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

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No. **30-025-53020**

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 05/10/2024

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	[2] Pool Code	[3] Pool Name
30-025-53020	98094	BOBCAT DRAW;UPPER WOLFCAMP

[4] Property Code	[5] Property Name	[6] Well Number
314104	CASCADE 28 FEDERAL	403H

[7] OGRID No.	[8] Operator Name	[9] Elevation
215099	CIMAREX ENERGY CO.	3374.1'

[10] 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	28	25S	33E		210	NORTH	2079	EAST	LEA

[11] Bottom Hole Location If Different From Surface

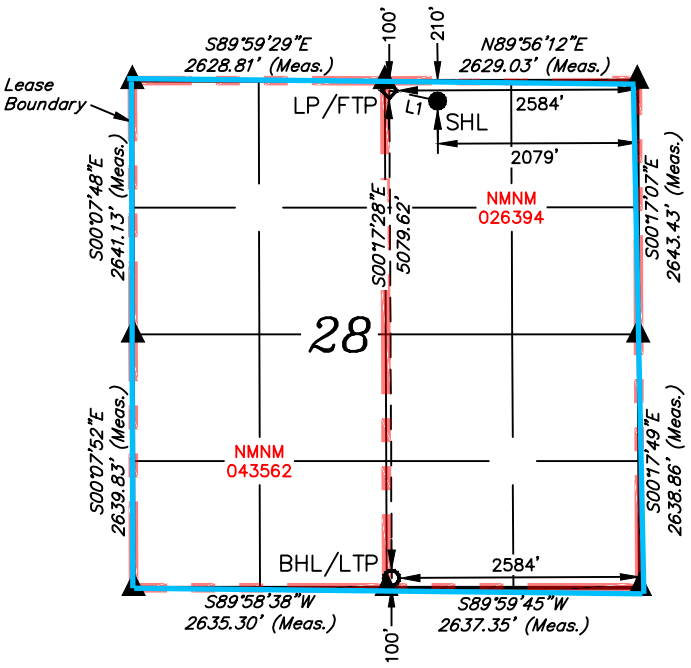
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	28	25S	33E		100	SOUTH	2584	EAST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
640			

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.

[16]

NOTE:
- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00"(NAD 83)



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N77°46'41"W	516.97'

● = SURFACE HOLE LOCATION
◇ = LANDING POINT/FIRST TAKE POINT
○ = BOTTOM HOLE LOCATION/ LAST TAKE POINT
▲ = SECTION CORNER LOCATED

2000' 1000' 0' 2000'
SCALE
DRAWN BY: T.J.S. 03-10-23

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'29.59" (32.108220°)
LONGITUDE = 103°34'31.82" (103.575505°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°06'29.14" (32.108095°)
LONGITUDE = 103°34'30.12" (103.575034°)
STATE PLANE NAD 83 (N.M. EAST)
N: 403931.68' E: 775981.88'
STATE PLANE NAD 27 (N.M. EAST)
N: 403873.93' E: 734795.63'

NAD 83 (LP/FTP)
LATITUDE = 32°06'30.69" (32.108525°)
LONGITUDE = 103°34'37.69" (103.577135°)
NAD 27 (LP/FTP)
LATITUDE = 32°06'30.24" (32.108400°)
LONGITUDE = 103°34'35.99" (103.576664°)
STATE PLANE NAD 83 (N.M. EAST)
N: 404038.99' E: 775476.26'
STATE PLANE NAD 27 (N.M. EAST)
N: 403981.23' E: 734290.03'

NAD 83 (BHL/LTP)
LATITUDE = 32°05'40.43" (32.094564°)
LONGITUDE = 103°34'37.56" (103.577099°)
NAD 27 (BHL/LTP)
LATITUDE = 32°05'39.98" (32.094440°)
LONGITUDE = 103°34'35.86" (103.576628°)
STATE PLANE NAD 83 (N.M. EAST)
N: 398960.46' E: 775523.26'
STATE PLANE NAD 27 (N.M. EAST)
N: 398902.83' E: 734336.79'

[17] 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.

Shelly M. Bowen 7/10/23
Signature Date

Shelly M. Bowen
Printed Name

shelly.bowen@coterra.com
E-mail Address

[18] 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.

January 24, 2018
Date of Survey
Signature and Seal of Professional Surveyor:

Certificate Number:

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:** 07/5/2023

II. Type: X 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
Cascade 28 Federal 403H		B, Sec 28 T25S, R33E	210 FNL/2079 FEL	2000	3900	5000

IV. Central Delivery Point Name: _Cascade 28 CDP 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
Cascade 28 Federal 403H		11/1/2024	11/19/2024	1/25/2025	2/13/2025	2/13/2025

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:	Sarah Jordan
Printed Name:	Sarah Jordan
Title:	Regulatory Analyst
E-mail Address:	sarah.jordan@coterra.com
Date:	7/5/2023
Phone:	432/620-1909

OIL CONSERVATION DIVISION

(Only applicable when submitted as a standalone form)

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.

1. Geological Formations

TVD of target 12,320
MD at TD 17,197

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
RUSTLER	995	N/A	
TOP SALT	1340	N/A	
BASE SALT	4930	N/A	
TOP DELAWARE SANDS	4970	N/A	
CHERRY CANYON	5985	N/A	
BRUSHY CANYON	7575	Hydrocarbons	
BASAL BRUSHY CANYON	8920	Hydrocarbons	
BONE SPRING LIME	9090	Hydrocarbons	
LEONARD	9130	Hydrocarbons	
AVALON	9330	Hydrocarbons	
1ST BONE SPRING SAND	10105	Hydrocarbons	
2ND BONE SPRING SAND	10685	Hydrocarbons	
3RD BONE SPRING CARB	11120	Hydrocarbons	
3RD BONE SPRING SAND	11785	Hydrocarbons	
WOLFCAMP	12360	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	1170	1170	10-3/4"	40.50	J-55	BT&C	3.12	6.18	13.27
9 7/8	0	12283	12192	7-5/8"	29.70	L-80	BT&C	2.49	1.21	1.83
6 3/4	0	11721	11721	5-1/2"	20.00	P-110	LT&C	1.46	1.66	2.47
6 3/4	11721	17197	12320	5"	18.00	P-110	BT&C	1.68	1.70	53.79
					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

	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	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	455	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	121	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	971	10.30	3.64	22.18		Lead: Tuned Light + LCM
	207	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Production	710	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	12083	25

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**	**10M**	Annular	5M	100% of working pressure
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other		
6 3/4	**13 5/8**	**10M**	Annular	5M	100% of working pressure
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other		

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 1170'	Fresh Water	7.83 - 8.33	28	N/C
1170' to 12283'	Brine Diesel Emulsion	8.50 - 9.00	30-35	N/C
12283' to 17197'	OBM	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

6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	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	8008 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	H2S is present
X	H2S plan is attached

8. Other Facets of Operation

9. Wellhead

1. The multi-bowl wellhead will be installed by a vendor representative. A copy of the installation instructions has been sent to the BLM field office.
2. A packoff will be installed after running and cementing the production casing. This packoff will be tested to 10K psi.

BOPE Additional Information & Testing

1. After running the first string of casing, a 10M BOP/BOPE system with 5M annular will be installed. BOPs will be tested according to Onshore Order #2. BOPE will be tested to full rated pressure (10K for all BOPE except the annular, which is tested to 5K). For the low test, the system will be tested to 250 psi.
2. All BOP equipment will be tested utilizing a conventional test plug.
3. A remote kill line is included in the BOPE system
4. All casing strings will be tested per Onshore Order #2, to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of casing burst.
5. If well conditions dictate, conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Additional Well Control Notes

In the event wellbore pressure encroaches to the maximum rated pressure of the annular, primary pressure control will be switched to the higher rated components (i.e., switch from annular to pipe rams) – upper pipe rams will be closed, and the annular opened in order to not exceed maximum rated pressures.

Schlumberger

COTERRA Rev 0

COTERRA

Borehole:	Well:	Field:	Structure:
Cascade 28 Federal 403H	Cascade 28 Federal 403H	NM Lea County (NAD 83)	Coterra Cascade 28 Federal Pad

Gravity & Magnetic Parameters

Model:	HDGM 2023	Dip:	59.634°	Date:	25-May-2023
MagDec:	6.235°	FS:	47351.665nT	Gravity FS:	998.436mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet

Lat:	N 32 6 29.59	Northing:	403931.68ftUS	Grid Conv:	0.4028°
Lon:	W 103 34 31.82	Easting:	775981.88ftUS	Scale Fact:	0.99997215

Miscellaneous

Slot:	Cascade 28 Federal 403H	TVD Ref:	RKB (3397.100 ft above MSL)
Plan:	Coterra Cascade 28 Federal 403H Rev0 kFc 25May23		

Critical Points

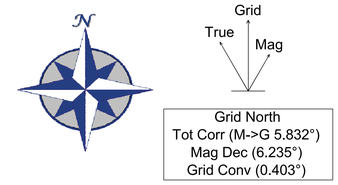
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [210' FNL, 2059' FEL]	0.00	0.00	281.98	0.00	0.00	0.00	0.00	
Rustler	995.00	0.00	281.98	995.00	0.00	0.00	0.00	0.00
Top Salt	1340.00	0.00	281.98	1340.00	0.00	0.00	0.00	0.00
Nudge, Build 2°/100ft	1800.00	0.00	281.98	1800.00	0.00	0.00	0.00	0.00
Hold	2199.97	8.00	281.98	2198.68	-6.04	5.79	-27.27	2.00
Lamar	4958.14	8.00	281.98	4930.00	-89.20	85.48	-402.74	0.00
Bell Canyon	4998.53	8.00	281.98	4970.00	-90.42	86.64	-408.24	0.00
Drop 2°/100ft	5513.65	8.00	281.98	5480.10	-105.95	101.53	-478.37	0.00
Hold	5913.62	0.00	281.98	5878.78	-111.99	107.31	-505.64	2.00
Cherry Canyon	6019.84	0.00	281.98	5985.00	-111.99	107.31	-505.64	0.00
Brushy Canyon	7609.84	0.00	281.98	7575.00	-111.99	107.31	-505.64	0.00
Basal Brushy Canyon	8954.84	0.00	281.98	8920.00	-111.99	107.31	-505.64	0.00
Bone Spring Lime	9124.84	0.00	281.98	9090.00	-111.99	107.31	-505.64	0.00
Leonard	9164.84	0.00	281.98	9130.00	-111.99	107.31	-505.64	0.00
Avalon	9364.84	0.00	281.98	9330.00	-111.99	107.31	-505.64	0.00
1st BS SS	10139.84	0.00	281.98	10105.00	-111.99	107.31	-505.64	0.00
2nd BS SS	10719.84	0.00	281.98	10685.00	-111.99	107.31	-505.64	0.00
3rd BS Carb	11154.84	0.00	281.98	11120.00	-111.99	107.31	-505.64	0.00
KOP, Build 8°/100ft	11720.62	0.00	281.98	11685.78	-111.99	107.31	-505.64	0.00
3rd BS SS	11820.16	7.96	179.47	11785.00	-105.08	100.41	-505.57	8.00
Build 10°/100ft	12283.12	45.00	179.47	12192.21	97.78	-102.45	-503.69	8.00
Wolfcamp	12294.25	46.11	179.47	12200.00	105.73	-110.39	-503.62	10.00
Landing Point	12738.26	90.51	179.47	12360.00	508.07	-512.71	-499.90	10.00
Cascade 28 Federal 403H - BHL [100 FSL, 2584' FEL]	17197.29	90.51	179.47	12320.00	4966.91	-4971.37	-458.63	0.00

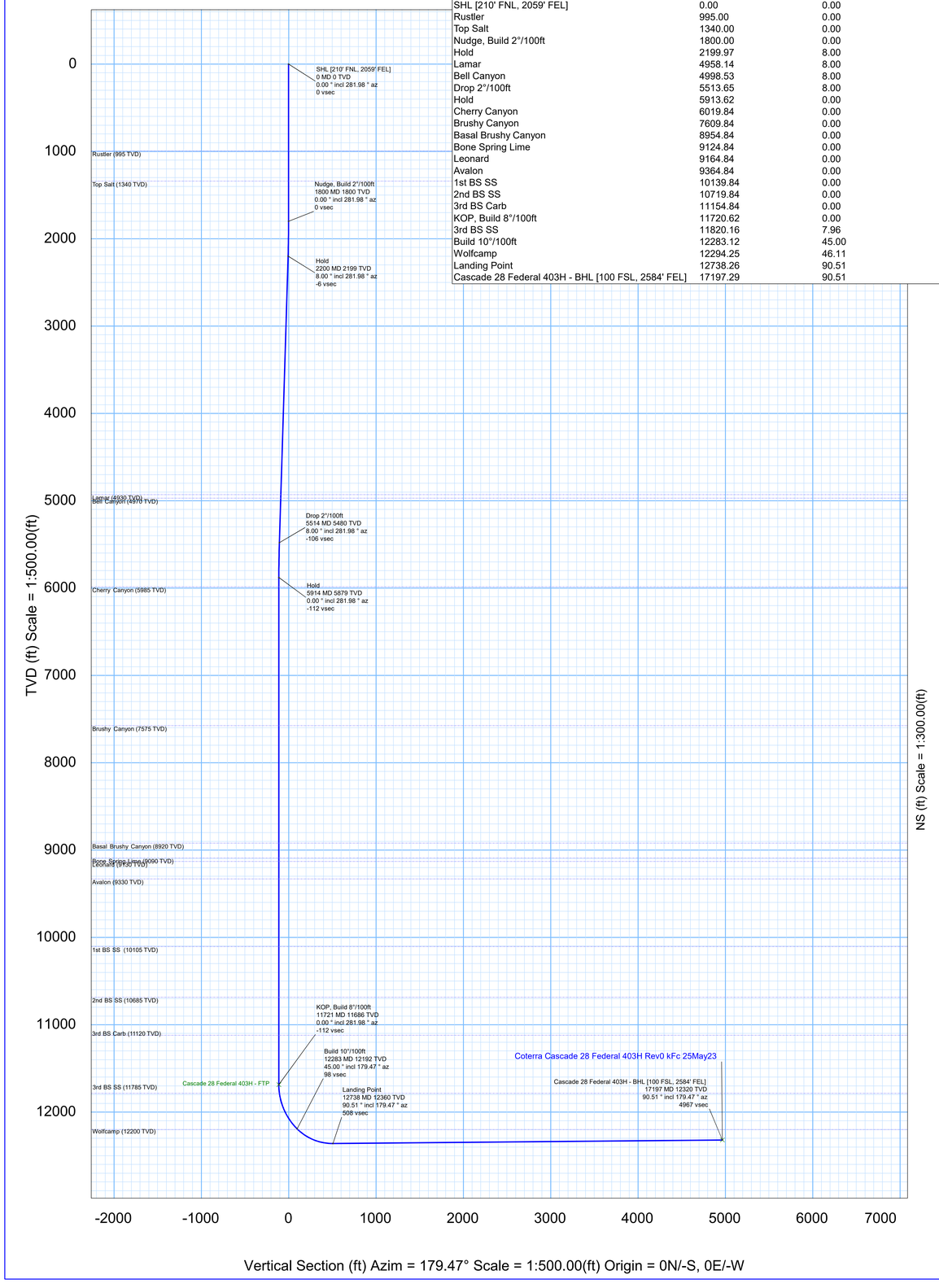
D E C **CONTROLLED**

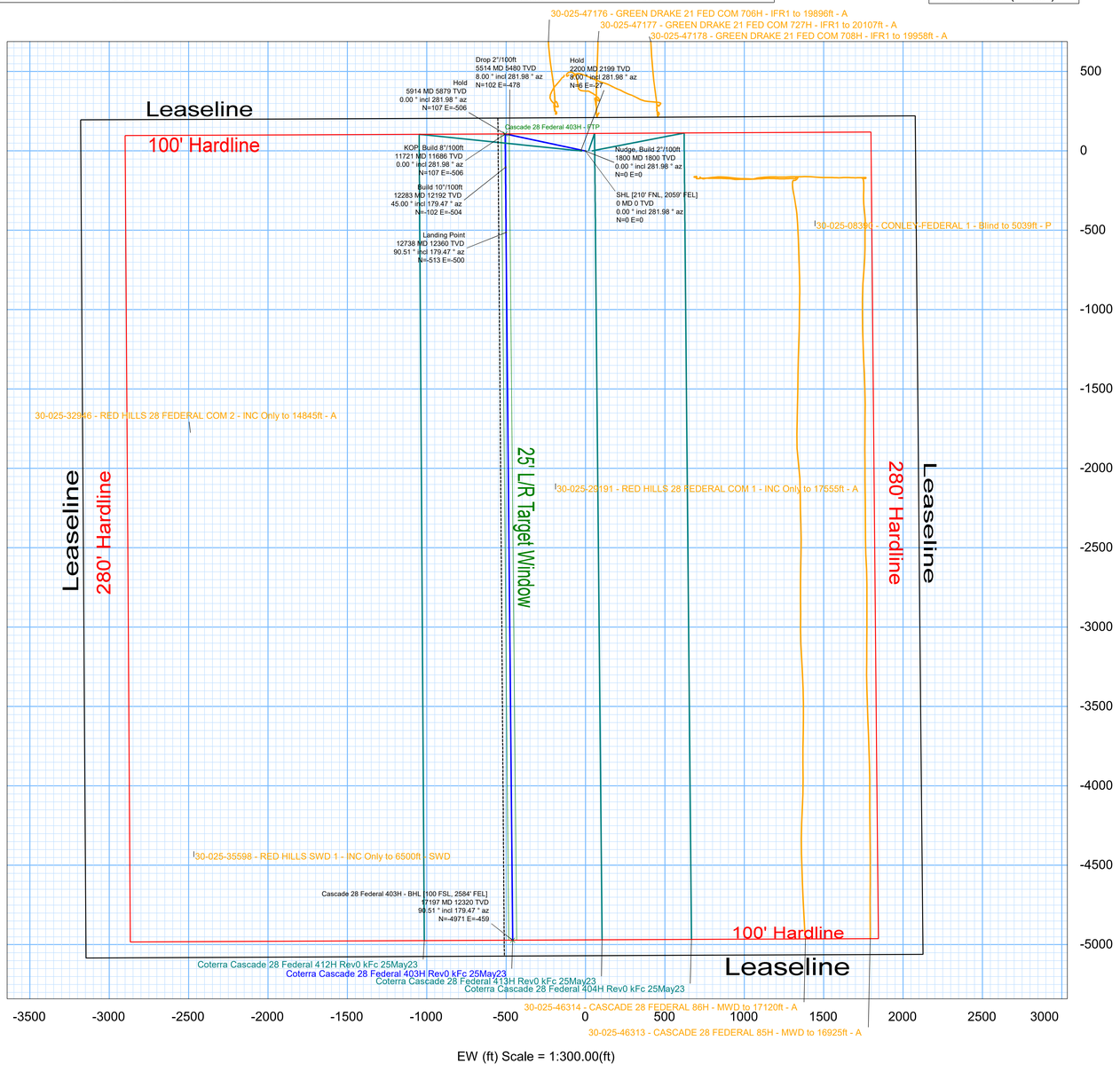
Plan ref	Coterra Cascade 28 Federal 403H Rev0 kFc 25May23
Drawing ref	
Copy number	of 3
Date	25-May-2023

1	Client	
2	Client	
3	Office	
4	Office	

Copy number for







Schlumberger

Coterra Cascade 28 Federal 403H Rev0 kFc 25May23 Proposal Geodetic Report

Def Plan

Report Date:	May 25, 2023 - 01:41 PM (UTC 0)	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	COTERRA	**Vertical Section Azimuth:**	179.470 °(GRID North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Coterra Cascade 28 Federal Pad / Cascade 28 Federal 403H	**TVD Reference Datum:**	RKB
Well:	Cascade 28 Federal 403H	**TVD Reference Elevation:**	3397.100 ft above MSL
Borehole:	Cascade 28 Federal 403H	**Seabed / Ground Elevation:**	3374.100 ft above MSL
UBHI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.235°
Survey Name:	Coterra Cascade 28 Federal 403H Rev0 kFc 25May23	**Total Gravity Field Strength:**	998.4365mgn (9.80665 Based)
Survey Date:	May 25, 2023	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	106.513 ° / 5595.797 ft / 5.919 / 0.453	**Total Magnetic Field Strength:**	47351.665 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.634°
Location Lat / Long:	32°6'29.59203"N , 103°34'31.81818"W	**Declination Date:**	May 25, 2023
Location Grid N/E Y/X:	N 403931.680 ftUS , E 775981.880 ftUS	**Magnetic Declination Model:**	HDGM 2023
CRS Grid Convergence Angle:	0.4028°	**North Reference:**	Grid North
Grid Scale Factor:	0.99997215	**Grid Convergence Used:**	0.4028°
Version / Patch:	2022.5.0.11	**Total Corr Mag North->Grid North:**	5.832°
		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 [210' FNL, 2059' FEL]	0.00	0.00	281.98	0.00	-3,397.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505			
	100.00	0.00	281.98	100.00	-3,297.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	200.00	0.00	281.98	200.00	-3,197.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	300.00	0.00	281.98	300.00	-3,097.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	400.00	0.00	281.98	400.00	-2,997.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	500.00	0.00	281.98	500.00	-2,897.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	600.00	0.00	281.98	600.00	-2,797.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	700.00	0.00	281.98	700.00	-2,697.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	800.00	0.00	281.98	800.00	-2,597.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	900.00	0.00	281.98	900.00	-2,497.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
Rustler	995.00	0.00	281.98	995.00	-2,402.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,000.00	0.00	281.98	1,000.00	-2,397.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,100.00	0.00	281.98	1,100.00	-2,297.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,200.00	0.00	281.98	1,200.00	-2,197.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,300.00	0.00	281.98	1,300.00	-2,097.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
Top Salt	1,340.00	0.00	281.98	1,340.00	-2,057.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,400.00	0.00	281.98	1,400.00	-1,997.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,500.00	0.00	281.98	1,500.00	-1,897.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,600.00	0.00	281.98	1,600.00	-1,797.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,700.00	0.00	281.98	1,700.00	-1,697.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
Nudge, Build 2°/100ft	1,800.00	0.00	281.98	1,800.00	-1,597.10	0.00	0.00	0.00	403,931.68	775,981.88	32.10822001	-103.57550505	0.00	0.00	0.00
	1,900.00	2.00	281.98	1,899.98	-1,497.12	-0.38	0.36	-1.71	403,932.04	775,980.17	32.10822104	-103.57551055	2.00	2.00	0.00
	2,000.00	4.00	281.98	1,999.84	-1,397.26	-1.51	1.45	-6.83	403,933.13	775,975.05	32.10822412	-103.57552706	2.00	2.00	0.00
	2,100.00	6.00	281.98	2,099.45	-1,297.65	-3.40	3.26	-15.35	403,934.94	775,966.53	32.10822926	-103.57555455	2.00	2.00	0.00
Hold	2,199.97	8.00	281.98	2,198.68	-1,198.42	-6.04	5.79	-27.27	403,937.47	775,954.61	32.10823644	-103.57559298	2.00	2.00	0.00
	2,200.00	8.00	281.98	2,198.70	-1,198.40	-6.04	5.79	-27.27	403,937.47	775,954.61	32.10823645	-103.57559299	0.00	0.00	0.00
	2,300.00	8.00	281.98	2,297.73	-1,099.37	-9.06	8.68	-40.89	403,940.36	775,941.00	32.10824465	-103.57563689	0.00	0.00	0.00
	2,400.00	8.00	281.98	2,396.76	-1,000.34	-12.07	11.57	-54.50	403,943.25	775,927.38	32.10825285	-103.57568078	0.00	0.00	0.00
	2,500.00	8.00	281.98	2,495.78	-901.32	-15.09	14.46	-68.11	403,946.14	775,913.77	32.10826106	-103.57572468	0.00	0.00	0.00
	2,600.00	8.00	281.98	2,594.81	-802.29	-18.10	17.34	-81.73	403,949.02	775,900.16	32.10826926	-103.57576858	0.00	0.00	0.00
	2,700.00	8.00	281.98	2,693.84	-703.26	-21.12	20.23	-95.34	403,951.91	775,886.54	32.10827747	-103.57581247	0.00	0.00	0.00
	2,800.00	8.00	281.98	2,792.86	-604.24	-24.13	23.12	-108.95	403,954.80	775,872.93	32.10828567	-103.57585637	0.00	0.00	0.00
	2,900.00	8.00	281.98	2,891.89	-505.21	-27.15	26.01	-122.56	403,957.69	775,859.32	32.10829388	-103.57590026	0.00	0.00	0.00
	3,000.00	8.00	281.98	2,990.92	-406.18	-30.16	28.90	-136.18	403,960.58	775,845.71	32.10830208	-103.57594416	0.00	0.00	0.00
	3,100.00	8.00	281.98	3,089.94	-307.16	-33.18	31.79	-149.79	403,963.47	775,832.09	32.10831028	-103.57598806	0.00	0.00	0.00
	3,200.00	8.00	281.98	3,188.97	-208.13	-36.19	34.68	-163.40	403,966.36	775,818.48	32.10831849	-103.57603195	0.00	0.00	0.00
	3,300.00	8.00	281.98	3,288.00	-109.10	-39.21	37.57	-177.02	403,969.25	775,804.87	32.10832669	-103.57607585	0.00	0.00	0.00
	3,400.00	8.00	281.98	3,387.02	-10.08	-42.22	40.46	-190.63	403,972.14	775,791.25	32.10833490	-103.57611975	0.00	0.00	0.00
	3,500.00	8.00	281.98	3,486.05	88.95	-45.24	43.35	-204.24	403,975.03	775,777.64	32.10834310	-103.57616364	0.00	0.00	0.00
	3,600.00	8.00	281.98	3,585.08	187.98	-48.25	46.24	-217.86	403,977.92	775,764.03	32.10835131	-103.57620754	0.00	0.00	0.00
	3,700.00	8.00	281.98	3,684.11	287.01	-51.27	49.13	-231.47	403,980.80	775,750.42	32.10835951	-103.57625144	0.00	0.00	0.00
	3,800.00	8.00	281.98	3,783.13	386.03	-54.28	52.02	-245.08	403,983.69	775,736.80	32.10836771	-103.57629533	0.00	0.00	0.00
	3,900.00	8.00	281.98	3,882.16	485.06	-57.30	54.90	-258.70	403,986.58	775,723.19	32.10837592	-103.57633923	0.00	0.00	0.00
	4,000.00	8.00	281.98	3,981.19	584.09	-60.31	57.79	-272.31	403,989.47	775,709.58	32.10838412	-103.57638312	0.00	0.00	0.00
	4,100.00	8.00	281.98	4,080.21	683.11	-63.33	60.68	-285.92	403,992.36	775,695.97	32.10839233	-103.57642702	0.00	0.00	0.00
	4,200.00	8.00	281.98	4,179.24	782.14	-66.34	63.57	-299.54	403,995.25	775,682.35	32.10840053	-103.57647092	0.00	0.00	0.00
	4,300.00	8.00	281.98	4,278.27	881.17	-69.36	66.46	-313.15	403,998.14	775,668.74	32.10840873	-103.57651481	0.00	0.00	0.00
	4,400.00	8.00	281.98	4,377.29	980.19	-72.37	69.35	-326.76	404,001.03	775,655.13	32.10841694	-103.57655871	0.00	0.00	0.00
	4,500.00	8.00	281.98	4,476.32	1,079.22	-75.39	72.24	-340.38	404,003.92	775,641.51	32.10842514	-103.57660261	0.00	0.00	0.00
	4,600.00	8.00	281.98	4,575.35	1,178.25	-78.40	75.13	-353.99	404,006.81	775,627.90	32.10843335	-103.57664650	0.00	0.00	0.00
	4,700.00	8.00	281.98	4,674.37	1,277.27	-81.42	78.02	-367.60	404,009.70	775,614.29	32.10844155	-103.57669040	0.00	0.00	0.00
	4,800.00	8.00	281.98	4,773.40	1,376.30	-84.43	80.91	-381.22	404,012.58	775,600.68	32.10844975	-103.57673430	0.00	0.00	0.00
	4,900.00	8.00	281.98	4,872.43	1,475.33	-87.44	83.80	-394.83	404,015.47	775,587.06	32.10845796	-103.57677819	0.00	0.00	0.00
Lamar	4,958.14	8.00	281.98	4,930.00	1,532.90	-89.20	85.48	-402.74	404,017.15	775,579.15	32.10846273	-103.57680371	0.00	0.00	0.00
Bell Canyon	4,998.53	8.00	281.98	4,970.00	1,572.90	-90.42	86.64	-408.24	404,018.32	775,573.65	32.10846604	-103.57682144	0.00	0.00	0.00
	5,000.00	8.00	281.98	4,971.46	1,574.36	-90.46	86.69	-408.44	404,018.36	775,573.45	32.10846616	-103.57682209	0.00	0.00	0.00
	5,100.00	8.00	281.98	5,070.48	1,673.38	-93.47	89.57	-422.06	404,021.25	775,559.84	32.10847437	-103.57686599	0.00	0.00	0.00
	5,200.00	8.00	281.98	5,169.51	1,772.41	-96.49	92.46	-435.67	404,024.14	775,546.22	32.10848257	-103.57690988	0.00	0.00	0.00
	5,300.00	8.00	281.98	5,268.54	1,871.44	-99.50	95.35	-449.28	404,027.03	775,532.61	32.10849077	-103.57695378	0.00	0.00	0.00
	5,400.00	8.00	281.98	5,367.56	1,970.46	-102.52	98.24	-462.90	404,029.92	775,519.00	32.10849898	-103.57699767	0.00	0.00	0.00
	5,500.00	8.00	281.98	5,466.59	2,069.49	-105.53	101.13	-476.51	404,032.81	775,505.39	32.10850718	-103.57704157	0.00	0.00	0.00
Drop 2°/100ft	5,513.65	8.00	281.98	5,480.10	2,083.00	-105.95	101.53	-478.37	404,033.20	775,503.53	32.10850830	-103.57704756	0.00	0.00	0.00
	5,600.00	6.27	281.98	5,565.79	2,168.69	-108.27	103.75	-488.86	404,035.43	775,493.04	32.10851463	-103.57708140	2.00	-2.00	0.00
	5,700.00	4.27	281.98	5,665.36	2,268.26	-110.26	105.66	-497.85	404,037.34	775,484.05	32.10852004	-103.57711038	2.00	-2.00	0.00
	5,800.00	2.27	281.98	5,765.19	2,368.09	-111.50	106.85	-503.43	404,038.52	775,478.46	32.10852341	-103.57712839	2.00	-2.00	0.00
	5,900.00	0.27	281.98	5,865.16	2,468.06	-111.98	107.31	-505.60	404,038.98	775,476.29	32.10852472	-103.57713539	2.00	-2.00	0.00
Hold	5,913.62	0.00	281.98	5,878.78	2,481.68	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	2.00	-2.00	0.00
	6,000.00	0.00	281.98	5,965.16	2,568.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
Cherry Canyon	6,019.84	0.00	281.98	5,985.00	2,587.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,100.00	0.00	281.98	6,065.16	2,668.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,200.00	0.00	281.98	6,165.16	2,768.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,300.00	0.00	281.98	6,265.16	2,868.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,400.00	0.00	281.98	6,365.16	2,968.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,500.00	0.00	281.98	6,465.16	3,068.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,600.00	0.00	281.98	6,565.16	3,168.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,700.00	0.00	281.98	6,665.16	3,268.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,800.00	0.00	281.98	6,765.16	3,368.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	6,900.00	0.00	281.98	6,865.16	3,468.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,000.00	0.00	281.98	6,965.16	3,568.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,100.00	0.00	281.98	7,065.16	3,668.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,200.00	0.00	281.98	7,165.16	3,768.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,300.00	0.00	281.98	7,265.16	3,868.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,400.00	0.00	281.98	7,365.16	3,968.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,500.00	0.00	281.98	7,465.16	4,068.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,600.00	0.00	281.98	7,565.16	4,168.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
Brushy Canyon	7,609.84	0.00	281.98	7,575.00	4,177.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,700.00	0.00	281.98	7,665.16	4,268.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,800.00	0.00	281.98	7,765.16	4,368.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	7,900.00	0.00	281.98	7,865.16	4,468.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,000.00	0.00	281.98	7,965.16	4,568.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,100.00	0.00	281.98	8,065.16	4,668.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,200.00	0.00	281.98	8,165.16	4,768.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,300.00	0.00	281.98	8,265.16	4,868.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,400.00	0.00	281.98	8,365.16	4,968.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,500.00	0.00	281.98	8,465.16	5,068.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,600.00	0.00	281.98	8,565.16	5,168.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,700.00	0.00	281.98	8,665.16	5,268.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,800.00	0.00	281.98	8,765.16	5,368.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	8,900.00	0.00	281.98	8,865.16	5,468.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
Basal Brushy Canyon	8,954.84	0.00	281.98	8,920.00	5,522.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,000.00	0.00	281.98	8,965.16	5,568.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,100.00	0.00	281.98	9,065.16	5,668.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
Bone Spring Lime	9,124.84	0.00	281.98	9,090.00	5,692.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00

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)
Leonard	9,164.84	0.00	281.98	9,130.00	5,732.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,200.00	0.00	281.98	9,165.16	5,768.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,300.00	0.00	281.98	9,265.16	5,868.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
Avalon	9,364.84	0.00	281.98	9,330.00	5,932.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,400.00	0.00	281.98	9,365.16	5,968.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,500.00	0.00	281.98	9,465.16	6,068.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,600.00	0.00	281.98	9,565.16	6,168.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,700.00	0.00	281.98	9,665.16	6,268.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,800.00	0.00	281.98	9,765.16	6,368.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	9,900.00	0.00	281.98	9,865.16	6,468.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,000.00	0.00	281.98	9,965.16	6,568.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,100.00	0.00	281.98	10,065.16	6,668.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
1st BS SS	10,139.84	0.00	281.98	10,105.00	6,707.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,200.00	0.00	281.98	10,165.16	6,768.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,300.00	0.00	281.98	10,265.16	6,868.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,400.00	0.00	281.98	10,365.16	6,968.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,500.00	0.00	281.98	10,465.16	7,068.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,600.00	0.00	281.98	10,565.16	7,168.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,700.00	0.00	281.98	10,665.16	7,268.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
2nd BS SS	10,719.84	0.00	281.98	10,685.00	7,287.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,800.00	0.00	281.98	10,765.16	7,368.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	10,900.00	0.00	281.98	10,865.16	7,468.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,000.00	0.00	281.98	10,965.16	7,568.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,100.00	0.00	281.98	11,065.16	7,668.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
3rd BS Carb	11,154.84	0.00	281.98	11,120.00	7,722.90	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,200.00	0.00	281.98	11,165.16	7,768.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,300.00	0.00	281.98	11,265.16	7,868.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,400.00	0.00	281.98	11,365.16	7,968.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,500.00	0.00	281.98	11,465.16	8,068.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,600.00	0.00	281.98	11,565.16	8,168.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,700.00	0.00	281.98	11,665.16	8,268.06	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
KOP, Build 8°/100ft	11,720.62	0.00	281.98	11,685.78	8,288.68	-111.99	107.31	-505.64	404,038.99	775,476.26	32.10852474	-103.57713549	0.00	0.00	0.00
	11,800.00	6.35	179.47	11,765.00	8,367.90	-107.59	102.92	-505.59	404,034.60	775,476.30	32.10851266	-103.57713546	8.00	8.00	0.00
3rd BS SS	11,820.16	7.96	179.47	11,785.00	8,387.90	-105.08	100.41	-505.57	404,032.08	775,476.32	32.10850575	-103.57713544	8.00	8.00	0.00
	11,900.00	14.35	179.47	11,863.29	8,466.19	-89.64	84.97	-505.43	404,016.65	775,476.47	32.10846331	-103.57713533	8.00	8.00	0.00
	12,000.00	22.35	179.47	11,958.13	8,561.03	-58.18	53.51	-505.14	403,985.19	775,476.76	32.10837685	-103.57713510	8.00	8.00	0.00
	12,100.00	30.35	179.47	12,047.66	8,650.56	-13.83	9.16	-504.73	403,940.84	775,477.17	32.10825494	-103.57713478	8.00	8.00	0.00
	12,200.00	38.35	179.47	12,130.16	8,733.06	42.55	-47.21	-504.21	403,884.47	775,477.69	32.10809997	-103.57713438	8.00	8.00	0.00
Build 10°/100ft	12,283.12	45.00	179.47	12,192.21	8,795.11	97.78	-102.45	-503.69	403,829.24	775,478.20	32.10794814	-103.57713398	8.00	8.00	0.00
Wolfcamp	12,294.25	46.11	179.47	12,200.00	8,802.90	105.73	-110.39	-503.62	403,821.29	775,478.27	32.10792630	-103.57713392	10.00	10.00	0.00
	12,300.00	46.69	179.47	12,203.97	8,806.87	109.89	-114.56	-503.58	403,817.13	775,478.31	32.10791486	-103.57713389	10.00	10.00	0.00
	12,400.00	56.69	179.47	12,265.88	8,868.78	188.26	-192.92	-502.86	403,738.77	775,479.04	32.10769946	-103.57713332	10.00	10.00	0.00
	12,500.00	66.69	179.47	12,313.25	8,916.15	276.18	-280.84	-502.04	403,650.85	775,479.85	32.10745777	-103.57713269	10.00	10.00	0.00
	12,600.00	76.69	179.47	12,344.63	8,947.53	371.00	-375.65	-501.17	403,556.04	775,480.73	32.10719715	-103.57713200	10.00	10.00	0.00
	12,700.00	86.69	179.47	12,359.07	8,961.97	469.82	-474.47	-500.25	403,457.22	775,481.64	32.10692552	-103.57713129	10.00	10.00	0.00
Landing Point	12,738.26	90.51	179.47	12,360.00	8,962.90	508.07	-512.71	-499.90	403,418.98	775,482.00	32.10682040	-103.57713101	10.00	10.00	0.00
	12,800.00	90.51	179.47	12,359.45	8,962.35	569.80	-574.45	-499.33	403,357.25	775,482.57	32.10665071	-103.57713057	0.00	0.00	0.00
	12,900.00	90.51	179.47	12,358.55	8,961.45	669.80	-674.44	-498.40	403,257.26	775,483.49	32.10637585	-103.57712984	0.00	0.00	0.00
	13,000.00	90.51	179.47	12,357.65	8,960.55	769.79	-774.43	-497.48	403,157.27	775,484.42	32.10610099	-103.57712912	0.00	0.00	0.00
	13,100.00	90.51	179.47	12,356.76	8,959.66	869.79	-874.42	-496.55	403,057.28	775,485.34	32.10582613	-103.57712840	0.00	0.00	0.00
	13,200.00	90.51	179.47	12,355.86	8,958.76	969.79	-974.41	-495.63	402,957.30	775,486.27	32.10555127	-103.57712767	0.00	0.00	0.00
	13,300.00	90.51	179.47	12,354.96	8,957.86	1,069.78	-1,074.40	-494.70	402,857.31	775,487.19	32.10527641	-103.57712695	0.00	0.00	0.00
	13,400.00	90.51	179.47	12,354.06	8,956.96	1,169.78	-1,174.40	-493.77	402,757.32	775,488.12	32.10500155	-103.57712623	0.00	0.00	0.00
	13,500.00	90.51	179.47	12,353.17	8,956.07	1,269.77	-1,274.39	-492.85	402,657.33	775,489.05	32.10472670	-103.57712550	0.00	0.00	0.00
	13,600.00	90.51	179.47	12,352.27	8,955.17	1,369.77	-1,374.38	-491.92	402,557.34	775,489.97	32.10445184	-103.57712478	0.00	0.00	0.00
	13,700.00	90.51	179.47	12,351.37	8,954.27	1,469.77	-1,474.37	-491.00	402,457.35	775,490.90	32.10417698	-103.57712406	0.00	0.00	0.00
	13,800.00	90.51	179.47	12,350.48	8,953.38	1,569.76	-1,574.36	-490.07	402,357.36	775,491.82	32.10390212	-103.57712333	0.00	0.00	0.00
	13,900.00	90.51	179.47	12,349.58	8,952.48	1,669.76	-1,674.35	-489.15	402,257.38	775,492.75	32.10362726	-103.57712261	0.00	0.00	0.00
	14,000.00	90.51	179.47	12,348.68	8,951.58	1,769.75	-1,774.35	-488.22	402,157.39	775,493.67	32.10335240	-103.57712189	0.00	0.00	0.00
	14,100.00	90.51	179.47	12,347.78	8,950.68	1,869.75	-1,874.34	-487.30	402,057.40	775,494.60	32.10307754	-103.57712116	0.00	0.00	0.00
	14,200.00	90.51	179.47	12,346.89	8,949.79	1,969.75	-1,974.33	-486.37	401,957.41	775,495.52	32.10280268	-103.57712044	0.00	0.00	0.00
	14,300.00	90.51	179.47	12,345.99	8,948.89	2,069.74	-2,074.32	-485.45	401,857.42	775,496.45	32.10252783	-103.57711972	0.00	0.00	0.00
	14,400.00	90.51	179.47	12,345.09	8,947.99	2,169.74	-2,174.31	-484.52	401,757.43	775,497.37	32.10225297	-103.57711899	0.00	0.00	0.00
	14,500.00	90.51	179.47	12,344.20	8,947.10	2,269.73	-2,274.30	-483.59	401,657.44	775,498.30	32.10197811	-103.57711827	0.00	0.00	0.00
	14,600.00	90.51	179.47	12,343.30	8,946.20	2,369.73	-2,374.30	-482.67	401,557.45	775,499.22	32.10170325	-103.57711755	0.00	0.00	0.00
	14,700.00	90.51	179.47	12,342.40	8,945.30	2,469.73	-2,474.29	-481.74	401,457.47	775,500.15	32.10142839	-103.57711682	0.00	0.00	0.00
	14,800.00	90.51	179.47	12,341.51	8,944.41	2,569.72	-2,574.28	-480.82	401,357.48	775,501.08	32.10115353	-103.57711610	0.00	0.00	0.00
	14,900.00	90.51	179.47	12,340.61	8,943.51	2,669.72	-2,674.27	-479.89	401,257.49	775,502.00	32.10087867	-103.57711538	0.00	0.00	0.00
	15,000.00	90.51	179.47	12,339.71	8,942.61	2,769.71	-2,774.26	-478.97	401,157.50	775,502.93	32.10060381	-103.57711465	0.00	0.00	0.00
	15,100.00	90.51	179.47	12,338.81	8,941.71	2,869.71	-2,874.25	-478.04	401,057.51	775,503.85	32.10032896	-103.57711393	0.00	0.00	0.00
	15,200.00	90.51	179.47	12,337.92	8,940.82	2,969.71	-2,974.25	-477.12	400,957.52	775,504.78	32.10005410	-103.57711321	0.00	0.00	0.00
	15,300.00	90.51	179.47	12,337.02	8,939.92	3,069.70	-3,074.24	-476.19	400,857.53	775,505.70	32.09977924	-103.57711248	0.00	0.00	0.00
	15,400.00	90.51	179.47	12,336.12	8,939.02	3,169.70	-3,174.23	-475.27	400,757.54	775,506.63	32.09950438	-103.57711176	0.00	0.00	0.00
	15,500.00	90.51	179.47	12,335.23	8,938.13	3,269.69	-3,274.22	-474.34	400,657.56	775,507.55	32.09922952	-103.57711103	0.00	0.00	0.00
	15,600.00	90.51	179.47	12,334.33	8,937.23	3,369.69	-3,374.21	-473.42	400,557.57	775,508.48	32.09895466	-103.57711031	0.00	0.00	0.00
	15,700.00	90.51	179.47	12,333.43	8,936.33	3,469.69	-3,474.21	-472.49	400,457.58	775,509.40	32.09867980	-103.57710959	0.00	0.00	0.00
	15,800.00	90.51	179.47	12,332.53	8,935.43	3,569.68	-3,574.20	-471.56	400,357.59	775,510.33	32.09840494	-103.57710886	0.00	0.00	0.00
	15,900.00	90.51	179.47	12,331.64	8,934.54	3,669.68	-3,674.19	-470.64	400,257.60	775,511.25	32.09813008	-103.57710814	0.00	0.00	0.00
	16,000.00	90.51	179.47	12,330.74	8,933.64	3,769.67	-3,774.18	-469.71	400,157.61	775,512.18	32.09785523	-103.57710742	0.00	0.00	0.00
	16,100.00	90.51	179.47	12,329.84	8,932.74	3,869.67	-3,874.17	-468.79	400,057.62	775,513.11	32.09758037	-103.57710669	0.00	0.00	0.00
	16,200.00	90.51	179.47	12,328.95	8,931.85	3,969.67	-3,974.16	-467.86	399,957.63	775,514.03	32.09730551	-103.57710597	0.00	0.00	0.00
	16,300.00	90.51	179.47	12,328.05	8,930.95	4,069.66	-4,074.16	-466.94	399,857.65	775,514.96	32.09703065	-103.57710525	0.00	0.00	0.00
	16,400.00	90.51	179.47	12,327.15	8,930.05	4,169.66	-4,174.15	-466.01	399,757.66	775,515.88	32.09675579	-103.57710452	0.00	0.00	0.00
	16,500.00	90.51	179.47	12,326.26	8,929.16	4,269.65	-4,274.14	-465.09	399,657.67	775,516.81	32.09648093	-103.57710380	0.00	0.00	0.00
	16,600.00	90.51	179.47	12,325.36	8,928.26	4,369.65	-4,374.13	-464.16	399,557.68	775,517.73	32.09620607	-103.57710307	0.00	0.00	0.00
	16,700.00	90.51	179.47	12,324.46	8,927.36	4,469.65	-4,474.12	-463.24	399,457.69	775,518.66	32.09593121	-103.57710235	0.00	0.00	0.00
	16,800.00	90.51	179.47	12,323.56	8,926.46	4,569.64	-4,574.11	-462.31	399,357.70	775,519.58	32.09565635	-103.57710163	0.00	0.00	0.00
	16,900.00	90.51	179.47	12,322.67	8,925.57	4,669.64	-4,674.11	-461.38	399,257.71	775,520.51	32.09538149	-103.57710090	0.00	0.00	0.00
	17,000.00	90.51	179.47	12,321.77	8,924.67	4,769.63	-4,774.10	-460.46	399,157.73	775,521.43	32.09510663	-103.57710018	0.00	0.00	0.00
	17,100.00	90.51	179.47	12,320.87	8,923.77	4,869.63	-4,874.09	-459.53	399,057.74	775,522.36	32.09483178	-103.57709946	0.00	0.00	0.00
Cascade 28 Federal 403H - BHL	17,197.29	90.51	179.47	12,320.00	8,922.90	4,966.91	-4,971.37	-458.63	398,960.46	775,523.26	32.09456437	-103.57709875	0.00	0.00	0.00

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 Code	Borehole / Survey
	1	0.000	11,700.000	1/100.000	75 – 9.875 – 6.75	10.75 – 7.625 – 5		A001Mb_MWD	Cascade 28 Federal 403H / Coterra Cascade 28 Federal 403H Rev0 kFc 25May23
	1	11,700.000	17,197.288	1/100.000	6.75	5		A008Mb_MWD+IFR1+MS	Cascade 28 Federal 403H / Coterra Cascade 28 Federal 403H Rev0 kFc 25May23

EOU Geometry:

End MD (ft)	Hole Size (in)	Casing Size (in)	Name
973.700	14.750	10.750	
11,473.700	9.875	7.625	
17,197.288	6.750	5.000	

Schlumberger

Coterra Cascade 28 Federal 403H Rev0 kFc 25May23 Anti-Collision Summary Report

Analysis Date-24hr Time:	May 25, 2023 - 01:42 PM (UTC 0)	**Analysis Method:**	3D Least Distance
Client:	COTERRA	**Reference Trajectory:**	Coterra Cascade 28 Federal 403H Rev0 kFc 25May23 (Def Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Coterra Cascade 28 Federal Pad	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	Cascade 28 Federal 403H	**Min Pts:**	Absolute minima indicated.
Well:	Cascade 28 Federal 403H	**Engine Version:**	2022.5.0.11
Borehole:	Cascade 28 Federal 403H	**Database \ Project:**	Cascade 28 Federal 403H–COTERRA
Scan MD Range:	0.00ft ~ 17197.29ft		

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

Offset Trajectories Summary

Offset Selection Criteria
Bounding box scan: minimum Ct-Ct separation <= 2000ft
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

12 out of 50 are selected

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
30-025-29191 - RED HILLS 28 FEDERAL COM 1 - INC Only to 17555ft - A (DefinitiveSurvey)													Fail Major
	2104.44	32.81	2102.58	2071.63	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2104.44	32.81	2102.58	2071.63	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	2104.44	106.01	2033.21	1998.43	30.23	OSF1.50	1800.00	1800.00				MinPt-CtCt	
	2170.73	258.12	1998.10	1912.61	12.69	OSF1.50	4430.00	4407.00				MINPT-O-EOU	
	2225.79	669.41	1778.97	1556.38	5.00	OSF1.50	11350.00	11315.16	OSF<5.00			Enter Alert	
	736.34	737.66	244.05	-1.32	1.50	OSF1.50	13650.00	12351.82		OSF<1.50		Enter Minor	
	484.99	737.69	-7.32	-252.70	0.99	OSF1.50	13940.00	12349.22			OSF<1.00	Enter Major	
	295.87	738.48	-196.96	-442.61	0.60	OSF1.50	14320.00	12345.81				MinPts	
	486.07	737.94	-6.40	-251.87	0.99	OSF1.50	14710.00	12342.31			OSF>1.00	Exit Major	
	728.44	737.54	236.23	-9.10	1.48	OSF1.50	14990.00	12339.80		OSF>1.50		Exit Minor	
	2443.56	736.62	1951.97	1706.94	4.98	OSF1.50	16750.00	12324.01	OSF>5.00			Exit Alert	
	2888.05	736.48	2396.55	2151.56	5.89	OSF1.50	17197.29	12320.00				TD	
30-025-08390 - CONLEY-FEDERAL 1 - Blind to 5039ft - P (DefinitiveSurvey)													Fail Major
	1511.06	32.81	1509.19	1478.25	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1510.72	32.81	1508.82	1477.91	38238.60	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	1510.70	32.81	1508.80	1477.89	41493.51	MAS = 10.00 (m)	23.00	23.00				WRP	
	1510.65	463.63	1200.94	1047.02	4.90	OSF1.50	360.00	360.00	OSF<5.00			Enter Alert	
	1510.65	1522.17	495.25	-11.52	1.49	OSF1.50	870.00	870.00		OSF<1.50		Enter Minor	
	1510.65	2269.17	-2.69	-758.52	1.00	OSF1.50	1230.00	1230.00			OSF<1.00	Enter Major	
	1510.65	3452.24	-791.40	-1941.60	0.66	OSF1.50	1800.00	1800.00				MinPt-CtCt	
	1942.28	10247.81	-4890.14	-8305.53	0.28	OSF1.50	5110.00	5080.39				MinPts	
	3721.06	5581.02	-0.18	-1859.97	1.00	OSF1.50	8230.00	8195.16			OSF>1.00	Exit Major	
	4556.35	4558.36	1516.89	-2.01	1.50	OSF1.50	9190.00	9155.16		OSF>1.50		Exit Minor	
	7541.54	2648.58	5775.31	4892.96	4.27	OSF1.50	12750.00	12359.90				MinPt-CtCt	
	8707.51	5683.88	4917.75	3023.63	2.30	OSF1.50	17100.00	12320.87				MINPT-O-EOU	
	8756.55	5756.44	4918.41	3000.11	2.28	OSF1.50	17197.29	12320.00				MinPts	
Coterra Cascade 28 Federal 413H Rev0 kFc 25May23 (DefinitivePlan)													Fail Minor
	19.90	16.13	18.84	3.77	N/A	MAS = 4.92 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	19.90	16.13	18.84	3.77	26583.42	MAS = 4.92 (m)	23.00	23.00				WRP	
	19.90	19.90	6.30	0.00	1.50	OSF1.50	1320.00	1320.00		OSF<1.50		Enter Minor	
	19.90	27.12	1.49	-7.22	1.09	OSF1.50	1800.00	1800.00				MinPt-CtCt	
	20.05	27.57	1.35	-7.51	1.08	OSF1.50	1830.00	1830.00				MinPts	
	20.17	27.72	1.37	-7.54	1.08	OSF1.50	1840.00	1840.00				MinPt-O-ADP	
	30.64	30.82	9.76	-0.18	1.49	OSF1.50	2050.00	2049.68		OSF>1.50		Exit Minor	
	47.51	33.04	25.16	14.48	2.18	OSF1.50	2200.00	2198.70				MinPts	
	139.72	42.62	110.98	97.10	5.00	OSF1.50	2850.00	2842.38	OSF>5.00			Exit Alert	
	562.92	169.71	449.45	393.21	5.00	OSF1.50	11360.00	11325.16	OSF<5.00			Enter Alert	
	562.92	175.48	445.61	387.44	4.83	OSF1.50	11780.00	11745.09				MinPt-CtCt	
	563.08	176.17	445.30	386.90	4.81	OSF1.50	11870.00	11834.08				MINPT-O-EOU	
	563.20	176.33	445.32	386.87	4.81	OSF1.50	11890.00	11853.58				MinPt-O-ADP	
	564.39	176.95	446.10	387.44	4.80	OSF1.50	11970.00	11930.15				MinPt-O-SF	
	587.69	177.35	469.13	410.34	4.99	OSF1.50	12330.00	12223.96	OSF>5.00			Exit Alert	
	623.00	187.67	497.55	435.33	5.00	OSF1.50	14620.00	12343.12	OSF<5.00			Enter Alert	
	624.25	235.50	466.92	388.75	3.99	OSF1.50	17197.29	12320.00				MinPts	
Coterra Cascade 28 Federal 412H Rev0 kFc 25May23 (DefinitivePlan)													Fail Minor
	20.00	16.21	18.94	3.79	N/A	MAS = 4.94 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.21	18.94	3.79	53449.23	MAS = 4.94 (m)	23.00	23.00				WRP	
	20.00	20.05	6.30	-0.05	1.50	OSF1.50	1330.00	1330.00		OSF<1.50		Enter Minor	
	20.00	23.96	3.70	-3.96	1.24	OSF1.50	1590.00	1590.00				MinPt-CtCt	
	20.16	24.56	3.46	-4.40	1.22	OSF1.50	1630.00	1630.00				MinPts	
	20.28	24.70	3.48	-4.43	1.22	OSF1.50	1640.00	1640.00				MinPt-O-ADP	
	26.90	27.01	8.57	-0.11	1.49	OSF1.50	1800.00	1800.00		OSF>1.50		Exit Minor	
	232.10	70.35	184.87	161.75	5.00	OSF1.50	4670.00	4644.67	OSF>5.00			Exit Alert	
	542.01	163.36	432.78	378.65	5.00	OSF1.50	10920.00	10885.16	OSF<5.00			Enter Alert	
	542.20	175.98	424.55	366.22	4.64	OSF1.50	11850.00	11814.46				MINPT-O-EOU	
	542.31	176.11	424.57	366.20	4.64	OSF1.50	11870.00	11834.08				MinPt-O-ADP	
	543.02	176.53	425.01	366.49	4.63	OSF1.50	11930.00	11892.19				MinPt-O-SF	
	574.65	173.55	458.61	401.09	4.99	OSF1.50	12380.00	12254.61	OSF>5.00			Exit Alert	
	604.83	164.54	494.81	440.29	5.54	OSF1.50	12738.26	12360.00				MINPT-O-EOU	
	610.85	184.02	487.84	426.83	5.00	OSF1.50	14740.00	12342.04	OSF<5.00			Enter Alert	
	618.26	231.45	463.63	386.80	4.02	OSF1.50	17197.29	12320.00				MinPts	
Coterra Cascade 28 Federal 404H Rev0 kFc 25May23 (DefinitivePlan)													Warning Alert
	40.00	32.21	38.94	7.80	N/A	MAS = 9.82 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	39.99	32.21	38.93	7.79	N/A	MAS = 9.82 (m)	23.00	23.00				WRP	
	39.99	32.21	21.59	7.79	2.24	MAS = 9.82 (m)	1800.00	1800.00				MinPts	
	40.02	32.21	21.52	7.82	2.23	MAS = 9.82 (m)	1810.00	1810.00				MINPT-O-EOU	
	40.29	32.21	21.59	8.08	2.22	MAS = 9.82 (m)	1830.00	1830.00				MinPt-O-SF	
	93.64	32.64	71.55	61.00	4.39	OSF1.50	2200.00	2198.70				MinPt-O-SF	
	107.12	33.32	84.57	73.79	4.92	OSF1.50	2250.00	2248.22	OSF>5.00			Exit Alert	
	1126.84	175.33	1009.63	951.51	9.69	OSF1.50	12560.00	12334.07				MinPt-CtCt	
	1126.85	239.68	966.73	887.17	7.07	OSF1.50	17197.29	12320.00				MinPts	
30-025-47176 - GREEN DRAKE 21 FED COM 706H - IFR1 to 19896ft - A (DefinitiveSurvey)													Warning Alert
	498.92	32.81	497.05	466.11	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	498.88	32.81	497.01	466.07	70688.98	MAS = 10.00 (m)	23.00	23.00				WRP	
	486.01	32.81	476.09	453.20	60.14	MAS = 10.00 (m)	890.00	890.00				MINPT-O-EOU	
	246.20	63.00	203.65	183.20	5.98	OSF1.50	4100.00	4080.21				MinPt-CtCt	
	246.48	64.38	203.00	182.10	5.85	OSF1.50	4190.00	4169.34				MINPT-O-EOU	
	246.84	64.84	203.07	182.01	5.82	OSF1.50	4220.00	4199.05				MinPt-O-ADP	
	252.98	67.46	207.45	185.52	5.73	OSF1.50	4400.00	4377.29				MinPt-O-SF	
	367.40	111.46	292.54	255.94	5.00	OSF1.50	7430.00	7395.16	OSF<5.00			Enter Alert	
	343.78	139.68	250.11	204.10	3.72	OSF1.50	9370.00	9335.16				MinPt-CtCt	
	344.76	142.55	249.18	202.22	3.65	OSF1.50	9570.00	9535.16				MINPT-O-EOU	
	339.88	156.26	235.16	183.62	3.28	OSF1.50	10500.00	10465.16				MinPt-CtCt	
	340.09	156.79	235.01	183.30	3.27	OSF1.50	10540.00	10505.16				MINPT-O-EOU	
	340.20	156.92	235.03	183.28	3.27	OSF1.50	10550.00	10515.16				MinPt-O-ADP	

Results highlighted in red: Sep-Factor <= 1.5
Result highlighted in boxed, red and bold: all local minima indicated.

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	341.61	157.82	235.84	183.79	3.27	OSF1.50	10620.00	10585.16				MinPt-O-SF	
	346.73	161.42	238.56	185.31	3.24	OSF1.50	10860.00	10825.16				MinPt-O-ADP	
	349.51	163.20	240.15	186.31	3.23	OSF1.50	10990.00	10955.16				MinPt-O-SF	
	346.07	170.93	231.60	175.14	3.05	OSF1.50	11510.00	11475.16				MinPt-CtCt	
	347.28	173.90	230.84	173.38	3.01	OSF1.50	11720.62	11685.78				MinPts	
	347.49	174.05	230.94	173.44	3.01	OSF1.50	11740.00	11705.16				MinPt-O-SF	
	564.30	171.18	449.67	393.12	4.98	OSF1.50	12330.00	12223.96	OSF>5.00			Exit Alert	
	5254.47	180.92	5133.35	5073.55	43.92	OSF1.50	17197.29	12320.00				TD	
30-025-32946 - RED HILLS 28 FEDERAL COM 2 - INC Only to 14845ft - A (DefinitiveSurvey)													Warning Alert
	3056.23	32.81	3054.37	3023.43	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	3056.23	32.81	3054.37	3023.43	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	2733.58	821.77	2185.22	1911.81	5.00	OSF1.50	11420.00	11385.16	OSF<5.00			Enter Alert	
	1999.84	910.06	1392.62	1089.78	3.30	OSF1.50	13980.00	12348.86				MinPts	
	3023.78	909.70	2416.81	2114.09	4.99	OSF1.50	16250.00	12328.50	OSF>5.00			Exit Alert	
	3786.46	909.10	3179.89	2877.36	6.26	OSF1.50	17197.29	12320.00				TD	
30-025-47177 - GREEN DRAKE 21 FED COM 727H - IFR1 to 20107ft - A (DefinitiveSurvey)													Pass
	491.60	32.81	489.74	458.79	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	491.55	32.81	489.68	458.74	99370.82	MAS = 10.00 (m)	23.00	23.00				WRP	
	483.96	32.81	477.26	451.16	99.63	MAS = 10.00 (m)	570.00	570.00				MinPts	
	484.11	32.81	477.13	451.30	94.31	MAS = 10.00 (m)	600.00	600.00				MINPT-O-EOU	
	369.47	46.26	338.08	323.21	12.37	OSF1.50	3060.00	3050.33				MinPt-CtCt	
	369.73	47.02	337.83	322.71	12.17	OSF1.50	3110.00	3099.85				MINPT-O-EOU	
	369.99	47.33	337.88	322.66	12.10	OSF1.50	3130.00	3119.65				MinPt-O-ADP	
	448.76	63.20	406.07	385.56	10.90	OSF1.50	4170.00	4149.53				MinPt-O-SF	
	562.15	78.64	509.17	483.51	10.92	OSF1.50	5200.00	5169.51				MinPt-O-SF	
	599.30	114.71	522.28	484.59	7.93	OSF1.50	7690.00	7655.16				MinPt-CtCt	
	587.74	136.89	495.92	450.84	6.50	OSF1.50	9200.00	9165.16				MinPt-CtCt	
	586.83	146.91	488.33	439.92	6.04	OSF1.50	9880.00	9845.16				MinPt-CtCt	
	586.90	147.15	488.25	439.75	6.03	OSF1.50	9900.00	9865.16				MINPT-O-EOU	
	587.00	147.27	488.26	439.72	6.03	OSF1.50	9910.00	9875.16				MinPt-O-ADP	
	593.08	154.78	489.34	438.30	5.79	OSF1.50	10420.00	10385.16				MinPt-CtCt	
	594.29	158.54	488.04	435.75	5.67	OSF1.50	10680.00	10645.16				MINPT-O-EOU	
	595.86	160.42	488.36	435.44	5.61	OSF1.50	10810.00	10775.16				MinPt-O-ADP	
	596.57	174.93	479.44	421.64	5.15	OSF1.50	11860.00	11824.28				MinPt-CtCt	
	596.61	175.00	479.43	421.61	5.15	OSF1.50	11870.00	11834.08				MinPts	
	597.20	175.31	479.82	421.89	5.14	OSF1.50	11910.00	11872.96				MinPt-O-SF	
	5220.18	182.34	5098.11	5037.84	43.30	OSF1.50	17197.29	12320.00				TD	
30-025-47178 - GREEN DRAKE 21 FED COM 708H - IFR1 to 19958ft - A (DefinitiveSurvey)													Pass
	485.68	32.81	483.82	452.88	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	485.64	32.81	483.76	452.83	35391.17	MAS = 10.00 (m)	23.00	23.00				WRP	
	466.86	32.81	458.49	434.05	71.53	MAS = 10.00 (m)	730.00	730.00				MinPts	
	467.13	32.81	458.29	434.32	66.76	MAS = 10.00 (m)	780.00	780.00				MINPT-O-EOU	
	453.43	38.21	427.41	415.22	18.54	OSF1.50	2520.00	2515.59				MinPt-CtCt	
	453.74	39.13	427.10	414.61	18.10	OSF1.50	2580.00	2575.00				MINPT-O-EOU	
	454.09	39.59	427.15	414.51	17.89	OSF1.50	2610.00	2604.71				MinPt-O-ADP	
	583.10	59.56	542.83	523.53	15.06	OSF1.50	3920.00	3901.96				MinPt-O-SF	
	602.93	61.54	561.35	541.39	15.06	OSF1.50	4050.00	4030.70				MinPt-O-SF	
	968.49	143.55	872.24	824.94	10.22	OSF1.50	9630.00	9595.16				MinPt-CtCt	
	965.61	155.04	861.70	810.57	9.43	OSF1.50	10410.00	10375.16				MinPt-CtCt	
	965.87	155.87	861.41	810.01	9.38	OSF1.50	10470.00	10435.16				MINPT-O-EOU	
	966.33	156.41	861.50	809.92	9.35	OSF1.50	10510.00	10475.16				MinPt-O-ADP	
	972.28	160.86	864.48	811.42	9.15	OSF1.50	10810.00	10775.16				MinPt-O-ADP	
	967.23	174.85	850.15	792.38	8.36	OSF1.50	11800.00	11765.00				MinPt-CtCt	
	967.25	174.92	850.13	792.34	8.35	OSF1.50	11810.00	11774.93				MINPT-O-EOU	
	967.31	174.98	850.15	792.33	8.35	OSF1.50	11820.00	11784.84				MinPt-O-ADP	
	968.71	175.42	851.25	793.28	8.34	OSF1.50	11890.00	11853.58				MinPt-O-SF	
	5294.41	182.58	5172.18	5111.83	43.85	OSF1.50	17197.29	12320.00				TD	
30-025-46314 - CASCADE 28 FEDERAL 86H - MWD to 17120ft - A (DefinitiveSurvey)													Pass
	722.62	32.81	720.76	689.81	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	722.59	32.81	720.72	689.79	133179.45	MAS = 10.00 (m)	23.00	23.00				WRP	
	703.66	32.81	690.24	670.87	59.63	MAS = 10.00 (m)	1270.00	1270.00				MinPts	
	703.88	32.81	690.09	671.07	57.88	MAS = 10.00 (m)	1310.00	1310.00				MINPT-O-EOU	
	748.95	32.93	726.44	716.02	35.85	OSF1.50	2200.00	2198.70				MinPt-O-ADP	
	872.01	43.54	842.43	828.47	31.18	OSF1.50	2980.00	2971.11				MinPt-O-SF	
	923.09	46.23	891.72	876.86	31.01	OSF1.50	3190.00	3179.07				MinPt-O-SF	
	1214.50	62.82	1172.07	1151.68	29.75	OSF1.50	4310.00	4288.17				MinPt-O-SF	
	1298.41	67.00	1253.20	1231.42	29.77	OSF1.50	4630.00	4605.06				MinPt-O-SF	
	1853.30	140.12	1759.33	1713.18	20.06	OSF1.50	9400.00	9365.16				MinPt-CtCt	
	1854.64	143.96	1758.11	1710.68	19.53	OSF1.50	9670.00	9635.16				MINPT-O-EOU	
	1855.32	144.78	1758.25	1710.54	19.43	OSF1.50	9730.00	9695.16				MinPt-O-ADP	
	1808.37	177.59	1689.46	1630.77	15.39	OSF1.50	12400.00	12265.88				MinPt-CtCt	
	1808.37	177.62	1689.44	1630.75	15.39	OSF1.50	12410.00	12271.30				MinPts	
	1810.67	178.06	1691.46	1632.62	15.37	OSF1.50	12520.00	12320.84				MinPt-O-SF	
	1845.53	181.24	1724.20	1664.29	15.39	OSF1.50	12860.00	12358.91				MinPt-O-ADP	
	1828.02	201.98	1692.86	1626.04	13.67	OSF1.50	14060.00	12348.14				MinPt-CtCt	
	1828.19	202.46	1692.71	1625.73	13.64	OSF1.50	14090.00	12347.87				MINPT-O-EOU	
	1828.47	202.78	1692.77	1625.69	13.62	OSF1.50	14110.00	12347.69				MinPt-O-ADP	
	1846.79	211.91	1705.01	1634.88	13.16	OSF1.50	14430.00	12344.82				MinPt-CtCt	
	1847.74	215.18	1703.77	1632.56	12.96	OSF1.50	14560.00	12343.66				MINPT-O-EOU	
	1848.55	216.14	1703.95	1632.41	12.91	OSF1.50	14600.00	12343.30				MinPt-O-ADP	
	1840.47	239.38	1680.37	1601.08	11.60	OSF1.50	15280.00	12337.20				MinPt-CtCt	
	1840.93	240.89	1679.82	1600.04	11.53	OSF1.50	15340.00	12336.66				MINPT-O-EOU	
	1841.53	241.64	1679.93	1599.85	11.49	OSF1.50	15370.00	12336.39				MinPt-O-ADP	
	1847.78	269.71	1667.46	1578.06	10.33	OSF1.50	16080.00	12330.02				MinPt-CtCt	
	1833.42	291.44	1638.62	1541.98	9.48	OSF1.50	16610.00	12325.27				MinPt-CtCt	
	1834.42	294.25	1637.74	1540.17	9.39	OSF1.50	16700.00	12324.46				MINPT-O-EOU	
	1837.91	300.46	1637.10	1537.45	9.21	OSF1.50	16850.00	12323.12				MINPT-O-EOU	
	1844.15	308.60	1637.90	1535.55	9.00	OSF1.50	17050.00	12321.32				MinPt-O-ADP	
	1850.89	314.05	1641.01	1536.84	8.88	OSF1.50	17197.29	12320.00				MinPt-O-SF	
30-025-46313 - CASCADE 28 FEDERAL 85H - MWD to 16925ft - A (DefinitiveSurvey)													Pass
	742.14	32.81	740.28	709.33	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	742.11	32.81	740.24	709.30	4406166.39	MAS = 10.00 (m)	23.00	23.00				WRP	
	742.06	32.81	738.77	709.25	519.21	MAS = 10.00 (m)	230.00	230.00				MinPts	
	740.17	32.81	730.27	707.36	91.84	MAS = 10.00 (m)	890.00	890.00				MINPT-O-EOU	
	738.37	32.81	726.00	705.57	68.79	MAS = 10.00 (m)	1160.00	1160.00				MinPts	
	738.64	32.81	725.71	705.83	65.41	MAS = 10.00 (m)	1220.00	1220.00				MINPT-O-EOU	
	940.13	44.31	910.03	895.82	33.01	OSF1.50	3040.00	3030.53				MinPt-O-SF	
	1040.48	48.67	1007.48	991.81	33.15	OSF1.50	3390.00	3377.12				MinPt-O-SF	
	1420.16	68.09	1374.21	1352.07	32.03	OSF1.50	4680.00	4654.57				MinPt-O-SF	
	1535.26	74.70	1484.91	1460.56	31.50	OSF1.50	5110.00	5080.39				MinPt-O-SF	
	1918.57	99.48	1851.69	1819.08	29.39	OSF1.50	6850.00	6815.16				MinPt-O-SF	
	2264.37	160.35	2156.92	2104.02	21.39	OSF1.50	10710.00	10675.16				MinPt-CtCt	
	2266.88	170.31	2152.79	2096.57	20.15	OSF1.50	11390.00	11355.16				MinPts	
	2267.91	172.88	2152.15	2095.03	19.84	OSF1.50	11580.00	11545.16				MINPT-O-EOU	
	2269.05	174.91	2151.93	2094.13	19.62	OSF1.50	11720.62	11685.78				MINPT-O-EOU	
	2268.81	175.82	2151.09	2092.99	19.51	OSF1.50	11900.00	11863.29				MinPt-CtCt	
	2268.82	175.86	2151.07	2092.96	19.51	OSF1.50	11920.00	11882.59				MinPts	
	2262.87	178.43	2143.41	2084.45	19.18	OSF1.50	12470.00	12300.66				MinPt-CtCt	
	2262.89	178.45	2143.41	2084.44	19.17	OSF1.50	12480.00	12305.02				MinPts	
	2239.99	187.21	2114.68	2052.78	18.08	OSF1.50	13310.00	12354.87				MinPt-CtCt	
	2240.21	187.86	2114.46	2052.35	18.02	OSF1.50	13360.00	12354.42				MINPT-O-EOU	
	2240.79	188.53	2114.60	2052.27	17.96	OSF1.50	13410.00	12353.97				MinPt-O-ADP	
	2247.07	210.60	2106.16	2036.47	16.11	OSF1.50	14370.00	12345.36				MinPt-CtCt	
	2245.88	220.76	2098.20	2025.12	15.36	OSF1.50	14710.00	12342.31				MinPt-CtCt	
	2246.51	222.66	2097.56	2023.85	15.23	OSF1.50	14790.00	12341.59				MINPT-O-EOU	
	2247.11	223.38	2097.69	2023.74	15.18	OSF1.50	14820.00	12341.33				MinPt-O-ADP	
	2245.23	250.93	2077.44	1994.30	13.49	OSF1.50	15580.00	12334.51				MinPt-CtCt	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	2248.42	257.50	2076.24	1990.92	13.17	OSF1.50	15780.00	12332.71				MINPT-O-EOU	
	2257.62	271.78	2075.92	1985.84	12.52	OSF1.50	16140.00	12329.48				MINPT-O-EOU	
	2257.22	285.30	2066.51	1971.92	11.92	OSF1.50	16440.00	12326.79				MinPt-CtCt	
	2253.31	315.13	2042.71	1938.18	10.77	OSF1.50	17130.00	12320.60				MinPt-CtCt	
	2253.13	318.35	2040.39	1934.78	10.66	OSF1.50	17197.29	12320.00				MinPts	
30-025-35598 - RED HILLS SWD 1 - INC Only to 6500ft - SWD (DefinitiveSurvey)													Pass
	5054.68	32.81	5052.81	5021.87	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	5054.67	32.81	5052.75	5021.86	99502.33	MAS = 10.00 (m)	23.00	23.00				WRP	
	4926.30	464.02	4616.40	4462.27	15.98	OSF1.50	6530.00	6495.16				MinPt-CtCt	
	4926.30	464.63	4615.99	4461.67	15.96	OSF1.50	6540.00	6505.16				MINPT-O-EOU	
	4926.31	464.64	4615.99	4461.67	15.96	OSF1.50	6550.00	6515.16				MinPt-O-ADP	
	4926.47	464.68	4616.13	4461.79	15.95	OSF1.50	6580.00	6545.16				MinPt-O-SF	
	6155.53	210.62	6014.60	5944.91	44.15	OSF1.50	16670.00	12324.73				MinPt-CtCt	
	6155.91	211.66	6014.29	5944.25	43.93	OSF1.50	16740.00	12324.10				MINPT-O-EOU	
	6156.32	212.15	6014.38	5944.17	43.83	OSF1.50	16770.00	12323.83				MinPt-O-ADP	
	6177.98	221.30	6029.94	5956.68	42.16	OSF1.50	17197.29	12320.00				MinPt-O-SF	

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

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 05/10/2024

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws 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, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: 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 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., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Approval Date: 05/10/2024

Additional Operator Remarks

Location of Well

0. SHL: NWNE / 210 FNL / 2079 FEL / TWSP: 25S / RANGE: 33E / SECTION: 28 / LAT: 32.10822 / LONG: -103.575505 (TVD: 0 feet, MD: 0 feet)

PPP: NWNE / 100 FNL / 2584 FEL / TWSP: 25S / RANGE: 33E / SECTION: 28 / LAT: 32.1085247 / LONG: -103.5771354 (TVD: 11686 feet, MD: 11721 feet)

BHL: SWSE / 100 FSL / 2584 FEL / TWSP: 25S / RANGE: 33E / SECTION: 28 / LAT: 32.094564 / LONG: -103.577099 (TVD: 12320 feet, MD: 17197 feet)

BLM Point of Contact

Name: JANET D ESTES
Title: ADJUDICATOR
Phone: (575) 234-6233
Email: JESTES@BLM.GOV

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT

SURFACE USE

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Coterra Energy Inc.
LEASE NO.:	NMNM26394
COUNTY:	Lea County, New Mexico

Wells:

Cascade 28 Federal 403H

Surface Hole Location: 210' FNL & 2079' FEL, Section 28, T. 25 S, R. 33 E.

Bottom Hole Location: 100' FSL & 2584' FEL, Section 28, T. 25 S, R. 33 E.

Cascade 28 Federal 404H

Surface Hole Location: 210' FNL & 2039' FEL, Section 28, T. 25 S, R. 33 E.

Bottom Hole Location: 100' FSL & 1457' FEL, Section 28, T. 25 S, R. 33 E.

Cascade 28 Federal 412H

Surface Hole Location: 210' FNL & 2099' FEL, Section 28, T. 25 S, R. 33 E.

Bottom Hole Location: 100' FSL & 2132' FEL, Section 28, T. 25 S, R. 33 E.

Cascade 28 Federal 413H

Surface Hole Location: 210' FNL & 2059' FEL, Section 28, T. 25 S, R. 33 E.

Bottom Hole Location: 100' FSL & 2021' FEL, Section 28, T. 25 S, R. 33 E.

Approval Date: 05/10/2024

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1. GENERAL PROVISIONS

The failure of the operator to comply with these requirements may result in the assessment of liquidated damages or penalties pursuant to 43 CFR 3163.1 or 3163.2. A copy of these conditions of approval shall be present on the location during construction, drilling and reclamation activity. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

1.1. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working on the operator's behalf, on the public or federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area (within 100ft) of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer, in conjunction with a BLM Cultural Resource Specialist, to determine appropriate actions to prevent the loss of significant scientific values. The operator shall be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the operator.

Traditional Cultural Properties (TCPs) are protected by NHPA as codified in 36 CFR 800 for possessing traditional, religious, and cultural significance tied to a certain group of individuals. Though there are currently no designated TCPs within the project area or within a mile of the project area, but it is possible for a TCP to be designated after the approval of this project. **If a TCP is designated in the project area after the project's approval, the BLM Authorized Officer will notify the operator of the following conditions and the duration for which these conditions are required.**

1. Temporary halting of all construction, drilling, and production activities to lower noise.
2. Temporary shut-off of all artificial lights at night.

The operator is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA), specifically NAGPRA Subpart B regarding discoveries, to protect human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered during project work. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and a BLM-CFO Authorized Officer will be notified immediately. The BLM will then be required to be notified, in writing, within 24 hours of the discovery. The written notification should include the geographic location by county and state, the contents of the discovery, and the steps taken to protect said discovery. You must also include any potential threats to the discovery and a conformation that all activity within 100ft of the discovery has ceased and work will not resume until written certification is issued. All work on the entire project must halt for a minimum of 3 days and work cannot resume until an Authorized Officer grants permission to do so.

Any paleontological resource discovered by the operator, or any person working on the operator's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. The operator will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the operator.

1.2. RANGELAND RESOURCES

1.2.1. **Cattleguards**

Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

1.2.2. **Fence Requirement**

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

1.2.3. **Livestock Watering Requirement**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

1.3. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA, New Mexico Department of Agriculture, and BLM requirements and policies.

1.3.1 African Rue (Peganum harmala)

Spraying: The spraying of African Rue must be completed by a licensed or certified applicator. In order to attempt to kill or remove African Rue the proper mix of chemical is needed. The mix consists of 2% Arsenal (Imazapyr) and 2% Roundup (Glyphosate) along with a nonionic surfactant. Any other chemicals or combinations shall be approved by the BLM Noxious Weeds Coordinator prior to treatment. African Rue shall be sprayed in connection to any dirt working activities or disturbances to the site being sprayed. Spraying of African Rue shall be done on immature plants at initial growth through flowering and mature plants between budding and flowering stages. Spraying shall not be conducted after flowering when plant is fruiting. This will ensure optimal intake of chemical and decrease chances of developing herbicide resistance. After spraying, the operator or necessary parties must contact the Carlsbad Field Office to inspect the effectiveness of the application treatment to the plant species. No ground disturbing activities can take place until the inspection by the authorized officer is complete. The operator may contact the Environmental Protection Department or the BLM Noxious Weed Coordinator at (575) 234-5972 or BLM_NM_CFO_NoxiousWeeds@blm.gov.

Management Practices: In addition to spraying for African Rue, good management practices should be followed. All equipment should be washed off using a power washer in a designated containment area. The containment area shall be bermed to allow for containment of the seed to prevent it from entering any open areas of the nearby landscape. The containment area shall be excavated near or adjacent to the well pad at a depth of three feet and just large enough to get equipment inside it to be washed off. This will allow all seeds to be in a centrally located area that can be treated at a later date if the need arises.

1.4. LIGHT POLLUTION

1.4.1. **Downfacing**

All permanent lighting will be pointed straight down at the ground in order to prevent light spill beyond the edge of approved surface disturbance.

1.4.2. **Shielding**

All permanent lighting will use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the lowest part of the light source).

1.4.3. **Lighting Color**

Lighting shall be 3,500 Kelvin or less (Warm White) except during drilling, completion, and workover operations. No bluish-white lighting shall be used in permanent outdoor lighting.

2. SPECIAL REQUIREMENTS.

2.1 Lesser Prairie Chicken Timing Stipulations

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

2.2 VISUAL RESOURCE MANAGEMENT

2.5.1 **VRM IV**

Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

3. CONSTRUCTION REQUIRENMENTS

3.1 CONSTRCUTION NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at BLM_NM_CFO_Construction_Reclamation@blm.gov at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and COAs on the well site and they shall be made available upon request by the Authorized Officer.

3.2 TOPSOIL

The operator shall strip the topsoil (the A horizon) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. No more than the top 6 inches of topsoil shall be removed. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (the B horizon and below) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

3.3 CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No reserve pits will be used for drill cuttings. The operator shall properly dispose of drilling contents at an authorized disposal site.

3.4 FEDERAL MINERAL PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

3.5 WELL PAD & SURFACING

Any surfacing material used to surface the well pad will be removed at the time of interim and final reclamation.

3.6 EXCLOSURE FENCING (CELLARS & PITS)

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the well cellar is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

The operator will also install and maintain mesh netting for all open well cellars to prevent access to smaller wildlife before and after drilling operations until the well cellar is free of fluids and the operator. Use a maximum netting mesh size of 1 ½ inches. The netting must not have holes or gaps.

3.7 ON LEASE ACESS ROAD

3.7.1 **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

3.7.2 **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements will be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

3.7.3 **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

3.7.4 **Ditching**

Ditching shall be required on both sides of the road.

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3.7.5 **Turnouts**

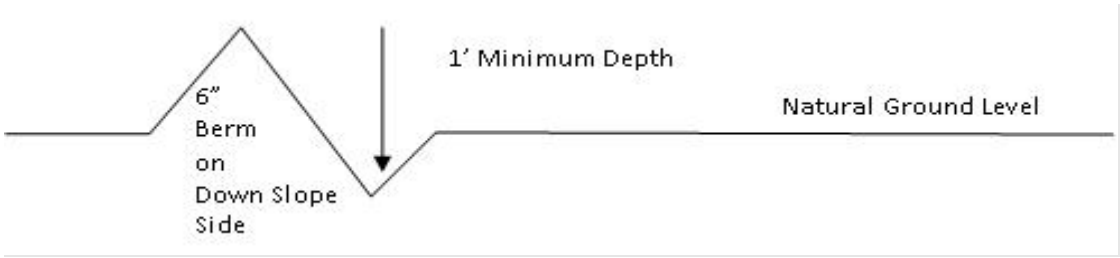
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

3.7.6 **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, leadoff ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4} + 100' = 200' \text{ lead-off ditch interval}$$

3.7.7 **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

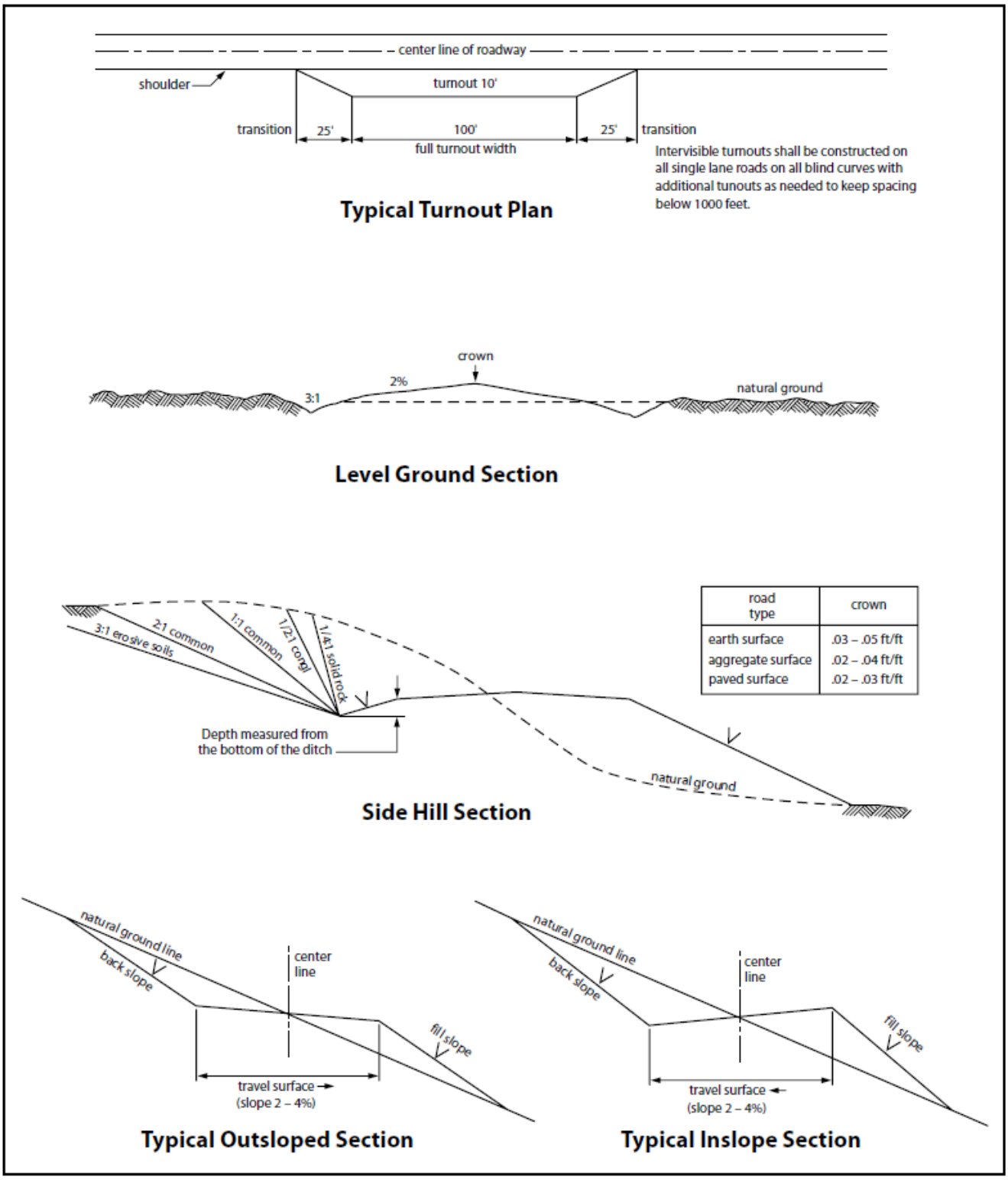


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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4. PIPELINES

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

4.1 BURIED PIPELINES

A copy of the application (APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request a copy of your permit during construction to ensure compliance with all stipulations.

Operator agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Operator shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this APD.

2. The Operator shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the operator shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the pipeline corridor or on facilities authorized under this APD. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The operator agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Pipeline corridor (unless the release or threatened release is wholly unrelated to the operator's activity on the pipeline corridor), or resulting from the activity of the Operator on the pipeline corridor. This agreement applies without regard to whether a release is caused by the operator, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant is discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of operator, regardless of fault. Upon failure of operator to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and

fish and wildlife habitats, at the full expense of the operator. Such action by the Authorized Officer shall not relieve operator of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized pipeline corridor.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this pipeline corridor will be 30 feet:

   - Blading of vegetation within the pipeline corridor will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation*.)

   - Clearing of brush species within the pipeline corridor will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

   - The remaining area of the pipeline corridor (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The operator shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this pipeline corridor and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire pipeline corridor shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted, and a 6-inch berm will be left over the ditch line to allow for settling back to grade.

10. The pipeline will be identified by signs at the point of origin and completion of the pipeline corridor and at all road crossings. At a minimum, signs will state the operator's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

11. The operator shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the operator before maintenance begins. The operator will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the operator to construct temporary deterrence structures.

12. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

13. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

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a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them alive at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30-degree slope and spaced no more than 500 feet apart) shall be placed in the trench. Before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them alive at least 100 yards from the trench.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

4.2 OVERHEAD ELECTRIC LINES

A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Operator agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The operator shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this APD.
2. The operator shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the operator shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the powerline corridor or on facilities authorized under this powerline corridor. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The operator agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Powerline corridor(unless the release or threatened release is wholly unrelated to the operator's activity on the powerline corridor), or resulting from the activity of the Operator on the powerline corridor. This agreement applies without regard to whether a release is caused by the operator, its agent, or unrelated third parties.
4. There will be no clearing or blading of the powerline corridor unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The operator shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this powerline corridor, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the operator without liability or expense to the United States.
6. Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.
7. The operator shall minimize disturbance to existing fences and other improvements on public lands. The operator is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The operator will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
8. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.
9. Upon cancellation, relinquishment, or expiration of this APD, the operator shall comply with those abandonment procedures as prescribed by the Authorized Officer.
10. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this APD, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.
11. Special Stipulations:
    - For reclamation remove poles, lines, transformer, etc. and dispose of properly. Fill in any holes from the poles removed.
12. Karst stipulations for overhead electric lines
    - Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features.
    - The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction.
    - No further construction will be done until clearance has been issued by the Authorized Officer.

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- Special restoration stipulations or realignment may be required.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

4.3 RANGLAND MITIGATION FOR PIPELINES

4.5.1 **Fence Requirement**

Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment operator prior to crossing any fence(s).

4.5.2 **Cattleguards**

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at road-fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

4.5.3 **Livestock Watering Requirement**

Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action.

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment operator if any damage occurs to structures that provide water to livestock.

- Livestock operators will be contacted, and adequate crossing facilities will be provided as needed to ensure livestock are not prevented from reaching water sources because of the open trench.

- Wildlife and livestock trails will remain open and passable by adding soft plugs (areas where the trench is excavated and replaced with minimal compaction) during the construction phase. Soft plugs with ramps on either side will be left at all well-defined livestock and wildlife trails along the open trench to allow passage across the trench and provide a means of escape for livestock and wildlife that may enter the trench.
- Trenches will be backfilled as soon as feasible to minimize the amount of open trench. The Operator will avoid leaving trenches open overnight to the extent possible and open trenches that cannot be backfilled immediately will have escape ramps (wooden) placed at no more than 2,500 feet intervals and sloped no more than 45 degrees.

5. PRODUCTION (POST DRILLING)

5.1 WELL STRUCTURES & FACILITIES

5.1.1 **Placement of Production Facilities**

Production facilities must be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

5.1.2 **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

5.1.3. Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

5.1.4. Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone*.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

5.1.5. Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

6. RECLAMATION

Stipulations required by the Authorized Officer on specific actions may differ from the following general guidelines

6.1 ROAD AND SITE RECLAMATION

Any roads constructed during the life of the well will have the caliche removed or linear burial. If contaminants are indicated then testing will be required for chlorides and applicable contaminate anomalies for final disposal determination (disposed of in a manner approved by the Authorized Officer within Federal, State and Local statutes, regulations, and ordinances) and seeded to the specifications in sections 6.5 and 6.6.

6.2 EROSION CONTROL

Install erosion control berms, windrows, and hummocks. Windrows must be level and constructed perpendicular to down-slope drainage; steeper slopes will require greater windrow density. Topsoil between windrows must be ripped to a depth of at least 12”, unless bedrock is encountered. Any large boulders pulled up during ripping must be deep-buried on location. Ripping must be perpendicular to down-slope. The surface must be left rough in order to catch and contain rainfall on-site. Any trenches resulting from erosion cause by run-off shall be addressed immediately.

6.3 INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations must undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators must work with BLM surface protection specialists (BLM_NM_CFO_Construction_Reclamation@blm.gov) to devise the best strategies to reduce the size of the location. Interim reclamation must allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche and any other surface material is required. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided in section 6.6.

Upon completion of interim reclamation, the operator shall submit a Sundry Notice, Subsequent Report of Reclamation (Form 3160-5).

6.4 FINAL ABANDONMENT & RECLAMATION

Prior to surface abandonment, the operator shall submit a Notice of Intent Sundry Notice and reclamation plan.

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding will be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM. After earthwork and seeding is completed, the operator is required to submit a Sundry Notice, Subsequent Report of Reclamation.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (BLM_NM_CFO_Construction_Reclamation@blm.gov).

6.5 SEEDING TECHNIQUES

Seeds shall be hydro-seeded, mechanically drilled, or broadcast, with the broadcast-seeded area raked, ripped or dragged to aid in covering the seed. The seed mixture shall be evenly and uniformly planted over the disturbed area.

6.6 SOIL SPECIFIC SEED MIXTURE

The lessee/permitee shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed land application will be accomplished by mechanical planting using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area. Smaller/heavier seeds tend to drop the bottom of the drill and are planted first; the operator shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory BLM or Soil Conservation

District stand is established as determined by the Authorized Officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding or until several months of precipitation have occurred, enabling a full four months of growth, with one or more seed generations being established.

Approval Date: 05/10/2024

Seed Mixture 2, for Sandy Site

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Cimarex Energy Company**
LEASE NO.:	**NMNM26394**
LOCATION:	Section 28, T.25 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	**Cascade 28 Federal 403H**
SURFACE HOLE FOOTAGE:	210'/N & 2079'/E
BOTTOM HOLE FOOTAGE	100'/S & 2584'/E
ATS/API ID:	**ATS-20-2092**
APD ID:	**10400093553**
Sundry ID:	**N/a**

COA

H2S	Yes		
Potash	None		
Cave/Karst Potential	Low		
Cave/Karst Potential	☐ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	Conventional and Multibowl		
Other	☐ 4 String	Capitan Reef: None	☐ WIPP
Other	Pilot Hole: None	☐ Open Annulus	
Cementing	Contingency Squeeze: None	Echo-Meter: None	Primary Cement Squeeze: None
Special Requirements	☐ Water Disposal/Injection	☑ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☑ Casing Clearance

Approval Date: 05/10/2024

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 **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1140 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **14 3/4** inch in diameter.

    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 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.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Approval Date: 05/10/2024

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.

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8** inch intermediate 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.**

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **10-3/4** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface 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 3172.6(b)(9) 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 part 3170 Subpart 3171**
- 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.

Casing Clearance

Operator casing variance is approved.

Operator shall clean up cycles until wellbore is clear of cuttings and any large debris, ensure cutting sizes are less than 0.5 micron before cementing.

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)

☑ 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 when present.

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 3172.6(b)(9) 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.

Long Vo (LVO) 5/8/2024

H2S Drilling Operations Plan

Training

All company and contract personnel admitted on location must be trained by a qualified H2S safety instructor to do the following:

1. Characteristics of H2S
2. Physical effects and hazards
3. Principle and operation of H2S detectors, warning system, and briefing areas
4. Evacuation procedure, routes and first aid
5. Proper use of safety equipment & life support systems
6. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H2S Detection and Alarm Systems

1. H2S 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 H2S detectors may be placed as deemed necessary
2. An audio alarm system will be installed on the derrick floor and in the top doghouse

Windsock and/or wind streamers

1. Windsock at mudpit area should be high enough to be visible
2. Windsock on the rig floor and / or top of doghouse should be high enough to be visible

Condition Flags & Signs

1. Warning signs on access road to location
2. Flags are to be displayed on sign at the entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates

danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

Well Control Equipment

1. See the pressure control section of this submission.

Communication

1. While working under masks, chalkboards will be used for communication
2. Hand signals will be used where chalk board is inappropriate.
3. Two way radio will be used to communicate off location in case emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

Drillstem Testing

1. No DSTs or cores are planned at this tmie
2. Drilling contractor supervisor will be required to be familiar with the effects that H2S has on tubular goods and other mechanical equipment.
3. If H2S is encountered, mud system will be altered if necessary to maintain control of the well. A mud gas separator will be brought into service along with H2S scavenger if necessary.

H2S Contingency Plan

Emergency Procedures

In the event of an H2S release, the first responder(s) must:

1. Isolate the area and prevent entry by other persons into the 100 PPM ROE.
2. Evacuate any public places encompassed by the 100 PPM ROE.
3. Be equipped with H2S monitors and air packs in order to control the release.
4. Use the buddy system
5. Take precautions to avoid personal injury during this operation
6. Contact operator and/or local officials to aid in operation. See list of emergency contacts attached.
7. Have received training the detection of H2S, measures for protection against the gas, and equipment used for protection and emergency response

Ignition of the Gas Source

1. Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). 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

Contacting Authorities

1. Coterra 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.
2. 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. Coterra’s response must be in coordination with the State of New Mexico's" Hazardous Materials Emergency Response Plan" (HMER).

Coterra: H2S Plan

Emergency Contacts

Coterra Energy

Charlie Pritchard: Drilling Operations Manager: 432 – 238 – 7084

Darrell Kelly: Vice President EHS: 281 – 589 – 5795

Third Party

PERMIAN REGION CONTACT NUMBERS

CALL 911

Air Ambulance Services

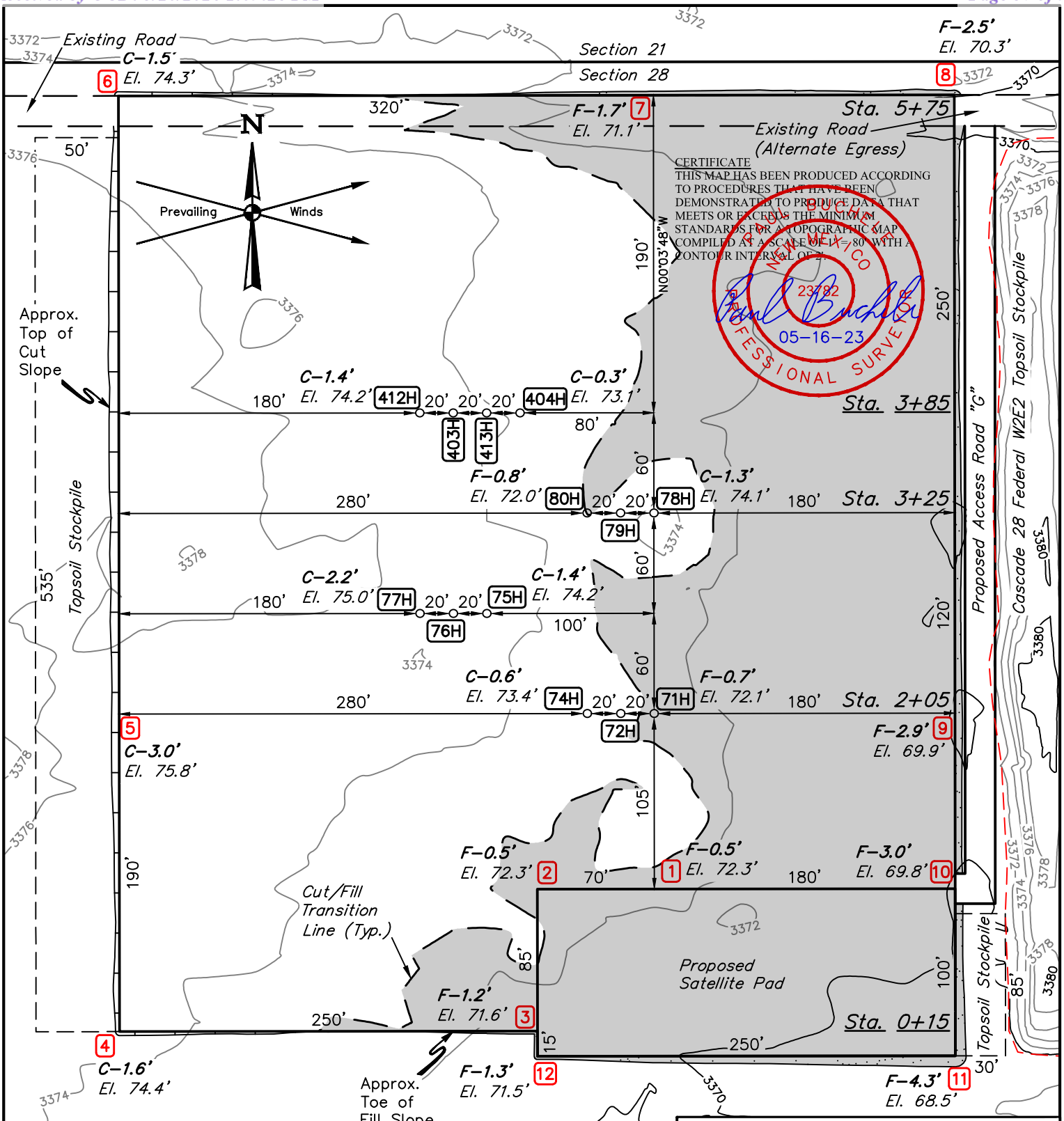
Reeves County Medical - Pecos, TX	432-447-3551
Aero Care - Midland, TX	800-627-2376
Tri State Care Flight - Artesia, NM	800-800-0900
Air Methods - Hobbs, NM	800-242-6199

Fire / Police / Medical Care

Sheriff's Office		Fire Departments		Hospital / Medical Care Facilities	
Andrews County	432-523-5545	Andrews	432-523-3111	Permian Regional Med.	432-523-2200
Reagan County	325-884-2929	Big Lake	325-884-3650	Reagan Memorial Hosp.	325-884-2561
Howard County	432-264-2244	Big Springs	432-264-2303	Scenic Mountain Med Ctr	432-263-1211
Terry County	806-637-2212	Brownfield	806-637-6633		
Crane County	432-558-3571	Crane	432-558-2361	Crane Memorial Hosp.	432-558-3555
Val Verde County	830-774-7513	Del Rio	830-774-8648	Val Verde Regional Med.	830-775-8566
		Denver City	806-592-3516	Yoakum County Hospital	806-592-2121
Pecos County	432-336-3521	Ft. Stockton	432-336-8525		
Glasscock County	432-354-2361	Garden City			
Winkler County	432-586-3461	Kermit	432-586-2577	Winkler County Memorial	432-586-5864
		McCamey	432-652-8232	McCamey Hospital	432-652-8626
Loving County	432-377-2411	Mentone			
Irion County	325-835-2551	Mertzon			
Ward County	432-943-6703	Monahans	432-943-2211	Ward Memorial Hospital	432-943-2511
Ector County	432-335-3050	Odessa	432-335-4650	Odessa Regional Hosp.	432-582-8340
Crocket County	325-392-2661	Ozona	325-392-2626		
Reeves County	432-445-4901	Pecos	505-757-6511	Reeves County Hospital	432-447-3551
Yoakum County	806-456-2377	Plains	806-456-2288		
Garza County	806-495-3595	Post			
Upton County	432-693-2422	Rankin			
Coke County	915-453-2717	Robert Lee			
		Roscoe	325-766-3931		
Hockley County	806-894-3126	Levelland	806-894-3155	Covenant Health	806-894-4963
Tom Green County	325-655-8111	San Angelo	325-657-4355	San Angelo Comm. Med.	325-949-9511
Gaines County	432-758-9871	Seminole	432-758-3621	Memorial Hospital	432-758-5811
Terrell County	432-345-2525	Sanderson			
Scurry County	325-573-3551	Snyder	325-573-3546	DM Cogdell Memorial	325-573-6374
Sterling County	325-378-4771	Sterling City			
Nolan County	325-235-5471	Sweetwater	325-235-8130	Rolling Plains Memorial	325-235-1701
Culberson County	432-283-2060	Van Horn		Culberson Hospital	432-283-2760
New Mexico					
Lea County	505-396-3611	Knowles	505-392-7469	Lea Reg Med Ctr	575-492-5000
Eddy County	575-887-7551	Carlsbad	575-885-3125	Carlsbad Medical	575-887-4100
		Artesia	575-746-5050	Artesia Hospital	575-748-3333
Roosevelt County	575-356-4408				
Chaves County	575-624-7590				

Ground Ambulance Services

Reeves County Medical		Pecos, TX	432-447-3551



REV: 3	05-16-23	N.D.T.	(ADD SATELLITE PAD)

NOTE: Earthwork calculations require a fill @ some location stakes for balance. All fill is to be compacted to a minimum of 95% of the maximum dry density obtained by AASHTO method t–99.

FINISHED GRADE ELEVATION = **3372.8'**

NOTES:

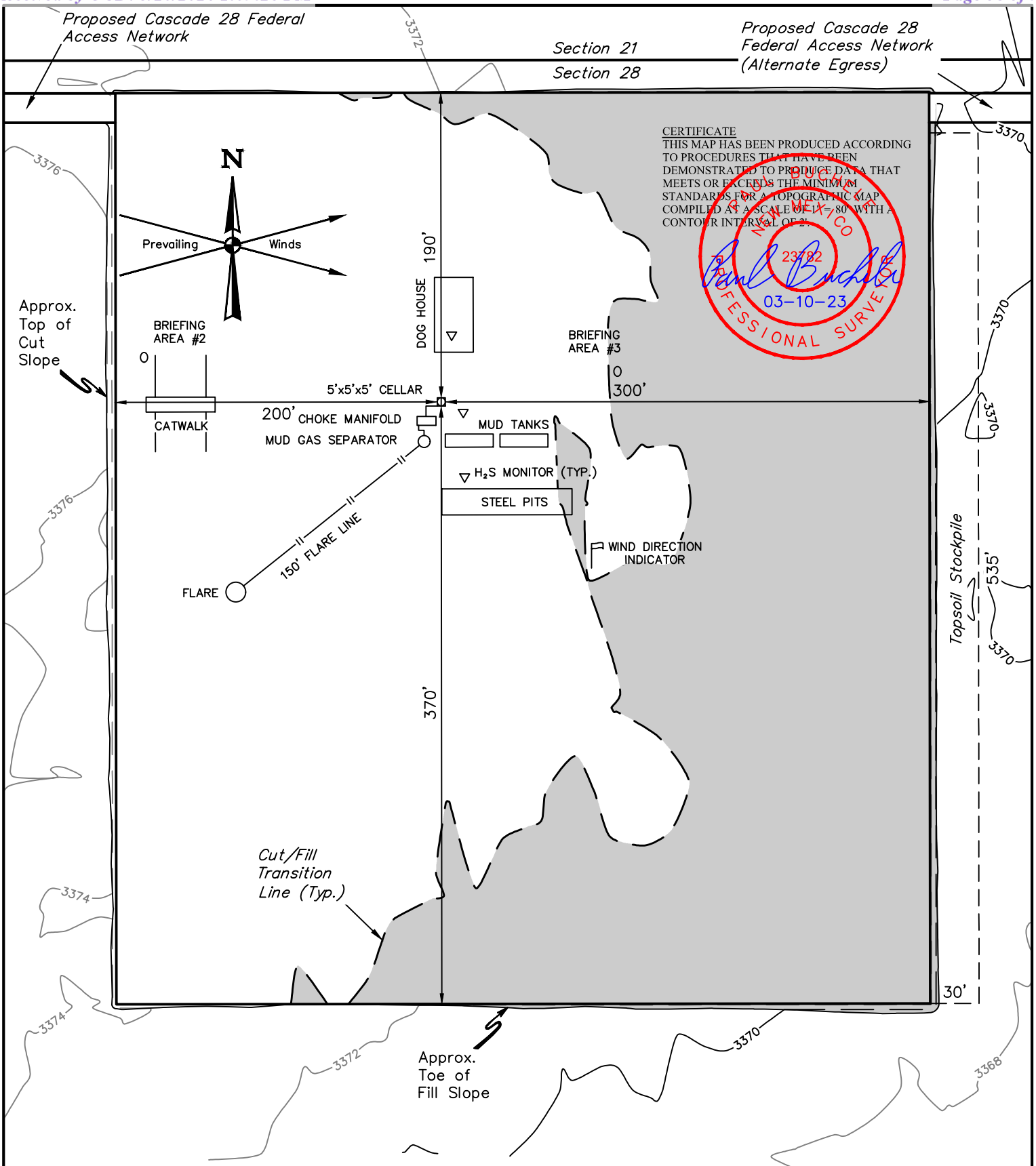
- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ.)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.

CIMAREX ENERGY CO.

CASCADE 28 FEDERAL W2E2-71H
NW 1/4 NE 1/4, SECTION 28, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.H., H.F.	05-12-23	SCALE
DRAWN BY	S.F.	01-25-18	1" = 80'
LOCATION LAYOUT			EXHIBIT J

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



NOTES:

- Contours shown at 2' intervals.

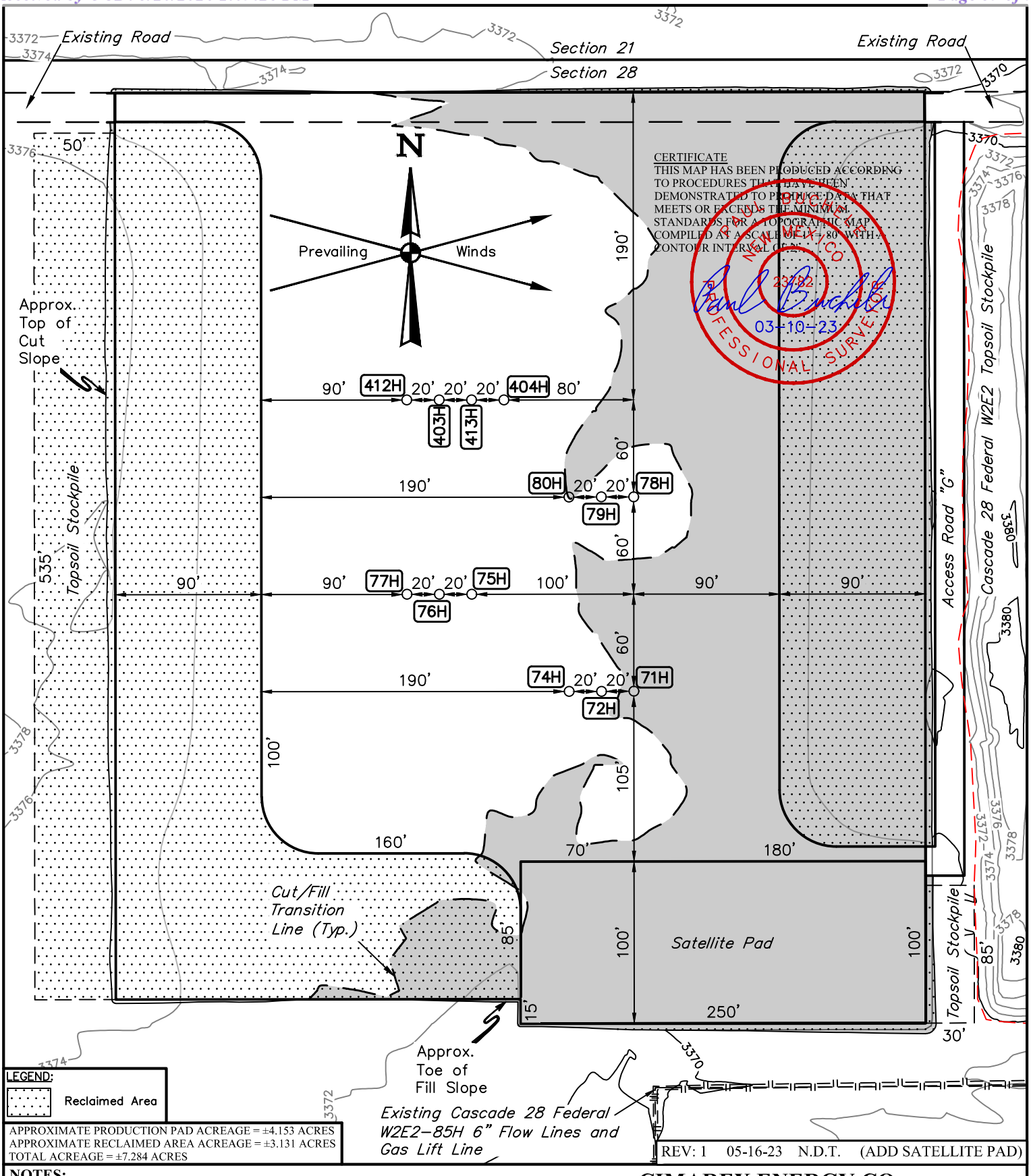
CIMAREX ENERGY CO.

CASCADE 28 FEDERAL 403H
210' FNL 2079' FEL
NW 1/4 NE 1/4, SECTION 28, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.T., C.H.	01-24-18	SCALE
DRAWN BY	T.J.S.	03-10-23	1" = 80'
TYPICAL RIG LAYOUT			EXHIBIT K

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



LEGEND:

Reclaimed Area

APPROXIMATE PRODUCTION PAD ACREAGE = ±4.153 ACRES
APPROXIMATE RECLAIMED AREA ACREAGE = ±3.131 ACRES
TOTAL ACREAGE = ±7.284 ACRES

REV: 1 05-16-23 N.D.T. (ADD SATELLITE PAD)

NOTES:

- Contours shown at 2' intervals.

CIMAREX ENERGY CO.

CASCADE 28 FEDERAL W2E2-71H
NW 1/4 NE 1/4, SECTION 28, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.H., H.F.	05-12-23	SCALE
DRAWN BY	T.J.S.	03-10-23	1" = 80'
INTERIM RECLAMATION			EXHIBIT P

UINTAH ENGINEERING & LAND SURVEYING
UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

Onshore Order No. 1 Surface Use Plan of Operations

Cimarex Energy Co.
Cascade 28 Federal W2E2 Pad
S ½ SW ¼, Section 28, T25S, R33E, NMPM
Lea County, New Mexico

Well Name	Surface Hole Locations
Cascade 28 Federal 403H	210' FNL / 2079' FEL
Cascade 28 Federal 404H	210' FNL / 2039' FEL
Cascade 28 Federal 412H	210' FNL / 2099' FEL
Cascade 28 Federal 413H	210' FNL / 2059' FEL

This surface use plan of operations provides site specific information for the above referenced wells located within the proposed "Cascade 28 Federal Project".

1. **Existing Roads, directions to location: See Exhibit C**
   a. **Existing Road Purpose:** Existing roads providing access to the well site are shown. Existing roads will be maintained and kept in good repair during all drilling and completion operations associated with these wells.
   b. **BLM ROW:** No off-lease ROW is required.

2. **New Roads: See Exhibit D & Access Road Map & R-O-W Plats**
   a. **Road Construction:**
      - The proposed access road is approximately 480 feet in length. It will be 30 feet in width, containing a total of approximately 0.33 acres of disturbance on BLM surface. The existing road that runs to the proposed access road may need to be repaired. Graveling or capping the roadbed will be performed as necessary to provide a well-constructed safe road. Should conditions warrant, rock, gravel, or culverts will be installed as needed.
      - New access roads on BLM surface will be crowned (2 to 3%), ditched, and constructed with a running surface of 480' and a maximum disturbed width of 30'.
      - Surface disturbance and vehicular traffic will be limited to the approved location and access route.
   b. **Road Dimensions:**
      - Total Length: 480'
      - Construction Width: 30'
      - Travel Width: 20'
      - Max Slope: 0
      - Max Grade: 0

c. **New Road Drainage Crossings:**
   - **Location and size of culverts and/or low water crossings**: Should conditions warrant, rock, gravel or culverts will be installed as needed. The operator will clean and maintain approved culverts as needed.
   - **Drainage Control comments and Ditch Design:** All drainage ditches will be kept clear and free-flowing and will be maintained to good standards. All culverts will be kept free of trash, free-flowing, and serviceable. The access road disturbed area will be kept free of trash during operations. All traffic will be confined to the approved road running surface. Road drainage crossings shall be of the typical dry creek drainage crossing type. Crossings shall be designed so they will not cause excess siltation or accumulation of debris in the drainage, nor shall the drainage be blocked by the roadbed.

d. **Army Corp of Engineers (ACOE) permit:**, N/A
e. **Road Drainage Control Structures (DCS):** Drainage structures or drainage dips will be placed in all natural drainage ways
f. **New road access erosion control**: Erosion of drainage ditches by runoff water shall be prevented by diverting water off at frequent intervals by means of cutouts. Should mud holes develop, the holes shall be filled in and detours around the holes avoided.
g. **Road Plan or Profile prepared:** N/A
h. **Engineering Design:** N/A
i. **Turnouts:** N/A
j. **Surfacing Material Type:** Should conditions warrant, rock, gravel or culverts will be installed as needed.
k. **Source and storage of Topsoil:**
   - **Onsite:**
     i. **Depth:** 4”
     ii. **Removal process:** The topsoil shall be stripped and salvaged to provide for sufficient quantities to be respreads to a depth that will be determined at the on-site over the disturbed areas needing reclamation. Topsoil shall be stockpiled separately from subsoil materials.
l. **Other**: The road surface and shoulders will be kept in safe and usable condition and will be maintained to good standards. When snow is removed from the road during the winter months, the snow should be pushed outside of the borrow ditches, and the turnouts kept clear so that snowmelt will be channeled away from the road.

3. **Location of Wells: See Exhibit E 1 Mile Radius Map**

4. **Location of Production Facilities: See Exhibit J Location Layout**
   a. **Production Facilities:**
      - A Satellite pad will be constructed on the southeast corner of the proposed pad.
      - An existing battery pad (South) will be utilized.

- All permanent (on site six months or longer) above the ground structures constructed or installed will be painted Carlsbad Tan as approved by the BLM.

b. Proposed Pipelines: See Exhibit H SWD Pipeline ROW

- No SWD pipeline ROW is required. Existing infrastructure will be utilized.

c. Proposed Power lines: See Powerline ROW

- **BLM ROW:** New powerline ROW will parallel the bulkline ROW, so only one ROW is needed for the power/bulkline.

d. Bulklines Pipelines

- **Bulkline ROW: Bulkline ROW required, crossing from NMNM026394 to NMNM043562**
  - All proposed pipelines will be constructed in a 70' ROW corridor.
    - Bulklines
      - Cimarex Energy plans to construct off-lease bulklines to service the well.
      - 8- 12" HP steel for oil, gas, and water production.
      - Length: 6,484'.
      - MAOP: 1,500 psi; Anticipated working pressure: 200-300 psi.

5. Location and Types of Water Supply: See Water Haul Map

a. Source & Volume:

- **Source Type:** Commercial Water – NGL CTP – Treated Produced Water
- **Use:** Surface Casing and Intermediate/Production Casing
- **Location:** Latitude: 32.3070805, Longitude: -103.6602027, SW/NE, Section 15, T23S, R32E
- **Source Land Ownership:** Federal
- **Source Transportation Land Ownership:** Federal
- **Permit Type:** Water Right
- **Transportation Method:** Pipeline/Trucking
- **Volume:** 150,000 BBLS

6. Construction Materials

a. Intended Use of Construction Materials: The use of materials under BLM jurisdiction will conform with 43 CFR 3610.2-3.

b. Proposed Source of Materials: NM One Call (811), offset operators will be notified before construction starts, if necessary. Top 4" of soil and brush will be stockpiled near the well pad. Top 4" of soil and brush will be piled near the CTB. Caliche will be obtained from the actual well sit if available. If caliche is not available onsite, caliche will be

hauled from an existing caliche pit on private land in SWSE, Section 6, T23S, R32E or SENE, Section 3, T22S, R32E.

7. **Methods of Handling Waste**
   a. **Reserve Pits (if necessary):** No Reserve Pit Planned
   b. **Cuttings stored on location:** Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to state approved disposal.
   c. **Garbage:** All trash will be placed in a portable trash cage. It will be hauled to the Lea County landfill. There will be no trash burning.
      - **Waste content description:** Onsite Refuse/trash
      - **Amount:** 32,500 pounds
      - **Disposal frequency:** Weekly
      - **Safe Containment description:** Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. Trash will not be burned on location. All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.
      - **Waste disposal type:** Haul to commercial facility
      - **Disposal location ownership:** Commercial
      - **Disposal location description:** All trash and waste material will be hauled to the Lea County Landfill.
   d. **Sewage:** Human waste will be disposed of in chemical toilets and hauled to the Hobbs wastewater treatment plant.
      - **Waste content description:** Onsite human waste
      - **Amount:** 300 gallons
      - **Disposal frequency:** Weekly
      - **Safe Containment description:** A chemical porta-toilet will be furnished with the drilling rig.
      - **Waste disposal type:** Haul to commercial facility
      - **Disposal location ownership:** Commercial
      - **Disposal location description:** The chemical porta-toilet wastes will be hauled to state approved disposal facility for treatment.
   e. **Produced Water:**
      - **Waste content description:** After first production, produced water will be confined to storage tanks on location and then disposed of in an approved location or recycled on location for future use.
      - **Amount:** 400 BBLS
      - **Disposal frequency:** Daily
      - **Safe Containment description:** Flowline to an approved disposal location
      - **Waste disposal type:** Off-lease injection
      - **Disposal location ownership:** Federal

- **Disposal location description:** Federal

8. Ancillary Facilities

No camps, airstrips or other facilities will be necessary during drilling of this well.

9. **Well Site Layout: See Exhibits J, K, L, Archeological Survey Boundary Plat**

a. The location showing access roads onto the pad and orientation of the rig with respect to the pad and other facilities are shown on Typical Rig Layout, Exhibit K for each well.

10. Plans for Final Surface Reclamation

- New Surface Disturbance vs. No New Surface Disturbance

APPROXIMATE SURFACE DISTURBANCE AREAS	DISTANCE (feet)	ACRES
WELL SITE DISTURBANCE	NA	4.24
70’ WIDE Bulk Line R-O-W DISTURBANCE	757.80	1.28
30’ Wide Road	480	0.33
TOTAL SURFACE USE AREA:	NA	5.52

**The table can be modified as needed to incorporate any/all associated actions*

a. Interim Reclamation: Once the last well has been drilled, then the pad will be interim reclaimed to a reduced working surface area. The reclaimed area will be recontoured and reseeded to match preconstruction grades.

b. Final Reclamation: Once the last well is plugged, then the pad, CTB, and new road will be reclaimed within 6 months of plugging. Disturbed areas will be recontoured to match pre- construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with BLM requirements. Road will be blocked. Noxious weeds will be controlled.

c. Drainage Systems:

- **Drainage/Erosion control construction:** Pad construction will include drainage control by rerouting drainages around the pad an installing culverts or low water crossings where needed. Erosion control techniques will be used where needed to minimize wind and water erosion and sedimentation prior to vegetation establishment.
- **Drainage/Erosion control reclamation:** Area-wide drainage will be stabilized and restored so that surface runoff flows and gradients are returned to the condition present prior to development. Drainage basins will have similar features found in nearby, properly functioning basins.

d. Existing Vegetation:

- **Well/Road/Pipeline/Other (Powerline**): Vegetation types noted during onsite were shinnery oak, yucca, mesquite, and big blue stem.

e. **Reconstruction method**: Areas to be reclaimed will be graded to approximate original contours and to blend in with adjacent topography. Graded surfaces will be suitable for the replacement of a uniform depth of topsoil, will promote cohesion between subsoil and topsoil layers, will reduce wind erosion, and will facilitate moisture capture. Specialized grading techniques may be applied, if warranted, and could include slope rounding, stair-step grading/terracing, and/or contour furrowing.
f. **Topsoil redistribution:** After compaction relief (ripping and discing) all topsoil will be redistributed on the reclaimed area to a pre-disturbance depth. Topsoil is typically redistributed with a scraper or front-end loader which leaves a friable surface to work with. Waterbars and erosion control devices will be installed on reclaimed areas, as necessary, to control topsoil erosion.
g. **Soil Treatments:** As needed.
h. **Seed Management (for each seed type, or Seed Reclamation Attachment):**
    - **Seed type:** The seed mixture and seeding rates will be submitted to the BLM in a subsequent report sundry notice following reclamation operations. Seed mixtures will be certified weed-free.
    - **Seed use location:** Well pad, access road, pipeline right-of-way, powerline right-of-way
    - **PLS pound per acre**: TBD
    - **Proposed seeding season:** Once the topsoil is replaced, seeding will occur generally between August 15 and ground freeze-up. If fall seeding is not feasible and erosion control is needed, seeding may occur between spring thaw and May 15. Spring seeding will be an exception, not the rule. The site will be monitored as outlined in this plan. Seeding will not be applied to wet or frozen ground. In this circumstance, seeding will take place when the ground dries or thaws to the point where soils are friable.
i. **Revegetation Operator Contact:**
    - **Name:**
    - **Phone #:**
    - **Email:**
    - **Seed method:** Broadcast over rough surface.
j. **Existing invasive species:** Yes
    - **Existing invasive species treatment description:** African Rue is present in proximity to well pad, access road, pipeline right-of-way, powerline right-of-way.
    - **Weed treatment plan:** Operator will be responsible for noxious and invasive weed control from all project activities for the life of the project. If use of herbicides is deemed necessary, a Pesticide Use Proposal will be submitted for approval to the BLM. Herbicides will be used only in the season or growth stage during which they are most effective. Herbicides will be applied only by certified personnel using approved precautionary and application procedures in compliance with all applicable federal, state, and local regulations. Herbicides will not be used within 100 feet of open water or during extremely windy conditions. Mowing may be considered as an alternative to herbicide

applications. Mowing would be implemented prior to seed head establishment or bloom. A weed control program will be applied to all existing and proposed access roads, pipeline ROWs, and well pads. Weed control involves annual treatments that are monitored and continued until desirable vegetation out-competes invasive or noxious weeds.

- **Monitoring:** Monitoring will be done in accordance with the BLM Reclamation Guidelines.
- **Success standard:** Success Standards will be in accordance with the BLM Reclamation Guidelines.

k. **Pit Closure Description:** No pit closure will be necessary. The referenced wells will be drilled utilizing a closed loop system. The closed loop system will be installed in a manner that will prevent leaks, breaks, or discharge. Drill cuttings will be contained in designated cuttings area. Upon completion of drilling operations, the cuttings will be mixed on location and dried; then spread on location.

11. Surface Ownership

- **Well site**
  a. **Surface owner:** Bureau of Land Management
  b. **Contact/Office location:** Bureau of Land Management
- **Roads**
  a. **Surface owner:** Bureau of Land Management
  b. **Contact/Office location:** Bureau of Land Management
- **Pipeline**
  a. **Surface owner:** Bureau of Land Management
  b. **Contact/Office location:** Bureau of Land Management
- **Utility Lines**
  a. **Surface owner:** Bureau of Land Management
  b. **Contact/Office location:** Bureau of Land Management

**include surface ownership for all actions associated with the APD*

12. Additional Information

a. **Location Construction:** OPERATOR shall notify the BLM AO 48 hours prior to construction of the location and access roads.
b. **Location Completion:** OPERATOR shall notify the BLM AO prior to moving the drilling rig on location
c. **Approved APD:** A true and complete copy of the approved Application for Permit to Drill will be located on site during all drilling & completion operations.
d. **Archeology:** A Class III Archeological Survey (19-0283) has been conducted by Archeologist. A copy of the reports was sent via email to the lead agency BLM Field Office.

13. Additional Information

Onsite Information: An onsite inspection was conducted for the Pad on 1/18/2018. Weather conditions were warm and sunny at the time of the onsite. In attendance at the inspection were the following individuals:

Attendee	Organization/Affiliate
Unknown	Cimarex/Coterra
Jeff Robertson	BLM
Cimarex Energy personnel on site:	BLM

Permitting Matters
Operator: Cimarex Energy Co.
Address: 6001 Deuville Blvd., Suite 300N
City, State, Zip: Midland, TX 79706
Name: Phillip Levasseur
Title: Regulatory Manager
Phone: 432-620-1974
Email: phillip.levasseur@coterra.com

Drilling, Completions Operational Matters
Operator: Cimarex Energy Co.
Address: 6001 Deuville Blvd., Suite 300N
City, State, Zip: Midland, TX 79706
Name: Grant Muncrief
Title: Drilling and Completions Manager
Phone: 432-570-3607
Email: grant.muncrief@coterra.com

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

Drilling Plan Data Report
05/15/2024

APD ID: 10400093553
Submission Date: 08/03/2023

Operator Name: CIMAREX ENERGY COMPANY

Well Name: CASCADE 28 FEDERAL
Well Number: 403H

Well Type: OIL WELL
Well Work Type: Drill

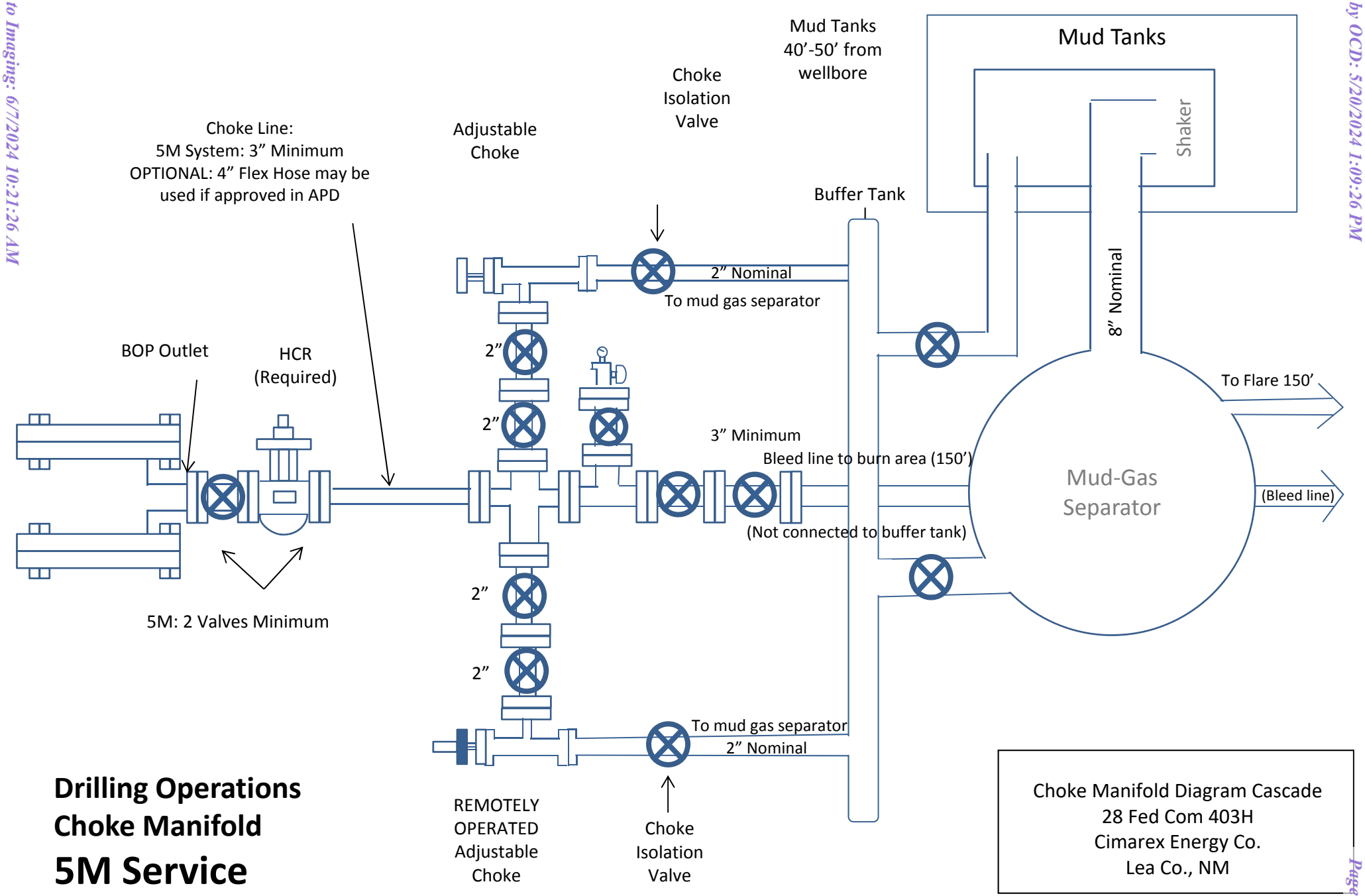
Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13409265	RUSTLER	0	995	995	ANHYDRITE, SANDSTONE	USEABLE WATER	N
13409266	TOP SALT	-1340	1340	1340	ANHYDRITE	NONE	N
13409259	LAMAR	-4930	4930	4958	LIMESTONE	NONE	N
13409267	BASE OF SALT	-4930	4930	4958	ANHYDRITE	NONE	N
13409269	BELL CANYON	-4970	4970	4999	SANDSTONE	NONE	N
13409270	CHERRY CANYON	-5985	5985	6020	SANDSTONE	NONE	N
13409271	BRUSHY CANYON	-7575	7575	7610	SANDSTONE	NATURAL GAS, OIL	N
13409260	BRUSHY CANYON LOWER	-8920	8920	8955	SANDSTONE	NATURAL GAS	N
13409272	BONE SPRING	-9090	9090	9125	LIMESTONE	NATURAL GAS, OIL	N
13409273	UPPER AVALON SHALE	-9330	9330	9364	SHALE	NATURAL GAS, OIL	N
13409261	BONE SPRING 1ST	-10105	10105	10139	SANDSTONE	NATURAL GAS	N
13409262	BONE SPRING 2ND	-10685	10685	10719	SANDSTONE	NATURAL GAS	N
13409263	BONE SPRING 3RD	-11120	11120	11154	OTHER : Carbonate	NATURAL GAS	N
13409264	BONE SPRING 3RD	-11785	11785	11820	SANDSTONE	NATURAL GAS	N
13409274	WOLFCAMP	-12320	12320	17197	SHALE	NATURAL GAS, OIL	Y

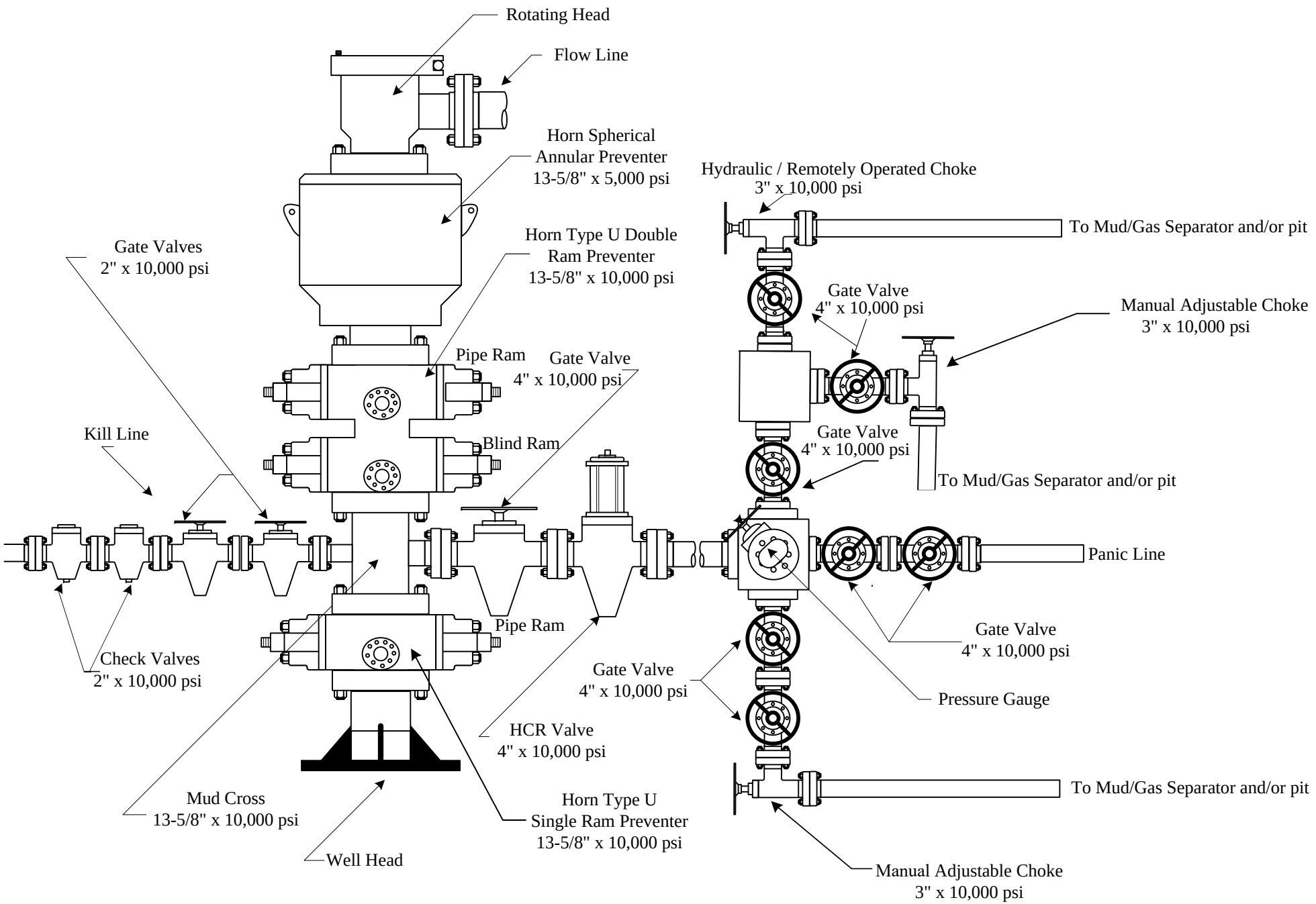
Section 2 - Blowout Prevention

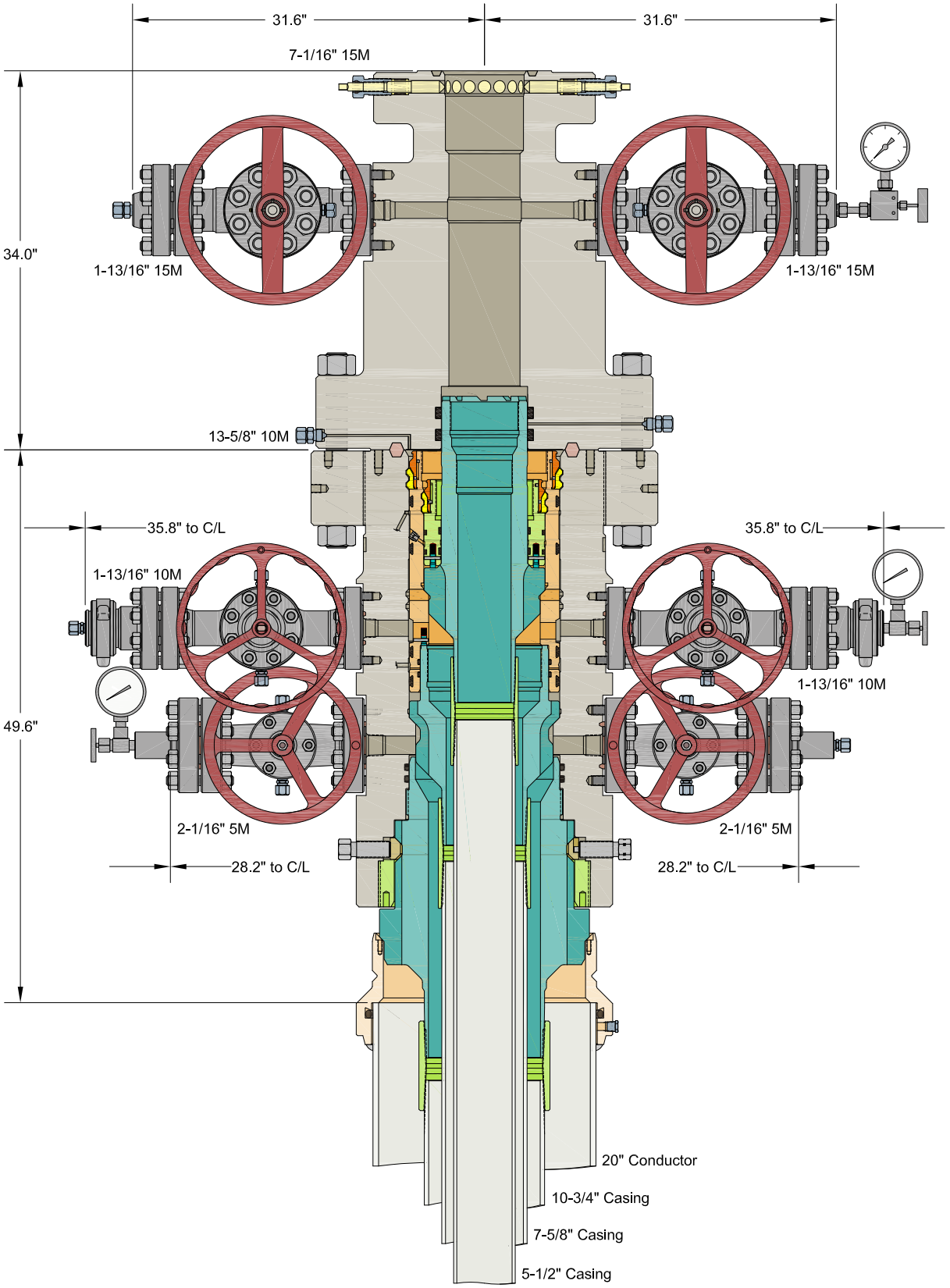


Drilling Operations
Choke Manifold
5M Service

Choke Manifold Diagram Cascade
28 Fed Com 403H
Cimarex Energy Co.
Lea Co., NM

COTERRA





ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	COTERRA ENERGY INC HOBBS, NM		
20" x 10-3/4" x 7-5/8" x 5-1/2" MBU-3T-CFL-R-DBLO-SF Wellhead With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head And 7-5/8" & 5-1/2" Mandrel Casing Hangers	DRAWN	VJK	07JUL23
	APPRV		
	DRAWING NO.	HBE0000965	

Quotation

Hobbs, NM
4120 W Carlsbad Hwy
Hobbs NM 88240
Phone: 817-682-8336

Quote Number : HBE0000965

Date: 07/07/2023

Valid For 30 Days

Bill To:	7035	**Ship To:**	0
COTERRA ENERGY INC PO BOX 4544 Attn: GULF COAST OFFICE HOUSTON TX 77210 US		COTERRA ENERGY INC PO BOX 4544 Attn: GULF COAST OFFICE HOUSTON TX 77210 US	

	Quantity	Price	Ext Price

COTERRA ENERGY INC
DAVID SHAW

HOBBS, NM

MBU-3T-CFL-R SAFEDRILL® WELLHEAD SYSTEM
20" X 10-3/4" X 7-5/8" X 5-1/2"

QUOTATION SUMMARY:

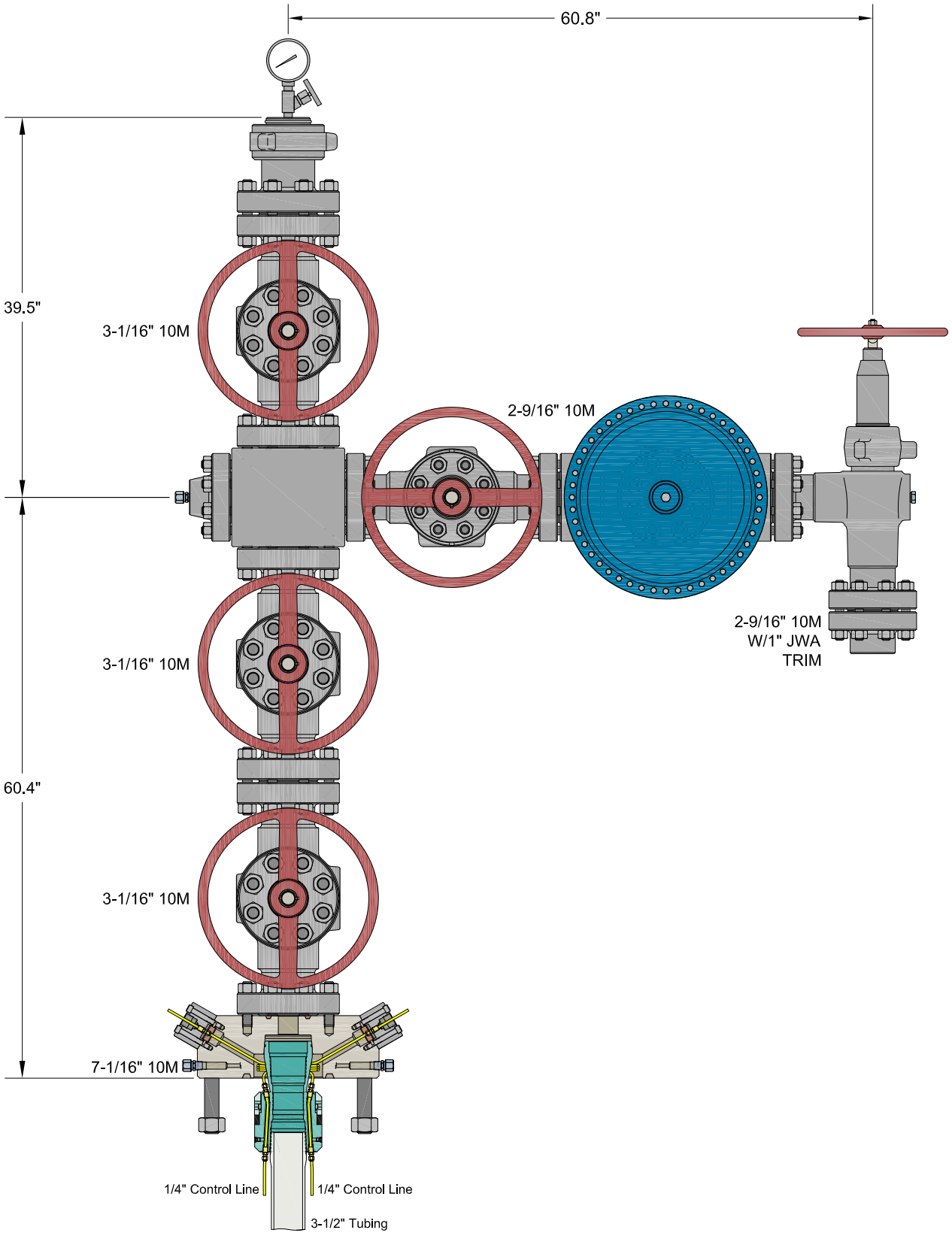
- MBU-3T-CFL ASSEMBLY - $29,839.64
- CASING HANGERS & PACKOFFS - $12,581.24
- TUBING HEAD ASSEMBLY - $19,367.17

CACTUS CONTACT:
RILEY STAFFORD
OFFICE: 405.708.7217
MOBILE: 405.445.2222
EMAIL: riley.stafford@cactuswellhead.com

DUE TO VOLATILITY IN THE STEEL MARKET, PRICING FOR ITEMS MADE FROM NICKEL ALLOYS (EX. 410SS, 17-4PHSS, INCONEL, ETC.) WILL BE VALID FOR TWO WEEKS. CW WILL REVIEW AND ADJUST, IF NECESSARY, AT ORDER PLACEMENT.

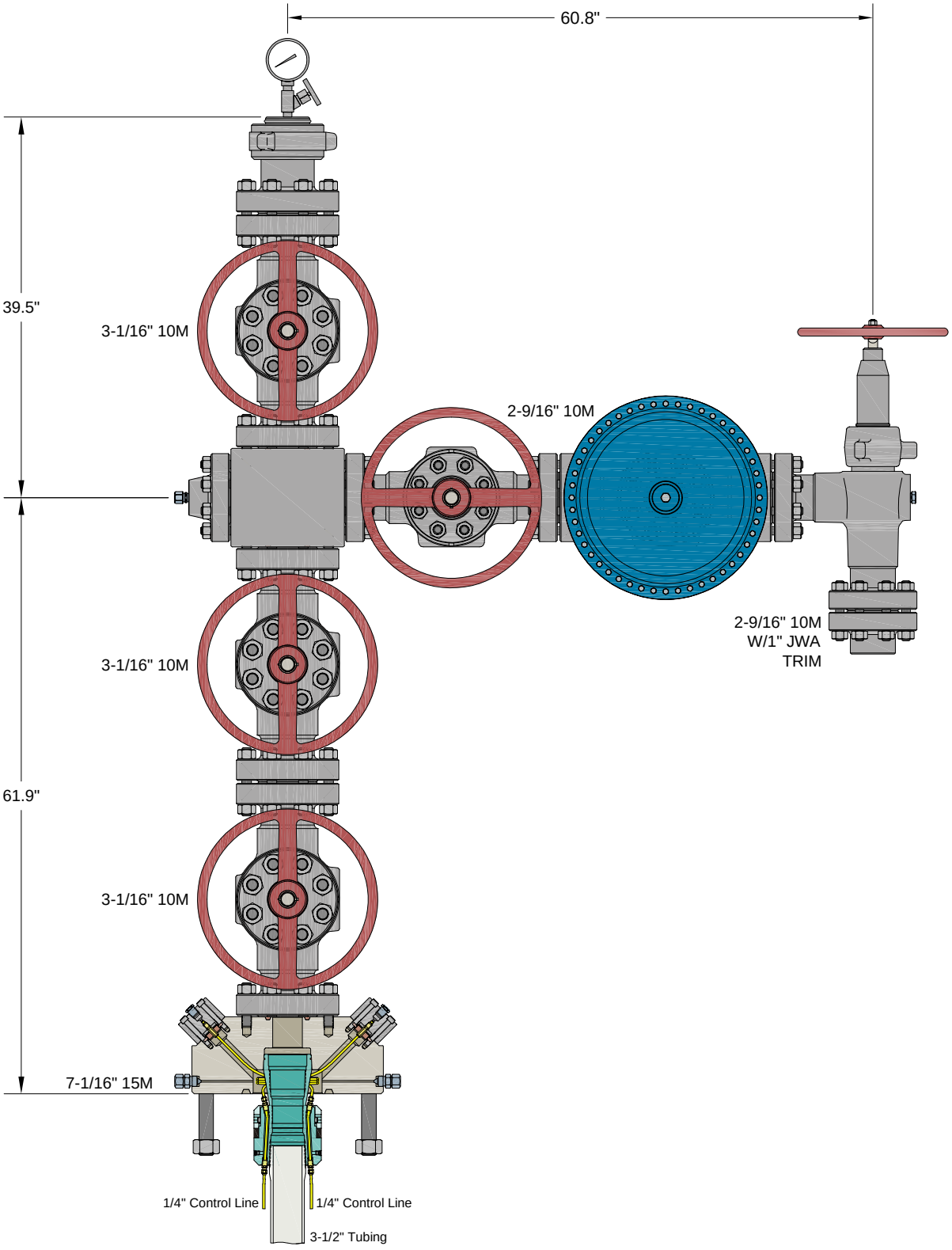
PREMIUM THREADED CASING HANGERS/RUNNING TOOLS & CUSTOMER SPECIFIC EQUIPMENT ARE NON-CANCELABLE AND MAY REQUIRE A PURCHASE ORDER (PO) PRIOR TO MANUFACTURING.

SUPPLY CHAIN PRICING IS BASED UPON A 135 DAY DELIVERY ARO. EXPEDITED PRICING CAN BE PROVIDED UPON REQUEST. PRICES ARE F.O.B. CACTUS BOSSIER CITY, LA. THE FOLLOWING QUOTATION DOES NOT INCLUDE PRO RATA FREIGHT AND OTHER APPLICABLE MILEAGE AND SERVICE CHARGES THAT MAY BE CHARGED AT TIME OF INVOICING.



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	CIMAREX HOBBS, NM		
7-1/16" 10M x 3-1/16" x 2-9/16" 10M Production Tree Assembly With 7-1/16" 10M x 3-1/16" 10M T40-CCL Tubing Head Adapter And 7-1/16" 3-1/2" T40-CCL Tubing Hanger	DRAWN	VJK	05SEP23
	APPRV		
	DRAWING NO.	HBE0001018	



ALL DIMENSIONS APPROXIMAT

CACTUS WELLHEAD LLC	CIMAREX HOBBS, NM	
7-1/16" 15M x 3-1/16" x 2-9/16" 10M Production Tree Assembly With 7-1/16" 15M x 3-1/16" 10M T40-CCL Tubing Head Adapter And 7-1/16" 3-1/2" T40-CCL Tubing Hanger	DRAWN	VJK 13DEC23
	APPRV	
	DRAWING NO.	HBE0001018

Cactus

Quotation

Hobbs, NM
4120 W Carlsbad Hwy
Hobbs NM 88240
Phone: 817-682-8336

Quote Number : HBE0001018

Date: 09/08/2023

Valid For 30 Days

Bill To: 7050

CIMAREX
ATTN: DAVID SHAW
202 S CHEYENNE AVENUE SUITE 1000
TULSA OK 74103
US

Ship To: 1016

2023 PRICING REVIEW
202 S Cheyenne Ave Ste 1000
Tulsa OK 74103-3001
US

	Quantity	Price	Ext Price

CIMAREX

HOBBS, NM

PRODUCTION TREE ASSEMBLY
7-1/16" 10M X 3-1/16" 10M X 2-9/16" 10M
OPTIONAL 15M ADAPTER

QUOTATION SUMMARY:

- PRODUCTION TREE ASSEMBLY - $49,338.02

CACTUS CONTACT:
RILEY STAFFORD / MIKE SPINKS
OFFICE: 405.708.7217 (RILEY) / 713.396.5762 (MIKE)
MOBILE: 405.445.2222 (RILEY) / 832.691.7724 (MIKE)
EMAIL: riley.stafford@cactuswellhead.com / mike.spinks@cactuswellhead.com

DUE TO VOLATILITY IN THE STEEL MARKET, PRICING FOR ITEMS MADE FROM NICKEL ALLOYS (EX. 410SS, 17-4PHSS, INCONEL, ETC.) WILL BE VALID FOR TWO WEEKS. CW WILL REVIEW AND ADJUST, IF NECESSARY, AT ORDER PLACEMENT.

PREMIUM THREADED CASING HANGERS/RUNNING TOOLS & CUSTOMER SPECIFIC EQUIPMENT ARE NON-CANCELABLE AND MAY REQUIRE A PURCHASE ORDER (PO) PRIOR TO MANUFACTURING.

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Gates Engineering & Services UK Ltd		CERTIFICATE OF CONFORMITY	
Doc. Ref.	Form-056		
Revision	4		

Gates SO No. 31675	**Customer Name & Address:** **Gates Engineering & Services North America** **7603, Prairie Oak Drive** **Suite 190** **Houston, TX 77086** **United States**
Clients PO No: 1714987/ 0	
Description: 3" Choke & Kill Hose x 35ft	

This is to certify that the components listed below have been supplied in accordance API 16C & with the referenced order number above. The assemblies listed below have been manufactured and tested in the UK

SPECIFICATION

ITEM	DESCRIPTION	Drawing Num	QTY
2	3" Choke & Kill Hose x 35ft complete with 4.1/16" API 6A 10K Fixed Flange with BX155 Inlaid Ring Groove on one end & 4.1/16" API 6A 10K Swivel Flange with BX155 Inlaid Ring Groove On the other end	31675-DW-001, Rev 0	1
	Hose Batch: 120839		
	Hose Assembly: 120840		
	Customer Tag: N/A		
	Working Pressure: 10000 PSI		
	Test Pressure: 15000 PSI		
	Standard: API 16C		
	PSL: FSL 3		
	Material Grade: F		
	Temperature Rating: -25 to +100 Deg C		

Accepted by..S A Tait..... 17/02/20 ..... **for and on behalf of Gates Engineering & Services UK Ltd**

Gates Engineering & Services UK Limited QA Approved

Gates Engineering & Services UK Ltd		PRESSURE TEST CERTIFICATE	
Doc. Ref.	Form-051		
Revision	9		

	Certificate No:
☐ BURST ☑ HYDROSTATIC ☐ CYCLIC	31675-002

Product:	3” Choke & Kill Hose	**Hose WO/Batch:**	120839
Assembly WO:	120840	**Length:**	35Ft
SO No:	31675	**Date:**	11/02/20
Client:	Gates Engineering & Services North America	**Client Reference:**	1714987/ 0

Inner Diameter:	3	**Inch**		
Working Pressure:	10000	**Psi**	690	**bar**
Test Pressure:	15000	**Psi**	1034	**bar**
Burst Pressure:	22500	**Psi**	1551	**bar**

Hose Description:	3” Choke & Kill Hose x 35ft complete with 4.1/16" API 6A 10K Fixed Flange with BX155 Inlaid Ring Groove on one end & 4.1/16" API 6A 10K Swivel Flange with BX155 Inlaid Ring Groove On the other end	
Item No	**Qty**	**Part Code**	**Customer Tag No (if applicable)**
2	1	HA31623-001	N/A

Details of Test:	Pressure tested with water at ambient temperature for 60 minutes at test pressure 1034 BAR, Chart recording done with Yokagawa Data Logger S/N: S5NC08915 Transducer ESI GS4200EX3000DE ID:TD/DC-002, S/N: 2018-741502 Calibration Certificate No: IKMCERTL9111
Results:	Pressure Loss: 11.4 Bar Acceptance Criteria: Pressure loss not to exceed - 34.47 Bar or 500 PSI

GESUK Ltd	Third Party
17/02/20	

CR 374

File Message : 120840 FAT
Device Type : DX2000
Serial No. : S5NC08915

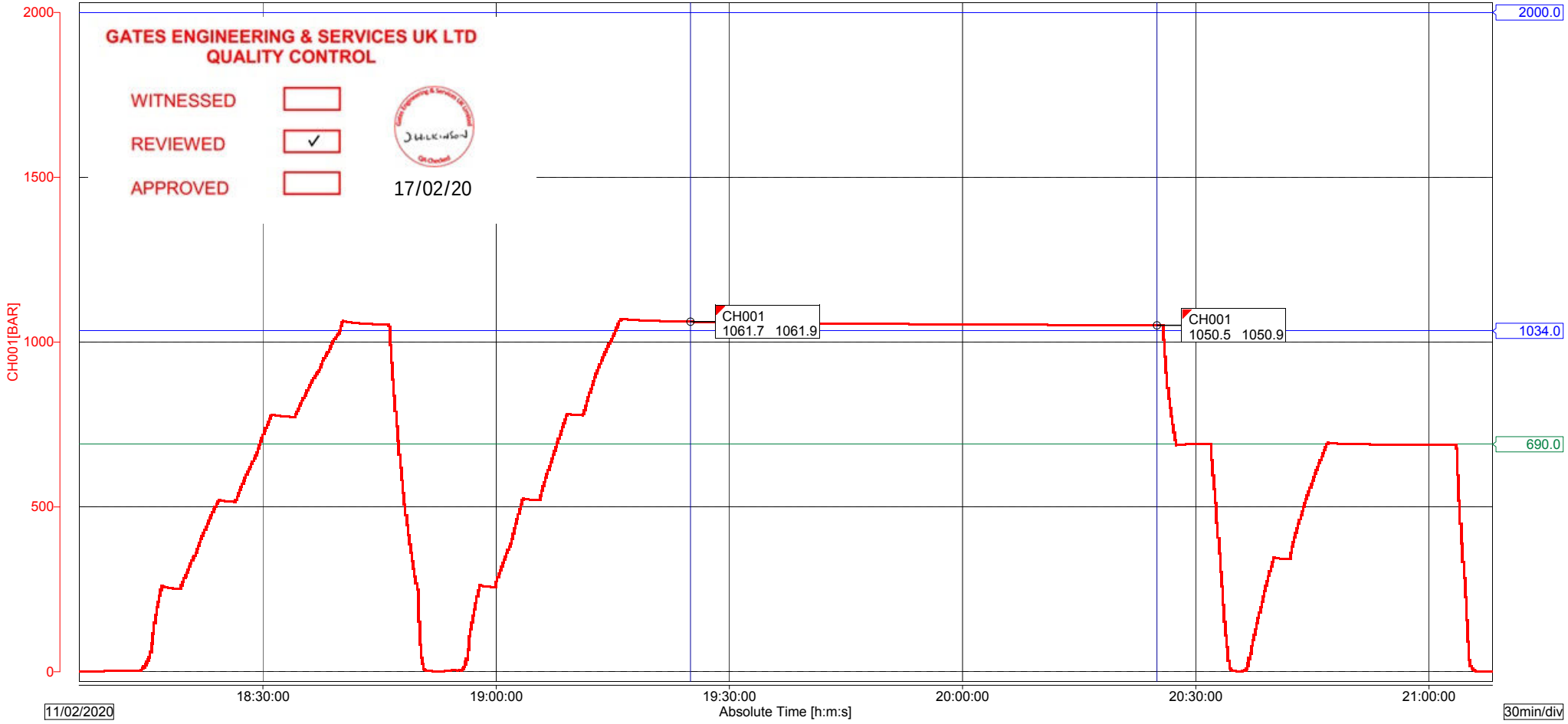
Start Time : 11/02/2020 18:06:20.000
Stop Time : 11/02/2020 21:08:10.000

Print Groups : GROUP 1
Print Range : 11/02/2020 18:06:20.000 - 11/02/2020 21:08:10.000
Comment : Factory Acceptance Test

		Cursor A	Cursor B	Difference
Data No.		472	832	360
Absolute Time		11/02/2020 19:25:00.000	11/02/2020 20:25:00.000	01:00:00.000
Channel		Value A	Value B	Value B-A
CH001 [BAR]	Max	1061.9	1050.9	-11.0
	Min	1061.7	1050.5	-11.2

Section 472 - 832 11/02/2020 19:25:00.000 - 11/02/2020 20:25:00.000

Channel	MIN	MAX	P-P	Mean	RMS
CH001[BAR]	1050.5	1061.9	11.4	1055.0	1055.1



TUSK LIFTING

REPORT OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

IN ACCORDANCE WITH LIFTING OPERATIONS AND LIFTING EQUIPMENT REGULATIONS 1998

ALL ITEMS ON THIS REPORT ARE SAFE TO USE

NAME & ADDRESS OF COMPANY FOR WHOM THE EXAMINATION WAS MADE	ADDRESS OF THE PREMISES WHERE THE EXAMINATION WAS MADE		
Gates Engineering & Services UK Ltd Bassington Drive Bassington Industrial Estate Cramlington NE23 8AS	Tusk Lifting Ltd 49D Sadler Forster Way Teesside Industrial Estate Stockton-On-Tees TS17 9JY	DATE OF REPORT	08/01/2020
		REPORT NO	13322
		CUSTOMER REFERENCE	052628
		CONTRACT NO.	0000059501

QTY	ID NO.	DESCRIPTION OF EQUIPMENT INCLUDING MANUFACTURER AND DATE OF MANUFACTURE	SWL / WLL	EWL	EXAM REASON (SEE BELOW)	TEST APPLIED	LATEST DATE OF NEXT THOROUGH EXAMINATION
50.00	643615/1 - 643615/50	10mm x 6ft HCP Coated Chain Sling c/w 4.75t Safety Pin Bow Shackle each end	4 TONNE	6 FT	B	VISUAL	08/07/2020

REASON FOR EXAMINATION: **A** - NEW INSTALLATION OR NEW LOCATION; **B** - WITHIN 6 MONTHS; **C** - WITHIN 12 MONTHS; **D** - WRITTEN SCHEME; **E** - EXCEPTIONAL CIRCUMSTANCES.

NAME AND QUALIFICATION OF PERSON MAKING THE REPORT

Jimmy Joyce, Company Approved Examiner

SIGNATURE

NAME OF THE PERSON AUTHENTICATING THE REPORT

Julie Montgomery, Planner

SIGNATURE

DATE OF THOROUGH EXAMINATION **08/01/2020**

OPERATING INSTRUCTIONS CAN BE FOUND ON OUR WEBSITE, HTTP://WWW.TUSKLIFTING.CO.UK
THE ORIGINAL MANUFACTURERS EC DECLARATION OF CONFORMITY IS HELD ON FILE AT OUR PREMISES AND IS AVAILABLE UPON REQUEST

Tusk Lifting Ltd.
49D Sadler Forster Way. Teesside Industrial Estate.
Stockton On Tees. TS17 9JY

T. 01642 915330
E. teesside@tusklifting.co.uk
W. tusklifting.co.uk

VAT. GB258876247
REG. 10497383

MAMMOET

LEEA Full Member

IMB52628

William Hackett
Lifting Products Limited

ISO 9001 · ISO 14001 · ISO 45001 · LEEA Full Member

DUAL PURPOSE DOCUMENT

EC DECLARATION OF CONFORMITY — **A**

DECLARATION

I DECLARE THAT THE ITEMS DESCRIBED ON THIS DOCUMENT COMPLY WITH THE REQUIREMENTS OF THE MACHINERY DIRECTIVE 2006/42/EC

MANUFACTURER'S CERTIFICATE — **B**

CERTIFIED ON BEHALF OF THE COMPANY

T.J. BURGESS 17/12/2019

Delivery Address

TUSK LIFTING LTD (STOCK)
49D SADLER FORSTER WAY
TEESIDE INDUSTRIAL ESTATE
STOCKTON ON TEES
TS17 9JY

Supplied To:	TUS002
Certificate Number:	**L072222**
Customer Order No:	7557
Date Received:	17/12/2019

PRODUCTS REQUIRING A DECLARATION OF CONFORMITY ARE INDICATED BY (A)
THOSE REQUIRING JUST A MANUFACTURER'S CERTIFICATE BY (B)

Authorised person for the configuration of the declaration documents: Tim Burgess, William Hackett Lifting Products, Alnwick, UK

A/B	Batch	Lot No / Serial No	Product	Description	Qty	Working Load Limit	Proof Load	Min Breaking Load
A	P02637	643615/1-50	HNZZZ.100.TUSK	10mm grade 10 chain sling assembly. Comprising of: 1 x 4.75t Safety Bow Shackle, 1 x 10mm connector, 10mm grade 10 chain, 1 x 10mm connector and 1 x 4.75t Safety Bow Shackle.	50	4t		

OAK DRIVE, LIONHEART ENTERPRISE PARK, ALNWICK, NORTHUMBERLAND NE66 2EU
Tel. + 44 (0) 1665 604200 Fax. + 44 (0) 1665 604204 Email: info@williamhackett.co.uk
Website: www.williamhackett.co.uk Co. Registration No. 09679580 VAT Reg. No. 217 3508 23

Report Version 2-5

IMB52628

William Hackett
Lifting Products Limited

3.1 Material Certificate

DATE: 18.12.2019	**PURCHASE ORDER NO. 7557**

CUSTOMER	TUSK LIFTING LIMITED
ADDRESS	49D SADLER FORSTER WAY TEESIDE IND EST STOCKTON ON TEES TS17 9JY

PRODUCT CODE: ASV.100.5	Marking: 1235
DESCRIPTION: 10MM GRADE 10 LIFTING CHAIN – Q61076	

Chemical Composition –

	%
C	0,215
Si	0,216
Mn	1,222
P	0,0076
S	0,0071
Ni	0,947
Cr	0,554
Cu	-
Mo	0,595
AL	0,0337

Trading & Registered Office: Oak Drive, Lionheart Enterprise Park, Alnwick, Northumberland NE66 2EU
Tel: +44 (0) 1665 604200 Fax: +44 (0) 1665 604204 Email: info@williamhackett.co.uk
Website: www.williamhackett.co.uk CRN: 09679580 VAT Registration No. 217 3508 23

YOKE®
Safety is our first priority™

YOKE INDUSTRIAL CORP.
#39,33rd Road, Taichung Industrial Park,
TAICHUNG 407, TAIWAN
TEL:+886-4-2350 8088
FAX:+886-4-2350 1001

Q6|259

IMB52628

Test Certificate

80059145-000730

TO : WILLIAM HACKETT LIFTING PRODUCTS LTD
Oak Drive,
Lionheart Enterprise Park,
Alnwick, Northumberland, NE66 2EU,
United Kingdom
Tel: 44-1665604200

Invoice NO: 90059797

Description: ITEM: X-015-10
G100,Connecting Link,10mm,3/8"
Batch No : YUA
Quantity : 1,800 PC

C	Si	Mn	P	S	Cr	Mo	Ni	Fe
0.18~0.30	0.15~0.40	0.70~1.30	<0.035	<0.04	0.40~1.10	0.15~0.40	0.40~1.00	other

Material :	Alloy Steel
Mini. Breaking Load :	157kN
Magnetic Flux Crack Tested :	100% of above quantity

Proof Load Test 100% :	98.1kN
Fatigue Rate 20000 cycle :	58.8kN
Working Load Limit :	4.0tonnes

TESTING ACCORDING TO ASTM A952/A 952M、DIN PAS 1061、EN1677-1
ISO 9001:2015 Certification by DNV and API
Inspection Test Certificate meet the EN 10204 3.1

TEST RESULT
Pass

YOKE INDUSTRIAL CORP.

Jason Yu

Dated: May 14, 2019

Qualification: QA Manager

YOKE INDUSTRIAL CORP.
#39,33rd Road, Taichung Industrial Park,
TAICHUNG 407, TAIWAN
TEL:+886-4-2350 8088
FAX:+886-4-2350 1001

Safety is our first priority™

061396

IMB52628

Test Certificate

80062821-000450

TO: WILLIAM HACKETT LIFTING PRODUCTS,LTD
Oak Drive,
Lionheart Enterprise Park,
Alnwick, Northumberland, NE66 2EU,
United Kingdom
Tel: 44-1665604200

Invoice NO: 90064302

Description: ITEM: DA-808-19
DA Bolt Pin Anchor Shackle, 3/4"
(Your PO no. 601644)
Batch No : AAA/AA
Quantity : 1,142 PC

C	Si	Mn	P	S	Cr	Mo	Ni	Fe
0.38~0.43	0.15~0.35	0.60~1.00	<0.035	<0.040	0.90~1.00	0.15~0.30	<0.1%	other

Material :	Alloy Steel	Proof Load Test 100% :	93kN
Mini. Breaking Load :	373kN	Fatigue Rate 20000 cycle :	70kN
Magnetic Flux Crack Tested :	100% of above quantity	Impact Test (-40℃) :	42J
Working Load Limit :	4.75tonnes		

TESTING ACCORDING TO EN 13889、RR-C-271F、DNVGL-ST-E273、EN 12079-2、IMO/MSC Circular 860
ISO 9001:2015 Certification by DNVGL and API
Inspection Test Certificate meet the EN 10204 3.1
These shackle have been designed, approved and tested in accordance with
DNVGL-ST-E271 Offshore Containers
This certificate is based on DNVGL type approval NO. S-8059

TEST RESULT
Pass

YOKE INDUSTRIAL CORP.
Jason Yu
Dated: September 30, 2019
Qualification: QA Manager

IML52690

TUSK LIFTING

REPORT OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

IN ACCORDANCE WITH LIFTING OPERATIONS AND LIFTING EQUIPMENT REGULATIONS 1998

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NAME & ADDRESS OF COMPANY FOR WHOM THE EXAMINATION WAS MADE	ADDRESS OF THE PREMISES WHERE THE EXAMINATION WAS MADE		
Gates Engineering & Services UK Ltd Bassington Drive Bassington Industrial Estate Cramlington NE23 8AS	Tusk Lifting Ltd 49D Sadler Forster Way Teesside Industrial Estate Stockton-On-Tees TS17 9JY	DATE OF REPORT	21/01/2020
		REPORT NO	13586
		CUSTOMER REFERENCE	052690
		CONTRACT NO.	0000059627

QTY	ID NO.	DESCRIPTION OF EQUIPMENT INCLUDING MANUFACTURER AND DATE OF MANUFACTURE	SWL / WLL	EWL	EXAM REASON (SEE BELOW)	TEST APPLIED	LATEST DATE OF NEXT THOROUGH EXAMINATION
30.00	IMK52690/01 - IMK52690/30	3.6T Safety Clamp CS Galv - 195MM Material CERT : GI9268	3.6 TONNE	-	B	PROOF LOAD	21/07/2020
20.00	IML52690/01 - IML52690/20	3.6T Safety Clamp CS Galv - 195MM Material CERT : GI9268	3.6 TONNE	-	B	PROOF LOAD	21/07/2020

REASON FOR EXAMINATION: **A** - NEW INSTALLATION OR NEW LOCATION; **B** - WITHIN 6 MONTHS; **C** - WITHIN 12 MONTHS; **D** - WRITTEN SCHEME; **E** - EXCEPTIONAL CIRCUMSTANCES.

NAME AND QUALIFICATION OF PERSON MAKING THE REPORT

Jimmy Joyce, Company Approved Examiner

SIGNATURE

NAME OF THE PERSON AUTHENTICATING THE REPORT

Julie Montgomery, Planner

SIGNATURE

DATE OF THOROUGH EXAMINATION **21/01/2020**

OPERATING INSTRUCTIONS CAN BE FOUND ON OUR WEBSITE, HTTP://WWW.TUSKLIFTING.CO.UK
THE ORIGINAL MANUFACTURERS EC DECLARATION OF CONFORMITY IS HELD ON FILE AT OUR PREMISES AND IS AVAILABLE UPON REQUEST

Tusk Lifting Ltd.
49D Sadler Forster Way. Teesside Industrial Estate.
Stockton On Tees. TS17 9JY

T. 01642 915330
E. teesside@tusklifting.co.uk
W. tusklifting.co.uk

VAT. GB258876247
REG. 10497383

MAMMOET

LEEA Full Member

IML52690

CELSA STEEL UK
OFFICES: Build. 58, Castle Works, East Moors Road
CF24 5NN Cardiff (United Kingdom)

CELSA GROUP

CELSA MANUFACTURING UK

CE UK MADE

LRV ID N: 0038
06
Cert No: 0038/CPR/LRQ4002811/1
DOP: CELSAUK001 EN10025
Hot rolled structural steel products

INSPECTION CERTIFICATE
BS-EN 10204-2004, TYPE 3.1

Standard
BS-EN 10025-2004

Customer:
CARTER STEEL LTD
YARM ROAD, STOCKTON
TS18 3SA STOCKTON
United Kingdom

Destination:
CARTER STEEL LTD
YARM ROAD, STOCKTON
TS18 3SA STOCKTON
United Kingdom

Delivery number: 2550169238
Order number : 15705941
Your order : 11049

MATERIAL Hot rolled structural steel products	CAST	C %	MN %	SI %	S %	P %	Cr %	N %	Ni %	Cu %	Mo %	V %	CE %	Reh MPA	Rm MPA	A 5.65 %	T °C	Impact 1 J	Impact 2 J	Impact 3 J	Impact Avg. J
S275 JR+AR FL130X10 L.6m	CM124288	0.10	0.53	0.14	0.026	0.020	0.117	0.010	0.14	0.55	0.021	0.001	0.260	328	464	34.8					
S275 JR+AR FL130X10 L.6m	CM124288	0.10	0.53	0.14	0.026	0.020	0.117	0.010	0.14	0.55	0.021	0.001	0.260	325	467	35.3					
S275 JR+AR FL130X10 L.6m	CM124288	0.10	0.53	0.14	0.026	0.020	0.117	0.010	0.14	0.55	0.021	0.001	0.260	329	465	35.2					
S275 JR+AR FL130X10 L.6m	CM124288	0.10	0.53	0.14	0.026	0.020	0.117	0.010	0.14	0.55	0.021	0.001	0.260	323	465	35.2					
S275 JR+AR FL130X12 L.6m	CM124207	0.10	0.56	0.16	0.035	0.022	0.124	0.009	0.14	0.47	0.021	0.001	0.259	317	452	33.8					
S275 JR+AR FL130X12 L.6m	CM124207	0.10	0.56	0.16	0.035	0.022	0.124	0.009	0.14	0.47	0.021	0.001	0.259	323	451	33.8					
S275 JR+AR FL150X12 L.6m	CM127200	0.10	0.54	0.15	0.023	0.018	0.086	0.010	0.11	0.44	0.014	0.002	0.250	313	448	32.5					
S275 JR+AR FL150X12 L.6m	CM127200	0.10	0.54	0.15	0.023	0.018	0.086	0.010	0.11	0.44	0.014	0.002	0.250	308	450	32.0					
S275 JR+AR FL150X6 L.6m	CM127310	0.11	0.57	0.15	0.023	0.019	0.105	0.008	0.10	0.40	0.015	0.001	0.260	298	462	37.6					
S275 JR+AR FL150X6 L.6m	CM127310	0.11	0.57	0.15	0.023	0.019	0.105	0.008	0.10	0.40	0.015	0.001	0.260	319	459	32.5					
S275 JR+AR FL150X6 L.6m	CM127310	0.11	0.57	0.15	0.023	0.019	0.105	0.008	0.10	0.40	0.015	0.001	0.260	318	457	37.5					
S275 JR+AR FL50X15 L.6m	CM124647	0.08	0.53	0.14	0.023	0.020	0.097	0.012	0.20	0.52	0.021	0.001	0.244	320	448	33.2					
S275 JR+AR FL50X15 L.6m	CM124647	0.08	0.53	0.14	0.023	0.020	0.097	0.012	0.20	0.52	0.021	0.001	0.244	329	447	33.8					
S275 JR+AR FL50X15 L.6m	CM124647	0.08	0.53	0.14	0.023	0.020	0.097	0.012	0.20	0.52	0.021	0.001	0.244	326	448	33.9					
S275 JR+AR FL50X15 L.6m	CM124647	0.08	0.53	0.14	0.023	0.020	0.097	0.012	0.20	0.52	0.021	0.001	0.244	322	447	33.5					

Red. X

The materials has been evaluated and radiation is within national limits
Product suitable for galvanizing: 0.14<=Si<=0.25 & P<=0.035.

Steel making process
Electric arc

Certified that the material detailed hereon meets the requirements of the specified standard.

Cardiff, 20.08.2019

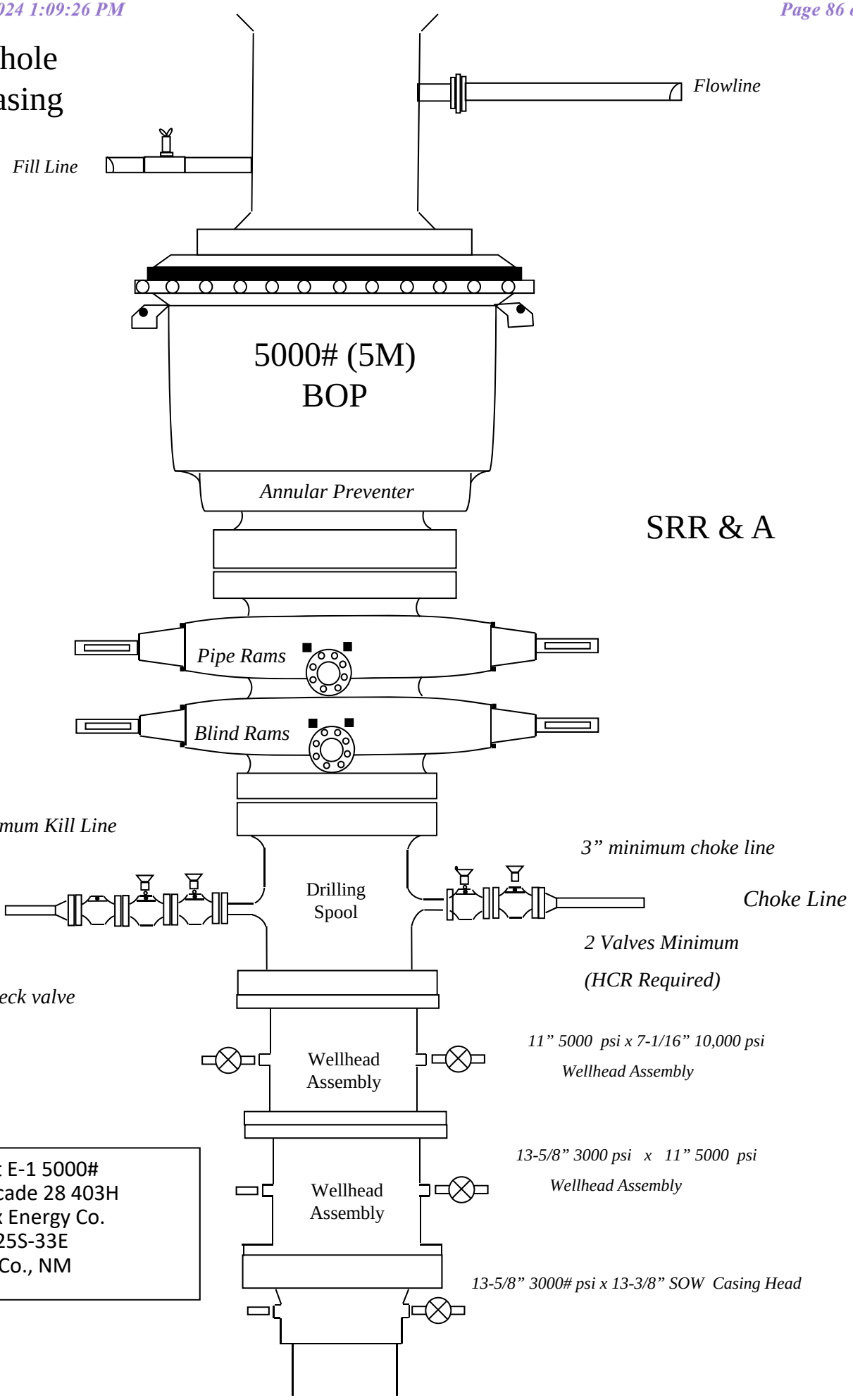
Stuart Thomas
Quality Manager

THIS IS A VERIFIED TRUE COPY OF AN ORIGINAL HELD BY CARTER STEEL LTD

CARTER STEEL LTD
DATE 21.8.2019
ORDER No 11049
CHECKED BY:

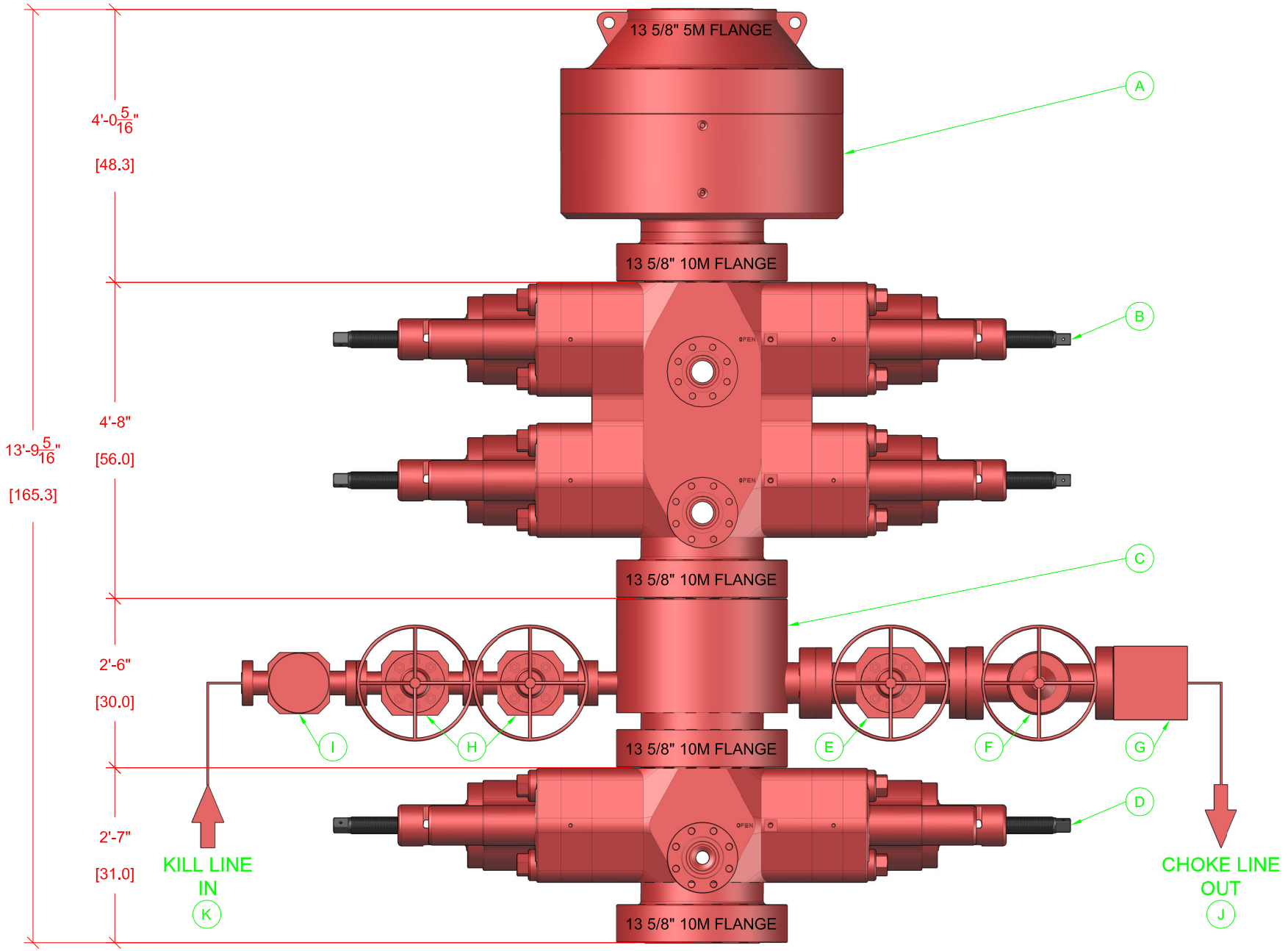
PAGE: 1 2

Drilling 6” hole below 7” Casing



SRR & A

Exhibit E-1 5000#
BOP Cascade 28 403H
Cimarex Energy Co.
28-25S-33E
Lea Co., NM



BOP EQUIPMENT INFORMATION

DESCRIPTION	MODEL	QTY
ANNULAR BOP	13 5/8" 5M	1
DOUBLE RAM BOP	13 5/8" 10M TYPE-U	1
MUD CROSS	13 5/8" 10M	1
SINGLE RAM BOP	13 5/8" 10M TYPE-U	1
GATE VALVE	4 1/16" 10M FC MANUAL	1
HCR VALVE	4 1/16" 10M HCR	1

ITEM	DESCRIPTION	MODEL	QTY
G	STUDDED BLOCK	4 1/16" 10M	1
H	GATE VALE	2 1/16" 10M FC MANUAL	2
I	CHECK VALVE	2 1/16" 10M	1
J	CHOKE HOSE	4 1/16" 10M	1
K	KILL HOSE	2 1/16" 10M	1
L			

SYM	DATE	REVISION	BY

TOLERANCE UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES

DECIMAL	DIMENSION	CONCENTRICITY
X.X	± .1	.1 F.I.R.
X.XX	± .06	.06 F.I.R.
X.XXX	± .010	.010 F.I.R.

ANGLES ± .5 DEGREES

ACAD FILE: CAC148-A-005-00-RO

CUSTOMER INFO:

FILE: R-148_BOP.dwg

DWG BY	IJA	9/10/2021
CHK BY		
APP BY		

SCALE: 1:25

CACTUS Drilling Co., L.L.C.
Oklahoma City, OK, U.S.A.
Tel: 405-577-5347 Fax: 405-577-9306

TITLE:
RIG 148
BOP STACK-UP

SIZE A | CAC148-A005 | SHEET 1/1

DWC/C-IS PLUS™

Connection Data Sheet

OD (in.)	WEIGHT (lbs./ft.)	WALL (in.)	GRADE	API DRIFT (in.)	RBW%	CONNECTION
5.000	Nominal: 18.00 Plain End: 17.95	0.362	VST P110RY	4.151	87.5	DWC/C-IS PLUS

PIPE PROPERTIES		
Outside Diameter	5.000	in.
Inside Diameter	4.276	in.
Nominal Area	5.275	sq.in.
Grade Type	API 5CT	
Min. Yield Strength	110	ksi
Max. Yield Strength	125	ksi
Min. Tensile Strength	125	ksi
Yield Strength	580	klb
Ultimate Strength	659	klb
Min. Internal Yield	13,940	psi
Collapse	13,470	psi

CONNECTION PROPERTIES		
Connection Type	Semi-Premium T&C	
Connection O.D. (nom)	5.800	in.
Connection I.D. (nom)	4.276	in.
Make-Up Loss	4.063	in.
Coupling Length	9.125	in.
Critical Cross Section	5.275	sq.in.
Tension Efficiency	100.0%	of pipe
Compression Efficiency	100.0%	of pipe
Internal Pressure Efficiency	100.0%	of pipe
External Pressure Efficiency	100.0%	of pipe

CONNECTION PERFORMANCES		
Yield Strength	580	klb
Parting Load	659	klb
Compression Rating	580	klb
Min. Internal Yield	13,940	psi
External Pressure	13,470	psi
Maximum Uniaxial Bend Rating	100.8	°/100 ft
Reference String Length w 1.4 Design Factor	23,020	ft.

FIELD END TORQUE VALUES		
Min. Make-up torque	13,300	ft.lb
Opti. Make-up torque	14,200	ft.lb
Max. Make-up torque	15,100	ft.lb
Min. Shoulder Torque	1,330	ft.lb
Max. Shoulder Torque	10,640	ft.lb
Min. Delta Turn	-	Turns
Max. Delta Turn	0.200	Turns
Maximum Operational Torque	16,900	ft.lb
Maximum Torsional Value (MTV)	18,590	ft.lb

Need Help? Contact: tech.support@vam-usa.com

Reference Drawing: 8084PP Rev.01 & 8084BP Rev.01

Date: 03/03/2020

Time: 01:10:05 PM

For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

VAM USA
2107 CityWest Boulevard Suite 1300
Houston, TX 77042
Phone: 713-479-3200
Fax: 713-479-3234
VAM® USA Sales E-mail: VAMUSAsales@vam-usa.com
Tech Support Email: tech.support@vam-usa.com

DWC Connection Data Sheet Notes:
1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a given pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.
12. DWC/C family of connections are compatible with API Buttress BTC connections. Please contact tech.support@vam-usa.com for details on connection ratings and make-up.

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 345861

CONDITIONS

Operator: CIMAREX ENERGY CO. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 345861
	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	6/7/2024
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	6/7/2024
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	6/7/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	6/7/2024
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	6/7/2024