

Well Name: RIVERBEND 12-13 FEDERAL COM	Well Location: T25S / R28E / SEC 1 / SESW /	County or Parish/State:
Well Number: 19H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM16104	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001549523	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Notice of Intent

Sundry ID: 2704505

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

Date Sundry Submitted: 11/28/2022 **Time Sundry Submitted:** 02:01

Date proposed operation will begin: 01/06/2023

Procedure Description: Cimarex Energy Company respectfully requests approval to make the following changes to the approved Application for Permit to Drill. These changes are as follows: 1. Change the BHL 2. Change the FTP 3. Change the LTP 4. Change the proposed TD 5. Update the drilling plan, casing and cement detail 6. Request off-line cementing 7. Request approval to skid rig Please see attached documents for details for the above-mentioned changes: Updated C-102, updated drilling plan, updated casing and cement details and an updated Directional Drilling Survey.

NOI Attachments

Procedure Description

Info_for_Sundry_Notice_20221128140036.pdf

Well Name: RIVERBEND 12-13 FEDERAL COM	Well Location: T25S / R28E / SEC 1 / SESW /	County or Parish/State:
Well Number: 19H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM16104	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001549523	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Conditions of Approval

Additional
RIVERBEND_12_13__FED_COM_19H_COA_20230512151153.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: RUSTY KLEIN	Signed on: NOV 28, 2022 02:00 PM
Name: CIMAREX ENERGY COMPANY	
Title: Regulatory Analyst IV	
Street Address: 600 N MRIENFIELD SUITE 600	
City: MIDLAND	State: TX
Phone: (432) 620-1933	
Email address: RUSTY.KLEIN@COTERRA.COM	

Field

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

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 06/14/2023
Signature: Chris Walls	

CIMAREX ENERGY COMPANY
RIVERBEND 12 13 FEDERAL COM #19H
30-015-49523
SECTION 1-T25S-R28E
EDDY CO., NM

Cimarex Energy Company respectfully requests permission to make changes to the Approved Application for Permit to Drill as follows:

1. BHL will change as follows:

FROM: 330' FSL & 1815' FEL (Unit O, SWSE)
Section 13-T25S-R28E
Lat 32.123644; Long 104.038174

TO: 330' FSL & 1660' FEL (Unit O, SWSE)
Section 13-T25S-R28E
Lat 32.123638; Long 104.037673

2. The FTP will change as follows:

FROM: 330' FNL & 1815' FEL (Unit B, NWNE)
Section 12-T25S-R28E
Lat 32.151029; Long 104.038144

TO: 330' FNL & 1779' FEL (Unit B, NWNE)
Section 12-T25S-R28E
Lat 32.151028; Long 104.038027

3. The LTP will change as follows:

FROM: 330' FSL & 1815' FEL (Unit O, SWSE)
Section 13-T25S-R28E
Lat 32.123644; Long 104.038174

TO: 330' FSL & 1660' FEL (Unit O, SWSE)
Section 13-T25S-R28E
Lat 32.123515; Long 104.037186

4. The proposed TD will change as follows:

FROM: 21123' MD; 9730' TVD; Purple Sage Wolfcamp (gas) – Pool Code 98220
TO: 20271' MD; 9778' TVD; Purple Sage Wolfcamp (gas) – Pool Code 98220

Cimarex Energy Company respectfully requests approval to perform off-line cementing and approval to skid the rig to the next well on the pad to begin operations prior to waiting 8 hours for surface casing cement to harden on this well.

Attached documentation supporting these changes include an updated C-102, drilling plan, an updated directional survey and an updated sheet showing casing and cement changes.

RUSTY KLEIN
REGULATORY ANALYST IV
rusty.klein@coterra.com
November 25, 2022

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 Hrazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

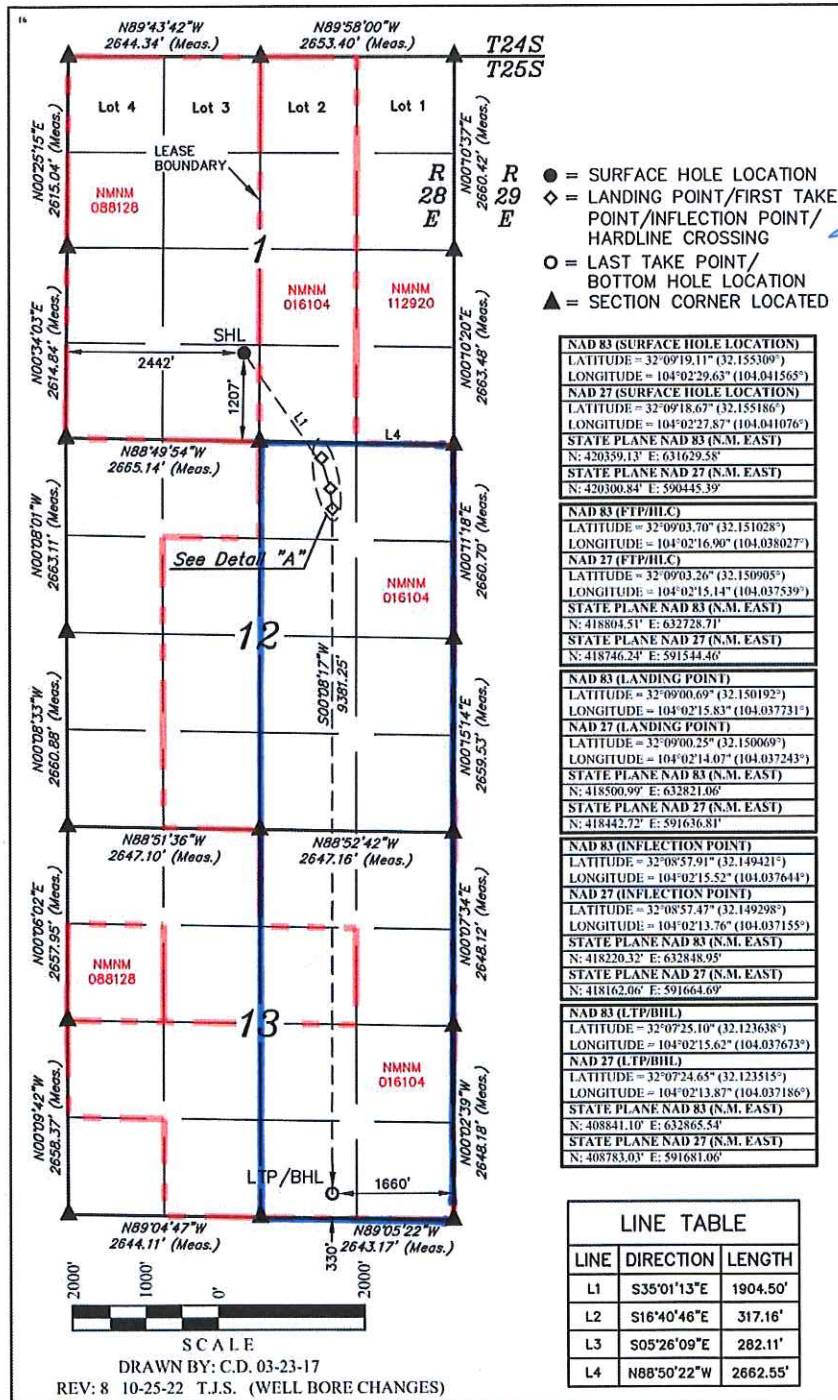
¹ API Number 30-015-49523	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp (Gas)
⁴ Property Code 321482	⁵ Property Name RIVERBEND 12-13 FEDERAL COM	⁶ Well Number 19H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 2934.7'

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	1	25S	28E		1207	SOUTH	2442	WEST	EDDY

"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	13	25S	28E		330	SOUTH	1660	EAST	EDDY
¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code Will be communitized	¹⁵ Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



"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.

Signature: *Rusty Klein* Date: *11/1/2022*

RUSTY KLEIN

Printed Name

rusty.klein@coterra.com

E-mail Address

"SURVEYOR CERTIFICATION

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

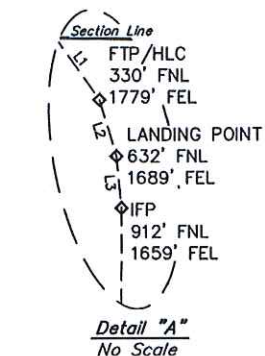
December 12, 2017

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:



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)

1. Geological Formations

TVD of target 9,778

Pilot Hole TD N/A

MD at TD 20,271

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	217	Useable Water	
Salado	408	N/A	
Castille	2463	N/A	
Bell Canyon	2757	N/A	
Cherry Canyon	3695	N/A	
Brushy Canyon	5294	Hydrocarbons	
Bone Spring	6427	Hydrocarbons	
1st Bone Spring	7367	Hydrocarbons	
2nd Bone Spring	8173	Hydrocarbons	
3rd Bone Spring	9291	Hydrocarbons	
Wolfcamp	9669	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	267	267	13-3/8"	48.00	J-55	ST&C	6.40	20.54	33.79
12 1/4	0	2717	2717	9-5/8"	36.00	J-55	ST&C	1.39	2.42	4.03
8 3/4	0	9375	9375	7"	26.00	L-80	LT&C	1.23	1.65	2.03
8 3/4	9375	10013	9699	7"	26.00	L-80	BT&C	1.19	1.60	71.70
6	8375	20271	9730	4-1/2"	11.60	P-110	BT&C	1.25	1.76	23.35
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

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

Cimarex Energy Co., Riverbend 12-13 Federal Com 19H

	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	173	14.80	1.34	6.32	9.5	Lead: Class C + LCM
Intermediate	530	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	159	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	423	10.30	3.64	22.18		Lead: Tuned Light + LCM
	119	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	762	14.20	1.30	5.86	14:30	Lead: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	25
Intermediate	0	47
Production	2430	25
Completion System	9813	10

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

4. Pressure Control Equipment

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	3M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
6	13 5/8	10M	Annular	X	10M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		

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

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

	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 267'	Fresh Water	7.83 - 8.33	28	N/C
267' to 2717'	Brine Water	9.80 - 10.30	30-32	N/C
2717' to 10013'	Brine Water	8.50 - 9.00	30-32	N/C
10013' to 20271'	OBM	11.50 - 12.00	50-70	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

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

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

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	6071 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.

	H ₂ S is present
	H ₂ S plan is attached

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

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to working pressure or a maximum test pressure of 5000 psi. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

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

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

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

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 10000 psi.

A solid steel body pack-off will be utilized after running and cementing the production casing. After installation the pack-off and lower flange will be pressure tested to 10000 psi.

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

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

10. Other Variances

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

Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 19H well. Surface cement will be pumped and we will ensure floats hold, do a green cement test and then skid to the next well on pad. We will not perform any operations on this 19H well until at least 8 hours and when both tail and lead slurry reach 500 psi. The mandrel hanger is made up on the last joint of 13 3/8" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is pre-welded to the conductor pipe. At this point the 13 3/8" casing is entirely supported by the conductor pipe via the landing ring/mandrel and is independent from the rig. This allows us to walk the rig away from the 19H well and begin work on the next well while the cement is hardening. There is no way for the casing to be moved or knocked off center since it is hanging from the landing ring.

CIMAREX ENERGY COMPANY
 RIVERBEND 12 13 FEDERAL COM #19H
 30-015-49523
 Section 1-T25S-R28E
 Eddy Co., NM

THE CASING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM: AS APPROVED ON APPROVED APPLICATION FOR PERMIT TO DRILL:

HOLE SIZE	CASING DEPTH FROM	CASING DEPTH TO	SETTING DEPTH TVD	CASING SIZE	WEIGHT (LB/FT)	GRADE	CONN	SF COLLAPSE	SF BURST	SF TENSION
17-1/2"	0	514'	514'	13-3/8"	48#	J-55	ST&C	3.32	10.67	17.55
12-1/4"	0	2630'	2630'	9-5/8"	36#	J-55	ST&C	1.43	2.50	4.16
8-3/4"	0	9330'	9330'	7"	26#	L-80	LT&C	1.24	1.66	2.02
8-3/4"	9330'	10330'	9730'	7"	26#	L-80	BT&C	1.19	1.59	58.08
6"	8330'	21123'	9730'	4-1/2"	11.6#	P-110	BT&C	1.25	1.76	22.60
BLM Minimum Safety Factor								1.125	1	1.6 dry 1.8 wet

TVD was used on all calculations

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

TO:

HOLE SIZE	CASING DEPTH FROM	CASING DEPTH TO	SETTING DEPTH TVD	CASING SIZE	WEIGHT (LB/FT)	GRADE	CONN	SF COLLAPSE	SF BURST	SF TENSION
						H-40/J-55				
17-1/2"	0	267'	267'	13-3/8"	48#	Hybrid	ST&C	6.40	20.54	33.79
12-1/4"	0	2717'	2717'	9-5/8"	36#	J-55	ST&C	1.39	2.42	4.03
8-3/4"	0	9375'	9375'	7"	26#	L-80	LT&C	1.23	1.65	2.03
8-3/4"	9375'	10013'	9699'	7"	26#	L-80	BT&C	1.19	1.60	71.70
6"	8375'	20271'	9730'	4-1/2"	11.6#	P-110	BT&C	1.25	1.76	23.35
BLM Minimum Safety Factor								1.125	1	1.6 dry 1.8 wet

TVD was used on all calculations.

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

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

An updated drilling plan and directional survey is attached.

CIMAREX ENERGY COMPANY
 RIVERBEND 12 13 FEDERAL COM #19H
 30-015-49523
 Section 1-T25S-R28E
 Eddy Co., NM

THE CEMENTING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM:

CASING	#SACKS	WEIGHT LB/GAL	YIELD FT3/SACK	H2O GAL/SACK	500# COMP STRENGTH (HOURS)	SLURRY DESCRIPTION
SURFACE	130	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
INTERMEDIATE	501	12.90	1.88	9.65	12	Lead: 35:65 Poz C, Salt & bentonite
	153	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	354	10.30	3.64	22.18		Lead: Tuned Light + LCM
	145	14.20	1.30	5.86	14.30	Tail: 50:50 Poz H + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion	830	14.20	1.30	5.86	14.30	Tail: 50:50 Poz + salt + bentonite + fluid loss + dispersant + SMS

CASING STRING	TOC	% EXCESS
SURFACE	0	35
INTERMEDIATE	0	49
PRODUCTION	2463	25
COMPLETION	9755	10

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

TO:

CASING	#SACKS	WEIGHT LB/GAL	YIELD FT3/SACK	H2O GAL/SACK	500# COMP STRENGTH (HOURS)	SLURRY DESCRIPTION
SURFACE	173	14.80	1.34	6.32	9.5	Tail: Class C + LCM
INTERMEDIATE	530	12.90	1.88	9.65	12	Lead: 35:65 Poz C, Salt & bentonite
	159	14.80	1.34	6.32	9.5	Tail: Class C + LCM

Production	423	10.30	3.64	22.18		Lead: Tuned Light + LCM
	119	14.20	1.30	5.86	14.30	Tail: 50:50 Poz H + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	762	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	25
INTERMEDIATE	0	47
PRODUCTION	2430	25
COMPLETION	9813	10

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



Cimarex Riverbend 12-13 Federal Com 19H Rev3 kFc 03Oct22 Proposal



Geodetic Report

(Def Plan)

30.015. 49523

Report Date: October 03, 2022 - 10:30 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Riverbend 12-13 Federal Com 19H / 19H
Well: Cimarex Riverbend 12-13 Federal Com 19H
Borehole: Cimarex Riverbend 12-13 Federal Com 19H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Riverbend 12-13 Federal Com 19H Rev3 kFc 03Oct22
Survey Date: October 03, 2022
Tort / AHD / DDI / ERD Ratio: 114.792 / 11886.494 ft / 6.452 / 1.216
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 9' 19.11334", W 104° 2' 29.63403"
Location Grid N/E Y/X: N 420359.130 RUS, E 631629.580 RUS
CRS Grid Convergence Angle: 0.1553 °
Grid Scale Factor: 0.99991843
Version / Patch: 2.10.833.1

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.900 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB = 23ft
TVD Reference Elevation: 2957.700 ft above MSL
Seabed / Ground Elevation: 2934.700 ft above MSL
Magnetic Declination: 6.852 °
Total Gravity Field Strength: 998.4601mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47528.525 nT
Magnetic Dip Angle: 59.757 °
Declination Date: October 03, 2022
Magnetic Declination Model: HDGM 2022
North Reference: Grid North
Grid Convergence Used: 0.1553 °
Total Corr Mag North->Grid North: 6.4964 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S °)	Longitude (E/W °)	
SHL [1207' FSL 2442' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	420359.13	631629.58	N 32.155309	W 104.041565	
Rustler	100.00	0.00	143.86	100.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	200.00	0.00	143.86	200.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	217.00	0.00	143.86	217.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	300.00	0.00	143.86	300.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	400.00	0.00	143.86	400.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
Salado	408.00	0.00	143.86	408.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	500.00	0.00	143.86	500.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	600.00	0.00	143.86	600.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	700.00	0.00	143.86	700.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	800.00	0.00	143.86	800.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	900.00	0.00	143.86	900.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1000.00	0.00	143.86	1000.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1100.00	0.00	143.86	1100.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1200.00	0.00	143.86	1200.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1300.00	0.00	143.86	1300.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1400.00	0.00	143.86	1400.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1500.00	0.00	143.86	1500.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1600.00	0.00	143.86	1600.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1700.00	0.00	143.86	1700.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1800.00	0.00	143.86	1800.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	1900.00	0.00	143.86	1900.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2000.00	0.00	143.86	2000.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2100.00	0.00	143.86	2100.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2200.00	0.00	143.86	2200.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2300.00	0.00	143.86	2300.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
2400.00	0.00	143.86	2400.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565		
Castillo	2500.00	0.00	143.86	2500.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2514.21	0.00	143.86	2514.21	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2600.00	0.00	143.86	2600.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
Bell Canyon	2700.00	0.00	143.86	2700.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2707.15	0.00	143.86	2707.15	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
Nudge, Build 27'100ft	2800.00	0.00	143.86	2800.00	0.00	0.00	0.00	0.00	420359.13	631629.58	N 32.155309	W 104.041565	
	2900.00	2.00	143.86	2899.98	1.41	-1.41	1.03	2.00	420357.72	631630.61	N 32.155305	W 104.041562	
	3000.00	4.00	143.86	2999.84	5.64	-5.64	4.12	2.00	420353.50	631633.70	N 32.155294	W 104.041552	
	3100.00	6.00	143.86	3099.45	12.69	-12.67	9.26	2.00	420346.46	631638.84	N 32.155274	W 104.041535	
	3200.00	8.00	143.86	3198.70	22.54	-22.51	16.44	2.00	420336.62	631646.02	N 32.155247	W 104.041512	
	3300.00	10.00	143.86	3297.47	35.19	-35.15	25.67	2.00	420323.99	631655.25	N 32.155212	W 104.041482	
	3359.30	11.19	143.86	3355.76	44.01	-43.95	32.10	2.00	420315.18	631661.68	N 32.155188	W 104.041462	
	3400.00	11.19	143.86	3395.68	50.39	-50.32	36.76	0.00	420308.81	631668.33	N 32.155171	W 104.041447	
	3500.00	11.19	143.86	3493.78	66.07	-65.99	48.20	0.00	420293.15	631677.78	N 32.155128	W 104.041410	
	3600.00	11.19	143.86	3591.88	81.76	-81.66	59.64	0.00	420277.48	631689.22	N 32.155084	W 104.041373	
	3700.00	11.19	143.86	3689.98	97.45	-97.32	71.08	0.00	420261.82	631700.66	N 32.155041	W 104.041336	
Cherry Canyon	3705.50	11.19	143.86	3695.38	98.31	-98.18	71.71	0.00	420260.95	631701.29	N 32.155039	W 104.041334	
	3800.00	11.19	143.86	3788.08	113.13	-112.99	82.53	0.00	420246.15	631712.10	N 32.154998	W 104.041299	
	3900.00	11.19	143.86	3886.18	128.82	-128.65	93.97	0.00	420230.49	631723.54	N 32.154955	W 104.041263	
	4000.00	11.19	143.86	3984.28	144.50	-144.32	105.41	0.00	420214.82	631734.98	N 32.154912	W 104.041226	
	4100.00	11.19	143.86	4082.38	160.19	-159.99	116.85	0.00	420199.16	631746.42	N 32.154869	W 104.041189	
	4200.00	11.19	143.86	4180.48	175.87	-175.65	128.30	0.00	420183.49	631757.87	N 32.154825	W 104.041152	
	4300.00	11.19	143.86	4278.58	191.56	-191.32	139.74	0.00	420167.83	631769.31	N 32.154782	W 104.041115	
	4400.00	11.19	143.86	4376.68	207.25	-206.98	151.18	0.00	420152.16	631780.75	N 32.154739	W 104.041078	
	4500.00	11.19	143.86	4474.78	222.93	-222.65	162.62	0.00	420136.50	631792.19	N 32.154696	W 104.041042	
	4600.00	11.19	143.86	4572.88	238.62	-238.31	174.07	0.00	420120.84	631803.63	N 32.154653	W 104.041005	
	4700.00	11.19	143.86	4670.98	254.30	-253.98	185.51	0.00	420105.17	631815.07	N 32.154610	W 104.040968	
	4800.00	11.19	143.86	4769.08	269.99	-269.65	196.95	0.00	420089.51	631826.51	N 32.154567	W 104.040931	
	4900.00	11.19	143.86	4867.18	285.67	-285.31	208.39	0.00	420073.84	631837.96	N 32.154523	W 104.040894	
	5000.00	11.19	143.86	4965.28	301.36	-300.98	219.84	0.00	420058.18	631849.40	N 32.154480	W 104.040857	
	5100.00	11.19	143.86	5063.38	317.05	-316.64	231.28	0.00	420042.51	631860.84	N 32.154437	W 104.040821	
	5200.00	11.19	143.86	5161.48	332.73	-332.31	242.72	0.00	420026.85	631872.28	N 32.154394	W 104.040784	
	5300.00	11.19	143.86	5259.58	348.42	-347.97	254.16	0.00	420011.18	631883.72	N 32.154351	W 104.040747	
	5334.89	11.19	143.86	5293.81	353.89	-353.44	258.16	0.00	420005.72	631887.71	N 32.154336	W 104.040734	
	5400.00	11.19	143.86	5357.69	364.10	-363.64	265.61	0.00	419995.52	631895.16	N 32.154308	W 104.040710	
	5500.00	11.19	143.86	5455.79	379.79	-379.31	277.05	0.00	419979.86	631906.60	N 32.154285	W 104.040673	
	5600.00	11.19	143.86	5553.89	395.48	-394.97	288.49	0.00	419964.19	631918.05	N 32.154221	W 104.040636	
	5700.00	11.19	143.86	5651.99	411.16	-410.64	299.93	0.00	419948.53	631929.49	N 32.154178	W 104.040600	
	5800.00	11.19	143.86	5750.09	426.85	-426.30	311.38	0.00	419932.86	631940.93	N 32.154135	W 104.040563	
	5900.00	11.19	143.86	5848.19	442.53	-441.97	322.82	0.00	419917.20	631952.37	N 32.154092	W 104.040526	
	6000.00	11.19	143.86	5946.29	458.22	-457.64	334.26	0.00	419901.53	631963.81	N 32.154049	W 104.040489	
	6100.00	11.19	143.86	6044.39	473.90	-473.30	345.70	0.00	419885.87	631975.25	N 32.154006	W 104.040452	
	6200.00	11.19	143.86	6142.49	489.59	-488.97	357.14	0.00	419870.20	631986.69	N 32.153963	W 104.040415	
	Brushy Canyon Lower	6245.53	11.19	143.86	6187.15	496.73	-496.10	362.35	0.00	419863.07	631991.90	N 32.153943	W 104.040399
		6300.00	11.19	143.86	6240.59	505.28	-504.63	368.59	0.00	419854.54	631998.14	N 32.153919	W 104.040379
	Bone Spring	6400.00	11.19	143.86	6338.69	520.96	-520.30	380.03	0.00	419838.88	632009.58	N 32.153876	W 104.040342
6490.18		11.19	143.86	6427.15	535.11	-534.43	390.35	0.00	419824.75	632019.90	N 32.153837	W 104.040308	
6500.00		11.19	143.86	6436.79	536.65	-535.86	391.47	0.00	419823.21	632021.02	N 32.153833	W 104.040305	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
BS "A" Shale	6600.00	11.19	143.86	6534.89	552.33	-551.63	402.91	0.00	419807.55	632032.46	N 32.153790	W 104.040288
	6606.08	11.19	143.86	6540.85	553.29	-552.58	403.61	0.00	419806.59	632033.16	N 32.153787	W 104.040266
	6700.00	11.19	143.86	6632.99	568.02	-567.30	414.36	0.00	419791.88	632043.90	N 32.153747	W 104.040231
	6800.00	11.19	143.86	6731.09	583.70	-582.96	425.80	0.00	419776.22	632055.34	N 32.153704	W 104.040194
	6900.00	11.19	143.86	6829.19	599.39	-598.63	437.24	0.00	419760.55	632066.78	N 32.153661	W 104.040158
	7000.00	11.19	143.86	6927.29	615.08	-614.29	448.68	0.00	419744.89	632078.23	N 32.153617	W 104.040121
	7100.00	11.19	143.86	7025.39	630.76	-629.96	460.13	0.00	419729.22	632089.67	N 32.153574	W 104.040084
BS "C" Shale	7157.61	11.19	143.86	7081.90	639.80	-638.99	466.72	0.00	419720.20	632096.26	N 32.153549	W 104.040063
	7200.00	11.19	143.86	7123.49	646.45	-645.62	471.57	0.00	419713.56	632101.11	N 32.153531	W 104.040047
	7300.00	11.19	143.86	7221.59	662.13	-661.29	483.01	0.00	419697.89	632112.55	N 32.153488	W 104.040010
	7400.00	11.19	143.86	7319.69	677.82	-676.96	494.45	0.00	419682.23	632123.99	N 32.153445	W 104.039973
	7448.62	11.19	143.86	7367.39	685.45	-684.57	500.02	0.00	419674.61	632129.56	N 32.153424	W 104.039955
	7500.00	11.19	143.86	7417.79	693.50	-692.62	505.90	0.00	419666.57	632135.43	N 32.153402	W 104.039937
	7600.00	11.19	143.86	7515.89	709.19	-708.29	517.34	0.00	419650.80	632146.87	N 32.153359	W 104.039900
1st BS SS	7700.00	11.19	143.86	7613.99	724.88	-723.95	528.78	0.00	419635.24	632158.32	N 32.153315	W 104.039863
	7800.00	11.19	143.86	7712.09	740.56	-739.62	540.22	0.00	419619.57	632169.76	N 32.153272	W 104.039826
	7900.00	11.19	143.86	7810.19	756.25	-755.29	551.67	0.00	419603.91	632181.20	N 32.153229	W 104.039789
	8000.00	11.19	143.86	7908.29	771.93	-770.95	563.11	0.00	419588.24	632192.64	N 32.153186	W 104.039752
	8100.00	11.19	143.86	8006.39	787.62	-786.62	574.55	0.00	419572.58	632204.08	N 32.153143	W 104.039715
	8200.00	11.19	143.86	8104.49	803.30	-802.28	585.99	0.00	419556.91	632215.52	N 32.153100	W 104.039679
	8269.71	11.19	143.86	8172.88	814.24	-813.20	593.97	0.00	419545.99	632223.60	N 32.153070	W 104.039653
2nd BS SS	8300.00	11.19	143.86	8202.59	818.99	-817.95	597.43	0.00	419541.25	632226.97	N 32.153057	W 104.039642
	8400.00	11.19	143.86	8300.69	834.68	-833.61	608.88	0.00	419525.59	632238.41	N 32.153013	W 104.039605
	8500.00	11.19	143.86	8398.79	850.36	-849.28	620.32	0.00	419509.92	632249.85	N 32.152970	W 104.039568
	8600.00	11.19	143.86	8496.89	866.05	-864.95	631.76	0.00	419494.26	632261.29	N 32.152927	W 104.039531
	8700.00	11.19	143.86	8594.99	881.73	-880.61	643.20	0.00	419478.59	632272.73	N 32.152884	W 104.039495
	8800.00	11.19	143.86	8693.09	897.42	-896.28	654.65	0.00	419462.93	632284.17	N 32.152841	W 104.039458
	8900.00	11.19	143.86	8791.19	913.10	-911.94	666.09	0.00	419447.26	632295.61	N 32.152798	W 104.039421
2nd BS SS Lower	8938.90	11.19	143.86	8829.35	919.21	-918.04	670.54	0.00	419441.17	632300.05	N 32.152781	W 104.039407
KOP, Build 10"/100R	9000.00	11.19	143.86	8889.29	928.79	-927.61	677.53	0.00	419431.60	632307.06	N 32.152755	W 104.039384
	9100.00	11.19	143.86	8987.39	944.48	-943.27	688.97	0.00	419415.93	632318.50	N 32.152711	W 104.039347
	9200.00	11.19	143.86	9085.49	960.16	-958.84	700.42	0.00	419400.27	632329.94	N 32.152668	W 104.039310
	9300.00	11.19	143.86	9183.59	975.85	-974.61	711.86	0.00	419384.61	632341.38	N 32.152625	W 104.039274
	9374.64	11.19	143.86	9258.82	987.56	-986.30	720.40	0.00	419372.91	632349.92	N 32.152593	W 104.039246
	9400.00	13.72	143.86	9281.58	991.88	-990.72	723.62	10.00	419368.50	632353.14	N 32.152581	W 104.039236
	9409.23	14.65	143.86	9290.53	993.81	-992.54	724.96	10.00	419366.67	632354.48	N 32.152576	W 104.039231
3rd BS SS	9500.00	23.72	143.86	9376.17	1017.80	-1016.60	742.53	10.00	419342.81	632372.05	N 32.152509	W 104.039175
	9600.00	33.72	143.86	9463.75	1056.70	-1055.36	770.84	10.00	419303.86	632400.38	N 32.152403	W 104.039084
	9700.00	43.72	143.86	9541.67	1107.22	-1105.81	807.69	10.00	419253.41	632437.20	N 32.152264	W 104.038985
	9800.00	53.72	143.86	9607.56	1167.90	-1166.42	851.96	10.00	419182.81	632481.47	N 32.152097	W 104.038823
	9860.57	61.78	143.86	9650.52	1222.96	-1221.40	892.12	10.00	419137.83	632521.63	N 32.151945	W 104.038693
	9900.00	63.72	143.86	9659.41	1236.92	-1235.35	902.31	10.00	419123.89	632531.81	N 32.151907	W 104.038661
	9923.42	66.06	143.86	9669.35	1254.07	-1252.47	914.81	10.00	419106.76	632544.32	N 32.151860	W 104.038620
Wolfcamp A	9987.42	72.46	143.86	9692.00	1302.44	-1300.78	950.10	10.00	419058.46	632579.60	N 32.151727	W 104.038507
Wolfcamp X	10000.00	73.72	143.86	9695.66	1312.17	-1310.50	957.20	10.00	419048.74	632586.70	N 32.151700	W 104.038484
Build & Turn 5"/100R	10012.78	75.00	143.86	9699.10	1322.12	-1320.44	984.46	10.00	419038.80	632593.96	N 32.151673	W 104.038460
330ft Hardline Cross	10100.00	77.07	147.81	9720.15	1392.22	-1390.46	1011.97	5.00	418966.79	632641.47	N 32.151480	W 104.038308
	10200.00	79.52	152.28	9740.44	1477.12	-1475.27	1060.85	5.00	418883.99	632690.34	N 32.151246	W 104.038150
	10289.64	81.77	156.19	9755.02	1556.82	-1554.90	1099.29	5.00	418804.36	632728.78	N 32.151027	W 104.038027
	10300.00	82.03	156.64	9756.48	1566.22	-1564.30	1103.39	5.00	418794.96	632732.88	N 32.151001	W 104.038014
	10309.78	84.58	160.96	9768.11	1658.65	-1656.67	1139.21	5.00	418702.60	632768.70	N 32.150747	W 104.037899
	10400.00	84.59	160.97	9768.13	1658.68	-1656.67	1139.26	5.00	418702.39	632768.77	N 32.150747	W 104.037899
	10500.00	87.17	165.28	9775.32	1754.32	-1752.29	1168.24	5.00	418606.99	632787.72	N 32.150484	W 104.037806
Landing Point Turn 4"/100R	10600.00	89.78	166.53	9777.98	1851.89	-1849.81	1190.04	5.00	418509.47	632819.52	N 32.150216	W 104.037736
	10608.62	90.00	169.90	9778.00	1880.37	-1878.29	1191.58	5.00	418500.99	632821.06	N 32.150192	W 104.037731
	10641.12	90.00	169.90	9778.00	1892.38	-1890.29	1197.28	0.00	418469.00	632826.76	N 32.150104	W 104.037713
	10700.00	90.00	172.26	9778.00	1950.58	-1948.45	1206.41	4.00	418410.84	632835.89	N 32.149945	W 104.037684
	10800.00	90.00	176.26	9778.00	2050.05	-2047.93	1216.42	4.00	418311.37	632845.90	N 32.149671	W 104.037653
	10891.12	90.00	179.90	9778.00	2141.11	-2138.99	1219.47	4.00	418220.32	632848.95	N 32.149421	W 104.037644
	10900.00	90.00	179.90	9778.00	2149.99	-2147.86	1219.49	0.00	418211.45	632848.97	N 32.149366	W 104.037644
Hold	11000.00	90.00	179.90	9778.00	2249.99	-2247.86	1219.66	0.00	418111.45	632849.14	N 32.149121	W 104.037644
	11000.00	90.00	179.90	9778.00	2349.99	-2347.86	1219.84	0.00	418011.46	632849.32	N 32.148847	W 104.037644
	11100.00	90.00	179.90	9778.00	2449.99	-2447.86	1220.01	0.00	417911.47	632849.49	N 32.148572	W 104.037645
	11200.00	90.00	179.90	9778.00	2549.99	-2547.86	1220.19	0.00	417811.48	632849.67	N 32.148297	W 104.037645
	11300.00	90.00	179.90	9778.00	2649.99	-2647.86	1220.36	0.00	417711.49	632849.84	N 32.148022	W 104.037645

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
Section 12-13 Line Cross	15299.59	90.00	179.90	9778.00	6549.58	-6547.45	1227.17	0.00	413812.23	632856.85	N 32.137303	W 104.037658
	15300.00	90.00	179.90	9778.00	6549.59	-6547.86	1227.17	0.00	413811.82	632856.85	N 32.137302	W 104.037658
	15400.00	90.00	179.90	9778.00	6649.59	-6647.86	1227.34	0.00	413711.83	632856.82	N 32.137027	W 104.037658
	15500.00	90.00	179.90	9778.00	6749.59	-6747.86	1227.52	0.00	413611.84	632856.99	N 32.136752	W 104.037659
	15600.00	90.00	179.90	9778.00	6849.59	-6847.86	1227.69	0.00	413511.85	632857.17	N 32.136478	W 104.037659
	15700.00	90.00	179.90	9778.00	6949.59	-6947.86	1227.87	0.00	413411.85	632857.34	N 32.136203	W 104.037659
	15800.00	90.00	179.90	9778.00	7049.59	-7047.86	1228.04	0.00	413311.86	632857.52	N 32.135928	W 104.037660
	15900.00	90.00	179.90	9778.00	7149.59	-7147.86	1228.22	0.00	413211.87	632857.69	N 32.135653	W 104.037660
	16000.00	90.00	179.90	9778.00	7249.59	-7247.86	1228.39	0.00	413111.88	632857.87	N 32.135378	W 104.037660
	16100.00	90.00	179.90	9778.00	7349.59	-7347.86	1228.56	0.00	413011.89	632858.04	N 32.135103	W 104.037661
	16200.00	90.00	179.90	9778.00	7449.59	-7447.86	1228.74	0.00	412911.90	632858.22	N 32.134828	W 104.037661
	16300.00	90.00	179.90	9778.00	7549.59	-7547.86	1228.91	0.00	412811.91	632858.39	N 32.134553	W 104.037661
	16400.00	90.00	179.90	9778.00	7649.59	-7647.86	1229.09	0.00	412711.91	632858.57	N 32.134279	W 104.037662
	16500.00	90.00	179.90	9778.00	7749.59	-7747.86	1229.26	0.00	412611.92	632858.74	N 32.134004	W 104.037662
	16600.00	90.00	179.90	9778.00	7849.59	-7847.86	1229.44	0.00	412511.93	632858.91	N 32.133729	W 104.037662
NMNM016104 Lease exit	16624.84	90.00	179.90	9778.00	7874.83	-7872.70	1229.48	0.00	412487.09	632858.96	N 32.133661	W 104.037662
	16700.00	90.00	179.90	9778.00	7949.99	-7947.86	1229.61	0.00	412411.94	632859.09	N 32.133454	W 104.037663
	16800.00	90.00	179.90	9778.00	8049.99	-8047.86	1229.79	0.00	412311.95	632859.26	N 32.133179	W 104.037663
	16900.00	90.00	179.90	9778.00	8149.99	-8147.85	1229.96	0.00	412211.96	632859.44	N 32.132904	W 104.037663
	17000.00	90.00	179.90	9778.00	8249.99	-8247.85	1230.14	0.00	412111.96	632859.61	N 32.132629	W 104.037664
	17100.00	90.00	179.90	9778.00	8349.99	-8347.85	1230.31	0.00	412011.97	632859.79	N 32.132354	W 104.037664
	17200.00	90.00	179.90	9778.00	8449.99	-8447.85	1230.48	0.00	411911.98	632859.96	N 32.132080	W 104.037664
	17300.00	90.00	179.90	9778.00	8549.99	-8547.85	1230.66	0.00	411811.99	632860.14	N 32.131805	W 104.037664
	17400.00	90.00	179.90	9778.00	8649.99	-8647.85	1230.83	0.00	411712.00	632860.31	N 32.131530	W 104.037665
	17500.00	90.00	179.90	9778.00	8749.99	-8747.85	1231.01	0.00	411612.01	632860.48	N 32.131255	W 104.037665
	17600.00	90.00	179.90	9778.00	8849.99	-8847.85	1231.18	0.00	411512.02	632860.66	N 32.130980	W 104.037665
	17700.00	90.00	179.90	9778.00	8949.99	-8947.85	1231.36	0.00	411412.02	632860.83	N 32.130705	W 104.037666
	17800.00	90.00	179.90	9778.00	9049.99	-9047.85	1231.53	0.00	411312.03	632861.01	N 32.130430	W 104.037666
	17900.00	90.00	179.90	9778.00	9149.99	-9147.85	1231.71	0.00	411212.04	632861.18	N 32.130156	W 104.037666
NMNM016104 Lease re-enter	17950.15	90.00	179.90	9778.00	9200.14	-9198.00	1231.79	0.00	411161.90	632861.27	N 32.130018	W 104.037667
	18000.00	90.00	179.90	9778.00	9249.99	-9247.85	1231.88	0.00	411112.05	632861.36	N 32.129881	W 104.037667
	18100.00	90.00	179.90	9778.00	9349.99	-9347.85	1232.05	0.00	411012.06	632861.53	N 32.129606	W 104.037667
	18200.00	90.00	179.90	9778.00	9449.99	-9447.85	1232.23	0.00	410912.07	632861.71	N 32.129331	W 104.037667
	18300.00	90.00	179.90	9778.00	9549.99	-9547.85	1232.40	0.00	410812.08	632861.88	N 32.129056	W 104.037668
	18400.00	90.00	179.90	9778.00	9649.99	-9647.85	1232.58	0.00	410712.08	632862.06	N 32.128781	W 104.037668
	18500.00	90.00	179.90	9778.00	9749.99	-9747.85	1232.75	0.00	410612.09	632862.23	N 32.128506	W 104.037668
	18600.00	90.00	179.90	9778.00	9849.99	-9847.85	1232.93	0.00	410512.10	632862.40	N 32.128231	W 104.037669
	18700.00	90.00	179.90	9778.00	9949.99	-9947.85	1233.10	0.00	410412.11	632862.58	N 32.127957	W 104.037669
	18800.00	90.00	179.90	9778.00	10049.99	-10047.85	1233.28	0.00	410312.12	632862.75	N 32.127682	W 104.037669
	18900.00	90.00	179.90	9778.00	10149.99	-10147.85	1233.45	0.00	410212.13	632862.93	N 32.127407	W 104.037670
	19000.00	90.00	179.90	9778.00	10249.99	-10247.85	1233.63	0.00	410112.13	632863.10	N 32.127132	W 104.037670
	19100.00	90.00	179.90	9778.00	10349.99	-10347.85	1233.80	0.00	410012.14	632863.28	N 32.126857	W 104.037670
	19200.00	90.00	179.90	9778.00	10449.99	-10447.85	1233.97	0.00	409912.15	632863.45	N 32.126582	W 104.037671
	19300.00	90.00	179.90	9778.00	10549.99	-10547.85	1234.15	0.00	409812.16	632863.63	N 32.126307	W 104.037671
	19400.00	90.00	179.90	9778.00	10649.99	-10647.85	1234.32	0.00	409712.17	632863.80	N 32.126033	W 104.037671
	19500.00	90.00	179.90	9778.00	10749.99	-10747.85	1234.50	0.00	409612.18	632863.97	N 32.125758	W 104.037672
	19600.00	90.00	179.90	9778.00	10849.99	-10847.85	1234.67	0.00	409512.19	632864.15	N 32.125483	W 104.037672
	19700.00	90.00	179.90	9778.00	10949.99	-10947.85	1234.85	0.00	409412.19	632864.32	N 32.125208	W 104.037672
	19800.00	90.00	179.90	9778.00	11049.99	-11047.85	1235.02	0.00	409312.20	632864.50	N 32.124933	W 104.037673
	19900.00	90.00	179.90	9778.00	11149.99	-11147.85	1235.20	0.00	409212.21	632864.67	N 32.124658	W 104.037673
	20000.00	90.00	179.90	9778.00	11249.99	-11247.85	1235.37	0.00	409112.22	632864.85	N 32.124383	W 104.037673
	20100.00	90.00	179.90	9778.00	11349.99	-11347.85	1235.54	0.00	409012.23	632865.02	N 32.124108	W 104.037674
	20200.00	90.00	179.90	9778.00	11449.99	-11447.85	1235.72	0.00	408912.24	632865.20	N 32.123834	W 104.037674
Cimarex Riverbend 12-13 Federal Com 19H - BHL [330' FSL 1660' FEL]	20271.09	90.00	179.90	9778.00	11521.08	-11518.94	1235.84	0.00	408841.15	632865.32	N 32.123638	W 104.037674

Survey Type: Def Plan

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	23.000	1/100.000	17.500	13.375		A001Mb_MWD-Depth Only	Cimarex Riverbend 12-13 Federal Com 19H / Cimarex Riverbend 12-
	1	23.000	9400.000	1/100.000	17.500	13.375		A001Mb_MWD	Cimarex Riverbend 12-13 Federal Com 19H / Cimarex Riverbend 12-
	1	9400.000	20271.093	1/100.000	17.500	13.375		A008Mb_MWD+IFR1+MS	Cimarex Riverbend 12-13 Federal Com 19H / Cimarex Riverbend 12-
MD From (ft)	MD To (ft)	Grid Convergence (deg)	Declination (deg)	Dip Angle (deg)	Field Strength (nT)	Geomag Model	Geomag Date	Gravity Model (mgm (9.80665 Based))	Grid Scale Factor
0.000	20271.090	0.155	6.652	59.757	47528.525	HDGM 2022	10/3/2022	GARM	998.460 0.999918428

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

Fill Line

Flowline

2000# (2M)
BOP

SRR & A

Annular Preventer

Pipe Rams

Blind Rams

Drilling Spool

Kill Line

2" Minimum Kill Line

1 Kill Line Valve
(Minimum)

2" Minimum Choke Line

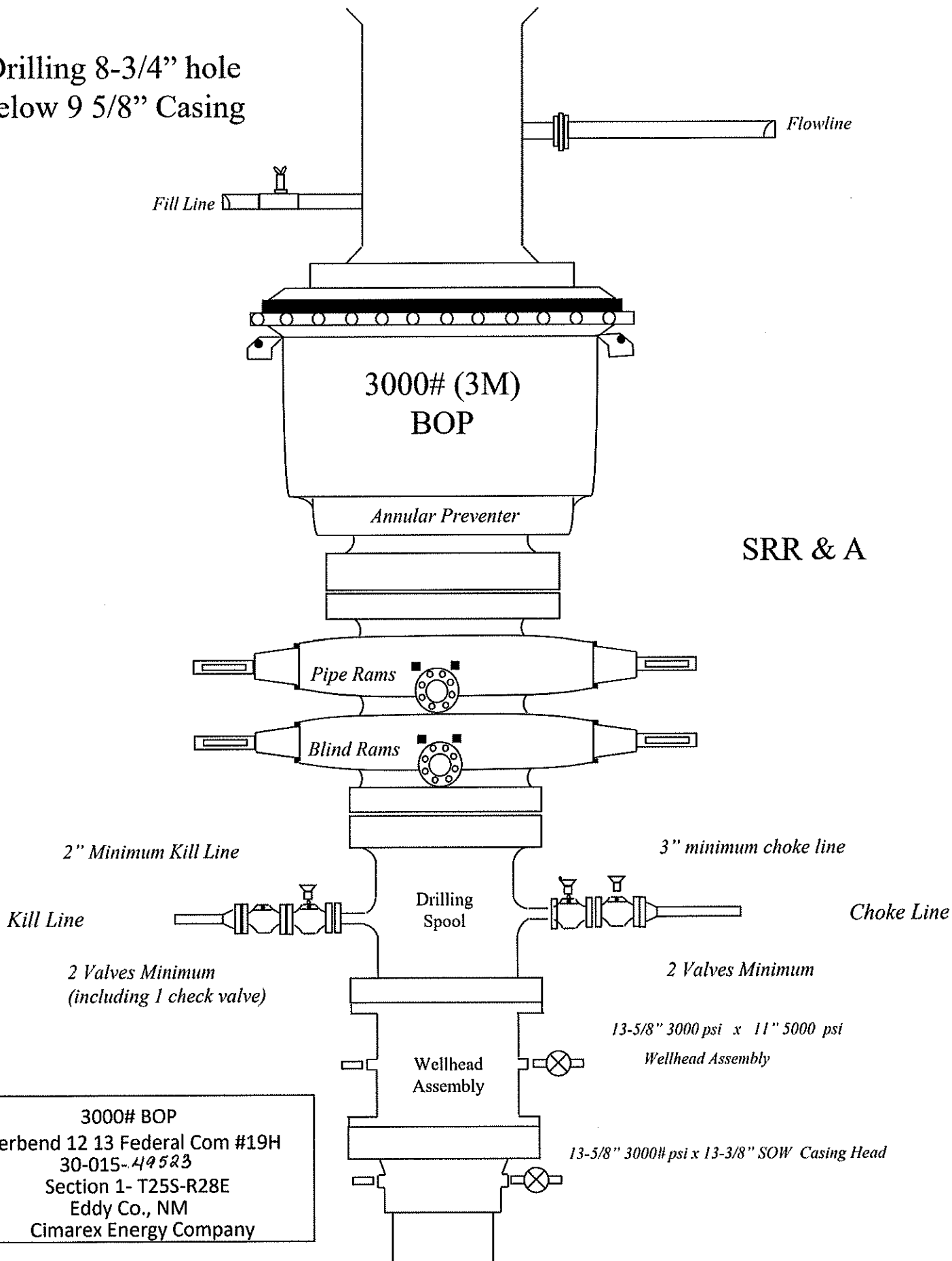
Choke Line

1 Choke Line Valve
(Minimum)

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

2000# BOP
Riverbend 12 13 Federal Com #19H
30-015- 49523
Section 1-T25S-R28E
Eddy Co., NM
Cimarex Energy Company

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



SRR & A

3000# BOP
Riverbend 12 13 Federal Com #19H
30-015-49523
Section 1- T25S-R28E
Eddy Co., NM
Cimarex Energy Company

Drilling 6" Hole
below 7" Casing

5M Annular Preventer

10M Double
Ram BOP

Pipe Rams

Blind Rams

2" Kill Line Valves (2)
with Check Valve

3" Manual Choke Valve
and 3" HCR Valve

2" Kill Line

3" Choke Line

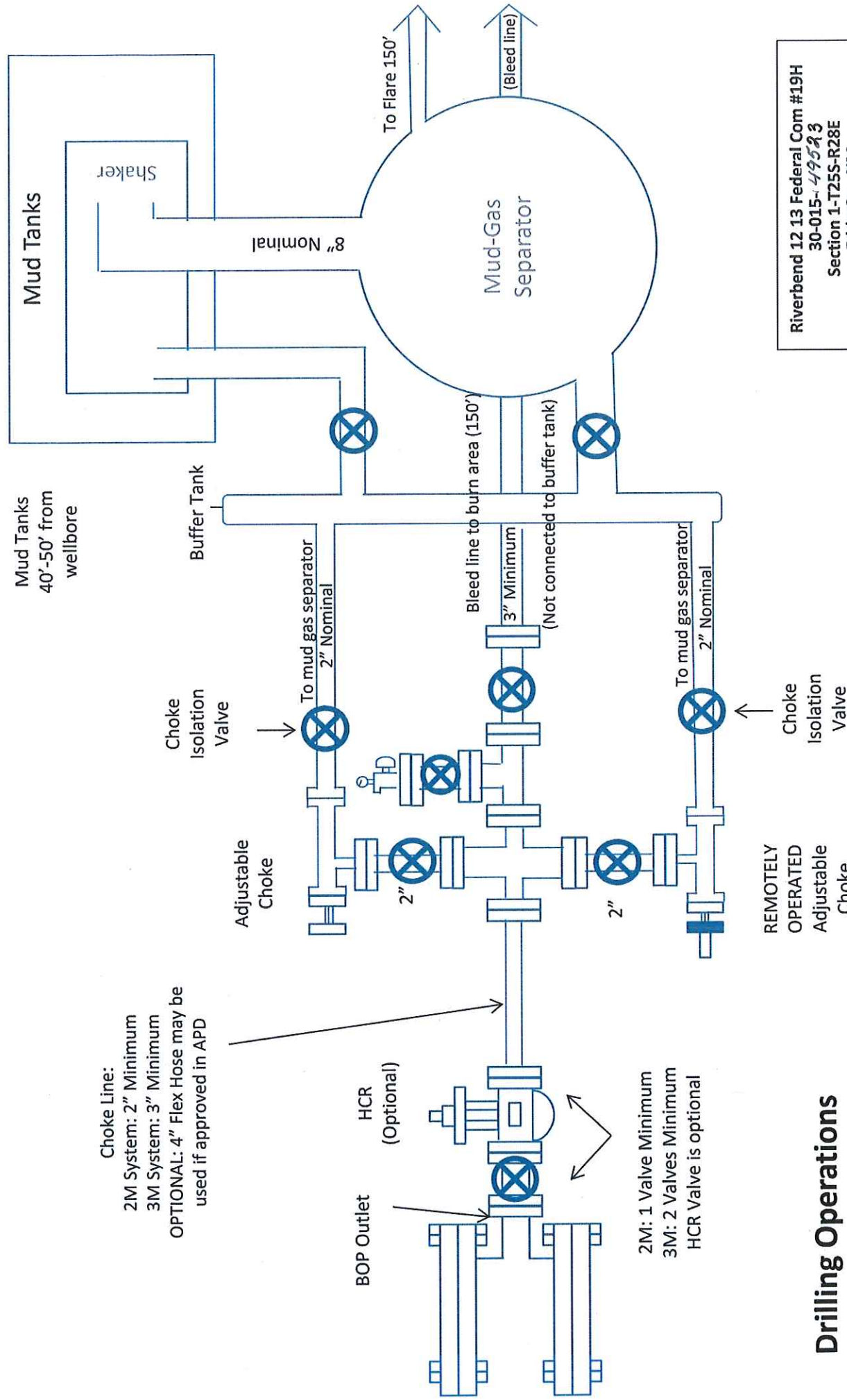
10M Single
Ram BOP

Pipe Rams

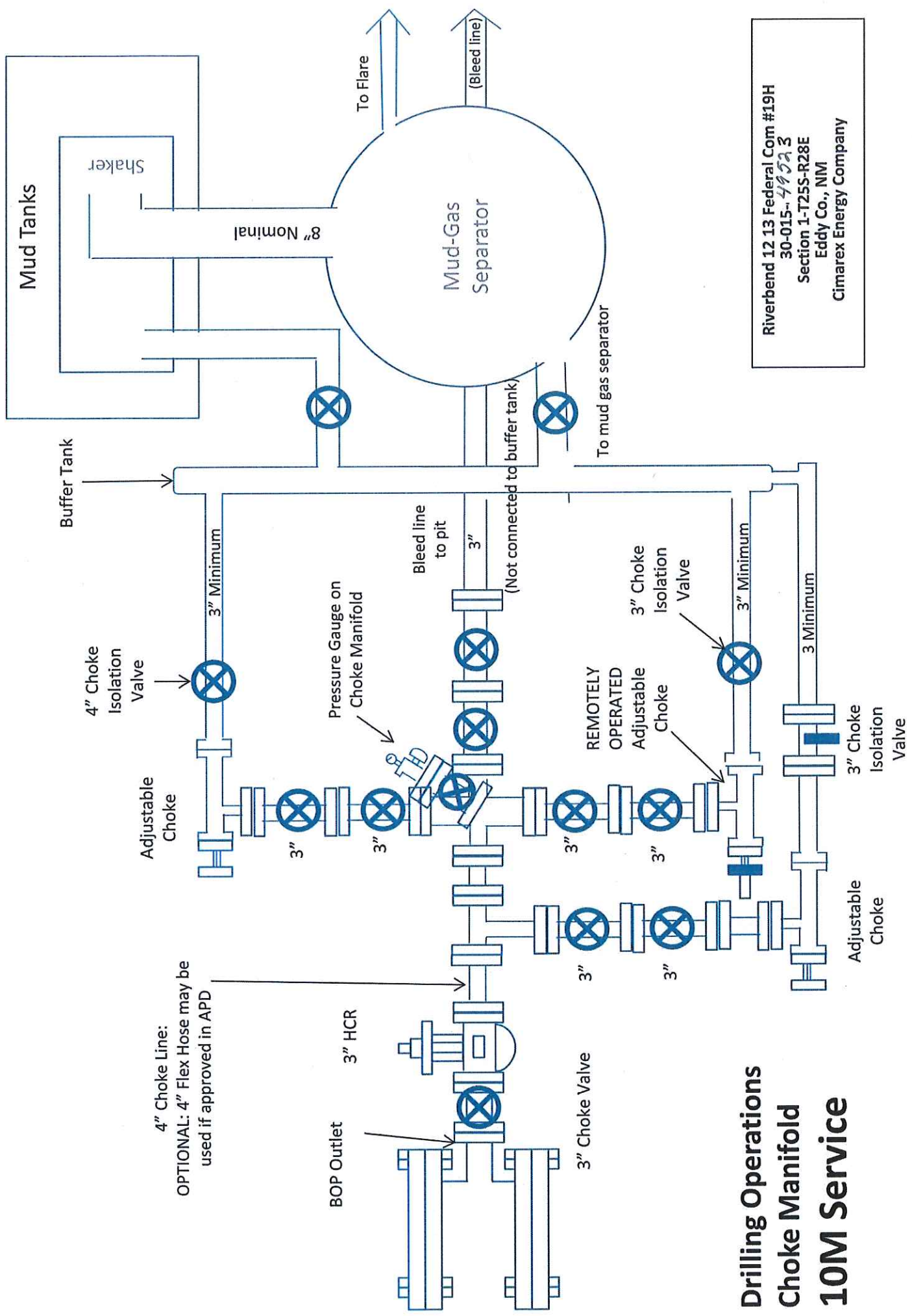
11" 10M x 13-5/8"
5M Casing Spool

13-5/8" 5M x
13-3/8" SOW
Wellhead

10,000# BOP
Riverbend 12 13 Federal Com #19H
30-015-49523
Section 1-T25S-R28E
Eddy Co., NM
Cimarex Energy Company



Riverbend 12 13 Federal Com #19H
30-015-49523
Section 1-T25S-R28E
Eddy Co., NM
Cimarex Energy Company



Drilling Operations Choke Manifold 10M Service

Riverbend 12 13 Federal Com #19H
30-015-44523
Section 1-T25S-R28E
Eddy Co., NM
Cimarex Energy Company



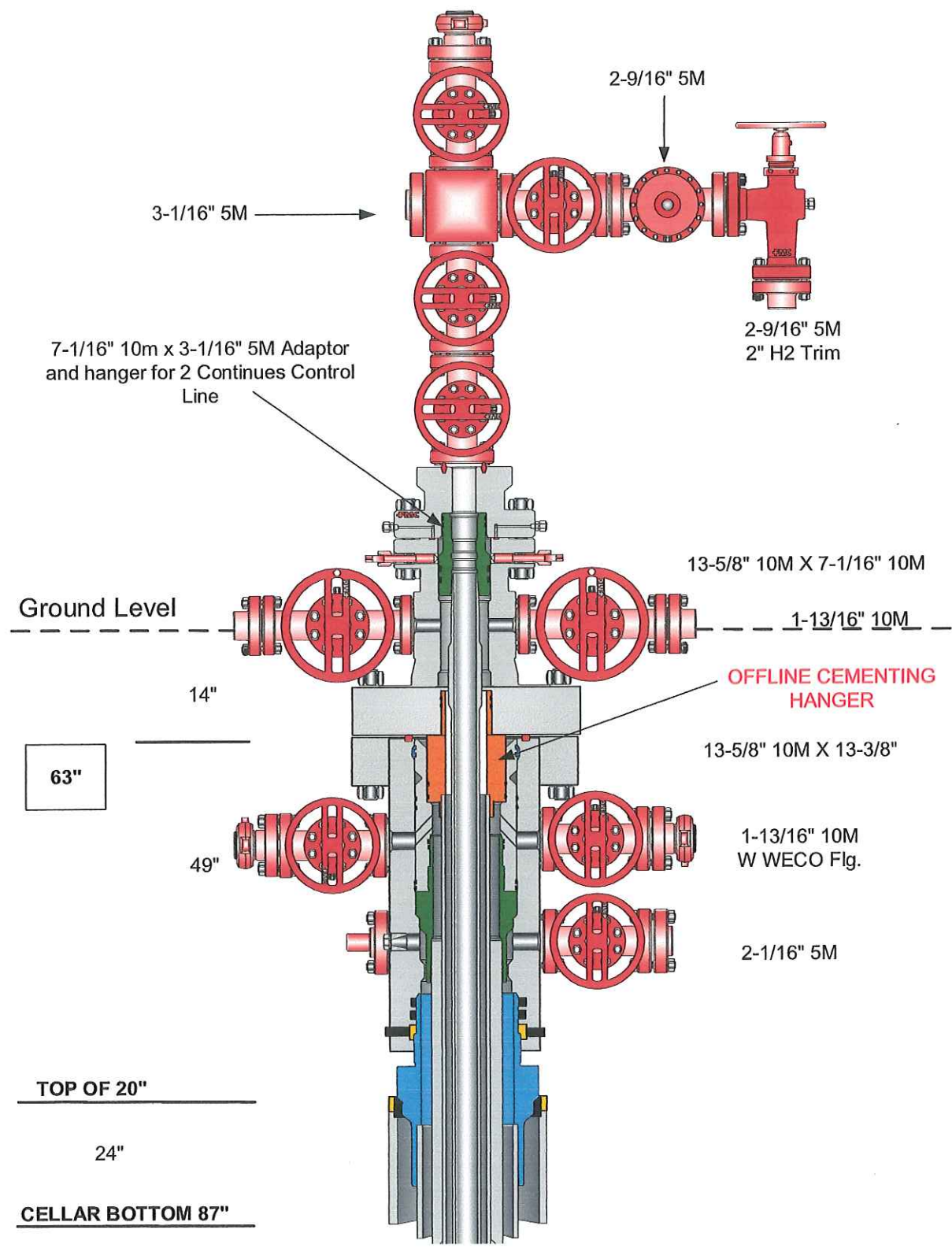
RIVERBEND 12 13 FEDERAL COM #19H - 30-015-49523

CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL

Eddy Co., NM

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	267	267	13-3/8"	48.00	J-55	ST&C	6.40	20.54	33.79
12 1/4	0	2717	2717	9-5/8"	36.00	J-55	ST&C	1.39	2.42	4.03
8 3/4	0	9375	9375	7"	26.00	L-80	LT&C	1.23	1.65	2.03
8 3/4	9375	10013	9699	7"	26.00	L-80	BT&C	1.19	1.60	71.70
6	8375	20271	9730	4-1/2"	11.60	P-110	BT&C	1.25	1.76	23.35
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



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 228314

CONDITIONS

Operator: CIMAREX ENERGY CO. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 228314
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Original COA's still apply.	10/23/2023