

Well Name: RIVERBEND 12-13 FEDERAL COM	Well Location: T25S / R28E / SEC 1 / SESW /	County or Parish/State:
Well Number: 1H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM88128	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001549155	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Notice of Intent

Sundry ID: 2704756

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 11/29/2022

Time Sundry Submitted: 09:40

Date proposed operation will begin: 01/06/2023

Procedure Description: Cimarex Energy Company respectfully requests to change the approved Application for Permit to Drill with the following changes: 1. Change the SHL location 2. Change the FTP 3. The BHL & LTP will remain the same as on the approved APD 4. Change the proposed TD 5. Change the casing and cement detail 6. Request off-line cementing 7. Request approval to skid rig Attachments include updated C-102, updated drilling plan, updated directional drilling survey, updated casing and cement detail

NOI Attachments

Procedure Description

Sundry_notice_information_20221129094023.pdf

Well Name: RIVERBEND 12-13 FEDERAL COM	Well Location: T25S / R28E / SEC 1 / SESW /	County or Parish/State:
Well Number: 1H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM88128	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001549155	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Conditions of Approval

Additional
RIVERBEND_12_13__FED_COM_1H_COA_20230518102454.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 29, 2022 09:40 AM
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: 06/12/2023
Signature: Chris Walls	

CIMAREX ENERGY COMPANY
Riverbend 12 13 Federal Com #1H
30-015-49155
Section 1-T25S-R28E
Eddy Co., NM

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 SHL location as follows:

FROM: 1327' FSL & 2444' FWL (Unit N, SESW)
Section 1-T25S-R28E
Lat 32.155639; Long 104.041557

TO: 1207' FSL & 2482' FWL (Unit N, SESW)
Section 1-T25S-R28E
Lat 32.155307; Long 104.041436

2. Change the FTP as follows:

FROM: 330' FNL & 330' FEL (Unit A, NENE)
Section 12-T25S-R28E
Lat 32.150952; Long 104.033347

TO: 330' FNL & 1217' FEL (Unit A, NENE)
Section 12-T25S-R28E
Lat 32.150998; Long 104.036211

3. The BHL & LTP will remain the same as on the approved Application for Permit to Drill

4. Change the proposed TD as follows:

FROM: 22612' MD; 10869' TVD – Wolfcamp; Pool Code – 98220 – Purple Sage Wolfcamp
(Gas)

TO: 20727' MD; 9778' TVD – Wolfcamp; Pool Code – 98220 – Purple Sage Wolfcamp
(Gas)

5. Casing and cement detail will change. See attached casing & cement detail pages attached.

6. Request approval for off-line cementing

7. Request approval to skid rig

Documents attached are an updated C-102, updated drilling plan, updated directional drilling survey, updated casing and cement details

**Rusty Klein
Regulatory Analyst IV
Cimarex Energy Company
November 28, 2022**

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-49155	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 1H
⁷ GRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 2934.6'

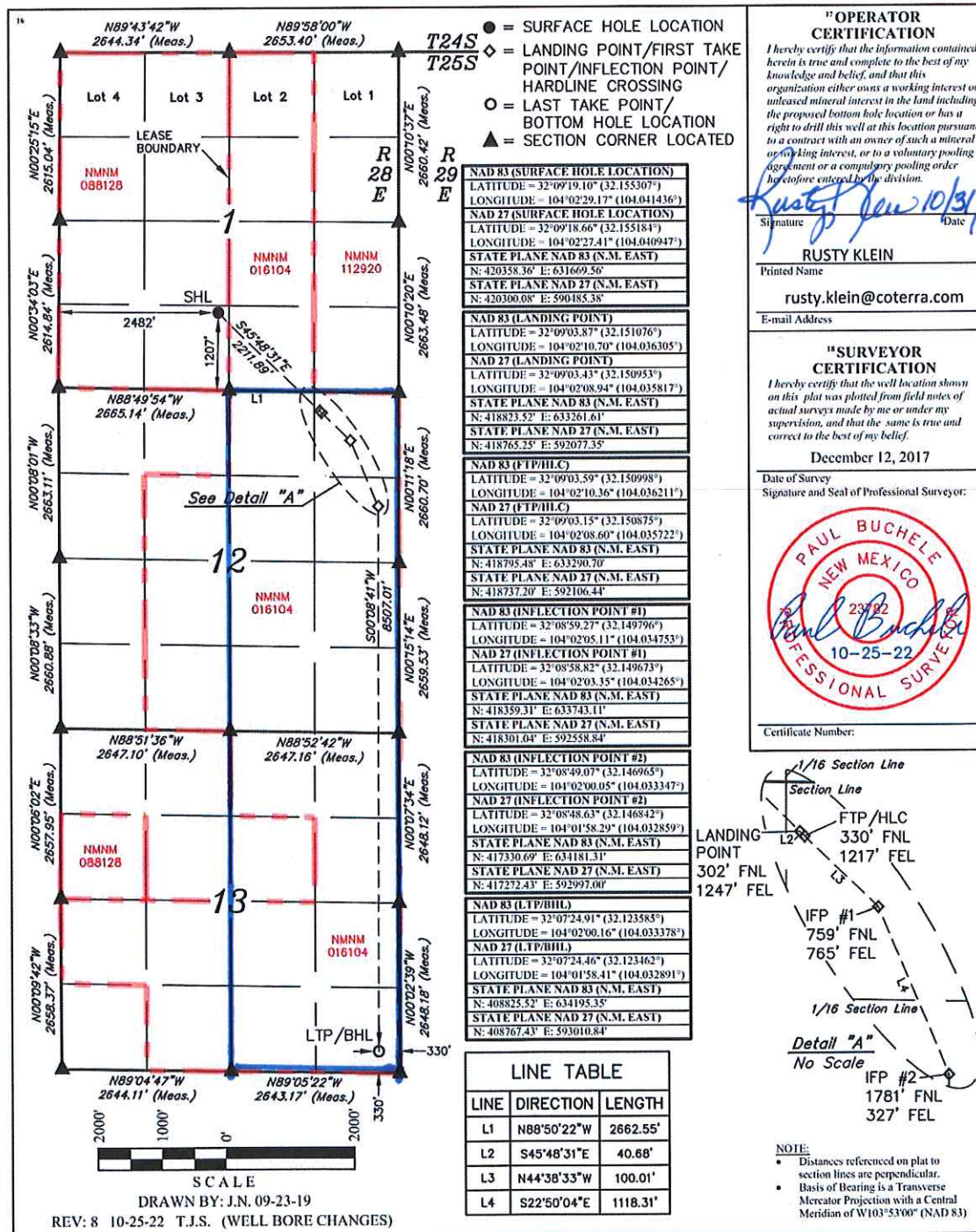
"Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	I	25S	28E		1207	SOUTH	2482	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
P	13	25S	28E		330	SOUTH	330	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.



Cimarex Energy Co., Riverbend 12-13 Federal Com 1H

1. Geological Formations

TVD of target 9,778
MD at TD 20,727

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	217	Useable Water	
Salado	408	N/A	
Castille	2514	N/A	
Bell Canyon	2757	Hydrocarbons	
Cherry Canyon	3695	Hydrocarbons	
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	H-40/J-55 Hybrid	ST&C	6.40	14.96	25.12
12 1/4	0	2717	2717	9-5/8"	36.00	J-55	LT&C	1.40	2.44	4.63
8 3/4	0	9485	9485	7"	26.00	L-80	LT&C	1.22	1.63	2.02
8 3/4	9485	10104	9739	7"	26.00	P-110	BT&C	1.37	2.19	125.68
6	9385	20727	9778	4-1/2"	11.60	P-110	BT&C	1.30	1.83	80.50
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 1H

	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?	N
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?	N

Cimarex Energy Co., Riverbend 12-13 Federal Com 1H

3. Cementing Program

Casing	# Sk	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	432	10.30	3.64	22.18		Lead: Tuned Light + LCM
	105	14.80	1.34	6.32	9.5	Tail: Class C + LCM
	108	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	788	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	2460	25
Production	2460	25
Completion System	9904	10

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

Cimarex Energy Co., Riverbend 12-13 Federal Com 1H

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.

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?

Cimarex Energy Co., Riverbend 12-13 Federal Com 1H

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 267'	FW Spud Mud	7.83 - 8.33	30-32	N/C
267' to 2717'	Brine Water	9.70 - 10.20	30-32	N/C
2717' to 10104'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
10104' to 20727'	OBM	11.00 - 11.50	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.

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	
X	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.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5847 psi
Abnormal Temperature	No

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

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

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

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 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 pressure test 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.

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

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

10. Other Variances

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

Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 1H 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 1H 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 1H 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 #1H
 30-015-49155
 Section 1-T25S-R28E
 Eddy Co., NM

THE CASING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM:

HOLE SIZE	CASING DEPTH FROM	CASING DEPTH TO	SETTING DEPTH TVD	CASING SIZE	WEIGHT (LB/FT)	GRADE	CONN	SF COLLAPSE	SF BURST	SF TENSION
17-1/2"	0	475'	475'	13-3/8"	48#	H-40/J-55 hybrid	ST&C	3.40	7.96	14.12
12-1/4"	0	2660'	2660'	9-5/8"	36#	J-55	LT&C	1.43	2.49	4.73
8-3/4"	0	9722'	9722'	7"	26#	L-80	LT&C	1.19	1.59	1.82
8-3/4"	9722'	11349'	10820'	7"	26#	P-110	BT&C	1.23	1.97	29.07
6"	9700'	22611'	10869'	4-1/2"	11.6#	P-110	BT&C	1.17	1.65	27.06
BLM Minimum Safety Factor								1.125	1	1.6 dry 1.8 wet

TVD was used on all calculations

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

TO:

HOLE SIZE	CASING DEPTH FROM	CASING DEPTH TO	SETTING DEPTH TVD	CASING SIZE	WEIGHT (LB/FT)	GRADE	CONN	SF COLLAPSE	SF BURST	SF TENSION
17-1/2"	0	267'	267'	13-3/8"	48#	H-40/J-55 Hybrid	ST&C	6.40	14.96	25.12
12-1/4"	0	2717'	2717'	9-5/8"	36#	J-55	LT&C	1.40	2.44	4.63
8-3/4"	0	9485'	9485'	7"	26#	L-80	LT&C	1.22	1.63	2.02
8-3/4"	9485'	10104'	9739'	7"	26#	P-110	BT&C	1.37	2.19	125.68
6"	9385'	20727'	9778'	4-1/2"	11.6#	P-110	BT&C	1.3	1.83	80.50
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 #1H
 30-015-49155
 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	136	14.80	1.34	6.32	9.5	Lead: Class C + LCM
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
INTERMEDIATE	509	12.90	1.88	9.65	12	Lead: 35:65 Poz C, Salt & bentonite
	156	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	901	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	89	14.80	1.34	6.32	9.50	Tail: Class C + LCM
Completion	835	14.20	1.30	5.86	14.30	Tail: 50:50 Poz + salt + bentonite + fluid loss + dispersant + SMS

CASING STRING	TOC	% EXCESS
SURFACE	0	34
INTERMEDIATE	0	49
PRODUCTION	2460	25
COMPLETION	11149	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	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	432	10.30	3.64	22.18		Lead: Tuned light + LCM
	105	14.80	1.34	6.32	9.5	Tail: Class C + LCM

	108	14.20	1.30	5.86	14.30	Tail: 50 50 Poz H + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	788	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	2460	25
PRODUCTION	2460	25
COMPLETION	9904	10

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



Cimarex Riverbend 12-13 Federal Com 1H Rev6 kFc 03Oct22 Proposal

Geodetic Report

30 - 015 - 49 / 55

(Def Plan)



Report Date: October 03, 2022 - 08:47 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Riverbend 12-13 Federal Com 1H / 1H
Well: Riverbend 12-13 Federal Com 1H
Borehole: Riverbend 12-13 Federal Com 1H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Riverbend 12-13 Federal Com 1H Rev6 kFc 03Oct22
Survey Date: October 03, 2022
Tort / AHD / DDI / ERD Ratio: 135.948 * / 12535.078 ft / 6.558 / 1.282
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 9' 19.10464", W 104° 2' 29.16897"
Location Grid N/E Y/X: N 420358.360 RUS, E 631669.560 RUS
CRS Grid Convergence Angle: 0.1554 °
Grid Scale Factor: 0.99991844
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: 2957.600 ft above MSL
Seabed / Ground Elevation: 2934.600 ft above MSL
Magnetic Declination: 6.652 °
Total Gravity Field Strength: 988.4601mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47528.528 nT
Magnetic Dip Angle: 59.757 °
Declination Date: October 03, 2022
Magnetic Declination Model: HDGM 2022
North Reference: Grid North
Grid Convergence Used: 0.1554 °
Total Corr Mag North->Grid North: 6.4962 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [1207' FSL, 2482' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	420358.36	631669.56	N 32.155307	W 104.041436
Rustler	100.00	0.00	133.95	100.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	200.00	0.00	133.95	200.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	218.40	0.00	133.95	218.40	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	300.00	0.00	133.95	300.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	400.00	0.00	133.95	400.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
Salado	409.40	0.00	133.95	409.40	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	500.00	0.00	133.95	500.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	600.00	0.00	133.95	600.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	700.00	0.00	133.95	700.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	800.00	0.00	133.95	800.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	900.00	0.00	133.95	900.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1000.00	0.00	133.95	1000.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1100.00	0.00	133.95	1100.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1200.00	0.00	133.95	1200.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1300.00	0.00	133.95	1300.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
Nudge, 2°/100ft Castille	1400.00	0.00	133.95	1400.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1500.00	0.00	133.95	1500.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1600.00	0.00	133.95	1600.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1700.00	0.00	133.95	1700.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1800.00	0.00	133.95	1800.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	1900.00	0.00	133.95	1900.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	2000.00	0.00	133.95	2000.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	2100.00	0.00	133.95	2100.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	2200.00	0.00	133.95	2200.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	2300.00	0.00	133.95	2300.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
Bell Canyon	2400.00	0.00	133.95	2400.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	2500.00	0.00	133.95	2500.00	0.00	0.00	0.00	0.00	420358.36	631669.56	N 32.155307	W 104.041436
	2515.61	0.31	133.95	2515.61	0.03	-0.03	0.03	2.00	420358.33	631669.59	N 32.155307	W 104.041436
	2600.00	2.00	133.95	2599.98	1.21	-1.21	1.26	2.00	420357.15	631670.82	N 32.155304	W 104.041432
	2700.00	4.00	133.95	2699.84	4.85	-4.84	5.02	2.00	420353.52	631674.58	N 32.155293	W 104.041420
	2708.73	4.17	133.95	2708.65	5.29	-5.28	5.47	2.00	420353.08	631675.03	N 32.155292	W 104.041418
	2800.00	6.00	133.95	2799.45	10.91	-10.89	11.30	2.00	420347.47	631680.86	N 32.155277	W 104.041399
	2900.00	8.00	133.95	2898.70	19.39	-19.35	20.07	2.00	420339.01	631689.63	N 32.155254	W 104.041371
	3000.00	10.00	133.95	2897.47	30.26	-30.21	31.33	2.00	420328.16	631700.89	N 32.155224	W 104.041335
	3100.00	12.00	133.95	3095.62	43.53	-43.45	45.07	2.00	420314.91	631714.63	N 32.155187	W 104.041291
Hold	3153.15	13.06	133.95	3147.51	51.55	-51.45	53.37	2.00	420306.91	631722.93	N 32.155165	W 104.041264
	3200.00	13.06	133.95	3193.14	58.91	-58.80	60.99	2.00	420299.56	631730.55	N 32.155145	W 104.041239
	3300.00	13.06	133.95	3290.56	74.62	-74.49	77.27	0.00	420283.88	631746.82	N 32.155102	W 104.041187
	3400.00	13.06	133.95	3387.97	90.34	-90.18	93.54	0.00	420268.19	631763.09	N 32.155058	W 104.041134
	3500.00	13.06	133.95	3485.38	106.06	-105.86	109.81	0.00	420252.50	631779.36	N 32.155015	W 104.041082
	3600.00	13.06	133.95	3582.79	121.77	-121.55	126.08	0.00	420236.82	631795.63	N 32.154972	W 104.041030
	3700.00	13.06	133.95	3680.20	137.49	-137.24	142.35	0.00	420221.13	631811.90	N 32.154929	W 104.040977
	3717.02	13.06	133.95	3696.78	140.16	-139.91	145.12	0.00	420218.46	631814.67	N 32.154921	W 104.040968
	3800.00	13.06	133.95	3777.62	153.20	-152.93	158.63	0.00	420205.45	631828.17	N 32.154885	W 104.040925
	3900.00	13.06	133.95	3875.03	168.92	-168.61	174.90	0.00	420189.76	631844.44	N 32.154842	W 104.040872
Cherry Canyon	4000.00	13.06	133.95	3972.44	184.63	-184.30	191.17	0.00	420174.07	631860.71	N 32.154799	W 104.040820
	4100.00	13.06	133.95	4069.85	200.35	-199.99	207.44	0.00	420158.39	631876.99	N 32.154756	W 104.040767
	4200.00	13.06	133.95	4167.27	216.07	-215.68	223.71	0.00	420142.70	631893.26	N 32.154712	W 104.040715
	4300.00	13.06	133.95	4264.68	231.78	-231.36	239.99	0.00	420127.02	631909.53	N 32.154669	W 104.040682
	4400.00	13.06	133.95	4362.09	247.50	-247.05	256.26	0.00	420111.33	631925.80	N 32.154626	W 104.040610
	4500.00	13.06	133.95	4459.50	263.21	-262.74	272.53	0.00	420095.64	631942.07	N 32.154583	W 104.040558
	4600.00	13.06	133.95	4556.91	278.93	-278.42	288.80	0.00	420079.96	631958.34	N 32.154539	W 104.040505
	4700.00	13.06	133.95	4654.33	294.64	-294.11	305.07	0.00	420064.27	631974.61	N 32.154496	W 104.040453
	4800.00	13.06	133.95	4751.74	310.36	-309.80	321.35	0.00	420048.59	631990.88	N 32.154453	W 104.040400
	4900.00	13.06	133.95	4849.15	326.08	-325.49	337.62	0.00	420032.90	632007.15	N 32.154410	W 104.040348
Brushy Canyon	5000.00	13.06	133.95	4946.56	341.79	-341.17	353.89	0.00	420017.21	632023.42	N 32.154366	W 104.040295
	5100.00	13.06	133.95	5043.98	357.51	-356.86	370.16	0.00	420001.53	632039.69	N 32.154323	W 104.040243
	5200.00	13.06	133.95	5141.39	373.22	-372.55	386.43	0.00	419985.84	632055.96	N 32.154280	W 104.040191
	5300.00	13.06	133.95	5238.80	388.94	-388.24	402.71	0.00	419970.16	632072.23	N 32.154237	W 104.040138
	5357.91	13.06	133.95	5295.21	398.04	-397.32	412.13	0.00	419961.07	632081.66	N 32.154212	W 104.040108
	5400.00	13.06	133.95	5336.21	404.65	-403.92	418.98	0.00	419954.47	632088.50	N 32.154193	W 104.040086
	5500.00	13.06	133.95	5433.62	420.37	-419.61	435.25	0.00	419938.79	632104.77	N 32.154150	W 104.040033
	5600.00	13.06	133.95	5531.04	436.08	-435.30	451.52	0.00	419923.10	632121.05	N 32.154107	W 104.039981
	5700.00	13.06	133.95	5628.45	451.80	-450.98	467.79	0.00	419907.41	632137.32	N 32.154064	W 104.039928
	5800.00	13.06	133.95	5725.86	467.52	-466.67	484.07	0.00	419891.73	632153.59	N 32.154021	W 104.039876
Bone Spring	5900.00	13.06	133.95	5823.27	483.23	-482.36	500.34	0.00	419876.04	632169.86	N 32.153977	W 104.039823
	6000.00	13.06	133.95	5920.68	498.95	-498.05	516.61	0.00	419860.36	632186.13	N 32.153934	W 104.039771
	6100.00	13.06	133.95	6018.10	514.66	-513.73	532.88	0.00	419844.67	632202.40	N 32.153891	W 104.039719
	6200.00	13.06	133.95	6115.51	530.38	-529.42	549.15	0.00	419828.98	632218.67	N 32.153848	W 104.039666
	6274.98	13.06	133.95	6188.55	542.16	-541.18	561.36	0.00	419817.22	632230.87	N 32.153815	W 104.039627
	6300.00	13.06	133.95	6212.92	546.09	-545.11	565.43	0.00	419813.30	632234.94	N 32.153804	W 104.039614
	6400.00	13.06	133.95	6310.33	561.81	-560.80	581.70	0.00	419797.61	632251.21	N 32.153761	W 104.039561
	6500.00	13.06	133.95	6407.75	577.53	-576.48	597.97	0.00	419781.93	632267.48	N 32.153718	W 104.039509
	6521.36	13.06	133.95	6428.55	580.88	-579.83	601.45	0.00	419778.98	632270.96	N 32.153709	W 104.039498
	6600.00	13.06	133.95	6505.16	593.24	-592.17	614.24	0.00	419766.24	632283.75	N 32.153675	W 104.039456

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	6638.08	13.06	133.95	6542.25	599.22	-598.14	620.44	0.00	419760.27	632289.95	N 32.153658	W 104.039436
	6700.00	13.06	133.95	6602.57	608.96	-607.88	630.51	0.00	419750.55	632300.02	N 32.153631	W 104.039404
	6800.00	13.06	133.95	6699.98	624.67	-623.54	646.79	0.00	419734.67	632316.29	N 32.153588	W 104.039352
	6900.00	13.06	133.95	6797.39	640.39	-639.23	663.06	0.00	419719.18	632332.56	N 32.153545	W 104.039299
	7000.00	13.06	133.95	6894.81	656.10	-654.92	679.33	0.00	419703.50	632348.83	N 32.153502	W 104.039247
	7100.00	13.08	133.95	6992.22	671.82	-670.61	695.60	0.00	419687.81	632365.10	N 32.153458	W 104.039194
	7193.50	13.06	133.95	7083.30	686.51	-685.27	710.82	0.00	419673.14	632380.32	N 32.153418	W 104.039145
	7200.00	13.06	133.95	7089.63	687.53	-686.29	711.87	0.00	419672.12	632381.38	N 32.153415	W 104.039142
	7300.00	13.06	133.95	7187.04	703.25	-701.98	726.15	0.00	419656.44	632397.65	N 32.153372	W 104.039099
	7400.00	13.06	133.95	7284.46	718.97	-717.87	744.42	0.00	419640.75	632413.92	N 32.153329	W 104.039037
BS "C" Shale	7496.58	13.06	133.95	7368.79	732.57	-731.25	758.51	0.00	419627.17	632428.00	N 32.153291	W 104.038991
	7500.00	13.06	133.95	7381.87	734.68	-733.36	760.69	0.00	419625.07	632430.19	N 32.153285	W 104.038984
	7600.00	13.06	133.95	7479.28	750.40	-749.04	776.96	0.00	419609.38	632446.45	N 32.153242	W 104.038932
	7700.00	13.06	133.95	7576.69	766.11	-764.73	793.23	0.00	419593.69	632462.73	N 32.153199	W 104.038880
	7800.00	13.06	133.95	7674.10	781.83	-780.42	809.51	0.00	419578.01	632479.00	N 32.153156	W 104.038827
	7900.00	13.06	133.95	7771.52	797.54	-796.10	825.76	0.00	419562.32	632495.27	N 32.153112	W 104.038775
	8000.00	13.06	133.95	7868.93	813.26	-811.79	842.05	0.00	419546.64	632511.54	N 32.153069	W 104.038722
	8100.00	13.06	133.95	7966.34	828.98	-827.48	858.32	0.00	419530.95	632527.81	N 32.153026	W 104.038670
	8200.00	13.06	133.95	8063.75	844.69	-843.17	874.59	0.00	419515.26	632544.08	N 32.152983	W 104.038617
	8300.00	13.06	133.95	8161.16	860.41	-858.85	890.87	0.00	419499.58	632560.35	N 32.152939	W 104.038565
2nd BS SS	8313.46	13.06	133.95	8174.28	862.52	-860.97	893.06	0.00	419497.47	632562.54	N 32.152934	W 104.038558
	8400.00	13.06	133.95	8258.58	876.12	-874.54	907.14	0.00	419483.89	632578.82	N 32.152896	W 104.038513
	8500.00	13.06	133.95	8355.99	891.84	-890.23	923.41	0.00	419468.21	632595.09	N 32.152853	W 104.038460
	8600.00	13.06	133.95	8453.40	907.55	-905.81	939.68	0.00	419452.52	632609.16	N 32.152810	W 104.038408
	8700.00	13.06	133.95	8550.81	923.27	-921.60	955.95	0.00	419436.83	632625.43	N 32.152767	W 104.038355
	8800.00	13.06	133.95	8648.23	938.98	-937.29	972.23	0.00	419421.15	632641.71	N 32.152723	W 104.038303
	8900.00	13.06	133.95	8745.64	954.70	-952.88	988.50	0.00	419405.46	632657.98	N 32.152680	W 104.038250
	8987.37	13.06	133.95	8830.75	968.43	-966.68	1002.72	0.00	419391.76	632672.19	N 32.152642	W 104.038205
	9000.00	13.06	133.95	8843.05	970.42	-968.66	1004.77	0.00	419389.78	632674.25	N 32.152637	W 104.038198
	9100.00	13.06	133.95	8940.46	986.13	-984.35	1021.04	0.00	419374.09	632690.52	N 32.152594	W 104.038145
3rd BS SS	9200.00	13.06	133.95	9037.87	1001.85	-1000.04	1037.31	0.00	419358.41	632706.79	N 32.152550	W 104.038093
	9300.00	13.06	133.95	9135.29	1017.56	-1015.73	1053.59	0.00	419342.72	632723.06	N 32.152507	W 104.038041
	9400.00	13.06	133.95	9232.70	1033.28	-1031.41	1069.86	0.00	419327.03	632739.33	N 32.152464	W 104.037989
	9460.80	13.06	133.95	9291.93	1042.83	-1040.95	1079.75	0.00	419317.50	632749.22	N 32.152438	W 104.037956
	9484.51	13.08	133.95	9315.02	1046.55	-1044.67	1083.61	0.00	419313.78	632753.08	N 32.152427	W 104.037944
	9500.00	14.61	133.95	9330.06	1049.14	-1047.24	1086.28	10.00	419311.21	632755.75	N 32.152420	W 104.037935
	9600.00	24.61	133.95	9424.14	1072.44	-1070.51	1110.41	10.00	419287.94	632779.88	N 32.152356	W 104.037857
	9700.00	34.61	133.95	9510.97	1106.76	-1104.76	1145.94	10.00	419253.69	632815.40	N 32.152282	W 104.037743
	9800.00	44.61	133.95	9587.91	1151.03	-1148.96	1191.78	10.00	419209.50	632861.24	N 32.152140	W 104.037595
	9900.00	54.61	133.95	9652.62	1203.93	-1201.75	1246.55	10.00	419156.71	632916.00	N 32.151994	W 104.037419
Wolfcamp A Section 1-12 Line Cross	9932.63	57.87	133.95	9670.75	1222.79	-1220.58	1266.07	10.00	419137.98	632935.53	N 32.151942	W 104.037356
	9944.16	59.03	133.95	9678.78	1229.62	-1227.40	1273.15	10.00	419131.06	632942.60	N 32.151924	W 104.037333
	9978.15	62.43	133.95	9693.40	1250.23	-1247.97	1294.49	10.00	419110.49	632963.94	N 32.151867	W 104.037264
	10000.00	64.61	133.95	9703.14	1263.83	-1261.55	1308.57	10.00	419096.82	632978.02	N 32.151829	W 104.037219
	10100.00	74.61	133.95	9737.94	1328.92	-1326.52	1375.97	10.00	419031.95	633045.41	N 32.151650	W 104.037002
	10103.88	75.00	133.95	9738.95	1331.52	-1329.12	1378.66	10.00	419029.35	633048.11	N 32.151643	W 104.036993
	10200.00	79.81	133.95	9759.91	1396.73	-1394.21	1446.18	5.00	418964.27	633115.62	N 32.151464	W 104.036776
	10264.31	83.02	133.95	9769.51	1440.94	-1438.34	1491.95	5.00	418920.14	633167.39	N 32.151342	W 104.036628
	10300.00	84.81	133.95	9773.29	1465.61	-1462.97	1517.50	5.00	418865.51	633186.93	N 32.151274	W 104.036546
	10400.00	89.81	133.95	9777.99	1535.05	-1532.28	1589.39	5.00	418826.21	633258.82	N 32.151083	W 104.036314
Landing Point 330R Hardline Cross	10403.88	90.00	133.95	9778.00	1537.74	-1534.87	1592.18	5.00	418823.52	633261.61	N 32.151076	W 104.036305
	10444.56	90.00	133.95	9778.00	1566.03	-1563.20	1621.46	0.00	418795.29	633290.89	N 32.150998	W 104.036211
	10500.00	90.00	133.95	9778.00	1604.58	-1601.68	1661.38	0.00	418756.81	633330.80	N 32.150892	W 104.036082
	10600.00	90.00	133.95	9778.00	1674.11	-1671.09	1733.37	0.00	418687.41	633402.79	N 32.150701	W 104.035850
	10700.00	90.00	133.95	9778.00	1743.64	-1740.49	1805.36	0.00	418618.01	633474.77	N 32.150509	W 104.035618
	10800.00	90.00	133.95	9778.00	1813.17	-1809.90	1877.38	0.00	418548.61	633546.76	N 32.150318	W 104.035386
	10900.00	90.00	133.95	9778.00	1882.70	-1879.30	1949.35	0.00	418479.21	633618.75	N 32.150127	W 104.035154
	11000.00	90.00	133.95	9778.00	1952.23	-1948.71	2021.34	0.00	418409.81	633690.73	N 32.149935	W 104.034922
	11100.00	90.00	135.04	9778.00	2021.95	-2018.50	2093.15	4.00	418340.23	633762.54	N 32.149743	W 104.034691
	11200.00	90.00	139.04	9778.00	2095.24	-2091.47	2161.29	4.00	418267.07	633830.66	N 32.149542	W 104.034471
Cimarex Riverbend 12-13 Federal Com 1H - IFP1, Turn 4"/100ft	11300.00	90.00	143.04	9778.00	2173.09	-2169.21	2224.15	4.00	418189.33	633893.52	N 32.149328	W 104.034269
	11400.00	90.00	147.04	9778.00	2255.13	-2251.15	2281.44	4.00	418107.39	633956.00	N 32.149102	W 104.034055
	11500.00	90.00	151.04	9778.00	2340.66	-2336.89	2332.67	4.00	418021.67	634002.23	N 32.148866	W 104.033919
	11600.00	90.00	155.04	9778.00	2430.15	-2426.00	2378.19	4.00	417932.56	634047.55	N 32.148621	W 104.033774
	11700.00	90.00	159.04	9778.00	2522.28	-2518.06						

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 °)
	14900.00	90.00	179.90	9778.00	5710.84	-5706.45	2516.63	0.00	414652.38	634185.98	N 32.139603	W 104.033358
	15000.00	90.00	179.90	9778.00	5810.84	-5806.45	2516.81	0.00	414552.39	634186.16	N 32.139328	W 104.033358
	15100.00	90.00	179.90	9778.00	5910.84	-5906.45	2516.98	0.00	414452.40	634186.33	N 32.139053	W 104.033358
	15200.00	90.00	179.90	9778.00	6010.84	-6006.45	2517.16	0.00	414352.41	634186.51	N 32.138778	W 104.033357
	15300.00	90.00	179.90	9778.00	6110.84	-6106.45	2517.33	0.00	414252.42	634186.68	N 32.138503	W 104.033357
	15400.00	90.00	179.90	9778.00	6210.84	-6206.45	2517.50	0.00	414152.43	634186.85	N 32.138228	W 104.033357
	15500.00	90.00	179.90	9778.00	6310.84	-6306.45	2517.68	0.00	414052.43	634187.03	N 32.137953	W 104.033358
	15600.00	90.00	179.90	9778.00	6410.84	-6406.45	2517.85	0.00	413952.44	634187.20	N 32.137679	W 104.033358
	15700.00	90.00	179.90	9778.00	6510.84	-6506.45	2518.03	0.00	413852.45	634187.38	N 32.137404	W 104.033358
Section 12-13 Line Cross	15760.75	90.00	179.90	9778.00	6571.58	-6567.20	2518.13	0.00	413791.71	634187.48	N 32.137237	W 104.033359
	15800.00	90.00	179.90	9778.00	6610.84	-6606.45	2518.20	0.00	413752.46	634187.55	N 32.137129	W 104.033359
	15900.00	90.00	179.90	9778.00	6710.84	-6706.45	2518.38	0.00	413652.47	634187.73	N 32.136854	W 104.033359
	16000.00	90.00	179.90	9778.00	6810.84	-6806.45	2518.55	0.00	413552.48	634187.90	N 32.136579	W 104.033359
	16100.00	90.00	179.90	9778.00	6910.84	-6906.45	2518.73	0.00	413452.49	634188.08	N 32.136304	W 104.033360
	16200.00	90.00	179.90	9778.00	7010.84	-7006.45	2518.90	0.00	413352.49	634188.25	N 32.136029	W 104.033360
	16300.00	90.00	179.90	9778.00	7110.84	-7106.45	2519.08	0.00	413252.50	634188.42	N 32.135754	W 104.033360
	16400.00	90.00	179.90	9778.00	7210.84	-7206.45	2519.25	0.00	413152.51	634188.60	N 32.135480	W 104.033361
	16500.00	90.00	179.90	9778.00	7310.84	-7306.45	2519.42	0.00	413052.52	634188.77	N 32.135205	W 104.033361
	16600.00	90.00	179.90	9778.00	7410.84	-7406.45	2519.60	0.00	412952.53	634188.95	N 32.134930	W 104.033361
	16700.00	90.00	179.90	9778.00	7510.84	-7506.45	2519.77	0.00	412852.54	634189.12	N 32.134655	W 104.033362
	16800.00	90.00	179.90	9778.00	7610.84	-7606.45	2519.95	0.00	412752.54	634189.30	N 32.134380	W 104.033362
	16900.00	90.00	179.90	9778.00	7710.84	-7706.45	2520.12	0.00	412652.55	634189.47	N 32.134105	W 104.033362
	17000.00	90.00	179.90	9778.00	7810.84	-7806.45	2520.30	0.00	412552.56	634189.65	N 32.133830	W 104.033363
	17100.00	90.00	179.90	9778.00	7910.84	-7906.45	2520.47	0.00	412452.57	634189.82	N 32.133556	W 104.033363
	17200.00	90.00	179.90	9778.00	8010.84	-8006.45	2520.65	0.00	412352.58	634189.99	N 32.133281	W 104.033363
	17300.00	90.00	179.90	9778.00	8110.84	-8106.45	2520.82	0.00	412252.59	634190.17	N 32.133006	W 104.033364
	17400.00	90.00	179.90	9778.00	8210.84	-8206.45	2520.99	0.00	412152.60	634190.34	N 32.132731	W 104.033364
	17500.00	90.00	179.90	9778.00	8310.84	-8306.45	2521.17	0.00	412052.60	634190.52	N 32.132456	W 104.033364
	17600.00	90.00	179.90	9778.00	8410.84	-8406.45	2521.34	0.00	411952.61	634190.69	N 32.132181	W 104.033365
	17700.00	90.00	179.90	9778.00	8510.84	-8506.45	2521.52	0.00	411852.62	634190.87	N 32.131906	W 104.033365
	17800.00	90.00	179.90	9778.00	8610.84	-8606.45	2521.69	0.00	411752.63	634191.04	N 32.131631	W 104.033366
	17900.00	90.00	179.90	9778.00	8710.84	-8706.45	2521.87	0.00	411652.64	634191.22	N 32.131357	W 104.033366
	18000.00	90.00	179.90	9778.00	8810.84	-8806.45	2522.04	0.00	411552.65	634191.39	N 32.131082	W 104.033366
	18100.00	90.00	179.90	9778.00	8910.84	-8906.45	2522.22	0.00	411452.66	634191.56	N 32.130807	W 104.033367
	18200.00	90.00	179.90	9778.00	9010.84	-9006.45	2522.39	0.00	411352.66	634191.74	N 32.130532	W 104.033367
	18300.00	90.00	179.90	9778.00	9110.84	-9106.45	2522.56	0.00	411252.67	634191.91	N 32.130257	W 104.033367
	18400.00	90.00	179.90	9778.00	9210.84	-9206.45	2522.74	0.00	411152.68	634192.09	N 32.129982	W 104.033368
	18500.00	90.00	179.90	9778.00	9310.84	-9306.45	2522.91	0.00	411052.69	634192.26	N 32.129707	W 104.033368
	18600.00	90.00	179.90	9778.00	9410.84	-9406.45	2523.09	0.00	410952.70	634192.44	N 32.129433	W 104.033368
	18700.00	90.00	179.90	9778.00	9510.84	-9506.45	2523.26	0.00	410852.71	634192.61	N 32.129158	W 104.033369
	18800.00	90.00	179.90	9778.00	9610.84	-9606.45	2523.44	0.00	410752.72	634192.79	N 32.128883	W 104.033369
	18900.00	90.00	179.90	9778.00	9710.84	-9706.45	2523.61	0.00	410652.72	634192.96	N 32.128608	W 104.033369
	19000.00	90.00	179.90	9778.00	9810.84	-9806.45	2523.79	0.00	410552.73	634193.14	N 32.128333	W 104.033370
	19100.00	90.00	179.90	9778.00	9910.84	-9906.45	2523.96	0.00	410452.74	634193.31	N 32.128058	W 104.033370
	19200.00	90.00	179.90	9778.00	10010.84	-10006.45	2524.14	0.00	410352.75	634193.48	N 32.127783	W 104.033370
	19300.00	90.00	179.90	9778.00	10110.84	-10106.45	2524.31	0.00	410252.76	634193.66	N 32.127508	W 104.033371
	19400.00	90.00	179.90	9778.00	10210.84	-10206.45	2524.48	0.00	410152.77	634193.83	N 32.127234	W 104.033371
	19500.00	90.00	179.90	9778.00	10310.84	-10306.45	2524.66	0.00	410052.77	634194.01	N 32.126959	W 104.033371
	19600.00	90.00	179.90	9778.00	10410.84	-10406.45	2524.83	0.00	409952.78	634194.18	N 32.126684	W 104.033372
	19700.00	90.00	179.90	9778.00	10510.84	-10506.45	2525.01	0.00	409852.79	634194.36	N 32.126409	W 104.033372
	19800.00	90.00	179.90	9778.00	10610.84	-10606.45	2525.18	0.00	409752.80	634194.53	N 32.126134	W 104.033372
	19900.00	90.00	179.90	9778.00	10710.84	-10706.45	2525.36	0.00	409652.81	634194.71	N 32.125859	W 104.033373
	20000.00	90.00	179.90	9778.00	10810.84	-10806.45	2525.53	0.00	409552.82	634194.88	N 32.125584	W 104.033373
	20100.00	90.00	179.90	9778.00	10910.84	-10906.45	2525.71	0.00	409452.83	634195.05	N 32.125309	W 104.033373
	20200.00	90.00	179.90	9778.00	11010.84	-11006.45	2525.88	0.00	409352.83	634195.23	N 32.125035	W 104.033374
	20300.00	90.00	179.90	9778.00	11110.84	-11106.45	2526.05	0.00	409252.84	634195.40	N 32.124760	W 104.033374
	20400.00	90.00	179.90	9778.00	11210.84	-11206.45	2526.23	0.00	409152.85	634195.58	N 32.124485	W 104.033374
	20500.00	90.00	179.90	9778.00	11310.84	-11306.45	2526.40	0.00	409052.86	634195.75	N 32.124210	W 104.033375
	20600.00	90.00	179.90	9778.00	11410.84	-11406.44	2526.58	0.00	408952.87	634195.93	N 32.123935	W 104.033375
	20700.00	90.00	179.90	9778.00	11510.84	-11506.44	2526.75	0.00	408852.88	634196.10	N 32.123660	W 104.033375
Cimarex Riverbend 12-13 Federal Com 1H - BHL (330' FSL, 330' FEL)	20727.35	90.00	179.90	9778.00	11538.20	-11533.80	2526.80	0.00	408825.52	634196.15	N 32.123585	W 104.033375

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	Riverbend 12-13 Federal Com 1H / Cimarex Riverbend 12-13
	1	23.000	9500.000	1/100.000	17.500	13.375		A001Mb_MWD	Riverbend 12-13 Federal Com 1H / Cimarex Riverbend 12-13
	1	9500.000	20727.359	1/100.000	17.500	13.375		A008Mb_MWD+IFR1+MS	Riverbend 12-13 Federal Com 1H / Cimarex Riverbend 12-13

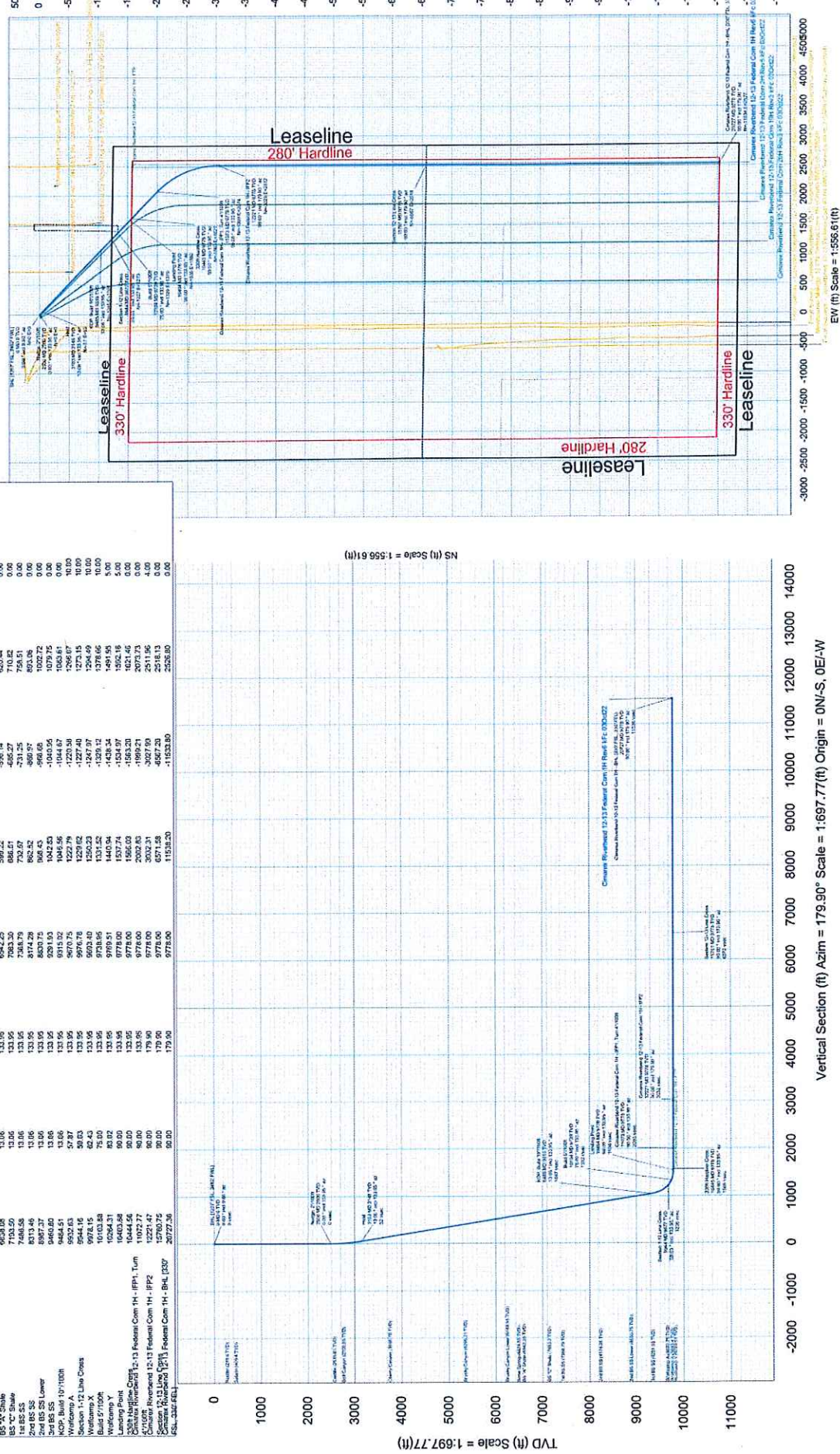
Rev 6



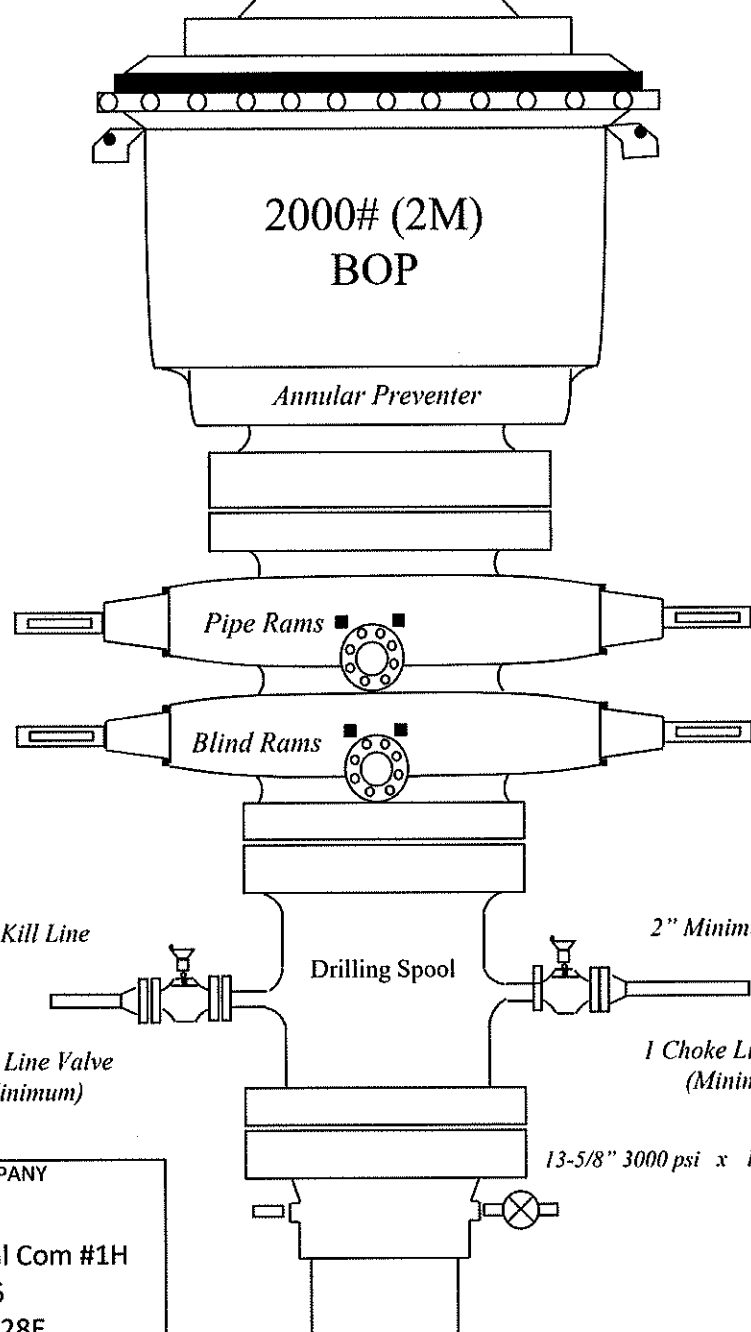
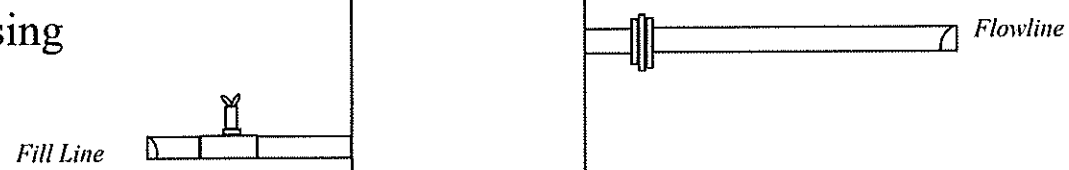
Borehole:	Well:	Field:	Structure:
Riverbend 12-13 Federal Com 1H	Riverbend 12-13 Federal Com 1H	NM Eddy County (NAD 83)	Cimarex Riverbend 12-13 Federal Com 1H

[illegible]

Critical Point		MD	INCL	AZIM	Critical Points			VSEC	NOYSL(-)	E(+)/W(-)	DLS
1	1007 Pst. 2402 PWN1										
2	216.40	0.00	133.95					0.00	0.00	0.00	
3	216.40	0.00	133.95					0.00	0.00	0.00	
4	216.40	0.00	133.95					0.00	0.00	0.00	
5	216.40	0.00	133.95					0.00	0.00	0.00	
6	216.40	0.00	133.95					0.00	0.00	0.00	
7	216.40	0.00	133.95					0.00	0.00	0.00	
8	216.40	0.00	133.95					0.00	0.00	0.00	
9	216.40	0.00	133.95					0.00	0.00	0.00	
10	216.40	0.00	133.95					0.00	0.00	0.00	
11	216.40	0.00	133.95					0.00	0.00	0.00	
12	216.40	0.00	133.95					0.00	0.00	0.00	
13	216.40	0.00	133.95					0.00	0.00	0.00	
14	216.40	0.00	133.95					0.00	0.00	0.00	
15	216.40	0.00	133.95					0.00	0.00	0.00	
16	216.40	0.00	133.95					0.00	0.00	0.00	
17	216.40	0.00	133.95					0.00	0.00	0.00	
18	216.40	0.00	133.95					0.00	0.00	0.00	
19	216.40	0.00	133.95					0.00	0.00	0.00	
20	216.40	0.00	133.95					0.00	0.00	0.00	
21	216.40	0.00	133.95					0.00	0.00	0.00	
22	216.40	0.00	133.95					0.00	0.00	0.00	
23	216.40	0.00	133.95					0.00	0.00	0.00	
24	216.40	0.00	133.95					0.00	0.00	0.00	
25	216.40	0.00	133.95					0.00	0.00	0.00	
26	216.40	0.00	133.95					0.00	0.00	0.00	
27	216.40	0.00	133.95					0.00	0.00	0.00	
28	216.40	0.00	133.95					0.00	0.00	0.00	
29	216.40	0.00	133.95					0.00	0.00	0.00	
30	216.40	0.00	133.95					0.00	0.00	0.00	
31	216.40	0.00	133.95					0.00	0.00	0.00	
32	216.40	0.00	133.95					0.00	0.00	0.00	
33	216.40	0.00	133.95					0.00	0.00	0.00	
34	216.40	0.00	133.95					0.00	0.00	0.00	
35	216.40	0.00	133.95					0.00	0.00	0.00	
36	216.40	0.00	133.95					0.00	0.00	0.00	
37	216.40	0.00	133.95					0.00	0.00	0.00	
38	216.40	0.00	133.95					0.00	0.00	0.00	
39	216.40	0.00	133.95					0.00	0.00	0.00	
40	216.40	0.00	133.95					0.00	0.00	0.00	
41	216.40	0.00	133.95					0.00	0.00	0.00	
42	216.40	0.00	133.95					0.00	0.00	0.00	
43	216.40	0.00	133.95					0.00	0.00	0.00	
44	216.40	0.00	133.95					0.00	0.00	0.00	
45	216.40	0.00	133.95					0.00	0.00	0.00	
46	216.40	0.00	133.95					0.00	0.00	0.00	
47	216.40	0.00	133.95					0.00	0.00	0.00	
48	216.40	0.00	133.95					0.00	0.00	0.00	
49	216.40	0.00	133.95					0.00	0.00	0.00	
50	216.40	0.00	133.95					0.00	0.00	0.00	
51	216.40	0.00	133.95					0.00	0.00	0.00	
52	216.40	0.00	133.95					0.00	0.00	0.00	
53	216.40	0.00	133.95					0.00	0.00	0.00	
54	216.40	0.00	133.95					0.00	0.00	0.00	
55	216.40	0.00	133.95					0.00	0.00	0.00	
56	216.40	0.00	133.95					0.00	0.00	0.00	
57	216.40	0.00	133.95					0.00	0.00	0.00	
58	216.40	0.00	133.95					0.00	0.00	0.00	
59	216.40	0.00	133.95					0.00	0.00	0.00	
60	216.40	0.00	133.95					0.00	0.00	0.00	
61	216.40	0.00	133.95					0.00	0.00	0.00	
62	216.40	0.00	133.95					0.00	0.00	0.00	
63	216.40	0.00	133.95					0.00	0.00	0.00	
64	216.40	0.00	133.95					0.00	0.00	0.00	
65	216.40	0.00	133.95					0.00	0.00	0.00	
66	216.40	0.00	133.95					0.00	0.00	0.00	
67	216.40	0.00	133.95					0.00	0.00	0.00	
68	216.40	0.00	133.95					0.00	0.00	0.00	
69	216.40	0.00	133.95					0.00	0.00	0.00	
70	216.40	0.00	133.95					0.00	0.00	0.00	
71	216.40	0.00	133.95					0.00	0.00	0.00	
72	216.40	0.00	133.95					0.00	0.00	0.00	
73	216.40	0.00	133.95					0.00	0.00	0.00	
74	216.40	0.00	133.95					0.00	0.00	0.00	
75	216.40	0.00	133.95					0.00	0.00	0.00	
76	216.40	0.00	133.95					0.00	0.00	0.00	
77	216.40	0.00	133.95					0.00	0.00	0.00	
78	216.40	0.00	133.95					0.00	0.00	0.00	
79	216.40	0.00	133.95					0.00	0.00	0.00	
80	216.40	0.00	133.95					0.00	0.00	0.00	
81	216.40	0.00	133.95					0.00	0.00	0.00	
82	216.40	0.00	133.95					0.00	0.00	0.00	
83	216.40	0.00	133.95					0.00	0.00	0.00	
84	216.40	0.00	133.95					0.00	0.00	0.00	
85	216.40	0.00	133.95					0.00	0.00	0.00	
86	216.40	0.00	133.95					0.00	0.00	0.00	
87	216.40	0.00	133.95					0.00	0.00	0.00	
88	216.40	0.00	133.95					0.00	0.00	0.00	
89	216.40	0.00	133.95					0.00	0.00	0.00	
90	216.40	0.00	133.95					0.00	0.00	0.00	
91	216.40	0.00	133.95					0.00	0.00	0.00	
92	216.40	0.00	133.95					0.00	0.00	0.00	
93	216.40	0.00	133.95					0.00	0.00	0.00	
94	216.40	0.00	133.95					0.00	0.00	0.00	
95	216.40	0.00	133.95					0.00	0.00	0.00	
96	216.40	0.00	133.95					0.00	0.00	0.00	
97	216.40	0.00	133.95					0.00	0.00	0.00	
98	216.40	0.00	133.95					0.00	0.00	0.00	
99	216.40	0.00	133.95					0.00	0.00	0.00	
100	216.40	0.00	133.95					0.00	0.00	0.00	
101	216.40	0.00	133.95					0.00	0.00	0.00	
102	216.40	0.00	133.95					0.00	0.00	0.00	
103	216.40	0.00	133.95					0.00	0.00	0.00	
104	216.40	0.00	133.95					0.00	0.00	0.00	
105	216.40	0.00	133.95					0.00	0.00	0.00	
106	216.40	0.00	133.95					0.00	0.00	0.00	
107	216.40	0.00	133.95					0.00	0.00	0.00	
108	216.40	0.00	133.95					0.00	0.00	0.00	
109	216.40	0.00	133.95					0.00	0.00	0.00	
110	216.40	0.00	133.95					0.00	0.00	0.00	
111	216.40	0.00	133.95					0.00	0.00	0.00	
112	216.40	0.00	133.95					0.00	0.00	0.00	
113	216.40	0.00	133.95					0.00	0.00	0.00	
114	216.40	0.00	133.95					0.00	0.00	0.00	
115	216.40	0.00	133.95					0.00	0.00	0.00	
116	216.40	0.00	133.95					0.00	0.00	0.00	
117	216.40	0.00	133.95					0.00	0.00	0.00	
118	216.40	0.00	133.95					0.00	0.00	0.00	
119	216.40	0.00	133.95					0.00	0.00	0.00	
120	216.40	0.00	133.95					0.00	0.00	0.00	
121	216.40	0.00	133.95					0.00	0.00	0.00	
122	216.40	0.00	133.95					0.00	0.00	0.00	
123	216.40	0.00	133.95					0.00	0.00	0.00	
124	216.40	0.00	133.95					0.00	0.00	0.00	
125	216.40	0.00	133.95					0.00	0.00	0.00	
126	216.40	0.00	133.95					0.00	0.00	0.00	
127	216.40	0.00	133.95					0.00	0.00	0.00	
128	216.40	0.00	133.95					0.00	0.00	0.00	
129	216.40	0.00	133.95					0.00	0.00	0.00	
130	216.40	0.00	133.95					0.00	0.00	0.00	
131	216.40	0.00	133.95					0.00	0.00	0.00	
132	216.40	0.00	133.95					0.00	0.00	0.00	
133	216.40	0.00	133.95					0.00	0.00	0.00	
134	216.40	0.00	133.95					0.00	0.00	0.00	
135	216.40	0.00	133.95					0.00	0.00	0.00	
136	216.40	0.00	133.95					0.00	0.00	0.00	
137	216.40	0.00	133.95					0.00	0.00	0.00	
138	216.40	0.00	133.95					0.00	0.00	0.00	
139	21										



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



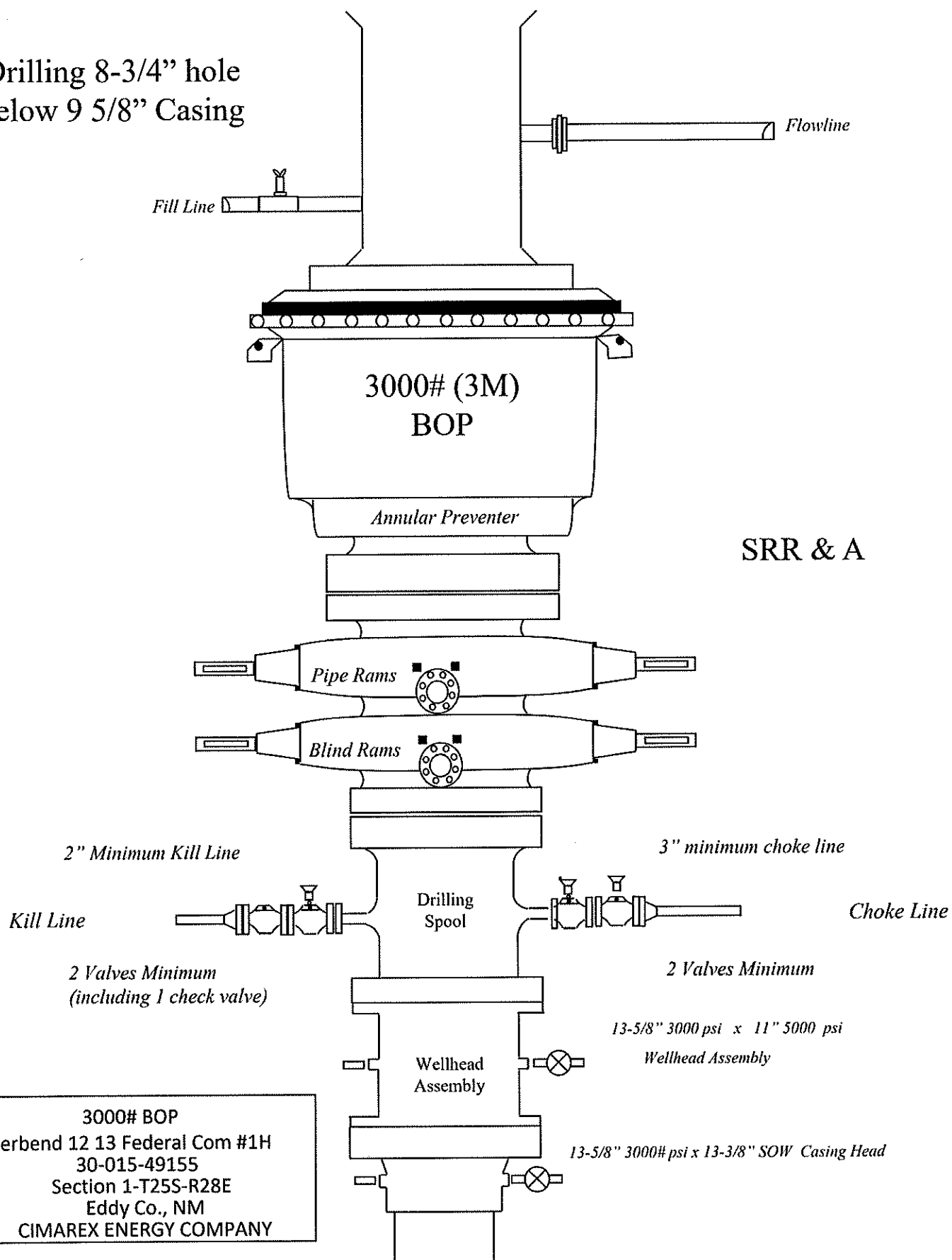
SRR & A

2" Minimum Kill Line
Kill Line
1 Kill Line Valve
(Minimum)

2" Minimum Choke Line
Choke Line
1 Choke Line Valve
(Minimum)

CIMAREX ENERGY COMPANY
2000# BOP
Riverbend 12 13 Federal Com #1H
30-015-49155
Section 1-T25S-R28E
Eddy Co., NM

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



3000# BOP
Riverbend 12 13 Federal Com #1H
30-015-49155
Section 1-T25S-R28E
Eddy Co., NM
CIMAREX ENERGY COMPANY

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

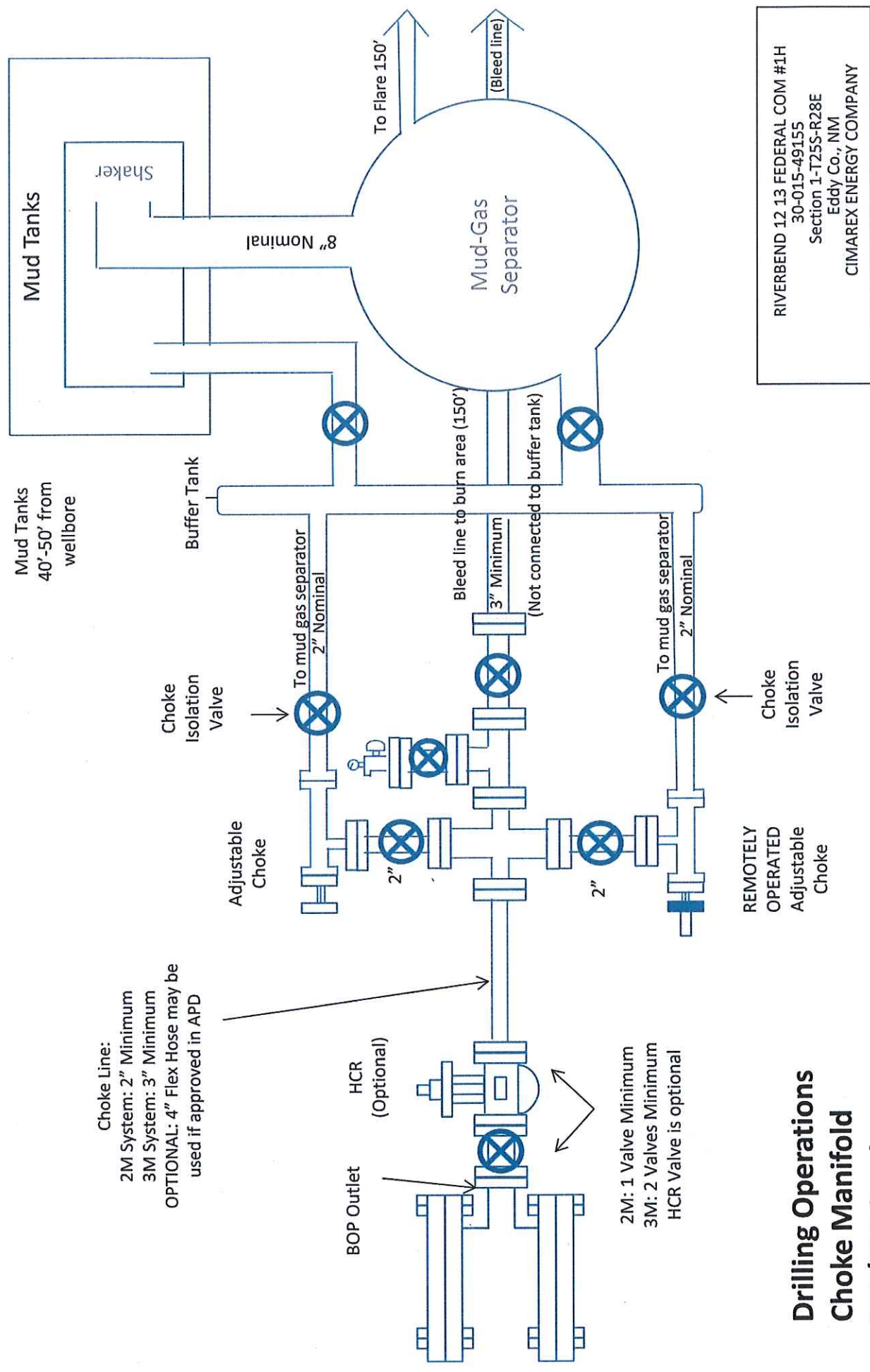
10M Single
Ram BOP

Pipe Rams

10,000# BOP
Riverbend 12 13
Federal Com #1H
30-015-49155
Section 1-T25S-R28E
Eddy Co., NM

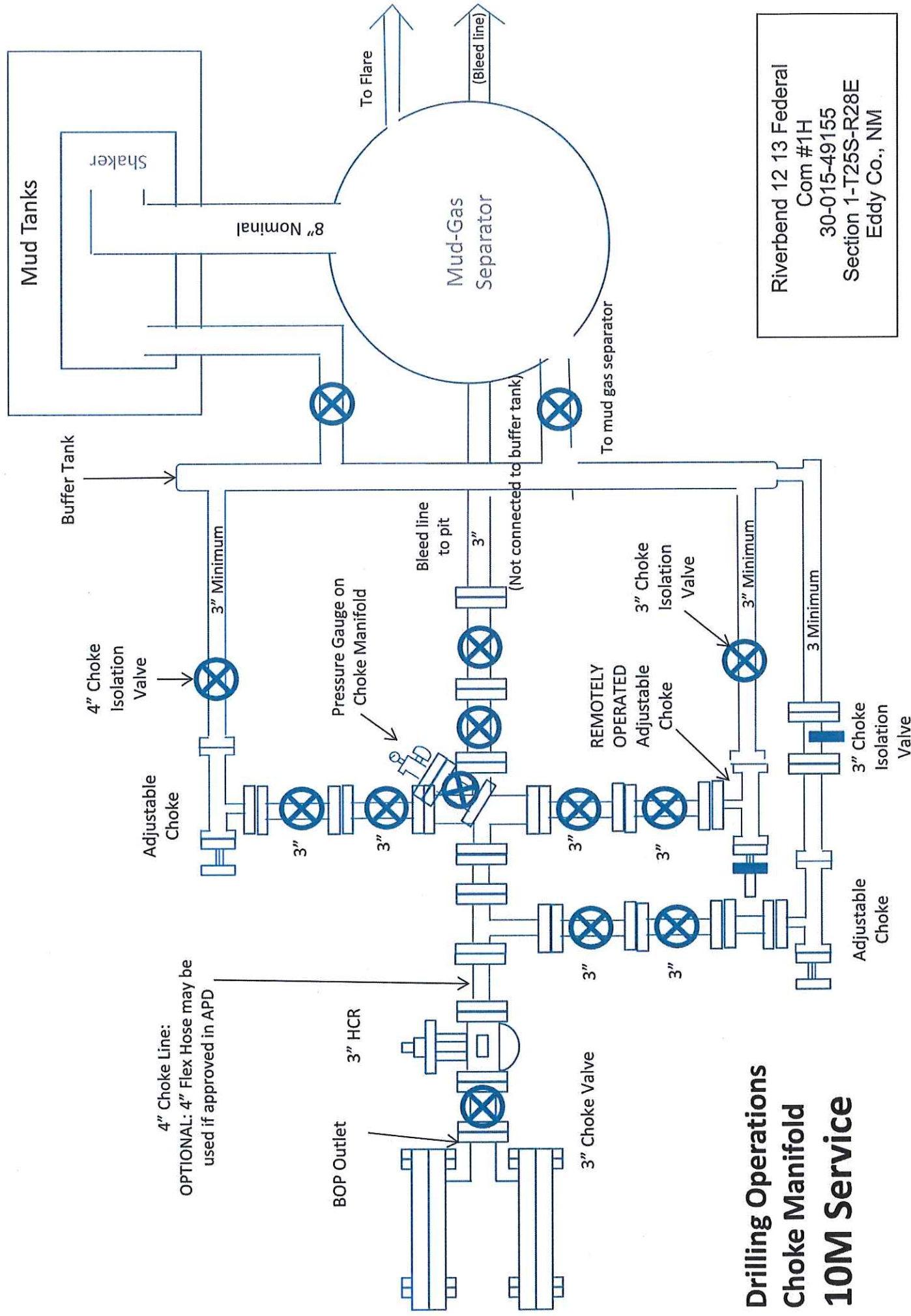
11" 10M x 13-5/8"
5M Casing Spool

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



Mud Tanks
40'-50' from
wellbore

CIMAREX ENERGY COMPANY



Drilling Operations
Choke Manifold
10M Service

Riverbend 12 13 Federal
Com #1H
30-015-49155
Section 1-T25S-R28E
Eddy Co., NM



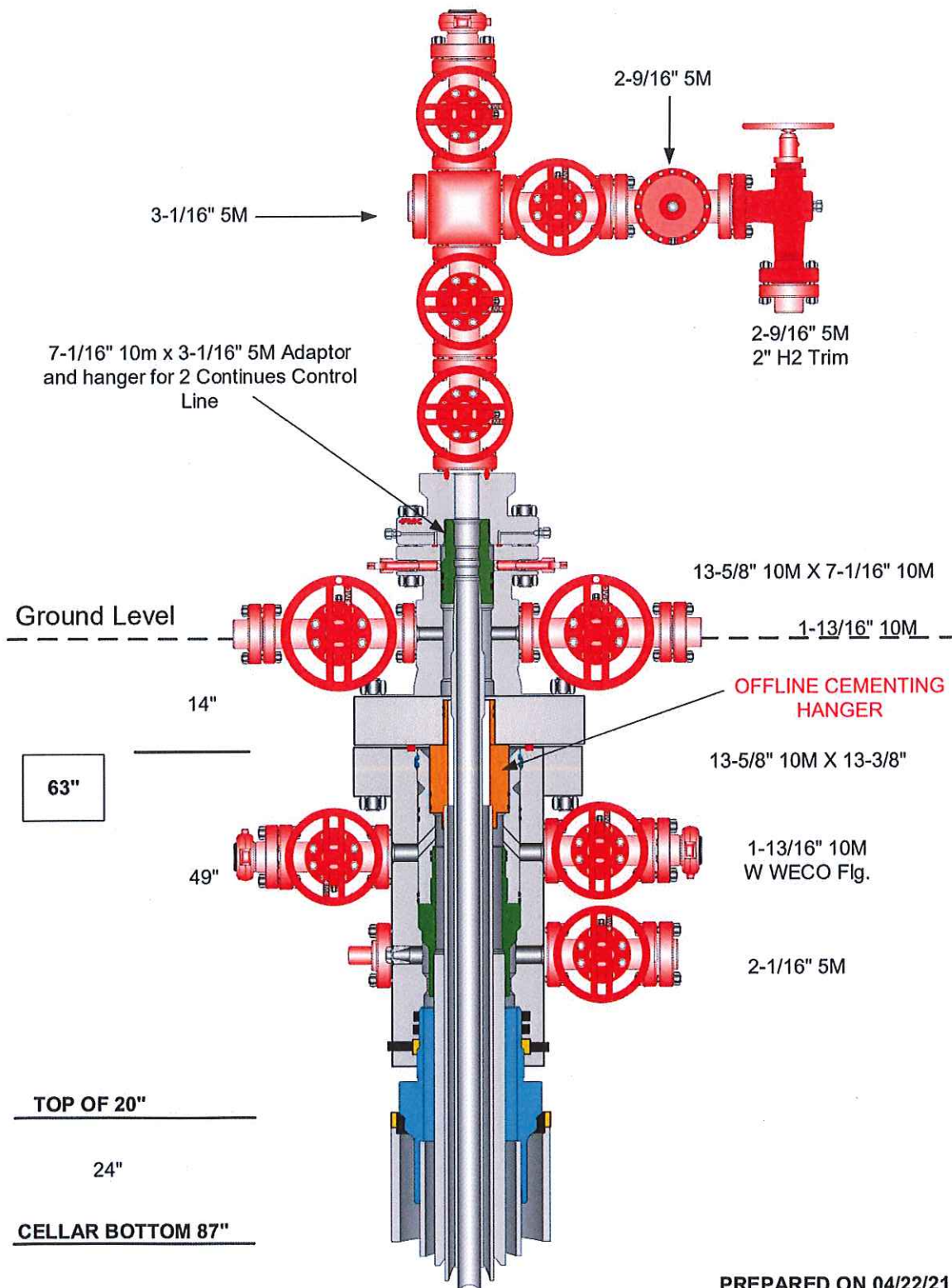
RIVERBEND 12 13 FEDERAL COM #1H - 30-015-49155

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	H-40/J-55 Hybrid	ST&C	6.40	14.96	25.12
12 1/4	0	2717	2717	9-5/8"	36.00	J-55	LT&C	1.40	2.44	4.63
8 3/4	0	9485	9485	7"	26.00	L-80	LT&C	1.22	1.63	2.02
8 3/4	9485	10104	9739	7"	26.00	P-110	BT&C	1.37	2.19	125.68
6	9385	20727	9778	4-1/2"	11.60	P-110	BT&C	1.30	1.83	80.50
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



PREPARED ON 04/22/21

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 227280

CONDITIONS

Operator: CIMAREX ENERGY CO. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 227280
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Original COA's still apply.	10/20/2023