Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM16104

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.: RIVERBEND 12-13 FEDERAL COM 21H

2. Name of Operator: CIMAREX ENERGY COMPANY

9. API Well No.: 30-015-49577

3a. Address: 600 N MARIENFELD STREET ST SUITE 600, MIDLAND

3b. Phone No. *(include area code)*: (432) 571-7800

10. Field and Pool, or Exploratory: SAN LORENZO NORTH BONE SPRING/

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: SESW / 1267 FSL / 2323 FWL / LAT 32.155481 / LONG -104.041948

At proposed prod. zone: SWSE / 100 FSL / 1330 FEL / LAT 32.122993 / LONG -104.036606

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 1/T25S/R28E/NMP

14. Distance in miles and direction from nearest town or post office*: 5 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 1267 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 640.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 20 feet

19. Proposed Depth: 8275 feet / 20149 feet

20. BLM/BIA Bond No. in file: FED: NMB001188

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 2933 feet

22. Approximate date work will start*: 11/30/2020

23. Estimated duration: 30 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	AMITHY CRAWFORD / Ph: (432) 620-1936	04/20/2020

Title: Regulatory Analyst

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575) 234-5959	04/13/2022

Title	Office
Assistant Field Manager Lands & Minerals	Carlsbad Field Office

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 04/13/2022

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015- 49577	53610/96217	San Lorenzo, Bone Spring (North)/ Willow Lake; Bone Spring, Southeast

[4] Property Code	[5] Property Name	[6] Well Number
321482	RIVERBEND 12-13 FEDERAL COM	21H

[7] OGRID No.	[8] Operator Name	[9] Elevation
215099	CIMAREX ENERGY CO.	2933.3

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	1	25S	28E		1267	SOUTH	2323	WEST	EDDY

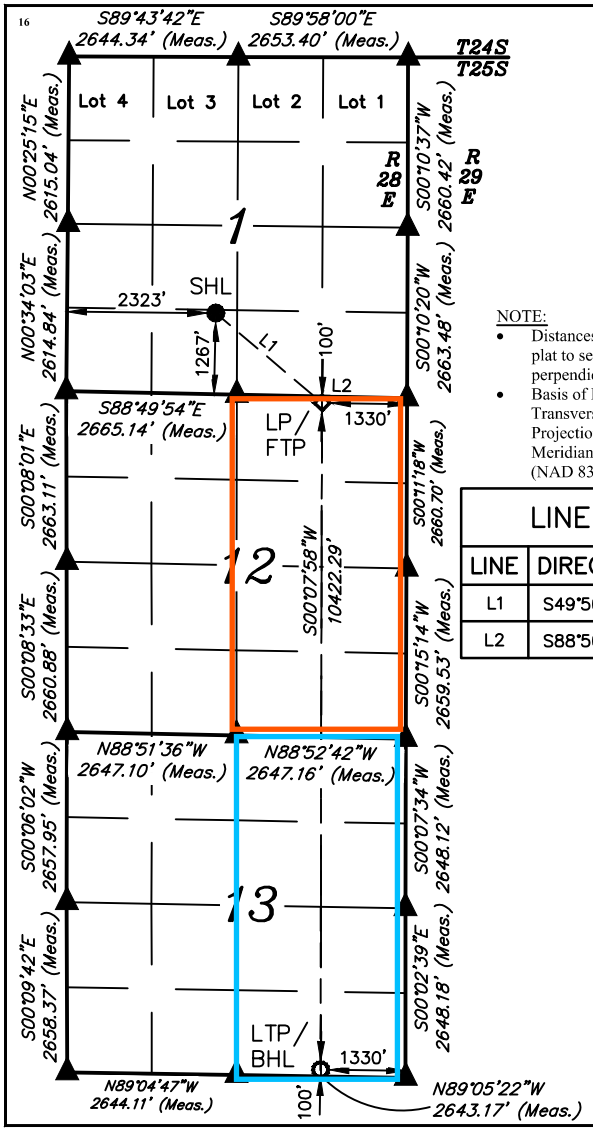
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	13	25S	28E		100	SOUTH	1330	EAST	EDDY

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

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

[16]



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

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

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S49°50'46"E	2173.19'
L2	S88°50'22"E	2662.55'

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°09'19.73" (32.155481°)
LONGITUDE = 104°02'31.01" (104.041948°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°09'19.29" (32.155358°)
LONGITUDE = 104°02'29.25" (104.041460°)
STATE PLANE NAD 83 (N.M. EAST)
N: 420421.39' E: 631510.77'
STATE PLANE NAD 27 (N.M. EAST)
N: 420363.10' E: 590326.59'

NAD 83 (LP/FTP)
LATITUDE = 32°09'05.89" (32.151637°)
LONGITUDE = 104°02'11.67" (104.036576°)
NAD 27 (LP/FTP)
LATITUDE = 32°09'05.45" (32.151513°)
LONGITUDE = 104°02'09.91" (104.036087°)
STATE PLANE NAD 83 (N.M. EAST)
N: 419027.28' E: 633177.26'
STATE PLANE NAD 27 (N.M. EAST)
N: 418969.00' E: 591993.01'

NAD 83 (LTP/BHL)
LATITUDE = 32°07'22.77" (32.122993°)
LONGITUDE = 104°02'11.78" (104.036606°)
NAD 27 (LTP/BHL)
LATITUDE = 32°07'22.33" (32.122869°)
LONGITUDE = 104°02'10.03" (104.036118°)
STATE PLANE NAD 83 (N.M. EAST)
N: 408607.26' E: 633196.63'
STATE PLANE NAD 27 (N.M. EAST)
N: 408549.19' E: 592012.14'

3000' 1500' 0' 3000'

SCALE

DRAWN BY: T.A. 03-05-20

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Amithy Crawford 4/15/20
Signature Date

Amithy Crawford
Printed Name

acrawford@cimarex.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

DECEMBER 12, 2017
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number:

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Cimarex Energy Company **OGRID:** 215099 **Date:** 5/3/2022

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Riverbend 12-13 Fed Com 21H		N, Sec 1 T25S, R28E	1267 FSL/2323 FWL	1320	3500	4000

IV. Central Delivery Point Name: Riverbend 12-13 CDP Sales
[See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Riverbend 12-13 Fed Com 21H		10/1/2024	10/20/2024	1/1/2025	3/1/2025	3/1/2025

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature:	Sarah Jordan
Printed Name:	Sarah Jordan
Title:	Regulatory Analyst
E-mail Address:	sarah.jordan@coterra.com
Date:	5/3/2022
Phone:	432/620-1909

OIL CONSERVATION DIVISION

(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

From State of New Mexico, Natural Gas Management Plan

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

XEC Standard Response

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

Cimarex
VII. Operational Practices

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

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

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

i. Venting or flaring occurs as a result of bradenhead testing.
j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
k. Venting or flaring occurs as a result of a packer leakage test.
l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.

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

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

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

- **Workovers:**
  - Always strive to kill well when performing downhole maintenance.
  - If vapors or trapped pressure is present and must be relieved then:
    - Initial blowdown to production facility:
      - Route vapors to LP flare if possible/applicable
    - Blowdown to portable gas buster tank:
      - Vent to existing or portable flare if applicable.

- **Stock tank servicing:**
  - Minimize time spent with thief hatches open.
  - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
    - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
  - Isolate the vent lines and overflows on the tank being serviced from other tanks.

- **Pressure vessel/compressor servicing and associated blowdowns:**
  - Route to flare where possible.
  - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
  - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
  - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.

- **Flare/combustor maintenance:**
  - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
  - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
  - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

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

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

Drilling Plan Data Report
04/25/2022

APD ID: 10400054869
Submission Date: 04/20/2020
Operator Name: CIMAREX ENERGY COMPANY
Well Name: RIVERBEND 12-13 FEDERAL COM
Well Number: 21H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
719953	RUSTLER	2933	464	464	ANHYDRITE	USEABLE WATER	N
719954	SALADO	1007	1926	1926	ANHYDRITE, SALT	NONE	N
719955	CASTILE	446	2487	2487	ANHYDRITE, SALT	NONE	N
719956	BELL CANYON	253	2680	2682	SANDSTONE	NONE	N
719957	CHERRY CANYON	-735	3668	3698	SANDSTONE	NONE	N
719958	BRUSHY CANYON	-2334	5267	5346	SANDSTONE	NONE	N
719959	BONE SPRING	-3467	6400	6514	LIMESTONE	NATURAL GAS, OIL	N
719960	BONE SPRING 1ST	-4407	7340	7483	SANDSTONE	NATURAL GAS, OIL	N
719961	BONE SPRING 2ND	-5213	8146	8408	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M
Rating Depth: 2610

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

Variance request: Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.
Testing Procedure: A multi-bowl wellhead system will be utilized. After running the 13-3/8" surface casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RIVERBEND 12-13 FEDERAL COM **Well Number:** 21H

casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing strings utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Choke Diagram Attachment:

Riverbend_12_13_Fed_Com_21H_Choke_2M3M_20200420153614.pdf

BOP Diagram Attachment:

Riverbend_12_13_Fed_Com_21H_BOP_3M_20200420153624.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 20149

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

Requesting Variance? YES

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

Testing Procedure: A multi-bowl wellhead system will be utilized. After running the 13-3/8" surface casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendors representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder, monitored by the wellhead vendor representative. .All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Choke Diagram Attachment:

Riverbend_12_13_Fed_Com_21H_Choke_5M_20200420153743.pdf

BOP Diagram Attachment:

Riverbend_12_13_Fed_Com_21H_BOP_5M_20200420153751.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RIVERBEND 12-13 FEDERAL COM **Well Number:** 21H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	514	0	514	2933	2419	514	J-55	48	ST&C	3.32	10.67	BUOY	17.55	BUOY	17.55
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2610	0	2610	2933	323	2610	J-55	36	ST&C	1.45	2.52	BUOY	4.19	BUOY	4.19
3	PRODUCTION	8.75	5.5	NEW	API	N	0	7944	0	7944	2933	-5011	7944	L-80	17	LT&C	1.69	2.08	BUOY	2.4	BUOY	2.4
4	PRODUCTION	8.75	5.5	NEW	API	N	7944	20149	7944	8275	-5011	-5342	12205	L-80	17	BUTT	1.62	2	BUOY	70.55	BUOY	70.55

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Riverbend_12_13_Fed_Com_21H_Casing_Assumptions_20200420153957.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RIVERBEND 12-13 FEDERAL COM **Well Number:** 21H

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Riverbend_12_13_Fed_Com_21H_Casing_Assumptions_20200420154137.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Riverbend_12_13_Fed_Com_21H_Casing_Assumptions_20200420154306.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Riverbend_12_13_Fed_Com_21H_Casing_Assumptions_20200420154426.pdf

Section 4 - Cement

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RIVERBEND 12-13 FEDERAL COM **Well Number:** 21H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	514	130	1.72	13.5	223	35	Class C	Bentonite
SURFACE	Tail		0	514	195	1.34	14.8	261	35	Class C	LCM
INTERMEDIATE	Lead		0	2610	497	1.88	12.9	934	49	35:65 (POZ C)	Salt, Bentonite
INTERMEDIATE	Tail		0	2610	153	1.34	14.8	205	49	Class C	LCM
PRODUCTION	Lead		0	20149	478	3.64	10.3	1739	25	Tuned Light	LCM
PRODUCTION	Tail		0	20149	2965	1.3	14.2	3854	25	50:50 (POZ H)	Salt, Bentonite, Fluid Loss, Dispersant, SMS
PRODUCTION	Lead		0	20149	478	3.64	10.3	1739	25	Tuned Light	LCM
PRODUCTION	Tail		0	20149	2965	1.3	14.2	3854	25	50:50 (POZ H)	Salt, bentonite, Fluid Loss, Dispersant, SMS

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	514	OTHER : Fresh Water	7.85	8.33							

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RIVERBEND 12-13 FEDERAL COM **Well Number:** 21H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
514	2610	SALT SATURATED	9.8	10.3							
2610	20149	OTHER : Cut Brine or OBM	8.5	9							

Section 6 - Test, Logging, Coring

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

No DST Planned

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

COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 3872 **Anticipated Surface Pressure:** 2051

Anticipated Bottom Hole Temperature(F): 154

Anticipated abnormal pressures, temperatures, or potential geologic hazards? YES

Describe:

Lost circulation may be encountered in the Delaware mountain group. Abnormal pressure as well as hole stability issues may be encountered in the Wolfcamp.

Contingency Plans geoharzards description:

Lost circulation material will be available, as well as additional drilling fluid along with the fluid volume in the drilling rig pit system. Drilling fluid can be mixed on location or mixed in vendor mud plant and trucked to location if needed. Sufficient barite will be available to maintain appropriate mud weight for the Wolfcamp interval.

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Riverbend_12_13_Fed_Com_21H_H2S_Plan_20200420155824.pdf

1. Geological Formations

TVD of target 8,275
MD at TD 20,149

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	464	Useable Water	
Salado	1926	N/A	
Castille	2487	N/A	
Bell Canyon	2860	N/A	
Cherry Canyon	3668	N/A	
Brushy Canyon	5267	N/A	
Bone Spring	6400	Hydrocarbons	
1st Bone Spring	7340	Hydrocarbons	
2nd Bone Spring	8146	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	514	514	13-3/8"	48.00	J-55	ST&C	3.32	10.67	17.55
12 1/4	0	2610	2610	9-5/8"	36.00	J-55	ST&C	1.45	2.52	4.19
8 3/4	0	7944	7944	5-1/2"	17.00	L-80	LT&C	1.69	2.08	2.40
8 3/4	7944	20149	8275	5-1/2"	17.00	L-80	BT&C	1.62	2.00	70.55
					BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	Y

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	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	497	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	478	10.30	3.64	22.18		Lead: Tuned Light + LCM
	2965	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	35
Intermediate	0	49
Production	2410	25

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

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	3M	Annular	X	3M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram		
			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 514'	Fresh Water	7.83 - 8.33	28	N/C
514' to 2610'	Brine Water	9.80 - 10.30	30-32	N/C
2610' to 20149'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C

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

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

6. Logging and Testing Procedures

Logging, Coring and Testing	
	Will run GR/CNL fromTD 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	3872 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.	
	H2S is present
	H2S plan is attached

8. Other Facets of Operation

9. Wellhead

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

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

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

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

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

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.

Operator Name: CIMAREX ENERGY COMPANY

Well Name: RIVERBEND 12-13 FEDERAL COM **Well Number:** 21H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Riverbend_12_13_Fed_Com_21H_Directional_20200420155850.pdf

Riverbend_12_13_Fed_Com_21H_AC_Report_20200420155857.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Riverbend_12_13_Fed_Com_21H_Drilling_Plan_20210412135400.pdf

Other Variance attachment:

Riverbend_12_13_Fed_Com_21H_Flex_Hose_20200420155918.pdf

Riverbend_12_13_Federal_Com_21H_Multibowl_20200420155930.pdf

Schlumberger

Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20 Proposal
Geodetic Report
(Def Plan)

CIMAREX

Report Date:	April 02, 2020 - 03:45 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	179.892 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Riverbend 12-13 Federal Com #21H / Cimarex Riverbend 12-13 Federal Com #21H	**TVD Reference Datum:**	RKB
Well:	Cimarex Riverbend 12-13 Federal Com #21H	**TVD Reference Elevation:**	2959.300 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	2933.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.920 °
Survey Name:	Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20	**Total Gravity Field Strength:**	998.4600mgn (9.80665 Based)
Survey Date:	March 24, 2020	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	120.449 ° / 13297.488 ft / 6.591 / 1.607	**Total Magnetic Field Strength:**	47796.993 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.854 °
Location Lat / Long:	N 32° 9' 19.73265", W 104° 2' 31.01417"	**Declination Date:**	March 24, 2020
Location Grid N/E Y/X:	N 420421.390 ftUS, E 631510.770 ftUS	**Magnetic Declination Model:**	HDGM 2020
CRS Grid Convergence Angle:	0.1551 °	**North Reference:**	Grid North
Grid Scale Factor:	0.9999184	**Grid Convergence Used:**	0.1551 °
Version / Patch:	2.10.787.0	**Total Corr Mag North->Grid North:**	6.7652 °
		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 [1267' FSL 2323' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	100.00	0.00	90.00	100.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	200.00	0.00	90.00	200.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	300.00	0.00	90.00	300.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	400.00	0.00	90.00	400.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
Rustler	*464.00*	*0.00*	*90.00*	*464.00*	*0.00*	*0.00*	*0.00*	*0.00*	*420421.39*	*631510.77*	*N 32 9 19.73*	*W 104 2 31.01*
	500.00	0.00	90.00	500.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	600.00	0.00	90.00	600.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	700.00	0.00	90.00	700.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	800.00	0.00	90.00	800.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	900.00	0.00	90.00	900.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1000.00	0.00	90.00	1000.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1100.00	0.00	90.00	1100.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1200.00	0.00	90.00	1200.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1300.00	0.00	90.00	1300.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1400.00	0.00	90.00	1400.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1500.00	0.00	90.00	1500.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1600.00	0.00	90.00	1600.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1700.00	0.00	90.00	1700.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1800.00	0.00	90.00	1800.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	1900.00	0.00	90.00	1900.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
Salado	*1926.00*	*0.00*	*90.00*	*1926.00*	*0.00*	*0.00*	*0.00*	*0.00*	*420421.39*	*631510.77*	*N 32 9 19.73*	*W 104 2 31.01*
	2000.00	0.00	90.00	2000.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	2100.00	0.00	90.00	2100.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
Nudge 2°/100' DLS	2200.00	0.00	90.00	2200.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
	2300.00	2.00	90.00	2299.98	0.00	0.00	1.75	2.00	420421.39	631512.52	N 32 9 19.73	W 104 2 30.99
	2400.00	4.00	90.00	2399.84	0.01	0.00	6.98	2.00	420421.39	631517.75	N 32 9 19.73	W 104 2 30.93
Castille	*2487.48*	*5.75*	*90.00*	*2487.00*	*0.03*	*0.00*	*14.41*	*2.00*	*420421.39*	*631525.18*	*N 32 9 19.73*	*W 104 2 30.85*
	2500.00	6.00	90.00	2499.45	0.03	0.00	15.69	2.00	420421.39	631526.46	N 32 9 19.73	W 104 2 30.83
	2600.00	8.00	90.00	2598.70	0.05	0.00	27.88	2.00	420421.39	631538.65	N 32 9 19.73	W 104 2 30.69
Bell Canyon	*2682.27*	*9.65*	*90.00*	*2680.00*	*0.08*	*0.00*	*40.50*	*2.00*	*420421.39*	*631551.27*	*N 32 9 19.73*	*W 104 2 30.54*
	2700.00	10.00	90.00	2697.47	0.08	0.00	43.52	2.00	420421.39	631554.29	N 32 9 19.73	W 104 2 30.51
	2800.00	12.00	90.00	2795.62	0.12	0.00	62.60	2.00	420421.39	631573.37	N 32 9 19.73	W 104 2 30.29
Hold Nudge	2900.00	14.00	90.00	2893.06	0.16	0.00	85.10	2.00	420421.39	631595.86	N 32 9 19.73	W 104 2 30.02
	3000.00	14.00	90.00	2990.08	0.21	0.00	109.29	0.00	420421.39	631620.05	N 32 9 19.73	W 104 2 29.74
	3100.00	14.00	90.00	3087.11	0.25	0.00	133.48	0.00	420421.39	631644.24	N 32 9 19.73	W 104 2 29.46
	3200.00	14.00	90.00	3184.14	0.30	0.00	157.67	0.00	420421.39	631668.43	N 32 9 19.73	W 104 2 29.18
	3300.00	14.00	90.00	3281.17	0.34	0.00	181.87	0.00	420421.39	631692.62	N 32 9 19.73	W 104 2 28.90
	3400.00	14.00	90.00	3378.20	0.39	0.00	206.06	0.00	420421.39	631716.81	N 32 9 19.73	W 104 2 28.62
	3500.00	14.00	90.00	3475.23	0.43	0.00	230.25	0.00	420421.39	631741.00	N 32 9 19.73	W 104 2 28.34
	3600.00	14.00	90.00	3572.26	0.48	0.00	254.44	0.00	420421.39	631765.19	N 32 9 19.73	W 104 2 28.05
Cherry Canyon	*3698.67*	*14.00*	*90.00*	*3668.00*	*0.52*	*0.00*	*278.31*	*0.00*	*420421.39*	*631789.06*	*N 32 9 19.73*	*W 104 2 27.78*
	3700.00	14.00	90.00	3669.29	0.53	0.00	278.63	0.00	420421.39	631789.38	N 32 9 19.73	W 104 2 27.77
	3800.00	14.00	90.00	3766.32	0.57	0.00	302.83	0.00	420421.39	631813.57	N 32 9 19.72	W 104 2 27.49
	3900.00	14.00	90.00	3863.35	0.62	0.00	327.02	0.00	420421.39	631837.76	N 32 9 19.72	W 104 2 27.21
	4000.00	14.00	90.00	3960.38	0.66	0.00	351.21	0.00	420421.39	631861.95	N 32 9 19.72	W 104 2 26.93
	4100.00	14.00	90.00	4057.41	0.71	0.00	375.40	0.00	420421.39	631886.14	N 32 9 19.72	W 104 2 26.65
	4200.00	14.00	90.00	4154.44	0.75	0.00	399.59	0.00	420421.39	631910.33	N 32 9 19.72	W 104 2 26.37
	4300.00	14.00	90.00	4251.47	0.80	0.00	423.79	0.00	420421.39	631934.52	N 32 9 19.72	W 104 2 26.08
	4400.00	14.00	90.00	4348.50	0.84	0.00	447.98	0.00	420421.39	631958.71	N 32 9 19.72	W 104 2 25.80
	4500.00	14.00	90.00	4445.53	0.89	0.00	472.17	0.00	420421.39	631982.90	N 32 9 19.72	W 104 2 25.52
	4600.00	14.00	90.00	4542.56	0.94	0.00	496.36	0.00	420421.39	632007.09	N 32 9 19.72	W 104 2 25.24
	4700.00	14.00	90.00	4639.59	0.98	0.00	520.56	0.00	420421.39	632031.28	N 32 9 19.72	W 104 2 24.96
	4800.00	14.00	90.00	4736.62	1.03	0.00	544.75	0.00	420421.39	632055.47	N 32 9 19.72	W 104 2 24.68
	4900.00	14.00	90.00	4833.65	1.07	0.00	568.94	0.00	420421.39	632079.66	N 32 9 19.72	W 104 2 24.40
	5000.00	14.00	90.00	4930.68	1.12	0.00	593.13	0.00	420421.39	632103.85	N 32 9 19.72	W 104 2 24.11
	5100.00	14.00	90.00	5027.71	1.16	0.00	617.32	0.00	420421.39	632128.04	N 32 9 19.72	W 104 2 23.83
	5200.00	14.00	90.00	5124.74	1.21	0.00	641.52	0.00	420421.39	632152.23	N 32 9 19.72	W 104 2 23.55
	5300.00	14.00	90.00	5221.76	1.25	0.00	665.71	0.00	420421.39	632176.42	N 32 9 19.71	W 104 2 23.27
Brushy Canyon	*5346.62*	*14.00*	*90.00*	*5267.00*	*1.28*	*0.00*	*676.99*	*0.00*	*420421.39*	*632187.70*	*N 32 9 19.71*	*W 104 2 23.14*
	5400.00	14.00	90.00	5318.79	1.30	0.00	689.90	0.00	420421.39	632200.61	N 32 9 19.71	W 104 2 22.99
	5500.00	14.00	90.00	5415.82	1.35	0.00	714.09	0.00	420421.39	632224.80	N 32 9 19.71	W 104 2 22.71
	5600.00	14.00	90.00	5512.85	1.39	0.00	738.29	0.00	420421.39	632248.99	N 32 9 19.71	W 104 2 22.43
	5700.00	14.00	90.00	5609.88	1.44	0.00	762.48	0.00	420421.39	632273.18	N 32 9 19.71	W 104 2 22.15
	5800.00	14.00	90.00	5706.91	1.48	0.00	786.67	0.00	420421.39	632297.37	N 32 9 19.71	W 104 2 21.86
	5900.00	14.00	90.00	5803.94	1.53	0.00	810.86	0.00	420421.39	632321.56	N 32 9 19.71	W 104 2 21.58
	6000.00	14.00	90.00	5900.97	1.57	0.00	835.05	0.00	420421.39	632345.75	N 32 9 19.71	W 104 2 21.30
	6100.00	14.00	90.00	5998.00	1.62	0.00	859.25	0.00	420421.39	632369.94	N 32 9 19.71	W 104 2 21.02
	6200.00	14.00	90.00	6095.03	1.67	0.00	883.44	0.00	420421.39	632394.13	N 32 9 19.71	W 104 2 20.74
Brushy Canyon Lower	*6266.96*	*14.00*	*90.00*	*6160.00*	*1.70*	*0.00*	*899.64*	*0.00*	*420421.39*	*632410.33*	*N 32 9 19.71*	*W 104 2 20.55*
	6300.00	14.00	90.00	6192.06	1.71	0.00	907.63	0.00	420421.39	632418.33	N 32 9 19.71	W 104 2 20.46
	6400.00	14.00	90.00	6289.09	1.76	0.00	931.82	0.00	420421.39	632442.52	N 32 9 19.71	W 104 2 20.18
	6500.00	14.00	90.00	6386.12	1.80	0.00	956.02	0.00	420421.39	632466.71	N 32 9 19.71	W 104 2 19.89
Bone Spring	*6514.31*	*14.00*	*90.00*	*6400.00*	*1.81*	*0.00*	*959.48*	*0.00*	*420421.39*	*632470.17*	*N 32 9 19.71*	*W 104 2 19.85*

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 ° ' ")
	6600.00	14.00	90.00	6483.15	1.85	0.00	980.21	0.00	420421.39	632490.90	N 32 9 19.71	W 104 2 19.61
Bone Spring "A" Shale	*6631.80*	*14.00*	*90.00*	*6514.00*	*1.86*	*0.00*	*987.90*	*0.00*	*420421.39*	*632498.59*	*N 32 9 19.71*	*W 104 2 19.52*
	6700.00	14.00	90.00	6580.18	1.89	0.00	1004.40	0.00	420421.39	632515.09	N 32 9 19.71	W 104 2 19.33
	6800.00	14.00	90.00	6677.21	1.94	0.00	1028.59	0.00	420421.39	632539.28	N 32 9 19.70	W 104 2 19.05
	6900.00	14.00	90.00	6774.24	1.98	0.00	1052.78	0.00	420421.39	632563.47	N 32 9 19.70	W 104 2 18.77
	7000.00	14.00	90.00	6871.27	2.03	0.00	1076.98	0.00	420421.39	632587.66	N 32 9 19.70	W 104 2 18.49
	7100.00	14.00	90.00	6968.30	2.08	0.00	1101.17	0.00	420421.39	632611.85	N 32 9 19.70	W 104 2 18.21
Bone Spring "C" Shale	*7189.36*	*14.00*	*90.00*	*7055.00*	*2.12*	*0.00*	*1122.79*	*0.00*	*420421.39*	*632633.46*	*N 32 9 19.70*	*W 104 2 17.95*
	7200.00	14.00	90.00	7065.33	2.12	0.00	1125.36	0.00	420421.39	632636.04	N 32 9 19.70	W 104 2 17.92
	7300.00	14.00	90.00	7162.36	2.17	0.00	1149.55	0.00	420421.39	632660.23	N 32 9 19.70	W 104 2 17.64
	7400.00	14.00	90.00	7259.39	2.21	0.00	1173.75	0.00	420421.39	632684.42	N 32 9 19.70	W 104 2 17.36
1st Bone Spring Ss	*7483.08*	*14.00*	*90.00*	*7340.00*	*2.25*	*0.00*	*1193.84*	*0.00*	*420421.39*	*632704.51*	*N 32 9 19.70*	*W 104 2 17.13*
	7500.00	14.00	90.00	7356.42	2.26	0.00	1197.94	0.00	420421.39	632708.61	N 32 9 19.70	W 104 2 17.08
	7600.00	14.00	90.00	7453.45	2.30	0.00	1222.13	0.00	420421.39	632732.80	N 32 9 19.70	W 104 2 16.80
	7700.00	14.00	90.00	7550.47	2.35	0.00	1246.32	0.00	420421.39	632756.99	N 32 9 19.70	W 104 2 16.52
	7800.00	14.00	90.00	7647.50	2.39	0.00	1270.51	0.00	420421.39	632781.18	N 32 9 19.70	W 104 2 16.24
	7900.00	14.00	90.00	7744.53	2.44	0.00	1294.71	0.00	420421.39	632805.37	N 32 9 19.70	W 104 2 15.95
KOP - Build 12°/100' DLS	7944.27	14.00	90.00	7787.49	2.46	0.00	1305.42	0.00	420421.39	632816.08	N 32 9 19.70	W 104 2 15.83
	8000.00	20.03	100.02	7840.77	4.15	-1.66	1321.58	12.00	420419.73	632832.24	N 32 9 19.68	W 104 2 15.64
	8100.00	31.51	108.28	7930.70	15.45	-12.88	1363.41	12.00	420408.51	632874.07	N 32 9 19.57	W 104 2 15.16
	8200.00	43.25	112.40	8010.03	36.89	-34.21	1420.11	12.00	420387.18	632930.76	N 32 9 19.36	W 104 2 14.50
Build & Turn 12°/100' DLS	8214.80	45.00	112.86	8020.65	40.87	-38.18	1429.62	12.00	420383.22	632940.27	N 32 9 19.32	W 104 2 14.39
	8300.00	48.71	125.93	8079.04	71.54	-68.74	1483.44	12.00	420352.65	632994.08	N 32 9 19.01	W 104 2 13.76
	8400.00	54.70	139.21	8141.15	124.79	-121.88	1540.73	12.00	420299.52	633051.37	N 32 9 18.48	W 104 2 13.10
2nd Bone Spring Ss	*8408.45*	*55.27*	*140.23*	*8146.00*	*130.08*	*-127.16*	*1545.20*	*12.00*	*420294.24*	*633055.84*	*N 32 9 18.43*	*W 104 2 13.04*
	8500.00	61.93	150.49	8193.76	194.42	-191.43	1589.30	12.00	420229.98	633099.93	N 32 9 17.80	W 104 2 12.53
	8600.00	69.96	160.27	8234.57	277.41	-274.34	1627.03	12.00	420147.07	633137.66	N 32 9 16.97	W 104 2 12.10
	8700.00	78.47	169.07	8261.79	370.11	-367.00	1652.27	12.00	420054.42	633162.90	N 32 9 16.06	W 104 2 11.81
	8800.00	87.23	177.34	8274.24	468.48	-465.35	1663.92	12.00	419956.08	633174.55	N 32 9 15.08	W 104 2 11.67
Landing Point	8831.35	90.00	179.89	8275.00	499.81	-496.67	1664.67	12.00	419924.76	633175.31	N 32 9 14.77	W 104 2 11.67
	8900.00	90.00	179.89	8275.00	568.46	-565.32	1664.80	0.00	419856.11	633175.44	N 32 9 14.09	W 104 2 11.67
	9000.00	90.00	179.89	8275.00	668.46	-665.32	1664.99	0.00	419756.12	633175.62	N 32 9 13.10	W 104 2 11.67
	9100.00	90.00	179.89	8275.00	768.46	-765.32	1665.18	0.00	419656.13	633175.81	N 32 9 12.11	W 104 2 11.67
	9200.00	90.00	179.89	8275.00	868.46	-865.32	1665.37	0.00	419556.14	633176.00	N 32 9 11.13	W 104 2 11.67
	9300.00	90.00	179.89	8275.00	968.46	-965.32	1665.56	0.00	419456.15	633176.19	N 32 9 10.14	W 104 2 11.67
	9400.00	90.00	179.89	8275.00	1068.46	-1065.32	1665.75	0.00	419356.16	633176.38	N 32 9 9.15	W 104 2 11.67
	9500.00	90.00	179.89	8275.00	1168.46	-1165.32	1665.93	0.00	419256.17	633176.57	N 32 9 8.16	W 104 2 11.67
	9600.00	90.00	179.89	8275.00	1268.46	-1265.32	1666.12	0.00	419156.17	633176.75	N 32 9 7.17	W 104 2 11.67
Section 1-12 Crossing	*9628.90*	*90.00*	*179.89*	*8275.00*	*1297.36*	*-1294.22*	*1666.18*	*0.00*	*419127.28*	*633176.81*	*N 32 9 6.88*	*W 104 2 11.67*
	9700.00	90.00	179.89	8275.00	1368.46	-1365.32	1666.31	0.00	419056.18	633176.94	N 32 9 6.18	W 104 2 11.68
First Legal Take Point (100' Hardline)	*9728.90*	*90.00*	*179.89*	*8275.00*	*1397.36*	*-1394.22*	*1666.37*	*0.00*	*419027.28*	*633177.00*	*N 32 9 5.89*	*W 104 2 11.68*
	9800.00	90.00	179.89	8275.00	1468.46	-1465.32	1666.50	0.00	418956.19	633177.13	N 32 9 5.19	W 104 2 11.68
	9900.00	90.00	179.89	8275.00	1568.46	-1565.32	1666.69	0.00	418856.20	633177.32	N 32 9 4.20	W 104 2 11.68
	10000.00	90.00	179.89	8275.00	1668.46	-1665.32	1666.88	0.00	418756.21	633177.51	N 32 9 3.21	W 104 2 11.68
	10100.00	90.00	179.89	8275.00	1768.46	-1765.32	1667.07	0.00	418656.22	633177.70	N 32 9 2.22	W 104 2 11.68
	10200.00	90.00	179.89	8275.00	1868.46	-1865.32	1667.25	0.00	418556.23	633177.88	N 32 9 1.23	W 104 2 11.68
	10300.00	90.00	179.89	8275.00	1968.46	-1965.32	1667.44	0.00	418456.23	633178.07	N 32 9 0.24	W 104 2 11.68
	10400.00	90.00	179.89	8275.00	2068.46	-2065.32	1667.63	0.00	418356.24	633178.26	N 32 8 59.25	W 104 2 11.68
	10500.00	90.00	179.89	8275.00	2168.46	-2165.32	1667.82	0.00	418256.25	633178.45	N 32 8 58.26	W 104 2 11.68
	10600.00	90.00	179.89	8275.00	2268.46	-2265.32	1668.01	0.00	418156.26	633178.64	N 32 8 57.27	W 104 2 11.68
	10700.00	90.00	179.89	8275.00	2368.46	-2365.32	1668.20	0.00	418056.27	633178.83	N 32 8 56.28	W 104 2 11.69
	10800.00	90.00	179.89	8275.00	2468.46	-2465.32	1668.38	0.00	417956.28	633179.01	N 32 8 55.29	W 104 2 11.69
	10900.00	90.00	179.89	8275.00	2568.46	-2565.32	1668.57	0.00	417856.28	633179.20	N 32 8 54.30	W 104 2 11.69
	11000.00	90.00	179.89	8275.00	2668.46	-2665.32	1668.76	0.00	417756.29	633179.39	N 32 8 53.31	W 104 2 11.69
	11100.00	90.00	179.89	8275.00	2768.46	-2765.32	1668.95	0.00	417656.30	633179.58	N 32 8 52.32	W 104 2 11.69
	11200.00	90.00	179.89	8275.00	2868.46	-2865.32	1669.14	0.00	417556.31	633179.77	N 32 8 51.33	W 104 2 11.69
	11300.00	90.00	179.89	8275.00	2968.46	-2965.32	1669.33	0.00	417456.32	633179.96	N 32 8 50.35	W 104 2 11.69
	11400.00	90.00	179.89	8275.00	3068.46	-3065.32	1669.51	0.00	417356.33	633180.15	N 32 8 49.36	W 104 2 11.69
	11500.00	90.00	179.89	8275.00	3168.46	-3165.32	1669.70	0.00	417256.34	633180.33	N 32 8 48.37	W 104 2 11.69
	11600.00	90.00	179.89	8275.00	3268.46	-3265.32	1669.89	0.00	417156.34	633180.52	N 32 8 47.38	W 104 2 11.69
	11700.00	90.00	179.89	8275.00	3368.46	-3365.32	1670.08	0.00	417056.35	633180.71	N 32 8 46.39	W 104 2 11.70
	11800.00	90.00	179.89	8275.00	3468.46	-3465.32	1670.27	0.00	416956.36	633180.90	N 32 8 45.40	W 104 2 11.70
	11900.00	90.00	179.89	8275.00	3568.46	-3565.32	1670.46	0.00	416856.37	633181.09	N 32 8 44.41	W 104 2 11.70
	12000.00	90.00	179.89	8275.00	3668.46	-3665.32	1670.65	0.00	416756.38	633181.28	N 32 8 43.42	W 104 2 11.70
	12100.00	90.00	179.89	8275.00	3768.46	-3765.32	1670.83	0.00	416656.39	633181.46	N 32 8 42.43	W 104 2 11.70
	12200.00	90.00	179.89	8275.00	3868.46	-3865.32	1671.02	0.00	416556.40	633181.65	N 32 8 41.44	W 104 2 11.70
	12300.00	90.00	179.89	8275.00	3968.46	-3965.32	1671.21	0.00	416456.40	633181.84	N 32 8 40.45	W 104 2 11.70
	12400.00	90.00	179.89	8275.00	4068.46	-4065.32	1671.40	0.00	416356.41	633182.03	N 32 8 39.46	W 104 2 11.70
	12500.00	90.00	179.89	8275.00	4168.46	-4165.32	1671.59	0.00	416256.42	633182.22	N 32 8 38.47	W 104 2 11.70
	12600.00	90.00	179.89	8275.00	4268.46	-4265.32	1671.78	0.00	416156.43	633182.41	N 32 8 37.48	W 104 2 11.70
	12700.00	90.00	179.89	8275.00	4368.46	-4365.32	1671.96	0.00	416056.44	633182.59	N 32 8 36.49	W 104 2 11.71
	12800.00	90.00	179.89	8275.00	4468.46	-4465.32	1672.15	0.00	415956.45	633182.78	N 32 8 35.50	W 104 2 11.71
	12900.00	90.00	179.89	8275.00	4568.46	-4565.32	1672.34	0.00	415856.46	633182.97	N 32 8 34.51	W 104 2 11.71
	13000.00	90.00	179.89	8275.00	4668.46	-4665.32	1672.53	0.00	415756.46	633183.16	N 32 8 33.52	W 104 2 11.71
	13100.00	90.00	179.89	8275.00	4768.46	-4765.32	1672.72	0.00	415656.47	633183.35	N 32 8 32.53	W 104 2 11.71
	13200.00	90.00	179.89	8275.00	4868.46	-4865.32	1672.91	0.00	415556.48	633183.54	N 32 8 31.54	W 104 2 11.71
	13300.00	90.00	179.89	8275.00	4968.46	-4965.32	1673.09	0.00	415456.49	633183.72	N 32 8 30.55	W 104 2 11.71
	13400.00	90.00	179.89	8275.00	5068.46	-5065.32	1673.28	0.00	415356.50	633183.91	N 32 8 29.56	W 104 2 11.71
	13500.00	90.00	179.89	8275.00	5168.46	-5165.31	1673.47	0.00	415256.51	633184.10	N 32 8 28.58	W 104 2 11.71
	13600.00	90.00	179.89	8275.00	5268.46	-5265.31	1673.66	0.00	415156.52	633184.29	N 32 8 27.59	W 104 2 11.72
	13700.00	90.00	179.89	8275.00	5368.46	-5365.31	1673.85	0.00	415056.52	633184.48	N 32 8 26.60	W 104 2 11.72
	13800.00	90.00	179.89	8275.00	5468.46	-5465.31	1674.04	0.00	414956.53	633184.67	N 32 8 25.61	W 104 2 11.72
	13900.00	90.00	179.89	8275.00	5568.46	-5565.31	1674.23	0.00	414856.54	633184.86	N 32 8 24.62	W 104 2 11.72
	14000.00	90.00	179.89	8275.00	5668.46	-5665.31	1674.41	0.00	414756.55	633185.04	N 32 8 23.63	W 104 2 11.72
	14100.00	90.00	179.89	8275.00	5768.46	-5765.31	1674.60	0.00	414656.56	633185.23	N 32 8 22.64	W 104 2 11.72
	14200.00	90.00	179.89	8275.00	5868.46	-5865.31	1674.79	0.00	414556.57	633185.42	N 32 8 21.65	W 104 2 11.72
	14300.00	90.00	179.89	8275.00	5968.46	-5965.31	1674.98	0.00	414456.58	633185.61	N 32 8 20.66	W 104 2 11.72
	14400.00	90.00	179.89	8275.00	6068.46	-6065.31	1675.17	0.00	414356.58	633185.80	N 32 8 19.67	W 104 2 11.72
	14500.00	90.00	179.89	8275.00	6168.46	-6165.31	1675.36	0.00	414256.59	633185.99	N 32 8 18.68	W 104 2 11.72
	14600.00	90.00	179.89	8275.00	6268.46	-6265.31	1675.54	0.00	414156.60	633186.17	N 32 8 17.69	W 104 2 11.73
	14700.00	90.00	179.89	8275.00	6368.46	-6365.31	1675.73	0.00	414056.61	633186.36	N 32 8 16.70	W 104 2 11.73
	14800.00	90.00	179.89	8275.00	6468.46	-6465.31	1675.92	0.00	413956.62	633186.55	N 32 8 15.71	W 104 2 11.73
	14900.00	90.00	179.89	8275.00	6568.46	-6565.31	1676.11	0.00	413856.63	633186.74	N 32 8 14.72	W 104 2 11.73
Section 12-13 Crossing	*14949.50*	*90.00*	*179.89*	*8275.00*	*6617.96*	*-6614.81*	*1676.20*	*0.00*	*413807.13*	*633186.83*	*N 32 8 14.23*	*W 104 2 11.73*
	15000.00	90.00	179.89	8275.00	6668.46	-6665.31	1676.30	0.00	413756.63	633186.93	N 32 8 13.73	W 104 2 11.73
	15100.00	90.00	179.89	8275.00	6768.46	-6765.31	1676.49	0.00	413656.64	633187.12	N 32 8 12.74	W 104 2 11.73
	15200.00	90.00	179.89	8275.00	6868.46	-6865.31	1676.67	0.00	413556.65	633187.30	N 32 8 11.75	W 104 2 11.73
	15300.00	90.00	179.89	8275.00	6968.46	-6965.31	1676.86	0.00	413456.66	633187.49	N 32 8 10.76	W 104 2 11.73
	15400.00	90.00	179.89	8275.00	7068.46	-7065.31	1677.05	0.00	413356.67	633187.68	N 32 8 9.77	W 104 2 11.73

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 ° ' ")
	15500.00	90.00	179.89	8275.00	7168.46	-7165.31	1677.24	0.00	413256.68	633187.87	N 32 8 8.78	W 104 2 11.73
	15600.00	90.00	179.89	8275.00	7268.46	-7265.31	1677.43	0.00	413156.69	633188.06	N 32 8 7.80	W 104 2 11.74
	15700.00	90.00	179.89	8275.00	7368.46	-7365.31	1677.62	0.00	413056.69	633188.25	N 32 8 6.81	W 104 2 11.74
	15800.00	90.00	179.89	8275.00	7468.46	-7465.31	1677.81	0.00	412956.70	633188.43	N 32 8 5.82	W 104 2 11.74
	15900.00	90.00	179.89	8275.00	7568.46	-7565.31	1677.99	0.00	412856.71	633188.62	N 32 8 4.83	W 104 2 11.74
	16000.00	90.00	179.89	8275.00	7668.46	-7665.31	1678.18	0.00	412756.72	633188.81	N 32 8 3.84	W 104 2 11.74
	16100.00	90.00	179.89	8275.00	7768.46	-7765.31	1678.37	0.00	412656.73	633189.00	N 32 8 2.85	W 104 2 11.74
	16200.00	90.00	179.89	8275.00	7868.46	-7865.31	1678.56	0.00	412556.74	633189.19	N 32 8 1.86	W 104 2 11.74
	16300.00	90.00	179.89	8275.00	7968.46	-7965.31	1678.75	0.00	412456.75	633189.38	N 32 8 0.87	W 104 2 11.74
	16400.00	90.00	179.89	8275.00	8068.46	-8065.31	1678.94	0.00	412356.75	633189.57	N 32 7 59.88	W 104 2 11.74
	16500.00	90.00	179.89	8275.00	8168.46	-8165.31	1679.12	0.00	412256.76	633189.75	N 32 7 58.89	W 104 2 11.74
	16600.00	90.00	179.89	8275.00	8268.46	-8265.31	1679.31	0.00	412156.77	633189.94	N 32 7 57.90	W 104 2 11.75
	16700.00	90.00	179.89	8275.00	8368.46	-8365.31	1679.50	0.00	412056.78	633190.13	N 32 7 56.91	W 104 2 11.75
	16800.00	90.00	179.89	8275.00	8468.46	-8465.31	1679.69	0.00	411956.79	633190.32	N 32 7 55.92	W 104 2 11.75
	16900.00	90.00	179.89	8275.00	8568.46	-8565.31	1679.88	0.00	411856.80	633190.51	N 32 7 54.93	W 104 2 11.75
	17000.00	90.00	179.89	8275.00	8668.46	-8665.31	1680.07	0.00	411756.81	633190.70	N 32 7 53.94	W 104 2 11.75
	17100.00	90.00	179.89	8275.00	8768.46	-8765.31	1680.25	0.00	411656.81	633190.88	N 32 7 52.95	W 104 2 11.75
	17200.00	90.00	179.89	8275.00	8868.46	-8865.31	1680.44	0.00	411556.82	633191.07	N 32 7 51.96	W 104 2 11.75
	17300.00	90.00	179.89	8275.00	8968.46	-8965.31	1680.63	0.00	411456.83	633191.26	N 32 7 50.97	W 104 2 11.75
	17400.00	90.00	179.89	8275.00	9068.46	-9065.31	1680.82	0.00	411356.84	633191.45	N 32 7 49.98	W 104 2 11.75
	17500.00	90.00	179.89	8275.00	9168.46	-9165.31	1681.01	0.00	411256.85	633191.64	N 32 7 48.99	W 104 2 11.75
	17600.00	90.00	179.89	8275.00	9268.46	-9265.31	1681.20	0.00	411156.86	633191.83	N 32 7 48.00	W 104 2 11.76
	17700.00	90.00	179.89	8275.00	9368.46	-9365.31	1681.39	0.00	411056.87	633192.01	N 32 7 47.02	W 104 2 11.76
	17800.00	90.00	179.89	8275.00	9468.46	-9465.31	1681.57	0.00	410956.87	633192.20	N 32 7 46.03	W 104 2 11.76
	17900.00	90.00	179.89	8275.00	9568.46	-9565.31	1681.76	0.00	410856.88	633192.39	N 32 7 45.04	W 104 2 11.76
	18000.00	90.00	179.89	8275.00	9668.46	-9665.31	1681.95	0.00	410756.89	633192.58	N 32 7 44.05	W 104 2 11.76
	18100.00	90.00	179.89	8275.00	9768.46	-9765.31	1682.14	0.00	410656.90	633192.77	N 32 7 43.06	W 104 2 11.76
	18200.00	90.00	179.89	8275.00	9868.46	-9865.31	1682.33	0.00	410556.91	633192.96	N 32 7 42.07	W 104 2 11.76
	18300.00	90.00	179.89	8275.00	9968.46	-9965.31	1682.52	0.00	410456.92	633193.14	N 32 7 41.08	W 104 2 11.76
	18400.00	90.00	179.89	8275.00	10068.46	-10065.31	1682.70	0.00	410356.93	633193.33	N 32 7 40.09	W 104 2 11.76
	18500.00	90.00	179.89	8275.00	10168.46	-10165.31	1682.89	0.00	410256.93	633193.52	N 32 7 39.10	W 104 2 11.76
	18600.00	90.00	179.89	8275.00	10268.46	-10265.31	1683.08	0.00	410156.94	633193.71	N 32 7 38.11	W 104 2 11.77
	18700.00	90.00	179.89	8275.00	10368.46	-10365.31	1683.27	0.00	410056.95	633193.90	N 32 7 37.12	W 104 2 11.77
	18800.00	90.00	179.89	8275.00	10468.46	-10465.31	1683.46	0.00	409956.96	633194.09	N 32 7 36.13	W 104 2 11.77
	18900.00	90.00	179.89	8275.00	10568.46	-10565.31	1683.65	0.00	409856.97	633194.28	N 32 7 35.14	W 104 2 11.77
	19000.00	90.00	179.89	8275.00	10668.46	-10665.31	1683.83	0.00	409756.98	633194.46	N 32 7 34.15	W 104 2 11.77
	19100.00	90.00	179.89	8275.00	10768.46	-10765.30	1684.02	0.00	409656.98	633194.65	N 32 7 33.16	W 104 2 11.77
	19200.00	90.00	179.89	8275.00	10868.46	-10865.30	1684.21	0.00	409556.99	633194.84	N 32 7 32.17	W 104 2 11.77
	19300.00	90.00	179.89	8275.00	10968.46	-10965.30	1684.40	0.00	409457.00	633195.03	N 32 7 31.18	W 104 2 11.77
	19400.00	90.00	179.89	8275.00	11068.46	-11065.30	1684.59	0.00	409357.01	633195.22	N 32 7 30.19	W 104 2 11.77
	19500.00	90.00	179.89	8275.00	11168.46	-11165.30	1684.78	0.00	409257.02	633195.41	N 32 7 29.20	W 104 2 11.77
	19600.00	90.00	179.89	8275.00	11268.46	-11265.30	1684.96	0.00	409157.03	633195.59	N 32 7 28.21	W 104 2 11.78
	19700.00	90.00	179.89	8275.00	11368.46	-11365.30	1685.15	0.00	409057.04	633195.78	N 32 7 27.22	W 104 2 11.78
	19800.00	90.00	179.89	8275.00	11468.46	-11465.30	1685.34	0.00	408957.04	633195.97	N 32 7 26.24	W 104 2 11.78
	19900.00	90.00	179.89	8275.00	11568.46	-11565.30	1685.53	0.00	408857.05	633196.16	N 32 7 25.25	W 104 2 11.78
	20000.00	90.00	179.89	8275.00	11668.46	-11665.30	1685.72	0.00	408757.06	633196.35	N 32 7 24.26	W 104 2 11.78
	20100.00	90.00	179.89	8275.00	11768.46	-11765.30	1685.91	0.00	408657.07	633196.54	N 32 7 23.27	W 104 2 11.78
Cimarex Riverbend 12-13 Federal Com #21H - PBHL [100' FSL, 1330' FEL]	20149.81	90.00	179.89	8275.00	11818.27	-11815.12	1686.00	0.00	408607.26	633196.63	N 32 7 22.77	W 104 2 11.78

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 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	26.000	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20
	1	26.000	20149.815	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Riverbend 12-13 Federal Com

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Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20 Proposal Geodetic Report

(Def Plan)

CIMAREX

Report Date:	April 02, 2020 - 03:45 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	179.892 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Riverbend 12-13 Federal Com #21H / Cimarex Riverbend 12-13 Federal Com #21H	**TVD Reference Datum:**	RKB
Well:	Cimarex Riverbend 12-13 Federal Com #21H	**TVD Reference Elevation:**	2959.300 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	2933.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.920 °
Survey Name:	Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20	**Total Gravity Field Strength:**	998.4600mgn (9.80665 Based)
Survey Date:	March 24, 2020	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	120.449 ° / 13297.488 ft / 6.591 / 1.607	**Total Magnetic Field Strength:**	47796.993 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.854 °
Location Lat / Long:	N 32° 9' 19.73265", W 104° 2' 31.01417"	**Declination Date:**	March 24, 2020
Location Grid N/E Y/X:	N 420421.390 ftUS, E 631510.770 ftUS	**Magnetic Declination Model:**	HDGM 2020
CRS Grid Convergence Angle:	0.1551 °	**North Reference:**	Grid North
Grid Scale Factor:	0.9999184	**Grid Convergence Used:**	0.1551 °
Version / Patch:	2.10.787.0	**Total Corr Mag North->Grid North:**	6.7652 °
		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 [1267' FSL 2323' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
Nudge 2°/100' DLS	2200.00	0.00	90.00	2200.00	0.00	0.00	0.00	0.00	420421.39	631510.77	N 32 9 19.73	W 104 2 31.01
Hold Nudge	2900.00	14.00	90.00	2893.06	0.16	0.00	85.10	2.00	420421.39	631595.86	N 32 9 19.73	W 104 2 30.02
KOP - Build 12°/100' DLS	7944.27	14.00	90.00	7787.49	2.46	0.00	1305.42	0.00	420421.39	632816.08	N 32 9 19.70	W 104 2 15.83
Build & Turn 12°/100' DLS	8214.80	45.00	112.86	8020.65	40.87	-38.18	1429.62	12.00	420383.22	632940.27	N 32 9 19.32	W 104 2 14.39
Landing Point	8831.35	90.00	179.89	8275.00	499.81	-496.67	1664.67	12.00	419924.76	633175.31	N 32 9 14.77	W 104 2 11.67
Cimarex Riverbend 12-13 Federal Com #21H - PBHL [100' FSL, 1330' FEL]	20149.81	90.00	179.89	8275.00	11818.27	-11815.12	1686.00	0.00	408607.26	633196.63	N 32 7 22.77	W 104 2 11.78

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 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	26.000	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20
	1	26.000	20149.815	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Riverbend 12-13 Federal Com

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Cimarex

Rev 0

CIMAREX

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Riverbend 12-13 Federal Com #21H	NM Eddy County (NAD 83)	Cimarex Riverbend 12-13 Federal Com #21H

Gravity & Magnetic Parameters
Model: HDGM 2020 | Dip: 59.854° | Date: 24-Mar-2020
MagDec: 6.92° | FS: 47796.993nT | Gravity FS: 998.46mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet
Lat: N 32 9 19.73 | Northing: 420421.39ftUS | Grid Conv: 0.1551°
Lon: W 104 2 31.01 | Easting: 631510.77ftUS | Scale Fact: 0.9999184

Miscellaneous
Slot: Cimarex Riverbend 12-13 Federal Com #21H | TVD Ref: RKB(2959.3ft above MSL)
Plan: Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [1267' FSL 2323' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	464.00	0.00	90.00	464.00	0.00	0.00	0.00	0.00
Salado	1926.00	0.00	90.00	1926.00	0.00	0.00	0.00	0.00
Nudge 2°/100' DLS	2200.00	0.00	90.00	2200.00	0.00	0.00	0.00	0.00
Castille	2487.48	5.75	90.00	2487.00	0.03	0.00	14.41	2.00
Bell Canyon	2682.27	9.65	90.00	2680.00	0.08	0.00	40.50	2.00
Hold Nudge	2900.00	14.00	90.00	2893.06	0.16	0.00	85.10	2.00
Cherry Canyon	3698.67	14.00	90.00	3668.00	0.52	0.00	278.31	0.00
Brushy Canyon	5346.62	14.00	90.00	5267.00	1.28	0.00	676.99	0.00
Brushy Canyon Lower	6266.96	14.00	90.00	6160.00	1.70	0.00	899.64	0.00
Bone Spring	6514.31	14.00	90.00	6400.00	1.81	0.00	959.48	0.00
Bone Spring "A" Shale	6631.80	14.00	90.00	6514.00	1.86	0.00	987.90	0.00
Bone Spring "C" Shale	7189.36	14.00	90.00	7055.00	2.12	0.00	1122.79	0.00
1st Bone Spring Ss	7483.08	14.00	90.00	7340.00	2.25	0.00	1193.84	0.00
KOP - Build 12°/100' DLS	7944.27	14.00	90.00	7787.49	2.46	0.00	1305.42	0.00
Build & Turn 12°/100' DLS	8214.80	45.00	112.86	8020.65	40.87	-38.18	1429.62	12.00
2nd Bone Spring Ss	8408.45	55.27	140.23	8146.00	130.08	-127.16	1545.20	12.00
Landing Point	8831.35	90.00	179.89	8275.00	499.81	-496.67	1664.67	12.00
Section 1-12 Crossing	9628.90	90.00	179.89	8275.00	1297.36	-1294.22	1666.18	0.00
First Legal Take Point (100' Hardline)	9728.90	90.00	179.89	8275.00	1397.36	-1394.22	1666.37	0.00
Section 12-13 Crossing	14949.50	90.00	179.89	8275.00	6617.96	-6614.81	1676.20	0.00
Cimarex Riverbend 12-13 Federal Com #21H - PBHL [100' FSL, 1330' FEL]	20149.81	90.00	179.89	8275.00	11818.27	-11815.12	1686.00	0.00
2nd BS Ss Lower	NaN			8802.00				

Grid
True
Mag

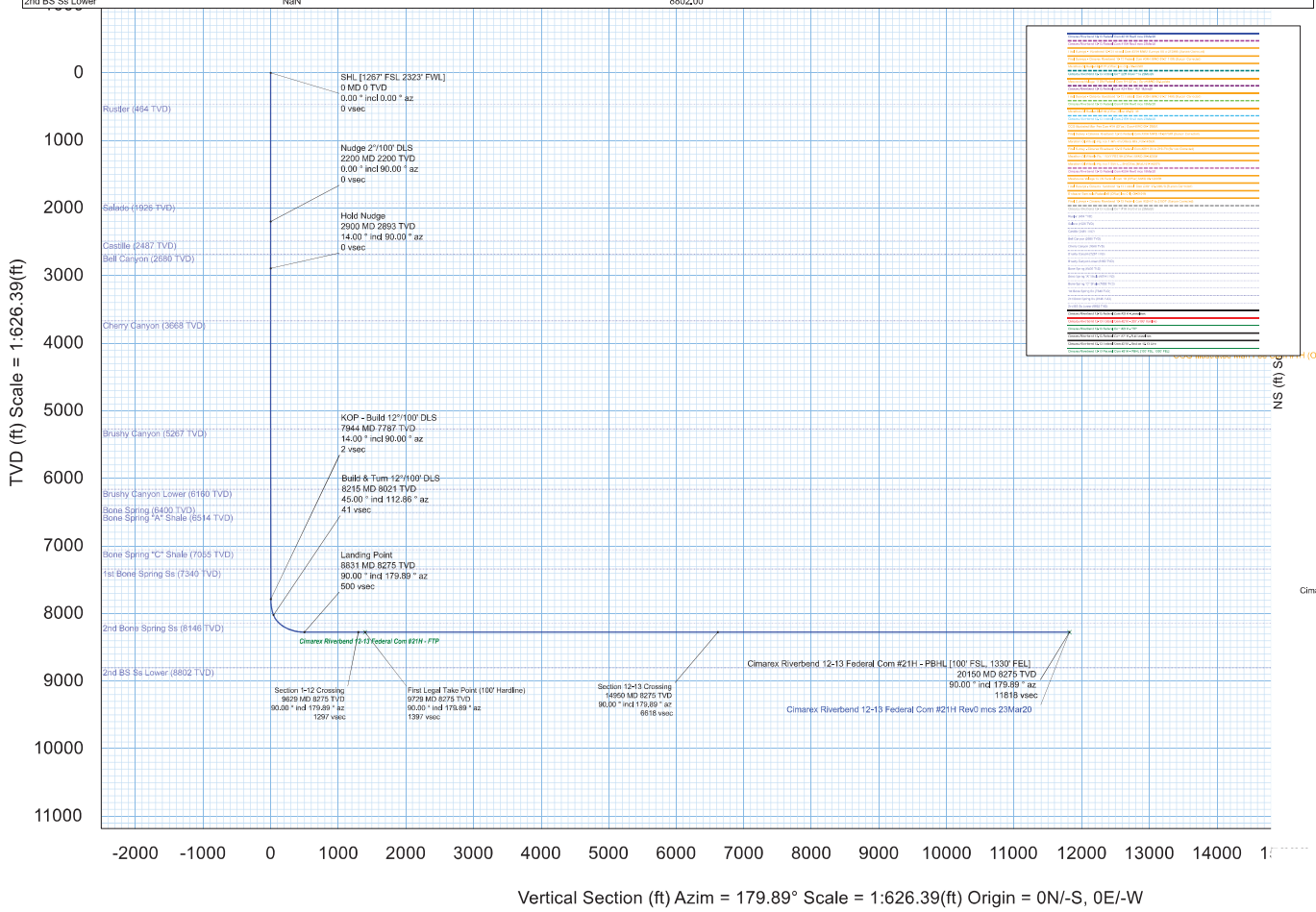
Grid North
Tot Corr (M->G 6.765°)
Mag Dec (6.920°)
Grid Conv (0.155°)

CONTROLLED

Plan ref	Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20
Drawing ref	
Copy number	of 3
Date	02-Apr-2020

1	Client	
2	Client	
3	Office	
4	Office	

Copy number: for



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CIMAREX

Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20 Anti-Collision Summary Report

Analysis Date-24hr Time:	April 02, 2020 - 15:45	**Analysis Method:**	3D Least Distance
Client:	Cimarex	**Reference Trajectory:**	Cimarex Riverbend 12-13 Federal Com #21H Rev0 mcs 23Mar20 (Def Plan)
Field:	NM Eddy County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex Riverbend 12-13 Federal Com #21H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	Cimarex Riverbend 12-13 Federal Com #21H	**Min Pts:**	All local minima indicated.
Well:	Cimarex Riverbend 12-13 Federal Com #21H	**Version / Patch:**	2.10.787.0
Borehole:	Original Borehole	**Database \ Project:**	us1153APP452.DIR.SLB.COM\DRILLING-NM Eddy County 2.10
Scan MD Range:	0.00ft ~ 20149.81ft		

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria
Wellhead distance scan: Not performed!
Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Results highlighted: Sep-Factor separation <= 1.50 ft													
Cimarex Riverbend 12-13 Federal Com 22H Rev0 mcs 23Mar20 (Def Plan)													Warning Alert
	20.00	16.25	18.71	3.74	N/A	MAS = 4.95 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.25	18.71	3.74	N/A	MAS = 4.95 (m)	26.00	26.00				WRP	
	20.00	19.55	6.54	0.45	1.54	OSF1.50	2000.00	2000.00				MinPt-CtCt	
	20.01	19.60	6.51	0.41	1.53	OSF1.50	2010.00	2010.00				MINPT-O-EOU	
	20.04	19.65	6.51	0.39	1.53	OSF1.50	2020.00	2020.00				MinPts	
	60.93	19.39	47.58	41.54	4.94	OSF1.50	2640.00	2638.27	OSF>5.00			Exit Alert	
	979.92	294.99	782.83	684.93	5.00	OSF1.50	17290.00	8275.00	OSF<5.00			Enter Alert	
	979.92	385.90	722.22	594.01	3.82	OSF1.50	20130.00	8275.00				MinPt-CtCt	
	979.92	386.02	722.15	593.91	3.82	OSF1.50	20140.00	8275.00				MinPts	
	980.01	385.72	722.44	594.29	3.82	OSF1.50	20149.81	8275.00				TD	
Cimarex Riverbend 12-13 Federal Com #19H Rev0 mcs 19Mar20 (Def Plan)													Warning Alert
	134.15	32.81	132.86	101.34	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	134.15	32.81	132.86	101.34	42712.36	MAS = 10.00 (m)	26.00	26.00				WRP	
	83.60	32.81	65.78	50.79	4.99	MAS = 10.00 (m)	3510.00	3484.94	OSF<5.00			Enter Alert	
	62.27	44.98	31.85	17.29	2.09	OSF1.50	5590.00	5503.15				MinPt-CtCt	
	64.79	52.42	29.42	12.37	1.86	OSF1.50	6260.00	6153.25				MINPT-O-EOU	
	68.42	56.76	30.16	11.66	1.82	OSF1.50	6650.00	6531.66				MinPt-O-ADP	
	71.73	59.75	31.47	11.98	1.81	OSF1.50	6920.00	6793.64				MinPt-O-SF	
	210.48	65.00	166.72	145.48	4.93	OSF1.50	8140.00	7963.91	OSF>5.00			Exit Alert	
	1532.59	381.97	1277.51	1150.62	6.03	OSF1.50	19910.00	8275.00				MinPt-CtCt	
	1532.60	382.10	1277.44	1150.50	6.03	OSF1.50	19920.00	8275.00				MinPts	
	1532.68	382.13	1277.50	1150.55	6.03	OSF1.50	19930.00	8275.00				MinPt-O-SF	
	1550.74	378.89	1297.72	1171.85	6.16	OSF1.50	20149.81	8275.00				TD	
Cimarex Riverbend 12-13 Federal Com #1H Rev3 mcs 23Mar20 (Def Plan)													Warning Alert
	170.86	32.81	169.57	138.05	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	170.86	32.81	169.57	138.05	58707.66	MAS = 10.00 (m)	26.00	26.00				WRP	
	170.86	32.81	157.46	138.05	14.00	MAS = 10.00 (m)	1990.00	1990.00				MinPts	
	170.88	32.81	157.37	138.07	13.88	MAS = 10.00 (m)	2010.00	2010.00				MINPT-O-EOU	
	172.87	32.81	158.94	140.06	13.58	MAS = 10.00 (m)	2110.00	2110.00				MinPt-O-SF	
	250.04	76.50	198.61	173.54	4.96	OSF1.50	8540.00	8211.61	OSF<5.00			Enter Alert	
	135.04	78.80	82.04	56.24	2.59	OSF1.50	8750.00	8269.91				MinPt-CtCt	
	135.09	79.31	81.75	55.78	2.57	OSF1.50	8760.00	8271.09				MinPts	
	135.95	79.85	82.26	56.10	2.57	OSF1.50	8770.00	8272.10				MinPt-O-SF	
	277.85	84.60	221.02	193.25	4.98	OSF1.50	8990.00	8275.00	OSF>5.00			Exit Alert	
	1539.03	348.20	1306.47	1190.83	6.65	OSF1.50	19960.00	8275.00				MINPT-O-EOU	
	1539.28	348.50	1306.52	1190.78	6.64	OSF1.50	19970.00	8275.00				MinPt-O-ADP	
	1543.61	350.41	1309.57	1193.20	6.63	OSF1.50	20050.00	8275.00				MinPt-O-SF	
	1554.77	351.55	1319.97	1203.22	6.65	OSF1.50	20149.81	8275.00				TD	
Cimarex Riverbend 12-13 Federal Com #15H Rev2 mcs 23Mar20 (Def Plan)													Warning Alert
	208.78	32.81	207.50	175.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	208.78	32.81	207.49	175.97	46694.74	MAS = 10.00 (m)	26.00	26.00				WRP	
	208.78	32.81	201.66	175.97	35.58	MAS = 10.00 (m)	990.00	990.00				MinPts	
	208.80	32.81	201.58	176.00	34.95	MAS = 10.00 (m)	1010.00	1010.00				MINPT-O-EOU	
	233.93	32.81	225.13	201.12	31.00	MAS = 10.00 (m)	1400.00	1400.00				MinPt-O-SF	
	657.37	81.78	602.42	575.59	12.23	OSF1.50	8490.00	8189.00				MinPts	
	657.89	81.89	602.87	576.00	12.22	OSF1.50	8510.00	8198.41				MinPt-O-SF	
	999.91	301.04	798.78	698.86	5.00	OSF1.50	17400.00	8275.00	OSF<5.00			Enter Alert	
	999.91	387.80	740.95	612.12	3.88	OSF1.50	20149.81	8275.00				MinPts	
Marathon Oil Rustler Bluff #4 (Offset) Blind 0ft-5210ft (Def Survey)													Warning Alert
	2429.85	32.81	2428.72	2397.04	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2429.38	32.81	2428.20	2396.57	42886.04	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	2421.08	728.65	1934.94	1692.43	4.99	OSF1.50	2420.00	2419.78	OSF<5.00			Enter Alert	
	1754.33	1613.74	677.90	140.58	1.63	OSF1.50	5550.00	5464.34				MinPt-O-SF	
	1753.23	1612.69	677.51	140.55	1.63	OSF1.50	5560.00	5474.04				MinPt-O-ADP	
	1749.42	1607.92	676.88	141.50	1.63	OSF1.50	5600.00	5512.85				MINPT-O-EOU	
	1743.25	1582.53	687.65	160.72	1.65	OSF1.50	5750.00	5658.40				MinPt-CtCt	
	2625.46	790.91	2097.80	1834.54	4.98	OSF1.50	7710.00	7560.18	OSF>5.00			Exit Alert	
	3299.90	668.59	2853.80	2631.32	7.41	OSF1.50	8840.00	8275.00				MinPt-O-ADP	
	4251.18	1149.11	3484.73	3102.07	5.55	OSF1.50	10590.00	8275.00				MinPt-O-SF	
	12862.04	1580.97	11807.68	11281.07	12.21	OSF1.50	20149.81	8275.00				TD	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Cimarex Riverbend 12-13 Federal Com #20H Rev0 mcs 19Mar20 (Def Plan)													Pass
	116.61	32.81	115.32	83.80	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	116.61	32.81	115.32	83.80	30530.96	MAS = 10.00 (m)	26.00	26.00				WRP	
	85.53	32.81	69.84	52.72	5.85	MAS = 10.00 (m)	2840.00	2834.69				MinPt-O-SF	
	85.50	32.81	69.83	52.69	5.86	MAS = 10.00 (m)	2850.00	2844.44				MinPts	
	980.66	58.89	940.97	921.77	25.50	OSF1.50	8880.00	8275.00				MinPts	
	980.65	58.83	941.00	921.82	25.53	OSF1.50	8890.00	8275.00				MinPt-CtCt	
	1961.08	379.23	1707.84	1581.85	7.78	OSF1.50	19900.00	8275.00				MinPt-CtCt	
	1961.13	379.54	1707.68	1581.59	7.77	OSF1.50	19920.00	8275.00				MinPts	
	1961.57	379.72	1707.99	1581.85	7.77	OSF1.50	19950.00	8275.00				MinPt-O-SF	
	1976.12	378.73	1723.21	1597.40	7.85	OSF1.50	20149.81	8275.00				TD	
Cimarex Riverbend 12-13 Federal Com #2H Rev2 mcs 23Mar20 (Def Plan)													Pass
	152.30	32.81	151.01	119.49	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	152.30	32.81	151.01	119.49	52282.06	MAS = 10.00 (m)	26.00	26.00				WRP	
	152.30	32.81	137.64	119.49	11.29	MAS = 10.00 (m)	2190.00	2190.00				MinPts	
	152.40	32.81	137.46	119.59	11.06	MAS = 10.00 (m)	2300.00	2299.98				MinPts	
	592.29	57.17	553.75	535.13	15.86	OSF1.50	7030.00	6900.38				MinPt-O-SF	
	306.39	75.75	255.46	230.64	6.15	OSF1.50	9080.00	8275.00				MinPt-O-SF	
	305.39	75.32	254.75	230.07	6.16	OSF1.50	9100.00	8275.00				MinPts	
	305.37	75.10	254.88	230.27	6.18	OSF1.50	9110.00	8275.00				MinPt-CtCt	
	1699.07	357.76	1460.14	1341.32	7.14	OSF1.50	19950.00	8275.00				MINPT-O-EOU	
	1699.28	357.97	1460.20	1341.31	7.14	OSF1.50	19960.00	8275.00				MinPt-O-ADP	
	1702.36	359.15	1462.50	1343.21	7.13	OSF1.50	20030.00	8275.00				MinPt-O-SF	
	1714.27	359.84	1473.95	1354.44	7.17	OSF1.50	20149.81	8275.00				TD	
Cimarex Riverbend 12-13 Federal Com #16H Rev2 mcs 23Mar20 (Def Plan)													Pass
	189.69	32.81	188.40	156.88	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	189.69	32.81	188.40	156.88	42397.95	MAS = 10.00 (m)	26.00	26.00				WRP	
	189.69	32.81	179.43	156.88	20.99	MAS = 10.00 (m)	1490.00	1490.00				MinPts	
	189.71	32.81	179.34	156.90	20.75	MAS = 10.00 (m)	1510.00	1510.00				MINPT-O-EOU	
	198.55	32.81	187.25	165.74	19.70	MAS = 10.00 (m)	1740.00	1740.00				MinPt-O-SF	
	377.18	68.66	330.98	308.52	8.37	OSF1.50	7450.00	7307.90				MINPT-O-EOU	
	292.37	81.24	237.78	211.12	5.46	OSF1.50	8380.00	8129.41				MinPts	
	292.50	81.43	237.78	211.07	5.45	OSF1.50	8390.00	8135.33				MinPt-O-ADP	
	292.95	81.61	238.11	211.33	5.45	OSF1.50	8400.00	8141.15				MinPt-O-SF	
	1970.74	346.29	1739.44	1624.44	8.56	OSF1.50	19980.00	8275.00				MINPT-O-EOU	
	1971.00	346.61	1739.50	1624.39	8.56	OSF1.50	19990.00	8275.00				MinPt-O-ADP	
	1980.99	350.33	1747.01	1630.66	8.51	OSF1.50	20140.00	8275.00				MinPt-O-SF	
	1982.03	350.50	1747.94	1631.53	8.51	OSF1.50	20149.81	8275.00				TD	
Final Surveys - Riverbend 12-13 Federal Com #31H MWD Surveys 0ft to 21398ft (Surcon Corrected) (Def Survey)													Pass
	1002.37	32.81	1001.08	969.56	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1002.38	32.81	1001.08	969.57	111255.25	MAS = 10.00 (m)	26.00	26.00				WRP	
	925.58	32.81	914.52	892.77	93.32	MAS = 10.00 (m)	2490.00	2489.50				MinPts	
	934.51	32.81	923.35	901.70	92.30	MAS = 10.00 (m)	2690.00	2687.61				MinPt-O-SF	
	943.34	32.81	932.09	910.53	92.20	MAS = 10.00 (m)	2780.00	2776.05				MinPt-O-SF	
	1745.44	49.29	1712.24	1696.15	54.21	OSF1.50	7800.00	7647.50				MinPt-O-SF	
	1786.52	50.40	1752.58	1736.12	54.23	OSF1.50	7950.00	7793.04				MinPt-O-SF	
	2695.07	75.68	2644.29	2619.39	54.10	OSF1.50	9790.00	8275.00				MinPts	
	2691.41	105.27	2620.90	2586.14	38.70	OSF1.50	10930.00	8275.00				MinPt-CtCt	
	2692.48	108.05	2620.11	2584.43	37.71	OSF1.50	11060.00	8275.00				MINPT-O-EOU	
	2686.14	168.35	2573.58	2517.80	24.07	OSF1.50	13170.00	8275.00				MinPt-CtCt	
	2688.37	173.17	2572.59	2515.20	23.41	OSF1.50	13370.00	8275.00				MINPT-O-EOU	
	2689.33	174.27	2572.82	2515.06	23.27	OSF1.50	13420.00	8275.00				MinPt-O-ADP	
	2698.07	186.50	2573.42	2511.58	21.81	OSF1.50	13830.00	8275.00				MINPT-O-EOU	
	2698.56	192.21	2570.09	2506.35	21.16	OSF1.50	13990.00	8275.00				MinPt-CtCt	
	2693.77	227.62	2541.70	2466.15	17.82	OSF1.50	15190.00	8275.00				MinPt-CtCt	
	2695.34	233.74	2539.19	2461.60	17.36	OSF1.50	15430.00	8275.00				MINPT-O-EOU	
	2661.62	312.95	2452.66	2348.68	12.79	OSF1.50	18050.00	8275.00				MinPt-CtCt	
	2659.73	320.49	2445.74	2339.24	12.48	OSF1.50	18300.00	8275.00				MinPt-CtCt	
	2656.85	346.55	2425.48	2310.29	11.53	OSF1.50	19170.00	8275.00				MinPt-CtCt	
	2657.59	352.27	2422.42	2305.32	11.34	OSF1.50	19360.00	8275.00				MinPt-CtCt	
	2658.48	362.76	2416.31	2295.71	11.02	OSF1.50	19710.00	8275.00				MinPt-CtCt	
	2659.28	368.33	2413.40	2290.95	10.85	OSF1.50	19910.00	8275.00				MinPts	
	2660.11	368.56	2414.08	2291.56	10.85	OSF1.50	19960.00	8275.00				MinPt-O-SF	
	2671.82	368.30	2425.96	2303.52	10.91	OSF1.50	20149.81	8275.00				TD	
Final Survey - Cimarex Riverbend 12-13 Federal Com #29H 0ft to 21947ft (Surcon Corrected) (Def Survey)													Pass
	934.43	32.81	933.14	901.62	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	934.42	32.81	933.12	901.61	78749.65	MAS = 10.00 (m)	26.00	26.00				WRP	
	931.77	32.81	928.66	898.96	511.84	MAS = 10.00 (m)	450.00	450.00				MINPT-O-EOU	
	929.08	32.81	924.55	896.28	272.97	MAS = 10.00 (m)	790.00	790.00				MinPts	
	929.23	32.81	924.41	896.42	251.52	MAS = 10.00 (m)	850.00	850.00				MINPT-O-EOU	
	927.06	32.81	916.01	894.25	93.38	MAS = 10.00 (m)	2300.00	2299.98				MinPt-O-SF	
	926.92	32.81	915.88	894.11	93.43	MAS = 10.00 (m)	2330.00	2329.96				MinPts	
	937.64	32.81	926.55	904.83	94.02	MAS = 10.00 (m)	2540.00	2539.20				MinPt-O-SF	
	1417.21	51.86	1382.30	1365.36	41.79	OSF1.50	7780.00	7628.10				MinPt-O-SF	
	3079.64	105.11	3009.24	2974.53	44.35	OSF1.50	11110.00	8275.00				MINPT-O-EOU	
	3082.58	113.80	3006.38	2968.78	40.97	OSF1.50	11400.00	8275.00				MinPt-CtCt	
	3082.68	119.10	3002.95	2963.58	39.14	OSF1.50	11590.00	8275.00				MinPt-CtCt	
	3083.63	129.34	2997.08	2954.29	36.02	OSF1.50	11950.00	8275.00				MinPt-CtCt	
	3068.35	161.91	2960.08	2906.44	28.59	OSF1.50	13080.00	8275.00				MinPt-CtCt	
	3069.03	164.01	2959.36	2905.02	28.23	OSF1.50	13180.00	8275.00				MINPT-O-EOU	
	3070.72	169.51	2957.38	2901.21	27.32	OSF1.50	13340.00	8275.00				MinPt-CtCt	
	3071.19	171.11	2956.79	2900.08	27.07	OSF1.50	13420.00	8275.00				MINPT-O-EOU	
	3071.83	171.90	2956.90	2899.93	26.95	OSF1.50	13460.00	8275.00				MinPt-O-ADP	
	3081.61	181.24	2960.45	2900.36	25.63	OSF1.50	13780.00	8275.00				MINPT-O-EOU	
	3074.88	215.38	2930.96	2859.50	21.51	OSF1.50	14900.00	8275.00				MinPt-CtCt	
	3079.58	229.61	2926.18	2849.97	20.20	OSF1.50	15410.00	8275.00				MINPT-O-EOU	
	3083.36	251.31	2915.50	2832.06	18.47	OSF1.50	16110.00	8275.00				MinPt-CtCt	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	3083.93	252.89	2915.00	2831.03	18.36	OSF1.50	16190.00	8275.00				MINPT-O-EOU	
	3086.00	256.16	2914.90	2829.84	18.13	OSF1.50	16310.00	8275.00				MINPT-O-EOU	
	3087.04	257.34	2915.15	2829.70	18.06	OSF1.50	16360.00	8275.00				MinPt-O-ADP	
	3087.92	263.23	2912.10	2824.69	17.66	OSF1.50	16510.00	8275.00				MinPt-CtCt	
	3087.33	267.74	2908.51	2819.59	17.35	OSF1.50	16660.00	8275.00				MinPt-CtCt	
	3087.81	269.34	2907.93	2818.48	17.25	OSF1.50	16740.00	8275.00				MINPT-O-EOU	
	3088.51	273.38	2905.93	2815.13	17.00	OSF1.50	16850.00	8275.00				MinPt-CtCt	
	3089.48	284.20	2899.69	2805.28	16.36	OSF1.50	17210.00	8275.00				MinPt-CtCt	
	3091.14	289.47	2897.84	2801.68	16.07	OSF1.50	17420.00	8275.00				MINPT-O-EOU	
	3091.67	290.12	2897.93	2801.55	16.03	OSF1.50	17450.00	8275.00				MinPt-O-ADP	
	3104.34	315.18	2893.89	2789.16	14.82	OSF1.50	18250.00	8275.00				MinPt-CtCt	
	3104.70	316.29	2893.51	2788.41	14.77	OSF1.50	18310.00	8275.00				MINPT-O-EOU	
	3105.14	316.83	2893.59	2788.31	14.74	OSF1.50	18340.00	8275.00				MinPt-O-ADP	
	3109.44	323.04	2893.76	2786.40	14.48	OSF1.50	18550.00	8275.00				MINPT-O-EOU	
	3110.46	324.24	2893.97	2786.21	14.43	OSF1.50	18600.00	8275.00				MinPt-O-ADP	
	3112.28	338.55	2886.25	2773.72	13.83	OSF1.50	19030.00	8275.00				MinPt-CtCt	
	3112.02	344.55	2882.00	2767.48	13.58	OSF1.50	19230.00	8275.00				MinPt-CtCt	
	3112.85	347.23	2881.03	2765.62	13.48	OSF1.50	19350.00	8275.00				MINPT-O-EOU	
	3115.50	351.22	2881.02	2764.27	13.34	OSF1.50	19490.00	8275.00				MINPT-O-EOU	
	3116.97	352.93	2881.36	2764.04	13.28	OSF1.50	19560.00	8275.00				MinPt-O-ADP	
	3120.18	364.66	2876.75	2755.52	12.87	OSF1.50	19900.00	8275.00				MinPt-CtCt	
	3120.27	364.87	2876.70	2755.40	12.86	OSF1.50	19920.00	8275.00				MINPT-O-EOU	
	3120.36	364.96	2876.73	2755.40	12.86	OSF1.50	19930.00	8275.00				MinPt-O-ADP	
	3123.50	365.80	2879.31	2757.70	12.84	OSF1.50	20040.00	8275.00				MinPt-O-SF	
	3130.49	366.20	2886.03	2764.29	12.85	OSF1.50	20149.81	8275.00				TD	
Final Survey - Cimarex Riverbend 12-13 Federal Com #30H MWD 0ft-20738ft (Surcon Corrected) (Def Survey)													Pass
	954.31	32.81	953.02	921.50	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	954.33	32.81	953.03	921.52	72993.11	MAS = 10.00 (m)	26.00	26.00				WRP	
	954.37	32.81	953.03	921.56	18516.68	MAS = 10.00 (m)	40.00	40.00				MINPT-O-EOU	
	957.79	32.81	950.14	924.98	146.90	MAS = 10.00 (m)	1510.00	1510.00				MinPts	
	957.86	32.81	950.08	925.05	143.85	MAS = 10.00 (m)	1540.00	1540.00				MINPT-O-EOU	
	956.76	32.81	945.86	923.95	97.86	MAS = 10.00 (m)	2320.00	2319.96				MinPts	
	956.99	32.81	946.09	924.18	97.84	MAS = 10.00 (m)	2350.00	2349.93				MinPt-O-SF	
	960.04	32.81	949.11	927.23	97.85	MAS = 10.00 (m)	2440.00	2439.72				MinPt-O-SF	
	1653.68	53.46	1617.70	1600.22	47.27	OSF1.50	7990.00	7831.34				MinPt-O-SF	
	2261.00	93.67	2198.22	2167.33	36.58	OSF1.50	10560.00	8275.00				MinPt-CtCt	
	2242.43	135.31	2151.90	2107.12	25.03	OSF1.50	12120.00	8275.00				MinPt-CtCt	
	2247.35	150.93	2146.40	2096.42	22.47	OSF1.50	12700.00	8275.00				MINPT-O-EOU	
	2247.85	151.53	2146.50	2096.32	22.39	OSF1.50	12730.00	8275.00				MinPt-O-ADP	
	2259.16	175.16	2142.05	2083.99	19.45	OSF1.50	13520.00	8275.00				MinPt-CtCt	
	2253.75	215.73	2109.60	2038.02	15.74	OSF1.50	14910.00	8275.00				MinPt-CtCt	
	2251.40	231.04	2097.05	2020.36	14.67	OSF1.50	15430.00	8275.00				MinPt-CtCt	
	2249.52	245.53	2085.51	2004.00	13.79	OSF1.50	15920.00	8275.00				MinPt-CtCt	
	2248.96	256.19	2077.83	1992.76	13.21	OSF1.50	16280.00	8275.00				MinPt-CtCt	
	2248.00	271.07	2066.96	1976.93	12.48	OSF1.50	16780.00	8275.00				MinPt-CtCt	
	2248.08	274.65	2064.65	1973.43	12.32	OSF1.50	16900.00	8275.00				MinPt-CtCt	
	2249.02	279.74	2062.20	1969.28	12.10	OSF1.50	17100.00	8275.00				MINPT-O-EOU	
	2250.81	281.86	2062.57	1968.95	12.01	OSF1.50	17190.00	8275.00				MinPt-O-ADP	
	2254.17	285.88	2063.25	1968.29	11.86	OSF1.50	17320.00	8275.00				MINPT-O-EOU	
	2256.34	288.26	2063.84	1968.08	11.78	OSF1.50	17410.00	8275.00				MinPt-O-ADP	
	2240.66	353.38	2004.74	1887.27	9.53	OSF1.50	19530.00	8275.00				MinPt-CtCt	
	2241.08	354.67	2004.30	1886.40	9.50	OSF1.50	19600.00	8275.00				MINPT-O-EOU	
	2241.37	355.03	2004.36	1886.34	9.49	OSF1.50	19620.00	8275.00				MinPt-O-ADP	
	2242.52	364.35	1999.29	1878.17	9.25	OSF1.50	19900.00	8275.00				MinPts	
	2242.56	364.39	1999.30	1878.17	9.25	OSF1.50	19910.00	8275.00				MinPt-O-ADP	
	2242.76	364.45	1999.47	1878.32	9.25	OSF1.50	19930.00	8275.00				MinPt-O-SF	
	2256.77	363.24	2014.28	1893.53	9.34	OSF1.50	20149.81	8275.00				TD	
Final Surveys - Cimarex Riverbend 12-13 Federal Com #35H MWD 0ft-21149ft (Surcon Corrected) (Def Survey)													Pass
	1022.09	32.81	1020.80	989.28	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1022.09	32.81	1020.80	989.29	108551.07	MAS = 10.00 (m)	26.00	26.00				WRP	
	1022.89	32.81	1020.28	990.09	767.32	MAS = 10.00 (m)	300.00	300.00				MINPT-O-EOU	
	1020.37	32.81	1015.46	987.56	269.83	MAS = 10.00 (m)	870.00	870.00				MinPts	
	1020.42	32.81	1015.44	987.61	264.60	MAS = 10.00 (m)	890.00	890.00				MINPT-O-EOU	
	1021.47	32.81	1014.06	988.67	162.37	MAS = 10.00 (m)	1460.00	1460.00				MinPts	
	1022.27	32.81	1013.66	989.46	136.56	MAS = 10.00 (m)	1730.00	1730.00				MINPT-O-EOU	
	1016.61	32.81	1005.85	983.80	105.49	MAS = 10.00 (m)	2230.00	2230.00				MinPts	
	1016.62	32.81	1005.84	983.81	105.26	MAS = 10.00 (m)	2240.00	2240.00				MINPT-O-EOU	
	1017.61	32.81	1006.69	984.80	103.88	MAS = 10.00 (m)	2300.00	2299.98				MinPt-O-SF	
	2346.61	49.98	2312.95	2296.63	71.87	OSF1.50	8020.00	7859.42				MinPt-O-SF	
	2798.00	58.65	2758.57	2739.35	72.75	OSF1.50	9000.00	8275.00				MinPts	
	2842.82	64.79	2799.30	2778.03	66.81	OSF1.50	9370.00	8275.00				MinPts	
	2846.26	68.91	2800.00	2777.35	62.83	OSF1.50	9490.00	8275.00				MINPT-O-EOU	
	2850.90	82.62	2795.50	2768.29	52.37	OSF1.50	10110.00	8275.00				MINPT-O-EOU	
	2852.79	85.77	2795.28	2767.02	50.45	OSF1.50	10240.00	8275.00				MINPT-O-EOU	
	2850.66	100.49	2783.34	2750.17	42.96	OSF1.50	10790.00	8275.00				MinPt-CtCt	
	2851.74	103.17	2782.63	2748.57	41.85	OSF1.50	10920.00	8275.00				MINPT-O-EOU	
	2841.83	115.53	2764.48	2726.30	37.20	OSF1.50	11350.00	8275.00				MinPt-CtCt	
	2841.97	115.94	2764.35	2726.03	37.07	OSF1.50	11380.00	8275.00				MINPT-O-EOU	
	2842.19	116.20	2764.40	2725.99	36.99	OSF1.50	11400.00	8275.00				MinPt-O-ADP	
	2858.96	125.28	2775.11	2733.68	34.49	OSF1.50	11750.00	8275.00				MINPT-O-EOU	
	2865.84	135.96	2774.87	2729.88	31.84	OSF1.50	12120.00	8275.00				MINPT-O-EOU	
	2865.82	150.70	2765.03	2715.12	28.70	OSF1.50	12610.00	8275.00				MinPt-CtCt	
	2865.12	161.65	2757.02	2703.47	26.74	OSF1.50	12990.00	8275.00				MinPt-CtCt	
	2857.87	178.19	2738.74	2679.67	24.18	OSF1.50	13560.00	8275.00				MinPt-CtCt	
	2847.57	199.03	2714.55	2648.54	21.56	OSF1.50	14270.00	8275.00				MinPt-CtCt	
	2848.25	201.08	2713.87	2647.17	21.34	OSF1.50	14370.00	8275.00				MINPT-O-EOU	
	2849.32	202.36	2714.08	2646.96	21.22	OSF1.50	14430.00	8275.00				MinPt-O-ADP	
	2855.19	248.06	2689.49	2607.13	17.33	OSF1.50	15930.00	8275.00				MinPt-CtCt	
	2850.25	264.15	2673.82	2586.10	16.24	OSF1.50	16470.00	8275.00				MinPt-CtCt	
	2827.59	313.54	2618.24	2514.05	13.57	OSF1.50	18120.00	8275.00				MinPt-CtCt	
	2828.46	316.16	2617.36	2512.30	13.46	OSF1.50	18240.00	8275.00				MINPT-O-EOU	
	2829.75	317.71	2617.61	2512.04	13.40	OSF1.50	18310.00	8275.00				MinPt-O-ADP	
	2826.22	337.54	2600.86	2488.68	12.59	OSF1.50	18920.00	8275.00				MinPt-CtCt	
	2826.19	344.19	2596.40	2482.00	12.35	OSF1.50	19140.00	8275.00				MinPt-CtCt	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	2827.59	348.85	2594.70	2478.75	12.19	OSF1.50	19330.00	8275.00				MINPT-O-EOU	
	2829.65	351.23	2595.17	2478.42	12.11	OSF1.50	19430.00	8275.00				MinPt-O-ADP	
	2838.19	361.28	2597.01	2476.91	11.81	OSF1.50	19750.00	8275.00				MINPT-O-EOU	
	2838.38	361.47	2597.07	2476.90	11.81	OSF1.50	19760.00	8275.00				MinPt-O-ADP	
	2844.91	366.32	2600.37	2478.58	11.68	OSF1.50	19960.00	8275.00				MinPt-O-ADP	
	2845.97	367.10	2600.91	2478.87	11.66	OSF1.50	19990.00	8275.00				MinPt-O-SF	
	2856.35	367.02	2611.34	2489.33	11.70	OSF1.50	20149.81	8275.00				TD	
Endeavor Seminole Federal #3 (Offset) Inc Only 0ft-5191ft (Def Survey)													Pass
	1237.29	32.81	1236.16	1204.48	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1236.77	32.81	1235.58	1203.96	19623.98	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	1236.68	32.81	1235.49	1203.87	20648.82	MAS = 10.00 (m)	26.00	26.00				WRP	
	1236.57	32.81	1235.30	1203.76	8738.39	MAS = 10.00 (m)	50.00	50.00				MinPts	
	1223.02	102.04	1154.62	1120.99	18.16	OSF1.50	1940.00	1940.00				MinPt-CtCt	
	1020.40	269.72	840.20	750.67	5.69	OSF1.50	5310.00	5231.47				MinPts	
	4328.92	195.99	4197.89	4132.94	33.32	OSF1.50	10230.00	8275.00				MinPt-O-SF	
	13229.70	271.26	13048.48	12958.43	73.46	OSF1.50	20149.81	8275.00				TD	
Final Surveys - Cimarex Riverbend 12-13 Federal Com #34H MWD 0ft-21110ft (Surcon Corrected) (Def Survey)													Pass
	1041.81	32.81	1040.53	1009.01	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1041.81	32.81	1040.51	1009.00	85817.78	MAS = 10.00 (m)	26.00	26.00				WRP	
	1040.40	32.81	1037.41	1007.59	611.12	MAS = 10.00 (m)	440.00	440.00				MINPT-O-EOU	
	1040.01	32.81	1036.61	1007.20	458.10	MAS = 10.00 (m)	560.00	560.00				MinPts	
	1040.33	32.81	1036.36	1007.52	366.32	MAS = 10.00 (m)	680.00	680.00				MINPT-O-EOU	
	1038.29	32.81	1031.24	1005.48	175.08	MAS = 10.00 (m)	1340.00	1340.00				MinPts	
	1039.05	32.81	1030.59	1006.24	141.60	MAS = 10.00 (m)	1620.00	1620.00				MINPT-O-EOU	
	1045.43	32.81	1034.97	1012.62	111.97	MAS = 10.00 (m)	2080.00	2080.00				MINPT-O-EOU	
	1057.50	32.81	1046.12	1024.69	103.13	MAS = 10.00 (m)	2350.00	2349.93				MinPt-O-SF	
	1077.76	32.81	1066.23	1044.95	103.59	MAS = 10.00 (m)	2520.00	2519.33				MinPt-O-SF	
	1492.70	32.81	1478.25	1459.89	111.10	MAS = 10.00 (m)	3890.00	3853.65				MinPt-O-SF	
	1503.75	32.81	1489.20	1470.94	111.10	MAS = 10.00 (m)	3920.00	3882.76				MinPt-O-SF	
	2592.89	50.85	2558.65	2542.03	78.02	OSF1.50	8030.00	7868.63				MinPt-O-SF	
	3318.75	126.72	3233.94	3192.03	39.58	OSF1.50	11820.00	8275.00				MinPt-CtCt	
	3319.37	128.47	3233.40	3190.90	39.04	OSF1.50	11910.00	8275.00				MINPT-O-EOU	
	3323.46	135.65	3232.71	3187.82	37.01	OSF1.50	12170.00	8275.00				MINPT-O-EOU	
	3330.26	151.31	3229.06	3178.95	33.22	OSF1.50	12690.00	8275.00				MinPt-CtCt	
	3311.99	190.08	3184.94	3121.91	26.26	OSF1.50	14030.00	8275.00				MinPt-CtCt	
	3313.21	206.03	3175.53	3107.18	24.23	OSF1.50	14570.00	8275.00				MinPt-CtCt	
	3313.59	207.32	3175.05	3106.27	24.08	OSF1.50	14640.00	8275.00				MINPT-O-EOU	
	3312.77	213.72	3169.96	3099.05	23.35	OSF1.50	14830.00	8275.00				MinPt-CtCt	
	3313.07	214.71	3169.61	3098.36	23.25	OSF1.50	14890.00	8275.00				MINPT-O-EOU	
	3313.50	215.19	3169.70	3098.30	23.20	OSF1.50	14920.00	8275.00				MinPt-O-ADP	
	3306.98	243.90	3144.05	3063.08	20.41	OSF1.50	15850.00	8275.00				MinPt-CtCt	
	3307.71	245.96	3143.41	3061.75	20.25	OSF1.50	15950.00	8275.00				MINPT-O-EOU	
	3308.75	247.22	3143.60	3061.52	20.15	OSF1.50	16010.00	8275.00				MinPt-O-ADP	
	3293.84	273.38	3111.26	3020.46	18.13	OSF1.50	16840.00	8275.00				MinPt-CtCt	
	3294.19	274.43	3110.91	3019.76	18.07	OSF1.50	16900.00	8275.00				MINPT-O-EOU	
	3294.61	274.94	3110.99	3019.68	18.03	OSF1.50	16930.00	8275.00				MinPt-O-ADP	
	3294.72	281.75	3106.56	3012.97	17.60	OSF1.50	17120.00	8275.00				MinPt-CtCt	
	3295.06	287.41	3103.13	3007.65	17.25	OSF1.50	17310.00	8275.00				MinPt-CtCt	
	3293.56	298.19	3094.44	2995.37	16.62	OSF1.50	17670.00	8275.00				MinPt-CtCt	
	3294.06	299.76	3093.89	2994.30	16.53	OSF1.50	17750.00	8275.00				MINPT-O-EOU	
	3294.71	304.46	3091.41	2990.25	16.28	OSF1.50	17880.00	8275.00				MinPt-CtCt	
	3295.36	336.08	3070.98	2959.28	14.75	OSF1.50	18930.00	8275.00				MinPt-CtCt	
	3291.68	349.34	3058.47	2942.35	14.17	OSF1.50	19370.00	8275.00				MinPt-CtCt	
	3291.93	350.15	3058.17	2941.79	14.14	OSF1.50	19420.00	8275.00				MINPT-O-EOU	
	3292.32	350.62	3058.25	2941.71	14.12	OSF1.50	19450.00	8275.00				MinPt-O-ADP	
	3299.44	357.55	3060.75	2941.90	13.88	OSF1.50	19690.00	8275.00				MinPts	
	3307.68	363.54	3064.99	2944.14	13.68	OSF1.50	19930.00	8275.00				MinPt-O-ADP	
	3311.38	365.76	3067.22	2945.63	13.61	OSF1.50	20030.00	8275.00				MinPt-O-SF	
	3318.96	366.12	3074.55	2952.84	13.63	OSF1.50	20149.81	8275.00				TD	
Final Surveys - Cimarex Riverbend 12-13 Federal Com #33H 0ft-20967ft (Surcon Corrected) (Def Survey)													Pass
	1061.56	32.81	1060.27	1028.75	N/A	MAS = 10.00 (m)	0.00	0.00				MinPts	
	1061.57	32.81	1060.27	1028.76	98753.76	MAS = 10.00 (m)	26.00	26.00				WRP	
	1062.02	32.81	1060.07	1029.21	1579.07	MAS = 10.00 (m)	190.00	190.00				MINPT-O-EOU	
	1062.18	32.81	1060.06	1029.38	1270.91	MAS = 10.00 (m)	220.00	220.00				MINPT-O-EOU	
	1064.85	32.81	1060.42	1032.04	338.18	MAS = 10.00 (m)	750.00	750.00				MinPts	
	1064.95	32.81	1060.28	1032.14	314.68	MAS = 10.00 (m)	800.00	800.00				MINPT-O-EOU	
	1058.42	32.81	1048.68	1025.61	125.05	MAS = 10.00 (m)	1910.00	1910.00				MinPts	
	1058.49	32.81	1048.61	1025.69	123.02	MAS = 10.00 (m)	1940.00	1940.00				MINPT-O-EOU	
	1073.90	32.81	1062.42	1041.09	105.25	MAS = 10.00 (m)	2300.00	2299.98				MinPt-O-SF	
	1400.62	32.81	1387.17	1367.81	115.07	MAS = 10.00 (m)	3360.00	3339.39				MinPt-O-SF	
	1561.12	32.81	1546.50	1528.31	116.96	MAS = 10.00 (m)	3750.00	3717.81				MinPt-O-SF	
	2949.42	51.97	2914.34	2897.45	87.25	OSF1.50	8030.00	7868.63				MinPt-O-SF	
	3589.71	75.85	3538.71	3513.86	72.19	OSF1.50	9870.00	8275.00				MinPts	
	3552.66	115.95	3474.93	3436.71	46.46	OSF1.50	11440.00	8275.00				MinPt-CtCt	
	3553.18	117.99	3474.10	3435.20	45.65	OSF1.50	11540.00	8275.00				MINPT-O-EOU	
	3553.79	118.74	3474.21	3435.06	45.37	OSF1.50	11580.00	8275.00				MinPt-O-ADP	
	3569.49	133.22	3480.24	3436.27	40.57	OSF1.50	12100.00	8275.00				MINPT-O-EOU	
	3552.82	177.44	3434.10	3375.38	30.24	OSF1.50	13610.00	8275.00				MinPt-CtCt	
	3559.71	203.66	3423.51	3356.05	26.37	OSF1.50	14540.00	8275.00				MINPT-O-EOU	
	3560.56	204.69	3423.67	3355.86	26.25	OSF1.50	14590.00	8275.00				MinPt-O-ADP	
	3553.85	262.92	3378.14	3290.93	20.37	OSF1.50	16510.00	8275.00				MinPt-CtCt	
	3555.31	266.25	3377.38	3289.06	20.12	OSF1.50	16660.00	8275.00				MINPT-O-EOU	
	3538.16	344.94	3307.78	3193.23	15.44	OSF1.50	19250.00	8275.00				MinPt-CtCt	
	3539.50	348.37	3306.83	3191.13	15.29	OSF1.50	19400.00	8275.00				MINPT-O-EOU	
	3541.98	351.33	3307.33	3190.65	15.17	OSF1.50	19520.00	8275.00				MinPt-O-ADP	
	3544.92	355.41	3307.55	3189.51	15.01	OSF1.50	19640.00	8275.00				MINPT-O-EOU	
	3548.87	361.20	3307.64	3187.67	14.79	OSF1.50	19830.00	8275.00				MINPT-O-EOU	
	3551.08	364.29	3307.79	3186.79	14.67	OSF1.50	19940.00	8275.00				MinPts	
	3556.42	365.49	3312.33	3190.93	14.64	OSF1.50	20080.00	8275.00				MinPt-O-SF	
	3561.13	365.84	3316.81	3195.29	14.65	OSF1.50	20149.81	8275.00				TD	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Final Surveys - Cimarex Riverbend 12-13 Federal Com #32H 0' to 21507' (Surcon Corrected) (Def Survey)													Pass
	1081.27	32.81	1079.98	1048.46	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1081.27	32.81	1079.97	1048.46	93876.00	MAS = 10.00 (m)	26.00	26.00				WRP	
	1070.62	32.81	1066.02	1037.81	308.03	MAS = 10.00 (m)	780.00	780.00				MinPts	
	1070.68	32.81	1065.98	1037.87	299.76	MAS = 10.00 (m)	800.00	800.00				MINPT-O-EOU	
	1206.90	32.81	1195.46	1174.09	116.97	MAS = 10.00 (m)	2300.00	2299.98				MinPt-O-SF	
	1698.70	32.81	1684.72	1665.89	131.07	MAS = 10.00 (m)	3680.00	3649.89				MinPt-O-SF	
	3362.55	53.39	3326.62	3309.16	96.29	OSF1.50	8050.00	7886.82				MinPt-O-SF	
	4023.78	75.31	3973.24	3948.47	81.18	OSF1.50	9760.00	8275.00				MINPT-O-EOU	
	4023.42	87.38	3964.84	3936.04	69.84	OSF1.50	10260.00	8275.00				MinPt-CtCt	
	4020.58	102.65	3951.82	3917.93	59.31	OSF1.50	10870.00	8275.00				MinPt-CtCt	
	4019.36	116.40	3941.43	3902.96	52.23	OSF1.50	11390.00	8275.00				MinPt-CtCt	
	4002.41	148.05	3903.38	3854.36	40.81	OSF1.50	12530.00	8275.00				MinPt-CtCt	
	3999.51	165.48	3888.86	3834.03	36.46	OSF1.50	13140.00	8275.00				MinPt-CtCt	
	3999.63	170.69	3885.51	3828.94	35.34	OSF1.50	13320.00	8275.00				MinPt-CtCt	
	3997.74	187.23	3872.59	3810.51	32.19	OSF1.50	13890.00	8275.00				MinPt-CtCt	
	3996.03	203.06	3860.33	3792.97	29.66	OSF1.50	14430.00	8275.00				MinPt-CtCt	
	3993.53	220.15	3846.44	3773.39	27.33	OSF1.50	15010.00	8275.00				MinPt-CtCt	
	3994.98	224.32	3845.11	3770.67	26.83	OSF1.50	15190.00	8275.00				MINPT-O-EOU	
	4010.95	243.17	3848.50	3767.77	24.84	OSF1.50	15850.00	8275.00				MinPt-O-ADP	
	3987.38	290.45	3793.42	3696.93	20.66	OSF1.50	17370.00	8275.00				MinPt-CtCt	
	3987.96	292.23	3792.81	3695.73	20.53	OSF1.50	17460.00	8275.00				MINPT-O-EOU	
	3988.77	293.22	3792.96	3695.55	20.47	OSF1.50	17510.00	8275.00				MinPt-O-ADP	
	3994.07	326.68	3775.96	3667.39	18.39	OSF1.50	18580.00	8275.00				MinPt-CtCt	
	3991.13	344.43	3761.18	3646.70	17.43	OSF1.50	19170.00	8275.00				MinPt-CtCt	
	3990.76	352.27	3755.59	3638.49	17.04	OSF1.50	19430.00	8275.00				MinPt-CtCt	
	3990.30	361.86	3748.73	3628.44	16.58	OSF1.50	19750.00	8275.00				MinPt-CtCt	
	3990.25	365.47	3746.28	3624.78	16.42	OSF1.50	19870.00	8275.00				MinPt-CtCt	
	3990.37	365.83	3746.16	3624.54	16.40	OSF1.50	19900.00	8275.00				MINPT-O-EOU	
	3990.46	365.94	3746.17	3624.52	16.40	OSF1.50	19910.00	8275.00				MinPt-O-ADP	
	3999.40	367.95	3753.77	3631.45	16.34	OSF1.50	20140.00	8275.00				MinPt-O-SF	
	4000.07	368.01	3754.40	3632.06	16.34	OSF1.50	20149.81	8275.00				TD	
Marathon Oil Rustler Bluff #7 (Offset) Inc Only 0ft-6500ft (Def Survey)													Pass
	2356.73	32.81	2355.60	2323.92	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2356.27	32.81	2355.09	2323.46	43194.05	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	2356.10	32.81	2354.85	2323.29	19478.49	MAS = 10.00 (m)	60.00	60.00				MinPts	
	2356.41	68.29	2310.51	2288.12	52.60	OSF1.50	1440.00	1440.00				MinPt-CtCt	
	1345.38	333.43	1122.32	1011.95	6.08	OSF1.50	6840.00	6716.02				MinPt-O-SF	
	1337.94	330.13	1117.09	1007.81	6.11	OSF1.50	6930.00	6803.35				MinPt-O-ADP	
	1337.11	329.19	1116.89	1007.92	6.12	OSF1.50	6950.00	6822.75				MINPT-O-EOU	
	1336.33	326.51	1117.90	1009.81	6.17	OSF1.50	7000.00	6871.27				MinPt-CtCt	
	2414.64	243.30	2252.06	2171.33	14.95	OSF1.50	10210.00	8275.00				MinPt-O-SF	
	11641.94	338.77	11415.72	11303.18	51.72	OSF1.50	20149.81	8275.00				TD	
Marathon Oil Whistle Pig Fee 1 SB FEE 5H (Offset)MWD 0ft-14257ft (Def Survey)													Pass
	4319.21	32.81	4318.08	4286.40	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4319.17	32.81	4318.03	4286.36	868406.28	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	4319.15	32.81	4318.02	4286.34	N/A	MAS = 10.00 (m)	20.00	20.00				MINPT-O-EOU	
	4319.15	32.81	4318.02	4286.34	N/A	MAS = 10.00 (m)	26.00	26.00				MinPts	
	4319.23	32.81	4317.97	4286.42	32971.44	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	4319.37	32.81	4317.96	4286.56	15371.69	MAS = 10.00 (m)	120.00	120.00				MINPT-O-EOU	
	4320.31	32.81	4317.67	4287.50	2873.42	MAS = 10.00 (m)	390.00	390.00				MinPts	
	4320.44	32.81	4317.53	4287.63	2427.44	MAS = 10.00 (m)	450.00	450.00				MINPT-O-EOU	
	4316.81	32.81	4309.83	4284.00	738.63	MAS = 10.00 (m)	1370.00	1370.00				MinPts	
	4317.19	32.81	4309.01	4284.38	611.75	MAS = 10.00 (m)	1630.00	1630.00				MINPT-O-EOU	
	4333.27	32.81	4322.22	4300.46	436.94	MAS = 10.00 (m)	2300.00	2299.98				MinPt-O-SF	
	1404.09	149.43	1304.10	1254.66	14.19	OSF1.50	8800.00	8274.24				MinPt-CtCt	
	1405.24	152.35	1303.29	1252.88	13.93	OSF1.50	8880.00	8275.00				MINPT-O-EOU	
	1405.53	152.70	1303.36	1252.84	13.90	OSF1.50	8890.00	8275.00				MinPt-O-ADP	
	1429.87	158.73	1323.67	1271.13	13.60	OSF1.50	9110.00	8275.00				MinPt-O-SF	
	11393.53	102.22	11325.01	11291.31	169.04	OSF1.50	20149.81	8275.00				TD	
Marathon Oil Whistle Pig Fee 1 WA 4H (Offset) MWD 0ft-14593ft (Def Survey)													Pass
	4303.85	32.81	4302.72	4271.04	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4303.82	32.81	4302.68	4271.01	938548.27	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	4303.80	32.81	4302.67	4270.99	N/A	MAS = 10.00 (m)	20.00	20.00				MinPts	
	4303.80	32.81	4302.67	4270.99	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	4303.83	32.81	4302.65	4271.02	79306.99	MAS = 10.00 (m)	50.00	50.00				MINPT-O-EOU	
	4305.85	32.81	4303.63	4273.04	3949.08	MAS = 10.00 (m)	300.00	300.00				MINPT-O-EOU	
	4316.10	32.81	4309.54	4283.29	794.76	MAS = 10.00 (m)	1240.00	1240.00				MINPT-O-EOU	
	1644.82	98.27	1578.93	1546.55	25.38	OSF1.50	8900.00	8275.00				MinPt-CtCt	
	1645.19	99.33	1578.60	1545.86	25.11	OSF1.50	8960.00	8275.00				MINPT-O-EOU	
	1645.48	99.68	1578.66	1545.81	25.03	OSF1.50	8980.00	8275.00				MinPt-O-ADP	
	1644.52	105.76	1573.64	1538.76	23.56	OSF1.50	9200.00	8275.00				MinPt-CtCt	
	1640.07	109.40	1566.76	1530.67	22.71	OSF1.50	9340.00	8275.00				MinPt-CtCt	
	1640.08	109.46	1566.73	1530.62	22.69	OSF1.50	9350.00	8275.00				MinPts	
	1642.35	109.84	1568.74	1532.50	22.65	OSF1.50	9430.00	8275.00				MinPt-O-SF	
	10930.02	75.49	10879.32	10854.54	220.47	OSF1.50	20149.81	8275.00				TD	
Marathon Oil Whistle Pig 1 WXY FEE 9H (Offset) MWD 0ft-14503ft (Def Survey)													Pass
	4334.71	32.81	4333.58	4301.90	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4334.67	32.81	4333.53	4301.86	874651.75	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	4334.65	32.81	4333.52	4301.84	N/A	MAS = 10.00 (m)	20.00	20.00				MINPT-O-EOU	
	4334.65	32.81	4333.52	4301.84	N/A	MAS = 10.00 (m)	26.00	26.00				MinPts	
	4334.68	32.81	4333.49	4301.87	79613.85	MAS = 10.00 (m)	50.00	50.00				MINPT-O-EOU	
	4336.74	32.81	4334.50	4303.93	3911.14	MAS = 10.00 (m)	310.00	310.00				MINPT-O-EOU	
	4332.60	32.81	4328.01	4299.79	1249.59	MAS = 10.00 (m)	820.00	820.00				MinPts	
	4332.72	32.81	4327.90	4299.91	1174.47	MAS = 10.00 (m)	870.00	870.00				MINPT-O-EOU	
	4327.50	32.81	4314.00	4294.69	349.87	MAS = 10.00 (m)	3470.00	3446.12				MinPts	
	4327.52	32.81	4313.95	4294.71	347.89	MAS = 10.00 (m)	3490.00	3465.53				MINPT-O-EOU	
	1807.74	139.20	1714.56	1668.54	19.63	OSF1.50	8820.00	8274.90				MinPts	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	1807.94	139.43	1714.61	1668.51	19.60	OSF1.50	8830.00	8275.00				MinPt-O-ADP	
	1819.26	153.62	1716.47	1665.64	17.88	OSF1.50	9210.00	8275.00				MINPT-O-EOU	
	1820.44	155.03	1716.71	1665.41	17.73	OSF1.50	9260.00	8275.00				MinPt-O-ADP	
	1832.69	161.61	1724.57	1671.08	17.12	OSF1.50	9510.00	8275.00				MinPt-O-SF	
	10943.59	98.23	10877.73	10845.36	169.04	OSF1.50	20149.81	8275.00				TD	
Mewbourne Malaga 13 CN Federal Com 1H (Offset) MWD 0ft-12805ft (Def Survey)													Pass
	6844.46	32.81	6842.48	6811.65	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	6844.34	32.81	6842.34	6811.53	508170.59	MAS = 10.00 (m)	26.00	26.00				WRP	
	6826.56	32.81	6817.95	6793.75	1029.68	MAS = 10.00 (m)	1450.00	1450.00				MinPts	
	6826.83	32.81	6817.71	6794.02	955.83	MAS = 10.00 (m)	1550.00	1550.00				MINPT-O-EOU	
	6839.72	32.81	6826.64	6806.91	615.94	MAS = 10.00 (m)	2560.00	2559.05				MinPt-O-SF	
	1977.45	237.21	1818.65	1740.24	12.60	OSF1.50	17260.00	8275.00				MinPt-CtCt	
	1977.21	244.93	1813.26	1732.28	12.20	OSF1.50	17440.00	8275.00				MinPt-CtCt	
	1948.82	294.06	1752.12	1654.76	10.00	OSF1.50	18500.00	8275.00				MinPt-CtCt	
	1949.93	298.30	1750.40	1651.63	9.86	OSF1.50	18630.00	8275.00				MINPT-O-EOU	
	1952.87	306.58	1747.82	1646.29	9.61	OSF1.50	18800.00	8275.00				MINPT-O-EOU	
	1928.74	361.34	1687.19	1567.40	8.04	OSF1.50	19840.00	8275.00				MinPt-O-SF	
	1928.70	361.33	1687.15	1567.37	8.04	OSF1.50	19850.00	8275.00				MinPts	
	1951.47	356.70	1713.01	1594.77	8.24	OSF1.50	20149.81	8275.00				TD	
COG Illustrated Man Fee Com #1H (Offset) Gyro+MWD 0ft-12865ft (Def Survey)													Pass
	2011.63	32.81	2009.65	1978.82	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2011.63	32.81	2009.65	1978.82	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	2011.64	32.81	2009.65	1978.83	152596.57	MAS = 10.00 (m)	26.00	26.00				WRP	
	2011.75	32.81	2009.59	1978.94	11195.28	MAS = 10.00 (m)	80.00	80.00				MINPT-O-EOU	
	2012.28	32.81	2009.27	1979.47	1945.92	MAS = 10.00 (m)	240.00	240.00				MINPT-O-EOU	
	2030.85	32.81	2018.25	1998.04	191.31	MAS = 10.00 (m)	2300.00	2299.98				MinPt-O-SF	
	2030.72	32.81	2018.16	1997.91	192.19	MAS = 10.00 (m)	2330.00	2329.96				MinPts	
	3121.14	51.74	3085.99	3069.40	94.03	OSF1.50	8050.00	7886.82				MinPt-O-SF	
	3148.29	52.15	3112.87	3096.14	94.07	OSF1.50	8120.00	7947.53				MinPt-O-SF	
	3190.09	52.76	3154.25	3137.33	94.17	OSF1.50	8210.00	8017.24				MinPt-O-SF	
	3107.49	61.51	3065.82	3045.98	78.25	OSF1.50	9940.00	8275.00				MinPt-CtCt	
	3107.64	62.02	3065.64	3045.62	77.59	OSF1.50	9980.00	8275.00				MINPT-O-EOU	
	3107.99	62.43	3065.71	3045.56	77.07	OSF1.50	10010.00	8275.00				MinPt-O-ADP	
	3088.17	95.48	3023.85	2992.68	49.51	OSF1.50	10880.00	8275.00				MinPt-CtCt	
	3089.22	98.65	3022.79	2990.57	47.90	OSF1.50	11000.00	8275.00				MINPT-O-EOU	
	3092.64	102.69	3023.52	2989.95	46.03	OSF1.50	11130.00	8275.00				MinPt-O-ADP	
	3110.05	127.66	3024.29	2982.39	37.09	OSF1.50	11630.00	8275.00				MINPT-O-EOU	
	3112.17	130.17	3024.73	2982.00	36.39	OSF1.50	11710.00	8275.00				MinPt-O-ADP	
	3129.48	144.90	3032.22	2984.58	32.82	OSF1.50	12050.00	8275.00				MINPT-O-EOU	
	3129.94	145.56	3032.24	2984.38	32.68	OSF1.50	12060.00	8275.00				MinPt-O-ADP	
	3175.10	174.79	3057.91	3000.30	27.54	OSF1.50	12660.00	8275.00				MINPT-O-EOU	
	3180.25	184.64	3056.49	2995.61	26.10	OSF1.50	12770.00	8275.00				MINPT-O-EOU	
	3182.59	187.26	3057.09	2995.33	25.75	OSF1.50	12840.00	8275.00				MinPt-O-ADP	
	3198.42	199.65	3064.66	2998.77	24.26	OSF1.50	13140.00	8275.00				MinPt-O-ADP	
	3215.57	210.29	3074.71	3005.28	23.14	OSF1.50	13380.00	8275.00				MinPt-O-ADP	
	3242.18	235.46	3084.55	3006.72	20.82	OSF1.50	13760.00	8275.00				MINPT-O-EOU	
	3247.94	245.51	3083.60	3002.42	19.99	OSF1.50	13910.00	8275.00				MinPts	
	3258.16	255.36	3087.26	3002.80	19.28	OSF1.50	14140.00	8275.00				MINPT-O-EOU	
	3258.61	255.99	3087.28	3002.61	19.23	OSF1.50	14150.00	8275.00				MinPt-O-ADP	
	3269.07	266.25	3090.91	3002.81	18.54	OSF1.50	14350.00	8275.00				MINPT-O-EOU	
	3273.61	272.11	3091.54	3001.50	18.17	OSF1.50	14450.00	8275.00				MinPt-O-ADP	
	3286.37	284.54	3096.02	3001.83	17.44	OSF1.50	14690.00	8275.00				MINPT-O-EOU	
	3287.83	286.17	3096.39	3001.66	17.34	OSF1.50	14720.00	8275.00				MinPt-O-ADP	
	3288.32	286.42	3096.72	3001.90	17.33	OSF1.50	14730.00	8275.00				MinPt-O-SF	
	6479.93	173.64	6363.51	6306.29	56.60	OSF1.50	20149.81	8275.00				TD	
Mewbourne Malaga 13 DM Federal Com 1H (Offset) Gyro+MWD 0ft-Update (Def Survey)													Pass
	6372.31	32.81	6370.33	6339.50	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	6372.15	32.81	6370.15	6339.34	353415.11	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	6372.10	32.81	6370.07	6339.29	119442.81	MAS = 10.00 (m)	50.00	50.00				MinPts	
	6372.08	32.81	6367.86	6339.27	2850.72	MAS = 10.00 (m)	510.00	510.00				MinPts	
	6359.19	32.81	6351.05	6326.38	1032.58	MAS = 10.00 (m)	1320.00	1320.00				MinPts	
	6359.27	32.81	6350.93	6326.46	999.93	MAS = 10.00 (m)	1370.00	1370.00				MINPT-O-EOU	
	6387.04	32.81	6374.53	6354.23	606.57	MAS = 10.00 (m)	2650.00	2648.15				MinPt-O-SF	
	2869.03	147.18	2770.25	2721.85	29.62	OSF1.50	14690.00	8275.00				MinPt-CtCt	
	2869.06	147.27	2770.22	2721.79	29.60	OSF1.50	14700.00	8275.00				MINPT-O-EOU	
	2869.13	147.37	2770.22	2721.76	29.58	OSF1.50	14710.00	8275.00				MinPt-O-ADP	
	2889.45	150.19	2788.67	2739.26	29.22	OSF1.50	15040.00	8275.00				MinPt-O-SF	
	3222.60	188.60	3096.21	3034.00	25.89	OSF1.50	16220.00	8275.00				MinPts	
	3231.56	193.76	3101.72	3037.80	25.26	OSF1.50	16280.00	8275.00				MinPts	
	3244.99	201.83	3109.77	3043.15	24.34	OSF1.50	16400.00	8275.00				MinPt-O-ADP	
	3381.41	256.65	3209.66	3124.77	19.91	OSF1.50	17510.00	8275.00				MinPts	
	3517.10	314.92	3306.49	3202.18	16.85	OSF1.50	18770.00	8275.00				MINPT-O-EOU	
	3519.99	318.67	3306.88	3201.32	16.66	OSF1.50	18820.00	8275.00				MinPt-O-ADP	
	3601.81	358.75	3361.98	3243.06	15.14	OSF1.50	19680.00	8275.00				MinPts	
	3627.22	378.98	3373.91	3248.24	14.42	OSF1.50	20040.00	8275.00				MinPt-O-ADP	
	3633.77	382.19	3378.31	3251.58	14.33	OSF1.50	20140.00	8275.00				MinPt-O-SF	
	3634.52	382.27	3379.02	3252.25	14.33	OSF1.50	20149.81	8275.00				TD	

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Cimarex Energy**
LEASE NO.:	**NMNM016104**
LOCATION:	Section 1, T.25 S., R.28 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	**Riverbend 12-13 Fed Com 21H**
SURFACE HOLE FOOTAGE:	1267'/S & 2323'/W
BOTTOM HOLE FOOTAGE	100'/S & 1330'/E

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	○ Medium	◉ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **514** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

 Approval Date: 04/13/2022

hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.

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

❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
   - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

   a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
   b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
   c. Manufacturer representative shall install the test plug for the initial BOP test.
   d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
   e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

b. When the operator proposes to set surface casing with Spudder Rig
   - Notify the BLM when moving in and removing the Spudder Rig.
   - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
   - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall

have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.
ZS112221

Hydrogen Sulfide Drilling Operations Plan
Riverbend 12-13 Fed Com 21H
Cimarex Energy Co.
UL: N, Sec. 1, 25S, 28E
Eddy Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H_2S
B. Physical effects and hazards
C. Principal and operation of H2S detectors, warning system and briefing areas.
D. Evacuation procedure, routes and first aid.
E. Proper use of safety equipment & life support systems
F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H_2S Detection and Alarm Systems:

A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.

B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:

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

4 Condition Flags and Signs

A. Warning sign on access road to location.
B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H_2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit "E-1"

6 Communication:

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

7 Drillstem Testing:
No DSTs r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

H_2S Contingency Plan
Riverbend 12-13 Fed Com 21H
Cimarex Energy Co.
UL: N, Sec. 1, 25S, 28E
Eddy Co., NM

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must:

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with H_2S monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the 432-620-1975
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training in the:
  · Detection of H_2S, and
  · Measures for protection against the gas,
  · Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H_2S and SO_2

Please see attached International Chemical Safety Cards.

Contacting Authorities

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

H_2S Contingency Plan Emergency Contacts
Riverbend 12-13 Fed Com 21H
Cimarex Energy Co.
UL: N, Sec. 1, 25S, 28E
Eddy Co., NM

Company Office			
Cimarex Energy Co. of Colorado		800-969-4789	
Co. Office and After-Hours Menu			

Key Personnel

Name	**Title**	**Office**	**Mobile**
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		432-634-2136

Artesia			
Ambulance		911	
State Police		575-746-2703	
City Police		575-746-2703	
Sheriff's Office		575-746-9888	
Fire Department		**575-746-2701**	
Local Emergency Planning Committee		575-746-2122	
New Mexico Oil Conservation Division		575-748-1283	

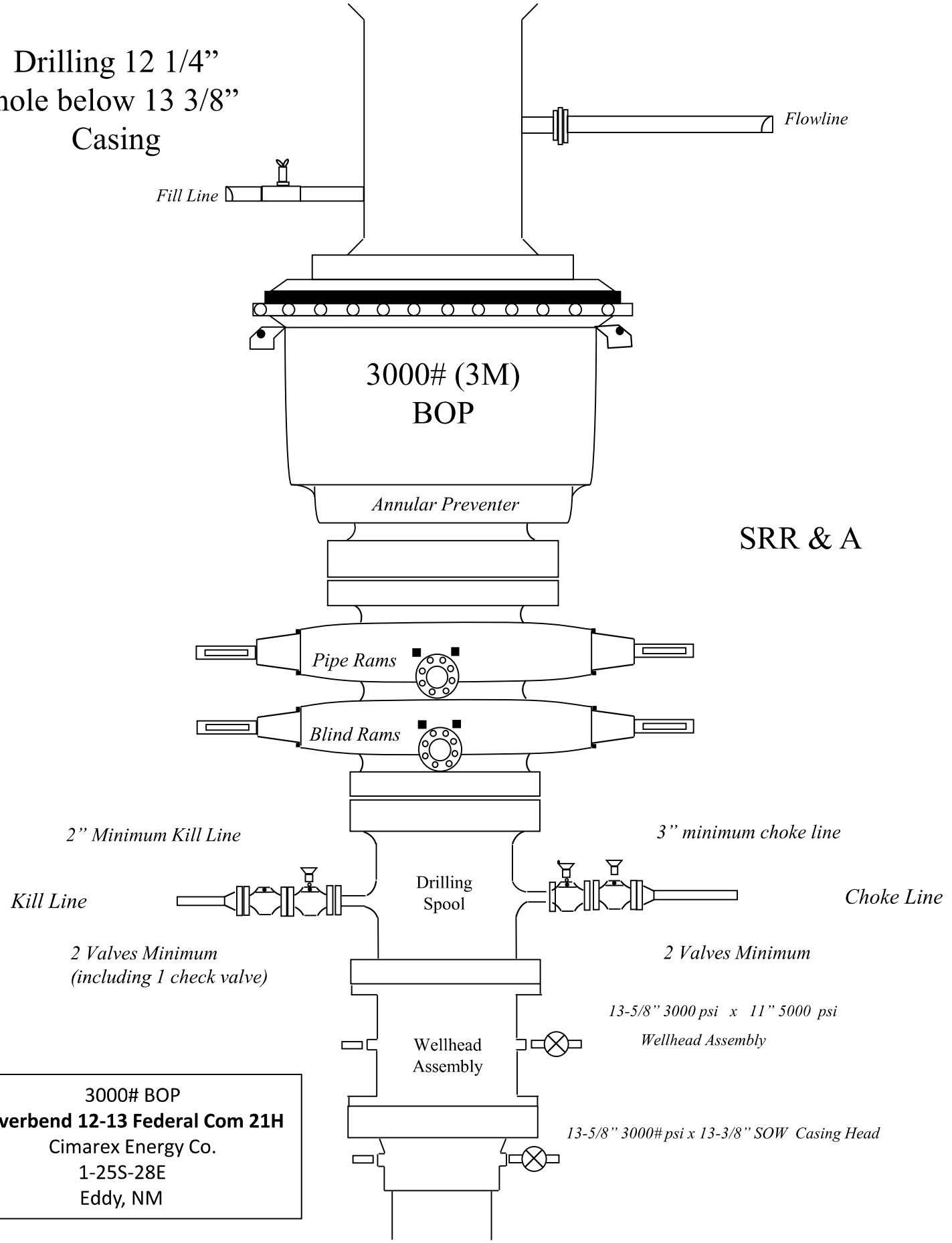
Carlsbad			
Ambulance		911	
State Police		575-885-3137	
City Police		575-885-2111	
Sheriff's Office		575-887-7551	
Fire Department		**575-887-3798**	
Local Emergency Planning Committee		575-887-6544	
US Bureau of Land Management		575-887-6544	

Santa Fe			
New Mexico Emergency Response Commission (Santa Fe)		505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs		505-827-9126	
New Mexico State Emergency Operations Center		505-476-9635	

National			
National Emergency Response Center (Washington, D.C.)		800-424-8802	

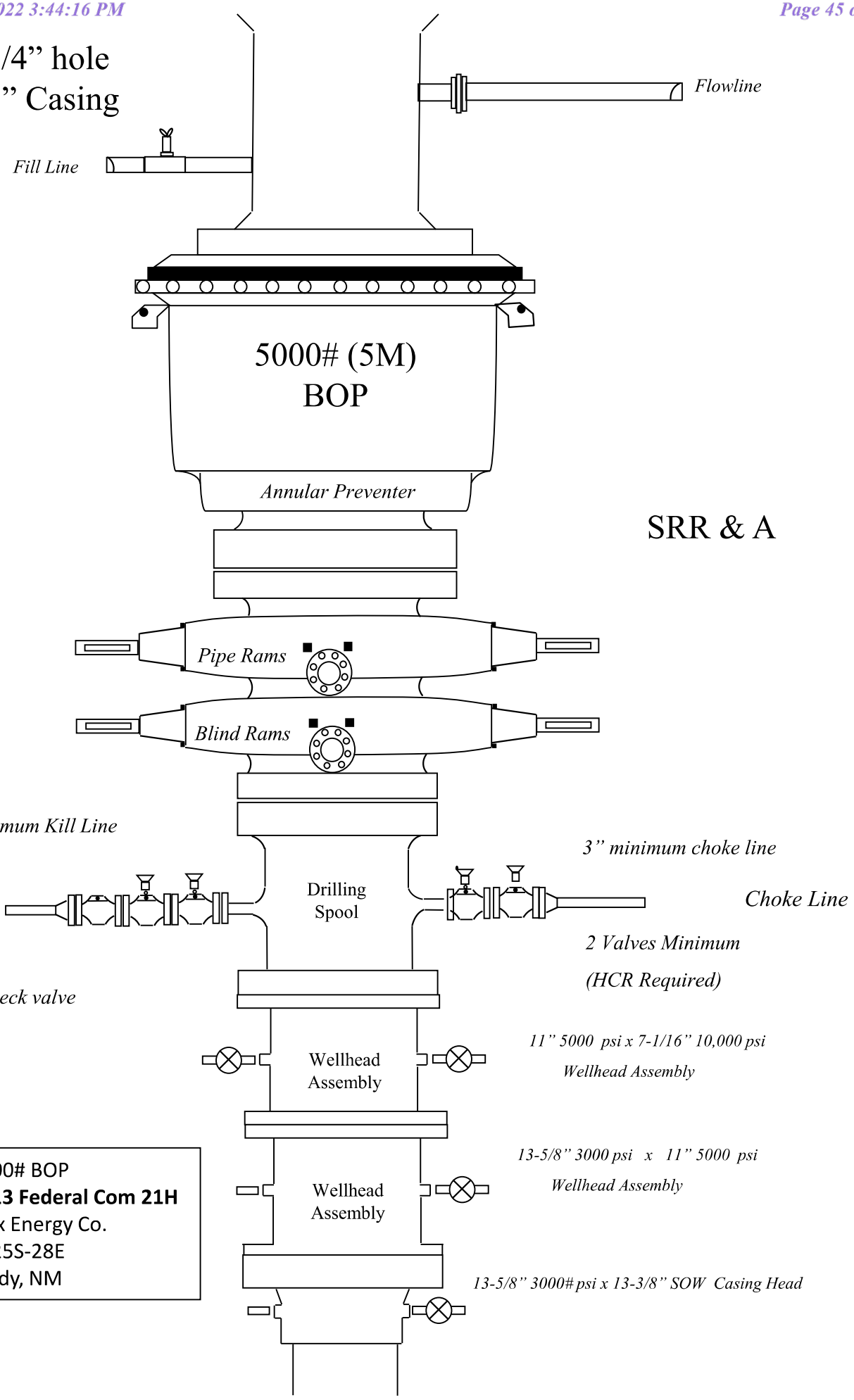
Medical			
Flight for Life - 4000 24th St.; Lubbock, TX		806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX		806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM		505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949	

Other			
Boots & Coots IWC		800-256-9688	or 281-931-8884
Cudd Pressure Control		432-699-0139	or 432-563-3356
Halliburton		575-746-2757	
B.J. Services		575-746-3569	



3000# BOP
Riverbend 12-13 Federal Com 21H
Cimarex Energy Co.
1-25S-28E
Eddy, NM

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



5000# BOP
Riverbend 12-13 Federal Com 21H
Cimarex Energy Co.
1-25S-28E
Eddy, NM

Intent ☐ As Drilled ☐

API #

Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

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

Latitude	Longitude	NAD

First Take Point (FTP)

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

Latitude	Longitude	NAD

Last Take Point (LTP)

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

Latitude	Longitude	NAD

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

Is this well an infill well? ☐

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

API #

Operator Name:	Property Name:	Well Number

Estimated Formation Tops

Formation:	Top:	Formation:	Top:

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 110672

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 110672
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Notify OCD 24 hours prior to casing & cement	5/31/2022
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/31/2022
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	5/31/2022
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	5/31/2022
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	5/31/2022