

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**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[326056]</div>	
2. Name of Operator <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[215099]</div>		9. API Well No. <div style="text-align: center; font-weight: bold; font-size: 1.2em;">30-025-50139</div>	
3a. Address		3b. Phone No. (include area code)	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[96674]</div>	
11. Sec., T. R. M. or Blk. and Survey or Area		12. County or Parish	
13. State		14. Distance in miles and direction from nearest town or post office*	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)		16. No of acres in lease	
17. Spacing Unit dedicated to this well		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	
19. Proposed Depth		20. BLM/BIA Bond No. in file	
21. Elevations (Show whether DF, KDB, RT, GL, etc.)		22. Approximate date work will start*	
23. Estimated duration		24. Attachments	
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)			
1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).		4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification. 6. Such other site specific information and/or plans as may be requested by the BLM.	
25. Signature		Name (Printed/Typed)	
Title		Date	
Approved by (Signature)		Name (Printed/Typed)	
Title		Office	
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Conditions of approval, if any, are attached.			
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.			

NGMP Rec 05/02/2022

SL

(Continued on page 2)



Approval Date: 09/09/2021

KZ  
05/12/2022

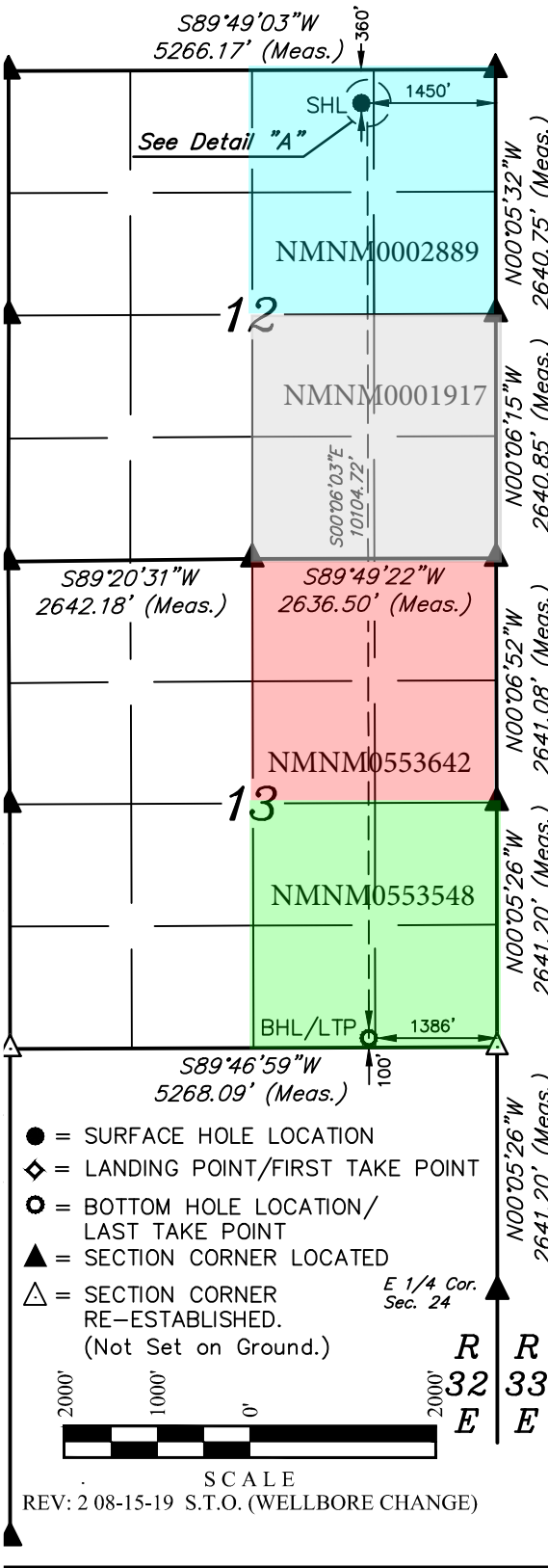
\*(Instructions on page 2)

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

☐ AMENDED REPORT

# Dos Equis 12-13 Fed Com W2E2 Pad 6

## Lease Map



## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Cimarex</b>
<b>LEASE NO.:</b>	<b>NMNM02889</b>
<b>LOCATION:</b>	Section 12, T.24 S., R.32 E., NMPM
<b>COUNTY:</b>	Lea County, New Mexico

<b>WELL NAME &amp; NO.:</b>	Dos Equis 12-13 Fed Com 90H
<b>SURFACE HOLE FOOTAGE:</b>	300'/N & 1530'/E
<b>BOTTOM HOLE FOOTAGE:</b>	100'/S & 1650'/E

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1235** feet (a minimum of **25 feet (Lea 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**



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

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

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

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.**

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

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in 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.

**ZS 072021**





U.S. Department of the Interior  
Bureau of Land Management

## Application for Permit to Drill

### APD Package Report

Date Printed:

APD ID:  
APD Received Date:  
Operator:

Well Status:  
Well Name:  
Well Number:

#### APD Package Report Contents

- Form 3160-3
- Operator Certification Report
- Application Report
- Application Attachments
  - Well Plat: 2 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
  - Blowout Prevention Choke Diagram Attachment: 2 file(s)
  - Blowout Prevention BOP Diagram Attachment: 2 file(s)
  - Casing Design Assumptions and Worksheet(s): 4 file(s)
  - Hydrogen sulfide drilling operations plan: 1 file(s)
  - Proposed horizontal/directional/multi-lateral plan submission: 2 file(s)
  - Other Facets: 2 file(s)
  - Other Variances: 2 file(s)
- SUPO Report
- SUPO Attachments
  - Existing Road Map: 1 file(s)
  - Attach Well map: 1 file(s)
  - Production Facilities map: 4 file(s)
  - Water source and transportation map: 1 file(s)
  - Well Site Layout Diagram: 2 file(s)
  - Recontouring attachment: 1 file(s)
- PWD Report
- PWD Attachments
  - None
- Bond Report
- Bond Attachments



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

# Application Data Report

10/27/2021

APD ID: 10400058473

Submission Date: 07/15/2020

Highlighted data  
reflects the most  
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 12-13 FEDERAL COM

Well Number: 90H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - General

APD ID: 10400058473

Tie to previous NOS? Y

Submission Date: 07/15/2020

BLM Office: Carlsbad

User: Amithy Crawford

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM02889

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

APD Operator: CIMAREX ENERGY COMPANY

Operator letter of designation:

## Operator Info

Operator Organization Name: CIMAREX ENERGY COMPANY

Operator Address: 600 N MARIENFELD STREET ST SUITE 600

Zip: 79701

Operator PO Box:

Operator City: MIDLAND

State: TX

Operator Phone: (432)571-7800

Operator Internet Address:

## Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: DOS EQUIS 12-13 FEDERAL COM

Well Number: 90H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: TRISTE DRAW  
BONE SPRINGPool Name: TRISTE DRAW  
BONE SPRING

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,OIL**Is the proposed well in a Helium production area?** N**Use Existing Well Pad?** Y**New surface disturbance?** N**Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:** Dos**Number:** W2E2 Pad 6

Equis 12-13 Fed Com

**Well Class:** HORIZONTAL**Number of Legs:** 1**Well Work Type:** Drill**Well Type:** OIL WELL**Describe Well Type:****Well sub-Type:** INFILL**Describe sub-type:****Distance to town:** 28 Miles**Distance to nearest well:** 20 FT**Distance to lease line:** 300 FT**Reservoir well spacing assigned acres Measurement:** 320 Acres**Well plat:** Dos\_Equis\_12\_13\_Fed\_Com\_90H\_C102\_20200707133035.pdf

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Lease\_Map\_20200707133046.pdf

**Well work start Date:** 11/30/2020**Duration:** 30 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:****Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	300	FNL	153 0	FEL	24S	32E	12	Aliquot NWNE	32.23863 5	- 103.6247 35	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 02889	360 0	0	0	Y
KOP Leg #1	300	FNL	153 0	FEL	24S	32E	12	Aliquot NWNE	32.23863 5	- 103.6247 35	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 02889	- 550 0	910 0	910 0	Y

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-1	300	FNL	1530	FEL	24S	32E	12	Aliquot NWNE	32.238635	- 103.625123	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 02889	- 5683	9287	9283	Y
PPP Leg #1-2	2640	FNL	1650	FEL	24S	32E	12	Aliquot NWSE	32.2322	- 103.625128	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 01917	- 6000	11744	9600	Y
PPP Leg #1-3	0	FNL	1650	FEL	24S	32E	13	Aliquot NWNE	32.224944	- 103.625133	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0553642	- 6000	14384	9600	Y
EXIT Leg #1	100	FSL	1650	FEL	24S	32E	13	Aliquot SWSE	32.210699	- 103.625144	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0553548	- 6000	19566	9600	Y
BHL Leg #1	100	FSL	1650	FEL	24S	32E	13	Aliquot SWSE	32.210699	- 103.625144	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0553548	- 6000	19566	9600	Y



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

# Drilling Plan Data Report

10/27/2021

APD ID: 10400058473

Submission Date: 07/15/2020

Highlighted data  
reflects the most  
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 12-13 FEDERAL COM

Well Number: 90H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
771809	RUSTLER	3608	1185	1185	LIMESTONE	USEABLE WATER	N
771810	SALADO	2108	1500	1500	ANHYDRITE	NONE	N
771811	CASTILE	-1042	4650	4650	ANHYDRITE	NONE	N
771812	BELL CANYON	-1339	4947	4947	SANDSTONE	NONE	N
771813	CHERRY CANYON	-2266	5874	5874	SANDSTONE	NONE	N
771814	BRUSHY CANYON	-3703	7311	7311	SANDSTONE	NATURAL GAS, OIL	N
771815	BONE SPRING	-5237	8845	8845	LIMESTONE	NATURAL GAS, OIL	N
771816	UPPER AVALON SHALE	-5675	9283	9286	SHALE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 4900

**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 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 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

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H

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:**

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Choke\_2M3M\_20200707133647.pdf

**BOP Diagram Attachment:**

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_BOP\_2M\_20200707133653.pdf

**Pressure Rating (PSI):** 5M**Rating Depth:** 19567

**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:**

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Choke\_5M\_20200707133712.pdf

**BOP Diagram Attachment:**

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_BOP\_5M\_20200707133719.pdf



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**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	1235	0	1235	3600	2365	1235	H-40	48	ST&C	1.38	3.23	BUOY	5.43	BUOY	5.43
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4900	0	4900	3608	-1300	4900	J-55	36	ST&C	1.21	1.38	BUOY	2.23	BUOY	2.23
3	PRODUCTION	8.75	5.5	NEW	API	N	0	9100	0	9100	3608	-5500	9100	L-80	20	LT&C	2.07	2.16	BUOY	2.17	BUOY	2.17
4	PRODUCTION	8.75	5.5	NEW	API	N	9100	19567	9100	9600	-5500	-6000	10467	L-80	20	BUTT	1.97	2	BUOY	46.6	BUOY	46.6

**Casing Attachments****Casing ID:** 1 **String Type:** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Casing\_Assumptions\_20200707133813.pdf

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Casing Attachments**

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**Casing ID:** 2      **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Casing\_Assumptions\_20200707133923.pdf

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**Casing ID:** 3      **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Casing\_Assumptions\_20200707133954.pdf

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**Casing ID:** 4      **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Casing\_Assumptions\_20200707133851.pdf

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**Section 4 - Cement**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	0	0	0	0	0	0	0	0

SURFACE	Lead		0	1235	599	1.72	13.5	1030	45	Class C	Bentonite
SURFACE	Tail		0	1235	160	1.34	14.8	214	45	Class C	LCM
INTERMEDIATE	Lead		0	4900	919	1.88	12.9	1727	51	35:65 POZ C	Salt Bentonite
INTERMEDIATE	Tail		0	4900	286	1.34	14.8	383	51	Class C	LCM
PRODUCTION	Lead		0	1956 7	380	3.64	10.3	1386	25	Tuned Lght	LCM
PRODUCTION	Tail		0	1956 7	2543	1.3	14.2	3305	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	1235	OTHER : Fresh Water	7.83	8.33							

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H

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
1235	4900	SALT SATURATED	9.5	10							
4900	19567	OIL-BASED MUD	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:**

GAMMA RAY LOG,DIRECTIONAL SURVEY,COMPENSATED NEUTRON LOG,

**Coring operation description for the well:**

N/A

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 4492

**Anticipated Surface Pressure:** 2379

**Anticipated Bottom Hole Temperature(F):** 166

**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 geohazards 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:**

Dos\_Equis\_12\_13\_Fed\_Com\_51H\_H2S\_Plan\_20200515084224.pdf

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** DOS EQUIS 12-13 FEDERAL COM

**Well Number:** 90H

## Section 8 - Other Information

### Proposed horizontal/directional/multi-lateral plan submission:

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_AC\_Report\_20200707134209.pdf

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Directional\_20200707134216.pdf

### Other proposed operations facets description:

### Other proposed operations facets attachment:

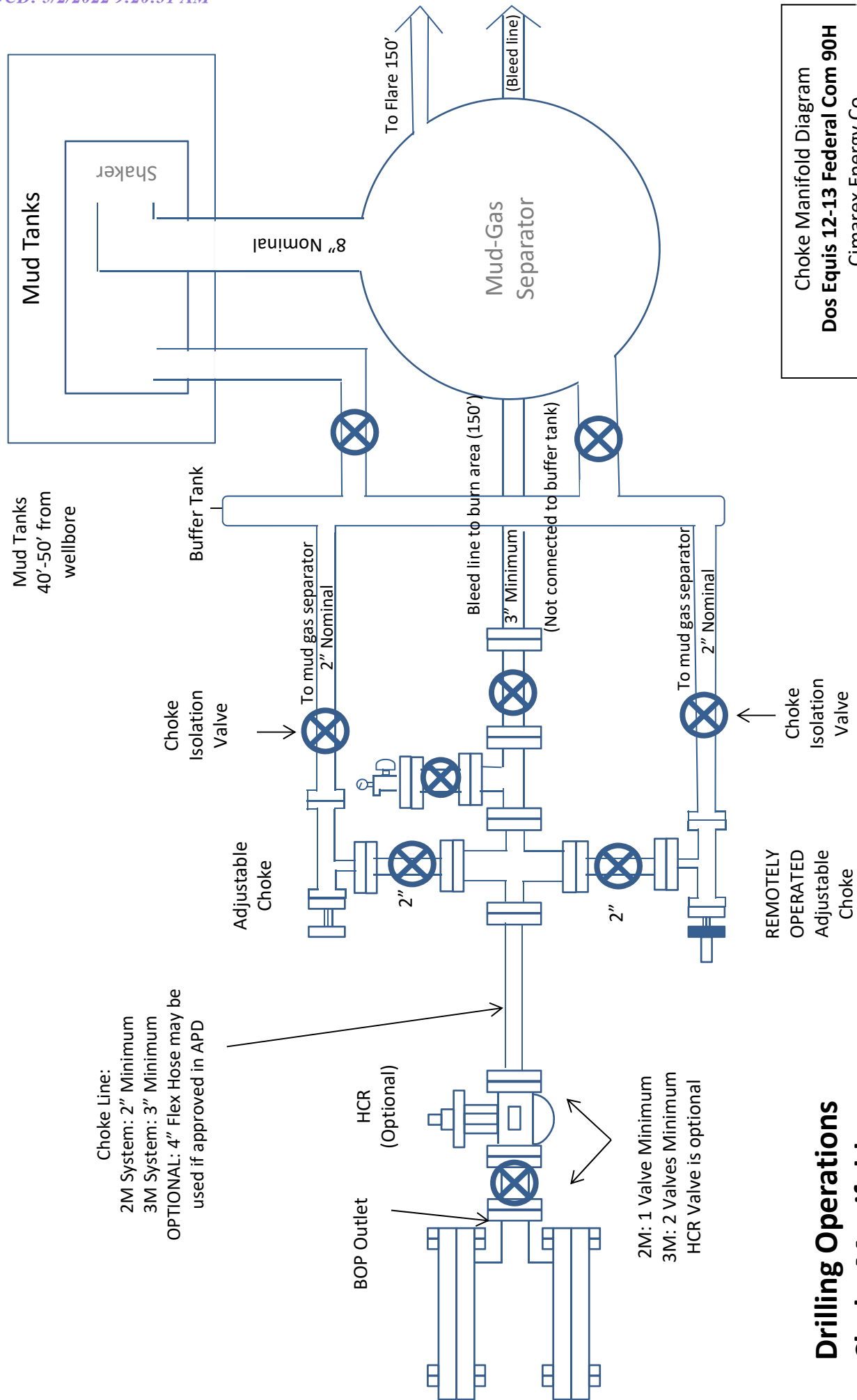
Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Gas\_Capture\_Plan\_20200707134241.pdf

Dos\_Equis\_12\_13\_Fed\_com\_90H\_Drilling\_Plan\_20210303122002.pdf

### Other Variance attachment:

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Multibowl\_Wellhead\_20200707134253.pdf

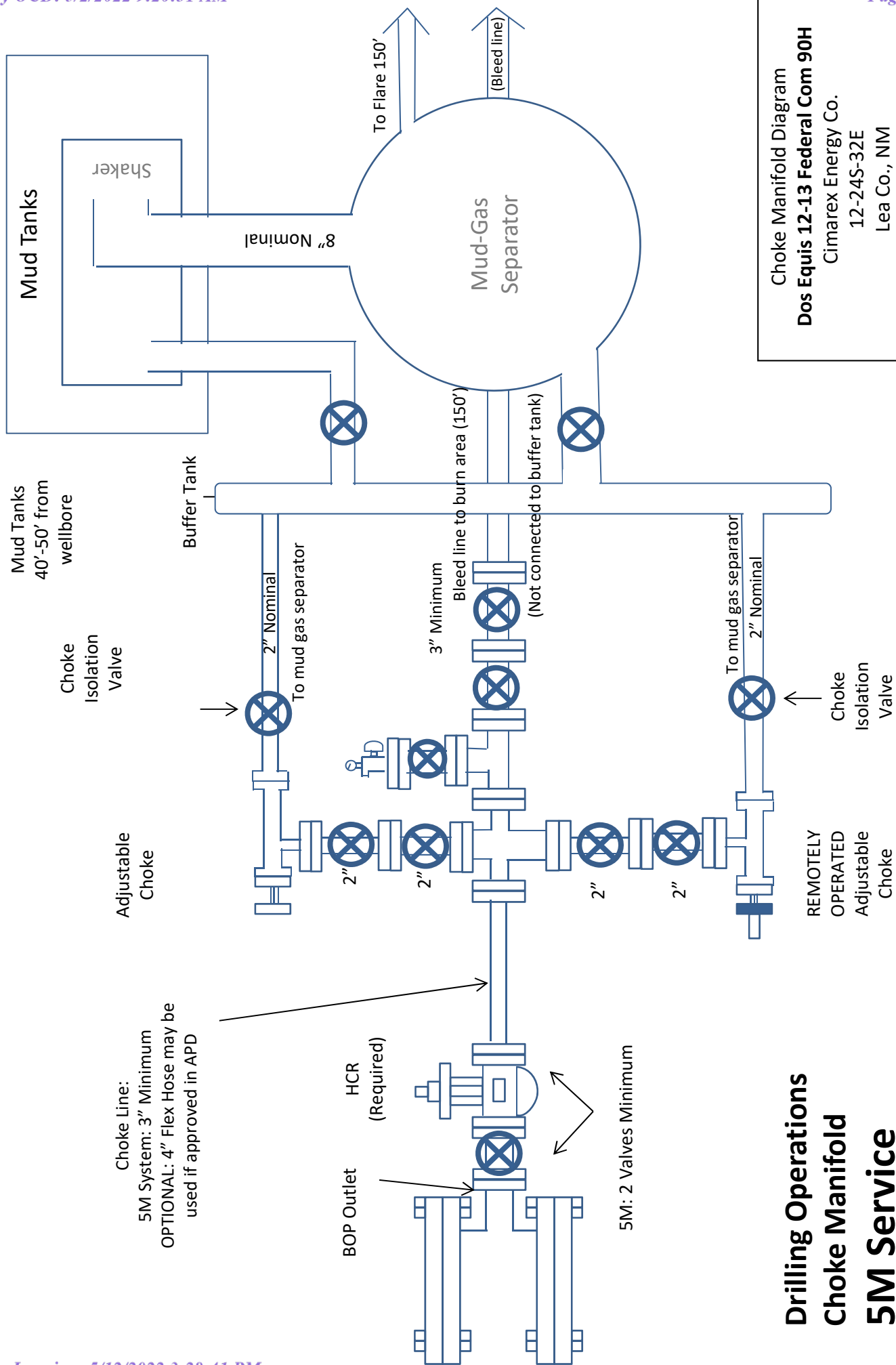
Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Flex\_Hose\_20200707134305.pdf



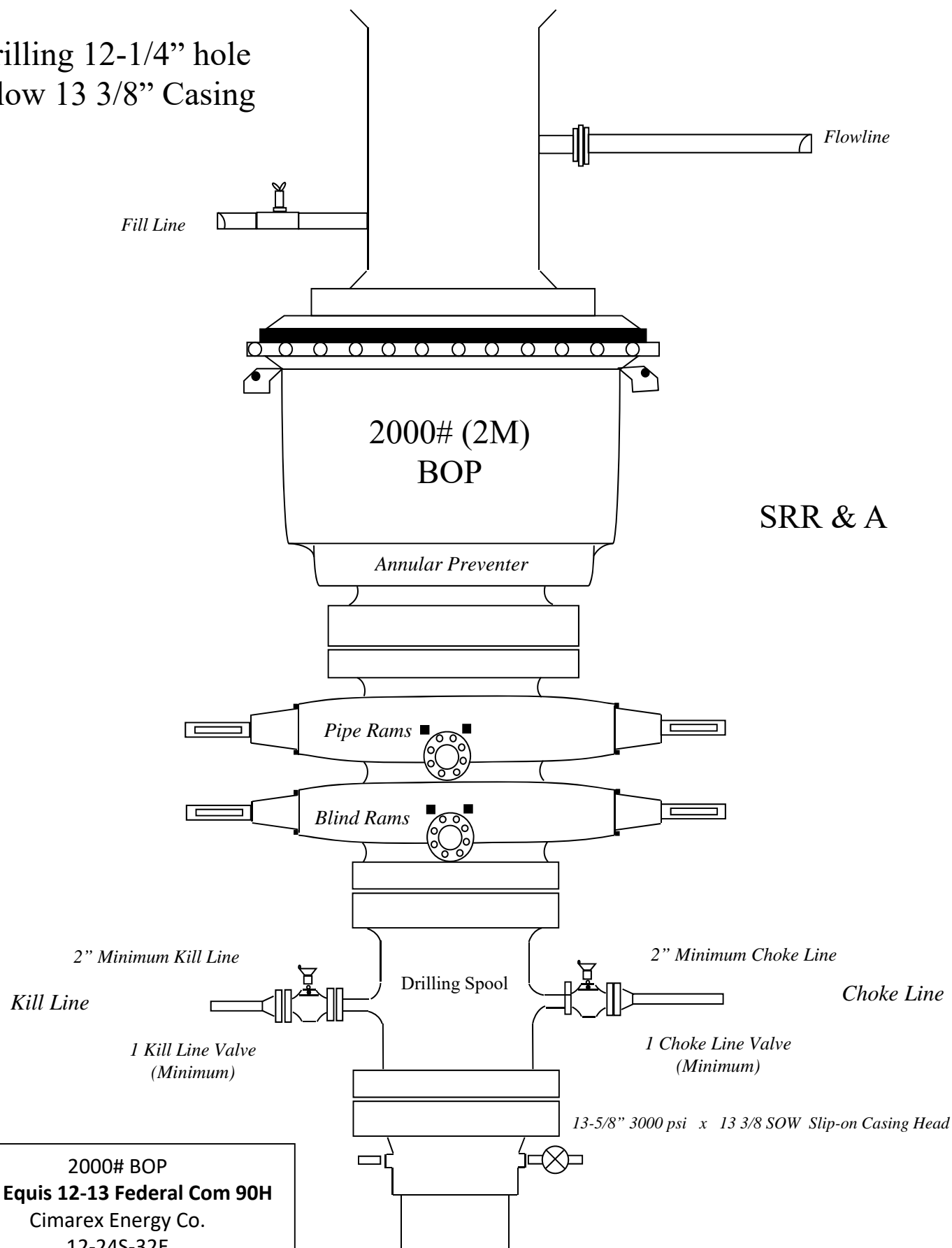
Choke Manifold Diagram  
**Dosquis 12-13 Federal Com 90H**  
 Cimarex Energy Co.  
 12-24S-32E  
 Lea Co., NM

**Drilling Operations**  
**Choke Manifold**  
**2M/3M Service**



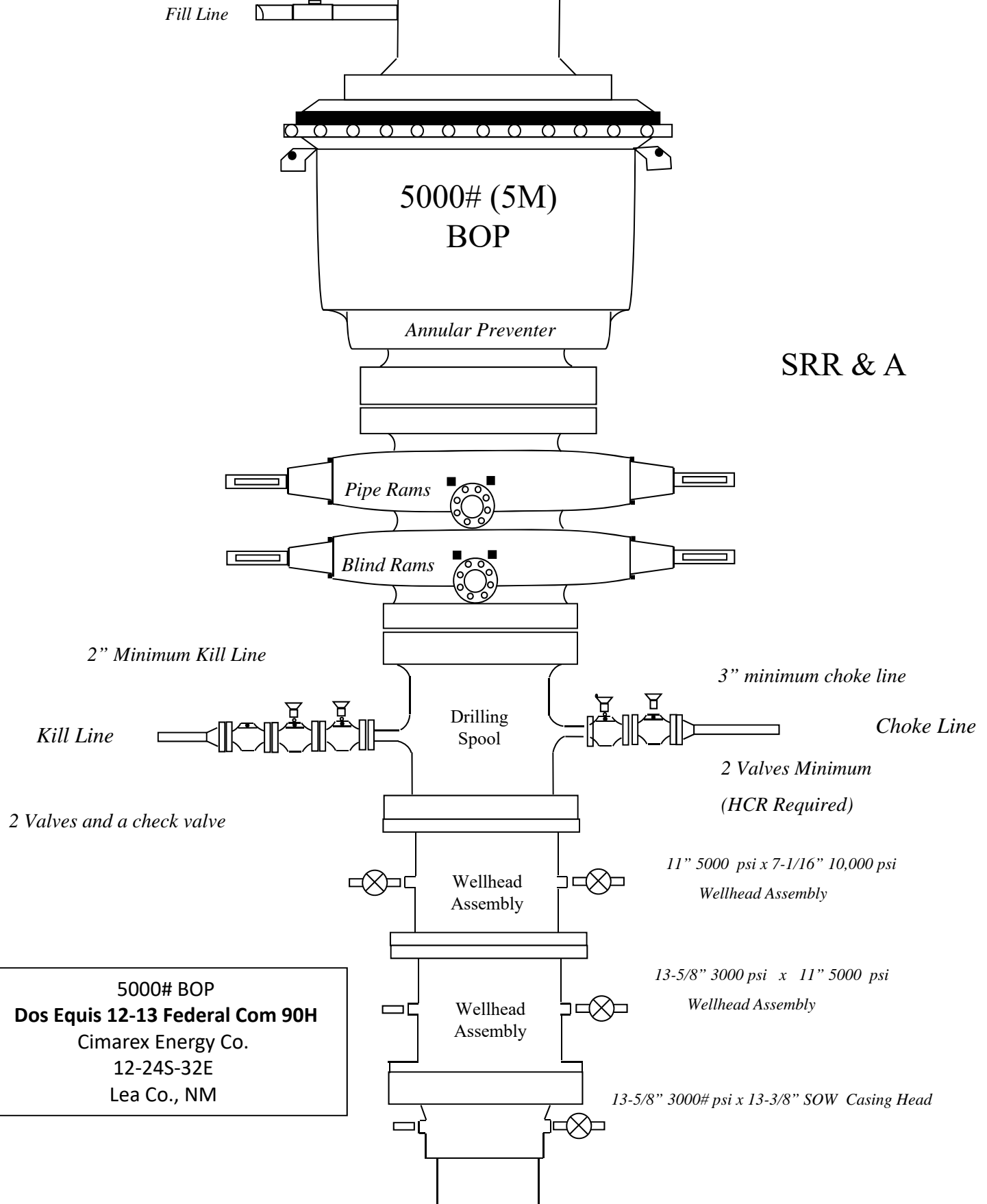


Drilling 12-1/4" hole  
below 13 3/8" Casing



2000# BOP  
**Dos Equis 12-13 Federal Com 90H**  
Cimarex Energy Co.  
12-24S-32E  
Lea Co., NM

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



5000# BOP  
Dos Equis 12-13 Federal Com 90H  
Cimarex Energy Co.  
12-24S-32E  
Lea Co., NM

## Dos Equis 12-13 Fed Com 90H

### Casing Assumptions

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	1235	1235	13-3/8"	48.00	H-40	ST&C	1.38	3.23	5.43
12 1/4	0	4900	4900	9-5/8"	36.00	J-55	ST&C	1.21	1.38	2.23
8 3/4	0	9100	9100	5-1/2"	20.00	L-80	LT&C	2.07	2.16	2.17
8 3/4	9100	19567	9600	5-1/2"	20.00	L-80	BT&C	1.97	2.00	46.60
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

## Dos Equis 12-13 Fed Com 90H

### Casing Assumptions

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	1235	1235	13-3/8"	48.00	H-40	ST&C	1.38	3.23	5.43
12 1/4	0	4900	4900	9-5/8"	36.00	J-55	ST&C	1.21	1.38	2.23
8 3/4	0	9100	9100	5-1/2"	20.00	L-80	LT&C	2.07	2.16	2.17
8 3/4	9100	19567	9600	5-1/2"	20.00	L-80	BT&C	1.97	2.00	46.60
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

## Dos Equis 12-13 Fed Com 90H

### Casing Assumptions

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	1235	1235	13-3/8"	48.00	H-40	ST&C	1.38	3.23	5.43
12 1/4	0	4900	4900	9-5/8"	36.00	J-55	ST&C	1.21	1.38	2.23
8 3/4	0	9100	9100	5-1/2"	20.00	L-80	LT&C	2.07	2.16	2.17
8 3/4	9100	19567	9600	5-1/2"	20.00	L-80	BT&C	1.97	2.00	46.60
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet



## Dos Equis 12-13 Fed Com 90H

### Casing Assumptions

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	1235	1235	13-3/8"	48.00	H-40	ST&C	1.38	3.23	5.43
12 1/4	0	4900	4900	9-5/8"	36.00	J-55	ST&C	1.21	1.38	2.23
8 3/4	0	9100	9100	5-1/2"	20.00	L-80	LT&C	2.07	2.16	2.17
8 3/4	9100	19567	9600	5-1/2"	20.00	L-80	BT&C	1.97	2.00	46.60
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

## Hydrogen Sulfide Drilling Operations Plan

## Dos Equis 12-13 Federal Com 51H

Cimarex Energy Co.  
UL: C, Sec. 12, 24S, 32E  
Lea Co., NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Principal and operation of H<sub>2</sub>S 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<sub>2</sub>S Detection and Alarm Systems:

  - A. H<sub>2</sub>S 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 H<sub>2</sub>S detectors may be 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<sub>2</sub>S present in dangerous concentration). Only H<sub>2</sub>S 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 or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
- 9 If H<sub>2</sub>S 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 H<sub>2</sub>S scavengers if necessary.

H<sub>2</sub>S Contingency Plan  
**Dos Equis 12-13 Federal Com 51H**  
Cimarex Energy Co.  
UL: C, Sec. 12, 24S, 32E  
Lea Co., NM

**Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, 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<sub>2</sub>S 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<sub>2</sub>S, 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<sub>2</sub>). 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<sub>2</sub>S and SO<sub>2</sub>**

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<sub>2</sub>S Contingency Plan Emergency Contact  
 s Dos Equis 12-13 Federal Com 51H  
 Cimarex Energy Co.  
 UL: C, Sec. 12, 24S, 32E  
 Lea 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
<b>Fire Department</b>	<b>575-746-2701</b>
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
<b>Fire Department</b>	<b>575-887-3798</b>
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
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**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		



## Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM 14Feb20 Anti-Collision Summary Report

**Analysis Date-24hr Time:** February 18, 2020 - 13:34

**Client:** Cimarex Energy

**Field:** NM Lea County (NAD 83)

**Structure:** Cimarex Dos Equis 12-13 Federal Com #90H

**Slot:** New Slot

**Well:** Dos Equis 12-13 Federal Com #90H

**Borehole:** Dos Equis 12-13 Federal Com #90H

**Scan MD Range:** 0.00ft ~ 19566.89ft

**Analysis Method:** 3D Least Distance

**Reference Trajectory:** Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM 14Feb20 (Def Plan)

**Depth Interval:** Every 10.00 Measured Depth (ft)

**Rule Set:** NAL Procedure: D&M AntiCollision Standard S002

**Min Pts:** All local minima indicated.

**Version / Patch:** 2.10.787.0

**Database \ Project:** us1153APP452.DIR.SLB.COM\DRILLING-NM Lea County 2.10

**Trajectory Error Model:** ISCSA0 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 Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Dos Equis 12-13  
Federal Com #91H Rev1 RM  
14Feb20 (Def Plan)

20.00	16.26	18.71	3.74	N/A	MAS = 4.96 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	Fail Minor
20.00	16.26	18.71	3.74	42115.91	MAS = 4.96 (m)	26.00	26.00					WRP	
20.00	20.02	6.23	-0.02	1.50	OSF1.50	2050.00	2050.00			OSF<1.50		Enter Minor	
20.00	24.17	3.46	-4.16	1.23	OSF1.50	2490.00	2490.00					MinPt-CtCt	
20.02	24.39	3.37	-4.31	1.22	OSF1.50	2510.00	2510.00					MINPT-O-EQU	
20.07	24.40	3.37	-4.33	1.22	OSF1.50	2520.00	2520.00					MinPts	
25.01	25.31	7.71	-0.29	1.48	OSF1.50	2670.00	2670.00			OSF>1.50		Exit Minor	
87.29	27.59	68.47	59.70	4.91	OSF1.50	3130.00	3130.00	OSF>5.00				Exit Alert	
660.07	70.02	612.96	590.05	14.38	OSF1.50	9870.00	9599.52					MinPt-O-SF	
659.91	69.98	612.83	589.93	14.38	OSF1.50	9890.00	9600.00					MinPts	
659.91	198.91	526.87	461.00	5.00	OSF1.50	15730.00	9600.00	OSF<5.00				Enter Alert	
659.90	318.68	447.02	341.23	3.10	OSF1.50	19566.89	9600.00					MinPts	

Cimarex Dos Equis 12-13  
Federal Com #9H Rev5 RM  
19Dec19 (Def Plan)

802.14	32.81	800.85	769.33	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Fail Minor
802.14	32.81	800.85	769.33	102985.30	MAS = 10.00 (m)	26.00	26.00					WRP	
156.71	48.85	123.50	107.86	4.95	OSF1.50	5630.00	5630.00	OSF<5.00				Enter Alert	
53.62	54.49	16.79	-0.86	1.48	OSF1.50	6140.00	6140.00			OSF<1.50		Enter Minor	
50.25	55.39	12.91	-5.12	1.36	OSF1.50	6210.00	6210.00					MinPt-CtCt	
50.28	55.52	12.84	-5.24	1.36	OSF1.50	6220.00	6220.00					MinPts	
55.93	56.30	17.97	-0.37	1.49	OSF1.50	6310.00	6310.00			OSF>1.50		Exit Minor	
198.89	61.05	157.76	137.83	4.96	OSF1.50	6970.00	6970.00	OSF>5.00				Exit Alert	
304.36	75.37	253.68	228.99	6.14	OSF1.50	9100.31	9100.31					MinPts	
304.42	75.40	253.73	229.02	6.14	OSF1.50	9110.00	9110.00					MinPt-O-SF	
2857.52	314.82	2647.22	2542.71	13.68	OSF1.50	19566.89	9600.00					MinPts	

Cimarex Dos Equis 12-13  
Federal Com #89H Rev1 RM  
14Feb20 (Def Plan)

19.99	16.25	18.70	3.74	N/A	MAS = 4.95 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	Warning Alert
19.99	16.25	18.70	3.74	N/A	MAS = 4.95 (m)	26.00	26.00					WRP	
19.99	19.55	6.53	0.45	1.54	OSF1.50	2000.00	2000.00					MinPt-CtCt	
20.01	19.62	6.50	0.39	1.53	OSF1.50	2010.00	2010.00					MINPT-O-EQU	
20.06	19.69	6.51	0.37	1.53	OSF1.50	2020.00	2020.00					MinPts	
72.45	22.74	56.87	49.72	4.98	OSF1.50	2570.00	2570.00	OSF>5.00				Exit Alert	
540.09	74.38	490.06	465.68	11.05	OSF1.50	9100.31	9100.31					MinPts	
540.29	74.46	490.22	465.82	11.05	OSF1.50	9120.00	9119.99					MinPt-O-SF	
659.91	199.09	526.76	460.82	4.99	OSF1.50	15760.00	9600.00	OSF<5.00				Enter Alert	
659.92	317.92	447.54	341.99	3.12	OSF1.50	19566.89	9600.00					MinPts	

Cimarex Dos Equis 12-13  
Federal Com #88H Rev1 RM  
14Feb20 (Def Plan)

39.99	32.25	38.71	7.74	N/A	MAS = 9.83 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	Warning Alert
39.99	32.25	38.71	7.74	N/A	MAS = 9.83 (m)	26.00	26.00					WRP	
39.99	32.25	28.42	7.74	3.76	MAS = 9.83 (m)	1700.00	1700.00					MinPts	
40.01	32.25	28.39	7.76	3.75	MAS = 9.83 (m)	1710.00	1710.00					MINPT-O-EQU	
40.42	32.25	28.61	8.17	3.72	MAS = 9.83 (m)	1750.00	1750.00					MinPt-O-SF	
58.64	32.25	45.79	26.39	4.96	MAS = 9.83 (m)	2030.00	2030.00	OSF>5.00				Exit Alert	
1201.20	79.88	1147.54	1121.34	22.91	OSF1.50	9100.31	9100.31					MinPts	
1201.42	79.89	1147.73	1121.53	22.90	OSF1.50	9120.00	9119.99					MinPt-O-SF	
1319.82	324.02	1103.38	995.80	6.13	OSF1.50	19560.00	9600.00					MinPt-CtCt	
1319.82	324.21	1103.23	995.58	6.12	OSF1.50	19566.89	9600.00					MinPts	

Cimarex Dos Equis 12-13  
Federal Com #87H Rev0 RM  
13Sept19 (Non-Def Plan)

99.98	32.81	98.70	67.17	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Warning Alert
99.98	32.81	98.70	67.17	N/A	MAS = 10.00 (m)	26.00	26.00					WRP	
99.98	32.81	78.92	67.17	4.99	MAS = 10.00 (m)	3210.00	3210.00	OSF<5.00				Enter Alert	
99.14	86.97	40.73	12.17	1.71	OSF1.50	9210.00	9209.04					MinPts	
282.47	87.42	223.76	195.05	4.90	OSF1.50	9670.00	9552.06	OSF>5.00				Exit Alert	
2752.88	311.08	2545.07	2441.81	13.32	OSF1.50	19566.89	9600.00					MinPts	

Cimarex Dos Equis 12-13  
Federal Com #75H Rev1 RM  
17Feb20 (Def Plan)

879.89	32.81	878.60	847.08	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Warning Alert
879.89	32.81	878.59	847.08	106875.80	MAS = 10.00 (m)	26.00	26.00					WRP	
350.05	69.62	302.97	280.43	7.72	OSF1.50	9890.00	9600.00					MinPt-O-SF	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
349.99	69.58	302.93	280.40	7.72		OSF1.50	9920.00	9600.00				MinPts	
349.97	106.59	278.24	243.38	4.99		OSF1.50	12520.00	9600.00	OSF<5.00			Enter Alert	
349.97	317.98	137.32	32.00	1.65		OSF1.50	19566.89	9600.00				MinPts	
Cimarex Dos Equis 13 Federal #2H XEM + MWD Off to 15311 (Def Survey)													
5278.88	32.81	5276.90	5246.07	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Warning Alert
5278.87	32.81	5276.89	5246.06	N/A		MAS = 10.00 (m)	10.00	10.00				MinPts	
5278.87	32.81	5276.89	5246.06	N/A		MAS = 10.00 (m)	26.00	26.00				WRP	
5281.58	32.81	5274.67	5248.77	1070.77		MAS = 10.00 (m)	890.00	890.00				MINPT-O-EQU	
5353.43	41.60	5325.04	5311.83	202.59		OSF1.50	5840.00	5840.00				MINPT-O-EQU	
5356.68	47.92	5324.07	5308.76	174.85		OSF1.50	6790.00	6790.00				MINPT-O-EQU	
5358.20	49.89	5324.28	5308.30	167.68		OSF1.50	7070.00	7070.00				MinPt-O-ADP	
5365.28	54.76	5328.11	5310.52	152.43		OSF1.50	7820.00	7820.00				MinPt-O-ADP	
5377.47	63.90	5334.22	5313.59	130.23		OSF1.50	9200.00	9199.28				MinPt-O-SF	
391.81	119.99	310.69	271.82	5.00		OSF1.50	14710.00	9600.00	OSF<5.00			Enter Alert	
387.24	121.48	305.49	265.76	4.84		OSF1.50	14770.00	9600.00				MinPts	
387.77	121.56	306.07	266.21	4.84		OSF1.50	14790.00	9600.00				MinPt-O-SF	
397.63	121.11	316.23	276.52	4.98		OSF1.50	14860.00	9600.00	OSF>5.00			Exit Alert	
1392.81	166.39	1281.22	1226.42	12.69		OSF1.50	16700.00	9600.00				MinPt-CtCt	
1380.02	242.50	1217.70	1137.52	8.59		OSF1.50	19310.00	9600.00				MinPt-CtCt	
1380.04	242.64	1217.63	1137.41	8.59		OSF1.50	19320.00	9600.00				MINPT-O-EQU	
1380.14	242.76	1217.64	1137.38	8.59		OSF1.50	19330.00	9600.00				MinPt-O-ADP	
1381.23	243.14	1218.48	1138.09	8.59		OSF1.50	19370.00	9600.00				MinPt-O-SF	
1403.31	242.32	1241.11	1161.00	8.75		OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 12-13 Federal Com #76H Rev1 RM 17Feb20 (Def Plan)													
899.88	32.81	898.59	867.07	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Warning Alert
899.88	32.81	898.58	867.07	106431.10		MAS = 10.00 (m)	26.00	26.00				WRP	
450.30	72.98	401.02	377.32	9.49		OSF1.50	9860.00	9598.99				MinPts	
449.96	72.87	400.75	377.09	9.47		OSF1.50	9890.00	9600.00				MinPts	
449.96	136.40	358.40	313.56	5.00		OSF1.50	13630.00	9600.00	OSF<5.00			Enter Alert	
449.96	317.09	237.93	132.87	2.13		OSF1.50	19566.89	9600.00				MinPts	
Gulf Oil Hanagan D Federal #2 (Offset) Plugged Oil Blind Off-5100ft (Def Survey)													
3112.00	32.81	3110.71	3079.19	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Warning Alert
3111.59	32.81	3110.25	3078.78	58728.12		MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
3111.37	934.49	2487.95	2176.89	5.00		OSF1.50	3080.00	3080.00	OSF<5.00			Enter Alert	
3111.37	1588.37	2052.03	1523.00	2.94		OSF1.50	5160.00	5160.00				MinPt-CtCt	
3111.38	1589.09	2051.56	1522.29	2.94		OSF1.50	5170.00	5170.00				MinPts	
4053.23	1220.53	3239.12	2832.70	4.98		OSF1.50	7760.00	7760.00	OSF>5.00			Exit Alert	
4059.98	487.69	4334.42	4172.29	14.37		OSF1.50	11370.00	9600.00				MinPt-O-ADP	
4546.92	353.34	4310.93	4193.58	19.37		OSF1.50	12390.00	9600.00				MinPt-CtCt	
4556.14	368.12	4310.30	4188.02	18.63		OSF1.50	12680.00	9600.00				MINPT-O-EQU	
4664.28	498.04	4331.83	4166.24	14.08		OSF1.50	13430.00	9600.00				MinPt-O-ADP	
6264.84	1129.14	5511.66	5135.71	8.33		OSF1.50	16700.00	9600.00				MinPt-O-SF	
8495.79	1361.81	7587.49	7133.98	9.37		OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 12-13 Federal Com #86H Rev1 RM 03Dec19 (Def Plan)													
116.60	32.81	115.31	83.79	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
116.60	32.81	115.31	83.79	N/A		MAS = 10.00 (m)	26.00	26.00				WRP	
116.60	32.81	106.28	83.79	12.77		MAS = 10.00 (m)	1500.00	1500.00				MinPts	
116.65	32.81	106.23	83.84	12.63		MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EQU	
121.06	32.81	109.87	88.25	12.10		MAS = 10.00 (m)	1690.00	1690.00				MinPt-O-SF	
1216.81	81.2	1162.22	1135.57	22.80		OSF1.50	9100.31	9100.31				MinPts	
1217.07	81.28	1162.45	1135.79	22.80		OSF1.50	9120.00	9119.99				MinPt-O-SF	
3059.33	309.54	2852.54	2749.79	14.88		OSF1.50	19560.00	9600.00				MinPt-CtCt	
3059.33	309.71	2852.43	2749.63	14.87		OSF1.50	19566.89	9600.00				MinPts	
Cimarex Dos Equis 12-13 Federal Com #6H - Rev2 RM 03Dec19 (Def Plan)													
134.14	32.81	132.85	101.33	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
134.14	32.81	132.85	101.33	N/A		MAS = 10.00 (m)	26.00	26.00				WRP	
134.14	32.81	123.82	101.33	14.71		MAS = 10.00 (m)	1500.00	1500.00				MinPts	
134.20	32.81	123.79	101.39	14.57		MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EQU	
137.99	32.81	127.00	105.18	14.08		MAS = 10.00 (m)	1660.00	1660.00				MinPt-O-SF	
593.24	74.33	543.25	518.91	12.16		OSF1.50	9100.31	9100.31				MinPts	
593.61	74.43	543.56	519.17	12.15		OSF1.50	9130.00	9129.98				MinPt-O-SF	
3412.72	309.81	3205.75	3102.91	16.59		OSF1.50	19560.00	9600.00				MinPt-CtCt	
3412.73	309.98	3205.64	3102.74	16.59		OSF1.50	19566.89	9600.00				MinPts	
Cimarex Dos Equis 12 Federal Com #2H Pilot Gyro+MWD Off to 12650ft (Def Survey)													
443.46	32.81	441.48	410.65	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
443.46	32.81	441.48	410.65	N/A		MAS = 10.00 (m)	10.00	10.00				MinPts	
443.46	32.81	441.47	410.65	36139.46		MAS = 10.00 (m)	26.00	26.00				WRP	
446.44	32.81	438.72	413.63	77.50		MAS = 10.00 (m)	920.00	920.00				MINPT-O-EQU	
451.35	32.81	439.91	418.54	47.49		MAS = 10.00 (m)	1810.00	1810.00				MinPts	
451.40	32.81	439.88	418.59	46.99		MAS = 10.00 (m)	1840.00	1840.00				MINPT-O-EQU	
451.68	32.81	439.44	418.87	43.83		MAS = 10.00 (m)	2050.00	2050.00				MinPts	
450.97	32.81	438.23	418.16	35.17		MAS = 10.00 (m)	2710.00	2710.00				MinPts	
451.14	32.81	436.08	418.33	34.34		MAS = 10.00 (m)	2780.00	2780.00				MINPT-O-EQU	
438.43	34.76	414.60	403.67	19.97		OSF1.50	4930.00	4930.00				MinPt-CtCt	
438.57	35.10	414.51	403.48	19.78		OSF1.50	4980.00	4980.00				MINPT-O-EQU	
439.92	36.69	414.79	403.22	18.92		OSF1.50	5220.00	5220.00				MinPt-O-ADP	
440.73	37.48	415.08	403.25	18.54		OSF1.50	5340.00	5340.00				MinPt-O-ADP	
452.68	46.78	420.83	405.90	15.09		OSF1.50	6740.00	6740.00				MinPt-O-ADP	
449.32	56.36	411.08	392.96	12.34		OSF1.50	8160.00	8160.00				MinPt-CtCt	
450.20	58.27	410.70	391.94	11.94		OSF1.50	8440.00	8440.00				MINPT-O-EQU	
450.72	58.89	410.80	391.83	11.83		OSF1.50	8530.00	8530.00				MinPt-O-ADP	
457.55	62.61	415.15	394.94	11.24		OSF1.50	9100.31	9100.31				MinPt-O-SF	
408.79	60.90	367.52	347.89	10.36		OSF1.50	9490.00	9449.16				MinPt-O-SF	
408.09	60.76	366.91	347.33	10.37		OSF1.50	9510.00	9463.01				MinPts	
408.05	60.69	366.92	347.35	10.38		OSF1.50	9520.00	9469.72				MinPt-CtCt	
10135.53	63.08	10092.82	10072.45	248.78		OSF1.50	19566.89	9600.00				TD	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
Cimarex Dos Equis 12 Federal Com #2H ST02 Gyro+MWD 13330ft to 15399ft MD (Def Survey)													
													Pass
	443.46	32.81	441.48	410.65	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
	443.46	32.81	441.48	410.65	N/A	MAS = 10.00 (m)	10.00	10.00					MinPts
	443.46	32.81	441.47	410.65	36139.46	MAS = 10.00 (m)	26.00	26.00					WRP
	446.44	32.81	438.72	413.63	77.50	MAS = 10.00 (m)	920.00	920.00					MINPT-O-EOU
	451.35	32.81	439.91	418.54	47.49	MAS = 10.00 (m)	1810.00	1810.00					MinPts
	451.40	32.81	439.86	418.59	46.99	MAS = 10.00 (m)	1840.00	1840.00					MINPT-O-EOU
	451.68	32.81	439.44	418.87	43.83	MAS = 10.00 (m)	2050.00	2050.00					MinPts
	450.97	32.81	436.23	418.16	35.17	MAS = 10.00 (m)	2710.00	2710.00					MinPts
	451.14	32.81	436.08	418.33	34.34	MAS = 10.00 (m)	2780.00	2780.00					MINPT-O-EOU
	438.43	34.76	414.60	403.67	19.97	OSF1.50	4930.00	4930.00					MinPt-CtCt
	438.57	35.10	414.51	403.48	19.78	OSF1.50	4980.00	4980.00					MINPT-O-EOU
	439.92	36.69	414.79	403.22	18.92	OSF1.50	5220.00	5220.00					MinPt-O-ADP
	440.73	37.48	415.08	403.25	18.54	OSF1.50	5340.00	5340.00					MinPt-O-ADP
	452.68	46.78	420.83	405.90	15.09	OSF1.50	6740.00	6740.00					MinPt-O-ADP
	449.32	56.36	411.08	392.96	12.34	OSF1.50	8160.00	8160.00					MinPt-CtCt
	450.20	58.27	410.70	391.94	11.94	OSF1.50	8440.00	8440.00					MINPT-O-EOU
	450.72	58.89	410.80	391.83	11.83	OSF1.50	8530.00	8530.00					MinPt-O-ADP
	457.55	62.61	415.15	394.94	11.27	OSF1.50	9100.31	9100.31					MinPt-O-SF
	408.79	60.90	367.52	347.89	10.36	OSF1.50	9490.00	9449.16					MinPt-O-SF
	408.09	60.76	366.91	347.33	10.37	OSF1.50	9510.00	9463.01					MinPts
	408.05	60.69	366.92	347.35	10.38	OSF1.50	9520.00	9469.72					MinPt-CtCt
	1474.85	104.89	1404.27	1369.96	21.47	OSF1.50	12670.00	9600.00					MinPt-CtCt
	1475.32	106.54	1403.64	1368.78	21.14	OSF1.50	12740.00	9600.00					MINPT-O-EOU
	1476.08	107.45	1403.78	1368.63	20.97	OSF1.50	12780.00	9600.00					MinPt-O-ADP
	1460.71	134.71	1370.24	1326.00	16.49	OSF1.50	13650.00	9600.00					MinPt-CtCt
	1457.95	151.79	1356.10	1306.17	14.58	OSF1.50	14030.00	9600.00					MinPt-CtCt
	1458.02	151.90	1356.09	1306.11	14.57	OSF1.50	14040.00	9600.00					MinPts
	1460.98	152.62	1358.57	1308.36	14.53	OSF1.50	14120.00	9600.00					MinPt-O-SF
	5729.51	87.34	5670.62	5642.17	100.65	OSF1.50	19566.89	9600.00					TD
Cimarex Dos Equis 12 Federal Com #2H ST01 Gyro+MWD 10486ft to 13433ft MD (Def Survey)													
													Pass
	443.46	32.81	441.48	410.65	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
	443.46	32.81	441.48	410.65	N/A	MAS = 10.00 (m)	10.00	10.00					MinPts
	443.46	32.81	441.47	410.65	36139.46	MAS = 10.00 (m)	26.00	26.00					WRP
	446.44	32.81	438.72	413.63	77.50	MAS = 10.00 (m)	920.00	920.00					MINPT-O-EOU
	451.35	32.81	439.91	418.54	47.49	MAS = 10.00 (m)	1810.00	1810.00					MinPts
	451.40	32.81	439.86	418.59	46.99	MAS = 10.00 (m)	1840.00	1840.00					MINPT-O-EOU
	451.68	32.81	439.44	418.87	43.83	MAS = 10.00 (m)	2050.00	2050.00					MinPts
	450.97	32.81	436.23	418.16	35.17	MAS = 10.00 (m)	2710.00	2710.00					MinPts
	451.14	32.81	436.08	418.33	34.34	MAS = 10.00 (m)	2780.00	2780.00					MINPT-O-EOU
	438.43	34.76	414.60	403.67	19.97	OSF1.50	4930.00	4930.00					MinPt-CtCt
	438.57	35.10	414.51	403.48	19.78	OSF1.50	4980.00	4980.00					MINPT-O-EOU
	439.92	36.69	414.79	403.22	18.92	OSF1.50	5220.00	5220.00					MinPt-O-ADP
	440.73	37.48	415.08	403.25	18.54	OSF1.50	5340.00	5340.00					MinPt-O-ADP
	452.68	46.78	420.83	405.90	15.09	OSF1.50	6740.00	6740.00					MinPt-O-ADP
	449.32	56.36	411.08	392.96	12.34	OSF1.50	8160.00	8160.00					MinPt-CtCt
	450.20	58.27	410.70	391.94	11.94	OSF1.50	8440.00	8440.00					MINPT-O-EOU
	450.72	58.89	410.80	391.83	11.83	OSF1.50	8530.00	8530.00					MinPt-O-ADP
	457.55	62.61	415.15	394.94	11.27	OSF1.50	9100.31	9100.31					MinPt-O-SF
	408.79	60.90	367.52	347.89	10.36	OSF1.50	9490.00	9449.16					MinPt-O-SF
	408.09	60.76	366.91	347.33	10.37	OSF1.50	9510.00	9463.01					MinPts
	408.05	60.69	366.92	347.35	10.38	OSF1.50	9520.00	9469.72					MinPt-CtCt
	1485.20	101.14	1417.12	1384.07	22.44	OSF1.50	12070.00	9600.00					MinPt-CtCt
	1485.22	101.23	1417.07	1383.98	22.42	OSF1.50	12080.00	9600.00					MINPT-O-EOU
	1485.29	101.33	1417.08	1383.96	22.40	OSF1.50	12090.00	9600.00					MinPt-O-ADP
	1491.47	102.26	1422.63	1389.20	22.28	OSF1.50	12210.00	9600.00					MinPt-O-SF
	7639.26	76.74	7587.44	7562.52	153.24	OSF1.50	19566.89	9600.00					TD
Cimarex Dos Equis 12-13 Federal Com #77H Rev1 RM 17Feb20 (Def Plan)													
													Pass
	919.88	32.81	918.59	887.07	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
	919.88	32.81	918.58	887.07	103360.09	MAS = 10.00 (m)	26.00	26.00					WRP
	587.23	79.05	534.00	508.19	11.34	OSF1.50	9450.00	9419.92					MinPts
	3330.76	315.86	3119.75	3014.89	15.88	OSF1.50	19566.89	9600.00					MinPts
Cimarex Dos Equis 12-13 Federal Com #73H Rev5 RM 19Dec19 (Def Plan)													
													Pass
	822.09	32.81	820.80	789.28	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
	822.09	32.81	820.79	789.28	102618.40	MAS = 10.00 (m)	26.00	26.00					WRP
	602.09	80.70	547.77	521.39	11.38	OSF1.50	9540.00	9482.73					MinPts
	2841.23	313.14	2632.04	2528.09	13.68	OSF1.50	19566.89	9600.00					MinPts
Cimarex Dos Equis 12 Federal Com #1H ST01 Gyro+MWD 10506ft to 15399ft MD (Def Survey)													
													Pass
	727.07	32.81	725.09	694.26	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
	727.07	32.81	725.09	694.26	N/A	MAS = 10.00 (m)	10.00	10.00					MinPts
	727.08	32.81	725.09	694.27	47466.63	MAS = 10.00 (m)	26.00	26.00					WRP
	727.16	32.81	725.06	694.35	5665.39	MAS = 10.00 (m)	60.00	60.00					MINPT-O-EOU
	732.18	32.81	721.76	699.37	86.48	MAS = 10.00 (m)	1820.00	1820.00					MinPts
	717.22	32.81	696.30	684.41	37.77	MAS = 10.00 (m)	4160.00	4160.00					MinPts
	717.25	32.81	696.26	684.44	37.63	MAS = 10.00 (m)	4180.00	4180.00					MINPT-O-EOU
	803.64	64.95	759.64	738.70	19.14	OSF1.50	9130.00	9129.98					MinPts
	1767.63	92.40	1705.37	1675.23	29.29	OSF1.50	11640.00	9600.00					MinPt-CtCt
	1769.10	101.23	1700.95	1667.87	26.71	OSF1.50	11880.00	9600.00					MinPt-CtCt
	1770.35	111.91	1695.08	1658.44	24.13	OSF1.50	12160.00	9600.00					MinPt-CtCt
	1774.18	131.38	1685.93	1642.80	20.54	OSF1.50	12670.00	9600.00					MinPt-CtCt
	1774.84	133.56	1685.14	1641.28	20.21	OSF1.50	12750.00	9600.00					MINPT-O-EOU
	1782.55	147.44	1683.60	1635.11	18.36	OSF1.50	13120.00	9600.00					MINPT-O-EOU
	1783.24	157.49	1677.59	1625.75	17.18	OSF1.50	13350.00	9600.00					MinPt-CtCt
	1782.39	193.92	1652.46	1588.48	13.91	OSF1.50	14040.00	9600.00					MinPt-CtCt
	1782.43	194.03	1652.42	1588.40	13.91	OSF1.50	14050.00	9600.00					MINPT-O-EOU
	1782.52	194.13	1652.44	1588.38	13.90	OSF1.50	14060.00	9600.00					MinPt-O-ADP
	1785.26	194.79	1654.75	1590.48	13.87	OSF1.50	14140.00	9600.00					MinPt-O-SF



Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
	5808.33	104.64	5737.91	5703.69	84.84	OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 12 Federal													
Com #1H Gyro Off to 11268ft													
MD (Def Survey)													
	727.07	32.81	725.09	694.26	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	727.07	32.81	725.09	694.26	N/A	MAS = 10.00 (m)	10.00	10.00				Surface	
	727.08	32.81	725.09	694.27	47466.63	MAS = 10.00 (m)	26.00	26.00				MinPts	
	727.16	32.81	725.06	694.35	5665.39	MAS = 10.00 (m)	60.00	60.00				WRP	
	732.18	32.81	721.76	699.37	86.48	MAS = 10.00 (m)	1820.00	1820.00				MinPts	
	717.22	32.81	696.30	684.41	37.77	MAS = 10.00 (m)	4160.00	4160.00				MinPts	
	717.25	32.81	696.26	684.44	37.63	MAS = 10.00 (m)	4180.00	4180.00				MinPts	
	803.64	64.95	759.64	738.70	19.14	OSF1.50	9130.00	9129.98				MinPts	
	10118.43	65.90	10073.83	10052.52	237.39	OSF1.50	19566.89	9600.00				TD	
Continental Wimberly #2													
(Offset) Plugged Oil Inc Only Off:													
5038ft (Def Survey)													
	940.31	32.81	939.02	907.50	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	940.05	32.81	938.73	907.24	26052.39	MAS = 10.00 (m)	10.00	10.00				Surface	
	939.86	32.81	938.55	907.05	57150.16	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	939.85	32.81	938.55	907.04	68807.40	MAS = 10.00 (m)	30.00	30.00				WRP	
	933.51	74.32	883.53	859.19	19.15	OSF1.50	1530.00	1530.00				MinPts	
	932.63	134.57	842.48	798.05	10.48	OSF1.50	2690.00	2690.00				MinPt-CtCt	
	939.45	223.87	789.78	715.58	6.32	OSF1.50	4400.00	4400.00				MinPt-CtCt	
	938.72	257.68	766.50	681.03	5.48	OSF1.50	5070.00	5070.00				MinPts	
	6401.16	202.77	6265.55	6198.39	47.63	OSF1.50	14150.00	9600.00				MinPt-O-SF	
	10866.27	260.22	10692.37	10606.06	62.94	OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 13 Federal													
#1H Pilot Hole Extreme Off to 11400ft (Def Survey)													
	5371.09	32.81	5369.11	5338.28	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	5371.05	32.81	5369.06	5338.24	N/A	MAS = 10.00 (m)	10.00	10.00				Surface	
	5371.03	32.81	5369.05	5338.22	N/A	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	5371.03	32.81	5369.05	5338.22	N/A	MAS = 10.00 (m)	26.00	26.00				MINPT-O-EOU	
	5370.72	32.81	5368.22	5337.91	10329.16	MAS = 10.00 (m)	170.00	170.00				WRP	
	5371.83	32.81	5367.76	5339.02	2573.65	MAS = 10.00 (m)	520.00	520.00				MinPts	
	5371.83	32.81	5367.76	5339.02	2573.65	MAS = 10.00 (m)	520.00	520.00				MINPT-O-EOU	
	5371.98	32.81	5367.32	5339.17	2005.62	MAS = 10.00 (m)	660.00	660.00				MinPts	
	5373.45	32.81	5366.73	5340.64	1131.77	MAS = 10.00 (m)	1120.00	1120.00				MINPT-O-EOU	
	5383.20	32.81	5371.04	5350.39	528.60	MAS = 10.00 (m)	2350.00	2350.00				MINPT-O-EOU	
	5384.77	32.81	5364.05	5351.96	287.30	MAS = 10.00 (m)	4270.00	4270.00				MinPts	
	5385.19	32.81	5363.77	5352.39	276.81	MAS = 10.00 (m)	4430.00	4430.00				MINPT-O-EOU	
	5423.15	51.86	5387.91	5371.29	163.02	OSF1.50	7530.00	7530.00				MinPt-O-ADP	
	5439.29	62.56	5396.92	5376.73	134.62	OSF1.50	9200.00	9199.28				MinPt-O-SF	
	1036.09	120.63	955.01	915.46	13.07	OSF1.50	14780.00	9600.00				MinPt-CtCt	
	1036.14	120.80	954.94	915.34	13.05	OSF1.50	14790.00	9600.00				MINPT-O-EOU	
	1036.29	120.97	954.98	915.32	13.04	OSF1.50	14800.00	9600.00				MinPt-O-ADP	
	1040.01	121.91	958.07	918.10	12.98	OSF1.50	14870.00	9600.00				MinPt-O-SF	
	4897.69	75.61	4846.63	4822.08	99.73	OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 13 Federal													
#1H ST01 Xem+MWD Off to 15250ft (Def Survey)													
	5371.09	32.81	5369.11	5338.28	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	5371.05	32.81	5369.06	5338.24	N/A	MAS = 10.00 (m)	10.00	10.00				Surface	
	5371.03	32.81	5369.05	5338.22	N/A	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	5371.03	32.81	5369.05	5338.22	N/A	MAS = 10.00 (m)	26.00	26.00				MINPT-O-EOU	
	5371.03	32.81	5369.05	5338.22	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	5370.72	32.81	5368.22	5337.91	10329.16	MAS = 10.00 (m)	170.00	170.00				MinPts	
	5371.83	32.81	5367.76	5339.02	2573.65	MAS = 10.00 (m)	520.00	520.00				MINPT-O-EOU	
	5371.83	32.81	5367.76	5339.02	2573.65	MAS = 10.00 (m)	520.00	520.00				MinPts	
	5371.98	32.81	5367.32	5339.17	2005.62	MAS = 10.00 (m)	660.00	660.00				MinPts	
	5373.45	32.81	5366.73	5340.64	1131.77	MAS = 10.00 (m)	1120.00	1120.00				MINPT-O-EOU	
	5383.20	32.81	5371.04	5350.39	528.60	MAS = 10.00 (m)	2350.00	2350.00				MINPT-O-EOU	
	5384.77	32.81	5364.05	5351.96	287.30	MAS = 10.00 (m)	4270.00	4270.00				MinPts	
	5385.19	32.81	5363.77	5352.39	276.81	MAS = 10.00 (m)	4430.00	4430.00				MINPT-O-EOU	
	5423.15	51.86	5387.91	5371.29	163.02	OSF1.50	7530.00	7530.00				MinPt-O-ADP	
	5439.29	62.56	5396.92	5376.73	134.62	OSF1.50	9200.00	9199.28				MinPt-O-SF	
	1036.09	120.63	955.01	915.46	13.07	OSF1.50	14780.00	9600.00				MinPt-CtCt	
	1036.14	120.80	954.94	915.34	13.05	OSF1.50	14790.00	9600.00				MINPT-O-EOU	
	1036.29	120.97	954.98	915.32	13.04	OSF1.50	14800.00	9600.00				MinPt-O-ADP	
	1040.01	121.91	958.07	918.10	12.98	OSF1.50	14870.00	9600.00				MinPt-O-SF	
	1737.14	174.69	1620.02	1562.45	15.07	OSF1.50	16720.00	9600.00				MinPt-O-SF	
	1737.16	179.37	1616.92	1557.79	14.67	OSF1.50	16860.00	9600.00				MinPt-CtCt	
	1741.03	189.24	1614.22	1551.80	13.93	OSF1.50	17170.00	9600.00				MINPT-O-EOU	
	1743.37	192.02	1614.70	1551.36	13.75	OSF1.50	17260.00	9600.00				MinPt-O-ADP	
	1706.32	236.06	1548.29	1470.26	10.92	OSF1.50	18430.00	9600.00				MinPt-CtCt	
	1706.80	237.52	1547.79	1469.27	10.86	OSF1.50	18490.00	9600.00				MINPT-O-EOU	
	1707.65	238.54	1547.97	1469.11	10.82	OSF1.50	18530.00	9600.00				MinPt-O-ADP	
	1729.86	255.27	1559.02	1474.59	10.23	OSF1.50	19000.00	9600.00				MinPt-O-ADP	
	1744.83	285.17	1554.06	1459.66	9.23	OSF1.50	19370.00	9600.00				MinPts	
	1764.54	284.77	1574.04	1479.78	9.35	OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 12-13													
Federal Com #49H Rev1 RM													
17Feb20 (Def Plan)													
	2198.33	32.81	2197.04	2165.52	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	2198.33	32.81	2197.02	2165.52	126774.80	MAS = 10.00 (m)	26.00	26.00				Surface	
	1548.61	74.33	1498.38	1474.28	32.10	OSF1.50	9560.00	9495.15				MinPt-O-SF	
	1546.97	74.16	1496.85	1472.81	32.13	OSF1.50	9610.00	9523.49				MinPts	
	3075.98	321.45	2861.25	2754.53	14.41	OSF1.50	19566.89	9600.00				MinPts	
Final Surveys - Cimarex Dos													
Equis 13 Federal Com #9H													
MWD Off-15788ft (Surcon Corrected) (Def Survey)													
	5757.64	32.81	5756.36	5724.84	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	5757.65	32.81	5756.31	5724.84	121980.95	MAS = 10.00 (m)	26.00	26.00				MinPts	
	5758.35	32.81	5753.57	5725.54	1646.18	MAS = 10.00 (m)	790.00	790.00				WRP	
	5757.85	32.81	5751.48	5725.04	1132.93	MAS = 10.00 (m)	1150.00	1150.00				MinPts	
	5748.30	32.81	5736.44	5715.50	535.63	MAS = 10.00 (m)	2450.00	2450.00				MINPT-O-EOU	
	5748.40	32.81	5735.65	5715.59	495.16	MAS = 10.00 (m)	2650.00	2650.00				MinPts	
	5748.70	32.81	5735.38	5715.89	471.86	MAS = 10.00 (m)	2780.00	2780.00				MINPT-O-EOU	
	5764.63	32.81	5745.02	5731.83	311.81	MAS = 10.00 (m)	4200.00	4200.00				MinPts	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
5764.47	32.81	5743.83	5731.67	295.31		MAS = 10.00 (m)	4420.00	4420.00				MinPts	
5764.65	32.81	5743.68	5731.84	290.57		MAS = 10.00 (m)	4490.00	4490.00				MINPT-O-EQU	
5766.26	32.81	5744.20	5733.45	275.55		MAS = 10.00 (m)	4740.00	4740.00				MINPT-O-EQU	
5767.30	33.56	5744.55	5733.74	266.69		OSF1.50	4900.00	4900.00				MinPt-O-ADP	
5513.75	63.50	5470.95	5450.26	133.22		OSF1.50	9200.00	9199.28				MinPt-O-SF	
1650.88	118.88	1570.81	1532.00	21.23		OSF1.50	14630.00	9600.00				MinPt-CtCt	
1651.00	119.21	1570.75	1531.80	21.16		OSF1.50	14650.00	9600.00				MINPT-O-EQU	
1651.16	119.37	1570.81	1531.79	21.13		OSF1.50	14660.00	9600.00				MinPt-O-ADP	
1672.87	122.17	1591.02	1550.70	20.73		OSF1.50	14900.00	9600.00				MinPt-O-SF	
2164.78	156.36	2060.20	2008.42	20.89		OSF1.50	16300.00	9600.00				MinPt-CtCt	
2163.42	163.61	2054.01	1999.82	19.95		OSF1.50	16580.00	9600.00				MinPt-CtCt	
2164.93	167.68	2052.75	1997.24	19.47		OSF1.50	16750.00	9600.00				MINPT-O-EQU	
2166.98	170.16	2053.20	1996.82	19.21		OSF1.50	16850.00	9600.00				MinPt-O-ADP	
2193.44	187.92	2067.82	2005.52	17.60		OSF1.50	17500.00	9600.00				MINPT-O-EQU	
2183.65	210.79	2042.82	1972.90	15.61		OSF1.50	18310.00	9600.00				MinPt-CtCt	
2185.78	233.01	2030.10	1952.77	14.13		OSF1.50	19090.00	9600.00				MinPt-CtCt	
2188.47	241.32	2027.25	1947.15	13.65		OSF1.50	19400.00	9600.00				MINPT-O-EQU	
2192.21	245.72	2028.06	1946.49	13.43		OSF1.50	19566.89	9600.00				MinPts	

Continental Wimberly #4  
(Offset) Plugged Oil Inc Only Off-  
5030ft (Def Survey)

Pass

1666.68	32.81	1665.40	1633.87	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
1666.43	32.81	1665.11	1633.62	69701.69		MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
1666.39	32.81	1665.09	1633.59	113186.67		MAS = 10.00 (m)	26.00	26.00				WRP	
1666.27	32.81	1651.89	1633.46	127.10		MAS = 10.00 (m)	450.00	450.00				MinPts	
1666.46	70.72	1618.89	1595.75	35.98		OSF1.50	1410.00	1410.00				MinPt-CtCt	
1666.73	117.12	1588.22	1549.61	21.57		OSF1.50	2300.00	2300.00				MinPt-CtCt	
1663.74	177.79	1544.78	1485.95	14.13		OSF1.50	3460.00	3460.00				MinPt-CtCt	
1659.32	217.45	1513.92	1441.87	11.51		OSF1.50	4210.00	4210.00				MinPt-CtCt	
1663.80	230.98	1509.38	1432.82	10.86		OSF1.50	4520.00	4520.00				MINPT-O-EQU	
1668.77	261.16	1494.23	1407.61	9.62		OSF1.50	5060.00	5060.00				MinPt-CtCt	
1668.79	261.20	1494.23	1407.59	9.62		OSF1.50	5070.00	5070.00				MinPts	
4539.08	39.90	4512.06	4499.19	176.27		OSF1.50	11070.00	9600.00				MinPt-CtCt	
4539.83	41.92	4511.46	4497.92	167.55		OSF1.50	11150.00	9600.00				MINPT-O-EQU	
4541.64	44.08	4511.82	4497.58	159.14		OSF1.50	11220.00	9600.00				MinPt-O-ADP	
6226.50	208.59	6087.01	6017.90	45.04		OSF1.50	15330.00	9600.00				MinPt-O-SF	
9635.20	260.82	9460.89	9374.38	55.68		OSF1.50	19566.89	9600.00				TD	

Cimarex Dos Equis 12 Federal  
Com #3H Gyro+MWD Off to  
15227ft MD (Def Survey)

Pass

1749.10	32.81	1747.12	1716.29	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
1749.01	32.81	1746.97	1716.21	25755.96		MAS = 10.00 (m)	26.00	26.00				WRP	
1745.59	32.81	1741.67	1712.78	900.44		MAS = 10.00 (m)	400.00	400.00				MinPts	
1746.29	32.81	1741.28	1713.49	574.88		MAS = 10.00 (m)	670.00	670.00				MINPT-O-EQU	
1752.65	32.81	1739.90	1719.84	162.52		MAS = 10.00 (m)	2470.00	2470.00				MinPts	
1753.27	32.81	1739.49	1720.46	148.41		MAS = 10.00 (m)	2680.00	2680.00				MINPT-O-EQU	
1755.47	32.81	1739.05	1722.66	121.47		MAS = 10.00 (m)	3260.00	3260.00				MinPts	
1754.79	32.81	1736.30	1721.57	106.20		MAS = 10.00 (m)	3720.00	3720.00				MinPts	
1754.86	32.81	1736.24	1722.05	105.34		MAS = 10.00 (m)	3750.00	3750.00				MINPT-O-EQU	
1753.74	32.81	1733.07	1720.94	93.72		MAS = 10.00 (m)	4200.00	4200.00				MinPts	
1753.85	32.81	1732.94	1721.05	92.53		MAS = 10.00 (m)	4250.00	4250.00				MINPT-O-EQU	
1749.83	33.86	1726.59	1715.96	82.23		OSF1.50	4780.00	4780.00				MinPt-CtCt	
1749.91	34.08	1726.53	1715.83	81.67		OSF1.50	4810.00	4810.00				MINPT-O-EQU	
1751.07	35.42	1726.80	1715.65	78.45		OSF1.50	5000.00	5000.00				MinPt-O-ADP	
1809.29	62.81	1766.75	1746.48	44.58		OSF1.50	9100.31	9100.31				MinPt-O-SF	
1805.73	62.81	1763.20	1742.92	44.48		OSF1.50	9200.00	9199.28				MinPt-O-SF	
1736.19	60.72	1695.04	1675.47	44.30		OSF1.50	9540.00	9482.73				MinPt-O-SF	
1720.33	59.81	1679.79	1660.52	44.59		OSF1.50	9700.00	9563.97				MinPts	
2182.25	86.03	2124.24	2096.22	38.91		OSF1.50	11000.00	9600.00				MinPt-CtCt	
2183.81	113.95	2107.18	2069.86	29.23		OSF1.50	11710.00	9600.00				MinPt-CtCt	
2176.96	141.96	2081.66	2035.00	23.31		OSF1.50	12370.00	9600.00				MinPt-CtCt	
2177.80	144.47	2080.83	2033.34	22.91		OSF1.50	12460.00	9600.00				MINPT-O-EQU	
2174.60	158.40	2068.34	2016.20	20.83		OSF1.50	12740.00	9600.00				MinPt-CtCt	
2175.22	160.48	2067.57	2014.73	20.57		OSF1.50	12820.00	9600.00				MINPT-O-EQU	
2176.07	161.52	2067.73	2014.55	20.44		OSF1.50	12860.00	9600.00				MinPt-O-ADP	
2173.50	181.27	2051.99	1992.23	18.17		OSF1.50	13260.00	9600.00				MinPt-CtCt	
2155.80	233.03	1999.78	1922.76	13.98		OSF1.50	14050.00	9600.00				MinPt-CtCt	
2155.83	233.12	1999.76	1922.72	13.98		OSF1.50	14060.00	9600.00				MinPts	
2157.79	233.63	2001.38	1924.16	13.96		OSF1.50	14140.00	9600.00				MinPt-O-SF	
5925.69	126.89	5840.44	5798.81	71.14		OSF1.50	19566.89	9600.00				TD	

Continental Wimberly #3  
(Offset) Plugged Oil Inc Only Off-  
3570ft (Def Survey)

Pass

1876.30	32.81	1875.01	1843.49	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
1875.70	32.81	1874.34	1842.89	25475.53		MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
1875.45	32.81	1874.07	1842.64	18953.17		MAS = 10.00 (m)	60.00	60.00				MinPts	
1874.49	65.71	1830.26	1808.78	43.62		OSF1.50	1410.00	1410.00				MinPt-CtCt	
1873.27	123.54	1790.48	1749.72	22.97		OSF1.50	2520.00	2520.00				MinPt-CtCt	
1868.45	201.46	1753.71	1686.98	14.14		OSF1.50	3960.00	3960.00				MinPt-CtCt	
1866.87	244.34	1723.55	1642.53	11.64		OSF1.50	4800.00	4800.00				MinPt-CtCt	
1888.18	248.12	1722.34	1640.06	11.47		OSF1.50	4910.00	4910.00				MINPT-O-EQU	
1890.12	251.31	1722.14	1638.80	11.33		OSF1.50	4980.00	4980.00				MINPT-O-EQU	
1894.61	263.22	1718.71	1631.40	10.84		OSF1.50	5130.00	5130.00				MinPts	
1894.66	263.23	1718.75	1631.43	10.84		OSF1.50	5140.00	5140.00				MinPt-O-SF	
4587.21	72.66	4538.34	4514.55	96.38		OSF1.50	11080.00	9600.00				MinPt-CtCt	
4587.34	73.00	4538.24	4514.33	95.92		OSF1.50	11110.00	9600.00				MINPT-O-EQU	
4587.66	73.40	4538.30	4514.26	95.40		OSF1.50	11140.00	9600.00				MinPt-O-ADP	
6175.42	209.89	6035.07	5965.53	44.49		OSF1.50	15210.00	9600.00				MinPt-O-SF	
9651.15	263.01	9475.39	9388.15	55.31		OSF1.50	19566.89	9600.00				TD	

Cimarex Dos Equis 12-13  
Federal Com #51H Rev1 RM  
17Feb20 (Def Plan)

Pass

2238.27	32.81	2236.99	2205.47	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
2238.27	32.81	2236.97	2205.47	129079.90		MAS = 10.00 (m)	26.00	26.00				WRP	
2238.27	86.51	2180.17	2151.76	39.37		OSF1.50	9100.31	9100.31				MinPts	
2085.15	82.06	2029.91	2003.10	38.83		OSF1.50	9730.00	9574.25				MinPt-O-SF	
2076.10	81.38	2021.31	1994.72	39.02		OSF1.50	9890.00	9600.00				MinPts	
2076.10	81.37	2021.31	1994.73	39.02		OSF1.50	9892.00	9600.00				MinPt-CtCt	
2077.79	316.58	1866.20	1781.21	9.89		OSF1.50	19566.89	9600.00				MinPts	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
Cimarex Dos Equis 12-13 Federal Com #48H Rev0 RM 13Sept19 (Non-Def Plan)													
	2156.29	32.81	2155.00	2123.48	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	2156.29	32.81	2154.99	2123.48	153955.97	MAS = 10.00 (m)	26.00	26.00				Surface	
	2077.16	86.91	2018.74	1990.24	36.42	OSF1.50	9650.00	9543.22				WRP	
	2076.76	86.86	2018.38	1989.90	36.43	OSF1.50	9680.00	9556.21				MinPt-O-SF	
	3529.01	312.69	3320.12	3216.32	16.99	OSF1.50	19566.89	9600.00				MinPts	
Cimarex Dos Equis 12-13 Federal Com #52H Rev1 RM 17Feb20 (Def Plan)													
	2258.24	32.81	2256.96	2225.44	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	2258.24	32.81	2256.94	2225.44	131923.51	MAS = 10.00 (m)	26.00	26.00				Surface	
	2244.87	84.37	2188.19	2160.50	40.51	OSF1.50	9120.00	9119.99				WRP	
	2234.60	82.80	2178.97	2151.80	41.10	OSF1.50	9200.00	9199.28				MinPt-O-SF	
	2112.90	79.83	2059.15	2033.07	40.47	OSF1.50	9670.00	9552.06				MinPt-O-SF	
	2096.10	78.87	2042.99	2017.23	40.66	OSF1.50	9890.00	9600.00				MinPts	
	2096.10	78.86	2042.99	2017.24	40.67	OSF1.50	9892.00	9600.00				MinPt-CtCt	
	2097.80	317.20	1885.80	1780.60	9.96	OSF1.50	19566.89	9600.00				MinPts	
Cimarex Dos Equis 12-13 Federal Com #50H Rev1 RM 17Feb20 (Def Plan)													
	2218.30	32.81	2217.01	2185.49	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	2218.30	32.81	2216.99	2185.49	127927.06	MAS = 10.00 (m)	26.00	26.00				Surface	
	2122.00	84.35	2065.29	2037.65	38.35	OSF1.50	9590.00	9512.63				WRP	
	2121.26	84.29	2064.60	2036.97	38.37	OSF1.50	9630.00	9533.70				MinPt-O-SF	
	3882.41	315.71	3671.50	3566.69	18.52	OSF1.50	19566.89	9600.00				MinPts	
Cimarex Dos Equis 12-13 Federal Com #9H Rev0 RM 26Dec19 (Non-Def Plan)													
	3405.77	32.81	3404.48	3372.96	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	3405.77	32.81	3404.46	3372.96	215815.10	MAS = 10.00 (m)	26.00	26.00				Surface	
	2501.51	77.86	2448.76	2423.65	49.77	OSF1.50	9200.00	9199.28				WRP	
	2415.74	76.48	2363.84	2339.26	49.07	OSF1.50	9620.00	9528.68				MinPt-O-SF	
	2408.70	76.08	2357.08	2332.62	49.19	OSF1.50	9730.00	9574.25				MinPts	
	2408.69	76.04	2357.09	2332.64	49.21	OSF1.50	9740.00	9577.31				MinPt-CtCt	
	3619.28	325.77	3401.66	3293.50	16.72	OSF1.50	19566.89	9600.00				MinPts	
Jubilee Energy Gulf Federal #1 (Offset) Plugged Oil Inc Only Off: 5020ft (Def Survey)													
	2711.61	32.81	2710.33	2678.80	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	2711.40	32.81	2710.08	2678.59	109027.07	MAS = 10.00 (m)	20.00	20.00				Surface	
	2711.36	32.81	2710.05	2678.55	121698.47	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	2711.33	32.81	2710.01	2678.52	81314.52	MAS = 10.00 (m)	40.00	40.00				WRP	
	2711.50	108.34	2638.85	2603.16	37.98	OSF1.50	2140.00	2140.00				MinPts	
	2712.07	211.86	2570.39	2500.20	19.31	OSF1.50	4110.00	4110.00				MinPt-CtCt	
	2723.01	262.44	2547.61	2460.56	15.63	OSF1.50	5060.00	5060.00				MinPts	
	2723.09	262.46	2547.69	2460.63	15.63	OSF1.50	5080.00	5080.00				MinPt-O-SF	
	4588.37	70.65	4540.84	4517.72	99.20	OSF1.50	12070.00	9600.00				MinPt-CtCt	
	4588.85	72.08	4540.38	4516.79	97.23	OSF1.50	12140.00	9600.00				MINPT-O-EQU	
	4589.60	72.97	4540.53	4516.64	96.02	OSF1.50	12180.00	9600.00				MinPt-O-ADP	
	6117.79	213.05	5975.33	5904.75	43.33	OSF1.50	16120.00	9600.00				MinPt-O-SF	
	8786.59	259.98	8612.84	8526.61	50.94	OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 12-13 Federal Com #10H Rev0 RM 26Dec19 (Non-Def Plan)													
	3445.65	32.81	3444.37	3412.85	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	3445.65	32.81	3444.35	3412.85	227976.49	MAS = 10.00 (m)	26.00	26.00				Surface	
	2875.29	74.34	2825.07	2800.95	59.58	OSF1.50	9590.00	9512.63				WRP	
	2872.95	74.28	2822.76	2798.67	59.58	OSF1.50	9610.00	9523.49				MinPt-O-SF	
	2866.85	73.95	2816.88	2792.89	59.71	OSF1.50	9720.00	9571.01				MinPts	
	4347.14	320.61	4132.96	4026.52	20.41	OSF1.50	19566.89	9600.00				MinPts	
Cimarex Dos Equis 12 Federal Com #4H Gyro Off to 11189ft MD (Def Survey)													
	3068.77	32.81	3066.79	3035.96	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	3068.77	32.81	3066.77	3035.96	135229.89	MAS = 10.00 (m)	26.00	26.00				Surface	
	3068.73	32.81	3065.93	3035.92	3731.40	MAS = 10.00 (m)	200.00	200.00				WRP	
	3070.92	32.81	3064.05	3038.11	628.14	MAS = 10.00 (m)	1030.00	1030.00				MinPts	
	3071.38	32.81	3064.06	3038.58	574.02	MAS = 10.00 (m)	1120.00	1120.00				MINPT-O-EQU	
	3071.13	32.81	3060.91	3038.32	372.33	MAS = 10.00 (m)	1890.00	1890.00				MinPts	
	3075.50	32.81	3057.84	3042.70	195.90	MAS = 10.00 (m)	3470.00	3470.00				MINPT-O-EQU	
	3076.22	32.81	3057.82	3043.41	187.20	MAS = 10.00 (m)	3620.00	3620.00				MINPT-O-EQU	
	3077.12	32.81	3057.83	3044.32	177.64	MAS = 10.00 (m)	3810.00	3810.00				MINPT-O-EQU	
	3053.18	47.20	3021.05	3005.98	101.23	OSF1.50	6820.00	6820.00				MinPt-CtCt	
	3054.09	50.10	3020.03	3003.99	95.14	OSF1.50	7250.00	7250.00				MINPT-O-EQU	
	3056.51	53.00	3020.52	3003.52	89.81	OSF1.50	7670.00	7670.00				MinPt-O-ADP	
	3062.01	57.31	3023.15	3004.71	82.97	OSF1.50	8310.00	8310.00				MinPt-CtCt	
	3062.65	59.40	3022.40	3003.26	79.96	OSF1.50	8600.00	8600.00				MINPT-O-EQU	
	3063.65	60.61	3022.59	3003.04	78.33	OSF1.50	8770.00	8770.00				MinPt-O-ADP	
	3062.02	62.90	3019.43	2999.12	75.35	OSF1.50	9200.00	9199.28				MinPt-O-SF	
	3022.76	61.74	2980.93	2961.02	75.87	OSF1.50	9400.00	9380.71				MinPt-O-SF	
	2968.02	59.83	2927.48	2908.20	76.92	OSF1.50	9750.00	9580.17				MinPts	
	2968.01	59.78	2927.49	2908.22	76.97	OSF1.50	9760.00	9582.85				MinPt-CtCt	
	10493.03	90.21	10432.23	10402.82	178.36	OSF1.50	19566.89	9600.00				TD	
Cimarex Dos Equis 12 Fed 4H Gyro+MWD 10305ft to 15240ft MD (Def Survey)													
	3068.77	32.81	3066.79	3035.96	N/A	MAS = 10.00 (m)	0.00	0.00					Pass
	3068.77	32.81	3066.77	3035.96	135229.89	MAS = 10.00 (m)	26.00	26.00				Surface	
	3068.73	32.81	3065.93	3035.92	3731.40	MAS = 10.00 (m)	200.00	200.00				WRP	
	3070.92	32.81	3064.05	3038.11	628.14	MAS = 10.00 (m)	1030.00	1030.00				MinPts	
	3071.38	32.81	3064.06	3038.58	574.02	MAS = 10.00 (m)	1120.00	1120.00				MINPT-O-EQU	
	3071.13	32.81	3060.91	3038.32	372.33	MAS = 10.00 (m)	1890.00	1890.00				MinPts	
	3075.50	32.81	3057.84	3042.70	195.90	MAS = 10.00 (m)	3470.00	3470.00				MINPT-O-EQU	
	3076.22	32.81	3057.82	3043.41	187.20	MAS = 10.00 (m)	3620.00	3620.00				MINPT-O-EQU	
	3077.12	32.81	3057.83	3044.32	177.64	MAS = 10.00 (m)	3810.00	3810.00				MINPT-O-EQU	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
3053.19	47.20	3021.05	3005.98	101.23		OSF1.50	6820.00	6820.00				MinPt-CiCi	
3054.09	50.16	3020.03	3003.99	95.14		OSF1.50	7250.00	7250.00				MINPT-O-EOU	
3056.51	53.00	3020.52	3003.52	89.81		OSF1.50	7670.00	7670.00				MinPt-O-ADP	
3062.01	57.31	3023.15	3004.71	82.97		OSF1.50	8310.00	8310.00				MinPt-CiCi	
3062.65	59.40	3022.40	3003.26	79.96		OSF1.50	8600.00	8600.00				MINPT-O-EOU	
3063.65	60.61	3022.59	3003.04	78.33		OSF1.50	8770.00	8770.00				MinPt-O-ADP	
3062.02	62.90	3019.43	2999.12	75.39		OSF1.50	9200.00	9199.28				MinPt-O-SF	
3022.76	61.74	2980.93	2961.02	75.87		OSF1.50	9400.00	9380.71				MinPt-O-SF	
2968.02	59.83	2927.48	2908.20	76.92		OSF1.50	9750.00	9580.17				MinPts	
2968.01	59.78	2927.49	2908.22	76.97		OSF1.50	9760.00	9582.85				MinPt-CiCi	
3231.81	85.19	3174.40	3146.69	58.27		OSF1.50	10820.00	9600.00				MINPT-O-EOU	
3232.34	85.77	3174.55	3146.57	57.83		OSF1.50	10860.00	9600.00				MINPT-O-EOU	
3234.03	87.81	3174.83	3146.22	56.48		OSF1.50	10940.00	9600.00				MinPt-O-ADP	
3234.98	100.36	3167.42	3134.63	49.29		OSF1.50	11160.00	9600.00				MinPt-CiCi	
3235.39	105.62	3164.32	3129.77	46.80		OSF1.50	11310.00	9600.00				MINPT-O-EOU	
3235.76	106.08	3164.39	3129.69	46.60		OSF1.50	11340.00	9600.00				MinPt-O-ADP	
3204.61	181.51	3082.94	3023.09	26.76		OSF1.50	12890.00	9600.00				MinPt-CiCi	
3193.92	214.22	3050.45	2979.70	22.56		OSF1.50	13540.00	9600.00				MinPt-CiCi	
3196.83	224.48	3046.51	2972.34	21.54		OSF1.50	13810.00	9600.00				MINPT-O-EOU	
3201.96	231.15	3047.20	2970.81	20.95		OSF1.50	13980.00	9600.00				MinPt-O-ADP	
3211.41	291.72	3016.27	2919.69	16.62		OSF1.50	14200.00	9600.00				MinPts	
3211.85	291.76	3016.68	2920.09	16.62		OSF1.50	14210.00	9600.00				MinPt-O-SF	
6369.61	188.82	6243.08	6180.80	51.12		OSF1.50	19566.89	9600.00				TD	

Cimarex Dos Equis 12-13  
Federal Com #11H Rev0 RM  
26Dec19 (Non-Def Plan)

3465.71	32.81	3464.43	3432.91	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3465.71	32.81	3464.41	3432.91	236252.88	MAS = 10.00 (m)	26.00	26.00					WRP	
3375.60	86.93	3317.15	3288.68	59.29	OSF1.50	9670.00	9552.06					MinPt-O-SF	
3373.34	86.82	3314.97	3286.51	59.24	OSF1.50	9740.00	9577.31					MinPts	
4267.20	313.91	4057.50	3953.29	20.47	OSF1.50	19566.89	9600.00					MinPts	

Continental Wimberly #8  
(Offset) Plugged Oil Inc Only Off:  
5070ft (Def Survey)

3472.13	32.81	3470.84	3439.32	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3472.00	32.81	3470.70	3439.19	274958.09	MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
3471.98	32.81	3470.69	3439.17	405248.52	MAS = 10.00 (m)	26.00	26.00					WRP	
3471.31	32.81	3463.28	3438.50	514.83	MAS = 10.00 (m)	340.00	340.00					MinPts	
3469.19	68.15	3423.32	3401.03	77.80	OSF1.50	1400.00	1400.00					MinPt-CiCi	
3468.96	125.69	3384.73	3343.27	41.81	OSF1.50	2530.00	2530.00					MinPt-CiCi	
3465.12	180.87	3344.10	3284.24	28.93	OSF1.50	3590.00	3590.00					MinPt-CiCi	
3464.68	239.13	3304.83	3225.55	21.84	OSF1.50	4700.00	4700.00					MinPt-CiCi	
3466.66	245.28	3302.71	3221.38	21.30	OSF1.50	4890.00	4890.00					MINPT-O-EOU	
3469.04	248.13	3303.19	3220.91	21.07	OSF1.50	4980.00	4980.00					MinPt-O-ADP	
3475.77	260.31	3301.80	3215.45	20.12	OSF1.50	5170.00	5170.00					MinPts	
4784.31	111.27	4709.70	4673.04	65.23	OSF1.50	12410.00	9600.00					MinPt-CiCi	
4784.51	111.84	4709.53	4672.68	64.90	OSF1.50	12450.00	9600.00					MINPT-O-EOU	
4784.89	112.29	4709.60	4672.60	64.64	OSF1.50	12480.00	9600.00					MinPt-O-ADP	
6081.57	215.75	5937.30	5865.81	42.53	OSF1.50	16160.00	9600.00					MinPt-O-SF	
8612.45	261.49	8437.70	8350.96	49.64	OSF1.50	19566.89	9600.00					TD	

Curtis Hankamer Gulf Hanagan  
Federal #3 (Offset) Plugged Oil  
Inc Only Off-5049ft (Def Survey)

3501.11	32.81	3499.82	3468.30	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3500.94	32.81	3499.63	3468.13	178096.47	MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
3500.91	32.81	3499.61	3468.10	196992.87	MAS = 10.00 (m)	26.00	26.00					WRP	
3491.03	40.03	3463.91	3451.00	135.12	OSF1.50	680.00	680.00					MinPt-CiCi	
3490.25	107.23	3418.33	3383.02	49.40	OSF1.50	2070.00	2070.00					MinPt-CiCi	
3481.66	190.48	3354.24	3291.18	27.59	OSF1.50	3630.00	3630.00					MinPt-CiCi	
3480.94	244.10	3317.78	3236.84	21.50	OSF1.50	4660.00	4660.00					MinPt-CiCi	
3482.33	248.24	3316.40	3234.09	21.14	OSF1.50	4800.00	4800.00					MINPT-O-EOU	
3490.47	265.70	3312.90	3224.76	19.79	OSF1.50	5170.00	5170.00					MinPts	
5384.68	150.47	5283.94	5234.22	54.13	OSF1.50	11080.00	9600.00					MinPt-CiCi	
5384.71	150.57	5283.90	5234.14	54.09	OSF1.50	11100.00	9600.00					MINPT-O-EOU	
5384.75	150.62	5283.91	5234.13	54.08	OSF1.50	11110.00	9600.00					MinPt-O-ADP	
6537.34	218.89	6390.98	6318.45	45.09	OSF1.50	14790.00	9600.00					MinPt-O-SF	
10048.47	272.36	9866.46	9776.10	55.60	OSF1.50	19566.89	9600.00					TD	

Standind Wimberly A Unit B #1  
Inc Only (Def Survey)

5656.76	32.81	5654.78	5623.95	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
5656.68	32.81	5654.69	5623.87	803486.18	MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
5656.67	32.81	5654.69	5623.86	N/A	MAS = 10.00 (m)	26.00	26.00					WRP	
5576.01	554.33	5205.77	5021.67	15.14	OSF1.50	5040.00	5040.00					MinPt-O-SF	
5575.87	554.30	5205.66	5021.57	15.14	OSF1.50	5070.00	5070.00					MinPts	
5575.87	554.29	5205.66	5021.58	15.14	OSF1.50	5080.00	5080.00					MinPt-CiCi	
6429.64	389.01	6169.64	6040.63	24.91	OSF1.50	10400.00	9600.00					MinPt-O-SF	
4539.15	137.43	4446.87	4401.72	50.25	OSF1.50	14950.00	9600.00					MinPt-CiCi	
4541.20	142.77	4445.36	4398.43	48.36	OSF1.50	15090.00	9600.00					MINPT-O-EOU	
4545.83	148.18	4446.39	4397.64	46.62	OSF1.50	15200.00	9600.00					MinPt-O-ADP	
6074.16	415.20	5796.70	5658.96	22.09	OSF1.50	18990.00	9600.00					MinPt-O-SF	
6471.88	438.93	6178.60	6032.95	22.21	OSF1.50	19566.89	9600.00					TD	

Westates Petroleum Wolley #1  
(Offset) Plugged Oil Blind Off:  
5063ft (Def Survey)

9631.89	32.81	9630.60	9599.08	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
9631.80	32.81	9630.50	9598.99	954797.66	MAS = 10.00 (m)	26.00	26.00					WRP	
9631.77	1577.33	8579.79	8054.44	9.17	OSF1.50	5110.00	5110.00					MinPt-CiCi	
9631.78	1577.46	8579.71	8054.32	9.17	OSF1.50	5120.00	5120.00					MinPts	
6318.50	1113.36	5575.83	5205.14	8.52	OSF1.50	14660.00	9600.00					MinPt-O-SF	
4659.00	461.86	4350.66	4197.14	15.17	OSF1.50	18230.00	9600.00					MinPt-O-ADP	
4595.53	396.53	4330.75	4199.00	17.44	OSF1.50	19000.00	9600.00					MinPt-CiCi	
4600.96	406.18	4329.75	4194.78	17.04	OSF1.50	19220.00	9600.00					MINPT-O-EOU	
4630.80	445.52	4333.36	4185.28	15.63	OSF1.50	19566.89	9600.00					MinPts	

Continental Wimberly #7  
(Offset) Plugged Oil Inc Only Off:  
5100ft (Def Survey)

4659.02	32.81	4657.74	4626.22	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
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Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
4658.96	32.81	4657.58	4626.18	38999.29		MAS = 10.00 (m)	26.00	26.00					WRP
4658.76	32.81	4652.00	4625.96	850.80		MAS = 10.00 (m)	290.00	290.00					MinPts
4658.57	42.87	4629.56	4615.70	168.00		OSF1.50	930.00	930.00					MinPt-CtCt
4657.43	82.09	4602.27	4575.34	86.44		OSF1.50	1680.00	1680.00					MinPt-CtCt
4658.25	131.93	4569.87	4526.32	53.47		OSF1.50	2640.00	2640.00					MinPt-CtCt
4655.55	187.96	4529.81	4467.59	37.40		OSF1.50	3710.00	3710.00					MinPt-CtCt
4658.28	241.73	4496.69	4416.55	29.05		OSF1.50	4740.00	4740.00					MinPt-CtCt
4661.10	250.30	4493.80	4410.79	28.07		OSF1.50	5000.00	5000.00					MINPT-O-EOU
4664.30	261.65	4489.44	4402.65	26.86		OSF1.50	5170.00	5170.00					MINPT-O-EOU
4664.42	261.77	4489.48	4402.65	26.85		OSF1.50	5180.00	5180.00					MinPts
4770.58	130.68	4683.03	4639.90	55.29		OSF1.50	13720.00	9600.00					MinPt-CtCt
4770.90	131.73	4682.65	4639.17	54.85		OSF1.50	13780.00	9600.00					MINPT-O-EOU
4771.35	132.28	4682.73	4639.07	54.62		OSF1.50	13810.00	9600.00					MinPt-O-ADP
5855.80	222.95	5706.74	5632.86	39.62		OSF1.50	17120.00	9600.00					MinPt-O-SF
7542.98	260.46	7368.90	7282.51	43.65		OSF1.50	19566.89	9600.00					TD



## Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM 14Feb20 Proposal Geodetic Report (Def Plan)



**Report Date:** February 18, 2020 - 01:33 PM  
**Client:** Cimarex Energy  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Cimarex Dos Equis 12-13 Federal Com #90H / New Slot  
**Well:** Dos Equis 12-13 Federal Com #90H  
**Borehole:** Dos Equis 12-13 Federal Com #90H  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM 14Feb20  
**Survey Date:** December 27, 2019  
**Tort / AHD / DDI / ERD Ratio:** 95.003 ° / 10185.716 ft / 6.295 / 1.061  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 14' 19.08575", W 103° 37' 29.04547"  
**Location Grid N/E Y/X:** N 451271.660 ftUS, E 760426.180 ftUS  
**CRS Grid Convergence Angle:** 0.3780 °  
**Grid Scale Factor:** 0.99996407  
**Version / Patch:** 2.10.787.0

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 179.660 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3626.400 ft above MSL  
**Seabed / Ground Elevation:** 3600.400 ft above MSL  
**Magnetic Declination:** 6.613 °  
**Total Gravity Field Strength:** 998.4391mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 47842.043 nT  
**Magnetic Dip Angle:** 59.879 °  
**Declination Date:** February 18, 2020  
**Magnetic Declination Model:** HDGM 2019  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.3780 °  
**Total Corr Mag North->Grid North:** 6.2353 °  
**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 [300' FNL, 1530' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
Rustler	100.00	0.00	209.01	100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	200.00	0.00	209.01	200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	300.00	0.00	209.01	300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	400.00	0.00	209.01	400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	500.00	0.00	209.01	500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	600.00	0.00	209.01	600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	700.00	0.00	209.01	700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	800.00	0.00	209.01	800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	900.00	0.00	209.01	900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1000.00	0.00	209.01	1000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1100.00	0.00	209.01	1100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1185.00	0.00	209.01	1185.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1200.00	0.00	209.01	1200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1300.00	0.00	209.01	1300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
1400.00	0.00	209.01	1400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
Salado (Top Salt)	1500.00	0.00	209.01	1500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
Base fo Salt	1600.00	0.00	209.01	1600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1700.00	0.00	209.01	1700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1800.00	0.00	209.01	1800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	1900.00	0.00	209.01	1900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2000.00	0.00	209.01	2000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2100.00	0.00	209.01	2100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2200.00	0.00	209.01	2200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2300.00	0.00	209.01	2300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2400.00	0.00	209.01	2400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2500.00	0.00	209.01	2500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2600.00	0.00	209.01	2600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2700.00	0.00	209.01	2700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2800.00	0.00	209.01	2800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	2900.00	0.00	209.01	2900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3000.00	0.00	209.01	3000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3100.00	0.00	209.01	3100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3200.00	0.00	209.01	3200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3300.00	0.00	209.01	3300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3400.00	0.00	209.01	3400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3500.00	0.00	209.01	3500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3600.00	0.00	209.01	3600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3700.00	0.00	209.01	3700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3800.00	0.00	209.01	3800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	3900.00	0.00	209.01	3900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4000.00	0.00	209.01	4000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4100.00	0.00	209.01	4100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4200.00	0.00	209.01	4200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4300.00	0.00	209.01	4300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4400.00	0.00	209.01	4400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4500.00	0.00	209.01	4500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4600.00	0.00	209.01	4600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4650.00	0.00	209.01	4650.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4700.00	0.00	209.01	4700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	4800.00	0.00	209.01	4800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
4900.00	0.00	209.01	4900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
Bell Canyon	4947.00	0.00	209.01	4947.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
Cherry Canyon	5000.00	0.00	209.01	5000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5100.00	0.00	209.01	5100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5200.00	0.00	209.01	5200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5300.00	0.00	209.01	5300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5400.00	0.00	209.01	5400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5500.00	0.00	209.01	5500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5600.00	0.00	209.01	5600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5700.00	0.00	209.01	5700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5800.00	0.00	209.01	5800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5874.00	0.00	209.01	5874.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	5900.00	0.00	209.01	5900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	6000.00	0.00	209.01	6000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	6100.00	0.00	209.01	6100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	6200.00	0.00	209.01	6200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
6300.00	0.00	209.01	6300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
6400.00	0.00	209.01	6400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
6500.00	0.00	209.01	6500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
6600.00	0.00	209.01	6600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
6700.00	0.00	209.01	6700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
6800.00	0.00	209.01	6800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
6900.00	0.00	209.01	6900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
7000.00	0.00	209.01	7000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
7100.00	0.00	209.01	7100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	

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 ° ' '')
Brushy Canyon	7200.00	0.00	209.01	7200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7300.00	0.00	209.01	7300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7311.00	0.00	209.01	7311.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7400.00	0.00	209.01	7400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7500.00	0.00	209.01	7500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7600.00	0.00	209.01	7600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7700.00	0.00	209.01	7700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7800.00	0.00	209.01	7800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	7900.00	0.00	209.01	7900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8000.00	0.00	209.01	8000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8100.00	0.00	209.01	8100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8200.00	0.00	209.01	8200.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8300.00	0.00	209.01	8300.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8400.00	0.00	209.01	8400.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8500.00	0.00	209.01	8500.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8600.00	0.00	209.01	8600.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
Bone Spring	8700.00	0.00	209.01	8700.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8800.00	0.00	209.01	8800.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8845.00	0.00	209.01	8845.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	8900.00	0.00	209.01	8900.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	9000.00	0.00	209.01	9000.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
	9100.00	0.00	209.01	9100.00	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
KOP - Build 12"/100' DLS	9100.31	0.00	209.01	9100.31	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05	
Avalon	9200.00	11.96	209.01	9199.28	9.04	-9.07	-5.03	12.00	451262.59	760421.15	N 32 14 19.00	W 103 37 29.10
	9287.78	22.50	209.01	9283.00	31.67	-31.77	-17.62	12.00	451239.89	760408.56	N 32 14 18.77	W 103 37 29.25
9300.00	23.96	209.01	9294.23	35.87	-35.99	-19.96	12.00	451235.67	760406.22	N 32 14 18.73	W 103 37 29.28	
Build & Turn 12"/100' DLS	9391.98	35.00	209.01	9374.17	75.27	-75.51	-41.88	12.00	451196.15	760384.31	N 32 14 18.34	W 103 37 29.54
Landina Point	9400.00	35.80	208.08	9380.71	79.33	-79.60	-44.10	12.00	451192.07	760382.09	N 32 14 18.30	W 103 37 29.56
	9500.00	46.20	198.88	9456.15	139.35	-139.76	-69.63	12.00	451131.90	760356.55	N 32 14 17.71	W 103 37 29.87
	9600.00	57.11	192.48	9518.14	214.64	-215.18	-90.46	12.00	451056.49	760335.72	N 32 14 16.96	W 103 37 30.12
	9700.00	68.27	187.52	9563.97	301.90	-302.54	-105.67	12.00	450969.14	760320.51	N 32 14 16.10	W 103 37 30.30
	9800.00	79.56	183.28	9591.64	397.34	-398.03	-114.60	12.00	450873.65	760311.59	N 32 14 15.15	W 103 37 30.41
	9892.00	90.00	179.66	9600.00	488.77	-489.48	-116.92	12.00	450782.20	760309.26	N 32 14 14.25	W 103 37 30.44
	9900.00	90.00	179.66	9600.00	496.77	-497.47	-116.88	0.00	450774.21	760309.31	N 32 14 14.17	W 103 37 30.44
	10000.00	90.00	179.66	9600.00	596.77	-597.47	-116.28	0.00	450674.21	760309.90	N 32 14 13.18	W 103 37 30.45
	10100.00	90.00	179.66	9600.00	696.77	-697.47	-115.69	0.00	450574.22	760310.49	N 32 14 12.19	W 103 37 30.45
	10200.00	90.00	179.66	9600.00	796.77	-797.47	-115.10	0.00	450474.22	760311.09	N 32 14 11.20	W 103 37 30.45
	10300.00	90.00	179.66	9600.00	896.77	-897.47	-114.50	0.00	450374.23	760311.68	N 32 14 10.21	W 103 37 30.45
	10400.00	90.00	179.66	9600.00	996.77	-997.46	-113.91	0.00	450274.23	760312.27	N 32 14 9.22	W 103 37 30.45
	10500.00	90.00	179.66	9600.00	1096.77	-1097.46	-113.32	0.00	450174.24	760312.87	N 32 14 8.23	W 103 37 30.45
	10600.00	90.00	179.66	9600.00	1196.77	-1197.46	-112.72	0.00	450074.25	760313.46	N 32 14 7.24	W 103 37 30.45
	10700.00	90.00	179.66	9600.00	1296.77	-1297.46	-112.13	0.00	449974.25	760314.05	N 32 14 6.25	W 103 37 30.45
	10800.00	90.00	179.66	9600.00	1396.77	-1397.46	-111.54	0.00	449874.26	760314.65	N 32 14 5.27	W 103 37 30.45
	10900.00	90.00	179.66	9600.00	1496.77	-1497.45	-110.94	0.00	449774.26	760315.24	N 32 14 4.28	W 103 37 30.45
	11000.00	90.00	179.66	9600.00	1596.77	-1597.45	-110.35	0.00	449674.27	760315.83	N 32 14 3.29	W 103 37 30.45
	11100.00	90.00	179.66	9600.00	1696.77	-1697.45	-109.76	0.00	449574.27	760316.43	N 32 14 2.30	W 103 37 30.45
11200.00	90.00	179.66	9600.00	1796.77	-1797.45	-109.16	0.00	449474.28	760317.02	N 32 14 1.31	W 103 37 30.45	
11300.00	90.00	179.66	9600.00	1896.77	-1897.45	-108.57	0.00	449374.28	760317.62	N 32 14 0.32	W 103 37 30.46	
11400.00	90.00	179.66	9600.00	1996.77	-1997.45	-107.98	0.00	449274.29	760318.21	N 32 13 59.33	W 103 37 30.46	
11500.00	90.00	179.66	9600.00	2096.77	-2097.44	-107.38	0.00	449174.30	760318.80	N 32 13 58.34	W 103 37 30.46	
11600.00	90.00	179.66	9600.00	2196.77	-2197.44	-106.79	0.00	449074.30	760319.40	N 32 13 57.35	W 103 37 30.46	
11700.00	90.00	179.66	9600.00	2296.77	-2297.44	-106.20	0.00	448974.31	760319.99	N 32 13 56.36	W 103 37 30.46	
Lease NMNM0002889 - NMNM0001917 Crossing	11744.20	90.00	179.66	9600.00	2340.97	-2341.64	-105.93	0.00	448930.11	760320.25	N 32 13 55.92	W 103 37 30.46
	11800.00	90.00	179.66	9600.00	2396.77	-2397.44	-105.60	0.00	448874.31	760320.58	N 32 13 55.37	W 103 37 30.46
	11900.00	90.00	179.66	9600.00	2496.77	-2497.44	-105.01	0.00	448774.32	760321.18	N 32 13 54.38	W 103 37 30.46
	12000.00	90.00	179.66	9600.00	2596.77	-2597.44	-104.42	0.00	448674.32	760321.77	N 32 13 53.39	W 103 37 30.46
	12100.00	90.00	179.66	9600.00	2696.77	-2697.43	-103.82	0.00	448574.33	760322.36	N 32 13 52.40	W 103 37 30.46
	12200.00	90.00	179.66	9600.00	2796.77	-2797.43	-103.23	0.00	448474.33	760322.96	N 32 13 51.41	W 103 37 30.46
	12300.00	90.00	179.66	9600.00	2896.77	-2897.43	-102.63	0.00	448374.34	760323.55	N 32 13 50.42	W 103 37 30.46
	12400.00	90.00	179.66	9600.00	2996.77	-2997.43	-102.04	0.00	448274.35	760324.14	N 32 13 49.43	W 103 37 30.46
	12500.00	90.00	179.66	9600.00	3096.77	-3097.43	-101.45	0.00	448174.35	760324.74	N 32 13 48.44	W 103 37 30.46
	12600.00	90.00	179.66	9600.00	3196.77	-3197.42	-100.85	0.00	448074.36	760325.33	N 32 13 47.45	W 103 37 30.47
	12700.00	90.00	179.66	9600.00	3296.77	-3297.42	-100.26	0.00	447974.36	760325.92	N 32 13 46.46	W 103 37 30.47
	12800.00	90.00	179.66	9600.00	3396.77	-3397.42	-99.67	0.00	447874.37	760326.52	N 32 13 45.48	W 103 37 30.47
	12900.00	90.00	179.66	9600.00	3496.77	-3497.42	-99.07	0.00	447774.37	760327.11	N 32 13 44.49	W 103 37 30.47
	13000.00	90.00										



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 ° ' ")
	16300.00	90.00	179.66	9600.00	6896.77	-6897.36	-78.90	0.00	444374.56	760347.28	N 32 13 10.84	W 103 37 30.49
	16400.00	90.00	179.66	9600.00	6996.77	-6997.36	-78.31	0.00	444274.57	760347.88	N 32 13 9.85	W 103 37 30.49
	16500.00	90.00	179.66	9600.00	7096.77	-7097.36	-77.71	0.00	444174.57	760348.47	N 32 13 8.86	W 103 37 30.49
	16600.00	90.00	179.66	9600.00	7196.77	-7197.35	-77.12	0.00	444074.58	760349.06	N 32 13 7.87	W 103 37 30.50
	16700.00	90.00	179.66	9600.00	7296.77	-7297.35	-76.52	0.00	443974.58	760349.66	N 32 13 6.88	W 103 37 30.50
	16800.00	90.00	179.66	9600.00	7396.77	-7397.35	-75.93	0.00	443874.59	760350.25	N 32 13 5.89	W 103 37 30.50
	16900.00	90.00	179.66	9600.00	7496.77	-7497.35	-75.34	0.00	443774.60	760350.84	N 32 13 4.90	W 103 37 30.50
	17000.00	90.00	179.66	9600.00	7596.77	-7597.35	-74.74	0.00	443674.60	760351.44	N 32 13 3.92	W 103 37 30.50
Lease NMNIM0553642 - NMNIM0553548 Crossing	17025.80	90.00	179.66	9600.00	7622.57	-7623.15	-74.59	0.00	443648.80	760351.59	N 32 13 3.66	W 103 37 30.50
	17100.00	90.00	179.66	9600.00	7696.77	-7697.35	-74.15	0.00	443574.61	760352.03	N 32 13 2.93	W 103 37 30.50
	17200.00	90.00	179.66	9600.00	7796.77	-7797.34	-73.56	0.00	443474.61	760352.63	N 32 13 1.94	W 103 37 30.50
	17300.00	90.00	179.66	9600.00	7896.77	-7897.34	-72.96	0.00	443374.62	760353.22	N 32 13 0.95	W 103 37 30.50
	17400.00	90.00	179.66	9600.00	7996.77	-7997.34	-72.37	0.00	443274.62	760353.81	N 32 12 59.96	W 103 37 30.50
	17500.00	90.00	179.66	9600.00	8096.77	-8097.34	-71.78	0.00	443174.63	760354.41	N 32 12 58.97	W 103 37 30.50
	17600.00	90.00	179.66	9600.00	8196.77	-8197.34	-71.18	0.00	443074.63	760355.00	N 32 12 57.98	W 103 37 30.50
	17700.00	90.00	179.66	9600.00	8296.77	-8297.33	-70.59	0.00	442974.64	760355.59	N 32 12 56.99	W 103 37 30.50
	17800.00	90.00	179.66	9600.00	8396.77	-8397.33	-70.00	0.00	442874.65	760356.19	N 32 12 56.00	W 103 37 30.50
	17900.00	90.00	179.66	9600.00	8496.77	-8497.33	-69.40	0.00	442774.65	760356.78	N 32 12 55.01	W 103 37 30.51
	18000.00	90.00	179.66	9600.00	8596.77	-8597.33	-68.81	0.00	442674.66	760357.37	N 32 12 54.02	W 103 37 30.51
	18100.00	90.00	179.66	9600.00	8696.77	-8697.33	-68.22	0.00	442574.66	760357.97	N 32 12 53.03	W 103 37 30.51
	18200.00	90.00	179.66	9600.00	8796.77	-8797.33	-67.62	0.00	442474.67	760358.56	N 32 12 52.04	W 103 37 30.51
	18300.00	90.00	179.66	9600.00	8896.77	-8897.32	-67.03	0.00	442374.67	760359.15	N 32 12 51.05	W 103 37 30.51
	18400.00	90.00	179.66	9600.00	8996.77	-8997.32	-66.44	0.00	442274.68	760359.75	N 32 12 50.06	W 103 37 30.51
	18500.00	90.00	179.66	9600.00	9096.77	-9097.32	-65.84	0.00	442174.68	760360.34	N 32 12 49.07	W 103 37 30.51
	18600.00	90.00	179.66	9600.00	9196.77	-9197.32	-65.25	0.00	442074.69	760360.93	N 32 12 48.08	W 103 37 30.51
	18700.00	90.00	179.66	9600.00	9296.77	-9297.32	-64.66	0.00	441974.70	760361.53	N 32 12 47.09	W 103 37 30.51
	18800.00	90.00	179.66	9600.00	9396.77	-9397.32	-64.06	0.00	441874.70	760362.12	N 32 12 46.10	W 103 37 30.51
	18900.00	90.00	179.66	9600.00	9496.77	-9497.31	-63.47	0.00	441774.71	760362.71	N 32 12 45.11	W 103 37 30.51
	19000.00	90.00	179.66	9600.00	9596.77	-9597.31	-62.88	0.00	441674.71	760363.31	N 32 12 44.13	W 103 37 30.51
	19100.00	90.00	179.66	9600.00	9696.77	-9697.31	-62.28	0.00	441574.72	760363.90	N 32 12 43.14	W 103 37 30.51
	19200.00	90.00	179.66	9600.00	9796.77	-9797.31	-61.69	0.00	441474.72	760364.49	N 32 12 42.15	W 103 37 30.52
	19300.00	90.00	179.66	9600.00	9896.77	-9897.31	-61.10	0.00	441374.73	760365.09	N 32 12 41.16	W 103 37 30.52
	19400.00	90.00	179.66	9600.00	9996.77	-9997.30	-60.50	0.00	441274.73	760365.68	N 32 12 40.17	W 103 37 30.52
	19500.00	90.00	179.66	9600.00	10096.77	-10097.30	-59.91	0.00	441174.74	760366.27	N 32 12 39.18	W 103 37 30.52
Cimarex Dos Equis 12-13 Federal Com #90H - PBHL [100' FSL, 1650' FEL]	19566.89	90.00	179.66	9600.00	10163.66	-10164.20	-59.51	0.00	441107.85	760366.67	N 32 12 38.52	W 103 37 30.52

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	Dos Equis 12-13 Federal Com #90H / Cimarex Dos Equis 12-13
	1	26.000	19566.894	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Federal Com #90H Rev1 RM Dos Equis 12-13 Federal Com #90H / Cimarex Dos Equis 12-13





Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM 14Feb20 Proposal  
Geodetic Report  
(Def Plan)



**Report Date:** February 18, 2020 - 01:34 PM  
**Client:** Cimarex Energy  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Cimarex Dos Equis 12-13 Federal Com #90H / New Slot  
**Well:** Dos Equis 12-13 Federal Com #90H  
**Borehole:** Dos Equis 12-13 Federal Com #90H  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM 14Feb20  
**Survey Date:** December 27, 2019  
**Tort / AHD / DDI / ERD Ratio:** 95.003 ° / 10185.716 ft / 6.295 / 1.061  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 14' 19.08575", W 103° 37' 29.04547"  
**Location Grid N/E Y/X:** N 451271.660 ftUS, E 760426.180 ftUS  
**CRS Grid Convergence Angle:** 0.3780 °  
**Grid Scale Factor:** 0.99996407  
**Version / Patch:** 2.10.787.0

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 179.660 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3626.400 ft above MSL  
**Seabed / Ground Elevation:** 3600.400 ft above MSL  
**Magnetic Declination:** 6.613 °  
**Total Gravity Field Strength:** 998.4391mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 47842.043 nT  
**Magnetic Dip Angle:** 59.879 °  
**Declination Date:** February 18, 2020  
**Magnetic Declination Model:** HDGM 2019  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.3780 °  
**Total Corr Mag North->Grid North:** 6.2353 °  
**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 [300' FNL, 1530' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
KOP - Build 12"/100' DLS	9100.31	0.00	209.01	9100.31	0.00	0.00	0.00	0.00	451271.66	760426.18	N 32 14 19.09	W 103 37 29.05
Build & Turn 12"/100' DLS	9391.98	35.00	209.01	9374.17	75.27	-75.51	-41.88	12.00	451196.15	760384.31	N 32 14 18.34	W 103 37 29.54
Landing Point Cimarex Dos Equis 12-13 Federal Com #90H - PBHL [100' FSL, 1650' FEL]	9892.00	90.00	179.66	9600.00	488.77	-489.48	-116.92	12.00	450782.20	760309.26	N 32 14 14.25	W 103 37 30.44
	19566.89	90.00	179.66	9600.00	10163.66	-10164.20	-59.51	0.00	441107.85	760366.67	N 32 12 38.52	W 103 37 30.52

**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	Dos Equis 12-13 Federal Com #90H / Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM
	1	26.000	19566.894	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Dos Equis 12-13 Federal Com #90H / Cimarex Dos Equis 12-13



Cimarex Energy

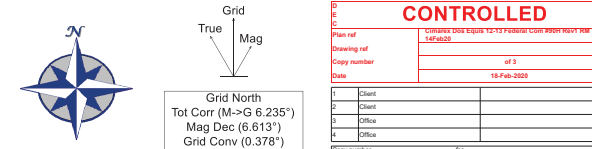
Rev 1



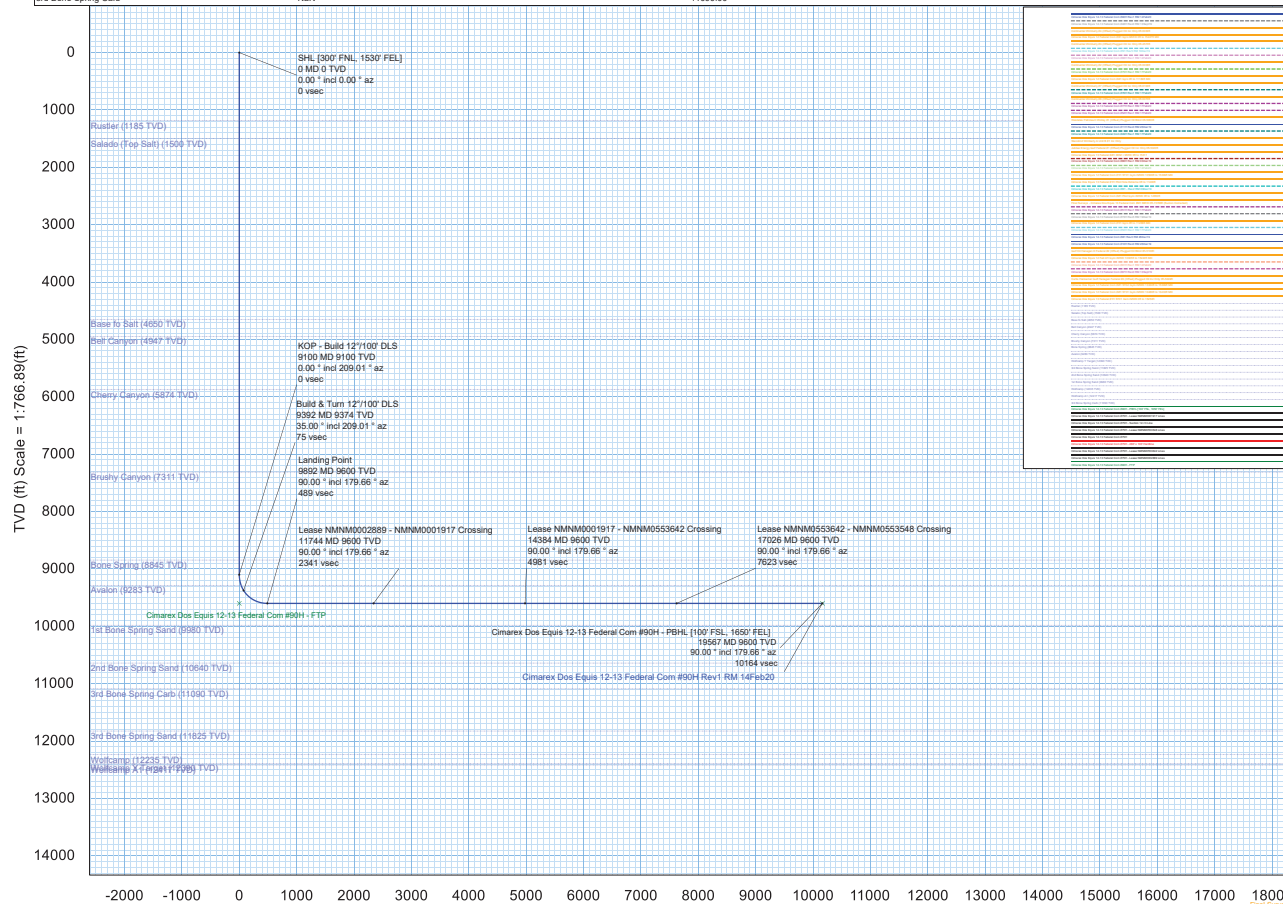
Borehole:	Dos Equis 12-13 Federal Com #90H	Well:	Dos Equis 12-13 Federal Com #90H	Field:	NM Lea County (NAD 83)	Structure:	Cimarex Dos Equis 12-13 Federal Com #90H
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Gravity & Magnetic Parameters	Dip: 59.879°	Date: 18-Feb-2020	Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Grid Conv:	0.378°	Miscellaneous
Model: HDGM 2019	FS: 47842.043nT	Gravity FS: 998.439mgm (9.80665 Based)	Lat: N 32 14 19.09	North: 451271.68HUS	Scale Fact: 0.99996407	New Slot	TVD Ref: RKB(3625.4ft above MSL)
MagDec: 6.613°			Lon: W 103 37 29.05	Easting: 760426.18HUS		Cimarex Dos Equis 12-13 Federal Com #90H Rev1 RM 14Feb20	

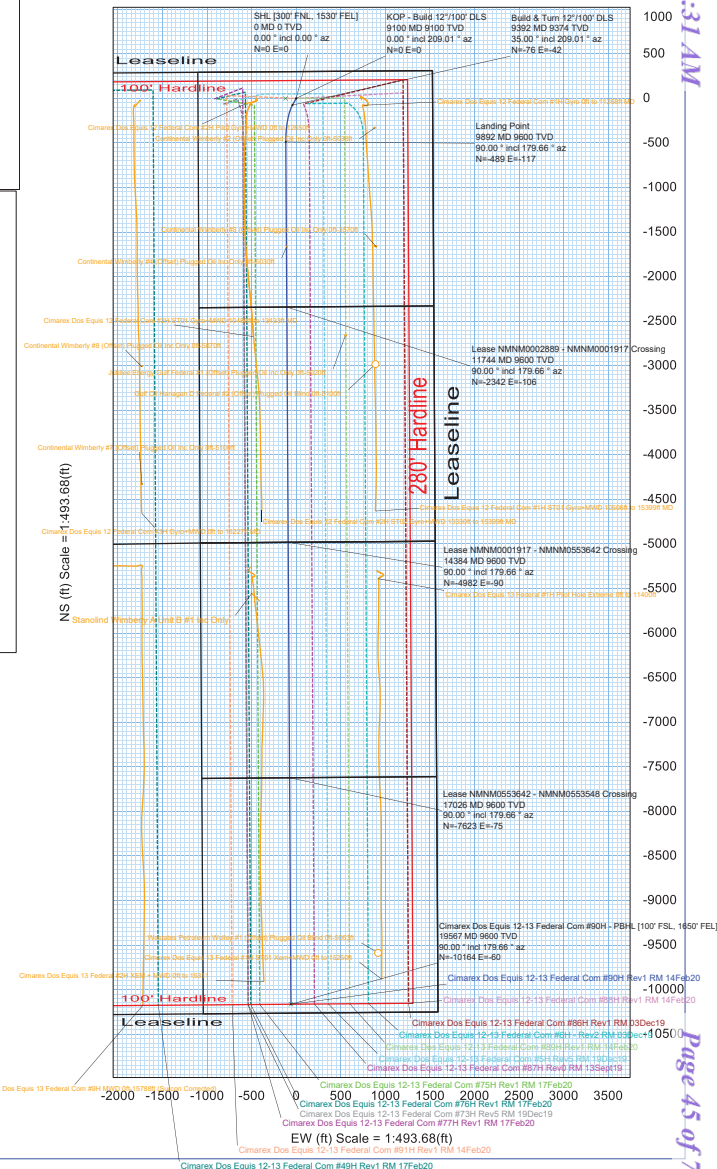
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)S(-)	E(+)W(-)	DLS
SHL [300' FNL, 1530' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler	1185.00	0.00	209.01	1185.00	0.00	0.00	0.00	0.00
Salado (Top Salt)	1500.00	0.00	209.01	1500.00	0.00	0.00	0.00	0.00
Base to Salt	4650.00	0.00	209.01	4650.00	0.00	0.00	0.00	0.00
Bell Canyon	4947.00	0.00	209.01	4947.00	0.00	0.00	0.00	0.00
Cherry Canyon	5874.00	0.00	209.01	5874.00	0.00	0.00	0.00	0.00
Brushy Canyon	7311.00	0.00	209.01	7311.00	0.00	0.00	0.00	0.00
Bone Spring	8845.00	0.00	209.01	8845.00	0.00	0.00	0.00	0.00
KOP - Build 12°/100' DLS	9100.31	0.00	209.01	9100.31	0.00	0.00	0.00	0.00
Avalon	9287.78	22.50	209.01	9283.00	31.67	-31.77	-17.62	12.00
Build & Turn 12°/100' DLS	9381.98	35.00	209.01	9374.17	75.27	-75.51	-41.88	12.00
Landing Point	9892.00	90.00	179.66	9600.00	488.77	-489.48	-116.92	12.00
Lease NMNM0002889 - NMNM0001917 Crossing	11744.20	90.00	179.66	9600.00	2340.97	-2341.64	-105.93	0.00
Lease NMNM0001917 - NMNM0553642 Crossing	14384.20	90.00	179.66	9600.00	4980.97	-4981.59	-90.27	0.00
Lease NMNM0553642 - NMNM0553548 Crossing	17025.80	90.00	179.66	9600.00	7622.57	-7623.15	-74.59	0.00
Cimarex Dos Equis 12-13 Federal Com #90H - PBHL [100' FSL, 1650' FEL]	19567.99	90.00	179.66	9600.00	10164.20	-10164.20	-59.51	0.00
Wolfcamp Y Target	NaN			12390.00				
3rd Bone Spring Sand	NaN			11825.00				
2nd Bone Spring Sand	NaN			10640.00				
1st Bone Spring Sand	NaN			9980.00				
Wolfcamp	NaN			12235.00				
Wolfcamp A1	NaN			12417.00				
3rd Bone Spring Carb	NaN			11090.00				



<b>CONTROLLED</b>	
Drawn by	CIMAREX DOS EQUIS 12-13 FEDERAL COM #90H REV1 RM 14Feb20
Copy number	1 of 3
Date	18-Feb-2020
Client	
Client	
Office	
Office	
Copy number	for



Vertical Section (ft) Azim = 179.66° Scale = 1:766.89(ft) Origin = 0N/-S, 0E/-W



EW (ft) Scale = 1:493.68(ft)

**1. Geological Formations**

TVD of target 9,600

Pilot Hole TD N/A

MD at TD 19,567

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1185	Useable	
Salado	1500	N/A	
Castille	4650	N/A	
Bell Canyon	4947	N/A	
Cherry Canyon	5874	N/A	
Brushy Canyon	7311	Hydrocarbons	
Bone Spring	8845	Hydrocarbons	
Upper Avalon Shale	9283	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	1235	1235	13-3/8"	48.00	H-40	ST&C	1.38	3.23	5.43
12 1/4	0	4900	4900	9-5/8"	36.00	J-55	ST&C	1.21	1.38	2.23
8 3/4	0	9100	9100	5-1/2"	20.00	L-80	LT&C	2.07	2.16	2.17
8 3/4	9100	19567	9600	5-1/2"	20.00	L-80	BT&C	1.97	2.00	46.60
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil 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	# Sk	Wt. lb/gal	Yld ft <sup>3</sup> /sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	599	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	160	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	919	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	286	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	380	10.30	3.64	22.18		Lead: Tuned Light + LCM
	2543	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	45
Intermediate	0	51
Production	4700	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	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		
8 3/4	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		

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

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

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

**5. Mud Program**

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1235'	Fresh Water	7.83 - 8.33	28	N/C
1235' to 4900'	Brine Water	9.50 - 10.00	30-32	N/C
4900' to 19567'	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 from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
X	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

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

**7. Drilling Conditions**

Condition	
BH Pressure at deepest TVD	4492 psi
Abnormal Temperature	No

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

	H <sub>2</sub> S is present
	H <sub>2</sub> S plan is attached

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

A multi-bowl wellhead system will be utilized.

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

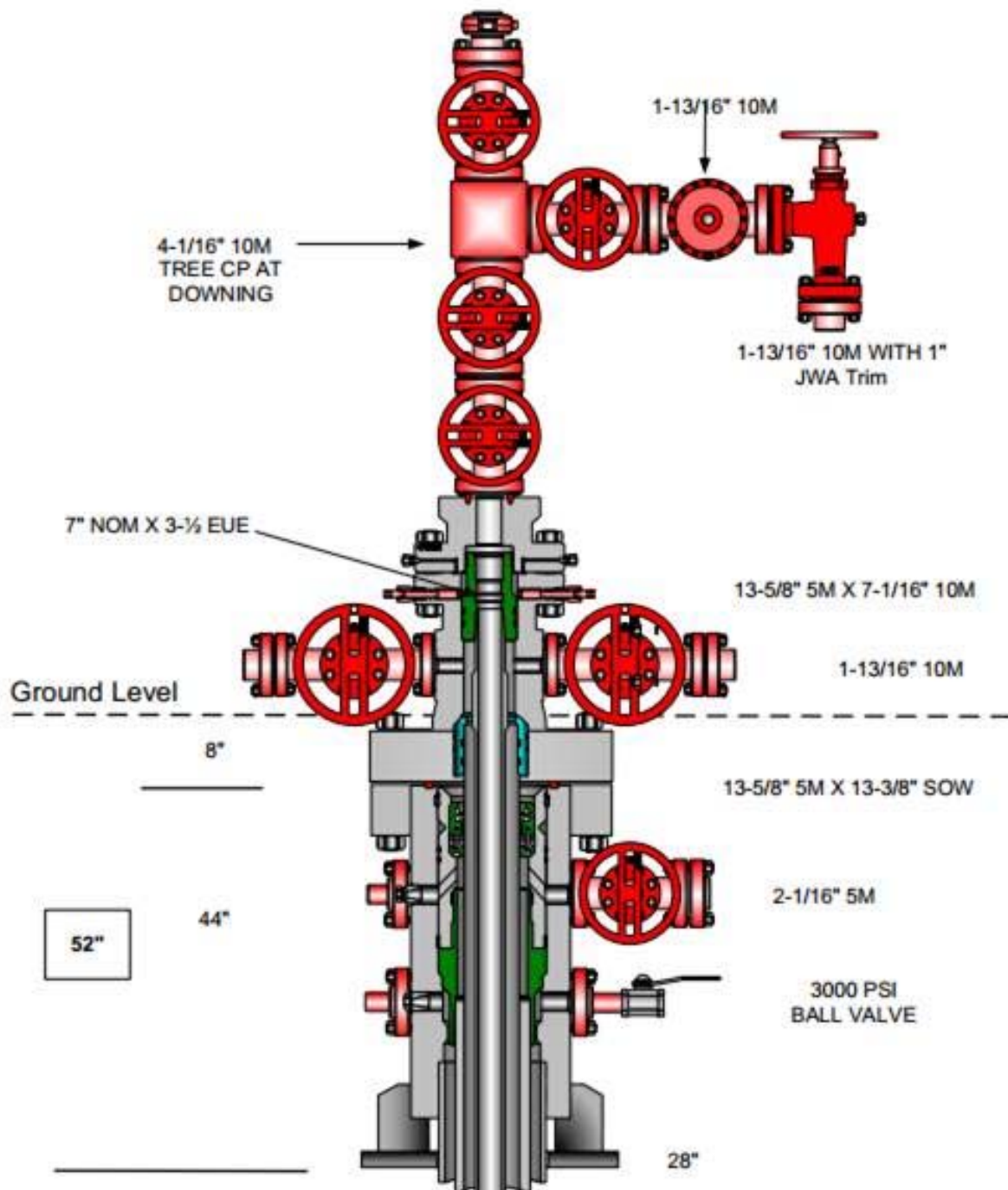
A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

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.

# Multi-bowl Wellhead Diagram

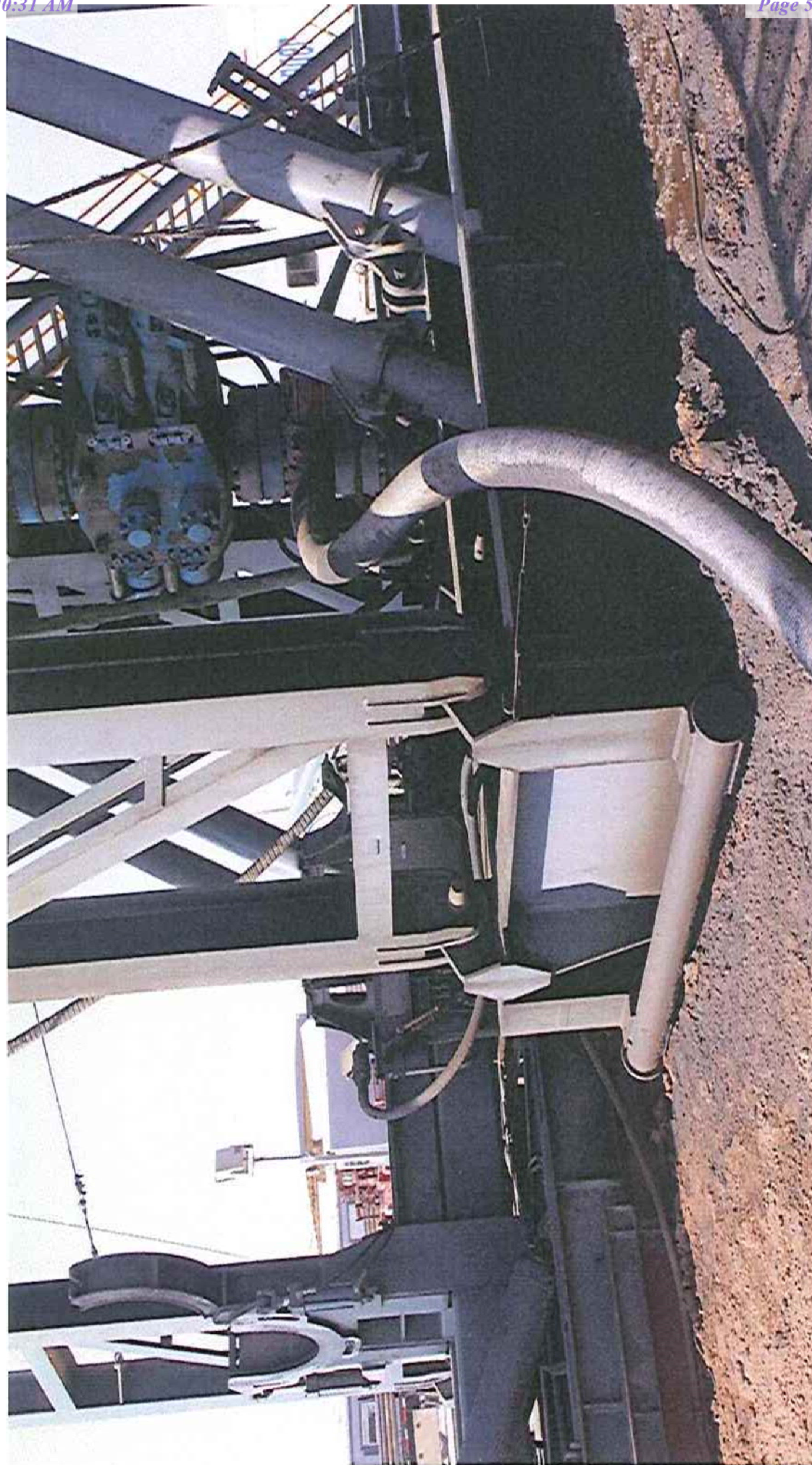
## Dos Equis 12-13 Fed Com 90H



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	1235	1235	13-3/8"	48.00	H-40	ST&C	1.38	3.23	5.43
12 1/4	0	4900	4900	9-5/8"	36.00	J-55	ST&C	1.21	1.38	2.23
8 3/4	0	9100	9100	5-1/2"	20.00	L-80	LT&C	2.07	2.16	2.17
8 3/4	9100	19567	9600	5-1/2"	20.00	L-80	BT&C	1.97	2.00	46.60
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet



Co-Flex Hose  
**Dos Equis 12-13 Federal Com 90H**  
Cimarex Energy Co.  
12-245-32E  
Lea Co., NM





Co-Flex Hose Hydrostatic Test  
**Dos Equis 12-13 Federal Com 90H**  
 Cimarex Energy Co.  
 12-24S-32E  
 Lea Co., NM



## Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT		
Customer:		P.O. Number:
Oderco Inc		odyd-271
HOSE SPECIFICATIONS		
Type:	Stainless Steel Armor Choke & Kill Hose	Hose Length: 45'ft.
I.D.	4 INCHES	O.D. 9 INCHES
WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
10,000 PSI	15,000 PSI	0 PSI
COUPLINGS		
Stem Part No.	Ferrule No.	
OKC OKC	OKC OKC	
Type of Coupling:		
Swage-It		
PROCEDURE		
<u>Hose assembly pressure tested with water at ambient temperature.</u>		
TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:	
15 MIN.	0 PSI	
Hose Assembly Serial Number:	Hose Serial Number:	
79793	OKC	
Comments:		
Date:	Tested:	Approved:
3/8/2011	<i>A. Joins</i>	<i>Kevin</i>

Co-Flex Hose Hydrostatic Test  
**Dos Equis 12-13 Federal Com 90H**  
 Cimarex Energy Co.  
 12-24S-32E  
 Lea Co., NM

March 3, 2011

# Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260



Midwest Hose  
& Specialty, Inc.

## Hose Specifications

Hose Type

C &amp; K

Length

45'

I.D.

4"

O.D.

6.09"

## Verification

Type of Fitting

4 1/16 10K

Coupling Method

Swage

Die Size

6.38"

Final O.D.

6.25"

Hose Serial #

5544

Hose Assembly Serial #

79793

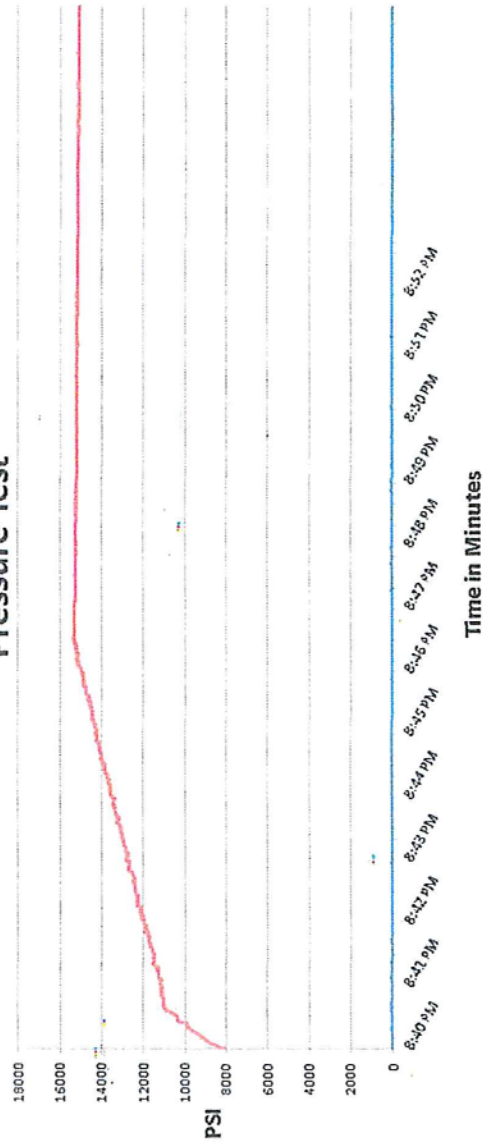
Working Pressure

10000 PSI

Burst Pressure

Standard Safety Multiplier Applies

## Pressure Test

Test Pressure  
15000 PSITime Held at Test Pressure  
11 Minutes

Actual Burst Pressure

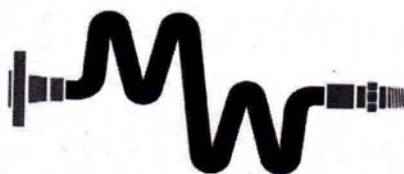
Peak Pressure  
15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac McConnell

Approved By: Kim Thomas

Co-Flex Hose  
Dos Equis 12-13 Federal Com 90H  
Cimarex Energy Co.  
12-24S-32E  
Lea Co., NM



Midwest Hose  
& Specialty, Inc.

### Certificate of Conformity

Customer:

DEM

PO

ODYD-271

### SPECIFICATIONS

Sales Order

79793

Dated:

3/8/2011

We hereby certify that the material supplied  
for the referenced purchase order to be true  
according to the requirements of the purchase  
order and current industry standards

Supplier:  
Midwest Hose & Specialty, Inc.  
10640 Tanner Road  
Houston, Texas 77041

Comments:

Approved:

*Samuel Garcia*

Date:

3/8/2011



Co-Flex Hose  
Dos Equis 12-13 Federal Com 90H  
Cimarex Energy Co.  
12-24S-32E  
Lea Co., NM

## Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium components. The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermiculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

<b>Working Pressure:</b>	5,000 or 10,000 psi working pressure
<b>Test Pressure:</b>	10,000 or 15,000 psi test pressure
<b>Reinforcement:</b>	Multiple steel cables
<b>Cover:</b>	Stainless Steel Armor
<b>Inner Tube:</b>	Petroleum resistant, Abrasion resistant
<b>End Fitting:</b>	API flanges, API male threads, threaded or butt weld hammer unions, unbolt and other special connections
<b>Maximum Length:</b>	110 Feet
<b>ID:</b>	2-1/2", 3", 3-1/2", 4"
<b>Operating Temperature:</b>	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 - 1421 S.E. 29<sup>th</sup> St. Oklahoma City, OK 73143 \* (405) 670-6718 \* Fax: (405) 670-6816



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

## SUPO Data Report

10/27/2021

**APD ID:** 10400058473**Submission Date:** 07/15/2020

Highlighted data  
reflects the most  
recent changes

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H[Show Final Text](#)**Well Type:** OIL WELL**Well Work Type:** Drill

### Section 1 - Existing Roads

**Will existing roads be used?** YES**Existing Road Map:**

Dos\_Equis\_12\_13\_Fed\_Com\_W2E2\_Pad\_6\_Existing\_Access\_Road\_20200625140210.pdf

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT**Row(s) Exist?** YES

#### ROW ID(s)

**ID:** NM131744**Do the existing roads need to be improved?** NO**Existing Road Improvement Description:****Existing Road Improvement Attachment:**

### Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** NO

### Section 3 - Location of Existing Wells

**Existing Wells Map?** YES**Attach Well map:**

Dos\_Equis\_12\_13\_Fed\_W2E2\_Pad\_6\_One\_Mile\_Radius\_20200707134328.pdf



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H

## Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** 500 x 560 pads were staked with the BLM for construction and use previously approved Dos Equis 12-13 Fed Com West Zone 2 CTB and existing Dos Equis 12-13 Fed Com East Zone 1 CTB will be utilized for this project. Existing Roads will be used. Bulkline: 4165 of 8-12 buried steel Bulk lines will be constructed in the same 60 trench. Please see Attachment M for route.

**Production Facilities map:**

Dos\_Equis\_12\_13\_Fed\_Com\_East\_Zone\_1\_CTB\_Battery\_Layout\_Previously\_Approved\_20200515063814.pdf

Dos\_Equis\_12\_13\_Fed\_Com\_West\_Zone\_2\_CTB\_Battery\_Layout\_20200515063820.pdf

Dos\_Equis\_12\_13\_Fed\_com\_90H\_SUPO\_20200707134346.pdf

Dos\_Equis\_12\_13\_Fed\_Com\_W2E2\_Pad\_6\_Bulk\_Flowline\_20200707134353.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source type:** MUNICIPAL

<b>Water source use type:</b>	SURFACE CASING
	INTERMEDIATE/PRODUCTION CASING

<b>Source latitude:</b>	<b>Source longitude:</b>
-------------------------	--------------------------

**Source datum:**

<b>Water source permit type:</b>	WATER RIGHT
----------------------------------	-------------

**Permit Number:**

<b>Water source transport method:</b>	TRUCKING
---------------------------------------	----------

**Source land ownership:** FEDERAL**Source transportation land ownership:** FEDERAL**Water source volume (barrels):** 5000**Source volume (acre-feet):** 0.64446548**Source volume (gal):** 210000**Water source and transportation map:**

Dos\_Equis\_12\_13\_Fed\_Com\_W2E2\_Pad\_6\_Drilling\_Water\_Route\_20200625142058.pdf

**Water source comments:****New water well?** N

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H

### New Water Well Info

**Well latitude:****Well Longitude:****Well datum:****Well target aquifer:****Est. depth to top of aquifer(ft):****Est thickness of aquifer:****Aquifer comments:****Aquifer documentation:****Well depth (ft):****Well casing type:****Well casing outside diameter (in.):****Well casing inside diameter (in.):****New water well casing?****Used casing source:****Drilling method:****Drill material:****Grout material:****Grout depth:****Casing length (ft.):****Casing top depth (ft.):****Well Production type:****Completion Method:****Water well additional information:****State appropriation permit:****Additional information attachment:**

### Section 6 - Construction Materials

**Using any construction materials:** NO**Construction Materials description:****Construction Materials source location attachment:**

### Section 7 - Methods for Handling Waste

**Waste type:** DRILLING**Waste content description:** Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations**Amount of waste:** 15000 barrels**Waste disposal frequency :** Weekly**Safe containment description:** N/A**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY**Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to R360 Environmental Solutions, 4507 Carlsbad Hwy, Hobbs, NM 88240

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Waste type:** GARBAGE**Waste content description:** Garbage and trash produced during drilling and completion operations**Amount of waste:** 32500 pounds**Waste disposal frequency :** Weekly**Safe containment description:** N/A**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY**Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** A licensed 3rd party hauls trash to Lea County Landfill**Waste type:** SEWAGE**Waste content description:** Human Waste**Amount of waste:** 300 gallons**Waste disposal frequency :** Weekly**Safe containment description:** Waste will be properly contained and disposed of properly at a state approved disposal facility.**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY**Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste to City of Toyah TX waste water facility.

### Reserve Pit

**Reserve Pit being used?** NO**Temporary disposal of produced water into reserve pit?** NO**Reserve pit length (ft.)****Reserve pit width (ft.)****Reserve pit depth (ft.)****Reserve pit volume (cu. yd.)****Is at least 50% of the reserve pit in cut?****Reserve pit liner****Reserve pit liner specifications and installation description**

### Cuttings Area

**Cuttings Area being used?** NO**Are you storing cuttings on location?** N



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Description of cuttings location****Cuttings area length (ft.)****Cuttings area width (ft.)****Cuttings area depth (ft.)****Cuttings area volume (cu. yd.)****Is at least 50% of the cuttings area in cut?****WCuttings area liner****Cuttings area liner specifications and installation description****Section 8 - Ancillary Facilities****Are you requesting any Ancillary Facilities?:** N**Ancillary Facilities attachment:****Comments:****Section 9 - Well Site Layout****Well Site Layout Diagram:**

Dos\_Equis\_12\_13\_Fed\_W2E2\_Pad\_6\_Well\_list\_20200625142923.docx

Dos\_Equis\_12\_13\_Fed\_Com\_90H\_Wellsite\_Layout\_20200707134422.pdf

**Comments:****Section 10 - Plans for Surface Reclamation****Type of disturbance:** No New Surface Disturbance **Multiple Well Pad Name:** Dos Equis 12-13 Fed Com**Multiple Well Pad Number:** W2E2 Pad 6**Recontouring attachment:**

Dos\_Equis\_12\_13\_Fed\_Com\_W2E2\_Pad\_6\_Interim\_Reclaim\_20200625142945.pdf

**Drainage/Erosion control construction:** To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

**Drainage/Erosion control reclamation:** All disturbed and re-contoured areas would be reseeded according to specifications. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 12-13 FEDERAL COM

Well Number: 90H

Well pad proposed disturbance (acres):	Well pad interim reclamation (acres): 0	Well pad long term disturbance (acres): 0
Road proposed disturbance (acres):	Road interim reclamation (acres): 0	Road long term disturbance (acres): 0
Powerline proposed disturbance (acres):	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres):	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 0
Other proposed disturbance (acres):	Other interim reclamation (acres): 0	Other long term disturbance (acres): 0
Total proposed disturbance: 0	Total interim reclamation: 0	Total long term disturbance: 0

**Disturbance Comments:**

**Reconstruction method:** After well plugging, all disturbed areas would be returned to the original contour or a contour that blends with the surrounding landform including roads unless the surface owner requests that they be left intact. In consultation with the surface owners it will be determined if any gravel or similar materials used to reinforce an area are to be removed, buried, or left in place during final reclamation. Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated. As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching, or fertilizing.

**Reclamation, Re-vegetation, and Drainage:** All disturbed and re-contoured areas would be reseeded using techniques outlined under Phase I and II of this plan or as specified by the land owner. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

**Topsoil redistribution:** The original stock piled topsoil, if any, will be spread evenly over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pad, production facilities, roads, pipelines, and power line corridors as close as possible to the original topography. The location will then be seeded.

**Soil treatment:** The soil surface would be prepared to provide a seedbed for reestablishment of desirable vegetation. Establish control of erosion and invasion of non-native plants to reestablish plant community.

**Existing Vegetation at the well pad:** N/A

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:** N/A

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:** N/A

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:** N/A

**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?** N

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** N

**Seedling transplant description attachment:**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Will seed be harvested for use in site reclamation?** N**Seed harvest description:****Seed harvest description attachment:****Seed Management****Seed Table****Seed Summary****Total pounds/Acre:****Seed Type****Pounds/Acre****Seed reclamation attachment:****Operator Contact/Responsible Official Contact Info****First Name:****Last Name:****Phone:****Email:****Seedbed prep:****Seed BMP:****Seed method:****Existing invasive species?** N**Existing invasive species treatment description:****Existing invasive species treatment attachment:****Weed treatment plan description:** N/A**Weed treatment plan attachment:****Monitoring plan description:** N/A**Monitoring plan attachment:****Success standards:** N/A**Pit closure description:** N/A**Pit closure attachment:****Section 11 - Surface Ownership**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Disturbance type:** WELL PAD**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:****Disturbance type:** PIPELINE**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Section 12 - Other Information****Right of Way needed?** Y**Use APD as ROW?** Y**ROW Type(s):** 288100 ROW – O&G Pipeline**ROW Applications****SUPO Additional Information:****Use a previously conducted onsite?** Y

**Previous Onsite information:** Location was moved 50 ft. east (To allow room for the 4H pad to the west) and 30 ft. south to avoid our pipelines to the north and we are bordered by our pipelines to the south. Pad size will only be 530' (N/S) x 500' (E/W). Access road off NE corner to existing lease road. V-Door West. Top soil east.

**Other SUPO Attachment**



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

## PWD Data Report

10/27/2021

**APD ID:** 10400058473

**Submission Date:** 07/15/2020

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** DOS EQUIS 12-13 FEDERAL COM

**Well Number:** 90H

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Section 1 - General

**Would you like to address long-term produced water disposal?** NO

### Section 2 - Lined Pits

**Would you like to utilize Lined Pit PWD options?** N

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit specifications:**

**Pit liner description:**

**Pit liner manufacturers information:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule attachment:**

**Lined pit reclamation description:**

**Lined pit reclamation attachment:**

**Leak detection system description:**

**Leak detection system attachment:**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** DOS EQUIS 12-13 FEDERAL COM

**Well Number:** 90H

**Lined pit Monitor description:**

**Lined pit Monitor attachment:**

**Lined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information attachment:**

### Section 3 - Unlined Pits

**Would you like to utilize Unlined Pit PWD options?** N

**Produced Water Disposal (PWD) Location:**

**PWD disturbance (acres):**

**PWD surface owner:**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

**Unlined pit: do you have a reclamation bond for the pit?**



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** DOS EQUIS 12-13 FEDERAL COM**Well Number:** 90H**Is the reclamation bond a rider under the BLM bond?****Unlined pit bond number:****Unlined pit bond amount:****Additional bond information attachment:**

#### Section 4 - Injection

**Would you like to utilize Injection PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Injection PWD discharge volume (bbl/day):****Injection well mineral owner:****Injection well type:****Injection well number:****Injection well name:****Assigned injection well API number?****Injection well API number:****Injection well new surface disturbance (acres):****Minerals protection information:****Mineral protection attachment:****Underground Injection Control (UIC) Permit?****UIC Permit attachment:**

#### Section 5 - Surface Discharge

**Would you like to utilize Surface Discharge PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Surface discharge PWD discharge volume (bbl/day):****Surface Discharge NPDES Permit?****Surface Discharge NPDES Permit attachment:****Surface Discharge site facilities information:****Surface discharge site facilities map:**

#### Section 6 - Other

**Would you like to utilize Other PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Other PWD discharge volume (bbl/day):**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** DOS EQUIS 12-13 FEDERAL COM

**Well Number:** 90H

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**



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

## Bond Info Data Report

10/27/2021

**APD ID:** 10400058473

**Submission Date:** 07/15/2020

Highlighted data  
reflects the most  
recent changes

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** DOS EQUIS 12-13 FEDERAL COM

**Well Number:** 90H

[Show Final Text](#)

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Bond Information

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001188

**BIA Bond number:**

**Do you have a reclamation bond?** NO

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond attachment:**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Electronically  
Via E-permitting

## 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 / 2 / 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
Dos Equis 12-13 Fed Com 90H		B, Sec 12, T24S, R32E	300 FNL/1530 FEL	1900	2850	3500
<b>30-025-50139</b>						

**IV. Central Delivery Point Name:** Dos Equis 12-13 CTB 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
Dos Equis 12-13 Fed Com 90H		1/1/2023	3/1/2023	6/1/2023	8/1/2023	8/1/2023
<b>30-025-50139</b>						

**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: 
Printed Name: Sarah Jordan
Title: Regulatory Analyst
E-mail Address: sarah.jordan@coterra.com
Date: 5/2/2022
Phone: 432/620-1909
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
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.*

**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 103069

**CONDITIONS**

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID:
	215099
	Action Number:
	103069
Action Type:	
[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)	

**CONDITIONS**

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/12/2022
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	5/12/2022
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	5/12/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	5/12/2022