

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OCD - HOBBS
04/09/2020
RECEIVED

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

1a. Type of work: ☐ DRILL ☐ REENTER		5. Lease Serial No.
1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator 215099		8. Lease Name and Well No. 322999
3a. Address	3b. Phone No. (include area code)	9. API Well No. 30-025-47080
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 98309
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)		12. County or Parish
16. No of acres in lease		13. State
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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

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

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

GCP Rec 04/09/2020

SL

(Continued on page 2)

APPROVED WITH CONDITIONS
Approval Date: 03/31/2020

KZ
04/16/2020

*(Instructions on page 2)



APD ID: 10400047446

Submission Date: 09/17/2019

Highlighted data
reflects the most
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400047446

Tie to previous NOS? Y

Submission Date: 09/17/2019

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: NMNM0002889

Lease Acres: 680

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 St., Suite 600

Zip: 79701

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)620-1936

Operator Internet Address: tstathem@cimarex.com

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 11-14 FEDERAL COM

Well Number: 8H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-025 G-08
S243213C; WOLFCAMP

Pool Name: WC-025 G-08
S243213C; WOLFCAMP

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 11-14 FEDERAL COM

Well Number: 8H

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? N

New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: Dos

Number: E2E2

Equis 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: 384 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Dos_Equis_11_14_Fed_Com_8H_C102_20190916125214.pdf

Well work start Date: 02/29/2020

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	384	FNL	1136	FEL	24S	32E	11	Aliquot NENE	32.238377	-103.6404899	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0002889	3603	0	0	Y
KOP Leg #1	390	FNL	332	FEL	24S	32E	11	Aliquot NENE	32.238381	-103.637892	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0002889	-8227	11887	11830	Y
PPP Leg #1-1	1108	FNL	330	FEL	24S	32E	11	Aliquot NENE	32.236372	-103.637892	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0002889	-8737	12893	12340	Y

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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 #1-2	0	FNL	330	FEL	24S	32E	14	Aliquot NENE	32.224739	- 103.637897	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0553642	- 8719	17125	12322	Y
PPP Leg #1-3	2642	FNL	330	FEL	24S	32E	11	Aliquot NESE	32.232186	- 103.637894	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0001917	- 8730	14416	12333	Y
EXIT Leg #1	100	FSL	330	FEL	24S	32E	14	Aliquot SESE	32.21068	- 103.637907	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0033503	- 8697	22240	12300	Y
BHL Leg #1	100	FSL	330	FEL	24S	32E	14	Aliquot SESE	32.21068	- 103.637907	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0033503	- 8697	22240	12300	Y



APD ID: 10400047446

Submission Date: 09/17/2019

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Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

[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
539135	RUSTLER	3603	1166	1166	LIMESTONE	USEABLE WATER	N
539136	SALADO	2213	1390	1390	ANHYDRITE	NONE	N
539137	BASE OF SALT	-1081	4684	4704	ANHYDRITE	NONE	N
539138	LAMAR	-1307	4910	4933	SANDSTONE	NONE	N
539139	BELL CANYON	-1362	4965	4988	SANDSTONE	NONE	N
539140	CHERRY CANYON	-2255	5858	5891	SANDSTONE	NONE	N
539141	BRUSHY CANYON	-3619	7222	7269	SANDSTONE	NATURAL GAS, OIL	N
539142	BONE SPRING	-5176	8779	8836	LIMESTONE	NATURAL GAS, OIL	N
539143	AVALON SAND	-5616	9219	9276	SHALE	NATURAL GAS, OIL	N
539144	BONE SPRING 1ST	-6341	9944	10000	SANDSTONE	NATURAL GAS, OIL	N
539145	BONE SPRING 2ND	-6505	10108	10165	LIMESTONE	NATURAL GAS, OIL	N
539146	BONE SPRING 3RD	-7433	11036	11093	LIMESTONE	NATURAL GAS, OIL	N
539147	WOLFCAMP	-8625	12228	12357	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

Pressure Rating (PSI): 10M

Rating Depth: 22240

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. Cimarex requests a 5M annular variance for the 10M BOP system. See attached procedure

Testing Procedure: A multi-bowl wellhead system will be utilized. After running the 10-3/4" surface casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to 50% 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 while being monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 10000 psi. 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_11_14_Fed_com_8H_10M_Choke_20190917075429.pdf

BOP Diagram Attachment:

Dos_Equis_11_14_Fed_Com_8H_10M_BOP_20190917075440.pdf

Pressure Rating (PSI): 5M

Rating Depth: 1216

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. Cimarex requests a 5M annular variance for the 10M BOP system. See attached procedure.

Testing Procedure: A multi-bowl wellhead system will be utilized. After running the 10-3/4" 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 50% 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 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. 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:

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

Dos_Equis_11_14_Fed_Com_8H_5M_BOP_20190917074545.pdf

BOP Diagram Attachment:

Dos_Equis_11_14_Fed_Com_8H_5M_Choke_20190917074605.pdf

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	14.75	10.75	NEW	API	N	0	1216	0	1216	3603	2387	1216	J-55	40.5	BUTT	2.84	5.63	BUOY	12.77	BUOY	12.77
2	PRODUCTI ON	6.75	5.5	NEW	API	N	0	11887	0	11887	3603	-8284	11887	L-80	20	LT&C	1.14	1.19	BUOY	1.88	BUOY	1.88
3	INTERMED IATE	9.875	7.625	NEW	NON API	N	0	12512	0	12291	3603	-8688	12512	L-80	29.7	BUTT	2.5	1.2	BUOY	1.82	BUOY	1.82
4	PRODUCTI ON	6.75	5.0	NEW	API	N	11887	22240	11887	12300	-8284	-8697	10353	P- 110	18	BUTT	1.68	1.7	BUOY	78.02	BUOY	78.02

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dos_Equis_11_14_Fed_Com_8H_Casing_Assumptions_20190917075934.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

Casing Attachments

Casing ID: 2 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dos_Equis_11_14_Fed_Com_8H_Casing_Assumptions_20190917080700.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Dos_Equis_11_14_Fed_Com_8H_Casing_Spec_Sheet_20190917080130.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dos_Equis_11_14_Fed_Com_8H_Casing_Assumptions_20190917080230.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dos_Equis_11_14_Fed_Com_8H_Casing_Assumptions_20190917080935.pdf

Section 4 - Cement

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1216	472	1.72	13.5	811	50	Class C	Bentonite
SURFACE	Tail		0	1216	127	1.34	14.8	169	25	Class C	LCM
INTERMEDIATE	Lead		0	1251 2	585	3.64	10.3	2128	50	Tuned Light	LCM
INTERMEDIATE	Tail		0	1251 2	198	1.36	14.8	268	25	Class C	Retarder
INTERMEDIATE	Lead	4910	0	1251 2	785	1.88	12.9	1475	50	35:65 (POZ C)	Salt, Bentonite

PRODUCTION	Lead		0	2224 0	832	1.3	14.2	1081	25	50:50 POZ H	Salt, Bentonite, Fluid Loss, Dispersant, SMS
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PRODUCTION	Lead		0	2224 0	832	1.3	14.2	1081	25	50:50 POZ H	Salt, Bentonite, Fluid Loss, Dispersant, SMS
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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

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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	1216	SPUD MUD	8.3	8.8							
1216	1251 2	OTHER : The Brine Emulsion is completely saturated brine fluid that ties diesel into itself to lower the weight of the fluid. The drilling fluid is completely salt saturated.	8.5	9							
1251 2	2224 0	OIL-BASED MUD	12	12.5							

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,COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7995

Anticipated Surface Pressure: 5280

Anticipated Bottom Hole Temperature(F): 171

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:

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Dos_Equis_11_14_Fed_Com_8H_H2S_Plan_20190917090027.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Dos_Equis_11_14_Fed_Com_8H_AC_Report_20190917090252.pdf

Dos_equis_11_14_Fed_Com_8H_Directional_Plan_20190917090259.pdf

Other proposed operations facets description:

Cimarex requests a 5M annular variance for the 10M BOP system. See attached procedure

Other proposed operations facets attachment:

Dos_Equis_11_14_Fed_Com_8H_Drilling_Plan_20190917091109.pdf

Dos_Equis_11_14_Fed_Com_8H_Flex_Hose_20190917091126.pdf

Dos_Equis_11_14_Fed_Com_8H_Gas_Capture_Plan_20190917091132.pdf

Other Variance attachment:

Dos_Equis_11_14_Fed_Com_8H_10M_5M_Annular_Well_Control_20190917091229.pdf

Dos_Equis_11_14_Fed_Com_8H_Multibowl_Wellhead_20200225154457.pdf

Drilling 9 7/8" hole
below 10 3/4" Casing

Fill Line

Flowline

5000# (5M)
BOP

Annular Preventer

SRR & A

Pipe Rams

Blind Rams

2" Minimum Kill Line

Kill Line

Drilling
Spool

3" minimum choke line

Choke Line

2 Valves Minimum
(HCR Required)

2 Valves and a check valve

Wellhead
Assembly

11" 5000 psi x 7-1/16" 10,000 psi
Wellhead Assembly

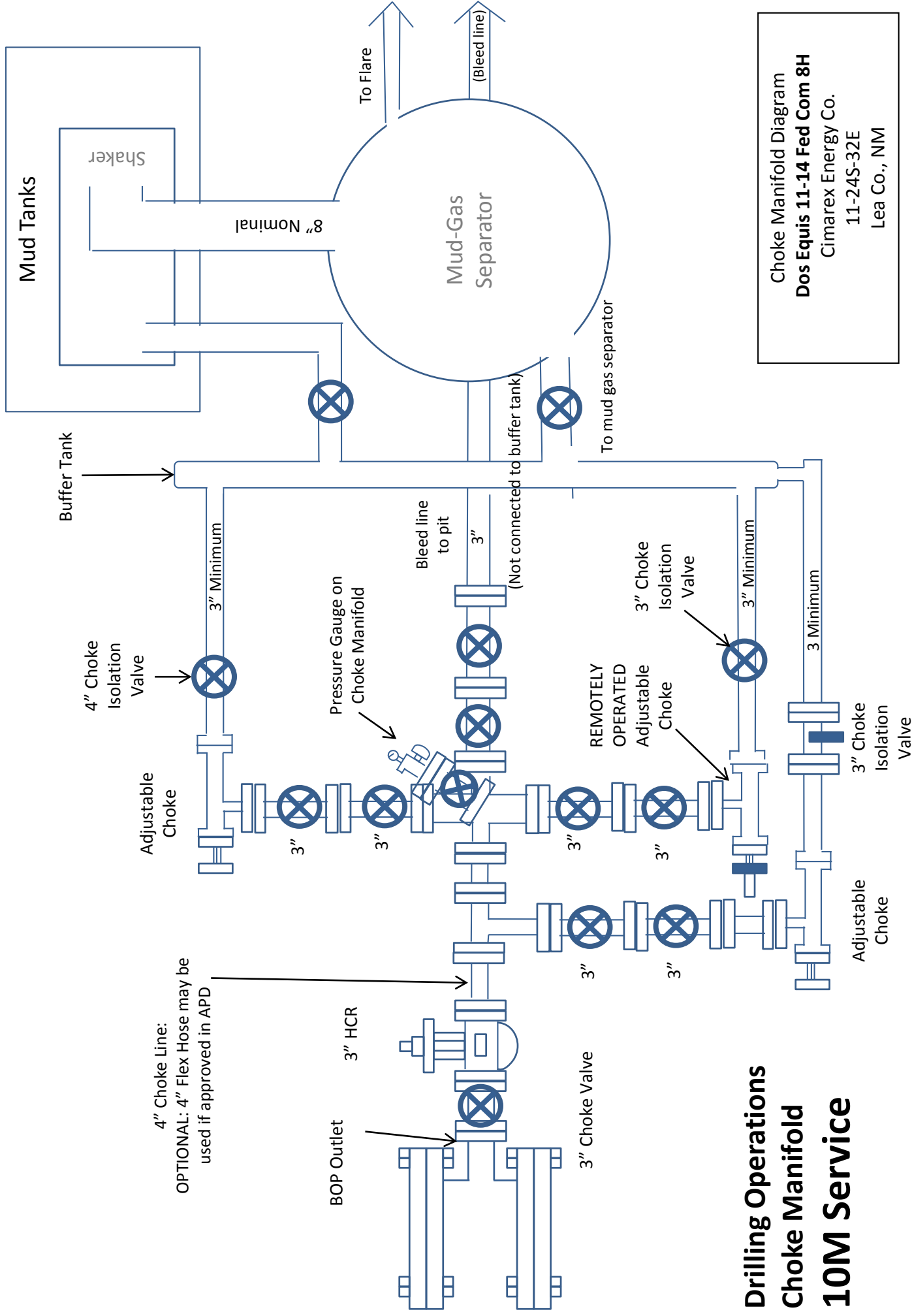
Wellhead
Assembly

13-5/8" 3000 psi x 11" 5000 psi
Wellhead Assembly

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

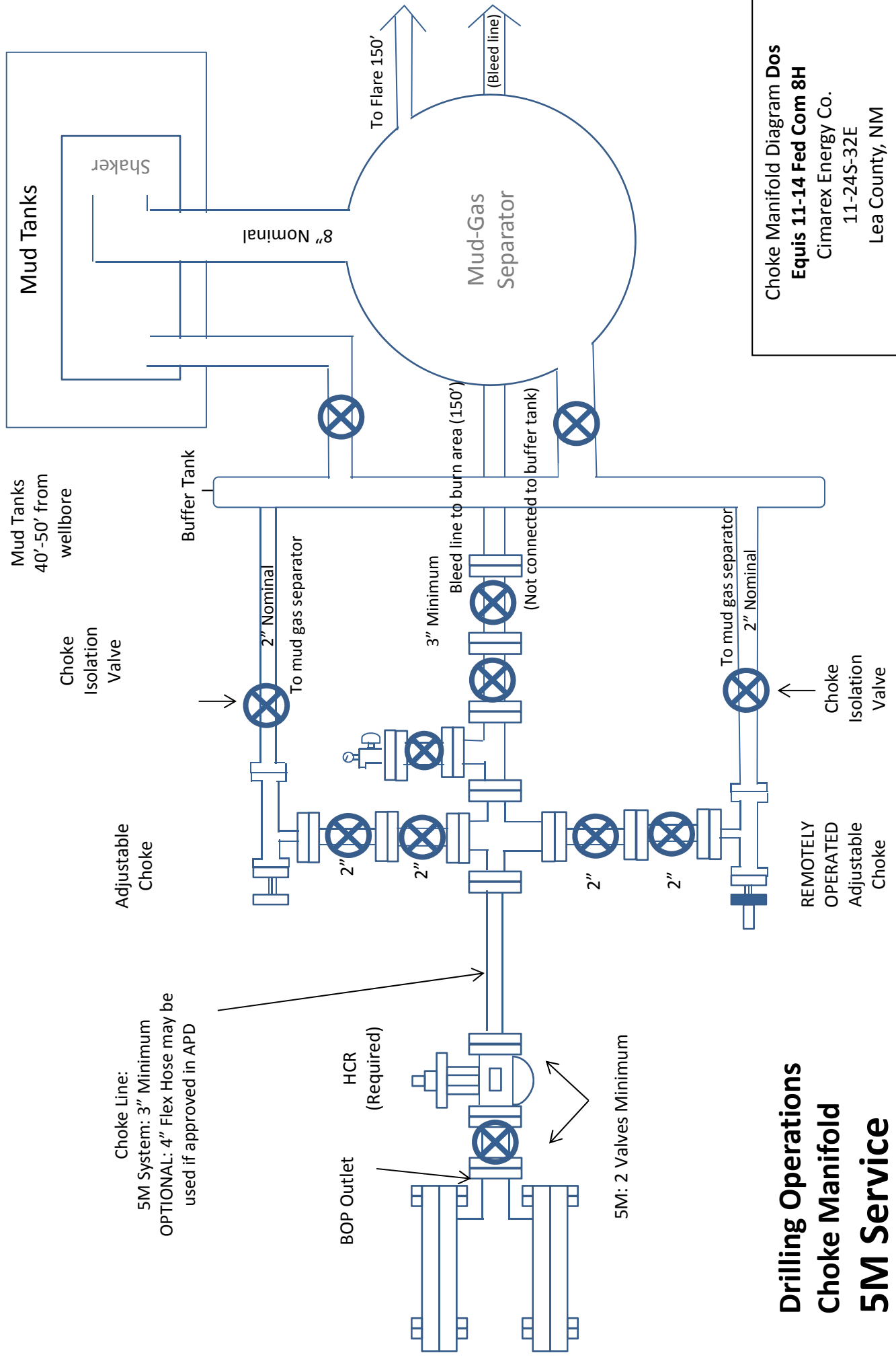
Exhibit E-1 – 5000# BOP
Dos Equis 11-14 Fed Com 8H
Cimarex Energy Co.
11-24S-32E
Lea Co., NM

Mud Tanks
40'-50' from
wellbore



Choke Manifold Diagram
Dos Equis 11-14 Fed Com 8H
Cimarex Energy Co.
11-24S-32E
Lea Co., NM

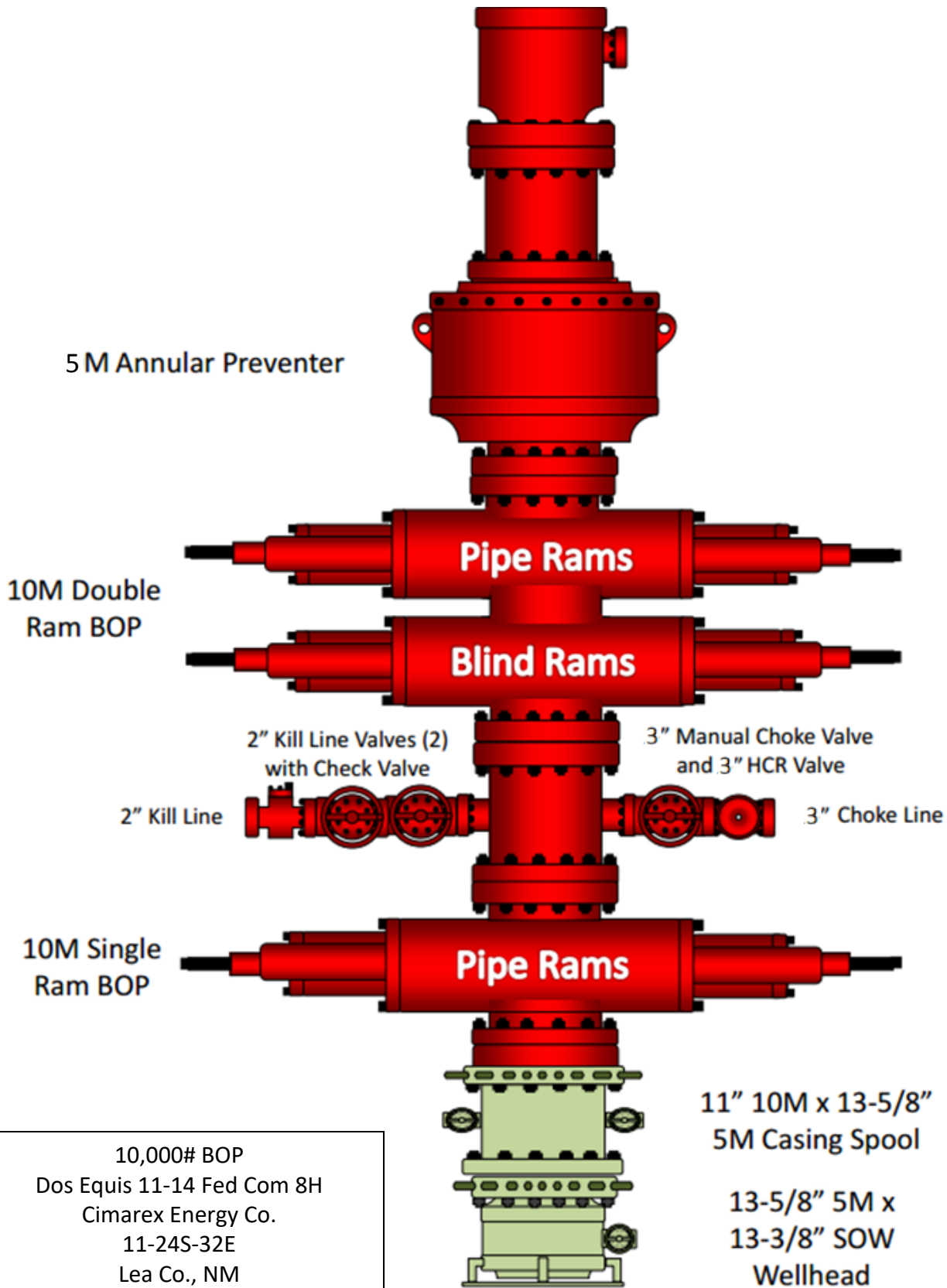
Drilling Operations
Choke Manifold
10M Service



Drilling Operations Choke Manifold 5M Service

Choke Manifold Diagram Dos
 Equis 11-14 Fed Com 8H
 Cimarex Energy Co.
 11-24S-32E
 Lea County, NM

Drilling 6 3/4" Hole
Below 7 5/8" Casing



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

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

H₂S Detection and Alarm Systems:

- A. H₂S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H₂S detectors may 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 (H₂S present in dangerous concentration). Only H₂S trained and certified personnel admitted to location.

5 Well control equipment:

- A. See exhibit "E-1"

6 Communication:

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

7 Drillstem Testing:

No DSTs or cores are planned at this time.

- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

H₂S Contingency Plan
Dos Equis 11-14 Fed Com 8H
Cimarex Energy Co.
UL: A, Sec. 11, 24S, 32E
Lea Co., NM

Emergency Procedures

In the event of a release of gas containing H₂S, 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 H₂S 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 H₂S, 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 (SO₂). 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 H₂S and SO₂

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).

H₂S Contingency Plan Emergency Contacts
 Dos Equis 11-14 Fed Com 8H
 Cimarex Energy Co.
 UL: A, Sec. 11, 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
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

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

Santa Fe

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

National

National Emergency Response Center (Washington, D.C.)	800-424-8802
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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 11-14 Federal Com 8H Rev0 RM 22Aug19 Anti-Collision Summary Report

Analysis Date-24hr Time: August 26, 2019 - 17:05

Client: Cimarex Energy

Field: NM Lea County (NAD 83)

Structure: Cimarex Dos Equis 11-14 Federal Com 8H

Slot: New Slot

Well: Dos Equis 11-14 Federal Com 8H

Borehole: Dos Equis 11-14 Federal Com 8H

Scan MD Range: 0.00ft ~ 22240.10ft

Analysis Method: 3D Least Distance

Reference Trajectory: Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM 22Aug19 (Non-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: 2.10.760.0

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 11-14
Federal Com 62H Rev0 RM
23Aug19 (Non-Def Plan)

Fail Minor

20.01	16.50	17.51	3.51	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	26.00	26.00					WRP	
20.00	20.00	5.83	0.00	1.50	OSF1.50	1920.00	1920.00			OSF<1.50		Enter Minor	
20.00	25.47	2.19	-5.47	1.14	OSF1.50	2500.00	2500.00					MinPt-CtCt	
20.02	25.54	2.18	-5.52	1.14	OSF1.50	2510.00	2510.00					MINPT-O-EQU	
20.07	25.61	2.16	-5.54	1.14	OSF1.50	2520.00	2520.00					MinPts	
26.30	26.64	7.71	-0.34	1.48	OSF1.50	2690.00	2689.86			OSF>1.50		Exit Minor	
100.69	31.98	78.54	68.72	5.00	OSF1.50	4290.00	4274.10	OSF>5.00				Exit Alert	
512.94	83.38	456.58	429.62	9.47	OSF1.50	11890.00	11833.06					MinPts	
512.93	79.60	459.03	433.33	9.93	OSF1.50	12420.00	12259.03					MinPt-CtCt	
512.94	155.88	408.18	357.05	4.99	OSF1.50	16900.00	12322.85	OSF<5.00				Enter Alert	
512.94	318.38	299.88	194.60	2.42	OSF1.50	22240.10	12300.00					MinPts	

Cimarex Dos Equis 11-14
Federal Com 63H Rev0 RM
26Aug19 (Non-Def Plan)

Warning Alert

40.00	32.50	37.50	7.50	N/A	MAS = 9.90 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
39.99	32.50	37.49	7.50	N/A	MAS = 9.90 (m)	26.00	26.00					WRP	
39.99	32.50	22.18	7.50	2.45	MAS = 9.90 (m)	2500.00	2500.00					MinPts	
40.01	32.50	22.15	7.52	2.44	MAS = 9.90 (m)	2510.00	2510.00					MINPT-O-EQU	
40.15	32.50	22.20	7.66	2.44	MAS = 9.90 (m)	2530.00	2530.00					MinPt-O-SF	
89.52	32.50	69.58	57.03	4.99	MAS = 9.90 (m)	3050.00	3047.13	OSF>5.00				Exit Alert	
843.46	97.38	777.72	746.11	13.30	OSF1.50	11800.00	11743.06					MinPts	
843.49	97.37	777.75	746.12	13.30	OSF1.50	11810.00	11753.06					MinPt-O-SF	
1025.89	93.30	962.85	932.58	16.91	OSF1.50	12590.00	12309.34					MinPts	
1025.86	92.57	963.31	933.29	17.04	OSF1.50	12880.00	12340.00					MinPt-CtCt	
1025.86	309.67	818.58	716.20	5.00	OSF1.50	22010.00	12300.98	OSF<5.00				Enter Alert	
1025.86	316.84	813.82	709.05	4.89	OSF1.50	22240.10	12300.00					MinPts	

Cimarex Dos Equis 11 Federal
#1H Extreme+MWD Off to
15324ft (Def Survey)

Warning Alert

487.41	32.81	484.91	454.61	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
487.38	32.81	484.86	454.57	24692.40	MAS = 10.00 (m)	26.00	26.00					WRP	
486.61	32.81	483.64	453.81	1011.89	MAS = 10.00 (m)	160.00	160.00					MinPts	
486.64	32.81	483.62	453.83	932.32	MAS = 10.00 (m)	170.00	170.00					MINPT-O-EQU	
489.53	32.81	481.04	456.72	81.40	MAS = 10.00 (m)	1370.00	1370.00					MinPts	
106.01	33.79	82.61	72.22	4.98	OSF1.50	6040.00	6005.70	OSF<5.00				Enter Alert	
102.42	34.81	78.38	67.61	4.64	OSF1.50	6230.00	6193.71					MinPt-CtCt	
102.44	34.86	78.36	67.57	4.63	OSF1.50	6240.00	6203.60					MINPT-O-EQU	
102.48	34.92	78.36	67.56	4.63	OSF1.50	6250.00	6213.50					MinPt-O-ADP	
102.99	35.18	78.70	67.81	4.61	OSF1.50	6300.00	6262.97					MinPt-O-SF	
116.55	36.74	91.23	79.81	5.00	OSF1.50	6600.00	6559.82	OSF>5.00				Exit Alert	
331.83	45.85	300.43	285.98	11.40	OSF1.50	9070.00	9013.06					MinPt-O-SF	
334.78	46.24	303.12	288.54	11.40	OSF1.50	9200.00	9143.06					MinPt-O-SF	
341.39	47.73	308.78	293.66	11.24	OSF1.50	9630.00	9573.06					MinPt-O-ADP	
350.84	49.82	316.79	301.02	11.04	OSF1.50	10130.00	10073.06					MinPt-O-SF	
344.12	52.95	307.95	291.17	10.16	OSF1.50	10760.00	10703.06					MinPts	
344.14	52.95	308.01	291.19	10.16	OSF1.50	10770.00	10713.06					MinPt-O-SF	
1449.61	54.61	1412.38	1395.01	41.66	OSF1.50	13690.00	12336.59					MinPt-CtCt	
1437.39	87.74	1378.07	1349.65	25.25	OSF1.50	14830.00	12331.71					MinPt-CtCt	
1438.65	101.47	1370.17	1337.18	21.77	OSF1.50	15270.00	12329.83					MinPt-CtCt	
1437.00	115.56	1359.21	1321.52	19.03	OSF1.50	15730.00	12327.86					MinPt-CtCt	
1445.21	153.92	1341.76	1291.28	14.29	OSF1.50	16720.00	12323.62					MINPT-O-EQU	
1445.29	154.03	1341.77	1291.26	14.28	OSF1.50	16730.00	12323.58					MinPt-O-ADP	
1447.80	154.57	1343.92	1293.23	14.26	OSF1.50	16800.00	12323.28					MinPt-O-SF	
5712.75	87.54	5653.56	5625.21	100.73	OSF1.50	22240.10	12300.00					TD	

Rover Operating Co Wimberly
#5 (Offset) Oil Inc Only Off-
5050ft (Def Survey)

Warning Alert

538.89	32.81	536.39	506.08	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
538.51	32.81	535.96	505.70	10734.71	MAS = 10.00 (m)	10.00	10.00					MinPt-O-SF	
538.29	32.81	535.78	505.48	51980.53	MAS = 10.00 (m)	26.00	26.00					MinPts	
535.47	66.73	490.15	468.74	12.45	OSF1.50	1300.00	1300.00					MinPt-CtCt	
536.89	128.59	450.33	408.30	6.36	OSF1.50	2490.00	2490.00					MinPt-CtCt	
504.99	154.10	401.42	350.90	4.97	OSF1.50	2990.00	2987.76	OSF<5.00				Enter Alert	
297.42	263.51	120.87	33.91	1.70	OSF1.50	5110.00	5085.48					MinPts	
297.29	263.08	121.02	34.21	1.70	OSF1.50	5120.00	5095.37					MinPt-CtCt	
491.20	150.25	390.20	340.95	4.96	OSF1.50	5510.00	5481.27	OSF>5.00				Exit Alert	
10185.94	224.47	10035.47	9961.48	68.82	OSF1.50	19590.00	12311.34					MinPt-O-SF	
12188.89	255.63	12017.63	11933.25	72.21	OSF1.50	22240.10	12300.00					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		
MCI Operating Hanagan Federal #2 (Offset) Oil Blind Off-4962ft (Def Survey)													
												Warning Alert	
	3035.73	32.81	3033.23	3002.92	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	3035.72	32.81	3030.99	3002.91	1359.27	MAS = 10.00 (m)	26.00	26.00				WRP	
	3035.72	771.47	2520.58	2264.26	5.92	OSF1.50	2500.00	2500.00				MinPt-CtCt	
	3046.61	918.53	2433.42	2128.07	4.98	OSF1.50	2970.00	2967.97	OSF<5.00			Enter Alert	
	3144.46	1546.77	2112.45	1597.69	3.05	OSF1.50	4990.00	4966.74				MinPts	
	4115.81	1239.74	3288.49	2876.07	4.99	OSF1.50	7480.00	7430.57	OSF>5.00			Exit Alert	
	7546.69	346.28	7315.01	7200.41	32.92	OSF1.50	15110.00	12330.51				MinPt-CtCt	
	7547.23	347.44	7314.77	7199.78	32.81	OSF1.50	15200.00	12330.13				MINPT-O-EOU	
	7556.24	357.45	7317.11	7198.79	31.92	OSF1.50	15490.00	12328.89				MinPt-O-ADP	
	10368.20	1105.99	9630.03	9262.20	14.09	OSF1.50	22220.00	12300.09				MinPt-O-SF	
	10381.99	1107.46	9642.85	9274.53	14.09	OSF1.50	22240.10	12300.00				TD	
Marks and Garner Hanagan Federal #1 (Offset) Oil Blind Off-5065ft (Def Survey)													
												Warning Alert	
	4253.60	32.81	4251.10	4220.79	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4253.60	32.81	4248.65	4220.79	1734.07	MAS = 10.00 (m)	26.00	26.00				WRP	
	4236.27	1273.74	3386.27	2962.53	5.00	OSF1.50	4110.00	4095.99	OSF<5.00			Enter Alert	
	4229.87	1579.15	3176.26	2650.71	4.02	OSF1.50	5100.00	5075.58				MinPts	
	4229.86	1579.14	3176.26	2650.71	4.02	OSF1.50	5110.00	5085.48				MinPts	
	4713.97	1418.25	3767.64	3295.72	4.99	OSF1.50	7190.00	7143.62	OSF>5.00			Exit Alert	
	7400.93	311.74	7192.26	7089.18	35.89	OSF1.50	15010.00	12330.94				MinPt-O-ADP	
	7314.75	208.03	7175.23	7106.72	53.37	OSF1.50	15570.00	12328.54				MINPT-O-EOU	
	7264.93	122.01	7182.76	7142.92	91.15	OSF1.50	16420.00	12324.91				MinPt-CtCt	
	7321.42	245.61	7156.85	7075.81	45.16	OSF1.50	17330.00	12321.01				MINPT-O-EOU	
	7403.90	344.65	7173.29	7059.24	32.45	OSF1.50	17850.00	12318.79				MinPt-O-ADP	
	9307.34	1010.71	8632.70	8296.63	13.84	OSF1.50	22240.10	12300.00				MinPt-O-SF	
MCI Operating Gulf Hanagan Federal #2 (Offset) Oil Blind Off-5046ft (Def Survey)													
												Warning Alert	
	4379.09	32.81	4376.59	4346.28	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4379.09	32.81	4374.42	4346.28	2018.12	MAS = 10.00 (m)	26.00	26.00				WRP	
	4379.09	771.28	3864.07	3607.81	8.54	OSF1.50	2500.00	2500.00				MinPt-CtCt	
	4429.93	1331.98	3541.11	3097.95	5.00	OSF1.50	4300.00	4283.99	OSF<5.00			Enter Alert	
	4458.97	1573.17	3409.35	2885.79	4.28	OSF1.50	5080.00	5055.79				MinPts	
	4874.76	1464.20	3897.79	3410.56	5.00	OSF1.50	6880.00	6836.87	OSF>5.00			Exit Alert	
	7458.79	362.59	7216.23	7096.20	31.06	OSF1.50	16490.00	12324.61				MinPt-CtCt	
	7459.59	364.31	7215.88	7095.28	30.92	OSF1.50	16600.00	12324.14				MINPT-O-EOU	
	7470.56	376.56	7218.68	7094.00	29.95	OSF1.50	16910.00	12322.81				MinPt-O-ADP	
	9417.36	1020.20	8736.39	8397.16	13.88	OSF1.50	22240.10	12300.00				MinPt-O-SF	
Cimarex Dos Equis 11 Federal #2H XEM + MWD Off to 11103ft (Def Survey)													
												Pass	
	510.91	32.81	508.41	478.10	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	510.91	32.81	508.41	478.10	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	510.92	32.81	508.41	478.11	46612.99	MAS = 10.00 (m)	26.00	26.00				WRP	
	512.54	32.81	506.37	479.73	139.21	MAS = 10.00 (m)	880.00	880.00				MinPts	
	512.56	32.81	505.78	479.76	119.13	MAS = 10.00 (m)	1020.00	1020.00				MinPts	
	512.57	32.81	504.81	479.76	97.11	MAS = 10.00 (m)	1240.00	1240.00				MinPts	
	513.29	32.81	504.49	480.48	81.04	MAS = 10.00 (m)	1480.00	1480.00				MINPT-O-EOU	
	524.03	32.81	510.44	491.22	47.04	MAS = 10.00 (m)	2600.00	2599.98				MinPt-O-SF	
	1340.73	46.30	1309.03	1294.42	45.82	OSF1.50	8055.48	8000.00				MinPt-O-SF	
	1391.66	45.29	1360.64	1346.38	48.70	OSF1.50	8690.00	8633.06				MINPT-O-EOU	
	1391.69	45.32	1360.64	1346.37	48.66	OSF1.50	8710.00	8653.06				MinPt-O-ADP	
	1396.97	47.71	1364.32	1349.25	46.26	OSF1.50	9370.00	9313.06				MinPt-CtCt	
	1397.00	47.80	1364.29	1349.19	46.17	OSF1.50	9410.00	9353.06				MINPT-O-EOU	
	1397.04	47.85	1364.31	1349.19	46.13	OSF1.50	9430.00	9373.06				MinPt-O-ADP	
	1409.12	53.61	1372.54	1355.51	41.28	OSF1.50	10790.00	10733.06				MINPT-O-EOU	
	1409.16	53.65	1372.55	1355.50	41.25	OSF1.50	10800.00	10743.06				MinPt-O-ADP	
	1418.33	55.49	1380.50	1362.84	40.08	OSF1.50	11230.00	11173.06				MinPt-O-SF	
	10191.96	62.00	10149.79	10129.96	256.88	OSF1.50	22240.10	12300.00				TD	
Cimarex Dos Equis 11 Federal #2H ST01 Xem+MWD 10343ft to 15244ft (Def Survey)													
												Pass	
	510.91	32.81	508.41	478.10	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	510.91	32.81	508.41	478.10	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	510.92	32.81	508.41	478.11	46612.99	MAS = 10.00 (m)	26.00	26.00				WRP	
	512.54	32.81	506.37	479.73	139.21	MAS = 10.00 (m)	880.00	880.00				MinPts	
	512.56	32.81	505.78	479.76	119.13	MAS = 10.00 (m)	1020.00	1020.00				MinPts	
	512.57	32.81	504.81	479.76	97.11	MAS = 10.00 (m)	1240.00	1240.00				MinPts	
	513.29	32.81	504.49	480.48	81.04	MAS = 10.00 (m)	1480.00	1480.00				MINPT-O-EOU	
	524.03	32.81	510.44	491.22	47.04	MAS = 10.00 (m)	2600.00	2599.98				MinPt-O-SF	
	1340.73	46.30	1309.03	1294.42	45.82	OSF1.50	8055.48	8000.00				MinPt-O-SF	
	1391.66	45.29	1360.64	1346.38	48.70	OSF1.50	8690.00	8633.06				MINPT-O-EOU	
	1391.69	45.32	1360.64	1346.37	48.66	OSF1.50	8710.00	8653.06				MinPt-O-ADP	
	1396.97	47.71	1364.32	1349.25	46.26	OSF1.50	9370.00	9313.06				MinPt-CtCt	
	1397.00	47.80	1364.29	1349.19	46.17	OSF1.50	9410.00	9353.06				MINPT-O-EOU	
	1397.04	47.85	1364.31	1349.19	46.13	OSF1.50	9430.00	9373.06				MinPt-O-ADP	
	1410.63	52.04	1375.10	1358.59	42.63	OSF1.50	10540.00	10483.06				MinPt-O-SF	
	1422.83	52.44	1387.04	1370.39	42.68	OSF1.50	10700.00	10643.06				MinPt-O-SF	
	2162.28	112.67	2086.33	2049.61	29.41	OSF1.50	14540.00	12332.95				MinPt-CtCt	
	2183.08	244.16	2019.47	1938.91	13.53	OSF1.50	16740.00	12323.54				MinPt-CtCt	
	2183.12	244.26	2019.45	1938.86	13.53	OSF1.50	16750.00	12323.49				MinPts	
	2185.57	244.88	2021.48	1940.69	13.51	OSF1.50	16840.00	12323.11				MinPt-O-SF	
	5921.59	128.64	5834.99	5792.94	70.39	OSF1.50	22240.10	12300.00				TD	
Continental Wimberly #6 (Offset) - Plugged Oil Inc Only Off-5100ft (Def Survey)													
												Pass	
	889.39	32.81	886.89	856.58	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	888.06	32.81	885.39	855.25	5330.19	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	886.66	32.81	874.43	853.85	90.84	MAS = 10.00 (m)	450.00	450.00				MinPts	
	884.15	64.87	840.07	819.25	21.20	OSF1.50	1360.00	1360.00				MinPt-CtCt	
	888.65	125.99	803.82	762.66	10.76	OSF1.50	2530.00	2530.00				MinPt-CtCt	
	889.79	129.86	802.39	759.94	10.45	OSF1.50	2610.00	2609.97				MINPT-O-EOU	

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		
	891.34	131.77	802.66	759.57	10.31	OSF1.50	2650.00	2649.93				MinPt-O-ADP	
	1226.82	261.34	1051.76	965.48	7.10	OSF1.50	5140.00	5115.16				MinPt-O-SF	
	10178.29	221.69	10029.67	9956.60	69.64	OSF1.50	19480.00	12311.81				MinPt-O-SF	
	12245.99	253.27	12076.31	11992.72	73.24	OSF1.50	22240.10	12300.00				TD	
Cimarex Dos Equis 11-14 Federal Com 49H Rev0 RM 22Aug19 (Non-Def Plan)													Pass
	1373.97	32.81	1371.47	1341.17	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1373.97	32.81	1371.46	1341.17	131334.66	MAS = 10.00 (m)	26.00	26.00				WRP	
	1373.97	32.81	1356.14	1341.17	89.47	MAS = 10.00 (m)	2500.00	2500.00				MinPts	
	1373.99	32.81	1356.11	1341.18	89.19	MAS = 10.00 (m)	2510.00	2510.00				MINPT-O-EOU	
	2153.41	71.09	2105.18	2082.31	47.04	OSF1.50	8100.00	8044.10				MinPt-O-SF	
	2177.42	95.75	2112.75	2081.67	34.98	OSF1.50	11600.00	11543.06				MinPts	
	2062.97	94.15	1999.37	1968.82	33.72	OSF1.50	12280.00	12180.15				MinPt-O-SF	
	2059.96	94.02	1996.45	1965.94	33.72	OSF1.50	12320.00	12206.08				MinPt-O-SF	
	2051.80	93.34	1988.74	1958.46	33.84	OSF1.50	12540.00	12298.20				MinPt-O-ADP	
	2051.78	93.31	1988.74	1958.47	33.85	OSF1.50	12550.00	12300.56				MINPT-O-EOU	
	2051.73	316.87	1839.65	1734.88	9.78	OSF1.50	22240.10	12300.00				MinPts	
Rover Operating Co Wimberly #7 (Offset) Oil Inc Only Off- 5118ft (Def Survey)													Pass
	1587.41	32.81	1584.91	1554.60	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1587.31	32.81	1584.80	1554.50	138531.33	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	1587.28	32.81	1584.78	1554.47	N/A	MAS = 10.00 (m)	20.00	20.00				MinPts	
	1587.28	32.81	1584.68	1554.47	16233.71	MAS = 10.00 (m)	26.00	26.00				WRP	
	1587.51	52.92	1551.40	1534.59	47.15	OSF1.50	990.00	990.00				MinPt-CtCt	
	1587.80	54.64	1550.54	1533.17	45.61	OSF1.50	1040.00	1040.00				MINPT-O-EOU	
	1587.97	54.84	1550.58	1533.13	45.44	OSF1.50	1050.00	1050.00				MinPt-O-ADP	
	1585.77	66.21	1540.79	1519.56	37.28	OSF1.50	1250.00	1250.00				MinPt-CtCt	
	1587.42	71.17	1539.14	1516.25	34.62	OSF1.50	1380.00	1380.00				MINPT-O-EOU	
	1587.31	91.25	1525.64	1496.06	26.79	OSF1.50	1750.00	1750.00				MinPt-CtCt	
	1591.21	102.65	1521.94	1488.56	23.80	OSF1.50	2000.00	2000.00				MINPT-O-EOU	
	1584.81	166.41	1473.04	1418.40	14.48	OSF1.50	3200.00	3195.55				MinPt-CtCt	
	1591.98	252.82	1422.59	1339.15	9.52	OSF1.50	4880.00	4857.90				MinPt-CtCt	
	1594.37	266.34	1415.97	1328.02	9.05	OSF1.50	5160.00	5134.95				MinPts	
	1594.57	266.44	1416.12	1328.14	9.05	OSF1.50	5170.00	5144.85				MinPt-O-SF	
	7228.72	49.22	7195.07	7179.50	232.00	OSF1.50	13780.00	12336.20				MinPt-CtCt	
	7229.48	51.11	7194.53	7178.31	222.74	OSF1.50	13880.00	12335.78				MINPT-O-EOU	
	7230.60	52.48	7194.78	7178.12	216.95	OSF1.50	13940.00	12335.52				MinPt-O-ADP	
	9839.05	230.82	9684.34	9608.23	64.62	OSF1.50	20450.00	12307.66				MinPt-O-SF	
	11131.41	254.28	10961.06	10877.13	66.30	OSF1.50	22240.10	12300.00				TD	
Continental Wimberly #1 (Offset) Plugged Oil Inc Only Off- 5091ft (Def Survey)													Pass
	1799.30	32.81	1796.74	1766.49	28467.74	MAS = 10.00 (m)	0.00	0.00				Surface	
	1799.30	32.81	1796.28	1766.49	3462.28	MAS = 10.00 (m)	26.00	26.00				WRP	
	1797.88	36.90	1772.45	1760.99	78.29	OSF1.50	690.00	690.00				MinPt-CtCt	
	1790.49	133.88	1700.40	1656.61	20.41	OSF1.50	2530.00	2530.00				MinPt-CtCt	
	1792.44	139.82	1698.39	1652.61	19.55	OSF1.50	2660.00	2669.92				MINPT-O-EOU	
	1795.02	142.96	1698.89	1652.06	19.14	OSF1.50	2730.00	2729.75				MinPt-O-ADP	
	1917.95	234.07	1761.07	1683.88	12.41	OSF1.50	4420.00	4402.73				MinPt-O-ADP	
	1977.30	266.28	1798.94	1711.02	11.23	OSF1.50	5110.00	5085.48				MinPt-O-SF	
	7432.89	70.52	7385.05	7362.37	163.86	OSF1.50	13780.00	12336.20				MinPt-CtCt	
	7433.13	71.21	7384.82	7361.92	162.21	OSF1.50	13840.00	12335.95				MINPT-O-EOU	
	7433.56	71.72	7384.91	7361.84	161.03	OSF1.50	13880.00	12335.78				MinPt-O-ADP	
	10020.15	230.86	9865.40	9789.28	65.80	OSF1.50	20500.00	12307.45				MinPt-O-SF	
	11261.33	253.27	11091.65	11008.06	67.35	OSF1.50	22240.10	12300.00				TD	
Cimarex Dos Equis 11-14 Federal Com 23H Rev0 RM 22Aug19 (Non-Def Plan)													Pass
	2424.38	32.81	2421.88	2391.57	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2424.38	32.81	2421.85	2391.57	75175.16	MAS = 10.00 (m)	26.00	26.00				WRP	
	2424.38	32.81	2406.52	2391.57	157.67	MAS = 10.00 (m)	2500.00	2500.00				MinPts	
	2424.40	32.81	2406.49	2391.59	157.19	MAS = 10.00 (m)	2510.00	2510.00				MINPT-O-EOU	
	3079.22	64.23	3035.57	3014.99	74.76	OSF1.50	8100.00	8044.10				MinPt-O-SF	
	3103.21	90.44	3042.09	3012.77	52.89	OSF1.50	11886.95	11830.01				MinPts	
	3099.08	86.23	3040.75	3012.86	55.48	OSF1.50	12580.00	12307.25				MinPt-O-ADP	
	3098.84	85.94	3040.71	3012.89	55.66	OSF1.50	12650.00	12320.46				MINPT-O-EOU	
	3098.43	85.35	3040.70	3013.08	56.05	OSF1.50	12990.00	12339.59				MinPt-O-SF	
	3098.42	85.41	3040.65	3013.01	56.01	OSF1.50	13070.00	12339.24				MinPt-CtCt	
	3098.42	314.57	2887.88	2783.88	14.88	OSF1.50	22240.10	12300.00				MinPts	
Cimarex Dos Equis 11-14 Federal Com 24H Rev0 RM 22Aug19 (Non-Def Plan)													Pass
	2444.33	32.81	2441.83	2411.52	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	2444.33	32.81	2441.80	2411.52	74258.08	MAS = 10.00 (m)	26.00	26.00				WRP	
	2444.33	32.81	2426.60	2411.52	160.27	MAS = 10.00 (m)	2480.00	2480.00				MinPts	
	2444.35	32.81	2426.53	2411.55	159.31	MAS = 10.00 (m)	2500.00	2500.00				MINPT-O-EOU	
	2452.57	32.81	2434.43	2419.76	156.67	MAS = 10.00 (m)	2670.00	2669.90				MinPt-O-SF	
	3336.78	45.46	3305.64	3291.32	116.43	OSF1.50	6340.00	6302.55				MinPt-O-SF	
	3591.51	58.71	3551.54	3532.80	95.77	OSF1.50	8100.00	8044.10				MinPt-O-SF	
	3615.51	81.78	3560.16	3533.73	68.39	OSF1.50	11886.95	11830.01				MinPts	
	3611.93	77.79	3559.24	3534.15	71.91	OSF1.50	12580.00	12307.25				MinPt-O-ADP	
	3611.79	77.65	3559.19	3534.14	72.04	OSF1.50	12620.00	12315.21				MinPt-O-ADP	
	3611.70	77.54	3559.17	3534.16	72.15	OSF1.50	12660.00	12322.07				MINPT-O-EOU	
	3611.35	77.58	3558.80	3533.77	72.10	OSF1.50	13070.00	12339.24				MinPt-CtCt	
	3611.35	316.04	3399.88	3295.38	17.27	OSF1.50	22240.10	12300.00				MinPts	
Bill J Graham Oil Hanagan D #4 (Offset) Plugged Oil Inc Only Off- 5107ft (Def Survey)													Pass
	2700.59	32.81	2698.04	2667.78	53821.78	MAS = 10.00 (m)	0.00	0.00				Surface	
	2700.57	32.81	2697.51	2667.77	4806.95	MAS = 10.00 (m)	26.00	26.00				WRP	
	2696.72	32.81	2675.08	2663.91	140.78	MAS = 10.00 (m)	550.00	550.00				MinPts	
	2691.81	89.15	2631.54	2602.66	46.56	OSF1.50	1640.00	1640.00				MinPt-CtCt	
	2687.57	137.27	2595.23	2550.30	29.89	OSF1.50	2530.00	2530.00				MinPt-CtCt	
	2689.11	141.60	2593.87	2547.50	28.97	OSF1.50	2620.00	2619.96				MINPT-O-EOU	
	2690.69	143.51	2594.19	2547.18	28.60	OSF1.50	2660.00	2659.92				MinPt-O-ADP	
	2877.63	243.40	2714.53	2634.23	17.90	OSF1.50	4370.00	4353.26				MinPt-O-ADP	

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		
2951.21	266.72	2772.55	2684.48	16.74		OSF1.50	4960.00	4937.06				MinPts	
2969.83	271.10	2788.26	2698.73	16.57		OSF1.50	5130.00	5105.27				MinPt-O-SF	
7814.37	107.09	7742.15	7707.29	112.04		OSF1.50	13790.00	12336.16				MinPt-CtCt	
7814.46	107.38	7742.07	7707.13	111.78		OSF1.50	13830.00	12335.99				MINPT-O-EOU	
7814.51	107.39	7742.08	7707.12	111.71		OSF1.50	13840.00	12335.95				MinPt-O-ADP	
10258.55	234.83	10101.17	10023.73	66.22		OSF1.50	20440.00	12307.70				MinPt-O-SF	
11506.80	257.31	11334.42	11249.48	67.72		OSF1.50	22240.10	12300.00				TD	

Bill J Graham Oil Hanagan D #3
(Offset) Oil Plugged Inc Only Off:
4986ft (Def Survey)

Pass

2945.45	32.81	2942.95	2912.64	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
2945.44	32.81	2942.89	2912.63	54151.78		MAS = 10.00 (m)	10.00	10.00				MinPts	
2945.44	32.81	2942.61	2912.63	8954.67		MAS = 10.00 (m)	26.00	26.00				WRP	
2940.71	103.41	2870.93	2837.29	43.68		OSF1.50	1980.00	1980.00				MinPt-CtCt	
2914.55	187.36	2788.81	2727.20	23.63		OSF1.50	3630.00	3621.03				MinPt-CtCt	
2896.43	255.25	2725.42	2641.18	17.18		OSF1.50	4890.00	4867.79				MinPt-CtCt	
2898.37	261.37	2723.23	2637.00	16.78		OSF1.50	5070.00	5045.90				MINPT-O-EOU	
2899.06	263.04	2722.85	2636.03	16.88		OSF1.50	5100.00	5075.58				MinPts	
7345.95	70.85	7297.90	7275.12	161.17		OSF1.50	15090.00	12330.60				MinPt-CtCt	
7346.96	73.68	7297.00	7273.28	154.76		OSF1.50	15210.00	12330.08				MINPT-O-EOU	
7348.45	75.44	7297.32	7273.00	151.06		OSF1.50	15280.00	12329.79				MinPt-O-ADP	
9691.18	237.66	9531.91	9453.52	61.80		OSF1.50	21410.00	12303.55				MinPt-O-SF	
10251.94	249.69	10084.65	10002.25	62.20		OSF1.50	22240.10	12300.00				TD	

Final Surveys - Cimarex Dos
Equis 11-14 Federal Com 4H
ST01 MWD Off-21967 (Def
Survey)

Pass

3797.16	32.81	3795.46	3764.35	N/A		MAS = 10.00 (m)	0.00	0.00				MinPts	
3797.20	32.81	3795.45	3764.39	76195.89		MAS = 10.00 (m)	26.00	26.00				WRP	
3797.26	32.81	3795.45	3764.45	34561.87		MAS = 10.00 (m)	50.00	50.00				MINPT-O-EOU	
3823.29	32.81	3810.49	3790.48	340.09		MAS = 10.00 (m)	2520.00	2520.00				MinPts	
3823.31	32.81	3810.47	3790.50	339.24		MAS = 10.00 (m)	2530.00	2530.00				MINPT-O-EOU	
3907.17	32.81	3892.64	3874.36	301.27		MAS = 10.00 (m)	3390.00	3383.56				MinPt-O-SF	
3922.68	32.81	3908.09	3889.87	301.17		MAS = 10.00 (m)	3510.00	3502.30				MinPt-O-SF	
4598.71	45.38	4567.94	4553.33	157.39		OSF1.50	8055.48	8000.00				MinPt-O-SF	
4646.63	51.69	4611.65	4594.94	139.01		OSF1.50	10850.00	10793.06				MinPt-CtCt	
4646.68	51.85	4611.55	4594.83	138.57		OSF1.50	10890.00	10833.06				MINPT-O-EOU	
4646.78	51.97	4611.61	4594.81	138.24		OSF1.50	10920.00	10863.06				MinPt-O-ADP	
4661.56	56.61	4623.31	4604.96	126.94		OSF1.50	11900.00	11843.06				MinPt-O-SF	
4666.62	55.59	4619.05	4601.03	129.20		OSF1.50	12140.00	12071.38				MinPt-O-SF	
4639.12	54.85	4602.05	4584.28	130.50		OSF1.50	12790.00	12336.73				MinPt-CtCt	
4639.13	54.87	4602.04	4584.27	130.46		OSF1.50	12800.00	12337.37				MINPT-O-EOU	
4639.15	54.90	4602.04	4584.26	130.38		OSF1.50	12810.00	12337.95				MinPt-O-ADP	
4622.40	78.07	4569.87	4544.33	90.45		OSF1.50	14400.00	12333.55				MinPt-CtCt	
4622.60	78.66	4569.68	4543.94	89.77		OSF1.50	14450.00	12333.34				MINPT-O-EOU	
4622.80	78.89	4569.72	4543.91	89.50		OSF1.50	14470.00	12333.25				MinPt-O-ADP	
4631.18	88.75	4571.51	4542.40	79.54		OSF1.50	14880.00	12331.50				MinPt-CtCt	
4631.27	92.31	4569.25	4538.96	76.42		OSF1.50	15030.00	12330.86				MinPt-CtCt	
4632.50	96.06	4567.98	4536.44	73.41		OSF1.50	15220.00	12330.04				MINPT-O-EOU	
4634.59	98.51	4568.43	4536.08	71.59		OSF1.50	15340.00	12329.53				MinPt-O-ADP	
4627.60	125.81	4543.25	4501.79	55.79		OSF1.50	16320.00	12325.33				MinPt-CtCt	
4629.71	131.80	4541.37	4497.92	53.26		OSF1.50	16580.00	12324.22				MINPT-O-EOU	
4630.58	132.79	4541.57	4497.79	52.86		OSF1.50	16630.00	12324.01				MinPt-O-ADP	
4637.95	142.46	4542.50	4495.49	49.32		OSF1.50	16970.00	12322.55				MINPT-O-EOU	
4638.31	142.85	4542.60	4495.46	49.18		OSF1.50	16990.00	12322.47				MinPt-O-ADP	
4645.75	155.83	4541.39	4489.92	45.12		OSF1.50	17400.00	12320.71				MinPt-CtCt	
4646.01	160.65	4538.43	4485.36	43.76		OSF1.50	17570.00	12319.99				MinPt-CtCt	
4626.98	187.21	4501.69	4439.77	37.35		OSF1.50	18490.00	12316.05				MinPt-CtCt	
4626.88	191.01	4499.06	4435.87	36.60		OSF1.50	18620.00	12315.49				MinPt-CtCt	
4627.63	193.18	4498.35	4434.45	36.19		OSF1.50	18730.00	12315.02				MINPT-O-EOU	
4628.46	194.16	4498.54	4434.29	36.01		OSF1.50	18780.00	12314.81				MinPt-O-ADP	
4629.10	194.80	4498.75	4434.30	35.90		OSF1.50	18810.00	12314.68				MinPt-O-ADP	
4633.76	199.97	4499.97	4433.79	35.00		OSF1.50	18980.00	12313.95				MINPT-O-EOU	
4629.06	232.09	4473.85	4396.97	30.09		OSF1.50	20020.00	12309.50				MinPt-CtCt	
4629.94	234.85	4472.85	4395.09	29.74		OSF1.50	20150.00	12308.94				MINPT-O-EOU	
4636.26	242.01	4474.44	4394.25	28.90		OSF1.50	20430.00	12307.75				MinPt-O-ADP	
4632.80	270.14	4452.22	4362.65	25.85		OSF1.50	21300.00	12304.02				MinPt-CtCt	
4632.05	276.09	4447.51	4355.96	25.29		OSF1.50	21500.00	12303.17				MinPt-CtCt	
4631.88	282.02	4443.39	4349.86	24.75		OSF1.50	21700.00	12302.31				MinPt-CtCt	
4632.53	284.31	4442.51	4348.22	24.56		OSF1.50	21810.00	12301.84				MINPT-O-EOU	
4633.32	285.28	4442.65	4348.04	24.48		OSF1.50	21860.00	12301.63				MinPt-O-ADP	
4639.53	298.50	4440.07	4341.05	23.42		OSF1.50	22240.10	12300.00				MinPts	

Final Surveys - Cimarex Dos
Equis 11-14 Federal Com 4H
MWD Off-13100ft (Surcon
Corrected) (Def Survey)

Pass

3797.16	32.81	3795.46	3764.35	N/A		MAS = 10.00 (m)	0.00	0.00				MinPts	
3797.20	32.81	3795.45	3764.39	76195.89		MAS = 10.00 (m)	26.00	26.00				WRP	
3797.26	32.81	3795.45	3764.45	34561.87		MAS = 10.00 (m)	50.00	50.00				MINPT-O-EOU	
3823.29	32.81	3810.49	3790.48	340.09		MAS = 10.00 (m)	2520.00	2520.00				MinPts	
3823.31	32.81	3810.47	3790.50	339.24		MAS = 10.00 (m)	2530.00	2530.00				MINPT-O-EOU	
3907.17	32.81	3892.64	3874.36	301.27		MAS = 10.00 (m)	3390.00	3383.56				MinPt-O-SF	
3922.68	32.81	3908.09	3889.87	301.17		MAS = 10.00 (m)	3510.00	3502.30				MinPt-O-SF	
4598.71	45.38	4567.94	4553.33	157.39		OSF1.50	8055.48	8000.00				MinPt-O-SF	
4646.63	51.69	4611.65	4594.94	139.01		OSF1.50	10850.00	10793.06				MinPt-CtCt	
4646.68	51.85	4611.55	4594.83	138.57		OSF1.50	10890.00	10833.06				MINPT-O-EOU	
4646.78	51.97	4611.61	4594.81	138.24		OSF1.50	10920.00	10863.06				MinPt-O-ADP	
4662.91	56.43	4624.77	4606.48	127.44		OSF1.50	11886.95	11830.01				MinPt-O-SF	
4663.11	56.43	4624.96	4606.67	127.44		OSF1.50	11900.00	11843.06				MinPt-O-SF	
4664.01	55.46	4626.51	4608.55	129.77		OSF1.50	12110.00	12045.04				MINPT-O-EOU	
4663.80	54.93	4626.66	4608.88	131.06		OSF1.50	12210.00	12128.97				MinPt-CtCt	
4739.64	53.54	4703.43	4686.10	136.76		OSF1.50	13230.00	12338.56				MinPt-O-SF	
4770.09	53.88	4733.64	4716.21	136.74		OSF1.50	13390.00	12337.87				MinPt-O-SF	
5638.38	66.27	5593.68	5572.11	130.69		OSF1.50	15570.00	12328.54				MinPt-O-SF	
5672.23	66.65	5627.27	5605.58	130.69		OSF1.50	15630.00	12328.29				MinPt-O-SF	
10880.33	89.81	10819.93	10790.52	184.93		OSF1.50	22240.10	12300.00				TD	

Rover Operating Co Wimberly
#6 (Offset) Oil Inc Only Off:
5075ft (Def Survey)

Pass

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		
4628.89	32.81	4626.39	4596.09	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
4628.89	32.81	4625.94	4596.09	10263.77		MAS = 10.00 (m)	26.00	26.00				WRP	
4628.48	32.81	4610.92	4595.67	307.11		MAS = 10.00 (m)	480.00	480.00				MinPts	
4626.75	139.73	4532.76	4487.01	50.55		OSF1.50	2600.00	2599.98				MinPt-CtCt	
4631.19	152.62	4528.61	4478.57	46.25		OSF1.50	2850.00	2849.13				MINPT-O-EQU	
4640.55	164.92	4529.77	4475.64	42.83		OSF1.50	3070.00	3066.92				MinPt-O-ADP	
4676.68	194.46	4546.20	4482.20	36.52		OSF1.50	3590.00	3581.46				MINPT-O-EQU	
4683.17	201.83	4547.78	4481.34	35.22		OSF1.50	3770.00	3759.56				MinPt-O-ADP	
4768.85	265.42	4591.06	4503.42	27.19		OSF1.50	4970.00	4946.95				MinPts	
7716.58	127.72	7630.60	7588.86	92.41		OSF1.50	16440.00	12324.82				MinPt-CtCt	
7716.98	128.94	7630.19	7588.04	91.52		OSF1.50	16520.00	12324.48				MINPT-O-EQU	
7717.65	129.74	7630.33	7587.91	90.95		OSF1.50	16570.00	12324.26				MinPt-O-ADP	
9622.40	245.90	9457.63	9376.50	59.28		OSF1.50	22190.00	12300.21				MinPt-O-SF	
9652.42	246.66	9487.15	9405.76	59.29		OSF1.50	22240.10	12300.00				TD	

Tenneco Oil Company USA
Jennings Fed #3 (Offset)
Plugged Oil Inc Only 0ft-5030ft
(Def Survey)

Pass

5620.97	32.81	5618.47	5588.16	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
5620.93	32.81	5618.42	5588.12	932315.42		MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
5620.89	32.81	5618.39	5588.09	N/A		MAS = 10.00 (m)	26.00	26.00				WRP	
5620.86	32.81	5616.47	5588.05	2964.14		MAS = 10.00 (m)	130.00	130.00				MinPts	
5619.98	49.17	5586.37	5570.81	180.55		OSF1.50	960.00	960.00				MinPt-CtCt	
5615.21	138.21	5522.23	5477.00	62.04		OSF1.50	2630.00	2629.96				MinPt-CtCt	
5618.60	149.27	5518.25	5469.33	57.40		OSF1.50	2900.00	2898.70				MINPT-O-EQU	
5627.17	159.54	5519.98	5467.63	53.73		OSF1.50	3160.00	3155.97				MinPt-O-ADP	
5655.65	225.95	5504.19	5429.70	37.95		OSF1.50	4230.00	4214.73				MinPt-CtCt	
5659.87	244.34	5496.14	5415.53	35.09		OSF1.50	4660.00	4640.21				MINPT-O-EQU	
5660.07	244.62	5496.15	5415.44	35.05		OSF1.50	4670.00	4650.10				MinPt-O-ADP	
5680.57	262.18	5505.00	5418.46	32.81		OSF1.50	5100.00	5075.58				MinPts	
7445.44	134.42	7354.99	7311.01	84.62		OSF1.50	17750.00	12319.22				MinPt-CtCt	
7446.12	136.46	7354.32	7309.67	83.35		OSF1.50	17850.00	12318.79				MINPT-O-EQU	
7447.18	137.71	7354.54	7309.47	82.59		OSF1.50	17910.00	12318.53				MinPt-O-ADP	
8694.99	238.36	8535.24	8456.62	55.28		OSF1.50	22240.10	12300.00				MinPt-O-SF	

MCI Operating Jennings
Federal #1 (Offset) SWD Blind
0ft-5019ft (Def Survey)

Pass

5977.42	32.81	5974.92	5944.61	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
5977.41	32.81	5974.87	5944.60	163974.69		MAS = 10.00 (m)	26.00	26.00				WRP	
5977.41	32.81	5959.58	5944.60	389.80		MAS = 10.00 (m)	2500.00	2500.00				MinPts	
5977.51	32.81	5959.49	5944.70	385.03		MAS = 10.00 (m)	2540.00	2540.00				MINPT-O-EQU	
6474.68	49.25	6441.01	6425.43	207.68		OSF1.50	6860.00	6817.09				MinPt-O-SF	
9424.89	42.34	9395.83	9382.55	354.78		OSF1.50	12511.95	12291.21				MinPt-O-SF	
7878.17	119.12	7797.93	7759.05	101.30		OSF1.50	17760.00	12319.17				MinPt-CtCt	
7878.94	121.43	7797.17	7757.53	99.36		OSF1.50	17870.00	12318.70				MINPT-O-EQU	
7879.80	122.45	7797.33	7757.35	98.51		OSF1.50	17920.00	12318.49				MinPt-O-ADP	
8960.93	186.74	8835.60	8774.18	72.93		OSF1.50	22030.00	12300.90				MinPt-O-SF	
9062.92	188.74	8936.26	8874.18	72.97		OSF1.50	22240.10	12300.00				TD	

MCI Operating Jennings
Federal #5 (Offset) Oil Inc Only
0ft-4950ft (Def Survey)

Pass

7201.08	32.81	7198.58	7168.27	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
7201.05	32.81	7198.54	7168.24	N/A		MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
7201.02	32.81	7198.52	7168.21	N/A		MAS = 10.00 (m)	26.00	26.00				WRP	
7200.28	32.81	7178.85	7167.48	379.99		MAS = 10.00 (m)	610.00	610.00				MinPts	
7199.69	134.29	7109.33	7065.40	81.92		OSF1.50	2560.00	2560.00				MinPt-CtCt	
7201.88	141.41	7106.77	7060.47	77.74		OSF1.50	2740.00	2739.72				MINPT-O-EQU	
7204.71	144.78	7107.36	7059.93	75.93		OSF1.50	2830.00	2829.27				MinPt-O-ADP	
7293.36	249.21	7126.36	7044.16	44.33		OSF1.50	4640.00	4620.42				MINPT-O-EQU	
7299.96	257.29	7127.60	7042.67	42.96		OSF1.50	4880.00	4857.90				MinPt-O-ADP	
7300.29	257.50	7127.80	7042.80	42.93		OSF1.50	4890.00	4867.79				MinPt-O-SF	
7894.70	175.11	7777.13	7719.59	68.58		OSF1.50	19080.00	12313.52				MinPt-CtCt	
7895.25	176.75	7776.58	7718.50	67.94		OSF1.50	19170.00	12313.14				MINPT-O-EQU	
7895.99	177.67	7776.71	7718.32	67.59		OSF1.50	19220.00	12312.92				MinPt-O-ADP	
8504.72	238.75	8344.72	8265.97	53.98		OSF1.50	22240.10	12300.00				MinPt-O-SF	

MCI Operating Jennings
Federal #6 (Offset) Oil Inc Only
0ft-4933ft (Def Survey)

Pass

8249.96	32.81	8247.46	8217.16	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
8249.90	32.81	8247.39	8217.09	N/A		MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
8249.89	32.81	8247.38	8217.08	N/A		MAS = 10.00 (m)	26.00	26.00				WRP	
8249.61	34.07	8226.06	8215.54	391.86		OSF1.50	680.00	680.00				MinPt-CtCt	
8254.18	138.86	8160.78	8115.33	90.77		OSF1.50	2650.00	2649.93				MinPt-CtCt	
8289.31	256.36	8117.57	8032.95	48.97		OSF1.50	4970.00	4946.95				MinPts	
8289.49	256.46	8117.69	8033.03	48.95		OSF1.50	4980.00	4956.85				MinPt-O-SF	
7523.61	187.44	7397.82	7336.17	61.00		OSF1.50	20400.00	12307.87				MinPt-CtCt	
7524.43	189.76	7397.09	7334.66	60.25		OSF1.50	20510.00	12307.40				MINPT-O-EQU	
7525.33	190.83	7397.28	7334.50	59.92		OSF1.50	20560.00	12307.19				MinPt-O-ADP	
7745.58	228.33	7592.52	7517.25	51.43		OSF1.50	22240.10	12300.00				MinPt-O-SF	

MCI Operating Jennings
Federal #4 (Offset) Oil Inc Only
0ft-5000ft (Def Survey)

Pass

8591.15	32.81	8588.65	8558.34	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
8591.15	32.81	8588.32	8558.34	26063.25		MAS = 10.00 (m)	26.00	26.00				WRP	
8589.99	48.94	8556.53	8541.05	277.36		OSF1.50	930.00	930.00				MinPt-CtCt	
8586.21	142.11	8490.64	8444.11	92.23		OSF1.50	2620.00	2619.96				MinPt-CtCt	
8587.54	147.68	8488.24	8439.85	88.69		OSF1.50	2760.00	2759.64				MINPT-O-EQU	
8588.97	149.45	8488.50	8439.53	87.65		OSF1.50	2820.00	2819.33				MinPt-O-ADP	
8639.89	225.26	8488.81	8414.69	58.16		OSF1.50	4130.00	4115.78				MINPT-O-EQU	
8645.08	232.04	8489.55	8413.04	56.48		OSF1.50	4310.00	4293.89				MinPt-O-ADP	
8696.49	263.47	8520.01	8433.02	49.97		OSF1.50	5200.00	5174.53				MinPts	
8012.56	204.51	7875.38	7808.05	59.48		OSF1.50	20410.00	12307.83				MinPt-CtCt	
8013.22	206.36	7874.82	7806.87	58.94		OSF1.50	20510.00	12307.40				MINPT-O-EQU	
8014.02	207.28	7875.00	7806.74	58.68		OSF1.50	20560.00	12307.19				MinPt-O-ADP	
8219.55	240.28	8058.54	7979.28	51.64		OSF1.50	22240.10	12300.00				MinPt-O-SF	

MCI Operating Jennings
Federal #2 (Offset) Inc Only 0ft-5000ft (Def Survey)

Pass

9879.68	32.81	9877.18	9846.87	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
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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		
9879.61		32.81	9877.10	9846.80	N/A	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
9879.60		32.81	9877.09	9846.79	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
9879.58		32.81	9877.03	9846.78	185224.75	MAS = 10.00 (m)	50.00	50.00				MinPts	
9907.22		181.26	9785.55	9725.96	83.11	OSF1.50	2880.00	2878.89				MINPT-O-EQU	
9953.51		246.78	9788.16	9706.73	61.10	OSF1.50	3620.00	3611.14				MINPT-O-EQU	
9958.49		254.28	9788.14	9704.21	59.31	OSF1.50	3700.00	3690.30				MINPT-O-EQU	
10046.26		371.54	9797.73	9674.72	40.82	OSF1.50	5070.00	5045.90				MinPts	
8399.20		277.64	8213.28	8121.56	45.78	OSF1.50	21510.00	12303.12				MinPt-CtCt	
8399.67		279.01	8212.83	8120.66	45.55	OSF1.50	21600.00	12302.74				MINPT-O-EQU	
8400.19		279.63	8212.94	8120.56	45.45	OSF1.50	21640.00	12302.57				MinPt-O-ADP	
8430.79		289.57	8236.91	8141.22	44.04	OSF1.50	22240.10	12300.00				MinPt-O-SF	

Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM 22Aug19 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: August 27, 2019 - 09:01 AM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Dos Equis 11-14 Federal Com 8H / New Slot
Well: Dos Equis 11-14 Federal Com 8H
Borehole: Dos Equis 11-14 Federal Com 8H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM 22Aug19
Survey Date: August 22, 2019
Tort / AHD / DDI / ERD Ratio: 106.874 ° / 10881.152 ft / 6.321 / 0.882
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 14' 18.15744", W 103° 38' 25.76087"
Location Grid N/E Y/X: N 451146.070 ftUS, E 755555.680 ftUS
CRS Grid Convergence Angle: 0.3696 °
Grid Scale Factor: 0.99996165
Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.657 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3629.400 ft above MSL
Seabed / Ground Elevation: 3603.400 ft above MSL
Magnetic Declination: 6.671 °
Total Gravity Field Strength: 998.4379mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47895.066 nT
Magnetic Dip Angle: 59.899 °
Declination Date: August 22, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.3696 °
Total Corr Mag North->Grid North: 6.3013 °
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 [384' FNL, 1136' FEL]	0.00	0.00	175.10	0.00	0.00	0.00	0.00	N/A	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	100.00	0.00	89.55	100.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	200.00	0.00	89.55	200.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	300.00	0.00	89.55	300.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	400.00	0.00	89.55	400.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	500.00	0.00	89.55	500.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	600.00	0.00	89.55	600.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	700.00	0.00	89.55	700.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	800.00	0.00	89.55	800.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	900.00	0.00	89.55	900.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1000.00	0.00	89.55	1000.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1100.00	0.00	89.55	1100.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
Rustler	1166.00	0.00	89.55	1166.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1200.00	0.00	89.55	1200.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1300.00	0.00	89.55	1300.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
Salado (Top Salt)	1390.00	0.00	89.55	1390.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1400.00	0.00	89.55	1400.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1500.00	0.00	89.55	1500.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1600.00	0.00	89.55	1600.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1700.00	0.00	89.55	1700.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1800.00	0.00	89.55	1800.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	1900.00	0.00	89.55	1900.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	2000.00	0.00	89.55	2000.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	2100.00	0.00	89.55	2100.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	2200.00	0.00	89.55	2200.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	2300.00	0.00	89.55	2300.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	2400.00	0.00	89.55	2400.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
Nudge 2°/100' DLS	2500.00	0.00	89.55	2500.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
	2600.00	2.00	89.55	2599.98	0.00	0.01	1.75	2.00	451146.08	755557.43	N 32 14 18.16	W 103 38 25.74
	2700.00	4.00	89.55	2699.84	-0.01	0.05	6.98	2.00	451146.12	755562.66	N 32 14 18.16	W 103 38 25.68
	2800.00	6.00	89.55	2799.45	-0.03	0.12	15.69	2.00	451146.19	755571.37	N 32 14 18.16	W 103 38 25.58
	2900.00	8.00	89.55	2898.70	-0.05	0.22	27.88	2.00	451146.29	755583.56	N 32 14 18.16	W 103 38 25.44
Hold Nudge	2915.73	8.31	89.55	2914.27	-0.06	0.24	30.11	2.00	451146.31	755585.79	N 32 14 18.16	W 103 38 25.41
	3000.00	8.31	89.55	2997.66	-0.08	0.33	42.30	0.00	451146.40	755597.97	N 32 14 18.16	W 103 38 25.27
	3100.00	8.31	89.55	3096.61	-0.11	0.45	56.76	0.00	451146.52	755612.43	N 32 14 18.16	W 103 38 25.10
	3200.00	8.31	89.55	3195.55	-0.13	0.56	71.22	0.00	451146.63	755626.89	N 32 14 18.16	W 103 38 24.93
	3300.00	8.31	89.55	3294.50	-0.16	0.67	85.68	0.00	451146.74	755641.35	N 32 14 18.16	W 103 38 24.76
	3400.00	8.31	89.55	3393.45	-0.19	0.79	100.14	0.00	451146.86	755655.81	N 32 14 18.16	W 103 38 24.59
	3500.00	8.31	89.55	3492.40	-0.21	0.90	114.60	0.00	451146.97	755670.27	N 32 14 18.16	W 103 38 24.43
	3600.00	8.31	89.55	3591.35	-0.24	1.01	129.06	0.00	451147.08	755684.73	N 32 14 18.16	W 103 38 24.26
	3700.00	8.31	89.55	3690.30	-0.27	1.13	143.52	0.00	451147.20	755699.19	N 32 14 18.16	W 103 38 24.09
	3800.00	8.31	89.55	3789.25	-0.30	1.24	157.98	0.00	451147.31	755713.65	N 32 14 18.16	W 103 38 23.92
	3900.00	8.31	89.55	3888.20	-0.32	1.35	172.44	0.00	451147.42	755728.11	N 32 14 18.16	W 103 38 23.75
	4000.00	8.31	89.55	3987.15	-0.35	1.47	186.90	0.00	451147.54	755742.57	N 32 14 18.16	W 103 38 23.58
	4100.00	8.31	89.55	4086.09	-0.38	1.58	201.36	0.00	451147.65	755757.03	N 32 14 18.16	W 103 38 23.42
	4200.00	8.31	89.55	4185.04	-0.40	1.70	215.82	0.00	451147.77	755771.49	N 32 14 18.16	W 103 38 23.25
	4300.00	8.31	89.55	4283.99	-0.43	1.81	230.28	0.00	451147.88	755785.95	N 32 14 18.16	W 103 38 23.08
	4400.00	8.31	89.55	4382.94	-0.46	1.92	244.74	0.00	451147.99	755800.41	N 32 14 18.16	W 103 38 22.91
	4500.00	8.31	89.55	4481.89	-0.48	2.04	259.20	0.00	451148.11	755814.87	N 32 14 18.16	W 103 38 22.74
	4600.00	8.31	89.55	4580.84	-0.51	2.15	273.66	0.00	451148.22	755829.33	N 32 14 18.16	W 103 38 22.57
	4700.00	8.31	89.55	4679.79	-0.54	2.26	288.12	0.00	451148.33	755843.79	N 32 14 18.16	W 103 38 22.41
Base Salt	4704.26	8.31	89.55	4684.00	-0.54	2.27	288.74	0.00	451148.34	755844.40	N 32 14 18.16	W 103 38 22.40
	4800.00	8.31	89.55	4778.74	-0.57	2.38	302.58	0.00	451148.45	755858.25	N 32 14 18.16	W 103 38 22.24
	4900.00	8.31	89.55	4877.69	-0.59	2.49	317.04	0.00	451148.56	755872.71	N 32 14 18.16	W 103 38 22.07
Lamar	4932.66	8.31	89.55	4910.00	-0.60	2.53	321.76	0.00	451148.60	755877.43	N 32 14 18.16	W 103 38 22.01
Bell Canyon	4988.24	8.31	89.55	4965.00	-0.62	2.59	329.80	0.00	451148.66	755885.47	N 32 14 18.16	W 103 38 21.92
	5000.00	8.31	89.55	4976.64	-0.62	2.60	331.50	0.00	451148.67	755887.17	N 32 14 18.16	W 103 38 21.90
	5100.00	8.31	89.55	5075.58	-0.65	2.72	345.96	0.00	451148.79	755901.63	N 32 14 18.16	W 103 38 21.73
	5200.00	8.31	89.55	5174.53	-0.67	2.83	360.42	0.00	451148.90	755916.09	N 32 14 18.16	W 103 38 21.56
	5300.00	8.31	89.55	5273.48	-0.70	2.94	374.88	0.00	451149.01	755930.55	N 32 14 18.16	W 103 38 21.40
	5400.00	8.31	89.55	5372.43	-0.73	3.06	389.34	0.00	451149.13	755945.01	N 32 14 18.16	W 103 38 21.23
	5500.00	8.31	89.55	5471.38	-0.75	3.17	403.80	0.00	451149.24	755959.47	N 32 14 18.16	W 103 38 21.06
	5600.00	8.31	89.55	5570.33	-0.78	3.29	418.26	0.00	451149.35	755973.93	N 32 14 18.16	W 103 38 20.89
	5700.00	8.31	89.55	5669.28	-0.81	3.40	432.72	0.00	451149.47	755988.38	N 32 14 18.16	W 103 38 20.72
	5800.00	8.31	89.55	5768.23	-0.84	3.51	447.18	0.00	451149.58	756002.84	N 32 14 18.16	W 103 38 20.55
Cherry Canyon	5890.73	8.31	89.55	5858.00	-0.86	3.62	460.30	0.00	451149.69	756015.96	N 32 14 18.16	W 103 38 20.40
	5900.00	8.31	89.55	5867.18	-0.86	3.63	461.64	0.00	451149.70	756017.30	N 32 14 18.16	W 103 38 20.39
	6000.00	8.31	89.55	5966.12	-0.89	3.74	476.10	0.00	451149.81	756031.76	N 32 14 18.16	W 103 38 20.22
	6100.00	8.31	89.55	6065.07	-0.92	3.85	490.56	0.00	451149.92	756046.22	N 32 14 18.16	W 103 38 20.05
	6200.00	8.31	89.55	6164.02	-0.94	3.97	505.02	0.00	451150.04	756060.68	N 32 14 18.16	W 103 38 19.88
	6300.00	8.31	89.55	6262.97	-0.97	4.08	519.48	0.00	451150.15	756075.14	N 32 14 18.16	W 103 38 19.71
	6400.00	8.31	89.55	6361.92	-1.00	4.19	533.94	0.00	451150.26	756089.60	N 32 14 18.16	W 103 38 19.54
	6500.00	8.31	89.55	6460.87	-1.02	4.31	548.40	0.00	451150.38	756104.06	N 32 14 18.16	W 103

	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	6800.00	8.31	89.55	6757.72	-1.11	4.65	591.78	0.00	451150.72	756147.44	N 32 14 18.17	W 103 38 18.87
	6900.00	8.31	89.55	6856.66	-1.13	4.76	606.24	0.00	451150.83	756161.90	N 32 14 18.17	W 103 38 18.70
	7000.00	8.31	89.55	6955.61	-1.16	4.88	620.71	0.00	451150.94	756176.36	N 32 14 18.17	W 103 38 18.53
	7100.00	8.31	89.55	7054.56	-1.19	4.99	635.17	0.00	451151.06	756190.82	N 32 14 18.17	W 103 38 18.37
	7200.00	8.31	89.55	7153.51	-1.21	5.10	649.63	0.00	451151.17	756205.28	N 32 14 18.17	W 103 38 18.20
	7269.22	8.31	89.55	7222.00	-1.23	5.18	659.63	0.00	451151.25	756215.29	N 32 14 18.17	W 103 38 18.08
	7300.00	8.31	89.55	7252.46	-1.24	5.22	664.09	0.00	451151.29	756219.74	N 32 14 18.17	W 103 38 18.03
	7400.00	8.31	89.55	7351.41	-1.27	5.33	678.55	0.00	451151.40	756234.20	N 32 14 18.17	W 103 38 17.86
	7500.00	8.31	89.55	7450.36	-1.29	5.44	693.01	0.00	451151.51	756248.66	N 32 14 18.17	W 103 38 17.69
	7600.00	8.31	89.55	7549.31	-1.32	5.56	707.47	0.00	451151.63	756263.12	N 32 14 18.17	W 103 38 17.52
	7700.00	8.31	89.55	7648.26	-1.35	5.67	721.93	0.00	451151.74	756277.58	N 32 14 18.17	W 103 38 17.36
	7800.00	8.31	89.55	7747.20	-1.38	5.78	736.39	0.00	451151.85	756292.04	N 32 14 18.17	W 103 38 17.19
Drop to Vertical 2"/100' DLS	7900.00	8.31	89.55	7846.15	-1.40	5.90	750.85	0.00	451151.97	756306.50	N 32 14 18.17	W 103 38 17.02
	8000.00	8.31	89.55	7945.10	-1.43	6.01	765.31	0.00	451152.08	756320.96	N 32 14 18.17	W 103 38 16.85
	8055.48	8.31	89.55	8000.00	-1.44	6.07	773.33	0.00	451152.14	756328.98	N 32 14 18.17	W 103 38 16.76
	8100.00	7.42	89.55	8044.10	-1.46	6.12	779.43	2.00	451152.19	756335.07	N 32 14 18.17	W 103 38 16.69
	8200.00	5.42	89.55	8143.47	-1.48	6.21	790.61	2.00	451152.28	756346.26	N 32 14 18.17	W 103 38 16.56
	8300.00	3.42	89.55	8243.16	-1.49	6.27	798.33	2.00	451152.34	756353.97	N 32 14 18.17	W 103 38 16.47
	8400.00	1.42	89.55	8343.07	-1.50	6.30	802.56	2.00	451152.37	756358.20	N 32 14 18.17	W 103 38 16.42
	8471.21	0.00	89.55	8414.27	-1.50	6.31	803.44	2.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	8500.00	0.00	89.55	8443.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	8600.00	0.00	89.55	8543.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	8700.00	0.00	89.55	8643.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	8800.00	0.00	89.55	8743.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
Bone Spring	8835.94	0.00	89.55	8779.00	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
Leonard Shale	8900.00	0.00	89.55	8843.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	8948.94	0.00	89.55	8892.00	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9000.00	0.00	89.55	8943.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9100.00	0.00	89.55	9043.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9200.00	0.00	89.55	9143.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9275.94	0.00	89.55	9219.00	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9300.00	0.00	89.55	9243.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9400.00	0.00	89.55	9343.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9500.00	0.00	89.55	9443.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9600.00	0.00	89.55	9543.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9700.00	0.00	89.55	9643.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	9800.00	0.00	89.55	9743.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
Avalon Shale	9900.00	0.00	89.55	9843.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10000.00	0.00	89.55	9943.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10000.94	0.00	89.55	9944.00	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10100.00	0.00	89.55	10043.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10164.94	0.00	89.55	10108.00	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10200.00	0.00	89.55	10143.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10300.00	0.00	89.55	10243.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10400.00	0.00	89.55	10343.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10500.00	0.00	89.55	10443.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10534.94	0.00	89.55	10478.00	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10600.00	0.00	89.55	10543.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10700.00	0.00	89.55	10643.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
2nd Bone Spring Sand	10800.00	0.00	89.55	10743.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	10900.00	0.00	89.55	10843.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11000.00	0.00	89.55	10943.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11092.94	0.00	89.55	11036.00	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11100.00	0.00	89.55	11043.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11200.00	0.00	89.55	11143.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11300.00	0.00	89.55	11243.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11400.00	0.00	89.55	11343.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11500.00	0.00	89.55	11443.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11600.00	0.00	89.55	11543.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11700.00	0.00	89.55	11643.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
	11800.00	0.00	89.55	11743.06	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
KOP - Build 12"/100' DLS	11886.95	0.00	89.55	11830.01	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
3rd Bone Spring Sand	11900.00	1.57	179.66	11843.06	-1.32	6.13	803.44	12.00	451152.20	756359.09	N 32 14 18.17	W 103 38 16.41
	11901.94	1.80	179.66	11845.00	-1.27	6.07	803.44	12.00	451152.14	756359.09	N 32 14 18.17	W 103 38 16.41
	12000.00	13.57	179.66	11942.01	11.82	-7.01	803.52	12.00	451139.06	756359.17	N 32 14 18.04	W 103 38 16.41
	12100.00	25.57	179.66	12036.06	45.25	-40.44	803.72	12.00	451105.63	756359.37	N 32 14 17.71	W 103 38 16.41
	12200.00	37.57	179.66	12121.11	97.50	-						

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 ° ' ")
NMNM0002889 - NMNM0001917 Crossing	14416.20	90.25	179.66	12333.48	2252.36	-2247.51	816.93	0.00	448898.65	756372.58	N 32 13 55.87	W 103 38 16.42
	14500.00	90.25	179.66	12333.12	2336.16	-2331.30	817.44	0.00	448814.86	756373.08	N 32 13 55.04	W 103 38 16.42
	14600.00	90.25	179.66	12332.70	2436.15	-2431.30	818.03	0.00	448714.87	756373.68	N 32 13 54.05	W 103 38 16.42
	14700.00	90.25	179.66	12332.27	2536.15	-2531.30	818.63	0.00	448614.87	756374.28	N 32 13 53.06	W 103 38 16.42
	14800.00	90.25	179.66	12331.84	2636.15	-2631.30	819.23	0.00	448514.88	756374.88	N 32 13 52.07	W 103 38 16.42
	14900.00	90.25	179.66	12331.41	2736.15	-2731.29	819.83	0.00	448414.89	756375.48	N 32 13 51.08	W 103 38 16.42
	15000.00	90.25	179.66	12330.98	2836.15	-2831.29	820.43	0.00	448314.89	756376.08	N 32 13 50.09	W 103 38 16.42
	15100.00	90.25	179.66	12330.56	2936.15	-2931.29	821.03	0.00	448214.90	756376.67	N 32 13 49.10	W 103 38 16.42
	15200.00	90.25	179.66	12330.13	3036.15	-3031.29	821.63	0.00	448114.91	756377.27	N 32 13 48.11	W 103 38 16.42
	15300.00	90.25	179.66	12329.70	3136.15	-3131.28	822.22	0.00	448014.91	756377.87	N 32 13 47.12	W 103 38 16.42
	15400.00	90.25	179.66	12329.27	3236.15	-3231.28	822.82	0.00	447914.92	756378.47	N 32 13 46.13	W 103 38 16.42
	15500.00	90.25	179.66	12328.84	3336.15	-3331.28	823.42	0.00	447814.93	756379.07	N 32 13 45.14	W 103 38 16.43
	15600.00	90.25	179.66	12328.42	3436.15	-3431.27	824.02	0.00	447714.93	756379.67	N 32 13 44.15	W 103 38 16.43
	15700.00	90.25	179.66	12327.99	3536.14	-3531.27	824.62	0.00	447614.94	756380.27	N 32 13 43.16	W 103 38 16.43
	15800.00	90.25	179.66	12327.56	3636.14	-3631.27	825.22	0.00	447514.95	756380.87	N 32 13 42.17	W 103 38 16.43
	15900.00	90.25	179.66	12327.13	3736.14	-3731.27	825.82	0.00	447414.95	756381.46	N 32 13 41.18	W 103 38 16.43
Wolfcamp Y SS	15930.85	90.25	179.66	12327.00	3767.00	-3762.12	826.00	0.00	447384.10	756381.65	N 32 13 40.88	W 103 38 16.43
	16000.00	90.25	179.66	12326.70	3836.14	-3831.26	826.42	0.00	447314.96	756382.06	N 32 13 40.19	W 103 38 16.43
	16100.00	90.25	179.66	12326.28	3936.14	-3931.26	827.01	0.00	447214.97	756382.66	N 32 13 39.21	W 103 38 16.43
	16200.00	90.25	179.66	12325.85	4036.14	-4031.26	827.61	0.00	447114.97	756383.26	N 32 13 38.22	W 103 38 16.43
	16300.00	90.25	179.66	12325.42	4136.14	-4131.26	828.21	0.00	447014.98	756383.86	N 32 13 37.23	W 103 38 16.43
	16400.00	90.25	179.66	12324.99	4236.14	-4231.25	828.81	0.00	446914.99	756384.46	N 32 13 36.24	W 103 38 16.43
	16500.00	90.25	179.66	12324.56	4336.14	-4331.25	829.41	0.00	446814.99	756385.06	N 32 13 35.25	W 103 38 16.43
	16600.00	90.25	179.66	12324.14	4436.14	-4431.25	830.01	0.00	446715.00	756385.65	N 32 13 34.26	W 103 38 16.43
	16700.00	90.25	179.66	12323.71	4536.14	-4531.24	830.61	0.00	446615.01	756386.25	N 32 13 33.27	W 103 38 16.43
	16800.00	90.25	179.66	12323.28	4636.13	-4631.24	831.21	0.00	446515.02	756386.85	N 32 13 32.28	W 103 38 16.43
	16900.00	90.25	179.66	12322.85	4736.13	-4731.24	831.80	0.00	446415.02	756387.45	N 32 13 31.29	W 103 38 16.43
	17000.00	90.25	179.66	12322.42	4836.13	-4831.24	832.40	0.00	446315.03	756388.05	N 32 13 30.30	W 103 38 16.43
	17100.00	90.25	179.66	12322.00	4936.13	-4931.23	833.00	0.00	446215.04	756388.65	N 32 13 29.31	W 103 38 16.43
NMNM0001917 - NMNM0553642 Crossing	17125.30	90.25	179.66	12321.89	4961.43	-4956.53	833.15	0.00	446189.74	756388.80	N 32 13 29.06	W 103 38 16.43
	17200.00	90.25	179.66	12321.57	5036.13	-5031.23	833.60	0.00	446115.04	756389.25	N 32 13 28.32	W 103 38 16.44
	17300.00	90.25	179.66	12321.14	5136.13	-5131.23	834.20	0.00	446015.05	756389.85	N 32 13 27.33	W 103 38 16.44
	17400.00	90.25	179.66	12320.71	5236.13	-5231.23	834.80	0.00	445915.06	756390.44	N 32 13 26.34	W 103 38 16.44
	17500.00	90.25	179.66	12320.28	5336.13	-5331.22	835.40	0.00	445815.06	756391.04	N 32 13 25.35	W 103 38 16.44
	17600.00	90.25	179.66	12319.86	5436.13	-5431.22	835.99	0.00	445715.07	756391.64	N 32 13 24.36	W 103 38 16.44
	17700.00	90.25	179.66	12319.43	5536.13	-5531.22	836.59	0.00	445615.08	756392.24	N 32 13 23.37	W 103 38 16.44
	17800.00	90.25	179.66	12319.00	5636.13	-5631.21	837.19	0.00	445515.08	756392.84	N 32 13 22.38	W 103 38 16.44
	17900.00	90.25	179.66	12318.57	5736.12	-5731.21	837.79	0.00	445415.09	756393.44	N 32 13 21.39	W 103 38 16.44
	18000.00	90.25	179.66	12318.15	5836.12	-5831.21	838.39	0.00	445315.10	756394.04	N 32 13 20.40	W 103 38 16.44
	18100.00	90.25	179.66	12317.72	5936.12	-5931.21	838.99	0.00	445215.10	756394.63	N 32 13 19.41	W 103 38 16.44
	18200.00	90.25	179.66	12317.29	6036.12	-6031.20	839.59	0.00	445115.11	756395.23	N 32 13 18.43	W 103 38 16.44
	18300.00	90.25	179.66	12316.86	6136.12	-6131.20	840.19	0.00	445015.12	756395.83	N 32 13 17.44	W 103 38 16.44
	18400.00	90.25	179.66	12316.43	6236.12	-6231.20	840.78	0.00	444915.12	756396.43	N 32 13 16.45	W 103 38 16.44
	18500.00	90.25	179.66	12316.01	6336.12	-6331.20	841.38	0.00	444815.13	756397.03	N 32 13 15.46	W 103 38 16.44
	18600.00	90.25	179.66	12315.58	6436.12	-6431.19	841.98	0.00	444715.14	756397.63	N 32 13 14.47	W 103 38 16.44
	18700.00	90.25	179.66	12315.15	6536.12	-6531.19	842.58	0.00	444615.14	756398.23	N 32 13 13.48	W 103 38 16.44
	18800.00	90.25	179.66	12314.72	6636.12	-6631.19	843.18	0.00	444515.15	756398.83	N 32 13 12.49	W 103 38 16.44
	18900.00	90.25	179.66	12314.29	6736.12	-6731.18	843.78	0.00	444415.16	756399.42	N 32 13 11.50	W 103 38 16.44
	19000.00	90.25	179.66	12313.87	6836.11	-6831.18	844.38	0.00	444315.16	756400.02	N 32 13 10.51	W 103 38 16.45
	19100.00	90.25	179.66	12313.44	6936.11	-6931.18	844.98	0.00	444215.17	756400.62	N 32 13 9.52	W 103 38 16.45
	19200.00	90.25	179.66	12313.01	7036.11	-7031.18	845.57	0.00	444115.18	756401.22	N 32 13 8.53	W 103 38 16.45
	19300.00	90.25	179.66	12312.58	7136.11	-7131.17	846.17	0.00	444015.18	756401.82	N 32 13 7.54	W 103 38 16.45
	19400.00	90.25	179.66	12312.15	7236.11	-7231.17	846.77	0.00	443915.19	756402.42	N 32 13 6.55	W 103 38 16.45
	19500.00	90.25	179.66	12311.73	7336.11	-7331.17	847.37	0.00	443815.20	756403.02	N 32 13 5.56	W 103 38 16.45
	19600.00	90.25	179.66	12311.30	7436.11	-7431.17	847.97	0.00	443715.20	756403.61	N 32 13 4.57	W 103 38 16.45
	19700.00	90.25	179.66	12310.87	7536.11	-7531.16	848.57	0.00	443615.21	756404.21	N 32 13 3.58	W 103 38 16.45
	19800.00	90.25	179.66	12310.44	7636.11	-7631.16	849.17	0.00	443515.22	756404.81	N 32 13 2.59	W 103 38 16.45
	19900.00	90.25	179.66	12310.01	7736.11	-7731.16	849.76	0.00	443415.22	756405.41	N 32 13 1.60	W 103 38 16.45
	20000.00	90.25	179.66	12309.59	7836.11	-7831.16	850.36	0.00	443315.23	756406.01	N 32 13 0.61	W 103 38 16.45
	20100.00	90.25	179.66	12309.16	7936.10	-7931.15	850.96	0.00	443215.24	756406.61	N 32 12 59.62	W 103 38 16.45
	20200.00	90.25	179.66	12308.73	8036.10	-8031.15	851.56	0.00	443115.24	756407.21	N 32 12 58.64	W 103 38 16.45
	20300.00	90.25	179.66	12308.30	8136.10	-8131.15	852.16	0.00	443015.25	756407.81	N 32 12 57.65	W 103 38 16.45
	20400.00	90.25	179.66	12307.87	8236.10	-8231.14	852.76	0.00	442915.26	756408.40	N 32 12 56.66	W 103 38 16.45
	20500.00	90.25	179.66	12307.45	8336.10	-8331.14	853.36	0.00	442815.26	756409.00	N 32 12 55.67	W 103 38 16.45
	20600.00	90.25	179.66	12307.02	8436.10	-8431.14	853.96	0.00	442715.27	756409.60	N 32 12 54.68	W 103 38 16.45
	20700.00	90.25	179.66	12306.59	8536.10	-8531.14	854.55	0.00	442615.28	756410.20	N 32 12 53.69	W 103 38 16.45
	20800.00	90.25	179.66	12306.16	8636.10	-8631.13	855.15	0.00	442515.28	756410.80	N 32 12 52.70	W 103 38 16.46
	20900.00	90.25	179.66	12305.73	8736.10	-8731.13	855.75	0.00	442415.29	756411.40	N 32 12 51.71	W 103 38 16.46
	21000.00	90.25	179.66	12305.31	8836.10	-8831.13	856.35	0.00	442315.30	756412.00	N 32 12 50.72	W 103 38 16.46
NMNM0553642 - NMNM003503 Crossing	21019.42	90.25	179.66	12305.22	8855.52	-8850.55	856.47	0.00	442295.88	756412.11	N 32 12 50.53	W 103 38 16.46
	21100.00	90.25	179.66	12304.88	8936.10	-8931.13	856.95	0.00	442215.30	756412.59	N 32 12 49.73	W 103 38 16.46
	21200.00	90.25	179.66	12304.45	9036.09	-9031.12	857.55	0.00	442115.31	756413.19	N 32 12 48.74	W 103 38 16.46
	21300.00	90.25	179.66	12304.02	9136.09	-9131.12	858.15	0.00	442015.32	756413.79	N 32 12 47.75	W 103 38 16.46
	21400.00	90.25	179.66	12303.60	9236.09	-9231.12	858.75	0.00	441915.33	756414.39	N 32 12 46.76	W 103 38 16

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 ° ' ")
		1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only		Dos Equis 11-14 Federal Com 8H / Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM	
		1	26.000	22240.102	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS		Dos Equis 11-14 Federal Com 8H / Cimarex Dos Equis 11-14	

Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM 22Aug19 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: August 26, 2019 - 05:02 PM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Dos Equis 11-14 Federal Com 8H / New Slot
Well: Dos Equis 11-14 Federal Com 8H
Borehole: Dos Equis 11-14 Federal Com 8H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM 22Aug19
Survey Date: August 22, 2019
Tort / AHD / DDI / ERD Ratio: 106.874 ° / 10881.152 ft / 6.321 / 0.882
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 14' 18.15744", W 103° 38' 25.76087"
Location Grid N/E Y/X: N 451146.070 ftUS, E 755555.680 ftUS
CRS Grid Convergence Angle: 0.3696 °
Grid Scale Factor: 0.99996165
Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.657 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3629.400 ft above MSL
Seabed / Ground Elevation: 3603.400 ft above MSL
Magnetic Declination: 6.671 °
Total Gravity Field Strength: 998.4379mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47895.066 nT
Magnetic Dip Angle: 59.899 °
Declination Date: August 22, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.3696 °
Total Corr Mag North->Grid North: 6.3013 °
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 [384' FNL, 1136' FEL]	0.00	0.00	175.10	0.00	0.00	0.00	0.00	N/A	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
Nudge 2"/100'	2500.00	0.00	89.55	2500.00	0.00	0.00	0.00	0.00	451146.07	755555.68	N 32 14 18.16	W 103 38 25.76
DLS	2915.73	8.31	89.55	2914.27	-0.06	0.24	30.11	2.00	451146.31	755585.79	N 32 14 18.16	W 103 38 25.41
Hold Nudge	8055.48	8.31	89.55	8000.00	-1.44	6.07	773.33	0.00	451152.14	756328.98	N 32 14 18.17	W 103 38 16.76
Drop to Vertical	8471.21	0.00	89.55	8414.27	-1.50	6.31	803.44	2.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
2"/100' DLS	11886.95	0.00	89.55	11830.01	-1.50	6.31	803.44	0.00	451152.38	756359.09	N 32 14 18.17	W 103 38 16.41
Hold Vertical	12511.95	75.00	179.66	12291.21	352.39	-347.57	805.56	12.00	450798.51	756361.21	N 32 14 14.67	W 103 38 16.41
KOP - Build	12893.08	90.25	179.66	12340.00	729.25	-724.43	807.81	4.00	450421.67	756363.46	N 32 14 10.94	W 103 38 16.41
12"/100' DLS												
Build 4"/100'												
DLS												
Landing Point												
Cimarex Dos Equis 11-14 Federal Com 8H - PBHL [100' FSL, 330' FEL]	22240.10	90.25	179.66	12300.00	10076.19	-10071.20	863.77	0.00	441075.28	756419.42	N 32 12 38.45	W 103 38 16.46

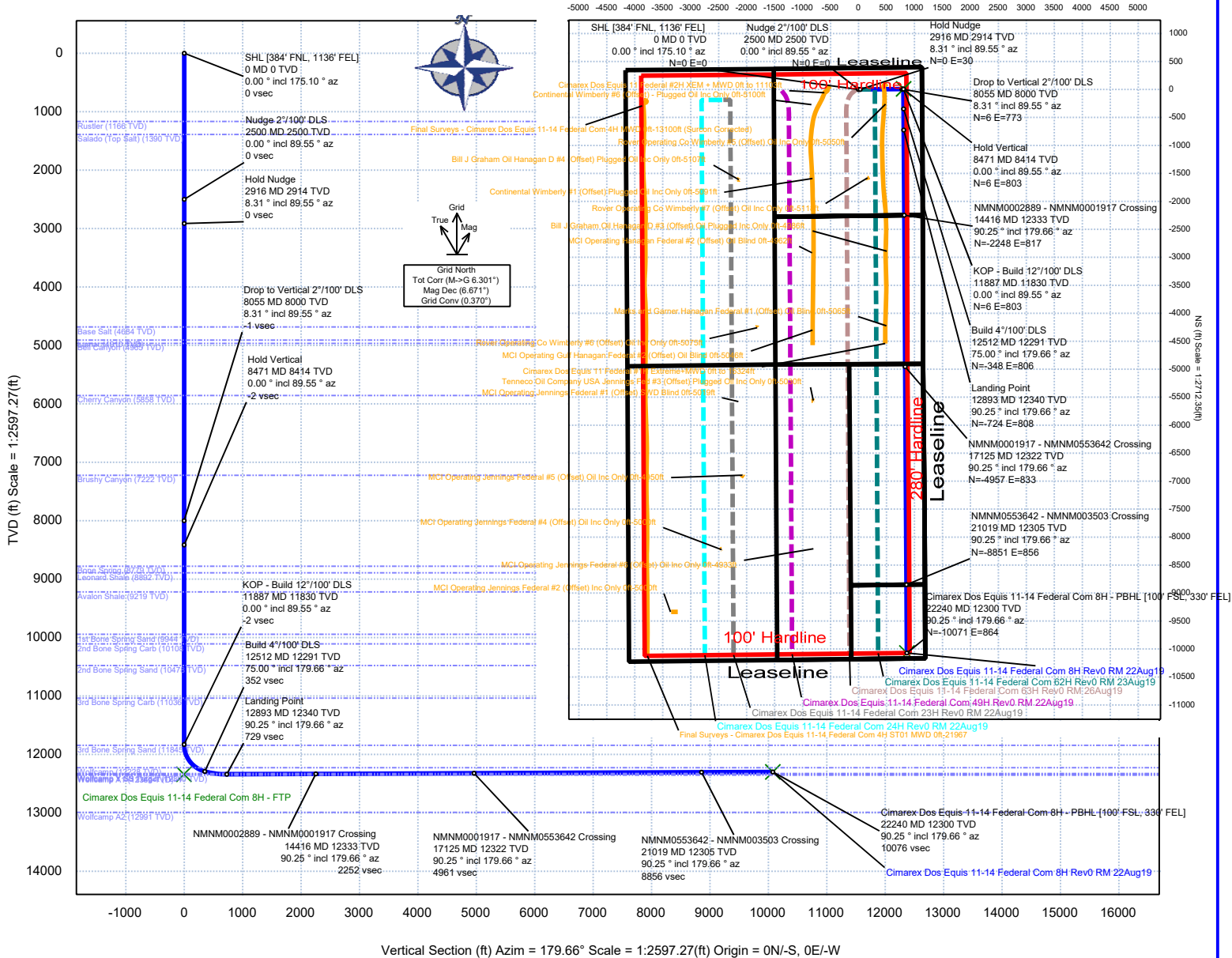
Survey Type: Non-Def Plan

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	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Dos Equis 11-14 Federal Com 8H / Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM
	1	26.000	22240.102	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Dos Equis 11-14 Federal Com 8H / Cimarex Dos Equis 11-14

Borehole:	Well:	Field:	Structure:
Dos Equis 11-14 Federal Com 8H	Dos Equis 11-14 Federal Com 8H	NM Lea County (NAD 83)	Cimarex Dos Equis 11-14 Federal Com 8H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	HDGM 2019	Dip:	59.899°	Date:	22-Aug-2019	Lat:	N 32 14 18.16	Northings:	451146.07NUS	Grid Conv:	0.3696°
MagDec:	6.671°	FS:	47895.066nT	Gravity FS:	998.438mgm (9.80665 Based)	Lon:	W 103 38 25.76	Easting:	755555.68NUS	Scale Fact:	0.99996165
								Plan: Cimarex Dos Equis 11-14 Federal Com 8H Rev0 RM 22Aug19			
								EW (ft) Scale = 1:2712.35(ft)			



Vertical Section (ft) Azim = 179.66° Scale = 1:2597.27(ft) Origin = 0N/-S, 0E/-W

Critical Point	MD	INCL	AZIM	Critical Points	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [384' FNL, 1136' FEL]	0.00	0.00	175.10		0.00	0.00	0.00	0.00	
Rustler	1166.00	0.00	89.55		1166.00	0.00	0.00	0.00	0.00
Salado (Top Salt)	1390.00	0.00	89.55		1390.00	0.00	0.00	0.00	0.00
Nudge 2 1/100' DLS	2500.00	0.00	89.55		2500.00	0.00	0.00	0.00	0.00
Hold Nudge	2915.73	8.31	89.55		2914.27	-0.06	0.24	30.11	0.00
Base Salt	4704.26	8.31	89.55		4684.00	-0.54	2.27	288.74	0.00
Lamar	4932.66	8.31	89.55		4910.00	-0.60	2.53	321.76	0.00
Bell Canyon	4988.24	8.31	89.55		4965.00	-0.62	2.59	329.80	0.00
Cherry Canyon	5890.73	8.31	89.55		5858.00	-0.86	3.62	460.30	0.00
Brushy Canyon	7269.22	8.31	89.55		7222.00	-1.23	5.18	659.63	0.00
Drop to Vertical 2 1/100' DLS	8055.48	8.31	89.55		8000.00	-1.44	6.07	773.33	0.00
Hold Vertical	8471.21	0.00	89.55		8414.27	-1.50	6.31	803.44	2.00
Bone Spring	8835.94	0.00	89.55		8779.00	-1.50	6.31	803.44	0.00
Leonard Shale	8948.94	0.00	89.55		8892.00	-1.50	6.31	803.44	0.00
Avalon Shale	9275.94	0.00	89.55		9219.00	-1.50	6.31	803.44	0.00
1st Bone Spring Sand	10000.94	0.00	89.55		9944.00	-1.50	6.31	803.44	0.00
2nd Bone Spring Sand	10164.94	0.00	89.55		10108.00	-1.50	6.31	803.44	0.00
2nd Bone Spring Sand	10534.94	0.00	89.55		10478.00	-1.50	6.31	803.44	0.00
3rd Bone Spring Carb	11092.94	0.00	89.55		11036.00	-1.50	6.31	803.44	0.00
KOP - Build 12 1/100' DLS	11886.95	0.00	89.55		11830.01	-1.50	6.31	803.44	0.00
3rd Bone Spring Sand	11901.94	1.80	179.66		11845.00	-1.27	6.07	803.44	12.00
Wolfcamp	12357.49	56.47	179.66		12228.00	212.19	-207.38	804.72	12.00
Build 4 1/100' DLS	12511.95	75.00	179.66		12291.21	352.39	-347.57	805.56	12.00
Wolfcamp Y SS	12693.72	82.27	179.66		12327.00	530.48	-525.66	806.62	4.00
Wolfcamp Y SS Target	12880.83	89.76	179.66		12340.00	717.00	-712.18	807.74	4.00
Wolfcamp Y SS Target	12893.07	90.24	179.66		12340.00	729.24	-724.41	807.81	4.00
Landing Point	12893.08	90.25	179.66		12340.00	729.25	-724.43	807.81	4.00
NMNM0002889 - NMNM0001917 Crossing	14416.20	90.25	179.66		12333.48	2252.36	-2247.51	816.63	0.00
Wolfcamp Y SS	15930.85	90.25	179.66		12327.00	3767.00	-3762.12	826.00	0.00
NMNM0001917 - NMNM0553642 Crossing	17125.30	90.25	179.66		12321.89	4961.43	-4956.53	833.15	0.00
NMNM0553642 - NMNM003503 Crossing	21019.42	90.25	179.66		12305.22	8855.52	-8850.55	856.47	0.00
Cimarex Dos Equis 11-14 Federal Com 8H - PBHL [100' FSL, 330' FEL]	22240.10	90.25	179.66		12300.00	10076.19	-10071.20	863.77	0.00
Wolfcamp A2	N/A				12991.00				
Wolfcamp A1	N/A				12355.00				

1. Geological Formations

TVD of target 12,300

Pilot Hole TD N/A

MD at TD 22,240

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1166	N/A	
Salado (Top Salt)	1390	N/A	
Base of Salt	4684	N/A	
Lamar	4910	N/A	
Bell Canyon	4965	N/A	
Cherry Canyon	5858	N/A	
Brushy Canyon	7222	Hydrocarbons	
Bone Spring	8779	Hydrocarbons	
Leonard Shale	8892	Hydrocarbons	
Avalon Shale	9212	Hydrocarbons	
1st Bone Spring Sand	9944	Hydrocarbons	
2nd Bone Spring Carb	10108	Hydrocarbons	
2nd Bone Spring Sand	10478	Hydrocarbons	
3rd Bone Spring Carb	11036	Hydrocarbons	
3rd Bone Spring Sand	11845	Hydrocarbons	
Wolfcamp	12228	Hydrocarbons	
Wolfcamp (Target)	12340	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
14 3/4	0	1216	1216	10-3/4"	40.50	J-55	BT&C	2.84	5.63	12.77
9 7/8	0	12512	12291	7-5/8"	29.70	L-80	BT&C	2.50	1.20	1.82
6 3/4	0	11887	11887	5-1/2"	20.00	L-80	LT&C	1.14	1.19	1.88
6 3/4	11887	22240	12300	5"	18.00	P-110	BT&C	1.68	1.70	78.02
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

Request Variance for 5-1/2" x 7-5/8" annular clearance. The portion that does not meet clearance will not be cemented

	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.	Y
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 ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	472	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	127	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate Stage 1	585	10.30	3.64	22.18		Lead: Tuned Light + LCM
	198	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Intermediate Stage 2	785	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
Production	832	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

DV tool with possible annular casing packer as needed is proposed at a depth of +/- 4,910'.

Casing String	TOC	% Excess
Surface	0	45
Intermediate Stage 1	4910	47
Intermediate Stage 2	0	37
Production	11887	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
9 7/8	13 5/8	5M	Annular	X	50% of working pressure
			Blind Ram		5M
			Pipe Ram	X	
			Double Ram	X	
			Other		
6 3/4	13 5/8	10M	Annular	X	50% of working pressure
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other		

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

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

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

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1216'	FW Spud Mud	8.30 - 8.80	30-32	N/C
1216' to 12512'	Brine Diesel Emulsion	8.50 - 9.00	30-35	N/C
12512' to 22240'	Oil Based Mud	12.00 - 12.50	50-70	N/C

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

The Brine Emulsion is completely saturated brine fluid that ties diesel into itself to lower the weight of the fluid. The drilling fluid is completely salt saturated.

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

6. Logging and Testing Procedures

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

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

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	7995 psi
Abnormal Temperature	No

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

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

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

A multi-bowl wellhead system will be utilized.

After running the 10-3/4" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to 50% 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.

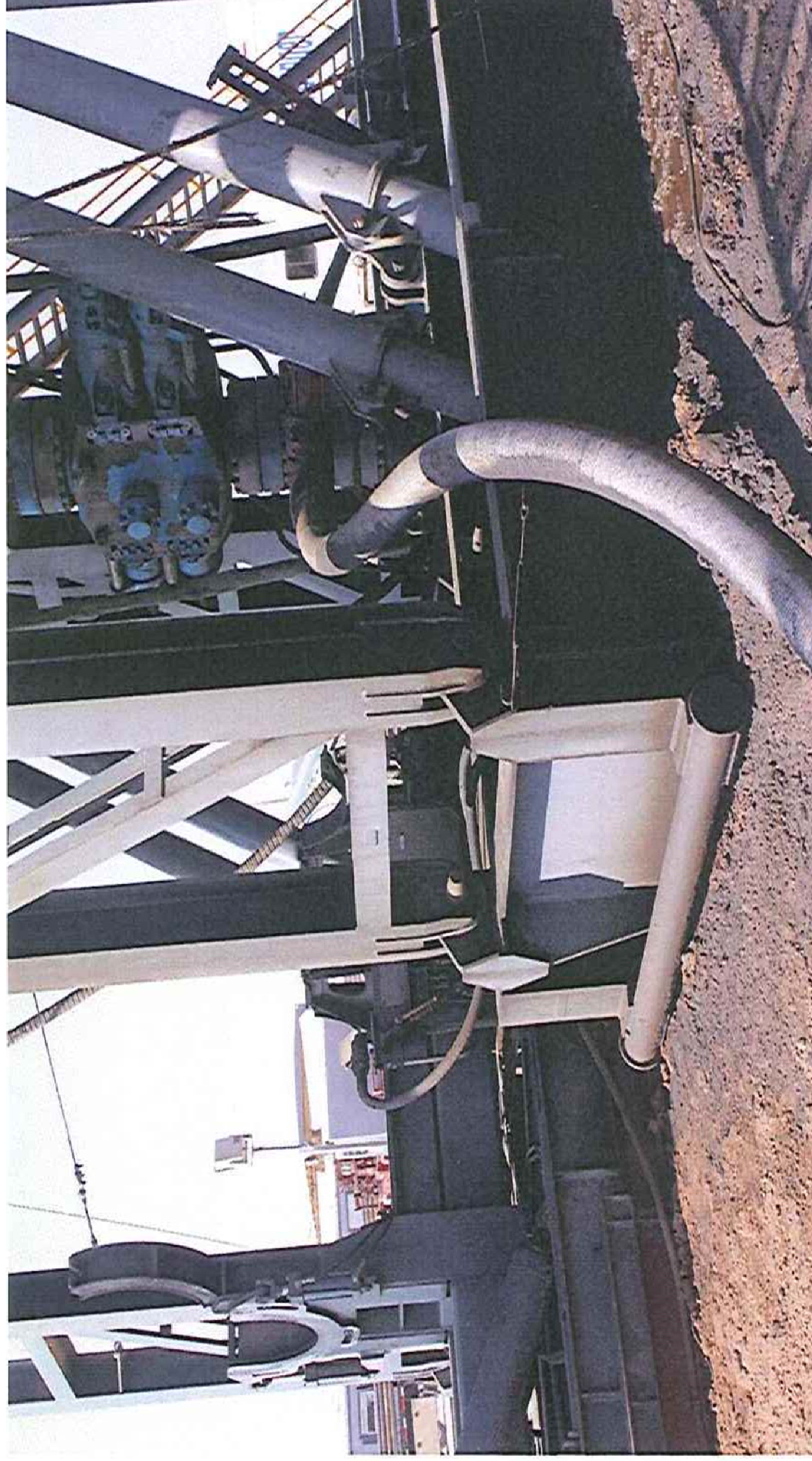
All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

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 10000 psi.

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

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

Co-Flex Hose
Dos Equis 11-14 Fed Com 8H
Cimarex Energy Co.
11-24S-32E
Lea County, NM





Cimarex 10M Well Control Plan

Version 1.0

BOPE Preventer Utilization

The table below displays all BHA components, drill pipe, casing, or open hole that could be present during a required shut in and the associated preventer component that would provide a barrier to flow. It is specific to the hole section that requires a 10M system. The mud system being utilized in the hole will always assumed to be the first barrier to flow. The below table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

Drill String Element	OD	Preventer	RWP
4" Drillpipe	4"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
4.5" Drillpipe	4.5"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
4" HWDP Drillpipe	4"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
4.5" HWDP Drillpipe	4.5"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
Drill Collars (including non-magnetic)	4.75-5.25"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
Production Casing	5.5"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
Production Casing	5"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
Production Casing	4.5"	Lower Ram 3 1/2" - 5 1/2" VBR* Upper Ram 3 1/2" - 5 1/2" VBR*	10M
ALL	0-13 5/8"	Annular	5M
Open Hole		Blind Rams	10M

*VBR – Variable Bore Ram

Well Control Procedures

Proper well control response is highly specific to current well conditions and must be adapted based on environment as needed. The procedures below are given in “common” operating conditions to cover the basic and most necessary operations required during the wellbore construction. These include drilling ahead, tripping pipe, tripping BHA, running casing, and pipe out of the hole/open hole. In some of the procedures below, there will be a switch of control from the lesser RWP annular to the appropriate 10M RWP ram. The pressure at which this is done is variable based on overall well conditions that must be evaluated situationally. The pressure that control is switched may be equal to or less than the RWP but at no time will the pressure on the annular preventer exceed the RWP of the annular. The annular will be tested to 5,000 psi. This will be the RWP of the annular preventer.

Shutting In While Drilling

1. Sound alarm to alert crew
2. Space out drill string
3. Shut down pumps
4. Shut in uppermost BOPE preventer (typically the annular preventer) and open HCR.
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

9. If pressure is anticipated to climb to the RWP of the annular preventer during kill procedure, swap control of the well to the upper pipe ram

Shutting In While Tripping

1. Sound alarm and alert crew
2. Install open, full open safety valve and close valve
3. Shut in uppermost BOPE preventer (typically the annular preventer) and open HCR.
4. Verify well is shut-in and flow has stopped
5. Notify supervisory personnel
6. Record data (SIDP, SICP, Pit Gain, and Time)
7. Hold pre-job safety meeting and discuss kill procedure
8. If pressure is anticipated to climb to the RWP of the annular preventer during kill procedure, swap control of the well to the upper pipe ram

Shutting In While Running Casing

1. Sound alarm and alert crew
2. Install circulating swedge. Close high pressure, low torque valves.
3. Shut in uppermost BOPE preventer (typically the annular preventer) and open HCR.
4. Verify well is shut-in and flow has stopped
5. Notify supervisory personnel
6. Record data (SIDP, SICP, Pit Gain, and Time)
7. Hold Pre-job safety meeting and discuss kill procedure
8. If pressure is anticipated to climb to the RWP of the annular preventer during kill procedure, swap control of the well to the upper pipe ram

Shutting in while out of hole

1. Sound alarm
2. Shut-in well: close blind rams
3. Verify well is shut-in and monitor pressures
4. Notify supervisory personnel
5. Record data (SIDP, SICP, Pit Gain, and Time)
6. Hold Pre-job safety meeting and discuss kill procedure

Shutting in prior to pulling BHA through stack

1. Prior to pulling last joint of drill pipe thru the stack space out and check flow. If flowing see steps below.
2. Sound alarm and alert crew
3. Install open, full open safety valve and close valve
4. Shut in upper pipe ram and open HCR.

5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

Shutting in while BHA is in the stack and ram preventer and combo immediately available

1. Sound alarm and alert crew
2. Stab Crossover and install open, full open safety valve and close valve
3. Space out drill string with upset just beneath the compatible pipe ram.
4. Shut in upper compatible pipe ram and open HCR.
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

Shutting in while BHA is in the stack and no ram preventer or combo immediately available

1. Sound alarm and alert crew
2. If possible pick up high enough, to pull string clear and follow “Open Hole” scenario
3. If not possible to pick up high enough:
 1. Stab Crossover, make up one joint/stand of drill pipe, and install open, full open safety valve and close valve
4. Space out drill string with upset just beneath the compatible pipe ram.
5. Shut in upper compatible pipe ram and open HCR.
6. Verify well is shut-in and flow has stopped
7. Notify supervisory personnel
8. Record data (SIDP, SICP, Pit Gain, and Time)
9. Hold pre-job safety meeting and discuss kill procedure

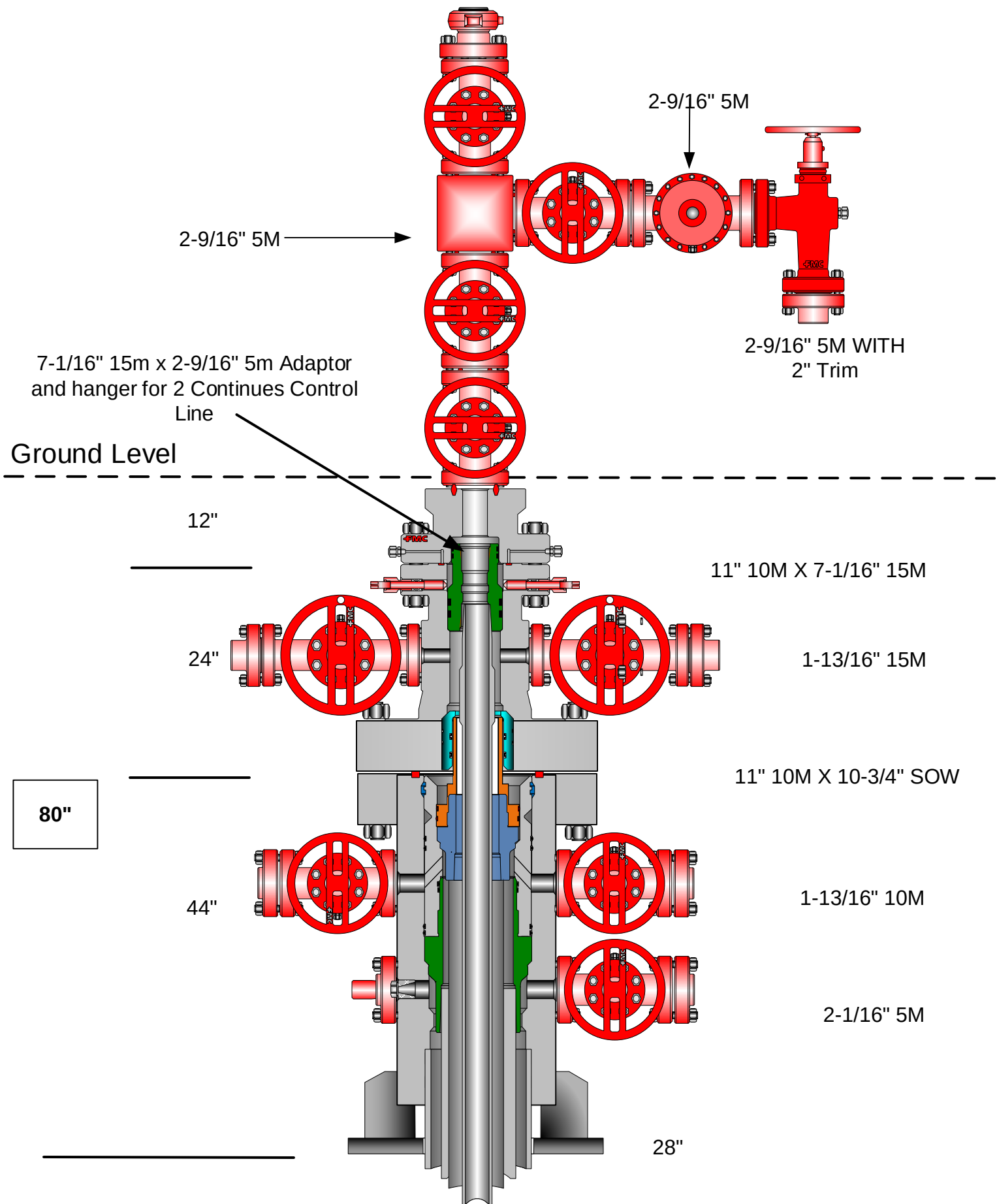


CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL

Dos Equis 11-14 Fed Com 8H

LEA CO., NM

Multi-bowl Wellhead Diagram



Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
14 3/4	0	1216	1216	10-3/4"	40.50	J-55	BT&C	2.84	5.63	12.77
9 7/8	0	12512	12291	7-5/8"	29.70	L-80	BT&C	2.50	1.20	1.82
6 3/4	0	11887	11887	5-1/2"	20.00	L-80	LT&C	1.14	1.19	1.88
6 3/4	11887	22240	12300	5"	18.00	P-110	BT&C	1.68	1.70	78.02
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations



APD ID: 10400047446

Submission Date: 09/17/2019

Highlighted data
reflects the most
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

[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_11_14___12_13_Fed_Com_Existing_Road_20190917095539.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? YES

ROW ID(s)

ID:

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_11_14_Fed_Com_E2E2_One_Mile_radius_20190917101339.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: If upon completion the well is a producer, a production facility battery will be constructed and production equipment installed at the wellsite. 2- 450 X 400 pads were staked with the BLM for construction and use as a central tank batteries (CTB) With associated Bulk Line Connection areas. Please see Exhibit F. Road: Existing roads will be used. Please see Exhibit C for 28603 existing road. Bulk Lines: 1987' of 8- 12 buried steel Bulk lines. Bulk Lines will be constructed along the proposed road buried in the same 60 trench. Please see Attachment M for route.

Production Facilities map:

Dos_Equis_11_14_Fed_Com_East_Zone_1_Flowline_Connection_Area_20200115074445.pdf

Dos_Equis_11_14_Fed_Com_East_Zone_2_Flowline_Connection_Area_20200115074503.pdf

Dos_Equis_11_14_Fed_Com_East_Zone_1_CTB_Battery_Layout_20200115085004.pdf

Dos_Equis_11_14_Fed_Com_East_Zone_2_CTB_Battery_Layout_20200115085009.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: MUNICIPAL

Water source use type: SURFACE CASING
INTERMEDIATE/PRODUCTION
CASING

Source latitude: **Source longitude:**

Source datum:

Water source permit type: WATER RIGHT

Permit Number:

Water source transport method: TRUCKING
PIPELINE

Source land ownership: STATE

Source transportation land ownership: STATE

Water source volume (barrels): 5000

Source volume (acre-feet): 0.64446548

Source volume (gal): 210000

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

Water source and transportation map:

Dos_Equis_11_14_Fed_Com_E2E2_Drilling_Water_Source_Route_20190917114836.pdf

Water source comments:

New water well? N

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: YES

Construction Materials description: The drilling and testing operations will be conducted on a watered and compacted native soil grade. Soft spots will be covered with caliche, free of large rocks (3" diameter). Upon completion as a commercial producer the location will be covered with caliche, free of large rocks (3" dia.) from an existing privately owned gravel pit. In the event that no caliche is found onsite, caliche will be hauled in from BLM approved caliche pit in Sec 7 24S 33E or Sec 20 23S 33E

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

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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 commercial Disposal

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations

Amount of waste:

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: Windmill Spraying Service 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.

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

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? N

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_11_14_Fed_Com_8H_Wellsite_Layout_20190917103602.pdf

Dos_Equis_11_14_E2E2_Wellsite_Pad_Info_20200115090048.docx

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: Dos Equis Fed Com

Multiple Well Pad Number: E2E2

Recontouring attachment:

Dos_Equis_11_14_Fed_Com_E2E2_Interim_Reclaim_20200115075025.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

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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.

Well pad proposed disturbance (acres): 7.258	Well pad interim reclamation (acres): 2.97	Well pad long term disturbance (acres): 4.288
Road proposed disturbance (acres):	Road interim reclamation (acres): 0	Road long term disturbance (acres): 0
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 2.78	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 2.78
Other proposed disturbance (acres): 9.921	Other interim reclamation (acres): 0	Other long term disturbance (acres): 9.921
Total proposed disturbance: 19.959	Total interim reclamation: 2.97	Total long term disturbance: 16.988999999999997

Disturbance Comments: Well Pad- 7.258 acres. Bulk line= 2.737 acres- 1988'. East Zone 1 CTB= 4.946 acres. East Zone 2 CTB=4.975 We have been working on engineering solutions to reduce our footprint in the section to lower cost, disturbance, and our economic hurdle for other marginal benches within the section to increase our total mineral recovery. It turns out that simply changing our flowline / well approach and moving our separation to our drilling pads significantly reduces our foot print and cost. By placing our separation on our drill pads we can use 6-12 Group lines to gather the separated oil gas and water from the entire section instead of using up to 90 flowlines to move production to the tank batteries for separation. The Group line ability to gather the entire section helps us eliminate 2 batteries per section by simply utilizing the group line approach.

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:** Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated.

Soil treatment: 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.

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:

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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:

Will seed be harvested for use in site reclamation?

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: Amithy

Last Name: Crawford

Phone: (432)620-1909

Email: acrawford@cimarex.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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

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:

Section 12 - Other Information

Right of Way needed? Y

Use APD as ROW? Y

ROW Type(s): 288100 ROW – O&G Pipeline,288101 ROW – O&G Facility Sites,289001 ROW- O&G Well Pad

ROW Applications

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

SUPO Additional Information:

Use a previously conducted onsite? Y

Previous Onsite information: Moved well 56' west and 54' south so as to avoid gas pipelines. V-Door West. Top soil east. Interim reclamation: All sides. Access road at existing road at SE corner. Cut off NE corner of pad and only 130 ft. to the south. Pad size= 500' (E/W) x 510' (N/S). Flowlines from SW corner, south and west, to battery

Other SUPO Attachment

Dos_Equis_11_14_Fed_Com_8H_Bulk_Line_ROW_20200115081237.pdf

Dos_Equis_11_14_Fed_Com_8H_Lease_Map_20200115081244.pdf

Dos_Equis_11_14_Fed_Com_8H_SUPO_Map_20200115081248.pdf

Dos_Equis_11_14_Fed_Com_8H_SUPO_20200115085204.pdf



APD ID: 10400047446

Submission Date: 09/17/2019

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

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 11-14 FEDERAL COM

Well Number: 8H

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 11-14 FEDERAL COM

Well Number: 8H

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 11-14 FEDERAL COM

Well Number: 8H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



APD ID: 10400047446

Submission Date: 09/17/2019

Highlighted data
reflects the most
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: DOS EQUIS 11-14 FEDERAL COM

Well Number: 8H

[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: