Form 3160-3 FORM APPROVED OMB No. 1004-0137 (June 2015) Expires: January 31, 2018 **UNITED STATES** DEPARTMENT OF THE INTERIOR 5. Lease Serial No. BUREAU OF LAND MANAGEMENT APPLICATION FOR PERMIT TO DRILL OR REENTER 6. If Indian, Allotee or Tribe Name 7. If Unit or CA Agreement, Name and No. DRILL REENTER 1a. Type of work: 1b. Type of Well: Oil Well Gas Well Other 8. Lease Name and Well No. 1c. Type of Completion: Hydraulic Fracturing Single Zone Multiple Zone 2. Name of Operator 9. API Well No. 30-015-55041 3a. Address 3b. Phone No. (include area code) 10. Field and Pool, or Exploratory 4. Location of Well (Report location clearly and in accordance with any State requirements.\*) 11. Sec., T. R. M. or Blk. and Survey or Area At surface At proposed prod. zone 14. Distance in miles and direction from nearest town or post office\* 12. County or Parish 13. State 15. Distance from proposed\* 16. No of acres in lease 17. Spacing Unit dedicated to this well location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 18. Distance from proposed location\* 19. Proposed Depth 20. BLM/BIA Bond No. in file to nearest well, drilling, completed, applied for, on this lease, ft. 23. Estimated duration 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 22. Approximate date work will start\* 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 2. A Drilling Plan. Item 20 above) 3. A Surface Use Plan (if the location is on National Forest System Lands, the 5. Operator certification. 6. Such other site specific information and/or plans as may be requested by the SUPO must be filed with the appropriate Forest Service Office). 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

APPROVED WITH CONDITIONS Released to Imaging: 5/16/2024 2:04:15 PM Approval Date: 04/29/2024

(Continued on page 2)

\*(Instructions on page 2)

#### <u>District I</u> 1625 N. French Dr., Hobbs, NM 88240

Phone: (575) 393-6161 Fax: (575) 393-0720 <u>District II</u>
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

<u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

#### State of New Mexico

# Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr.

Santa Fe, NM 87505

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

☐ AMENDED REPORT

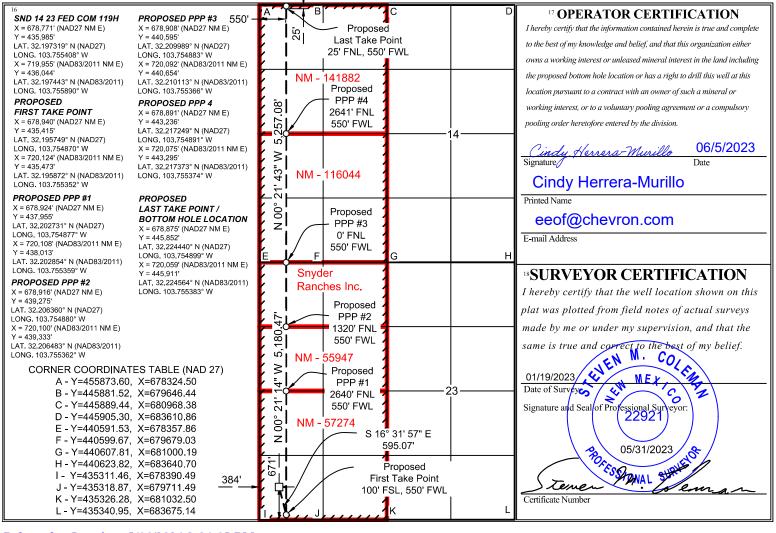
#### WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Numbe		<sup>2</sup> Pool Code							
30-015-5504	1	13367	ING						
<sup>4</sup> Property Code		<sup>5</sup> Property Name							
335883		SND 14 23 FED COM							
<sup>7</sup> OGRID No.		<sup>8</sup> Operator Name							
4323	CHEVRON U.S.A. INC. 3,538'								

<sup>10</sup> Surface Location

				Sui	Tace Locat	1011							
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County				
M	23	24 SOUTH	31 EAST, N.M.P.M		671'	SOUTH	384'	WEST	EDDY				
	<sup>11</sup> Bottom Hole Location If Different From Surface												
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County				
D	14	24 SOUTH	31 EAST, N.M.P.M		25'	NORTH	550'	WEST	EDDY				
12 Dedicated A	cres 13 Joi	nt or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.									
640 Infill				Defining well	is SND 14 23 FI	ED COM 226H (3	0-015-48007), (	COM Agreement No	. NMNM143539-H				

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



I. Operator:

Chevron USA

## State of New Mexico Energy, Minerals and Natural Resources Department

Submit Electronically Via E-permitting

Date: 6 / 05 / 23

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

## NATURAL GAS MANAGEMENT PLAN

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

## Section 1 – Plan Description <u>Effective May 25, 2021</u>

OGRID:

4323

<u>=</u>			_ 0 011121			<u> </u>							
I. Type: ⊠ Original □ Amendment due to □ 19.15.27.9.D(6)(a) NMAC □ 19.15.27.9.D(6)(b) NMAC □ Other.													
If Other, please describe: _													
<b>III.</b> Well(s): Provide the to be recompleted from a si					f wells proposed	to be drilled or proposed							
Well Name	API	ULSTR	Footages	Anticipated	Anticipated	Anticipated							
				Oil BBL/D	Gas MCF/D	Produced Water							
						BBL/D							
SND 14 23 FED COM	Pending	UL:M, Sec 23,	671' FSL,	1587 BBL/D	7141MCF/D	2410 BBL/D							
#119H		T24S-R31E	384' FEL										
SND 14 23 FED COM	Pending	UL:M,Sec 23,	671' FSL,	1671 BBL/D	3667 MCF/D	5830 BBL/D							
#513H	1 chains	T24S-R31E	404' FEL	10/1 BBE/B	3007 1/10172	3030 BBE/B							
SND 14 23 FED COM	Pending	UL:M,Sec 23,	671' FNL,	1598 BBL/D	4125 MCF/D	2939 BBL/D							
#619H		T24S-R31E	424' FEL										
SND 14 23 FED COM	Pending	UL:M,Sec 23,	671' FNL,	1598 BBL/D	4125 MCF/D	2939 BBL/D							
#620H		T24S-R31E	444' FEL										
SND 14 23 FED COM	Pending	UL:M,Sec23,	671' FNL,	1253 BBL/D	3235 MCF/D	2305 BBL/D							
#621H		T24S-R31E	464' FEL										

IV. Central Delivery Point Name: SND CTB 12 [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
SND 14 23 FED COM #119H	Pending	August 2025	N/A	N/A	N/A	N/A
SND 14 23 FED COM #513H	Pending	August 2025	N/A	N/A	N/A	N/A
SND 14 23 FED COM #619\H	Pending	August 2025	N/A	N/A	N/A	N/A
SND 14 23 FED COM #620H	Pending	August 2025	N/A	N/A	N/A	N/A

Page 1 of 4

SND 14 23 FED	Pending	August 2025	N/A	N/A	N/A	N/A
COM #621H		_				

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

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

VIII. Best Management Practices: 

Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

# Section 2 – Enhanced Plan EFFECTIVE APRIL 1, 2022

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

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

#### IX. Anticipated Natural Gas Production:

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

## X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

**XIV.** Confidentiality: 

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

(h)

(i)

# Section 3 - Certifications <u>Effective May 25, 2021</u>

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal: 🖂 Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or ☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. If Operator checks this box, Operator will select one of the following: Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or Venting and Flaring Plan. 

Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including: power generation on lease; (a) **(b)** power generation for grid; compression on lease; (c) (d) liquids removal on lease; reinjection for underground storage; (e) **(f)** reinjection for temporary storage; **(g)** reinjection for enhanced oil recovery; fuel cell production; and

# **Section 4 - Notices**

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

other alternative beneficial uses approved by the division.

- Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become (a) unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or
- Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.
- 2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

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

Signature:  Cindy Herrera-Murillo
Printed Name: Cindy Herrera-Murillo
Title: Sr HSE Regulatory affairs Coordinator
E-mail Address: eeof@chevron.com
Date: 06/05/2023
Phone: 575-263-0431
OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Well Name: SND 14 23 FED COM Well Number: 119H

break test will only be performed on operations where BLM documentation states a 5M or less BOP can be utilized. "Chevron respectfully requests a variance to use a FMC Technologies UH-S Multibowl wellhead, which will be run through the rig floor on surface casing. BOPE will be nippled up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC Technologies and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal. All tests performed by third party.

**Testing Procedure:** The stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, production, and production liner will take place. A full BOP test will be performed per hole section, unless approval from BLM is received otherwise (see variance request). Flex choke hose will be used for all wells on the pad (see attached specs and variance). BOP test pressures and other documented tests may be recorded and documented via utilization of the IPT 'Suretec' Digital BOP Test Method in lieu of the standard test chart. In the event the IPT system is unavailable, the standard test chart will be used.

## **Choke Diagram Attachment:**

D2.1a\_BLM\_5M\_Choke\_Manifold\_Diagram\_20210823122058.pdf

D2.2a\_BLM\_Choke\_Hose\_Test\_Specs\_and\_Pressure\_Test\_Continental\_20210823122144.pdf

#### **BOP Diagram Attachment:**

D2.1b NM Slim Hole Wellhead 6650 psi UH S 20210823122152.pdf

D2.3a\_BLM\_5M\_Annular\_10M\_Rams\_Stackup\_and\_Test\_Plan\_20210823122216.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	16	13.375	NEW	API	N	0	450	0	450	3538	3088	450	J-55	54.5	BUTT	5.43	2.04	DRY	37.0 6	DRY	34.7 8
2	INTERMED IATE	12.2 5	9.625	NEW	API	N	0	4524	0	4464	3465	-926	4524	L-80	40	BUTT	1.52	2.65	DRY	5.3	DRY	5.13
3	PRODUCTI ON	8.75	7.0	NEW	API	N	0	7980	0	7920	3465	-4382	7980	P- 110	-	OTHER - BLUE	2.18	4.4	DRY	4.04	DRY	4.04
4		6.12 5	5.0	NEW	API	N	7780	8430	7720	8320	-4182	-4782	650	P- 110	_	OTHER - W513	1.75	4.2	DRY	2.46	DRY	3.87
5	LINER	4.5	4.5	NEW	API	N	8730	18797	8320	8493	-4782	-4955	10067	P- 110		OTHER - W521	1.75	4.2	DRY	2.46	DRY	3.87

#### **Casing Attachments**

Well Name: SND 14 23 FED COM Well Number: 119H

Casing ID: 1

String

**SURFACE** 

**Inspection Document:** 

**Spec Document:** 

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

 $13.375\_54.5ppf\_J55\_STC\_20220823114831.pdf$ 

Casing ID: 2

String

INTERMEDIATE

**Inspection Document:** 

**Spec Document:** 

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

9.625in\_BTC\_40ppf\_L80\_20230606074105.pdf

Casing ID: 3

**String** 

**PRODUCTION** 

**Inspection Document:** 

**Spec Document:** 

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

7in\_Blue\_SD\_29ppf\_P110\_20230606074226.pdf

Well Name: SND 14 23 FED COM Well Number: 119H

## **Casing Attachments**

Casing ID: 4

String

**LINER** 

**Inspection Document:** 

**Spec Document:** 

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

 $5 in\_Wedge\_513\_18 ppf\_P110\_20230606074317.pdf$ 

Casing ID: 5

String

LINER

**Inspection Document:** 

**Spec Document:** 

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

4.5in\_Wedge\_521\_11.6ppf\_P110\_20230606074421.pdf

# **Section 4 - Cement**

String Type	Lead/Tail	Stage Tool Depth	Тор МD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	0	0	0	0	0	0	N/A	N/A
SURFACE	Tail		0	450	292	1.34	14.8	391	25	CLASS C	Extender, Antifoam, Retarder,, Viscosifier
LINER	Lead		0	0	0	0	0	0	0	N/A	N/A

INTERMEDIATE	Lead		0	3524	615	2.29	11.5	1408	25		Extender, Antifoam, Retarder, Viscosifier
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Well Name: SND 14 23 FED COM Well Number: 119H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail		3524	4524	263	1.63	13.6	429	25	CLASS C	Extender, Antifoam, Retarder, Viscosifier
PRODUCTION	Lead		0	6980	446	2.64	11.5	1179	25	CLASS C	Extender, Antifoam, Retarder, Viscosifier
PRODUCTION	Tail		6980	7980	134	1.4	14.5	188	25	CLASS C	Extender, Antifoam, Retarder, Viscosifier
LINER	Lead		7780	1879 7	767	1.69	13.2	1297	25	CLASS H	Extender, Antifoam, Retarder, Viscosifier

# **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: A closed system will be used consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical portatoilet and then hauled to an approved sanitary landfill. If a reserve pit is approved, then the operation will utilize a open loop system via the permitted reserve pit and a closed system will be used consisting of above ground steel tanks All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations. And transporting of E&P waste will follow EPA regulations and accompanying manifests.

**Describe the mud monitoring system utilized:** A mud test shall be performed every 24 hours after muddling up to determine, as applicable: density, viscosity, gel strength, filtration, and pH. Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated a PVT, stroke counter, flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume in compliance with Onshore Order #2. A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

# **Circulating Medium Table**

Top Depth	Bottom Depth Mud Type	Min Weight (lbs/gal) Max Weight (lbs/gal) Density (lbs/cu ft)	PH Viscosity (CP) Salinity (ppm)	Filtration (cc) Additional Characteristics
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Well Name: SND 14 23 FED COM Well Number: 119H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	ЬН	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
7980	1879 7	OIL-BASED MUD	9	10							Viscosity 50-70 Filtrate 5-10 -Due to wellbore instability in the lateral, may exceed the MW weight window needed to maintain overburden stresses
4524	7980	OTHER : WBM/SALT- STURATED	8.5	9.5							Viscosity: 26-36 Filtrate: 15-25
0	450	SPUD MUD	8.3	8.9							Viscosity: 26-36 Filtrate: 15-25
450	4524	SALT SATURATED	8.9	10							Viscosity: 26-36 Filtrate: 15-25 Saturated brine would be used through salt sections.

# **Section 6 - Test, Logging, Coring**

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

Production tests are not planned.

Logs run include: Gamma Ray Log, Directional Survey

Coring Operations are not planned.

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

GAMMA RAY LOG, MUD LOG/GEOLOGIC LITHOLOGY LOG, DIRECTIONAL SURVEY,

Coring operation description for the well:

Conventional whole core samples are not planned; direction survey will be run - will send log(s) when run.

## **Section 7 - Pressure**

Anticipated Bottom Hole Pressure: 4416 Anticipated Surface Pressure: 2547

Anticipated Bottom Hole Temperature(F): 146

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

**Contingency Plans geoharzards description:** 

**Contingency Plans geohazards** 

Well Name: SND 14 23 FED COM Well Number: 119H

#### Hydrogen Sulfide drilling operations plan required? YES

## Hydrogen sulfide drilling operations

Chevron\_Standard\_H2S\_Contingency\_Plan\_20220823121507.pdf

## **Section 8 - Other Information**

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

DefPlan100ft\_SND1423FedCom119H\_R0\_20230606075151.pdf SND\_23\_14\_FED\_COM\_119H\_\_\_9\_Pt\_Plan\_20230606075213.pdf

### Other proposed operations facets description:

- Authorization to use the spudder rig to spud the well and set surface casing. The drilling rig will move in less than 90 days to continue drilling operations. Rig layouts attached.
- \*\*\*Drilling plan attached contains a contingency cement program.

## Other proposed operations facets attachment:

Operational\_Best\_Management\_Practices\_20230531095957.pdf
Visio\_Patterson\_Mock\_Pad\_v.2\_20230531100306.pdf
SND\_P619\_Gas\_Management\_Plan\_\_\_NMOCD\_\_1\_20230606075247.pdf

#### Other Variance attachment:



#### SND 14 23 Fed Com 119H R0 mdv 12May23 Proposal Geodetic Report

Report Date:
Client:
Fleid:
Structure / Slot:
Well:
Borehole:
UBHI / APIs:
Survey Name:
Survey Date:
Tont / AHD / DDI / ERD Ratio:
Coordinate Reference System:
Location Lat / Long:
Location Grid NE YEX:
CRS Grid Convergence Angle:
Grid Scale Factor:
Version / Patch:

May 12, 2023 - 09:48 PM ( UTC 0 )
Chevron
NM, Eddy County (NAD 27 EZ)
Chevron SND Pad 619 / 119H
SND 14 28 Fed Com 119H
SND 14 22 Fed Com 119H Romdy 12Mey23
NND 14 22 Fed Com 119H RO mdy 12Mey23
NND 14 22 Fed Com 119H RO mdy 12Mey23
118.556 / 11146.678 It /s .466 / 1.312
118.556 / 11146.678 It /s .466 / 1.312
21.130.34007N, 1.03\*4519.46162\*W
N 435968.000 ftUS , E 678771.000 ftUS
0.3079\*
0.99994569
2022.2.5.0.11

Survey / DLS Computation:
Vertical Section Azimuth:
Vertical Azimuth:
Vertical Section Azimuth:

Comments	MD	Incl	Azim	TVD	TVDSS	VSEC	NS	EW	DLS	Northing	Easting	Latitude Longitude
Surface	(ft) 0.00	0.00	(°) 170.00	(ft) 0.00	-3,563.00	(ft) 0.00	(ft) 0.00	(ft) 0.00	(°/100ft)	(ftUS) 435,985.00	(ftUS) 678,771.00	(° ' ") (° ' ") 32°11'50.349003"N 103°45'19.461619"W
	100.00 200.00	0.00	170.00 170.00	100.00 200.00	-3,463.00 -3,363.00	0.00	0.00	0.00	0.00	435,985.00 435,985.00	678,771.00 678,771.00	32°11'50.349003"N 103°45'19.461619"W 32°11'50.349003"N 103°45'19.461619"W
Build 1.5°/100ft	300.00 400.00	0.00	170.00 170.00	300.00 400.00	-3,263.00 -3,163.00	0.00	0.00	0.00	0.00	435,985.00 435,985.00	678,771.00 678,771.00	32°11'50.349003"N 103°45'19.461619"W 32°11'50.349003"N 103°45'19.461619"W
	500.00 600.00	1.50 3.00	170.00 170.00	499.99 599.91	-3,063.01 -2,963.09	-1.29 -5.16	-1.29 -5.16	0.23 0.91	1.50 1.50	435,983.71 435,979.85	678,771.23 678,771.91	32°11'50.336235"N 103°45'19.459054"W 32°11'50.297941"N 103°45'19.451363"W
Rustler (RSLR)	677.24 700.00	4.16 4.50	170.00 170.00	677.00 699.69	-2,886.00 -2,863.31	-9.92 -11.61	-9.90 -11.60	1.75 2.04	1.50 1.50	435,975.10 435,973.40	678,772.75 678,773.04	32°11′50.250904″N 103°45′19.441916″W 32°11′50.234147″N 103°45′19.438550″W
Rustler Los Medaños Member	800.00 883.29	6.00 7.25	170.00 170.00	799.27 882.00	-2,763.73 -2,681.00	-20.63 -30.10	-20.61 -30.07	3.63 5.30	1.50 1.50	435,964.39 435,954.93	678,774.63 678,776.30	32°11′50.144896″N 103°45′19.420624″W 32°11′50.051174″N 103°45′19.401800″W
Rustler Los Medaños M-1 Unit	900.00 908.50	7.50 7.63	170.00 170.00	898.57 907.00	-2,664.43 -2,656.00	-32.22 -33.32	-32.18 -33.28	5.67 5.87	1.50 1.50	435,952.82 435,951.72	678,776.67 678,776.87	32°11'50.030251"N 103°45'19.397598"W 32°11'50.019336"N 103°45'19.395406"W
	1,000.00 1,024.78	9.00 9.37	170.00 170.00	997.54 1,022.00	-2,565.46 -2,541.00	-46.36 -50.26	-46.31 -50.21	8.17 8.85	1.50 1.50	435,938.69 435,934.79	678,779.17 678,779.85	32°11'49.890288"N 103°45'19.369487"W
Salado (SLDO)	1,100.00	10.50	170.00	1,096.09	-2,466.91	-63.06	-62.99	11.11	1.50	435,922.01	678,782.11	32°11'49.851699"N 103°45'19.361736"W 32°11'49.725105"N 103°45'19.336310"W
Turn 1.5°/100ft	1,200.00 1,300.00	12.00 11.96	170.00 162.77	1,194.16 1,291.99	-2,368.84 -2,271.01	-82.29 -102.46	-82.20 -102.34	14.49 19.37	1.50 1.50	435,902.80 435,882.67	678,785.49 678,790.37	32°11'49.534814"N 103°45'19.298091"W 32°11'49.335278"N 103°45'19.242619"W
Hold	1,341.52 1,400.00	12.00 12.00	159.78 159.78	1,332.61 1,389.81	-2,230.39 -2,173.19	-110.64 -122.08	-110.50 -121.91	22.14 26.34	1.50 0.00	435,874.50 435,863.09	678,793.14 678,797.34	32°11'49.254367"N 103°45'19.210932"W 32°11'49.141218"N 103°45'19.162728"W
	1,500.00 1,600.00	12.00 12.00	159.78 159.78	1,487.62 1,585.44	-2,075.38 -1,977.56	-141.64 -161.20	-141.43 -160.94	33.53 40.72	0.00	435,843.58 435,824.07	678,804.53 678,811.71	32°11'48.947732"N 103°45'19.080298"W 32°11'48.754247"N 103°45'18.997869"W
	1,700.00 1,800.00	12.00 12.00	159.78 159.78	1,683.25 1,781.06	-1,879.75 -1,781.94	-180.76 -200.31	-180.46 -199.97	47.91 55.09	0.00	435,804.55 435,785.04	678,818.90 678,826.09	32°11'48.560761"N 103°45'18.915440"W 32°11'48.367275"N 103°45'18.833012"W
	1,900.00 2,000.00	12.00 12.00	159.78 159.78	1,878.88 1,976.69	-1,684.12 -1,586.31	-219.87 -239.43	-219.49 -239.00	62.28 69.47	0.00	435,765.53 435,746.01	678,833.28 678,840.47	32°11'48.173790"N 103°45'18.750583"W 32°11'47.980304"N 103°45'18.668154"W
	2,100.00 2,200.00	12.00 12.00	159.78 159.78	2,074.50 2,172.32	-1,488.50 -1,390.68	-258.99 -278.55	-258.52 -278.03	76.66 83.85	0.00	435,726.50 435,706.99	678,847.65 678,854.84	32°11'47.786818"N 103°45'18.585726"W 32°11'47.593333"N 103°45'18.503297"W
	2,300.00 2,400.00	12.00 12.00	159.78 159.78	2,270.13 2,367.94	-1,292.87 -1,195.06	-298.11 -317.67	-297.54 -317.06	91.04 98.22	0.00	435,687.47 435,667.96	678,862.03 678,869.22	32°11'47.399847"N 103°45'18.420869"W 32°11'47.206361"N 103°45'18.338440"W
	2,500.00 2,600.00	12.00 12.00	159.78 159.78	2,465.76 2,563.57	-1,097.24 -999.43	-337.23 -356.79	-336.57 -356.09	105.41 112.60	0.00	435,648.45 435,628.93	678,876.41 678,883.59	32°11'47.012875"N 103°45'18.256012"W 32°11'46.819390"N 103°45'18.173584"W
	2,700.00 2,800.00	12.00 12.00	159.78 159.78	2,661.39 2,759.20	-901.61 -803.80	-376.35 -395.91	-375.60 -395.12	119.79 126.98	0.00	435,609.42 435,589.90	678,890.78 678,897.97	32°11'46.625904"N 103°45'18.091156"W 32°11'46.432418"N 103°45'18.008728"W
Castile (CSTL)	2,855.00 2,900.00	12.00 12.00	159.78 159.78	2,813.00 2,857.01	-750.00 -705.99	-406.67 -415.47	-405.85 -414.63	130.93 134.17	0.00	435,579.17 435,570.39	678,901.92 678,905.16	32°11'46.325994"N 103°45'17.963390"W 32°11'46.238932"N 103°45'17.926300"W
	3,000.00 3,100.00	12.00 12.00 12.00	159.78 159.78	2,954.83 3.052.64	-608.17 -510.36	-435.03 -454.59	-434.15 -453.66	141.35 148.54	0.00	435,550.88 435,531.36	678,912.35 678,919.53	32°11'46.045446"N 103°45'17.843873"W 32°11'45.851960"N 103°45'17.761445"W
Drop .75°/100ft	3,151.81	12.00	159.78	3,103.31	-459.69	-464.72	-463.77	152.27	0.00	435,521.26	678,923.26	32°11'45.751723"N 103°45'17.718742"W
	3,200.00 3,300.00	11.64 10.89	159.78 159.78	3,150.49 3,248.56	-412.51 -314.44	-474.00 -492.38	-473.04 -491.37	155.68 162.43	0.75 0.75	435,511.99 435,493.66	678,926.67 678,933.42	32°11'45.659859"N 103°45'17.679607"W 32°11'45.478087"N 103°45'17.602170"W
	3,400.00 3,500.00	10.14 9.39	159.78 159.78	3,346.88 3,445.43	-216.12 -117.57	-509.55 -525.50	-508.50 -524.41	168.74 174.61	0.75 0.75	435,476.53 435,460.62	678,939.73 678,945.60	32°11'45.308274"N 103°45'17.529828"W 32°11'45.150450"N 103°45'17.462593"W
	3,600.00 3,700.00	8.64 7.89	159.78 159.78	3,544.19 3,643.15	-18.81 80.15	-540.24 -553.76	-539.12 -552.61	180.02 184.99	0.75 0.75	435,445.91 435,432.42	678,951.01 678,955.98	32°11'45.004641"N 103°45'17.400477"W 32°11'44.870872"N 103°45'17.343490"W
	3,800.00 3,900.00	7.14 6.39	159.78 159.78	3,742.29 3,841.59	179.29 278.59	-566.07 -577.15	-564.89 -575.94	189.51 193.59	0.75 0.75	435,420.15 435,409.09	678,960.50 678,964.58	32°11'44.749166"N 103°45'17.291642"W 32°11'44.639545"N 103°45'17.244942"W
	4,000.00 4,100.00	5.64 4.89	159.78 159.78	3,941.04 4,040.62	378.04 477.62	-587.01 -595.64	-585.78 -594.39	197.21 200.38	0.75 0.75	435,399.26 435,390.64	678,968.20 678,971.37	32°11'44.542026"N 103°45'17.203398"W 32°11'44.456627"N 103°45'17.167017"W
	4,200.00 4,300.00	4.14 3.39	159.78 159.78	4,140.31 4,240.09	577.31 677.09	-603.04 -609.22	-601.78 -607.94	203.10 205.37	0.75 0.75	435,383.25 435,377.09	678,974.09 678,976.36	32°11'44.383361"N 103°45'17.135805"W 32°11'44.322243"N 103°45'17.109768"W
	4,400.00 4,500.00	2.64 1.89	159.78 159.78	4,339.95 4,439.87	776.95 876.87	-614.17 -617.89	-612.88 -616.59	207.19 208.56	0.75 0.75	435,372.15 435,368.44	678,978.18 678,979.55	32°11'44.273282"N 103°45'17.088910"W 32°11'44.236486"N 103°45'17.073235"W
Lamar (LMAR) Bell Canyon (BEL)	4,544.15 4.589.16	1.56 1.22	159.78 159.78	4,484.00 4.529.00	921.00 966.00	-619.14 -620.17	-617.84 -618.87	209.02 209.40	0.75 0.75	435,367.19 435,366.17	678,980.01 678,980.39	32°11'44.224114"N 103°45'17.067964"W 32°11'44.213943"N 103°45'17.063631"W
, ,	4,600.00 4,700.00	1.14 0.39	159.78 159.78	4,539.84 4,639.83	976.84 1,076.83	-620.38 -621.64	-619.08 -620.33	209.48 209.94	0.75 0.75	435,365.96 435,364.70	678,980.46 678,980.93	32°11'44.211862"N 103°45'17.062745"W 32°11'44.199414"N 103°45'17.057442"W
Hold Vertical	4,752.21 4,800.00	0.00	159.78 159.78	4,692.04 4,739.83	1,129.04 1,176.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.75 0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	4,900.00 5,000.00	0.00	159.78 159.78	4,839.83 4,939.83	1,276.83 1,376.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00 0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	5,100.00 5,200.00	0.00	159.78 159.78	5,039.83 5.139.83	1,476.83 1,576.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	5,300.00	0.00	159.78	5,239.83	1,676.83	-621.81	-620.50	210.00	0.00	435,364.53	678,980.99	32°11'44.197754"N 103°45'17.056735"W
Cherry Canyon (CHR)	5,400.00 5,469.17	0.00	159.78 159.78	5,339.83 5,409.00	1,776.83 1,846.00	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	5,500.00 5,600.00	0.00	159.78 159.78	5,439.83 5,539.83	1,876.83 1,976.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	5,700.00 5,800.00	0.00 0.00	159.78 159.78	5,639.83 5,739.83	2,076.83 2,176.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00 0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	5,900.00 6,000.00	0.00	159.78 159.78	5,839.83 5,939.83	2,276.83 2,376.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	6,100.00 6,200.00	0.00	159.78 159.78	6,039.83 6,139.83	2,476.83 2,576.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	6,300.00 6,400.00	0.00	159.78 159.78	6,239.83 6,339.83	2,676.83 2,776.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	6,500.00 6,600.00	0.00	159.78 159.78	6,439.83 6,539.83	2,876.83 2,976.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
Brushy Canyon (BCN)	6,700.00 6,782.17	0.00	159.78 159.78	6,639.83 6,722.00	3,076.83 3,159.00	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	6,800.00 6,900.00	0.00	159.78 159.78	6,739.83 6,839.83	3,176.83 3,276.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	7,000.00 7,100.00	0.00	159.78 159.78	6,939.83 7,039.83	3,376.83 3,476.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	7,200.00 7,300.00	0.00 0.00	159.78 159.78	7,139.83 7,239.83	3,576.83 3,676.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	7,400.00 7,500.00	0.00	159.78 159.78	7,339.83 7,439.83	3,776.83 3.876.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	7,600.00 7,700.00	0.00	159.78 159.78	7,539.83 7,639.83	3,976.83 4,076.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
	7,800.00 7,900.00	0.00	159.78 159.78	7,739.83 7,839.83	4,176.83 4,276.83	-621.81 -621.81	-620.50 -620.50	210.00 210.00	0.00 0.00	435,364.53 435,364.53	678,980.99 678,980.99	32°11'44.197754"N 103°45'17.056735"W 32°11'44.197754"N 103°45'17.056735"W
Build 10°/100ft	7,980.21 8,000.00	0.00	159.78 357.23	7,920.04 7,939.82	4,357.04 4,376.82	-621.81 -621.47	-620.50 -620.16	210.00 210.00 209.98	0.00 10.00	435,364.53 435,364.88	678,980.99 678,980.97	32°11'44.197754"N 103°45'17.056735"W 32°11'44.201132"N 103°45'17.056906"W
	8,100.00 8,200.00	11.98 21.98	357.23 357.23	8,038.96 8,134.48	4,475.96 4,571.48	-609.34 -580.20	-608.04 -578.91	209.96 209.40 207.99	10.00 10.00 10.00	435,377.00 435,406.12	678,980.39 678,978.98	32°11'44.321099"N 103°45'17.062974"W 32°11'44.609431"N 103°45'17.077558"W
FTP Cross	8,223.00	24.28	357.23	8,155.63	4,592.63	-571.18	-569.88	207.55	10.00	435,415.15	678,978.54	32°11'44.698741"N 103°45'17.082075"W
Bone Spring (BSL)	8,300.00 8,392.96	31.98 41.27	357.23 357.23	8,223.48 8,298.00	4,660.48 4,735.00	-534.94 -479.59	-533.65 -478.32	205.80 203.12	10.00 10.00	435,451.38 435,506.71	678,976.78 678,974.11	32°11'45.057366"N 103°45'17.100214"W 32°11'45.605035"N 103°45'17.127916"W
BSL_carb rich top	8,400.00 8,463.47	41.98 48.33	357.23 357.23	8,303.27 8,348.00	4,740.27 4,785.00	-474.91 -429.98	-473.65 -428.73	202.89 200.72	10.00 10.00	435,511.38 435,556.30	678,973.88 678,971.71	32°11'45.651294"N 103°45'17.130256"W 32°11'46.095910"N 103°45'17.152745"W
Upper Avalon (AVU)	8,500.00 8,556.58	51.98 57.64	357.23 357.23	8,371.41 8,404.00	4,808.41 4,841.00	-401.96 -355.78	-400.72 -354.55	199.36 197.13	10.00 10.00	435,584.31 435,630.47	678,970.35 678,968.12	32°11'46.373169"N 103°45'17.166769"W 32°11'46.830101"N 103°45'17.189881"W
	8,600.00 8,700.00	61.98 71.98	357.23 357.23	8,425.83 8,464.89	4,862.83 4,901.89	-318.29 -226.46	-317.07 -225.26	195.31 190.87	10.00 10.00	435,667.94 435,759.75	678,966.30 678,961.86	32°11'47.201058"N 103°45'17.208645"W 32°11'48.109804"N 103°45'17.254611"W
Landing Point	8,800.00 8,880.21	81.98 90.00	357.23 357.23	8,487.39 8,493.00	4,924.39 4,930.00	-129.24 -49.36	-128.07 -48.22	186.16 182.30	10.00 10.00	435,856.94 435,936.79	678,957.15 678,953.29	32°11'49.071797"N 103°45'17.303270"W 32°11'49.862193"N 103°45'17.343250"W
	8,900.00 9,000.00	90.00 90.00	357.23 357.23	8,493.00 8,493.00	4,930.00 4,930.00	-29.59 70.32	-28.45 71.43	181.34 176.51	0.00 0.00	435,956.55 436,056.43	678,952.33 678,947.50	32°11'50.057846"N 103°45'17.353146"W 32°11'51.046482"N 103°45'17.403154"W
	9,100.00 9,200.00	90.00 90.00	357.23 357.23	8,493.00 8,493.00	4,930.00 4,930.00	170.24 270.15	171.32 271.20	171.67 166.84	0.00	436,156.31 436,256.19	678,942.66 678,937.83	32°11'52.035119"N 103°45'17.453162"W 32°11'53.023755"N 103°45'17.503170"W
Turn 2°/100ft	9,218.15 9,300.00	90.00 90.00	357.23 358.87	8,493.00 8,493.00	4,930.00 4,930.00	288.28 370.10	289.33 371.13	165.96 163.17	0.00	436,274.32 436,356.11	678,936.95 678,934.16	32°11'53.203228"N 103°45'17.512248"W 32°11'54.012778"N 103°45'17.539580"W
Hold	9,339.21 9,400.00	90.00 90.00	359.65 359.65	8,493.00 8,493.00	4,930.00 4,930.00	409.31 470.10	410.34 471.12	162.66 162.29	2.00 0.00	436,395.31 436,456.10	678,933.65 678,933.28	32°11′54.400790″N 103°45′17.543035″W 32°11′55.002314″N 103°45′17.543551″W
	9,500.00 9,600.00	90.00 90.00	359.65 359.65	8,493.00 8,493.00	4,930.00 4,930.00	570.10 670.10	571.12 671.12	161.68 161.07	0.00 0.00	436,556.09 436,656.08	678,932.67 678,932.06	32°11'55.991864"N 103°45'17.544399"W 32°11'56.981414"N 103°45'17.545247"W
	.,			.,	,					,	,	

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (° ' ")	Longitude (° ' ")
-	9,700.00	90.00	359.65	8,493.00	4,930.00	770.10	771.12	160.46	0.00	436,756.08	678,931.45		103°45'17.546095"W
	9,800.00 9.900.00	90.00 90.00	359.65 359.65	8,493.00	4,930.00 4.930.00	870.10	871.12	159.85 159.24	0.00	436,856.07	678,930.84 678,930.23		103°45'17.546943"W 103°45'17.547791"W
	10,000.00	90.00	359.65	8,493.00 8,493.00	4,930.00	970.10 1,070.10	971.12 1,071.11	159.24	0.00	436,956.06 437,056.05	678,930.23		103°45'17.548639'W
	10,100.00	90.00	359.65	8,493.00	4,930.00	1,170.10	1,171.11	158.02	0.00	437,156.05	678,929.01	32°12'1.929164"N	103°45'17.549487"W
	10,200.00	90.00	359.65	8,493.00	4,930.00	1,270.10	1,271.11	157.41	0.00	437,256.04	678,928.40	32°12'2.918714"N	103°45'17.550334"W
	10,300.00 10,400.00	90.00 90.00	359.65 359.65	8,493.00 8,493.00	4,930.00 4,930.00	1,370.10 1,470.10	1,371.11 1,471.11	156.79 156.18	0.00	437,356.03 437,456.02	678,927.79 678,927.18		103°45'17.551182"W 103°45'17.552030"W
	10,500.00	90.00	359.65	8,493.00	4,930.00	1,570.10	1,571.10	155.57	0.00	437,556.02	678,926.56	32°12'5.887363"N	103°45'17.552878"W
	10,600.00	90.00	359.65	8,493.00	4,930.00	1,670.10	1,671.10	154.96	0.00	437,656.01	678,925.95	32°12'6.876912"N	103°45'17.553725"W
	10,700.00 10.800.00	90.00 90.00	359.65 359.65	8,493.00 8.493.00	4,930.00 4.930.00	1,770.10 1.870.10	1,771.10 1.871.10	154.35 153.74	0.00	437,756.00 437,855.99	678,925.34 678,924.73		103°45'17.554573"W 103°45'17.555420"W
	10,900.00	90.00	359.65	8,493.00	4,930.00	1,970.10	1,971.10	153.13	0.00	437,955.99	678,924.12		103°45'17.556268"W
	11,000.00	90.00	359.65	8,493.00	4,930.00	2,070.10	2,071.09	152.52	0.00	438,055.98	678,923.51		103°45'17.557115"W
	11,100.00 11,200.00	90.00	359.65 359.65	8,493.00 8.493.00	4,930.00 4.930.00	2,170.10 2.270.10	2,171.09 2.271.09	151.91 151.30	0.00	438,155.97 438,255.96	678,922.90 678,922.29		103°45'17.557963"W 103°45'17.558810"W
	11,300.00	90.00	359.65	8,493.00	4,930.00	2,370.10	2,371.09	150.69	0.00	438,355.96	678,921.68	32°12'13.803758"N	103°45'17.559657'W
	11,400.00	90.00	359.65	8,493.00	4,930.00	2,470.10	2,471.09	150.08	0.00	438,455.95	678,921.07	32°12'14.793307"N	103°45'17.560505"W
	11,500.00 11,600.00	90.00 90.00	359.65 359.65	8,493.00 8,493.00	4,930.00 4.930.00	2,570.10 2,670.10	2,571.09 2.671.08	149.46 148.85	0.00	438,555.94 438,655.93	678,920.46 678,919.85	32°12'15.782857"N	103°45'17.561352"W 103°45'17.562199"W
	11,700.00	90.00	359.65	8,493.00	4,930.00	2,670.10	2,771.08	148.24	0.00	438,755.93	678,919.23	32°12'17.761955"N	103°45'17.563046"W
	11,800.00	90.00	359.65	8,493.00	4,930.00	2,870.10	2,871.08	147.63	0.00	438,855.92	678,918.62	32°12'18.751504"N	103°45'17.563893"W
	11,900.00 12,000.00	90.00 90.00	359.65 359.65	8,493.00 8.493.00	4,930.00 4.930.00	2,970.10 3.070.10	2,971.08 3.071.08	147.02 146.41	0.00	438,955.91 439,055.90	678,918.01 678,917.40	32°12'19.741053"N	103°45'17.564740"W 103°45'17.565587"W
	12,000.00	90.00	359.65	8,493.00	4,930.00	3,070.10	3,071.08	145.80	0.00	439,055.90	678,917.40		103°45'17.565587'W
	12,200.00	90.00	359.65	8,493.00	4,930.00	3,270.10	3,271.07	145.19	0.00	439,255.89	678,916.18	32°12'22.709700"N	103°45'17.567281"W
	12,300.00 12,400.00	90.00 90.00	359.65 359.65	8,493.00 8.493.00	4,930.00 4.930.00	3,370.10 3,470.10	3,371.07 3.471.07	144.58 143.97	0.00	439,355.88 439,455.87	678,915.57 678,914.96		103°45'17.568128"W 103°45'17.568975"W
	12,400.00	90.00	359.65	8,493.00	4,930.00	3,470.10	3,471.07	143.97	0.00	439,455.87	678,914.95		103°45'17.568975'W
	12,600.00	90.00	359.65	8,493.00	4,930.00	3,670.10	3,671.06	142.75	0.00	439,655.86	678,913.74	32°12'26.667895"N	103°45'17.570669"W
	12,700.00	90.00	359.65	8,493.00	4,930.00	3,770.10	3,771.06	142.13	0.00	439,755.85	678,913.13		103°45'17.571515"W
	12,800.00 12,900.00	90.00 90.00	359.65 359.65	8,493.00 8,493.00	4,930.00 4,930.00	3,870.10 3,970.10	3,871.06 3,971.06	141.52 140.91	0.00	439,855.84 439,955.84	678,912.52 678,911.90	32°12'28.646992"N 32°12'29.636541"N	103°45'17.572362"W 103°45'17.573209"W
	13,000.00	90.00	359.65	8,493.00	4,930.00	4,070.10	4,071.06	140.30	0.00	440,055.83	678,911.29	32°12'30.626089"N	103°45'17.574055"W
	13,100.00	90.00	359.65	8,493.00	4,930.00	4,170.10	4,171.06	139.69	0.00	440,155.82	678,910.68	32°12'31.615638"N	103°45'17.574902"W
	13,200.00 13,300.00	90.00 90.00	359.65 359.65	8,493.00 8,493.00	4,930.00 4,930.00	4,270.10 4,370.10	4,271.05 4,371.05	139.08 138.47	0.00	440,255.81 440,355.81	678,910.07 678,909.46		103°45'17.575748"W 103°45'17.576595"W
	13,400.00	90.00	359.65	8,493.00	4,930.00	4,470.10	4,471.05	137.86	0.00	440,455.80	678,908.85	32°12'34.584283"N	103°45'17.577441"W
	13,500.00	90.00	359.65	8,493.00	4,930.00	4,570.10	4,571.05	137.25	0.00	440,555.79	678,908.24	32°12'35.573832"N	103°45'17.578288"W
MP, Turn 2°/100ft Hold to TD	13,539.21	90.00	359.65 359.64	8,493.00 8,493.00	4,930.00 4,930.00	4,609.31 4,609.79	4,610.26 4,610.74	137.01 137.00	0.00	440,595.00 440,595.48	678,908.00 678,908.00		103°45'17.578619"W 103°45'17.578624"W
Tiola to TD	13,600.00	90.00	359.64	8,493.00	4,930.00	4,670.10	4,671.05	136.63	0.00	440,655.78	678,907.62		103°45'17.579253"W
	13,700.00	90.00	359.64	8,493.00	4,930.00	4,770.10	4,771.04	136.00	0.00	440,755.78	678,906.99		103°45'17.580295"W
	13,800.00 13,900.00	90.00 90.00	359.64 359.64	8,493.00 8.493.00	4,930.00 4,930.00	4,870.10 4,970.10	4,871.04 4.971.04	135.37 134.74	0.00	440,855.77 440,955.76	678,906.36 678,905.74		103°45'17.581338"W 103°45'17.582380"W
	14,000.00	90.00	359.64	8,493.00	4,930.00	5,070.10	5,071.04	134.12	0.00	441,055.75	678,905.11	32°12'40.521572"N	103°45'17.583423'W
	14,100.00	90.00	359.64	8,493.00	4,930.00	5,170.10	5,171.04	133.49	0.00	441,155.75	678,904.48	32°12'41.511120"N	103°45'17.584465"W
	14,200.00 14,300.00	90.00 90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4,930.00	5,270.10 5,370.10	5,271.03 5.371.03	132.86 132.23	0.00	441,255.74 441,355.73	678,903.85 678,903.22	32°12'42.500668"N	103°45'17.585507"W 103°45'17.586550"W
	14,400.00	90.00	359.64	8,493.00	4,930.00	5,470.10	5,471.03	131.60	0.00	441,455.72	678,902.60	32°12'44.479763"N	103°45'17.587592"W
	14,500.00	90.00	359.64	8,493.00	4,930.00	5,570.10	5,571.03	130.98	0.00	441,555.71	678,901.97	32°12'45.469311"N	103°45'17.588634"W
	14,600.00 14,700.00	90.00 90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4,930.00	5,670.10 5,770.10	5,671.03 5.771.02	130.35 129.72	0.00	441,655.71 441,755.70	678,901.34 678,900.71	32°12'46.458859"N 32°12'47.448407"N	103°45'17.589676"W 103°45'17.590718"W
	14,800.00	90.00	359.64	8,493.00	4,930.00	5,870.10	5,871.02	129.09	0.00	441,855.69	678,900.09	32°12'48.437954"N	103°45'17.591760"W
	14,900.00	90.00	359.64	8,493.00	4,930.00	5,970.10	5,971.02	128.47	0.00	441,955.68	678,899.46		103°45'17.592803"W
	15,000.00 15,100.00	90.00 90.00	359.64 359.64	8,493.00 8.493.00	4,930.00 4.930.00	6,070.10 6,170.10	6,071.02 6.171.02	127.84 127.21	0.00	442,055.68 442,155.67	678,898.83 678.898.20		103°45'17.593845"W 103°45'17.594886"W
	15,200.00	90.00	359.64	8,493.00	4,930.00	6,270.10	6,271.01	126.58	0.00	442,255.66	678,897.58		103°45'17.595928"W
	15,300.00	90.00	359.64	8,493.00	4,930.00	6,370.10	6,371.01	125.95	0.00	442,355.65	678,896.95		103°45'17.596970"W
	15,400.00 15,500.00	90.00 90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4,930.00	6,470.10 6,570.10	6,471.01 6,571.01	125.33 124.70	0.00	442,455.65 442,555.64	678,896.32 678,895.69	32°12'54.375239"N 32°12'55 364787"N	103°45'17.598012"W 103°45'17.599054"W
	15,600.00	90.00	359.64	8,493.00	4,930.00	6,670.10	6,671.01	124.07	0.00	442,655.63	678,895.06	32°12'56.354334"N	103°45'17.600096"W
	15,700.00	90.00	359.64	8,493.00	4,930.00	6,770.10	6,771.00	123.44	0.00	442,755.62	678,894.44	32°12'57.343881"N	103°45'17.601137"W
	15,800.00 15,900.00	90.00 90.00	359.64 359.64	8,493.00 8.493.00	4,930.00 4.930.00	6,870.10 6,970.10	6,871.00 6,971.00	122.82 122.19	0.00	442,855.62 442,955.61	678,893.81 678.893.18	32°12'58.333428"N 32°12'59.322975"N	103°45'17.602179"W 103°45'17.603221"W
	16,000.00	90.00	359.64	8,493.00	4,930.00	7,070.10	7,071.00	121.56	0.00	443,055.60	678,892.55	32°13'0.312523"N	103°45'17.604262"W
	16,100.00	90.00	359.64	8,493.00	4,930.00	7,170.10	7,171.00	120.93	0.00	443,155.59	678,891.93		103°45'17.605304"W
	16,200.00 16,300.00	90.00 90.00	359.64 359.64	8,493.00 8.493.00	4,930.00 4.930.00	7,270.10 7.370.10	7,270.99 7.370.99	120.31 119.68	0.00	443,255.59 443,355.58	678,891.30 678,890.67		103°45'17.606345"W 103°45'17.607387"W
	16,400.00	90.00	359.64	8,493.00	4,930.00	7,470.10	7,470.99	119.05	0.00	443,455.57	678,890.04	32°13'4.270711"N	103°45'17.608428"W
	16,500.00	90.00	359.64	8,493.00	4,930.00	7,570.10	7,570.99	118.42	0.00	443,555.56	678,889.42		103°45'17.609470"W
	16,600.00 16,700.00	90.00 90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4.930.00	7,670.10 7,770.10	7,670.99 7.770.98	117.79 117.17	0.00	443,655.56 443,755.55	678,888.79 678,888.16		103°45'17.610511"W 103°45'17.611552"W
	16,800.00	90.00	359.64	8,493.00	4,930.00	7,870.10	7,870.98	116.54	0.00	443,855,54	678.887.53		103°45'17.612594"W
	16,900.00	90.00	359.64	8,493.00	4,930.00	7,970.10	7,970.98	115.91	0.00	443,955.53	678,886.90	32°13'9.218445"N	103°45'17.613635"W
	17,000.00 17,100.00	90.00 90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4,930.00	8,070.10 8,170.10	8,070.98 8,170.98	115.28 114.66	0.00 0.00	444,055.52 444,155.52	678,886.28 678,885.65	32°13'10.207991"N	103°45'17.614676"W 103°45'17.615717"W
	17,200.00	90.00	359.64	8,493.00	4,930.00	8,270.10	8,270.98	114.03	0.00	444,255.51	678,885.02	32°13'12.187085"N	103°45'17.616758'W
	17,300.00	90.00	359.64	8,493.00	4,930.00	8,370.10	8,370.97	113.40	0.00	444,355.50	678,884.39	32°13'13.176631"N	103°45'17.617799"W
	17,400.00 17,500.00	90.00 90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4,930.00	8,470.10 8,570.10	8,470.97 8,570.97	112.77 112.14	0.00	444,455.49 444,555.49	678,883.77 678,883.14		103°45'17.618840"W 103°45'17.619881"W
	17,500.00	90.00	359.64	8,493.00	4,930.00	8,670.10	8,670.97	112.14	0.00	444,655.48	678,883.14	32°13'16.145271"N	103°45'17.620922"W
	17,700.00	90.00	359.64	8,493.00	4,930.00	8,770.10	8,770.97	110.89	0.00	444,755.47	678,881.88	32°13'17.134817"N	103°45'17.621963"W
	17,800.00 17,900.00	90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4,930.00	8,870.10 8,970.10	8,870.96 8,970.96	110.26 109.63	0.00	444,855.46 444,955.46	678,881.26 678,880,63		103°45'17.623004"W 103°45'17.624045"W
	17,900.00 18.000.00	90.00 90.00	359.64 359.64	8,493.00 8,493.00	4,930.00 4.930.00	8,970.10 9.070.10	8,970.96 9.070.96	109.63 109.01	0.00	444,955.46 445.055.45	678,880.63 678.880.00		103°45'17.624045"W 103°45'17.625085"W
	18,100.00	90.00	359.64	8,493.00	4,930.00	9,170.10	9,170.96	108.38	0.00	445,155.44	678,879.37	32°13'21.093002"N	103°45'17.626126"W
	18,200.00	90.00	359.64	8,493.00	4,930.00	9,270.10	9,270.96	107.75	0.00	445,255.43	678,878.74		103°45'17.627167"W
	18,300.00 18,400.00	90.00 90.00	359.64 359.64	8,493.00 8.493.00	4,930.00 4.930.00	9,370.10 9,470.10	9,370.95 9.470.95	107.12 106.50	0.00	445,355.43 445,455.42	678,878.12 678.877.49	32"13'23.072094"N 32"13'24 061640"N	103°45'17.628207"W 103°45'17.629248"W
	18,500.00	90.00	359.64	8,493.00	4,930.00	9,570.10	9,570.95	105.87	0.00	445,555.41	678,876.86	32°13'25.051186"N	103°45'17.630289"W
	18,600.00	90.00	359.64	8,493.00	4,930.00	9,670.10	9,670.95	105.24	0.00	445,655.40	678,876.23	32°13'26.040732"N	103°45'17.631329"W
SND 14 23 Fed Com 119H LTP/	18,700.00 18,796.61	90.00 90.00	359.64 359.64	8,493.00 8.493.00	4,930.00 4,930.00	9,770.10 9.866.71	9,770.95 9.867.56	104.61 104.01	0.00	445,755.40 445.852.00	678,875.61 678.875.00	32°13'27.030278"N	103°45'17.632370"W 103°45'17.633375"W
2.35 14 E0 1 60 GOIII 11011 E1F/	10,130.01	55.00	555.04	0,400.00	-,550.00	0,000.71	0,007.00	10-1.01	0.00		0.0,010.00	1021.000200 N	0000010 11

Survey Type: Def Plan

Survey Error Model: ISCW SA0 3 sigma

urvey Program:									
		MD From	MD To	EOU Frea	Hole Size Cas	ing Diameter	Expected Max		
Description	Part	(ft)	(ft)	(4)	(in)	(in)	Inclination	Survey Tool Code	Borehole / Survey
		(11)	(11)	(11)	(III)	(III)	(deg)		

1 0.000 23,235.983 1//00.00025 - 8.75 - 6.125 3.625 - 7 - 6.125 B001Mb\_MWD+HRGM SND 14 23 Fed Com 119H / SND 14 23 Fed Com 119H R0 mdv 12May23

EOU Geometry:
End MD (ft) Hole Size (in) Casing Size (in) Nam

993.384 17.500 13.375

4,492.123 12.250 9.625

8,560.334 8.750 7.000

18,796.612 6.125

# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME: CHEVRON USA INCORPORATED
WELL NAME & NO.: SND 14 23 FED COM 119H
SURFACE HOLE FOOTAGE: 671'/S & 384'/W
BOTTOM HOLE FOOTAGE 25'/N & 550'/W
LOCATION: Section 23, T.24 S., R.31 E., NMP
COUNTY: Eddy County, New Mexico

COA

H2S	• Yes	O No	
Potash	None	© Secretary	© R-111-P
Cave/Karst Potential	• Low	© Medium	C High
Cave/Karst Potential	Critical		
Variance	O None	• Flex Hose	Other
Wellhead	Conventional	<ul><li>Multibowl</li></ul>	© Both
Wellhead Variance	O Diverter		
Other	□4 String	☐ Capitan Reef	□WIPP
Other	☐Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Cementing	☐ Contingency	☐ EchoMeter	☐ Primary Cement
	Cement Squeeze		Squeeze
Special Requirements	☐ Water Disposal	□ СОМ	□ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements	✓ Break Testing	□ Offline	☐ Casing
Variance		Cementing	Clearance

## A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet 43 CFR part 3170 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

#### B. CASING

## **Primary Casing Design:**

1. The 13-3/8 inch surface casing shall be set at approximately 900 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be 16 inch in diameter.

- a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8** hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

Operator is approved to use contingency cementing for the Intermediate and Production section. Operator shall notify the BLM before proceeding with contingency operation.

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.
     Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
- 3. The minimum required fill of cement behind the 7 inch intermediate casing is:
  - Cement should tie-back at least 200 feet into previous casing string.
     Operator shall provide method of verification.
     Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
     Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.
- 4. The minimum required fill of cement behind the 5 X 4-1/2 inch production liner is:
  - Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification.

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

#### C. PRESSURE CONTROL

- 1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 13-3/8 inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.

### D. SPECIAL REQUIREMENT (S)

# (Note: For a minimum 5M BOPE or less (Utilizing a 10M BOPE system) BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. (Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-361-2822 Eddy County) 4 hours prior to BOPE
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per 43 CFR 3170.

• If in the event break testing is not utilized, then a full BOPE test would be conducted.

# **GENERAL REQUIREMENTS**

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

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

(575) 361-2822

(575) 689-5981

- Eddy County
   EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
   BLM\_NM\_CFO\_DrillingNotifications@BLM.GOV
- 1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.
- 2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

#### A. CASING

- 1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
- 2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
- 5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
- 6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
- 7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a

larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

## B. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in 43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3.
- 2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
- 3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
- 4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500

feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per 43 CFR part 3170 Subpart 3172.

#### C. DRILLING MUD

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

#### D. WASTE MATERIAL AND FLUIDS

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

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

JS 11/7/2023



# **Training**

MCBU Drilling and Completions  $H_2S$  training requirements are intended to define the minimum level of training required for employees, contractors and visitors to enter or perform work at MCBU Drilling and Completions locations that have known concentrations of  $H_2S$ .

### **Awareness Level**

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H<sub>2</sub>S, who are not required to perform work in H<sub>2</sub>S areas, will be provided with an awareness level of H<sub>2</sub>S training prior to entering any H<sub>2</sub>S areas. At a minimum, awareness level training will include:

- 1. Physical and chemical properties of H<sub>2</sub>S
- 2. Health hazards of H<sub>2</sub>S
- 3. Personal protective equipment
- 4. Information regarding potential sources of H<sub>2</sub>S
- 5. Alarms and emergency evacuation procedures

Awareness level training will be developed and conducted by personnel who are qualified either by specific training, educational experience and/or work-related background.

# Advanced Level H<sub>2</sub>S Training

Employees and contractors required to work in areas that may contain H<sub>2</sub>S will be provided with Advanced Level H<sub>2</sub>S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H<sub>2</sub>S training will include:

- 1. H<sub>2</sub>S safe work practice procedures;
- 2. Emergency contingency plan procedures;
- 3. Methods to detect the presence or release of H<sub>2</sub>S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H<sub>2</sub>S equipment.
- 4. Basic overview of respiratory protective equipment suitable for use in H<sub>2</sub>S environments. Note: Employees who work at sites that participate in the Chevron Respirator User program will require separate respirator training as required by the MCBU Respiratory Protection Program;
- 5. Basic overview of emergency rescue techniques, first aid, CPR and medical evaluation procedures. Employees who may be required to perform "standby" duties are required to receive additional first aid and CPR training, which is not covered in the Advanced Level H<sub>2</sub>S training;
- 6. Proficiency examination covering all course material.

Advanced H<sub>2</sub>S training courses will be instructed by personnel who have successfully completed an appropriate H<sub>2</sub>S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.



# H<sub>2</sub>S Training Certification

All employees and visitors will be issued an  $H_2S$  training certification card (or certificate) upon successful completion of the appropriate  $H_2S$  training course. Personnel working in an  $H_2S$  environment will carry a current  $H_2S$  training certification card as proof of having received the proper training on their person at all times.

# **Briefing Area**

A minimum of two briefing areas will be established in locations that at least one area will be upwind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

# H<sub>2</sub>S Equipment

# **Respiratory Protection**

- a) Six 30 minute SCBAs 2 at each briefing area and 2 in the Safety Trailer.
- b) Eight 5 minute EBAs 5 in the dog house at the rig floor, 1 at the accumulator, 1 at the shale shakers and 1 at the mud pits.

# **Visual Warning System**

- a) One color code sign, displaying all possible conditions, will be placed at the entrance to the location with a flag displaying the current condition.
- b) Two windsocks will be on location, one on the dog house and one on the Drill Site Manager's Trailer.

# H<sub>2</sub>S Detection and Monitoring System

- a) H<sub>2</sub>S monitoring system (sensor head, warning light and siren) placed throughout rig.
  - Drilling Rig Locations: at a minimum, in the area of the Shale shaker, rig floor, and bell nipple.
  - Workover Rig Locations: at a minimum, in the area of the Cellar, rig floor and circulating tanks or shale shaker.



# **Well Control Equipment**

- a) Flare Line 150' from wellhead with igniter.
- b) Choke manifold with a remotely operated choke.
- c) Mud / gas separator

# **Mud Program**

In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

- 1. Use of a degasser
- 2. Use of a zinc based mud treatment
- 3. Increasing mud weight

# **Public Safety - Emergency Assistance**

<u>Agency</u>	Telephone Number
Lea County Sheriff's Department	575-396-3611
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Lea County Regional Medical Center	575-492-5000
Jal Community Hospital	505-395-2511
Lea County Emergency Management	575-396-8602
Poison Control Center	800-222-1222

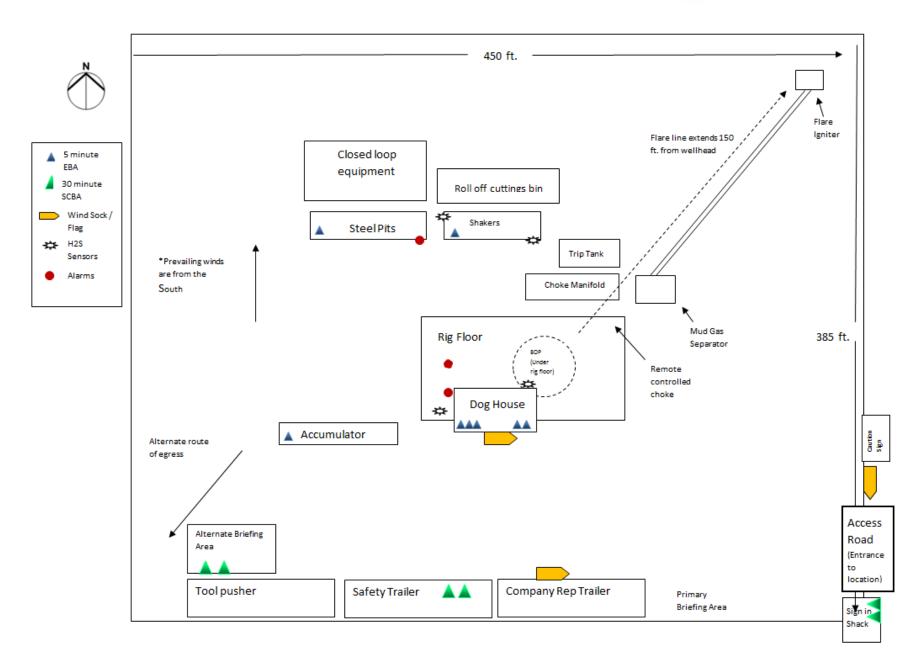


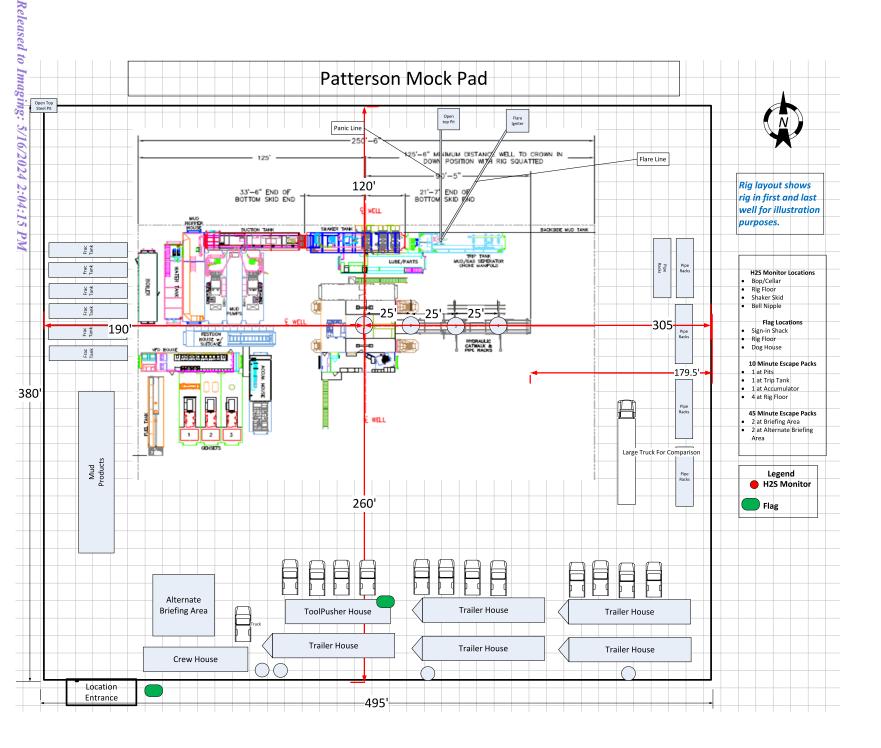
# **Chevron MCBU D&C Emergency Notifications**

Below are lists of contacts to be used in emergency situations.

	Name	Title	Office Number	Cell Phone
1.	TBD	Drilling Engineer		
2.	TBD	Superintendent		
5.	Steve Hassmann	Drilling Manager	(713) 372-4496	832-729-3236
6.	Kyle Eastman	Operations Manager	TBD	281-755-6554
7.	TBD	D&C HES		
8.	TBD	Completion Engineer		







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KZ 06/29/2018



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

# Drilling Plan Data Report

BUREAU OF LAND MANAGEMENT

Well Name: SND 14 23 FED COM

Submission Date: 06/12/2023

**Operator Name: CHEVRON USA INCORPORATED** 

Well Number: 119H

Well Type: OIL WELL

APD ID: 10400092684

Well Work Type: Drill

Highlighted data reflects the most recent changes

**Show Final Text** 

## **Section 1 - Geologic Formations**

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13333979	RUSTLER	3549	677	677	SANDSTONE	NONE	N
13333999	SALADO	2527	1022	1025	ANHYDRITE, SALT	NONE	N
13333996	CASTILE	736	2813	2855	ANHYDRITE, SALT	NONE	N
13333998	LAMAR	-935	4484	4544	LIMESTONE	NONE	N
13333980	BELL CANYON	-980	4529	4589	LIMESTONE, SANDSTONE	NONE	N
13333982	CHERRY CANYON	-1860	5409	5469	SANDSTONE, SILTSTONE	NONE	N
13333983	BRUSHY CANYON	-3173	6722	6782	LIMESTONE, SANDSTONE	NONE	N
13333984	BONE SPRING LIME	-4749	8298	8393	SHALE, SILTSTONE	NATURAL GAS, OIL	N
13333994	UPPER AVALON SHALE	-4855	8404	8557	SHALE	NATURAL GAS, OIL	Y

## **Section 2 - Blowout Prevention**

Pressure Rating (PSI): 5M Rating Depth: 8493

**Equipment:** Chevron will have a minimum of a 5,000 psi rig stack for drill out below surface casing. The stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, intermediate, and production will take place. A full BOP test will be performed per hole section, unless approval from BLM is received otherwise. Flex choke hose will be used for all wells on the pad (see attached specs and variance). BOP test will be conducted by a third party.

#### Requesting Variance? YES

Variance request: "Chevron respectfully request to vary from the Onshore Order 2 where it states: "(A full BOP Test) shall be performed: when initially installed and whenever any seal subject to test pressure is broken." We propose to break test if able to finish the next hole section within 21 days of the previous full BOP test. No BOP components nor any break will ever surpass 21 days between testing. A break test will consist of a 250 psi low / 5,000 psi high for 10 min each test against the connection that was broken when skidding the rig. Upon the first nipple up of the pad a full BOP test will be performed. A full BOP test will be completed prior to drilling the production lateral sections unless the BOP connection was not broken prior to drilling that hole section (example: drilling straight from production into production liner hole section). A

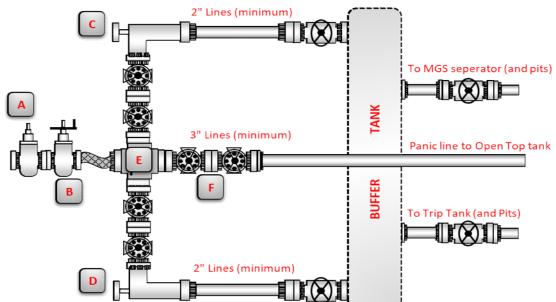
# **CHOKE MANIFOLD SCHEMATIC**

Operation: Intermediate & Production

Minimum System operation pressure

5,000 psi

		Choke Manif	<u>old</u>
Part	Size	Pressure Rating	Description
Α	3"	10,000	HCR (remotely operated)
В	3"	10,000	HCR (manually operated)
С	2"	10,000	Remotely operated choke
D	2"	10,000	Adjustable choke
Е	3"	10,000	Crown valve with pressure gage
F	3"	10,000	Panic line valves



Choke Manifold Installation Checklist: The following items must be verified and checked off prior to pressure testing BOP equipment

The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.

Adjustable chokes may be remotely operated but will have backup hand pump for hydraulic actuation in case of loss of rig air or power.

Flare and panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.

All valves (except chokes) on choke line, kill line and choke manifold will be full opening and will allow straight through flow. This excludes any valves between the mud gas separator and shale shakers.

All manual valves will have hand wheels installed.

Flare systems will have an effective method for ignition.

All connections will be flanged, welded or clamped

If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 339659

#### **CONDITIONS**

Operator:	OGRID:
CHEVRON U S A INC	4323
6301 Deauville Blvd	Action Number:
Midland, TX 79706	339659
	Action Type:
	[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

#### CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	5/16/2024
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/16/2024
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	5/16/2024
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	5/16/2024
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	5/16/2024
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	5/16/2024