Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM111960

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.: SND 14 23 FED COM 001 P26 227H

2. Name of Operator: CHEVRON USA INCORPORATED

9. API Well No.: 30 015 48009

3a. Address: 6301 Deauville Blvd., Midland, TX 79706

3b. Phone No. *(include area code)*: (432) 687-7866

10. Field and Pool, or Exploratory: ~~SAND DUNES/LOWER AVALON~~ COTTON DRAW;BONE SPRING

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

At surface: SWSW / 140 FSL / 1308 FWL / LAT 32.225019 / LONG -103.752931

At proposed prod. zone: SESW / 25 FSL / 2178 FWL / LAT 32.195667 / LONG -103.750089

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 11/T24S/R31E/NMP

14. Distance in miles and direction from nearest town or post office*: 50 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 140 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 640.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1860 feet

19. Proposed Depth: 9083 feet / 19890 feet

20. BLM/BIA Bond No. in file: FED: ES0022

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3538 feet

22. Approximate date work will start*: 11/01/2020

23. Estimated duration: 147 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	LAURA BECERRA / Ph: (432) 687-7866	05/20/2020

Title: Permitting Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575) 234-5959	01/06/2021

Title	Office
Assistant Field Manager Lands & Minerals	Carlsbad Field Office

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 01/06/2021

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

0. SHL: SWSW / 140 FSL / 1308 FWL / TWSP: 24S / RANGE: 31E / SECTION: 11 / LAT: 32.225019 / LONG: -103.752931 (TVD: 0 feet, MD: 0 feet)

PPP: SENW / 1465 FNL / 2178 FWL / TWSP: 24S / RANGE: 31E / SECTION: 23 / LAT: 32.206057 / LONG: -103.750118 (TVD: 9043 feet, MD: 9446 feet)

PPP: NENW / 100 FNL / 2178 FWL / TWSP: 24S / RANGE: 31E / SECTION: 23 / LAT: 32.209807 / LONG: -103.750118 (TVD: 9043 feet, MD: 9446 feet)

PPP: SESW / 100 FSL / 2178 FWL / TWSP: 24S / RANGE: 31E / SECTION: 14 / LAT: 32.210357 / LONG: -103.750118 (TVD: 9043 feet, MD: 9446 feet)

PPP: NENW / 100 FNL / 2178 FWL / TWSP: 24S / RANGE: 31E / SECTION: 14 / LAT: 32.22436 / LONG: -103.750118 (TVD: 9043 feet, MD: 9446 feet)

BHL: SESW / 25 FSL / 2178 FWL / TWSP: 24S / RANGE: 31E / SECTION: 23 / LAT: 32.195667 / LONG: -103.750089 (TVD: 9083 feet, MD: 19890 feet)

BLM Point of Contact

Name: Candy Vigil
Title: LIE
Phone: (575) 234-5982
Email: cvigil@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30 015 48009	13367	COTTON DRAW;BONE SPRING ~~SAND DUNES; LOWER AVALON~~

[4] Property Code	[5] Property Name	[6] Well Number
330011	SND 14 23 FED COM 001 P26	227H

[7] OGRID No.	[8] Operator Name	[9] Elevation
4323	CHEVRON U.S.A. INC.	3538'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	11	24 SOUTH	31 EAST, N.M.P.M.		140'	SOUTH	1308'	WEST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	23	24 SOUTH	31 EAST, N.M.P.M.		25'	SOUTH	2178'	WEST	EDDY

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

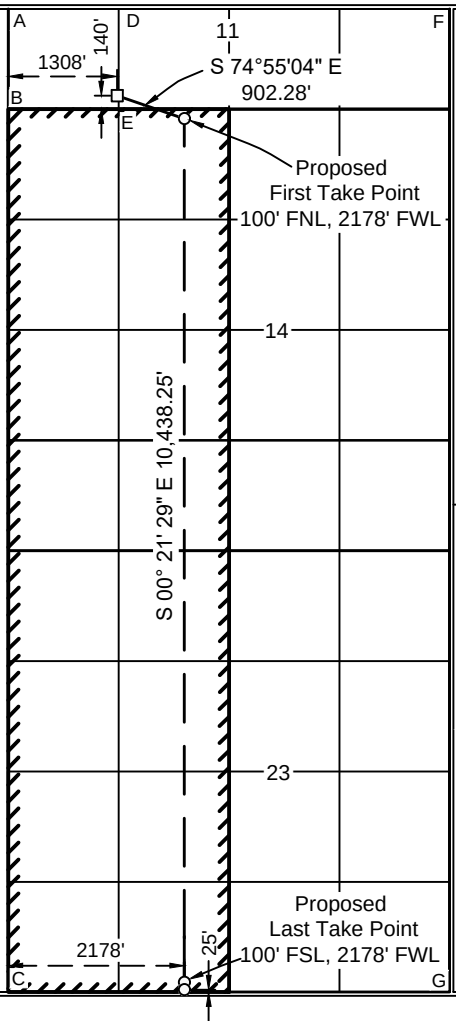
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]

SND 14 23 FED COM 001 P26 NO. 227H WELL			PROPOSED FIRST TAKE POINT		
X=	679,632'	NAD 27	X=	680,503'	NAD 27
Y=	446,021'		Y=	445,787'	
LAT.	32.224895° N		LAT.	32.224237° N	
LONG.	103.752448° W		LONG.	103.749635° W	
X=	720,816'	NAD83/2011	X=	721,687'	NAD83/2011
Y=	446,080'		Y=	445,846'	
LAT.	32.225019° N		LAT.	32.224360° N	
LONG.	103.752931° W		LONG.	103.750118° W	
ELEV.	+3538'	NAVD88			

PROPOSED LAST TAKE POINT			PROPOSED BOTTOM HOLE LOCATION		
X=	680,568'	NAD 27	X=	680,568'	NAD 27
Y=	435,424'		Y=	435,349'	
LAT.	32.195749° N		LAT.	32.195543° N	
LONG.	103.749607° W		LONG.	103.749607° W	
X=	721,752'	NAD83/2011	X=	721,753'	NAD83/2011
Y=	435,482'		Y=	435,407'	
LAT.	32.195873° N		LAT.	32.195667° N	
LONG.	103.750089° W		LONG.	103.750089° W	

CORNER COORDINATES TABLE
(NAD 27)
A - Y=447193.90, X= 678318.78
B - Y=445873.60, X=678324.50
C - Y=435311.46, X=678390.49
D - Y=447201.92, X=679640.10
E - Y=445881.52, X=679646.09
F - Y=447225.98, X=683604.05
G - Y=435342.34, X=683670.54



[17] OPERATOR CERTIFICATION

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

Signature 5/7/2020 Date

Laura Becerra
Printed Name

LBecerra@Chevron.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

03/31/2020
Date of Survey

Signature and Seal of Professional Surveyor:

ROBERT L. LASTRAPES NEW MEXICO 23006 PROFESSIONAL SURVEYOR 04/13/2020

Certificate Number

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

X Original Operator & OGRID No.: CHEVRON U S A INC (4323)
☐ Amended Date: 5/13/2020
Reason for Amendment:

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

Well(s)/Production Facility – SND Section 12 CTB

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location	Footages	Expected MCF/D	Flared or Vented	Comments
SND 14 23 FED COM 001 P26 225H	Pending	UL:M, Sec. 11, T24S-R31E	140' FSL, 1,258' FWL	2896	0	
SND 14 23 FED COM 001 P26 226H	Pending	UL:M, Sec. 11, T24S-R31E	140' FSL, 1,283' FWL	2896	0	
SND 14 23 FED COM 001 P26 227H	Pending	UL:M, Sec. 11, T24S-R31E	140' FNL, 1,308' FWL	2896	0	

Gathering System and Pipeline Notification

These wells will be connected to Chevron's SND Section 12 CTB production facility located in Section 12, T24S – R31E, Eddy County, New Mexico during flowback and production.

Gas produced from the production facility will be dedicated to DCP Operating Company, LP (DCP) and will be connected to DCP's high pressure gathering system located in Eddy County, New Mexico. Produced gas will be processed at one or more of DCP's New Mexico gas plants located in Eddy and Lea Counties. Chevron periodically provides DCP estimated production forecasts for wells that are scheduled to be drilled in the foreseeable future. In addition, Chevron and DCP have periodic conference calls to discuss changes to the forecasts.

Flowback Strategy

After the fracture treatment/completion operations, wells will be turned to permanent production facilities. Wells will have temporary sand catchers (separators) that will be installed at the well location to prevent sand from getting into the flowlines. These sand separators will be blown down periodically which will result in minimal venting of gas. Gas sales will start as soon as the wells start flowing through the production facilities unless there are operational issues with DCP's system at that time. Based on current information, it is Chevron's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On Lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared.
- Compressed Natural Gas – On Lease
  - Gas flared would be minimal but might be uneconomical to operate when gas volume declines.
- NGL Removal – On lease and trucked from condensate tanks
  - Plants are expensive and uneconomical to operate when gas volume declines.
  - Any residue gas that results in the future may be flared.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CHEVRON USA INCORPORATED
LEASE NO.:	NMNM111960
LOCATION:	Section 11, T.24 S., R.31 E., NMP
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	SND 14 23 FED COM 001 P26 225H
SURFACE HOLE FOOTAGE:	140'/S & 1258'/W
BOTTOM HOLE FOOTAGE	25'/S & 330'/W

WELL NAME & NO.:	SND 14 23 FED COM 001 P26 226H
SURFACE HOLE FOOTAGE:	140'/S & 1283'/W
BOTTOM HOLE FOOTAGE	25'/S & 1254'/W

WELL NAME & NO.:	SND 14 23 FED COM 001 P26 227H
SURFACE HOLE FOOTAGE:	140'/S & 1308'/W
BOTTOM HOLE FOOTAGE	25'/S & 2178'/W

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

Casing Design:

Approval Date: 01/06/2021

1. The **13-3/8** inch surface casing shall be set at approximately **875** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    Option 1 (Single Stage):

    - 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.**

    Option 2:

    Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

    a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

    b. Second stage above DV tool:

    - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
      Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

    ❖ In **Secretary Potash Areas** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **7** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **500 feet** into previous casing string. Operator shall provide method of verification.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement should tie-back at least **500 feet** into previous casing string. Operator shall provide method of verification.

Operator has proposed to pump down 9-5/8" X 7" annulus. Operator must run a CBL from TD of the 7" casing to surface. Submit results to BLM.

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.

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.

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

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b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

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

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

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

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

GENERAL REQUIREMENTS

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

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

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

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

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

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

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

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

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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.

 Approval Date: 01/06/2021

B. PRESSURE CONTROL

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

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

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

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

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

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

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

lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

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

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

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

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

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

NMK01042021

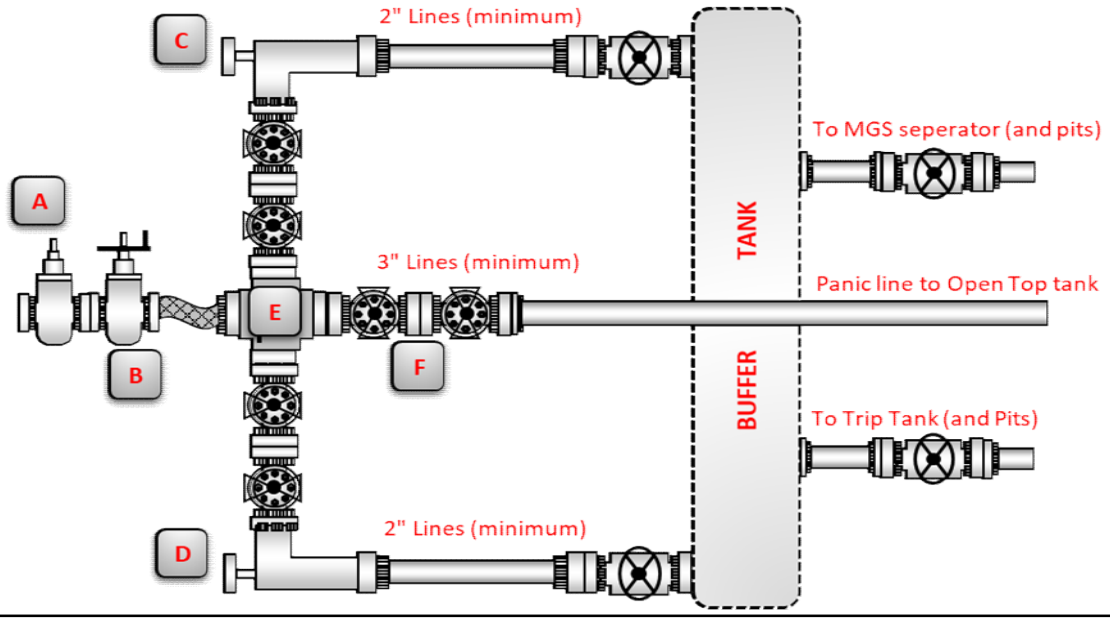
Approval Date: 01/06/2021

CHOKE MANIFOLD SCHEMATIC

Operation:	Intermediate & Production
Minimum System operation pressure	5,000 psi

Choke Manifold

Part	Size	Pressure Rating	Description
A	3"	10,000	HCR (remotely operated)
B	3"	10,000	HCR (manually operated)
C	2"	10,000	Remotely operated choke
D	2"	10,000	Adjustable choke
E	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.

Hose Data Sheet

CRI Order No.	541802
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500606483 COM757207
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C** → FSL2
Inside dia in inches	3
Length	45 ft
Type of coupling one end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGE C/W BX155ST/ST INLAID R.GR. SOUR
Type of coupling other end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGE C/W BX155 ST/ST INLAID R.GR. SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	Yes
Lifting collar	Yes
Element C	Yes
Safety chain	No
Safety wire rope	Yes
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

1/1

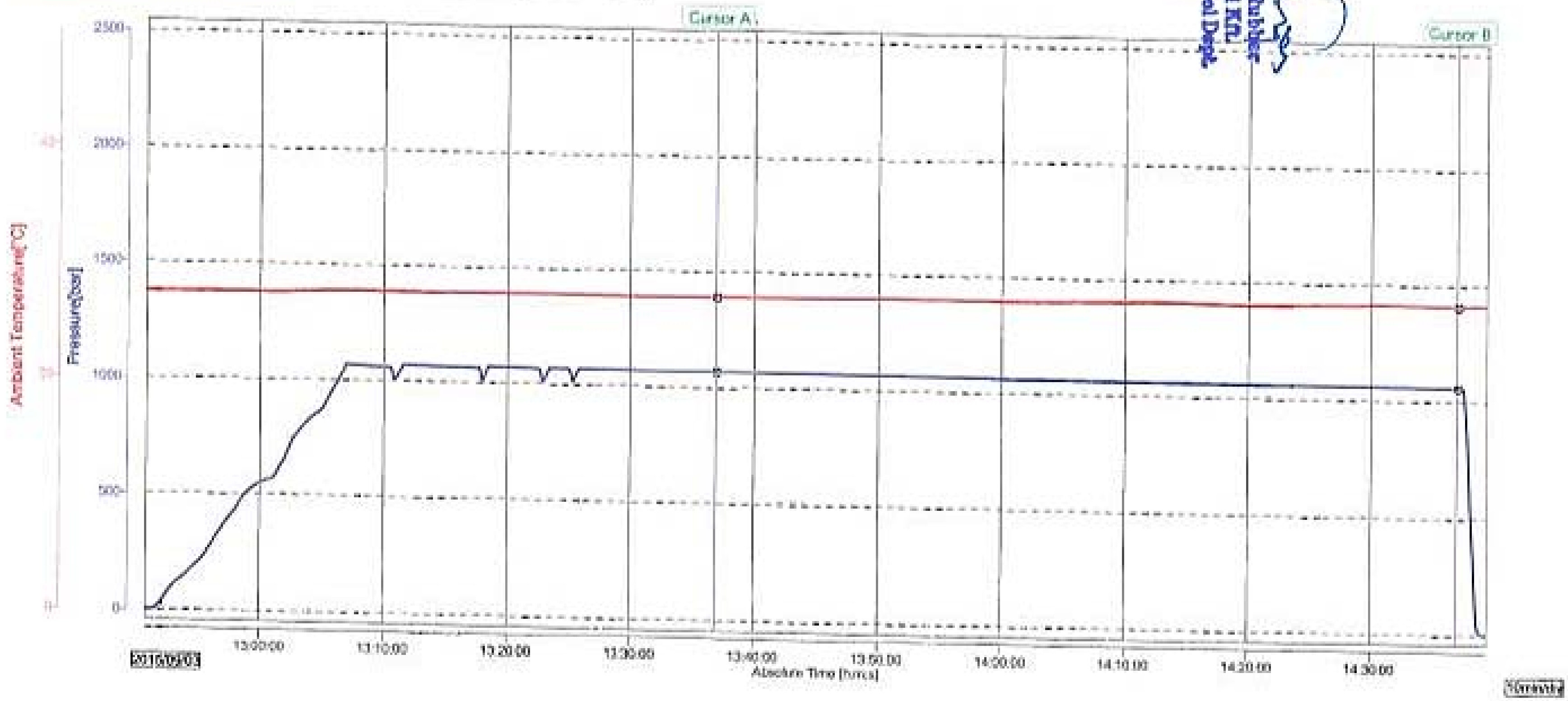
File Name : 008177_71303,71304.GEV,...,008187_71303,71304.GEV
File Message : 71303,71304
Device Type : GX10
Serial No. : S5P036398
Data Count : 1304

Print Group : Press-Temp
Print Range : 2015/09/03 12:50:50.000 - 2015/09/03 14:39:25.000
Comment :

Sampling Int. : 5.000 sec
Start Time : 2015/09/03 12:50:50.000
Stop Time : 2015/09/03 14:39:25.000

	Cursor A	Cursor B	Difference
Data No.	554	1274	720
Absolute Time	2015/09/03 13:37:00.000	2015/09/03 14:37:00.000	01:00:00.000
Tag Comment	Value A	Value B	Value B-A
Pressure[bar]	1067.69	1059.38	-8.31
Ambient Temperature[°C]	27.80	28.27	0.47

ContiTech Rubber Industrial Kft. Quality Control Dept. (1)



BLOWOUT PREVENTER SCHEMATIC

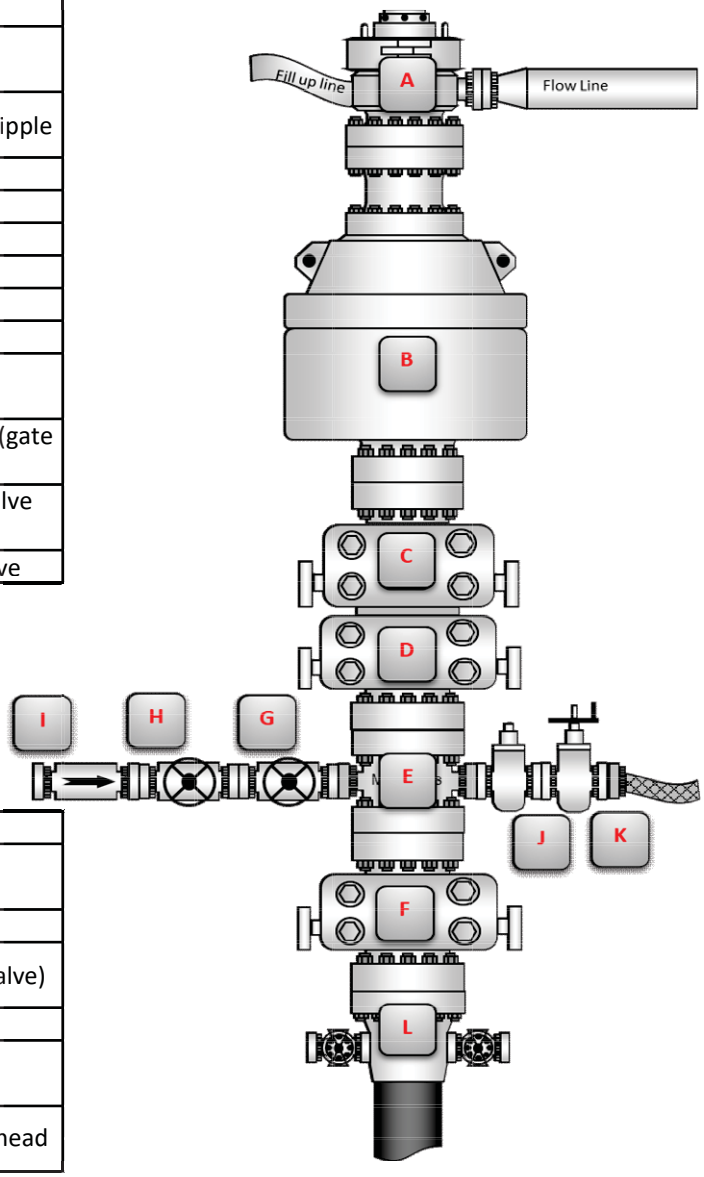
Operation:	Intermediate & Production Drilling Operations
Minimum System operation pressure	5,000 psi

BOP Stack

Part	Size	Pressure Rating	Description
A	13-5/8"	N/A	Rotating Head/Bell nipple
B	13-5/8"	5,000	Annular
C	13-5/8"	10,000	Blind Ram
D	13-5/8"	10,000	Pipe Ram
E	13-5/8"	10,000	Mud Cross
F	13-5/8"	10,000	Pipe Ram

Kill Line

Part	Size	Pressure Rating	Description
G	2"	10,000	Inside Kill Line Valve (gate valve)
H	2"	10,000	Outside Kill Line Valve (gate valve)
I	2"	10,000	Kill Line Check valve



Choke line

Part	Size	Pressure Rating	Description
J	3"	10,000	HCR (gate valve)
K	3"	10,000	Manual HCR (gate valve)

Wellhead

Part	Size	Pressure Rating	Description
L	13-5/8"	5,000	FMC Multibowl wellhead

BOP 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.
All valves on the kill line and choke line will be full opening and will allow straight flow through.
Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be install on all manual valves on the choke and kill line.
A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.
Upper kelly cock valve with handle will be available on rig floor along with saved valve and subs to fit all drill string connections in use.

BLOWOUT PREVENTER SCHEMATIC	
Operation:	Intermediate & Production
Minimum System operation pressure	5,000 psi

Minimum Requirements

Closing Unit and Accumulator Checklist

The following item must be performed, verified, and checked off at least once per well prior to low/high pressure testing of BOP equipment. This must be repeated after 6 months on the same well.

☐ **Precharge pressure for each accumulator bottle must fall within the range below. Bottles may be further charged with nitrogen gas only. Tested precharge pressures must be recorded for each individual bottle and kept on location through the end of the well. Test will be conducted prior to connecting unit to BOP stack.**

Check one that applies	Accumulator working pressure rating	Minimum acceptable operating pressure	Desired precharge pressure	Maximum acceptable precharge pressure	Minimum acceptable precharge pressure
☐	1500 psi	1500 psi	750 psi	800 psi	700 psi
☐	2000 psi	2000 psi	1000 psi	1100 psi	900 psi
☐	3000 psi	3000 psi	1000 psi	1100 psi	900 psi

☐ **Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if used), close all rams, close the annular preventer, and retain a minimum of 200 psi above the maximum acceptable precharge pressure (see table above) on the closing manifold without the use of the closing pumps. This test will be performed with test pressure recorded and kept on location through the end of the well**

☐ **Accumulator fluid reservoir will be double the usable fluid volume of the accumulator system capacity. Fluid level will be maintained at manufacturer's recommendations. Usable fluid volume will be recorded. Reservior capacity will be recorded. Reservoir fluid level will be recorded along with manufacturer's recommendation. All will be kept on location through the end of the well.**

☐ **Closing unit system will have two independent power sources (not counting accumulator bottles) to close the preventers.**

☐ **Power for the closing unit pumps will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure decreases to the pre-set level. It is recommended to check that air line to accumulator pump is "ON" during each tour change.**

☐ **With accumulator bottles isolated, closing unit will be capable of opening the hydraulically-operated choke line valve (if used) plus close the annular preventer on the smallest size drill pipe within 2 minutes and obtain a minimum of 200 psi above maximum acceptable precharge pressure (see table above) on the closing manifold. Test pressure and closing time will be recorded and kept on location through the end of the well.**

☐ **Master controls for the BOPE system will be located at the accumulator and will be capable of opening and closing all preventer and the choke line valve (if used)**

☐ **Remote controls for the BOPE system will be readily accessible (clear path) to the driller and located on the rig floor (not in the dog house). Remote controls will be capable of closing all preventers.**

☐ **Record accumulator tests in drilling reports and IADC sheet**

BLOWOUT PREVENTER SCHEMATIC	
Operation:	Intermediate & Production
Minimum System operation pressure	5,000 psi

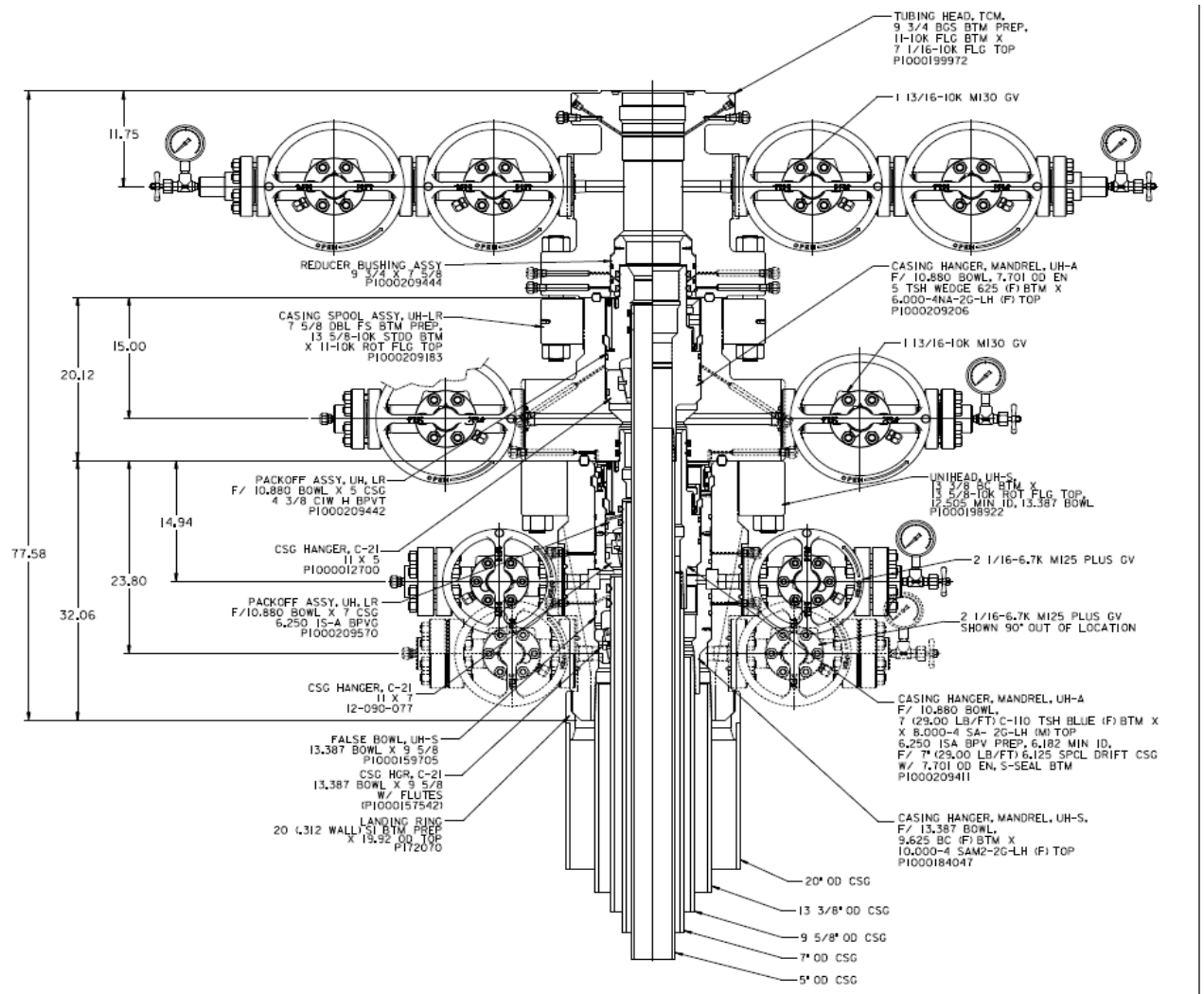
BOPE 5K Test Checklist

The following items must be checked off prior to beginning test:

- ☐ BLM will be given at least 4 hour notice prior to beginning BOPE testing.
- ☐ Valve on casing head below test plug will be open.
- ☐ Test will be performed using clear water.

The following items must be performed during the BOPE testing:

- ☐ BOPE will be pressure tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs, and at a minimum of 30 day intervals. **Test pressure and times will be recorded by a 3rd party on a test charge and kept on location through the end of the well.**
- ☐ Test plug will be used.
- ☐ Ram type preventer and all related well control equipment will be tested to 250 psi (low) and 5,000 psi (high).
- ☐ Annular type preventer will be tested to 250 psi (low) and 3,500 psi (high).
- ☐ Valves will be tested fromt eh working pressure side with all downstream valves open. The check valve will be held open to test the kill line valve(s).
- ☐ Each pressure test will be held for 10 minutes with no allowable leak off.
- ☐ Master controls and remote controls to the closing unit (accumulator) must be function tested as part of the BOPE test.
- ☐ Record BOP tests and pressures in drilling reports and IADC sheet.



PRODUCTION MODE

6650 PSI UH-S

CHEVRON

20 X 13 3/8 X 9 5/8 X 7 X 5

NEW MEXICO SLIM HOLE

QUOTE# 20395747
CASE# 00026966
FIII378
DB01016339d
REF: DM100312054
DM100276064

Tenaris

Casing and Tubing Performance Data

PIPE BODY DATA

GEOMETRY

Outside Diameter	13.375 in	Wall Thickness	0.380 in	API Drift Diameter	12.459 in
Nominal Weight	54.50 lbs/ft	Nominal ID	12.615 in	Alternative Drift Diameter	n.a.
Plain End Weight	52.79 lbs/ft	Nominal cross section	15.513 in		

PERFORMANCE

Steel Grade	J55	Minimum Yield	55,000 psi	Minimum Ultimate	75,000 psi
Tension Yield	853,000 in	Internal Pressure Yield	2,730 psi	Collapse Pressure	1,130 psi
Available Seamless	Yes	Available Welded	Yes		

CONNECTION DATA

TYPE: STC

GEOMETRY

Coupling Reg OD	14.375 in	Threads per in	8	Thread turns make up	3.5

PERFORMANCE

Steel Grade	J55	Coupling Min Yield	55,000 psi	Coupling Min Ultimate	75,000 psi
Joint Strength	514,000 lbs			Internal Pressure Resistance	2,730 psi

For the latest performance data, always visit our website: www.tenaris.com

Blue®

Printed on: 07/15/2019

Outside Diameter	**7.000** in.	Min. Wall Thickness	**87.5**%	(*) Grade P110	
Wall Thickness	**0.408** in.	Connection OD Option	**REGULAR**	COUPLING	PIPE BODY
Grade	**P110***	Drift	**API Standard**	Body: **White** 1st Band: - 2nd Band: - 3rd Band: -	1st Band: **White** 2nd Band: - 3rd Band: - 4th Band: -
		Type	**Casing**		

PIPE BODY DATA

GEOMETRY

Nominal OD	**7.000** in.	Nominal Weight	**29.00** lbs/ft	Drift	**6.059** in.
Nominal ID	**6.184** in.	Wall Thickness	**0.408** in.	Plain End Weight	**28.75** lbs/ft
OD Tolerance	**API**				

PERFORMANCE

Body Yield Strength	**929** x1000 lbs	Internal Yield	**11220** psi	SMYS	**110000** psi
Collapse	**8530** psi				

CONNECTION DATA

GEOMETRY

Connection OD	**7.677** in.	Coupling Length	**10.551** in.	Connection ID	**6.118** in.
Make-up Loss	**4.480** in.	Threads per in	**4**	Connection OD Option	**REGULAR**

PERFORMANCE

Tension Efficiency	**100.0** %	Joint Yield Strength	**929.000** x1000 lbs	Internal Pressure Capacity	**11220.000** psi
Compression Efficiency	**100** %	Compression Strength	**929.000** x1000 lbs	Max. Allowable Bending	**72** °/100 ft
External Pressure Capacity	**8530.000** psi	Coupling Face Load	**433000** lbs		

MAKE-UP TORQUES

Minimum	**10480** ft-lbs	Optimum	**11640** ft-lbs	Maximum	**12800** ft-lbs

SHOULDER TORQUES

Minimum	**1750** ft-lbs	Maximum	**9890** ft-lbs		

OPERATION LIMIT TORQUES

Operating Torque	**29100** ft-lbs	Yield Torque	**36380** ft-lbs		

Notes

This connection is fully interchangeable with:

Blue® - 7 in. - 23 / 24.75 / 26 / 32 / 35 / 38 / 41 / 44 lbs/ft

Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

Datasheet is also valid for Special Bevel option when applicable - except for Coupling Face Load, which will be reduced. Please contact a local Tenaris technical sales representative.

For further information on concepts indicated in this datasheet, download the Datasheet Manual from www.tenaris.com

Wedge 521®

Printed on: 05/09/2019

Outside Diameter	**4.500** in.	**Min. Wall Thickness**	**87.5%**	**(*) Grade P110**	
Wall Thickness	**0.250** in.	**Connection OD Option**	**REGULAR**	**COUPLING**	**PIPE BODY**
Grade	**P110***	**Drift**	**API Standard**	Body: **White** 1st Band: **-** 2nd Band: **-** 3rd Band: **-**	1st Band: **White** 2nd Band: **-** 3rd Band: **-** 4th Band: **-**
		Type	**Casing**		

PIPE BODY DATA

GEOMETRY

Nominal OD	**4.500** in.	Nominal Weight	**11.60** lbs/ft	Drift	**3.875** in.
Nominal ID	**4.000** in.	Wall Thickness	**0.250** in.	Plain End Weight	**11.36** lbs/ft
OD Tolerance	**API**				

PERFORMANCE

Body Yield Strength	**367** x1000 lbs	Internal Yield	**10690** psi	SMYS	**110000** psi
Collapse	**7580** psi				

CONNECTION DATA

GEOMETRY

Connection OD	**4.695** in.	Connection ID	**3.960** in.	Make-up Loss	**3.620** in.
Threads per in	**3.36**	Connection OD Option	**REGULAR**		

PERFORMANCE

Tension Efficiency	**64.2** %	Joint Yield Strength	**235.614** x1000 lbs	Internal Pressure Capacity	**10690.000** psi
Compression Efficiency	**84.8** %	Compression Strength	**311.216** x1000 lbs	Max. Allowable Bending	**71.9** °/100 ft
External Pressure Capacity	**7580.000** psi				

MAKE-UP TORQUES

Minimum	**3600** ft-lbs	Optimum	**4300** ft-lbs	Maximum	**6300** ft-lbs

OPERATION LIMIT TORQUES

Operating Torque	**14000** ft-lbs	Yield Torque	**21000** ft-lbs		

Notes

This connection is fully interchangeable with:

Wedge 521® - 4.5 in. - 10.5 / 11 / 12.6 / 13.5 lbs/ft

Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

For further information on concepts indicated in this datasheet, download the Datasheet Manual from www.tenaris.com

ONSHORE ORDER NO. 1
Chevron
SND 14 23 FED COM 001 P26 227H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 1

Pad Summary: INSERT PAD NAME

The table below lists all the wells for the given pad and their respective name and TVD's (ft) for their production target intervals:

Well Name(s)	Target TVD	Formation Desc.
SND 14 23 FED COM 001 P26 225H	9,027	Lower Avalon
SND 14 23 FED COM 001 P26 226H	9,027	Lower Avalon
SND 14 23 FED COM 001 P26 227H	9,027	Lower Avalon

1. **FORMATION TOPS**

The estimated tops of important geologic markers are as follows:
Elevation: 3539 ft

FORMATION	SUB-SEA TVD	TVD	MD	LITHOLOGIES	MIN. RESOURCES	PROD. FORMATION
Rustler (RSLR)	2803	736	736	Dolomite	N/A	
Castile (CSTL)	598	2,941	2,967	Anhydrite	N/A	
Lamar (LMAR)	-953	4,492	4,546	Limestone	N/A	
Bell Canyon (BLCN)	-998	4,537	4,592	Sandstone	N/A	
Cherry Canyon (CRCN)	-1866	5,405	5,475	Sandstone	N/A	
Brushy Canyon (BCN)	-3104	6,643	6,726	Sandstone	N/A	
Bone Spring (BSGL)	-4815	8,354	8,437	Limestone	Oil	
Upper Avalon (AVU)	-4899	8,438	8,521	Limestone/Shale	Oil	
Lower Avalon Target 1	-5488	**9,027**	**19,890**	**Limestone/Shale/Sandstone**	**Oil**	**yes**

WELLBORE LOCATIONS	SUB-SEA TVD	RKB TVD	MD
SHL	3539	-	
KOP	-4931	8,470	8,553
FTP	-5504	9,043	9,446
LTP	-5544	9,083	19,810

2. **ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		500
Water	Cherry Canyon	5,405
Oil/Gas	Bone Spring (BSGL)	8,354
Oil/Gas	Avalon	8,438

All shows of fresh water and minerals will be reported and protected.

3. **BOP EQUIPMENT**

Chevron will have a minimum of a 5,000 psi rig stack (see proposed schematic) for drill out below surface casing. 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 below). 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.

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 liner hole 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 break test will only be performed on operations where BLM documentation states a 5M or less BOP can be utilized.

Chevron 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.

ONSHORE ORDER NO. 1
Chevron
SND 14 23 FED COM 001 P26 227H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 2

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition	
Surface	0'	875'	12-1/4"	9-5/8"	40#	L-80	BTC/LTC	New	
Production	0'	8,500'	8-3/4"	7"	29.0 #	P/TN-110	BLUE	New	
Production Liner	8,200'	19,890'	6-1/8"	5** / 4-1/2"	11.6 #	P-110	W531**/W521	New	**5" contingency from TOL to 200' above planned 1st perf depth

b. **Casing design subject to revision based on geologic conditions encountered.**

c. **A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalculated & sent to the BLM prior to drilling.**

d. **Chevron will fill casing at a minimum of every 20 jts (~840') while running for intermediate and production casing in order to maintain collapse SF.**

SF Calculations based on the following "Worst Case" casing design:

Intermediate Casing:	1,000'	ftTVD	*max depths*
Production Casing:	8,987'	ftTVD	*max depths*
Production Casing:	19,920'	ftMD	*max depths*

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	3.57	6.65	5.32	3.74
Production	1.15	5.28	2.64	1.23
Production Liner	1.10	1.26	1.53	1.16

The following worst case load cases were considered for calculation of the above Min. Safety Factors:

Burst Design	Surf	Prod	Prod Lnr
Pressure Test- Surface, Prod Csg, Prod Liner P external: Mud weight above TOC, PP below P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Mud weight above TOC, PP below P internal: Dry Gas from Next Csg Point	X		
Gas over mud (60/40) - Prod Csg P external: Mud weight above TOC, PP below P internal: 60% gas over 40% mud from hole TD PP			
Stimulation (Frac) Pressures- Prod Liner P external: Mud weight above TOC, PP below P internal: Max inj pressure w/ heaviest injected fluid		X	X
Tubing leak- Prod Csg (packer at KOP) P external: Mud weight above TOC, PP below P internal: Leak just below surf, 8.45 ppg packer fluid		X	X
Collapse Design	Surf	Prod	Prod Lnr
Full Evacuation P external: Mud weight gradient P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: displacement fluid - water	X	X	X
Tension Design	Surf	Prod	Prod Lnr
100k lb overpull	X	X	X

ONSHORE ORDER NO. 1
Chevron
SND 14 23 FED COM 001 P26 227H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 3

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	*Sacks*	Yield	Density	%Excess	Water	*Volume*	Additives
Intermediate Csg 9-5/8										
Tail	Class C	0'	875'	409	1.34	14.8	100	6.40	548	Extender, Antifoam, Retarder
Production 7"										
Planned single stage cement job										
1st Lead	Class C	0'	7,500'	881	2.56	11.9	100	14.66	2255	Extender, Antifoam, Retarder, Viscosifier
1st Tail	Class C	7,500'	8,500'	170	1.33	14.8	50	6.38	226	Extender, Antifoam, Retarder, Viscosifier
Contingency: Top Job										
1st Tail	Class C	0'	6,700'	1136	1.33	14.8	50	6.38	1511	Extender, Antifoam, Retarder, Viscosifier
Production Liner 4-1/2"										
Lead	Class C	8,300'	18,890'	596	1.84	13.2	10	9.86	1097	Extender, Antifoam, Retarder, Viscosifier
Tail	Acid Sol Class H	18,890'	19,890'	48	2.16	15	10	9.22	104	Extender, Antifoam, Retarder, Viscosifier

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.

3. Production casing will have one solid body or bow spring type centralizer on every joint in the lateral, then every other joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing and surface.

6. **MUD PROGRAM**

From (TVD)	To (TVD)	Type	Weight	Viscosity	Filtrate	Notes
0'	875'	Brine	8.3 - 10.3	26-36	15-25	
875'	8,500'	WBM/Brine	8.7 - 10.6	26-36	15-25	
8,500'	9,027'	OBM	8.7 - 13	50-70	5-10	Due to wellbore stability, the mud program may exceed the MW weight window needed to maintain overburden of pore pressure.

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 porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations. And transportating of E&P waste will follow EPA regulations and accompanying manifests.

A mud test shall be performed every 24 hours after mudding 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 pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. **TESTING, LOGGING, AND CORING**

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing
Mudlogs	2 man mudlog	Surface casing shoe through prod hole TD	While drilling or circulating
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling

c. Conventional whole core samples are not planned.
d. A directional survey will be run.

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

a. No abnormal pressure or temperatures are expected. Estimated BHP is: **2,145** psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

Tenaris

Data Sheet

TH DS-19.0248 13 May 19
Rev 00

API BTC 9 5/8" 40.00 ppf L80-ICY

(USC Units)

PIPE BODY DATA					
GEOMETRY					
Nominal OD	9.625 in.	**Nominal Weight**	40.00 lbs/ft	**Standard Drift Diameter**	8.679 in.
Nominal ID	8.835 in.	**Wall Thickness**	0.395 in.	**Special Drift Diameter**	8.750 in.
Plain End Weight	38.97 lbs/ft				
PERFORMANCE					
Body Yield Strength	974 x 1000 lbs	**Internal Yield**	6100 psi	**Collapse**	3870 psi

CONNECTION DATA					
GEOMETRY					
Coupling OD	10.625 in.	**Threads per inch**	5	**Hand-Tight Standoff Thread Turns**	1.00
PERFORMANCE (1)					
Joint Strength	968 x 1000 lbs	**Internal Pressure Resistance**	6100 psi		

(1) Non API size / grade combination for BTC.
This product is threaded on API-enhanced Steel Grade pipe.
Geometrical features according to API Standards 5CT and 5B
Performance calculated as per API Technical Report 5C3 (Sections 9 & 10).

Tenaris

Blue®

Coupling	Pipe Body
Grade: **TN 110SS**	Grade: **TN 110SS**
Body: **Brown**	1st Band: **Pink**
1st Band: **Pink**	2nd Band: **Yellow**
2nd Band: **Yellow**	3rd Band: **Brown**
3rd Band: **-**	4th Band: **-**

Outside Diameter	7.000 in.	**Wall Thickness**	0.408 in.	**Grade**	TN 110SS
Min. Wall Thickness	87.50 %	**Drift**	API Standard	**Type**	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	7.000 in.	**Wall Thickness**	0.408 in.	**Body Yield Strength**	929 x1000 lb
Nominal Weight	29 lb/ft	**Plain End Weight**	28.75 lb/ft	**Min. Internal Yield Pressure**	11,220 psi
Drift	6.059 in.	**OD Tolerance**	API	**SMYS**	110,000 psi
Nominal ID	6.184 in.			**Collapse Pressure**	8530 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	7.677 in.	**Tension Efficiency**	100 %	**Minimum**	10,480 ft-lb
Coupling Length	10.551 in.	**Joint Yield Strength**	929 x1000 lb	**Optimum**	11,640 ft-lb
Connection ID	6.118 in.	**Internal Pressure Capacity**	11,220 psi	**Maximum**	12,800 ft-lb
Make-up Loss	4.480 in.	**Compression Efficiency**	100 %		
Threads per inch	4	**Compression Strength**	929 x1000 lb	**Shoulder Torques**	
Connection OD Option	Regular	**Max. Allowable Bending**	72 °/100 ft	**Minimum**	1750 ft-lb
		External Pressure Capacity	8530 psi	**Maximum**	9890 ft-lb
		Coupling Face Load	433,000 lb	**Operation Limit Torques**	
				Operating Torque	29,100 ft-lb
				Yield Torque	36,380 ft-lb

Notes

This connection is fully interchangeable with:
Blue® - 7 in. - 23 / 24.75 / 26 / 32 / 35 / 38 / 41 / 44 lb/ft
Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version
Datasheet is also valid for Special Bevel option when applicable - except for Coupling Face Load, which will be reduced. Please contact a local Tenaris technical sales representative.

For the lastest performance data, always visit our website: www.tenaris.com

Tenaris

Wedge 513®

Coupling	Pipe Body
Grade: **P110**	Grade: **P110**
Body: **-**	1st Band: **White**
1st Band: **-**	2nd Band: **-**
2nd Band: **-**	3rd Band: **-**
3rd Band: **-**	4th Band: **-**

Outside Diameter	5.000 in.	**Wall Thickness**	0.362 in.	**Grade**	P110
Min. Wall Thickness	87.50 %	**Drift**	API Standard	**Type**	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	5.000 in.	**Wall Thickness**	0.362 in.	**Body Yield Strength**	580 x1000 lb
Nominal Weight	18 lb/ft	**Plain End Weight**	17.95 lb/ft	**Min. Internal Yield Pressure**	13,940 psi
Drift	4.151 in.	**OD Tolerance**	API	**SMYS**	110,000 psi
Nominal ID	4.276 in.			**Collapse Pressure**	13,470 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	5 in.	**Tension Efficiency**	63.70 %	**Minimum**	6500 ft-lb
Connection ID	4.194 in.	**Joint Yield Strength**	369.46 x1000 lb	**Optimum**	7800 ft-lb
Make-up Loss	4.320 in.	**Internal Pressure Capacity**	13,940 psi	**Maximum**	11,400 ft-lb
Threads per inch	3.36	**Compression Efficiency**	73.70 %		
Connection OD Option	Regular	**Compression Strength**	427.46 x1000 lb	**Operation Limit Torques**	
		Max. Allowable Bending	64.30 °/100 ft	**Operating Torque**	19,300 ft-lb
		External Pressure Capacity	13,470 psi	**Yield Torque**	29,000 ft-lb

Notes

For the lastest performance data, always visit our website: www.tenaris.com

Wedge 521®

Printed on: 05/09/2019

Outside Diameter	**4.500** in.	**Min. Wall Thickness**	**87.5%**	**(*) Grade P110**	
Wall Thickness	**0.250** in.	**Connection OD Option**	**REGULAR**	**COUPLING**	**PIPE BODY**
Grade	**P110***	**Drift**	**API Standard**	Body: **White** 1st Band: **-** 2nd Band: **-** 3rd Band: **-**	1st Band: **White** 2nd Band: **-** 3rd Band: **-** 4th Band: **-**
		Type	**Casing**		

PIPE BODY DATA

GEOMETRY

Nominal OD	**4.500** in.	Nominal Weight	**11.60** lbs/ft	Drift	**3.875** in.
Nominal ID	**4.000** in.	Wall Thickness	**0.250** in.	Plain End Weight	**11.36** lbs/ft
OD Tolerance	**API**				

PERFORMANCE

Body Yield Strength	**367** x1000 lbs	Internal Yield	**10690** psi	SMYS	**110000** psi
Collapse	**7580** psi				

CONNECTION DATA

GEOMETRY

Connection OD	**4.695** in.	Connection ID	**3.960** in.	Make-up Loss	**3.620** in.
Threads per in	**3.36**	Connection OD Option	**REGULAR**		

PERFORMANCE

Tension Efficiency	**64.2** %	Joint Yield Strength	**235.614** x1000 lbs	Internal Pressure Capacity	**10690.000** psi
Compression Efficiency	**84.8** %	Compression Strength	**311.216** x1000 lbs	Max. Allowable Bending	**71.9** °/100 ft
External Pressure Capacity	**7580.000** psi				

MAKE-UP TORQUES

Minimum	**3600** ft-lbs	Optimum	**4300** ft-lbs	Maximum	**6300** ft-lbs

OPERATION LIMIT TORQUES

Operating Torque	**14000** ft-lbs	Yield Torque	**21000** ft-lbs		

Notes

This connection is fully interchangeable with:

Wedge 521® - 4.5 in. - 10.5 / 11 / 12.6 / 13.5 lbs/ft

Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

For further information on concepts indicated in this datasheet, download the Datasheet Manual from www.tenaris.com

ONSHORE ORDER NO. 1
Chevron
SND 14 23 FED COM 001 P26 227H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 1

Pad Summary: Sand Dunes Pad 26

The table below lists all the wells for the given pad and their respective name and TVD's (ft) for their production target intervals:

Well Name(s)	Target TVD	Formation Desc.
SND 14 23 FED COM 001 P26 225H	9,027	Lower Avalon
SND 14 23 FED COM 001 P26 226H	9,027	Lower Avalon
SND 14 23 FED COM 001 P26 227H	9,027	Lower Avalon

1. **FORMATION TOPS**

The estimated tops of important geologic markers are as follows:
Elevation: 3538 ft

FORMATION	SUB-SEA TVD	TVD	MD	LITHOLOGIES	MIN. RESOURCES	PROD. FORMATION
Rustler (RSLR)	2802	736	736	Dolomite	N/A	
Castile (CSTL)	597	2,941	2,970	Anhydrite	N/A	
Lamar (LMAR)	-954	4,492	4,553	Limestone	N/A	
Bell Canyon (BLCN)	-999	4,537	4,599	Sandstone	N/A	
Cherry Canyon (CRCN)	-1867	5,405	5,485	Sandstone	N/A	
Brushy Canyon (BCN)	-3105	6,643	6,737	Sandstone	N/A	
Bone Spring (BSGL)	-4816	8,354	8,448	Limestone	Oil	
Upper Avalon (AVU)	-4900	8,438	8,532	Limestone/Shale	Oil	
Lower Avalon Target 1	-5489	**9,027**	**19,890**	**Limestone/Shale/Sandstone**	**Oil**	**yes**

WELLBORE LOCATIONS	SUB-SEA TVD	RKB TVD	MD
SHL	3538	-	
KOP	-4932	8,470	8,553
FTP	-5505	9,043	9,446
LTP	-5545	9,083	19,810

2. **ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		500
Water	Cherry Canyon	5,405
Oil/Gas	Bone Spring (BSGL)	8,354
Oil/Gas	Avalon	8,438

All shows of fresh water and minerals will be reported and protected.

3. **BOP EQUIPMENT**

Chevron will have a minimum of a 5,000 psi rig stack (see proposed schematic) for drill out below surface casing. 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 below). 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.

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 liner hole 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 break test will only be performed on operations where BLM documentation states a 5M or less BOP can be utilized.

Chevron 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 nipple 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.

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:

Purpose	From	To	*(TVD)*	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	800'	*800'*	16"	13-3/8"	54.5 #	J-55	STC	New
Intermediate	0'	4,500'	*4,500'*	12-1/4"	9-5/8"	40#	L-80	BTC	New
Prod/Intermediate 2	0'	8,360'	*8,500'*	8-3/4"	7"	29.0 #	P/TN-110	BLUE	New
Production Liner	8,060'	19,890'	*9,083'*	6-1/8"	5** x 4-1/2"	18 x 11.6	P-110	W513 x W521	New

**5" casing ran from TOL to 45 deg. Max OD at connection is 5.00 inches

a. **Casing design subject to revision based on geologic conditions encountered.**

b. **A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalculated & sent to the BLM prior to drilling.**

c. **Chevon will keep casing fluid filled at all times and while RIH. Chevron will check casing at a minimum of every 20 jts (~840') while running intermediate and production casing in order to maintain collapse SF.**

SF Calculations based on the following "Worst Case" casing design:

Surface	1,000'	ftTVD	*max depths*
Intermediate	5,000'	ftTVD	*max depths*
Prod/Intermediate 2	10,000'	ftTVD	*max depths*
Production Liner	21,000'	ftMD	*max depths*

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.70	2.44	4.72	1.80
Intermediate	1.34	1.78	2.70	1.63
Prod/Intermediate 2	1.15	5.82	2.77	1.24
Production Liner	1.11	1.32	1.38	1.16

The following worst case load cases were considered for calculation of the above Min. Safety Factors:

Burst Design	Surf	Int	Int 2	Prod Lnr
Pressure Test- Surface, Prod Csg, Prod Liner P external: Mud weight above TOC, PP below P internal: Test psi + next section heaviest mud in csg	X	X	X	X
Displace to Gas P external: Mud weight above TOC, PP below P internal: Dry Gas from Next Csg Point	X	X	X	X
Gas over mud (60/40) - Prod Csg P external: Mud weight above TOC, PP below P internal: 60% gas over 40% mud from hole TD PP		X	X	X
Stimulation (Frac) Pressures- P external: Mud weight above TOC, PP below P internal: Max inj pressure w/ heaviest injected fluid			X	X
Tubing leak- Prod Csg (packer at KOP) P external: Mud weight above TOC, PP below P internal: Leak just below surf, 8.45 ppg packer fluid		X	X	X
Collapse Design	Surf	Prod	Prod	Prod
Full Evacuation P external: Mud weight gradient P internal: none	X	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: displacement fluid - water	X	X	X	X
Tension Design	Surf	Prod	Prod	Prod
50-100k lb overpull	X	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	*Sacks*	Yield	Density	%Excess	Water	*Volume cuft*	Additives
Surface Csg 13-3/8"										
Tail	Class C	0'	800'	374	1.34	14.5	100	6.40	501	Extender, Antifoam, Retarder
Intermediate Csg 9-5/8"										
Tail	Class C	0'	3,500'	877	2.5	11.5	100	14.60	2192	Extender, Antifoam, Retarder
Tail	Class C	3,500'	4,500'	336	1.4	14.5	50	6.50	470	Extender, Antifoam, Retarder
Prod Intermediate-2 7"										
Planned single stage cement job										
Lead	Class C	4,000'	7,360'	303	2.5	11.5	50	14.60	758	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	7,360'	8,360'	134	1.4	14.5	25	6.50	188	Extender, Antifoam, Retarder, Viscosifier
Contingency: Top Job										
Tail	Class C	0'	6,000'	805	1.4	14.5	25	6.50	1128	Extender, Antifoam, Retarder, Viscosifier
Production Liner 5" x 4-1/2"										
Lead	Class C	8,060'	19,890'	757	1.84	13.2	25	9.86	1393	Extender, Antifoam, Retarder, Viscosifier

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.

3. Production casing will have one solid body or bow spring type centralizer on every joint in the lateral, then every other joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing and surface.

6. **MUD PROGRAM**

From	To	Type	Weight	Weight at TD	Viscosity	Filtrate	Notes
0'	800'	Spud mud	8.3 - 8.9	8.9	26-36	15-25	
0'	4,500'	Brine	8.3 - 10.6	10.0	26-36	15-25	
4,500'	8,360'	WBM/Brine	8.7 - 10.6	9.0	26-36	15-25	
8,360'	19,890'	OBM	8.7 - 10.5	9.6	50-70	5-10	

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 porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations. And transportating of E&P waste will follow EPA regulations and accompanying manifests.

A mud test shall be performed every 24 hours after mudding 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 pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. **TESTING, LOGGING, AND CORING**

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing
Mudlogs	2 man mudlog	Surface casing shoe through prod hole TD	While drilling or circulating
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling

c. Conventional whole core samples are not planned.
d. A directional survey will be run.

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

a. No abnormal pressure or temperatures are expected. Estimated BHP is: **2,520** psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

H_2S Preparedness and Contingency Plan Summary

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_2S, who are not required to perform work in H_2S areas, will be provided with an awareness level of H_2S training prior to entering any H_2S areas. At a minimum, awareness level training will include:

1. Physical and chemical properties of H_2S
2. Health hazards of H_2S
3. Personal protective equipment
4. Information regarding potential sources of H_2S
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_2S Training

Employees and contractors required to work in areas that may contain H_2S will be provided with Advanced Level H_2S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H_2S training will include:

1. H_2S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H_2S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H_2S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H_2S 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_2S training;
6. Proficiency examination covering all course material.

Advanced H_2S training courses will be instructed by personnel who have successfully completed an appropriate H_2S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.

H_2S Preparedness and Contingency Plan Summary

H_2S 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 up-wind 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_2S 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_2S Detection and Monitoring System

a) H_2S 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.

H_2S Preparedness and Contingency Plan Summary

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

Agency	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

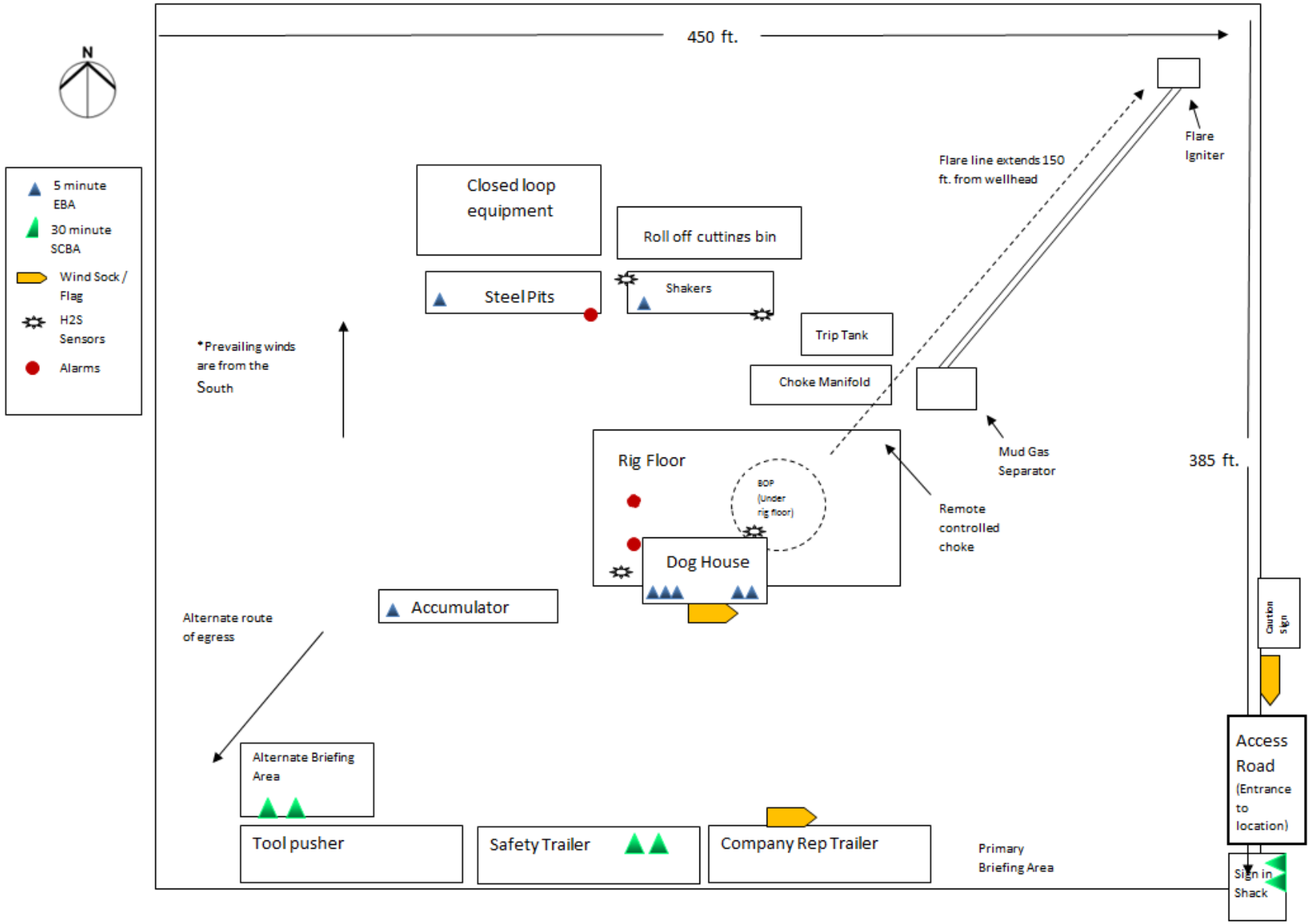
H_2S Preparedness and Contingency Plan Summary

Chevron MCBU D&C Emergency Notifications

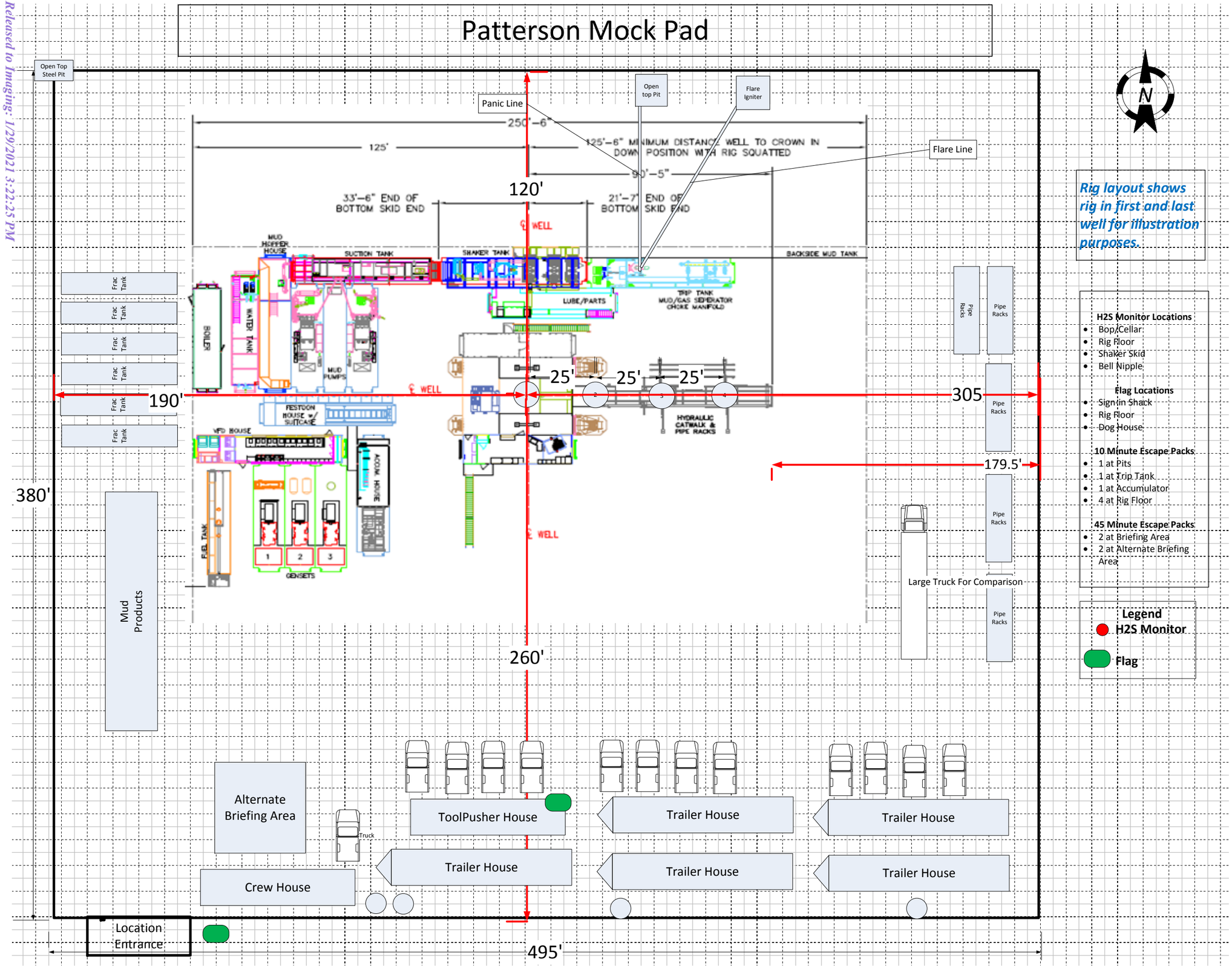
Below are lists of contacts to be used in emergency situations.

	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		

H_2S Preparedness and Contingency Plan Summary



Patterson Mock Pad



Rig layout shows rig in first and last well for illustration purposes.

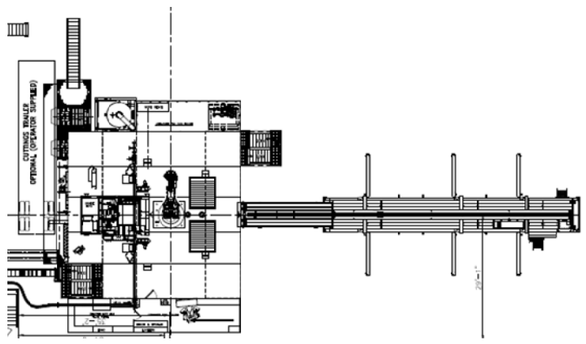
H2S Monitor Locations
- Bop/Cellar
- Rig Floor
- Shaker Skid
- Bell Nipple

Flag Locations
- Sign in Shack
- Rig Floor
- Dog House

10 Minute Escape Packs
- 1 at Pits
- 1 at Trip Tank
- 1 at Accumulator
- 4 at Rig Floor

45 Minute Escape Packs
- 2 at Briefing Area
- 2 at Alternate Briefing Area

Legend
- H2S Monitor
- Flag


OPTIONAL (OPERATOR SUPPLIED)

Schlumberger

Chevron SND 14 23 Fed Com 001 P26 No. 227H Rev0 CVS 04May20
Proposal Geodetic Report
(Def Plan)

Report Date:	May 08, 2020 - 02:50 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chevron	**Vertical Section Azimuth:**	179.650 ° (Grid North)
Field:	NM Eddy County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chevron SND 14 23 Fed Com 001 P26 Pad / 227H	**TVD Reference Datum:**	RKB = 30ft
Well:	SND 14 23 Fed Com 001 P26 No. 227H	**TVD Reference Elevation:**	3568.000 ft above MSL
Borehole:	SND 14 23 Fed Com 001 P26 No. 227H	**Seabed / Ground Elevation:**	3538.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.639 °
Survey Name:	Chevron SND 14 23 Fed Com 001 P26 No. 227H Rev0 CVS 04May20	**Total Gravity Field Strength:**	998.4309mgn (9.80665 Based)
Survey Date:	May 08, 2020	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	113.324 ° / 11933.924 ft / 6.471 / 1.314	**Total Magnetic Field Strength:**	47809.867 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.884 °
Location Lat / Long:	N 32° 13' 29.61828", W 103° 45' 8.81054"	**Declination Date:**	May 08, 2020
Location Grid N/E Y/X:	N 446021.000 ftUS, E 679632.000 ftUS	**Magnetic Declination Model:**	HDGM 2020
CRS Grid Convergence Angle:	0.3098 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994605	**Grid Convergence Used:**	0.3098 °
Version / Patch:	2.10.811.0	**Total Corr Mag North->Grid North:**	6.3293 °
		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 ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	100.00	0.00	69.05	100.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	200.00	0.00	69.05	200.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	300.00	0.00	69.05	300.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	400.00	0.00	69.05	400.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	500.00	0.00	69.05	500.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	600.00	0.00	69.05	600.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	700.00	0.00	69.05	700.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
Rustler	*736.00*	*0.00*	*69.05*	*736.00*	*0.00*	*0.00*	*0.00*	*0.00*	*446021.00*	*679632.00*	*N 32 13 29.62*	*W 103 45 8.81*
	800.00	0.00	69.05	800.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
9-5/8" Casing	900.00	0.00	69.05	900.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
Build 1.5°/100ft	980.00	0.00	69.05	980.00	0.00	0.00	0.00	0.00	446021.00	679632.00	N 32 13 29.62	W 103 45 8.81
	1000.00	0.30	69.05	1000.00	-0.02	0.02	0.05	1.50	446021.02	679632.05	N 32 13 29.62	W 103 45 8.81
	1100.00	1.80	69.05	1099.98	-0.66	0.67	1.76	1.50	446021.67	679633.76	N 32 13 29.62	W 103 45 8.79
	1200.00	3.30	69.05	1199.88	-2.23	2.26	5.92	1.50	446023.26	679637.91	N 32 13 29.64	W 103 45 8.74
	1300.00	4.80	69.05	1299.63	-4.71	4.79	12.51	1.50	446025.79	679644.51	N 32 13 29.67	W 103 45 8.66
	1400.00	6.30	69.05	1399.15	-8.12	8.25	21.54	1.50	446029.25	679653.54	N 32 13 29.70	W 103 45 8.56
	1500.00	7.80	69.05	1498.40	-12.43	12.64	33.00	1.50	446033.63	679665.00	N 32 13 29.74	W 103 45 8.43
	1600.00	9.30	69.05	1597.28	-17.66	17.95	46.89	1.50	446038.95	679678.89	N 32 13 29.79	W 103 45 8.26
Hold	1696.68	10.75	69.05	1692.48	-23.58	23.97	62.61	1.50	446044.97	679694.60	N 32 13 29.85	W 103 45 8.08
	1700.00	10.75	69.05	1695.74	-23.80	24.19	63.18	0.00	446045.19	679695.18	N 32 13 29.85	W 103 45 8.07
	1800.00	10.75	69.05	1793.99	-30.36	30.86	80.60	0.00	446051.86	679712.60	N 32 13 29.92	W 103 45 7.87
	1900.00	10.75	69.05	1892.23	-36.93	37.53	98.02	0.00	446058.52	679730.02	N 32 13 29.98	W 103 45 7.67
	2000.00	10.75	69.05	1990.48	-43.49	44.19	115.44	0.00	446065.19	679747.44	N 32 13 30.05	W 103 45 7.46
	2100.00	10.75	69.05	2088.72	-50.05	50.86	132.86	0.00	446071.86	679764.86	N 32 13 30.11	W 103 45 7.26
	2200.00	10.75	69.05	2186.97	-56.61	57.53	150.28	0.00	446078.53	679782.28	N 32 13 30.18	W 103 45 7.06
	2300.00	10.75	69.05	2285.21	-63.18	64.20	167.70	0.00	446085.20	679799.69	N 32 13 30.24	W 103 45 6.85
	2400.00	10.75	69.05	2383.46	-69.74	70.87	185.12	0.00	446091.87	679817.11	N 32 13 30.31	W 103 45 6.65
	2500.00	10.75	69.05	2481.70	-76.30	77.54	202.54	0.00	446098.53	679834.53	N 32 13 30.37	W 103 45 6.45
	2600.00	10.75	69.05	2579.95	-82.86	84.21	219.96	0.00	446105.20	679851.95	N 32 13 30.44	W 103 45 6.24
	2700.00	10.75	69.05	2678.19	-89.42	90.88	237.38	0.00	446111.87	679869.37	N 32 13 30.50	W 103 45 6.04
	2800.00	10.75	69.05	2776.44	-95.99	97.54	254.80	0.00	446118.54	679886.79	N 32 13 30.57	W 103 45 5.84
	2900.00	10.75	69.05	2874.68	-102.55	104.21	272.22	0.00	446125.21	679904.21	N 32 13 30.63	W 103 45 5.64
Castile	*2967.50*	*10.75*	*69.05*	*2941.00*	*-106.98*	*108.71*	*283.98*	*0.00*	*446129.71*	*679915.97*	*N 32 13 30.68*	*W 103 45 5.50*
	3000.00	10.75	69.05	2972.93	-109.11	110.88	289.64	0.00	446131.88	679921.63	N 32 13 30.70	W 103 45 5.43
	3100.00	10.75	69.05	3071.17	-115.67	117.55	307.06	0.00	446138.54	679939.05	N 32 13 30.77	W 103 45 5.23
	3200.00	10.75	69.05	3169.42	-122.24	124.22	324.48	0.00	446145.21	679956.46	N 32 13 30.83	W 103 45 5.03
	3300.00	10.75	69.05	3267.66	-128.80	130.89	341.90	0.00	446151.88	679973.88	N 32 13 30.90	W 103 45 4.82
	3400.00	10.75	69.05	3365.91	-135.36	137.56	359.32	0.00	446158.55	679991.30	N 32 13 30.96	W 103 45 4.62
	3500.00	10.75	69.05	3464.15	-141.92	144.23	376.74	0.00	446165.22	680008.72	N 32 13 31.03	W 103 45 4.42
	3600.00	10.75	69.05	3562.40	-148.48	150.89	394.16	0.00	446171.89	680026.14	N 32 13 31.09	W 103 45 4.21
	3700.00	10.75	69.05	3660.64	-155.05	157.56	411.58	0.00	446178.55	680043.56	N 32 13 31.16	W 103 45 4.01
	3800.00	10.75	69.05	3758.89	-161.61	164.23	429.00	0.00	446185.22	680060.98	N 32 13 31.22	W 103 45 3.81
	3900.00	10.75	69.05	3857.13	-168.17	170.90	446.42	0.00	446191.89	680078.40	N 32 13 31.29	W 103 45 3.60
	4000.00	10.75	69.05	3955.38	-174.73	177.57	463.84	0.00	446198.56	680095.82	N 32 13 31.35	W 103 45 3.40
	4100.00	10.75	69.05	4053.62	-181.30	184.24	481.26	0.00	446205.23	680113.24	N 32 13 31.42	W 103 45 3.20
	4200.00	10.75	69.05	4151.87	-187.86	190.91	498.68	0.00	446211.90	680130.65	N 32 13 31.48	W 103 45 2.99
	4300.00	10.75	69.05	4250.11	-194.42	197.58	516.10	0.00	446218.56	680148.07	N 32 13 31.55	W 103 45 2.79
	4400.00	10.75	69.05	4348.36	-200.98	204.24	533.52	0.00	446225.23	680165.49	N 32 13 31.61	W 103 45 2.59
	4500.00	10.75	69.05	4446.60	-207.54	210.91	550.94	0.00	446231.90	680182.91	N 32 13 31.68	W 103 45 2.38
Lamar	*4546.21*	*10.75*	*69.05*	*4492.00*	*-210.58*	*213.99*	*558.99*	*0.00*	*446234.98*	*680190.96*	*N 32 13 31.71*	*W 103 45 2.29*
Bell Canyon	*4592.01*	*10.75*	*69.05*	*4537.00*	*-213.58*	*217.05*	*566.97*	*0.00*	*446238.04*	*680198.94*	*N 32 13 31.74*	*W 103 45 2.20*
	4600.00	10.75	69.05	4544.85	-214.11	217.58	568.36	0.00	446238.57	680200.33	N 32 13 31.74	W 103 45 2.18
	4700.00	10.75	69.05	4643.09	-220.67	224.25	585.78	0.00	446245.24	680217.75	N 32 13 31.81	W 103 45 1.98
	4800.00	10.75	69.05	4741.34	-227.23	230.92	603.20	0.00	446251.91	680235.17	N 32 13 31.87	W 103 45 1.77
	4900.00	10.75	69.05	4839.58	-233.79	237.59	620.62	0.00	446258.58	680252.59	N 32 13 31.94	W 103 45 1.57
	5000.00	10.75	69.05	4937.83	-240.36	244.26	638.04	0.00	446265.24	680270.01	N 32 13 32.00	W 103 45 1.37
	5100.00	10.75	69.05	5036.07	-246.92	250.93	655.46	0.00	446271.91	680287.42	N 32 13 32.07	W 103 45 1.16
	5200.00	10.75	69.05	5134.32	-253.48	257.59	672.88	0.00	446278.58	680304.84	N 32 13 32.13	W 103 45 0.96
	5300.00	10.75	69.05	5232.56	-260.04	264.26	690.30	0.00	446285.25	680322.26	N 32 13 32.20	W 103 45 0.76
	5400.00	10.75	69.05	5330.81	-266.60	270.93	707.72	0.00	446291.92	680339.68	N 32 13 32.26	W 103 45 0.56
Cherry Canyon	*5475.52*	*10.75*	*69.05*	*5405.00*	*-271.56*	*275.97*	*720.88*	*0.00*	*446296.95*	*680352.84*	*N 32 13 32.31*	*W 103 45 0.40*
	5500.00	10.75	69.05	5429.05	-273.17	277.60	725.14	0.00	446298.59	680357.10	N 32 13 32.33	W 103 45 0.35
	5600.00	10.75	69.05	5527.30	-279.73	284.27	742.56	0.00	446305.25	680374.52	N 32 13 32.39	W 103 45 0.15
	5700.00	10.75	69.05	5625.54	-286.29	290.94	759.98	0.00	446311.92	680391.94	N 32 13 32.46	W 103 44 59.95
	5800.00	10.75	69.05	5723.79	-292.85	297.61	777.40	0.00	446318.59	680409.36	N 32 13 32.52	W 103 44 59.74
	5900.00	10.75	69.05	5822.03	-299.41	304.28	794.82	0.00	446325.26	680426.78	N 32 13 32.59	W 103 44 59.54
Drop 1.5°/100ft	5958.29	10.75	69.05	5879.30	-303.24	308.16	804.97	0.00	446329.15	680436.93	N 32 13 32.62	W 103 44 59.42
	6000.00	10.12	69.05	5920.32	-305.90	310.86	812.03	1.50	446331.85	680443.99	N 32 13 32.65	W 103 44 59.34
	6100.00	8.62	69.05	6018.98	-311.63	316.69	827.24	1.50	446337.67	680459.20	N 32 13 32.71	W 103 44 59.16
	6200.00	7.12	69.05	6118.04	-316.45	321.59	840.04	1.50	446342.57	680471.99	N 32 13 32.76	W 103 44 59.01
	6300.00	5.62	69.05	6217.41	-320.35	325.56	850.41	1.50	446346.54	680482.36	N 32 13 32.79	W 103 44 58.89
	6400.00	4.12	69.05	6317.05	-323.34	328.59	858.34	1.50	446349.57	680490.29	N 32 13 32.82	W 103 44 58.80
	6500.00	2.62	69.05	6416.87	-325.41	330.70	863.84	1.50	446351.68	680495.79	N 32 13 32.84	W 103 44 58.73
	6600.00	1.12	69.05	6516.82	-326.57	331.87	866.89	1.50	446352.85	680498.84	N 32 13 32.86	W 103 44 58.70
Hold Vertical	6674.97	0.00	69.05	6591.78	-326.82	332.13	867.58	1.50	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	6700.00	0.00	69.05	6616.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
Brushy Canyon	*6726.19*	*0.00*	*69.05*	*6643.00*	*-326.82*	*332.13*	*867.58*	*0.00*	*446353.11*	*680499.53*	*N 32 13 32.86*	*W 103 44 58.69*
	6800.00	0.00	69.05	6716.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	6900.00	0.00	69.05	6816.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7000.00	0.00	69.05	6916.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7100.00	0.00	69.05	7016.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69

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 ° ' ")
	7200.00	0.00	69.05	7116.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7300.00	0.00	69.05	7216.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7400.00	0.00	69.05	7316.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7500.00	0.00	69.05	7416.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7600.00	0.00	69.05	7516.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7700.00	0.00	69.05	7616.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7800.00	0.00	69.05	7716.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	7900.00	0.00	69.05	7816.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	8000.00	0.00	69.05	7916.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	8100.00	0.00	69.05	8016.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	8200.00	0.00	69.05	8116.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	8300.00	0.00	69.05	8216.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	8400.00	0.00	69.05	8316.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
Bone Spring	*8437.19*	*0.00*	*69.05*	*8354.00*	*-326.82*	*332.13*	*867.58*	*0.00*	*446353.11*	*680499.53*	*N 32 13 32.86*	*W 103 44 58.69*
7" Casing	*8483.19*	*0.00*	*69.05*	*8400.00*	*-326.82*	*332.13*	*867.58*	*0.00*	*446353.11*	*680499.53*	*N 32 13 32.86*	*W 103 44 58.69*
	8500.00	0.00	69.05	8416.81	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
Upper Avalon	*8521.19*	*0.00*	*69.05*	*8438.00*	*-326.82*	*332.13*	*867.58*	*0.00*	*446353.11*	*680499.53*	*N 32 13 32.86*	*W 103 44 58.69*
KOP, Build 10°/100ft	8553.27	0.00	69.05	8470.08	-326.82	332.13	867.58	0.00	446353.11	680499.53	N 32 13 32.86	W 103 44 58.69
	8600.00	4.67	179.64	8516.76	-324.92	330.23	867.59	10.00	446351.21	680499.54	N 32 13 32.84	W 103 44 58.69
	8700.00	14.67	179.64	8615.21	-308.14	313.44	867.70	10.00	446334.43	680499.65	N 32 13 32.67	W 103 44 58.69
	8800.00	24.67	179.64	8709.26	-274.51	279.82	867.91	10.00	446300.81	680499.86	N 32 13 32.34	W 103 44 58.69
	8900.00	34.67	179.64	8796.03	-225.07	230.38	868.22	10.00	446251.37	680500.17	N 32 13 31.85	W 103 44 58.69
	9000.00	44.67	179.64	8872.91	-161.31	166.62	868.62	10.00	446187.61	680500.57	N 32 13 31.22	W 103 44 58.69
	9100.00	54.67	179.64	8937.54	-85.17	90.48	869.09	10.00	446111.48	680501.04	N 32 13 30.47	W 103 44 58.69
	9200.00	64.67	179.64	8987.97	1.03	4.28	869.63	10.00	446025.28	680501.58	N 32 13 29.61	W 103 44 58.69
	9300.00	74.67	179.64	9022.66	94.69	-89.37	870.22	10.00	445931.63	680502.17	N 32 13 28.69	W 103 44 58.69
Lower Avalon Target 1	*9317.38*	*76.41*	*179.64*	*9027.00*	*111.52*	*-106.21*	*870.32*	*10.00*	*445914.80*	*680502.27*	*N 32 13 28.52*	*W 103 44 58.69*
	9400.00	84.67	179.64	9040.56	192.94	-187.63	870.83	10.00	445833.38	680502.78	N 32 13 27.71	W 103 44 58.69
FTP Cross Landing Point	9446.46	89.32	179.64	9043.00	239.33	-234.01	871.12	10.00	445787.00	680503.07	N 32 13 27.26	W 103 44 58.69
	9500.00	89.32	179.64	9043.63	292.86	-287.54	871.46	0.00	445733.47	680503.41	N 32 13 26.73	W 103 44 58.68
	9600.00	89.32	179.64	9044.82	392.86	-387.54	872.08	0.00	445633.49	680504.03	N 32 13 25.74	W 103 44 58.68
	9700.00	89.32	179.64	9046.01	492.85	-487.53	872.71	0.00	445533.50	680504.66	N 32 13 24.75	W 103 44 58.68
	9800.00	89.32	179.64	9047.20	592.84	-587.52	873.33	0.00	445433.52	680505.29	N 32 13 23.76	W 103 44 58.68
	9900.00	89.32	179.64	9048.39	692.83	-687.51	873.96	0.00	445333.53	680505.91	N 32 13 22.77	W 103 44 58.68
	10000.00	89.32	179.64	9049.57	792.83	-787.50	874.59	0.00	445233.54	680506.54	N 32 13 21.78	W 103 44 58.68
	10100.00	89.32	179.64	9050.76	892.82	-887.49	875.21	0.00	445133.56	680507.16	N 32 13 20.79	W 103 44 58.68
	10200.00	89.32	179.64	9051.95	992.81	-987.48	875.84	0.00	445033.57	680507.79	N 32 13 19.80	W 103 44 58.68
	10300.00	89.32	179.64	9053.14	1092.81	-1087.47	876.46	0.00	444933.59	680508.41	N 32 13 18.81	W 103 44 58.68
	10400.00	89.32	179.64	9054.33	1192.80	-1187.46	877.09	0.00	444833.60	680509.04	N 32 13 17.82	W 103 44 58.68
	10500.00	89.32	179.64	9055.51	1292.79	-1287.45	877.71	0.00	444733.62	680509.67	N 32 13 16.83	W 103 44 58.68
	10600.00	89.32	179.64	9056.70	1392.79	-1387.45	878.34	0.00	444633.63	680510.29	N 32 13 15.84	W 103 44 58.67
	10700.00	89.32	179.64	9057.89	1492.78	-1487.44	878.97	0.00	444533.65	680510.92	N 32 13 14.85	W 103 44 58.67
	10800.00	89.32	179.64	9059.08	1592.77	-1587.43	879.59	0.00	444433.66	680511.54	N 32 13 13.86	W 103 44 58.67
	10900.00	89.32	179.64	9060.27	1692.76	-1687.42	880.22	0.00	444333.68	680512.17	N 32 13 12.87	W 103 44 58.67
	11000.00	89.32	179.64	9061.46	1792.76	-1787.41	880.84	0.00	444233.69	680512.79	N 32 13 11.88	W 103 44 58.67
	11100.00	89.32	179.64	9062.64	1892.75	-1887.40	881.47	0.00	444133.71	680513.42	N 32 13 10.89	W 103 44 58.67
	11200.00	89.32	179.64	9063.83	1992.74	-1987.39	882.09	0.00	444033.72	680514.05	N 32 13 9.91	W 103 44 58.67
	11300.00	89.32	179.64	9065.02	2092.74	-2087.38	882.72	0.00	443933.73	680514.67	N 32 13 8.92	W 103 44 58.67
	11400.00	89.32	179.64	9066.21	2192.73	-2187.37	883.35	0.00	443833.75	680515.30	N 32 13 7.93	W 103 44 58.67
	11500.00	89.32	179.64	9067.40	2292.72	-2287.36	883.97	0.00	443733.76	680515.92	N 32 13 6.94	W 103 44 58.67
	11600.00	89.32	179.64	9068.58	2392.71	-2387.36	884.60	0.00	443633.78	680516.55	N 32 13 5.95	W 103 44 58.66
	11700.00	89.32	179.64	9069.77	2492.71	-2487.35	885.22	0.00	443533.79	680517.17	N 32 13 4.96	W 103 44 58.66
	11800.00	89.32	179.64	9070.96	2592.70	-2587.34	885.85	0.00	443433.81	680517.80	N 32 13 3.97	W 103 44 58.66
	11900.00	89.32	179.64	9072.15	2692.69	-2687.33	886.47	0.00	443333.82	680518.43	N 32 13 2.98	W 103 44 58.66
	12000.00	89.32	179.64	9073.34	2792.69	-2787.32	887.10	0.00	443233.84	680519.05	N 32 13 1.99	W 103 44 58.66
IFP1, Build 2°/100ft	12055.84	89.32	179.64	9074.00	2848.53	-2843.16	887.45	0.00	443178.00	680519.40	N 32 13 1.44	W 103 44 58.66
	12100.00	90.20	179.64	9074.18	2892.68	-2887.31	887.73	2.00	443133.85	680519.68	N 32 13 1.00	W 103 44 58.66
Hold	12113.57	90.47	179.64	9074.10	2906.25	-2900.88	887.81	2.00	443120.28	680519.76	N 32 13 0.87	W 103 44 58.66
	12200.00	90.47	179.64	9073.39	2992.68	-2987.31	888.35	0.00	443033.86	680520.30	N 32 13 0.01	W 103 44 58.66
	12300.00	90.47	179.64	9072.56	3092.67	-3087.30	888.98	0.00	442933.87	680520.93	N 32 12 59.02	W 103 44 58.66
	12400.00	90.47	179.64	9071.74	3192.67	-3187.30	889.61	0.00	442833.88	680521.56	N 32 12 58.03	W 103 44 58.66
	12500.00	90.47	179.64	9070.91	3292.67	-3287.29	890.23	0.00	442733.89	680522.18	N 32 12 57.04	W 103 44 58.66
	12600.00	90.47	179.64	9070.08	3392.66	-3387.29	890.86	0.00	442633.90	680522.81	N 32 12 56.05	W 103 44 58.65
	12700.00	90.47	179.64	9069.26	3492.66	-3487.28	891.48	0.00	442533.91	680523.43	N 32 12 55.06	W 103 44 58.65
	12800.00	90.47	179.64	9068.43	3592.66	-3587.28	892.11	0.00	442433.93	680524.06	N 32 12 54.07	W 103 44 58.65
	12900.00	90.47	179.64	9067.60	3692.65	-3687.27	892.74	0.00	442333.94	680524.69	N 32 12 53.08	W 103 44 58.65
	13000.00	90.47	179.64	9066.78	3792.65	-3787.26	893.36	0.00	442233.95	680525.31	N 32 12 52.09	W 103 44 58.65
	13100.00	90.47	179.64	9065.95	3892.65	-3887.26	893.99	0.00	442133.96	680525.94	N 32 12 51.10	W 103 44 58.65
	13200.00	90.47	179.64	9065.12	3992.64	-3987.25	894.62	0.00	442033.97	680526.57	N 32 12 50.12	W 103 44 58.65
	13300.00	90.47	179.64	9064.30	4092.64	-4087.25	895.24	0.00	441933.98	680527.19	N 32 12 49.13	W 103 44 58.65
	13400.00	90.47	179.64	9063.47	4192.64	-4187.24	895.87	0.00	441833.99	680527.82	N 32 12 48.14	W 103 44 58.65
	13500.00	90.47	179.64	9062.64	4292.63	-4287.24	896.50	0.00	441734.00	680528.45	N 32 12 47.15	W 103 44 58.65
	13600.00	90.47	179.64	9061.81	4392.63	-4387.23	897.12	0.00	441634.01	680529.07	N 32 12 46.16	W 103 44 58.65
	13700.00	90.47	179.64	9060.99	4492.63	-4487.23	897.75	0.00	441534.02	680529.70	N 32 12 45.17	W 103 44 58.64
	13800.00	90.47	179.64	9060.16	4592.62	-4587.22	898.37	0.00	441434.04	680530.32	N 32 12 44.18	W 103 44 58.64
	13900.00	90.47	179.64	9059.33	4692.62	-4687.22	899.00	0.00	441334.05	680530.95	N 32 12 43.19	W 103 44 58.64
	14000.00	90.47	179.64	9058.51	4792.62	-4787.21	899.63	0.00	441234.06	680531.58	N 32 12 42.20	W 103 44 58.64
	14100.00	90.47	179.64	9057.68	4892.61	-4887.21	900.25	0.00	441134.07	680532.20	N 32 12 41.21	W 103 44 58.64
	14200.00	90.47	179.64	9056.85	4992.61	-4987.20	900.88	0.00	441034.08	680532.83	N 32 12 40.22	W 103 44 58.64
	14300.00	90.47	179.64	9056.03	5092.61	-5087.19	901.51	0.00	440934.09	680533.46	N 32 12 39.23	W 103 44 58.64
	14400.00	90.47	179.64	9055.20	5192.60	-5187.19	902.13	0.00	440834.10	680534.08	N 32 12 38.24	W 103 44 58.64
	14500.00	90.47	179.64	9054.37	5292.60	-5287.18	902.76	0.00	440734.11	680534.71	N 32 12 37.25	W 103 44 58.64
	14600.00	90.47	179.64	9053.55	5392.60	-5387.18	903.39	0.00	440634.12	680535.34	N 32 12 36.26	W 103 44 58.64
IFP2, Drop 2°/100ft	14666.13	90.47	179.64	9053.00	5458.72	-5453.31	903.80	0.00	440568.00	680535.75	N 32 12 35.61	W 103 44 58.63
	14700.00	89.80	179.64	9052.92	5492.59	-5487.17	904.01	2.00	440534.13	680535.96	N 32 12 35.27	W 103 44 58.63
Hold	14715.54	89.49	179.64	9053.02	5508.13	-5502.71	904.11	2.00	440518.60	680536.06	N 32 12 35.12	W 103 44 58.63
	14800.00	89.49	179.64	9053.78	5592.59	-5587.17	904.64	0.00	440434.14	680536.59	N 32 12 34.28	W 103 44 58.63
	14900.00	89.49	179.64	9054.67	5692.59	-5687.16	905.27	0.00	440334.16	680537.21	N 32 12 33.29	W 103 44 58.63
	15000.00	89.49	179.64	9055.57	5792.58	-5787.16	905.89	0.00	440234.17	680537.84	N 32 12 32.30	W 103 44 58.63
	15100.00	89.49	179.64	9056.47	5892.58	-5887.15	906.52	0.00	440134.18	680538.47	N 32 12 31.31	W 103 44 58.63
	15200.00	89.49	179.64	9057.37	5992.57	-5987.14	907.15	0.00	440034.19	680539.09	N 32 12 30.32	W 103 44 58.63
	15300.00	89.49	179.64	9058.26	6092.57	-6087.14	907.77	0.00	439934.20	680539.72	N 32 12 29.34	W 103 44 58.63
	15400.00	89.49	179.64	9059.16	6192.57	-6187.13	908.40	0.00	439834.21	680540.35	N 32 12 28.35	W 103 44 58.63
	15500.00	89.49	179.64	9060.06	6292.56	-6287.13	909.03	0.00	439734.23	680540.97	N 32 12 27.36	W 103 44 58.63
	15600.00	89.49	179.64	9060.96	6392.56	-6387.12	909.65	0.00	439634.24	680541.60	N 32 12 26.37	W 103 44 58.63
	15700.00	89.49	179.64	9061.86	6492.55	-6487.11	910.28	0.00	439534.25	680542.23	N 32 12 25.38	W 103 44 58.62
	15800.00	89.49	179.64	9062.75	6592.55	-6587.11	910.90	0.00	439434.26	680542.85	N 32 12 24.39	W 103 44 58.62
	15900.00	89.49	179.64	9063.65	6692.55	-6687.10	911.53	0.00	439334.27	680543.48	N 32 12 23.40	W 103 44 58.62
	16000.00	89.49	179.64	9064.55	6792.54	-6787.10	912.16	0.00	439234.28	680544.11	N 32 12 22.41	W 103 44 58.62
	16100.00	89.49	179.64	9065.45	6892.54	-6887.09	912.78	0.00	439134.30	680544.73	N 32 12 21.42	W 103 44 58.62
	16200.00	89.49	179.64	9066.34	6992.53	-6987.08	913.41	0.00	439034.31	680545.36	N 32 12 20.43	W 103 44 58.62
	16300.00	89.49	179.64	9067.24	7092.53	-7087.08	914.04	0.00	438934.32	680545.99	N 32 12 19.44	W 103 44 58.62
	16400.00	89.49	179.64	9068.14	7192.53	-7187.07	914.66	0.00	438834.33	680546.61	N 32 12 18.45	W 103 44 58.62
	16500.00	89.49	179.64	9069.04	7292.52	-7287.07	915.29	0.00	438734.34	680547.24	N 32 12 17.46	W 103 44 58.62
	16600.00	89.49	179.64	9069.94	7392.52	-7387.06	915.92	0.00	438634.35	680547.87	N 32 12 16.47	W 103 44 58.62
	16700.00	89.49	179.64	9070.83	7492.51	-7487.05	916.54	0.00	438534.36	680548.49	N 32 12 15.48	W 103 44 58.61
	16800.00	89.49	179.64	9071.73	7592.51	-7587.05	917.17	0.00	438434.38	680549.12	N 32 12 14.49	W 103 44 58.61
	16900.00	89.49	179.64	9072.63	7692.51	-7687.04	917.80	0.00	438334.39	680549.75	N 32 12 13.50	W 103 44 58.61
	17000.00	89.49	179.64	9073.53	7792.50	-7787.04	918.42	0.00	438234.40	680550.37	N 32 12 12.51	W 103 44 58.61

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 ° ' ")
	17100.00	89.49	179.64	9074.42	7892.50	-7887.03	919.05	0.00	438134.41	680551.00	N 32 12 11.52	W 103 44 58.61
	17200.00	89.49	179.64	9075.32	7992.49	-7987.02	919.68	0.00	438034.42	680551.63	N 32 12 10.53	W 103 44 58.61
IFP3, Build 2°/100ft	17275.43	89.49	179.64	9076.00	8067.92	-8062.45	920.15	0.00	437959.00	680552.10	N 32 12 9.79	W 103 44 58.61
Hold	17293.53	89.85	179.64	9076.11	8086.02	-8080.55	920.26	2.00	437940.90	680552.21	N 32 12 9.61	W 103 44 58.61
	17300.00	89.85	179.64	9076.12	8092.49	-8087.02	920.30	0.00	437934.43	680552.25	N 32 12 9.55	W 103 44 58.61
	17400.00	89.85	179.64	9076.39	8192.49	-8187.02	920.93	0.00	437834.44	680552.88	N 32 12 8.56	W 103 44 58.61
	17500.00	89.85	179.64	9076.65	8292.49	-8287.01	921.56	0.00	437734.45	680553.51	N 32 12 7.57	W 103 44 58.61
	17600.00	89.85	179.64	9076.92	8392.49	-8387.01	922.18	0.00	437634.46	680554.13	N 32 12 6.58	W 103 44 58.61
	17700.00	89.85	179.64	9077.19	8492.49	-8487.01	922.81	0.00	437534.47	680554.76	N 32 12 5.59	W 103 44 58.61
	17800.00	89.85	179.64	9077.45	8592.49	-8587.01	923.44	0.00	437434.47	680555.38	N 32 12 4.60	W 103 44 58.60
	17900.00	89.85	179.64	9077.72	8692.49	-8687.00	924.06	0.00	437334.48	680556.01	N 32 12 3.61	W 103 44 58.60
	18000.00	89.85	179.64	9077.98	8792.49	-8787.00	924.69	0.00	437234.49	680556.64	N 32 12 2.62	W 103 44 58.60
	18100.00	89.85	179.64	9078.25	8892.49	-8887.00	925.32	0.00	437134.50	680557.26	N 32 12 1.63	W 103 44 58.60
	18200.00	89.85	179.64	9078.52	8992.49	-8987.00	925.94	0.00	437034.50	680557.89	N 32 12 0.64	W 103 44 58.60
	18300.00	89.85	179.64	9078.78	9092.49	-9087.00	926.57	0.00	436934.51	680558.52	N 32 11 59.65	W 103 44 58.60
	18400.00	89.85	179.64	9079.05	9192.49	-9186.99	927.19	0.00	436834.52	680559.14	N 32 11 58.66	W 103 44 58.60
	18500.00	89.85	179.64	9079.31	9292.49	-9286.99	927.82	0.00	436734.53	680559.77	N 32 11 57.67	W 103 44 58.60
	18600.00	89.85	179.64	9079.58	9392.49	-9386.99	928.45	0.00	436634.54	680560.39	N 32 11 56.68	W 103 44 58.60
	18700.00	89.85	179.64	9079.85	9492.48	-9486.99	929.07	0.00	436534.54	680561.02	N 32 11 55.69	W 103 44 58.60
	18800.00	89.85	179.64	9080.11	9592.48	-9586.98	929.70	0.00	436434.55	680561.65	N 32 11 54.70	W 103 44 58.59
	18900.00	89.85	179.64	9080.38	9692.48	-9686.98	930.33	0.00	436334.56	680562.27	N 32 11 53.71	W 103 44 58.59
	19000.00	89.85	179.64	9080.64	9792.48	-9786.98	930.95	0.00	436234.57	680562.90	N 32 11 52.72	W 103 44 58.59
	19100.00	89.85	179.64	9080.91	9892.48	-9886.98	931.58	0.00	436134.58	680563.53	N 32 11 51.73	W 103 44 58.59
	19200.00	89.85	179.64	9081.18	9992.48	-9986.97	932.21	0.00	436034.58	680564.15	N 32 11 50.74	W 103 44 58.59
	19300.00	89.85	179.64	9081.44	10092.48	-10086.97	932.83	0.00	435934.59	680564.78	N 32 11 49.75	W 103 44 58.59
	19400.00	89.85	179.64	9081.71	10192.48	-10186.97	933.46	0.00	435834.60	680565.41	N 32 11 48.76	W 103 44 58.59
	19500.00	89.85	179.64	9081.97	10292.48	-10286.97	934.08	0.00	435734.61	680566.03	N 32 11 47.78	W 103 44 58.59
	19600.00	89.85	179.64	9082.24	10392.48	-10386.97	934.71	0.00	435634.62	680566.66	N 32 11 46.79	W 103 44 58.59
	19700.00	89.85	179.64	9082.51	10492.48	-10486.96	935.34	0.00	435534.62	680567.28	N 32 11 45.80	W 103 44 58.59
	19800.00	89.85	179.64	9082.77	10592.48	-10586.96	935.96	0.00	435434.63	680567.91	N 32 11 44.81	W 103 44 58.58
LTP Cross	*19810.42*	*89.85*	*179.64*	*9082.80*	*10602.90*	*-10597.38*	*936.03*	*0.00*	*435424.21*	*680567.98*	*N 32 11 44.70*	*W 103 44 58.58*
SND 14 23 Fed Com 001 P26 No. 227H - PBHL	19885.64	89.85	179.64	9083.00	10678.12	-10672.60	936.50	0.00	435349.00	680568.45	N 32 11 43.96	W 103 44 58.58

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 97.071% Confidence 3.0000 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	30.000	1/100.000	30.000	30.000		B001Mb_MWD+HRGM-Depth Only	SND 14 23 Fed Com 001 P26 No. 227H / Chevron SND 14 23 Fed Com 001 P26 No. 227H Rev0
	1	30.000	19885.638	1/100.000	30.000	30.000		B001Mb_MWD+HRGM	SND 14 23 Fed Com 001 P26 No. 227H / Chevron SND 14 23 Fed

Chevron U.S.A. Inc. (CUSA)
SUNDRY ATTACHMENT: SPUDDER RIG

DATA OPERATOR NAME: Chevron U.S.A. Inc.

1. SUMMARY OF REQUEST:

CUSA respectfully requests approval for the following operations for the surface hole in the drill plan:

1. Utilize a spudder rig to pre-set surface casing for time and cost savings.

2. Description of Operations

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
   - **a.** After drilling the surface hole section, the spudder rig will run casing and cement following all the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
   - **b.** The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.

2. The wellhead will be installed and then tested offline after the WOC time has been reached.

3. An abandonment cap at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on one wing-valve.
   - **a.** A means for intervention will be maintained while the drilling rig is not over the well.

4. Spudder rig operations are expected to take 2-3 days per well on the pad.

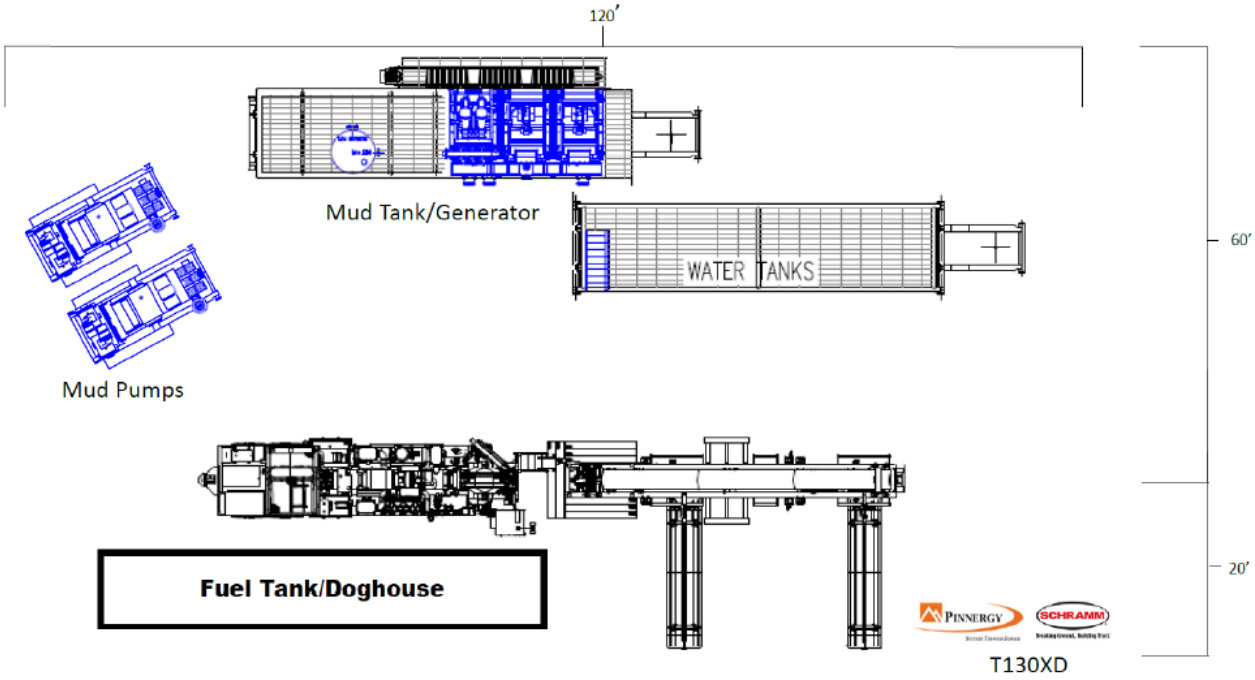
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.

6. Drilling operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nippled up and tested on the wellhead before drilling operations resume on each well.
   - **a.** The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
   - **b.** The BLM will be contacted / notified 24 hours before the larger rig moves back on the pre-set locations.

7. CUSA will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.

8. Once the rig is removed, CUSA will secure the wellhead area by placing a guard rail around the cellar area.

Surface Rig Layout



Delaware Basin
Changes to APD / COA for Federal Well

Well Names:

Well Name	
SND 14 23 FED COM 001 P26	225H
SND 14 23 FED COM 001 P26	226H
SND 14 23 FED COM 001 P26	227H

Rig: Nabors X53

CVX CONTACT:

Hannah Wardo
Wells Engineer

MidContinent Business Unit
Chevron North America Exploration & Production
1400 Smith St, Rm 43-174, Houston, TX 77002
Mobile: 832.963.9814
Office: 713.372.9032
Email: Hannah.Wardo@chevron.com

Summary of Changes

500 psi CS Tail instead of Lead – cave/karst areas

Chevron respectfully requests variance to wait to 500 psi compressive strength (CS) of the tail cement slurry, for primary cement operations in both the Surface and Production casing string(s) (9-5/8”,7"). WOC time is considered the time between bumping the plug (cement in place), until beginning to drill the shoe track. This will ensure that cement will be at suffucient strength prior to performing a shoe test and drilling ahead through the next hole section.

The objective is to utilize applicable engineering lab tests and to simplify operational practices, which will ensure consistent execution is performed and high integrity shoes are achieved across Chevron Operations on BLM in New Mexico.

Sample engineering lab tests may be seen below, as provided by the cementing provider. Note: these numbers will vary slightly based on actual casing set depths and finlized cement lab tests for the particular slurry. Finalized 500 psi compressive strength times will be found on location with the Chevron Drill Site Representative via the cementing labs, Drilling Program and/or POA’s (Plan of Action).

Tail Slurry

Job Type	: Primary	MD	: 9,060.00 ft	TVD	: 9,060.00 ft
BHST	: 157.00 °F	BHCT	: 145.00 °F	BHP	: 5,100.00 psi
Starting Temp	: 80.00 °F	Time To Temp	: 00:45 hr:mn	Heating Rate	: 1.44 °F/min
Starting Pressure	: 500.00 psi	Time To Pressure	: 00:45 hr:mn		

Composition

Slurry Density	: 14.50 lb/gal	Yield	: 1.40 ft³/sk of blend	Mix Fluid	: 6.818 gal/sk of blend
Solid Vol. Fraction	: 34.14 %	Slurry Type	: Tail	Mix Water	: 6.798 gal/sk of blend

Code	Concentration	IsSpike	Sack Reference	Component	Blend Density	Lot Number
D903	100.00 % BVOB		Blend sack: 94 lb	Cement	197.28 lb/ft³	bulk
D065	0.10 % BWOB			Dispersant		6843
D255	0.40 % BWOB			Fluid loss		PPRB1031-51
D047	0.020 gal/sk VBWOB			Anti Foam		D009K1L53
D800	0.20 % BWOB			Retarder		1190032
D208	0.02 % BWOB			Viscosifier		9K3825W
Fresh Water	6.798 gal/sk of blend			Base Fluid		Tap water

Rheology

S/N: XXX5				S/N: XXX5			
Surface (Configuration: R1B1 F1.0)				Downhole (Configuration: R1B1 F1.0)			
Temperature	80 °F			Temperature	145 °F		
(rpm)	Up (deg)	Down (deg)	Average (deg)	(rpm)	Up (deg)	Down (deg)	Average (deg)
600	158	158	158	600	130	130	130
300	110	110	110	300	80	80	80
200	86	70	78	200	64	62	63
100	70	56	63	100	44	40	42
60	60	42	51	60	34	30	32
30	52	34	43	30	26	22	24
20	42	28	35	20	22	18	20
10	32	22	27	10	18	16	17
6	24	20	22	6	12	10	11
3	16	18	17	3	10	10	10
10 sec Gel	34 deg - 36.19 lbf/100ft²			10 sec Gel	16 deg - 17.03 lbf/100ft²		
10 min Gel	48 deg - 51.09 lbf/100ft²			10 min Gel	30 deg - 31.93 lbf/100ft²		
Rheo. computed	PV: 68.2 cP, Ty: 30.16 lbf/100ft²			Rheo. computed	PV: 59.3 cP, Ty: 16.55 lbf/100ft²		
Conditioned at 145.00 °F and bottomhole pressure for 30 mins after reaching temperature All readings taken with F2 spring, doubled, and calculated/reported as F1 spring per Chevron Testing Procedures							

Thickening Time S/N: 718

Set Conditions – Thick (Gelled)

Consistency	Time	Temp
POD Time	02:45 hr:mn	145 °F
30 Bc	02:59 hr:mn	145 °F
50 Bc	03:35 hr:mn	145 °F
70 Bc	03:42 hr:mn	145 °F

Free Fluid

(0.0%) 0 / 250 mL in 2 hrs
At 80 °F and 45 deg inclination
Conditioned at 145.00 °F and 5,100.00 psi for 30 mins after reaching temperature
Sedimentation: None
Tube Dimensions: 250mL: 35 mm X 245 mm

Fluid Loss S/N: 05-034

API/Calculated Fluid Loss 78 mL
Collected 39 mL filtrate in 30 min at 162 degF and 1000 psi
Filter Cake Thickness: 1 in
Filter Cake Consistency: Hard
Non-Stirred Fluid Loss Apparatus Thermocouple Located in Cell Wall

UCA S/N: 903-R

Time	CS	Temp
07:39 hr:mn	50 psi	163 °F
11:30 hr:mn	500 psi	163 °F
13:25 hr:mn	713 psi	163 °F

Comments

All slurries prepared and tested in accordance with API RP 10B-2 unless otherwise noted

Time to Add Solids : 00:17 mn:sc

Vortex Quality: good/visible

6. **MUD PROGRAM**

From	To	Type	Weight	Weight at TD	Viscosity	Filtrate	Notes
0'	800'	Spud mud	8.3 - 8.9	8.9	26-36	15-25	
0'	4,500'	Brine	8.3 - 10.6	10.0	26-36	15-25	
4,500'	8,360'	WBM/Brine	8.7 - 10.6	9.0	26-36	15-25	
8,360'	19,890'	OBM	8.7 - 10.5	9.6	50-70	5-10	

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 porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations. And transportating of E&P waste will follow EPA regulations and accompanying manifests.

A mud test shall be performed every 24 hours after mudding 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 pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. **TESTING, LOGGING, AND CORING**

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

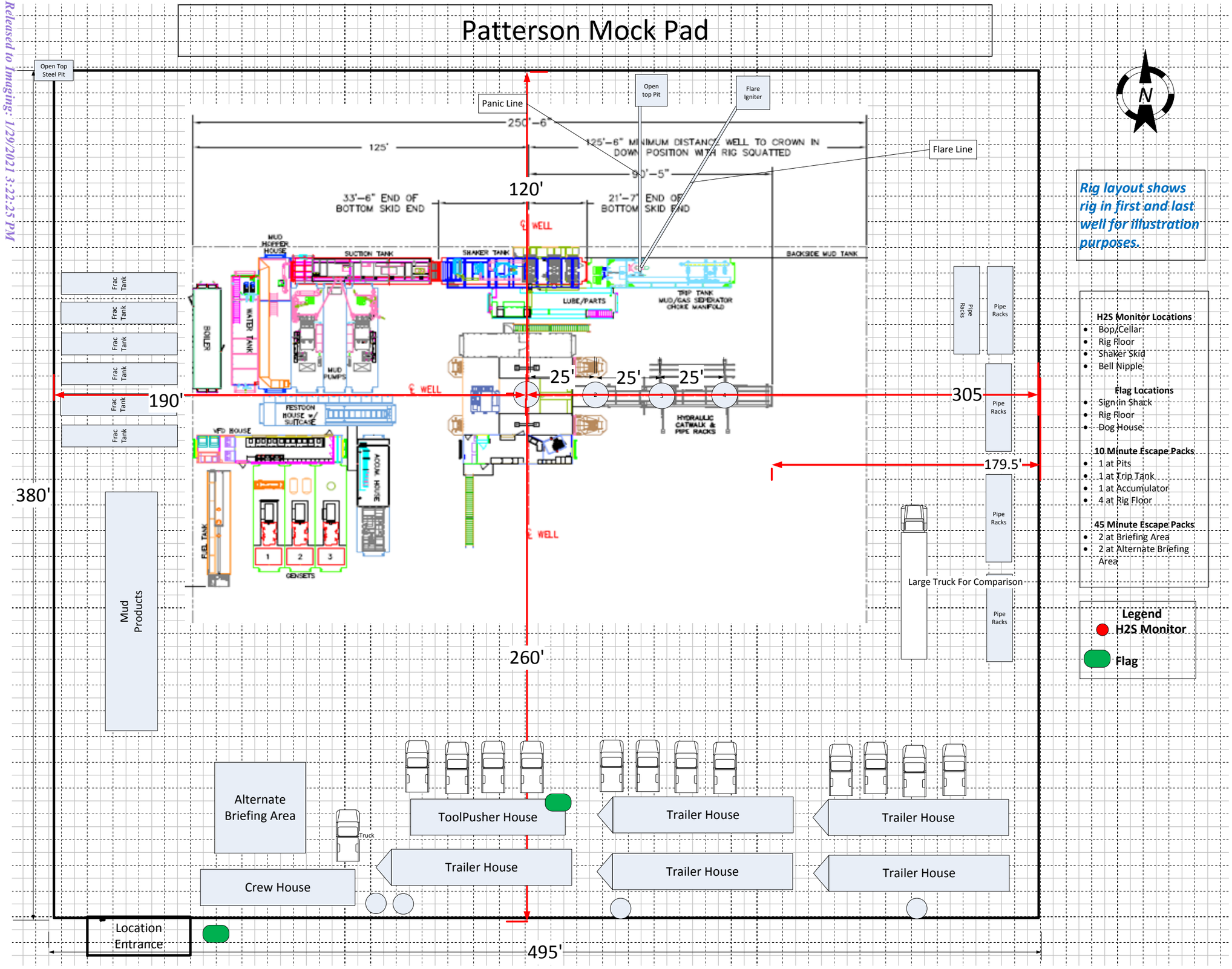
TYPE	Logs	Interval	Timing
Mudlogs	2 man mudlog	Surface casing shoe through prod hole TD	While drilling or circulating
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling

c. Conventional whole core samples are not planned.
d. A directional survey will be run.

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

a. No abnormal pressure or temperatures are expected. Estimated BHP is: **2,520** psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

Patterson Mock Pad



Rig layout shows rig in first and last well for illustration purposes.

H2S Monitor Locations
- Bop/Cellar
- Rig Floor
- Shaker Skid
- Bell Nipple

Flag Locations
- Sign in Shack
- Rig Floor
- Dog House

10 Minute Escape Packs
- 1 at Pits
- 1 at Trip Tank
- 1 at Accumulator
- 4 at Rig Floor

45 Minute Escape Packs
- 2 at Briefing Area
- 2 at Alternate Briefing Area

Legend
- H2S Monitor
- Flag

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 15834

COMMENTS

Operator:			OGRID:	Action Number:	Action Type:
CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	4323	15834	FORM 3160-3

Created By	Comment	Comment Date
kpickford	KP GEO Review 1/29/2021	01/29/2021

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

CONDITIONS

Action 15834

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	4323	15834	FORM 3160-3

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