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.: NMNM100549

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.: HH SO 17 20 FED 003 301H

2. Name of Operator: CHEVRON USA INCORPORATED

9. API Well No.: 30 015 48784

3a. Address: , ,

3b. Phone No. *(include area code)*:

10. Field and Pool, or Exploratory: 64010 WELCH;BONE SPRING

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

At surface: SESW / 244 FSL / 2284 FWL / LAT 32.050435 / LONG -104.213534

At proposed prod. zone: SWSW / 25 FSL / 660 FWL / LAT 32.020543 / LONG -104.218501

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 8/T26S/R27E/NMP

14. Distance in miles and direction from nearest town or post office*: 11.5 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 244 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.: 410 feet

19. Proposed Depth: 8713 feet / 19783 feet

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3251 feet

22. Approximate date work will start*: 12/01/2020

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	12/30/2019

Title: Permitting Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575) 234-5959	05/04/2021

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: 05/04/2021

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
	64010	WELCH;BONE SPRING
[4] Property Code	[5] Property Name	[6] Well Number
	HH SO 17 20 FED 003	301H
[7] OGRID No.	[8] Operator Name	[9] Elevation
4323	CHEVRON U.S.A. INC.	3251'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	8	26 SOUTH	27 EAST, N.M.P.M.		244'	SOUTH	2284'	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
M	20	26 SOUTH	27 EAST, N.M.P.M.		25'	SOUTH	660'	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.

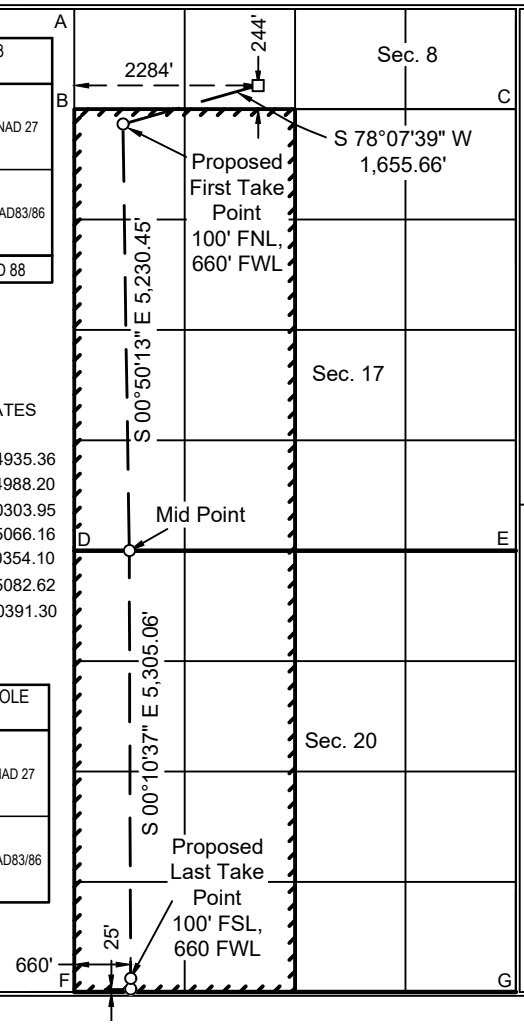
[16]

FIRST TAKE POINT		
X=	535,650'	NAD 27
Y=	381,709'	
LAT.	32.049382° N	
LONG.	104.218270° W	
X=	576,833'	NAD83/86
Y=	381,766'	
LAT.	32.049504° N	
LONG.	104.218765° W	
MID POINT		
X=	535,726'	NAD 27
Y=	376,480'	
LAT.	32.035005° N	
LONG.	104.218042° W	
X=	576,910'	NAD83/86
Y=	376,536'	
LAT.	32.035126° N	
LONG.	104.218536° W	
LAST TAKE POINT		
X=	535,742'	NAD 27
Y=	371,250'	
LAT.	32.020627° N	
LONG.	104.218008° W	
X=	576,926'	NAD83/86
Y=	371,306'	
LAT.	32.020749° N	
LONG.	104.218501° W	

HH SO 17 20 FED 003 NO. 301H WELL		
X=	537,270'	NAD 27
Y=	382,050'	
LAT.	32.050314° N	
LONG.	104.213040° W	
X=	578,454'	NAD83/86
Y=	382,107'	
LAT.	32.050435° N	
LONG.	104.213534° W	
ELEVATION +3251' NAVD 88		

CORNER COORDINATES TABLE (NAD 27)
A - Y=387143.09, X=534935.36
B - Y=381810.94, X=534988.20
C - Y=381799.23, X=540303.95
D - Y=376480.27, X=535066.16
E - Y=376474.90, X=540354.10
F - Y=371149.70, X=535082.62
G - Y=371148.59, X=540391.30

PROPOSED BOTTOM HOLE LOCATION		
X=	535,743'	NAD 27
Y=	371,175'	
LAT.	32.020421° N	
LONG.	104.218007° W	
X=	576,926'	NAD83/86
Y=	371,231'	
LAT.	32.020543° N	
LONG.	104.218501° W	



[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 12/16/2019 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.

09/19/2019
Date of Survey

Signature and Seal of Professional Surveyor:

STEVEN M. COLEMAN NEW MEXICO 22921 PROFESSIONAL SURVEYOR

11/06/2019

Certificate Number

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Chevron USA **OGRID:** 4323 **Date:** 7 / 8 / 21

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
HH SO 17 20 FED 003 301H	*Pending*	UL:N, Sec 8, T26S-R27E	244' FSL, 2284' FWL	1217BBL/D	2779 MCF/D	4270BBL/D
HH SO 17 20 FED 003 302H	*Pending*	UL:N, Sec 8, T26S-R27E	169' FSL, 2283' FWL	1217BBL/D	2779 MCF/D	4270BBL/D

IV. Central Delivery Point Name: HHNM CTB 9 [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
HH SO 17 20 FED 003 301H	*Pending*	5/1/2022	7/12/2022	12/06/2022	1/12/2023	1/21/2023
HH SO 17 20 FED 003 302H	*Pending*	5/3/2022	**7/15/2022**	12/08/2022	**1/16/2023**	1/24/2023

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

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

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

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature:	Kayla McConnell
Printed Name:	KAYLA MCCONNELL
Title:	REGULATORY AFFAIRS COORDINATOR
E-mail Address:	GNCV@CHEVRON.COM
Date:	7/26/2021
Phone:	432-687-7375

OIL CONSERVATION DIVISION

(Only applicable when submitted as a standalone form)

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

VI. Separation Equipment:
Separation equipment installed at each Chevron facility is designed for maximum anticipated throughput and pressure to minimize waste. Separation equipment is designed and built according to ASME Sec VIII Div I to ensure gas is separated from liquid streams according to projected production.

VII./VIII. Operational & Best Management Practices:
1. General Requirements for Venting and Flaring of Natural Gas:
- In all circumstances, Chevron will flare rather than vent unless flaring is technically infeasible and venting of natural gas will avoid a risk of an immediate and substantial adverse impact on safety, public health, or the environment.
- Chevron installs and operates vapor recovery units (VRUs) in new facilities to minimize venting and flaring. If a VRU experiences operating issues, it is quickly assessed so that action can be taken to return the VRU to operation or, if necessary, facilities are shut-in to reduce the venting or flaring of natural gas.

2. During Drilling Operations:
- Flare stacks will be located a minimum of 110 feet from the nearest surface hole location.
- If an emergency or malfunction occurs, gas will be flared or vented to avoid a risk of an immediate and substantial adverse impact on public health, safety or the environment and be properly reported to the NMOCD pursuant to 19.15.27.8.G.
- Natural gas is captured or combusted if technically feasible using best industry practices and control technologies, such as the use of separators (e.g., Sand Commanders) during normal drilling and completions operations.

3. During Completions:
- Chevron typically does not complete traditional flowback, instead Chevron will flow produced oil, water, and gas to a centralized tank battery and continuously recover salable quality gas. If Chevron completes traditional flowback, Chevron conducts reduced emission completions as required by 40 CFR 60.5375a by routing gas to a gas flow line as soon as practicable once there is enough gas to operate a separator. Venting does not occur once there is enough gas to operate a separator
- Normally, during completions a flare is not on-site. A Snubbing Unit will have a flare on-site, and the flare volume will be estimated.
- If natural gas does not meet pipeline quality specification, the gas is sampled twice per week until the gas meets the specifications.

4. During Production:
- An audio, visual and olfactory (AVO) inspection will be performed daily (at minimum) for active wells and facilities to confirm that all production equipment is operating properly and there are no leaks or releases except as allowed in Subsection D of 19.15.27.8 NMAC. Inactive, temporarily abandoned, or shut-in wells and facilities will be inspected weekly. Inspection records will be kept for a minimum of five years and will be available upon request by the division.
- Monitor manual liquid unloading for wells on-site, takes all reasonable actions to achieve a stabilized rate and pressure at the earliest practical time and takes reasonable actions to minimize venting to the maximum extent practicable.
- In all circumstances, Chevron will flare rather than vent unless flaring is technically infeasible and venting of natural gas will avoid a risk of an immediate and substantial adverse impact on safety, public health, or the environment.
- Chevron's design for new facilities utilizes air-activated pneumatic controllers and pumps.
- If natural gas does not meet pipeline quality specification, the gas is sampled twice per week until the gas meets the specifications.
- Chevron does not produce oil or gas until all flowlines, tank batteries, and oil/gas takeaway are installed, tested, and determined operational.

5. Performance Standards

- Equipment installed at each facility is designed for maximum anticipated throughput and pressure to minimize waste. Tank pressure relief systems utilize a soft seated or metal seated PSVs, as appropriate, which are both designed to not leak.
- Flare stack has been designed for proper size and combustion efficiency. New flares will have a continuous pilot and will be located at least 100 feet from the well and storage tanks and will be securely anchored.
- New tanks will be equipped with an automatic gauging system.
- An audio, visual and olfactory (AVO) inspection will be performed daily (at minimum) for active wells and facilities to confirm that all production equipment is operating properly and there are no leaks or releases except as allowed in Subsection D of 19.15.27.8 NMAC. Inactive, temporarily abandoned, or shut-in wells and facilities will be inspected weekly. Inspection records will be kept for a minimum of five years and will be available upon request by the division.

6. Measurement or Estimation of Vented and Flared Natural Gas

- Chevron estimates or measures the volume of natural gas that is vented, flared, or beneficially used during drilling, operations, regardless of the reason or authorization for such venting or flaring.
- Where technically practicable, Chevron will install meters on flares installed after May 25, 2021. Meters will conform to industry standards. Bypassing the meter will only occur for inspecting and servicing of the meter.

ONSHORE ORDER NO. 1
Chevron USA
HH SO 17 20 FED 003 301H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 1

Pad Summary: Package 15
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.
HH SO 17 20 FED 003 401H	9,083	WCA_TGT2
HH SO 17 20 FED 003 301H	8,713	TBS_TGT1
HH SO 17 20 FED 003 402H	8,957	WCA_TGT4
HH SO 17 20 FED 003 403H	9,118	WCA_TGT2
HH SO 17 20 FED 003 302H	8,741	TBS_TGT1
HH SO 17 20 FED 003 404H	8,975	WCA_TGT4

1. **FORMATION TOPS**

The estimated tops of important geologic markers are as follows:
Elevation: 3251 ft

FORMATION	SUB-SEA TVD	TVD	MD	LITHOLOGIES	MIN. RESOURCES	PROD. FORMATION
Salado (SLDO) / Castile (CSTL)	2602	649	649	ANHY	N/A	
Lamar Lime (LMAR)	1149	2,102	2,102	SS	N/A	
Bell Canyon (BLCN)	1120	2,131	2,131	SS	N/A	
Cherry Canyon (CRCN)	297	2,954	2,954	SS	N/A	
Brushy Canyon (BRSC)	-785	4,036	4,036	SS	N/A	
Bone Spring (BSGL)	-2420	5,671	5,671	LS	N/A	
Avalon (AVLN)	-2547	5,798	5,798	SH	Oil	
1st Bone Spring (FBSG)	-3350	6,601	6,601	SH	Oil	
2nd Bone Spring (SBSG)	-3846	7,097	7,097	SH	Oil	
3rd BS Carb	-4985	8,236	8,236	LS	Oil	
3rd Bone Spring (TBSG)	-5214	8,465	8,465	LS	Oil	
TBS_TGT1	-5495	8,746	9,000	SH	Oil	Yes
TD		**8,713**	**19,783**	**SH**	**Oil**	

WELLBORE LOCATIONS	SUB-SEA TVD	RKB TVD	MD
SHL	3251	-	
KOP	-5035	8,286	8,503
FTP	-5462	8,713	9,255
LTP	-5462	8,713	19,718

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		300
Water	Salado (SLDO) / Castile (CSTL)	649
Oil/Gas	Avalon (AVLN)	5,798
Oil/Gas	TBS_TGT1	8,465

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, intermediate, and production will take place. A full BOP test will be performed per hole section, unless approval from BLM is received otherwise. Flex choke hose will be used for all wells on the pad (see attached specs and variance). BOP test will be conducted by a third party.

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.

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'	450'	17-1/2" to 16"	13-3/8"	54.5 #	J-55	BTC/STC	New
Intermediate	0'	2,150'	12-1/4"	9-5/8"	40#	L-80	BTC/LTC	New
Production	0'	8,465'	8-1/2"	7"	29.0 #	P110/TN110S	BLUE	New
Production Liner	8,165'	19,783'	6-1/8"	4-1/2"	11.6 #	P110/TN110S	W521	New

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:

Surface Casing:	450'	ftTVD
Intermediate Casing:	2,150'	ftTVD
Production Casing:	8,465'	ftTVD
Production Casing:	19,783'	ftMD

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.79	5.19	6.03	2.22
Intermediate	1.46	2.41	4.29	1.79
Production	1.10	1.76	1.84	1.29
Production Liner	1.38	1.02	1.61	1.54

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

Burst Design	Surf	Int	Prod	Prod Lnr
Pressure Test- Surface, Int, Prod Csg 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- Surf Csg P external: Mud weight above TOC, PP below P internal: Dry Gas from Next Csg Point	X			
Gas over mud (60/40) - Int Csg P external: Mud weight above TOC, PP below P internal: 60% gas over 40% mud from hole TD PP		X		
Stimulation (Frac) Pressures- Prod Csg 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	Int	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	Int	Prod	Prod
100k lb overpull	X	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	*Sacks*	Yield	Density	%Excess	Water	*Volume*	Additives
Surface 13-3/8					(cu ft/sk)	(ppg)	Open Hole	gal/sk	cuft	
Tail	Class C	0'	450'	353	1.33	14.8	50	6.36	469	Extender, Antifoam, Retarder
Intermediate Csg 9-5/8										
Lead	Class C	0'	1,150'	217	2.49	11.9	50	14.11	540	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	1,150'	2,150'	382	1.33	14.8	50	6.36	507	Extender, Antifoam, Retarder, Viscosifier
Production 7"										
Lead	Class C	0'	7,465'	881	2.2	11.9	100	12.18	1939	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	7,465'	8,465'	161	1.4	14.5	50	6.82	226	Extender, Antifoam, Retarder, Viscosifier
Production Liner 4-1/2"										
Lead	Class C	8,165'	17,908'	598	1.84	13.2	20	9.86	1101	Extender, Antifoam, Retarder, Viscosifier
Tail	Acid Sol Class H	17,908'	19,783'	98	2.16	15	20	9.22	212	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 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	Viscosity	Filtrate	Notes
0'	450'	Fresh water mud	8.3 - 9.1	28-30	N/C	
450'	2,150'	Brine	8.8 - 10.2	28-31	15-25	
2,150'	8,465'	WBM	8.8 - 9.6	50-70	15-25	
8,465'	19,783'	OBM	9.2 - 13.0	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: **4,984** psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

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.

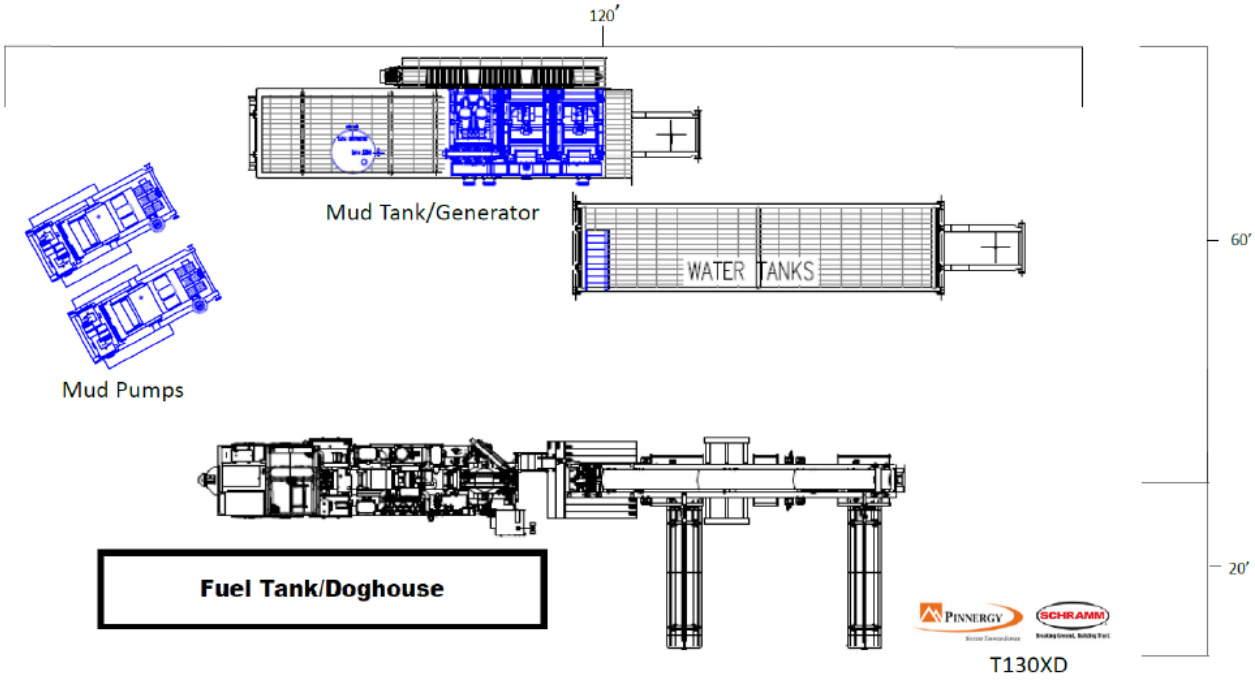
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.

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



Schlumberger

Chevron HH SO 17 20 FED 003 301H Rev0 kFc 25Nov19 Proposal Geodetic Report

(Def Plan)

Report Date:	November 27, 2019 - 03:07 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chevron	**Vertical Section Azimuth:**	179.490 ° (Grid North)
Field:	NM Eddy County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chevron HH SO 17 20 FED 003 Pad / 301H	**TVD Reference Datum:**	RKB = 28ft
Well:	HH SO 17 20 Fed 003 301H	**TVD Reference Elevation:**	3279.000 ft above MSL
Borehole:	HH SO 17 20 Fed 003 301H	**Seabed / Ground Elevation:**	3251.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.176 °
Survey Name:	Chevron HH SO 17 20 FED 003 301H Rev0 kFc 25Nov19	**Total Gravity Field Strength:**	998.4306mgn (9.80665 Based)
Survey Date:	November 25, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	122.215 ° / 12872.243 ft / 6.553 / 1.477	**Total Magnetic Field Strength:**	47720.347 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.640 °
Location Lat / Long:	N 32° 3' 1.12803", W 104° 12' 46.94317"	**Declination Date:**	November 25, 2019
Location Grid N/E Y/X:	N 382050.000 ftUS, E 537270.000 ftUS	**Magnetic Declination Model:**	HDGM 2019
CRS Grid Convergence Angle:	0.0638 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99991068	**Grid Convergence Used:**	0.0638 °
Version / Patch:	2.10.787.0	**Total Corr Mag North->Grid North:**	7.1123 °
		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	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
	100.00	0.00	289.90	100.00	0.00	0.00	0.00	0.00	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
	200.00	0.00	289.90	200.00	0.00	0.00	0.00	0.00	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
	300.00	0.00	289.90	300.00	0.00	0.00	0.00	0.00	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
	400.00	0.00	289.90	400.00	0.00	0.00	0.00	0.00	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
13 3/8" Casing	*450.00*	*0.00*	*289.90*	*450.00*	*0.00*	*0.00*	*0.00*	*0.00*	*382050.00*	*537270.00*	*N 32 3 1.13*	*W 104 12 46.94*
	500.00	0.00	289.90	500.00	0.00	0.00	0.00	0.00	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
	600.00	0.00	289.90	600.00	0.00	0.00	0.00	0.00	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
Salado / Castile	*649.00*	*0.00*	*289.90*	*649.00*	*0.00*	*0.00*	*0.00*	*0.00*	*382050.00*	*537270.00*	*N 32 3 1.13*	*W 104 12 46.94*
Build 1.5°/100ft	700.00	0.00	289.90	700.00	0.00	0.00	0.00	0.00	382050.00	537270.00	N 32 3 1.13	W 104 12 46.94
	800.00	1.50	289.90	799.99	-0.46	0.45	-1.23	1.50	382050.45	537268.77	N 32 3 1.13	W 104 12 46.96
	900.00	3.00	289.90	899.91	-1.83	1.78	-4.92	1.50	382051.78	537265.08	N 32 3 1.15	W 104 12 47.00
	1000.00	4.50	289.90	999.69	-4.11	4.01	-11.07	1.50	382054.01	537258.93	N 32 3 1.17	W 104 12 47.07
	1100.00	6.00	289.90	1099.27	-7.30	7.12	-19.68	1.50	382057.12	537250.33	N 32 3 1.20	W 104 12 47.17
	1200.00	7.50	289.90	1198.57	-11.40	11.12	-30.73	1.50	382061.12	537239.28	N 32 3 1.24	W 104 12 47.30
	1300.00	9.00	289.90	1297.54	-16.40	16.01	-44.22	1.50	382066.01	537225.79	N 32 3 1.29	W 104 12 47.46
	1400.00	10.50	289.90	1396.09	-22.31	21.77	-60.14	1.50	382071.77	537209.86	N 32 3 1.34	W 104 12 47.64
	1500.00	12.00	289.90	1494.16	-29.11	28.41	-78.49	1.50	382078.41	537191.52	N 32 3 1.41	W 104 12 47.85
	1600.00	13.50	289.90	1591.70	-36.81	35.92	-99.24	1.50	382085.92	537170.77	N 32 3 1.48	W 104 12 48.10
Turn 1.5°/100ft	1686.13	14.79	289.90	1675.22	-44.15	43.09	-119.03	1.50	382093.08	537150.98	N 32 3 1.56	W 104 12 48.33
	1700.00	14.78	289.09	1688.62	-45.36	44.27	-122.37	1.50	382094.27	537147.64	N 32 3 1.57	W 104 12 48.36
Hold	1775.22	14.79	284.66	1761.36	-51.09	49.84	-140.73	1.50	382099.83	537129.29	N 32 3 1.62	W 104 12 48.58
	1800.00	14.79	284.66	1785.31	-52.75	51.44	-146.85	0.00	382101.44	537123.17	N 32 3 1.64	W 104 12 48.65
	1900.00	14.79	284.66	1882.00	-59.43	57.90	-171.55	0.00	382107.90	537098.47	N 32 3 1.70	W 104 12 48.94
	2000.00	14.79	284.66	1978.68	-66.11	64.37	-196.25	0.00	382114.36	537073.77	N 32 3 1.77	W 104 12 49.22
	2100.00	14.79	284.66	2075.37	-72.79	70.83	-220.95	0.00	382120.82	537049.07	N 32 3 1.83	W 104 12 49.51
Lamar Lime	*2127.54*	*14.79*	*284.66*	*2102.00*	*-74.63*	*72.61*	*-227.75*	*0.00*	*382122.60*	*537042.27*	*N 32 3 1.85*	*W 104 12 49.59*
9 5/8" Casing	*2140.99*	*14.79*	*284.66*	*2115.00*	*-75.53*	*73.48*	*-231.07*	*0.00*	*382123.47*	*537038.95*	*N 32 3 1.86*	*W 104 12 49.63*
Bell Canyon	*2157.54*	*14.79*	*284.66*	*2131.00*	*-76.64*	*74.55*	*-235.16*	*0.00*	*382124.54*	*537034.86*	*N 32 3 1.87*	*W 104 12 49.67*
	2200.00	14.79	284.66	2172.06	-79.48	77.29	-245.65	0.00	382127.29	537024.38	N 32 3 1.90	W 104 12 49.80
	2300.00	14.79	284.66	2268.74	-86.16	83.76	-270.35	0.00	382133.75	536999.68	N 32 3 1.96	W 104 12 50.08
	2400.00	14.79	284.66	2365.43	-92.84	90.22	-295.04	0.00	382140.21	536974.98	N 32 3 2.02	W 104 12 50.37
	2500.00	14.79	284.66	2462.11	-99.53	96.68	-319.74	0.00	382146.67	536950.28	N 32 3 2.09	W 104 12 50.66
	2600.00	14.79	284.66	2558.80	-106.21	103.15	-344.44	0.00	382153.14	536925.59	N 32 3 2.15	W 104 12 50.94
	2700.00	14.79	284.66	2655.48	-112.89	109.61	-369.14	0.00	382159.60	536900.89	N 32 3 2.22	W 104 12 51.23
	2800.00	14.79	284.66	2752.17	-119.57	116.07	-393.84	0.00	382166.06	536876.19	N 32 3 2.28	W 104 12 51.52
	2900.00	14.79	284.66	2848.86	-126.26	122.54	-418.54	0.00	382172.53	536851.50	N 32 3 2.35	W 104 12 51.80
	3000.00	14.79	284.66	2945.54	-132.94	129.00	-443.24	0.00	382178.99	536826.80	N 32 3 2.41	W 104 12 52.09
Cherry Canyon	*3008.75*	*14.79*	*284.66*	*2954.00*	*-133.52*	*129.56*	*-445.40*	*0.00*	*382179.55*	*536824.64*	*N 32 3 2.42*	*W 104 12 52.12*
	3100.00	14.79	284.66	3042.23	-139.62	135.46	-467.94	0.00	382185.45	536802.10	N 32 3 2.47	W 104 12 52.38
	3200.00	14.79	284.66	3138.91	-146.31	141.93	-492.64	0.00	382191.91	536777.40	N 32 3 2.54	W 104 12 52.67
	3300.00	14.79	284.66	3235.60	-152.99	148.39	-517.34	0.00	382198.38	536752.71	N 32 3 2.60	W 104 12 52.95
	3400.00	14.79	284.66	3332.29	-159.67	154.85	-542.04	0.00	382204.84	536728.01	N 32 3 2.67	W 104 12 53.24
	3500.00	14.79	284.66	3428.97	-166.35	161.32	-566.74	0.00	382211.30	536703.31	N 32 3 2.73	W 104 12 53.53
	3600.00	14.79	284.66	3525.66	-173.04	167.78	-591.44	0.00	382217.76	536678.61	N 32 3 2.79	W 104 12 53.81
	3700.00	14.79	284.66	3622.34	-179.72	174.24	-616.14	0.00	382224.23	536653.92	N 32 3 2.86	W 104 12 54.10
	3800.00	14.79	284.66	3719.03	-186.40	180.71	-640.84	0.00	382230.69	536629.22	N 32 3 2.92	W 104 12 54.39
	3900.00	14.79	284.66	3815.72	-193.09	187.17	-665.54	0.00	382237.15	536604.52	N 32 3 2.99	W 104 12 54.67
	4000.00	14.79	284.66	3912.40	-199.77	193.63	-690.24	0.00	382243.61	536579.83	N 32 3 3.05	W 104 12 54.96
	4100.00	14.79	284.66	4009.09	-206.45	200.10	-714.94	0.00	382250.08	536555.13	N 32 3 3.12	W 104 12 55.25
Brushy Canyon	*4127.84*	*14.79*	*284.66*	*4036.00*	*-208.31*	*201.89*	*-721.81*	*0.00*	*382251.88*	*536548.25*	*N 32 3 3.13*	*W 104 12 55.33*
	4200.00	14.79	284.66	4105.77	-213.13	206.56	-739.64	0.00	382256.54	536530.43	N 32 3 3.18	W 104 12 55.53
	4300.00	14.79	284.66	4202.46	-219.82	213.02	-764.34	0.00	382263.00	536505.73	N 32 3 3.24	W 104 12 55.82
	4400.00	14.79	284.66	4299.14	-226.50	219.49	-789.04	0.00	382269.47	536481.04	N 32 3 3.31	W 104 12 56.11
	4500.00	14.79	284.66	4395.83	-233.18	225.95	-813.74	0.00	382275.93	536456.34	N 32 3 3.37	W 104 12 56.39
	4600.00	14.79	284.66	4492.52	-239.87	232.41	-838.44	0.00	382282.39	536431.64	N 32 3 3.44	W 104 12 56.68
	4700.00	14.79	284.66	4589.20	-246.55	238.88	-863.14	0.00	382288.85	536406.94	N 32 3 3.50	W 104 12 56.97
	4800.00	14.79	284.66	4685.89	-253.23	245.34	-887.83	0.00	382295.32	536382.25	N 32 3 3.57	W 104 12 57.26
	4900.00	14.79	284.66	4782.57	-259.91	251.80	-912.53	0.00	382301.78	536357.55	N 32 3 3.63	W 104 12 57.54
	5000.00	14.79	284.66	4879.26	-266.60	258.26	-937.23	0.00	382308.24	536332.85	N 32 3 3.69	W 104 12 57.83
	5100.00	14.79	284.66	4975.95	-273.28	264.73	-961.93	0.00	382314.70	536308.15	N 32 3 3.76	W 104 12 58.12
	5200.00	14.79	284.66	5072.63	-279.96	271.19	-986.63	0.00	382321.17	536283.46	N 32 3 3.82	W 104 12 58.40
	5300.00	14.79	284.66	5169.32	-286.65	277.65	-1011.33	0.00	382327.63	536258.76	N 32 3 3.89	W 104 12 58.69
	5400.00	14.79	284.66	5266.00	-293.33	284.12	-1036.03	0.00	382334.09	536234.06	N 32 3 3.95	W 104 12 58.98
	5500.00	14.79	284.66	5362.69	-300.01	290.58	-1060.73	0.00	382340.55	536209.37	N 32 3 4.02	W 104 12 59.26
	5600.00	14.79	284.66	5459.38	-306.69	297.04	-1085.43	0.00	382347.02	536184.67	N 32 3 4.08	W 104 12 59.55
	5700.00	14.79	284.66	5556.06	-313.38	303.51	-1110.13	0.00	382353.48	536159.97	N 32 3 4.14	W 104 12 59.84
	5800.00	14.79	284.66	5652.75	-320.06	309.97	-1134.83	0.00	382359.94	536135.27	N 32 3 4.21	W 104 13 0.12
Bone Spring	*5818.88*	*14.79*	*284.66*	*5671.00*	*-321.32*	*311.19*	*-1139.49*	*0.00*	*382361.16*	*536130.61*	*N 32 3 4.22*	*W 104 13 0.18*
	5900.00	14.79	284.66	5749.43	-326.74	316.43	-1159.53	0.00	382366.41	536110.58	N 32 3 4.27	W 104 13 0.41
Avalon	*5950.23*	*14.79*	*284.66*	*5798.00*	*-330.10*	*319.68*	*-1171.94*	*0.00*	*382369.65*	*536098.17*	*N 32 3 4.30*	*W 104 13 0.56*
	6000.00	14.79	284.66	5846.12	-333.43	322.90	-1184.23	0.00	382372.87	536085.88	N 32 3 4.34	W 104 13 0.70
	6100.00	14.79	284.66	5942.80	-340.11	329.36	-1208.93	0.00	382379.33	536061.18	N 32 3 4.40	W 104 13 0.98
	6200.00	14.79	284.66	6039.49	-346.79	335.82	-1233.63	0.00	382385.79	536036.48	N 32 3 4.46	W 104 13 1.27
	6300.00	14.79	284.66	6136.18	-353.47	342.29	-1258.33	0.00	382392.26	536011.79	N 32 3 4.53	W 104 13 1.56
	6400.00	14.79	284.66	6232.86	-360.16	348.75	-1283.03	0.00	382398.72	535987.09	N 32 3 4.59	W 104 13 1.85
	6500.00	14.79	284.66	6329.55	-366.84	355.21	-1307.73	0.00	382405.18	535962.39	N 32 3 4.66	W 104 13 2.13
	6600.00	14.79	284.66	6426.23	-373.52	361.68	-1332.43	0.00	382411.64	535937.69	N 32 3 4.72	W 104 13 2.42
	6700.00	14.79	284.66	6522.92	-380.21	368.14	-1357.13	0.00	382418.11	535913.00	N 32 3 4.79	W 104 13 2.71
1st Bone Spring	*6780.76*	*14.79*	*284.66*	*6601.00*	*-385.60*	*373.36*	*-1377.07*	*0.00*	*382423.33*	*535893.05*	*N 32 3 4.84*	*W 104 13 2.94*
	6800.00	14.79	284.66	6619.61	-386.89	374.60	-1381.83	0.00	382424.57	535888.30	N 32 3 4.85	W 104 13 2.99
Turn 1.5°/100ft	6899.48	14.79	284.66	6715.79	-393.54	381.03	-1406.40	0.00	382431.00	535863.73	N 32 3 4.91	W 104 13 3.28
	6900.00	14.79	284.64	6716.29	-393.57	381.07	-1406.53	1.50	382431.03	535863.60	N 32 3 4.91	W 104 13 3.28
	7000.00	13.68	280.52	6813.22	-399.17	386.45	-1430.50	1.50	382436.42	535839.63	N 32 3 4.97	W 104 13 3.56

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 ° ' ")
	7100.00	12.65	275.72	6910.60	-402.62	389.70	-1453.02	1.50	382439.67	535817.11	N 32 3 5.00	W 104 13 3.82
	7200.00	11.72	270.13	7008.34	-403.93	390.82	-1474.08	1.50	382440.78	535796.06	N 32 3 5.01	W 104 13 4.06
2nd Bone Spring	*7290.42*	*10.99*	*264.32*	*7097.00*	*-403.25*	*389.99*	*-1491.85*	*1.50*	*382439.95*	*535778.29*	*N 32 3 5.00*	*W 104 13 4.27*
	7300.00	10.92	263.66	7106.40	-403.08	389.80	-1493.66	1.50	382439.76	535776.48	N 32 3 5.00	W 104 13 4.29
	7400.00	10.28	256.30	7204.70	-400.08	386.64	-1511.74	1.50	382436.60	535758.40	N 32 3 4.97	W 104 13 4.50
	7500.00	9.82	248.10	7303.17	-394.93	381.34	-1528.32	1.50	382431.31	535741.82	N 32 3 4.92	W 104 13 4.70
	7600.00	9.57	239.31	7401.75	-387.64	373.92	-1543.38	1.50	382423.89	535726.76	N 32 3 4.84	W 104 13 4.87
	7700.00	9.56	230.27	7500.36	-378.21	364.37	-1556.92	1.50	382414.34	535713.23	N 32 3 4.75	W 104 13 5.03
	7800.00	9.77	221.42	7598.95	-366.65	352.70	-1568.91	1.50	382402.67	535701.23	N 32 3 4.64	W 104 13 5.17
	7900.00	10.20	213.12	7697.44	-352.96	338.92	-1579.37	1.50	382388.89	535690.78	N 32 3 4.50	W 104 13 5.29
	8000.00	10.82	205.63	7795.76	-337.16	323.04	-1588.27	1.50	382373.01	535681.88	N 32 3 4.34	W 104 13 5.39
	8100.00	11.60	199.04	7893.86	-319.25	305.06	-1595.61	1.50	382355.03	535674.53	N 32 3 4.16	W 104 13 5.48
	8200.00	12.52	193.33	7991.65	-299.25	285.01	-1601.39	1.50	382334.98	535668.75	N 32 3 3.97	W 104 13 5.55
	8300.00	13.53	188.43	8089.08	-277.17	262.89	-1605.61	1.50	382312.87	535664.54	N 32 3 3.75	W 104 13 5.59
	8400.00	14.63	184.22	8186.08	-253.03	238.73	-1608.25	1.50	382288.70	535661.90	N 32 3 3.51	W 104 13 5.63
7" Casing / Hold	8414.39	14.79	183.66	8200.00	-249.39	235.08	-1608.50	1.50	382285.06	535661.65	N 32 3 3.47	W 104 13 5.63
3rd BS Carb	*8451.63*	*14.79*	*183.66*	*8236.00*	*-239.91*	*225.59*	*-1609.11*	*0.00*	*382275.57*	*535661.04*	*N 32 3 3.38*	*W 104 13 5.64*
	8500.00	14.79	183.66	8282.77	-227.59	213.27	-1609.90	0.00	382263.25	535660.25	N 32 3 3.26	W 104 13 5.64
KOP, Build 10°/100ft	8503.67	14.79	183.66	8286.32	-226.65	212.33	-1609.96	0.00	382262.31	535660.19	N 32 3 3.25	W 104 13 5.65
	8600.00	24.42	183.66	8376.96	-194.45	180.11	-1612.02	10.00	382230.09	535658.13	N 32 3 2.93	W 104 13 5.67
	8700.00	34.42	183.66	8463.95	-145.52	131.14	-1615.16	10.00	382181.13	535654.99	N 32 3 2.44	W 104 13 5.71
3rd Bone Spring	*8701.28*	*34.55*	*183.66*	*8465.00*	*-144.79*	*130.42*	*-1615.20*	*10.00*	*382180.41*	*535654.95*	*N 32 3 2.44*	*W 104 13 5.71*
	8800.00	44.42	183.66	8541.09	-82.26	67.85	-1619.21	10.00	382117.84	535650.94	N 32 3 1.82	W 104 13 5.75
	8900.00	54.42	183.66	8606.06	-6.60	-7.86	-1624.06	10.00	382042.14	535646.09	N 32 3 1.07	W 104 13 5.81
	9000.00	64.42	183.66	8656.86	79.16	-93.67	-1629.55	10.00	381956.34	535640.60	N 32 3 0.22	W 104 13 5.88
	9100.00	74.42	183.66	8691.96	172.41	-186.98	-1635.53	10.00	381863.04	535634.62	N 32 2 59.30	W 104 13 5.95
	9200.00	84.42	183.66	8710.29	270.33	-284.96	-1641.80	10.00	381765.07	535628.35	N 32 2 58.33	W 104 13 6.02
FTP Cross / Landing Point	9255.75	90.00	183.66	8713.00	325.85	-340.50	-1645.36	10.00	381709.53	535624.79	N 32 2 57.78	W 104 13 6.06
	9300.00	90.00	183.66	8713.00	369.98	-384.66	-1648.19	0.00	381665.37	535621.96	N 32 2 57.34	W 104 13 6.10
Turn 2°/100ft	9335.75	90.00	183.66	8713.00	405.63	-420.34	-1650.47	0.00	381629.70	535619.68	N 32 2 56.99	W 104 13 6.12
	9400.00	90.00	182.38	8713.00	469.76	-484.50	-1653.86	2.00	381565.55	535616.29	N 32 2 56.35	W 104 13 6.16
	9500.00	90.00	180.38	8713.00	569.70	-584.47	-1656.26	2.00	381465.59	535613.89	N 32 2 55.36	W 104 13 6.19
	9600.00	90.00	178.38	8713.00	669.69	-684.45	-1655.18	2.00	381365.61	535614.97	N 32 2 54.37	W 104 13 6.18
Hold	9635.77	90.00	177.66	8713.00	705.45	-720.20	-1653.94	2.00	381329.86	535616.21	N 32 2 54.02	W 104 13 6.17
	9700.00	90.00	177.66	8713.00	769.65	-784.38	-1651.33	0.00	381265.69	535618.82	N 32 2 53.38	W 104 13 6.14
	9800.00	90.00	177.66	8713.00	869.60	-884.30	-1647.25	0.00	381165.78	535622.90	N 32 2 52.40	W 104 13 6.09
	9900.00	90.00	177.66	8713.00	969.55	-984.21	-1643.17	0.00	381065.88	535626.98	N 32 2 51.41	W 104 13 6.05
	10000.00	90.00	177.66	8713.00	1069.50	-1084.13	-1639.10	0.00	380965.97	535631.05	N 32 2 50.42	W 104 13 6.00
	10100.00	90.00	177.66	8713.00	1169.45	-1184.05	-1635.02	0.00	380866.06	535635.13	N 32 2 49.43	W 104 13 5.95
	10200.00	90.00	177.66	8713.00	1269.40	-1283.96	-1630.94	0.00	380766.15	535639.21	N 32 2 48.44	W 104 13 5.91
	10300.00	90.00	177.66	8713.00	1369.34	-1383.88	-1626.87	0.00	380666.25	535643.28	N 32 2 47.45	W 104 13 5.86
	10400.00	90.00	177.66	8713.00	1469.29	-1483.80	-1622.79	0.00	380566.34	535647.36	N 32 2 46.46	W 104 13 5.82
	10500.00	90.00	177.66	8713.00	1569.24	-1583.71	-1618.71	0.00	380466.43	535651.43	N 32 2 45.47	W 104 13 5.77
	10600.00	90.00	177.66	8713.00	1669.19	-1683.63	-1614.64	0.00	380366.52	535655.51	N 32 2 44.48	W 104 13 5.72
	10700.00	90.00	177.66	8713.00	1769.14	-1783.55	-1610.56	0.00	380266.61	535659.59	N 32 2 43.50	W 104 13 5.68
	10800.00	90.00	177.66	8713.00	1869.09	-1883.46	-1606.48	0.00	380166.71	535663.66	N 32 2 42.51	W 104 13 5.63
	10900.00	90.00	177.66	8713.00	1969.04	-1983.38	-1602.41	0.00	380066.80	535667.74	N 32 2 41.52	W 104 13 5.59
	11000.00	90.00	177.66	8713.00	2068.99	-2083.30	-1598.33	0.00	379966.89	535671.82	N 32 2 40.53	W 104 13 5.54
Turn 2°/100ft	11088.65	90.00	177.66	8713.00	2157.59	-2171.87	-1594.72	0.00	379878.32	535675.43	N 32 2 39.65	W 104 13 5.50
	11100.00	90.00	177.89	8713.00	2168.94	-2183.22	-1594.28	2.00	379866.98	535675.87	N 32 2 39.54	W 104 13 5.49
Hold	11163.67	90.00	179.16	8713.00	2232.60	-2246.86	-1592.64	2.00	379803.34	535677.51	N 32 2 38.91	W 104 13 5.47
	11200.00	90.00	179.16	8713.00	2268.93	-2283.19	-1592.11	0.00	379767.02	535678.04	N 32 2 38.55	W 104 13 5.47
	11300.00	90.00	179.16	8713.00	2368.93	-2383.18	-1590.65	0.00	379667.04	535679.49	N 32 2 37.56	W 104 13 5.45
	11400.00	90.00	179.16	8713.00	2468.92	-2483.17	-1589.19	0.00	379567.06	535680.95	N 32 2 36.57	W 104 13 5.44
	11500.00	90.00	179.16	8713.00	2568.92	-2583.16	-1587.73	0.00	379467.08	535682.41	N 32 2 35.58	W 104 13 5.42
	11600.00	90.00	179.16	8713.00	2668.92	-2683.15	-1586.27	0.00	379367.10	535683.87	N 32 2 34.59	W 104 13 5.41
	11700.00	90.00	179.16	8713.00	2768.92	-2783.14	-1584.81	0.00	379267.12	535685.33	N 32 2 33.60	W 104 13 5.39
	11800.00	90.00	179.16	8713.00	2868.92	-2883.13	-1583.36	0.00	379167.14	535686.79	N 32 2 32.61	W 104 13 5.37
	11900.00	90.00	179.16	8713.00	2968.92	-2983.12	-1581.90	0.00	379067.16	535688.25	N 32 2 31.62	W 104 13 5.36
	12000.00	90.00	179.16	8713.00	3068.92	-3083.10	-1580.44	0.00	378967.18	535689.71	N 32 2 30.64	W 104 13 5.34
	12100.00	90.00	179.16	8713.00	3168.91	-3183.09	-1578.98	0.00	378867.20	535691.17	N 32 2 29.65	W 104 13 5.33
	12200.00	90.00	179.16	8713.00	3268.91	-3283.08	-1577.52	0.00	378767.22	535692.62	N 32 2 28.66	W 104 13 5.31
	12300.00	90.00	179.16	8713.00	3368.91	-3383.07	-1576.06	0.00	378667.24	535694.08	N 32 2 27.67	W 104 13 5.30
	12400.00	90.00	179.16	8713.00	3468.91	-3483.06	-1574.60	0.00	378567.26	535695.54	N 32 2 26.68	W 104 13 5.28
	12500.00	90.00	179.16	8713.00	3568.91	-3583.05	-1573.14	0.00	378467.28	535697.00	N 32 2 25.69	W 104 13 5.26
	12600.00	90.00	179.16	8713.00	3668.91	-3683.04	-1571.68	0.00	378367.30	535698.46	N 32 2 24.70	W 104 13 5.25
	12700.00	90.00	179.16	8713.00	3768.90	-3783.03	-1570.22	0.00	378267.31	535699.92	N 32 2 23.71	W 104 13 5.23
	12800.00	90.00	179.16	8713.00	3868.90	-3883.02	-1568.76	0.00	378167.33	535701.38	N 32 2 22.72	W 104 13 5.22
	12900.00	90.00	179.16	8713.00	3968.90	-3983.01	-1567.31	0.00	378067.35	535702.84	N 32 2 21.73	W 104 13 5.20
	13000.00	90.00	179.16	8713.00	4068.90	-4083.00	-1565.85	0.00	377967.37	535704.30	N 32 2 20.74	W 104 13 5.19
	13100.00	90.00	179.16	8713.00	4168.90	-4182.99	-1564.39	0.00	377867.39	535705.76	N 32 2 19.75	W 104 13 5.17
	13200.00	90.00	179.16	8713.00	4268.90	-4282.98	-1562.93	0.00	377767.41	535707.21	N 32 2 18.76	W 104 13 5.15
	13300.00	90.00	179.16	8713.00	4368.89	-4382.97	-1561.47	0.00	377667.43	535708.67	N 32 2 17.77	W 104 13 5.14
	13400.00	90.00	179.16	8713.00	4468.89	-4482.96	-1560.01	0.00	377567.45	535710.13	N 32 2 16.78	W 104 13 5.12
	13500.00	90.00	179.16	8713.00	4568.89	-4582.95	-1558.55	0.00	377467.47	535711.59	N 32 2 15.79	W 104 13 5.11
	13600.00	90.00	179.16	8713.00	4668.89	-4682.93	-1557.09	0.00	377367.49	535713.05	N 32 2 14.80	W 104 13 5.09
	13700.00	90.00	179.16	8713.00	4768.89	-4782.92	-1555.63	0.00	377267.51	535714.51	N 32 2 13.81	W 104 13 5.08
	13800.00	90.00	179.16	8713.00	4868.89	-4882.91	-1554.17	0.00	377167.53	535715.97	N 32 2 12.82	W 104 13 5.06
	13900.00	90.00	179.16	8713.00	4968.88	-4982.90	-1552.72	0.00	377067.55	535717.43	N 32 2 11.84	W 104 13 5.04
	14000.00	90.00	179.16	8713.00	5068.88	-5082.89	-1551.26	0.00	376967.57	535718.89	N 32 2 10.85	W 104 13 5.03
	14100.00	90.00	179.16	8713.00	5168.88	-5182.88	-1549.80	0.00	376867.59	535720.34	N 32 2 9.86	W 104 13 5.01
	14200.00	90.00	179.16	8713.00	5268.88	-5282.87	-1548.34	0.00	376767.61	535721.80	N 32 2 8.87	W 104 13 5.00
	14300.00	90.00	179.16	8713.00	5368.88	-5382.86	-1546.88	0.00	376667.63	535723.26	N 32 2 7.88	W 104 13 4.98
	14400.00	90.00	179.16	8713.00	5468.88	-5482.85	-1545.42	0.00	376567.65	535724.72	N 32 2 6.89	W 104 13 4.97
MP, Turn 2°/100ft	14487.67	90.00	179.16	8713.00	5556.54	-5570.51	-1544.14	0.00	376480.00	535726.00	N 32 2 6.02	W 104 13 4.95
	14500.00	90.00	179.41	8713.00	5568.87	-5582.84	-1543.99	2.00	376467.67	535726.15	N 32 2 5.90	W 104 13 4.95
Hold	14520.39	90.00	179.82	8713.00	5589.26	-5603.23	-1543.85	2.00	376447.28	535726.29	N 32 2 5.70	W 104 13 4.95
	14600.00	90.00	179.82	8713.00	5668.87	-5682.84	-1543.60	0.00	376367.68	535726.54	N 32 2 4.91	W 104 13 4.95
	14700.00	90.00	179.82	8713.00	5768.87	-5782.84	-1543.28	0.00	376267.69	535726.86	N 32 2 3.92	W 104 13 4.95
	14800.00	90.00	179.82	8713.00	5868.87	-5882.84	-1542.96	0.00	376167.70	535727.18	N 32 2 2.93	W 104 13 4.94
	14900.00	90.00	179.82	8713.00	5968.87	-5982.84	-1542.65	0.00	376067.71	535727.49	N 32 2 1.94	W 104 13 4.94
	15000.00	90.00	179.82	8713.00	6068.87	-6082.84	-1542.33	0.00	375967.72	535727.81	N 32 2 0.95	W 104 13 4.94
	15100.00	90.00	179.82	8713.00	6168.87	-6182.84	-1542.01	0.00	375867.73	535728.13	N 32 1 59.96	W 104 13 4.94
	15200.00	90.00	179.82	8713.00	6268.86	-6282.84	-1541.70	0.00	375767.74	535728.44	N 32 1 58.97	W 104 13 4.93
	15300.00	90.00	179.82	8713.00	6368.86	-6382.83	-1541.38	0.00	375667.75	535728.76	N 32 1 57.98	W 104 13 4.93
	15400.00	90.00	179.82	8713.00	6468.86	-6482.83	-1541.06	0.00	375567.76	535729.08	N 32 1 56.99	W 104 13 4.93
	15500.00	90.00	179.82	8713.00	6568.86	-6582.83	-1540.75	0.00	375467.77	535729.39	N 32 1 56.00	W 104 13 4.93
	15600.00	90.00	179.82	8713.00	6668.86	-6682.83	-1540.43	0.00	375367.78	535729.71	N 32 1 55.01	W 104 13 4.92
	15700.00	90.00	179.82	8713.00	6768.86	-6782.83	-1540.11	0.00	375267.79	535730.03	N 32 1 54.02	W 104 13 4.92
	15800.00	90.00	179.82	8713.00	6868.85	-6882.83	-1539.79	0.00	375167.80	535730.35	N 32 1 53.03	W 104 13 4.92
	15900.00	90.00	179.82	8713.00	6968.85	-6982.83	-1539.48	0.00	375067.81	535730.66	N 32 1 52.04	W 104 13 4.92
	16000.00	90.00	179.82	8713.00	7068.85	-7082.83	-1539.16	0.00	374967.82	535730.98	N 32 1 51.05	W 104 13 4.91
	16100.00	90.00	179.82	8713.00	7168.85	-7182.83	-1538.84	0.00	374867.83	535731.30	N 32 1 50.07	W 104 13 4.91
	16200.00	90.00	179.82	8713.00	7268.85	-7282.83	-1538.53	0.00	374767.83	535731.61	N 32 1 49.08	W 104 13 4.91
	16300.00	90.00	179.82	8713.00	7368.85	-7382.83	-1538.21	0.00	374667.84	535731.93	N 32 1 48.09	W 104 13 4.91
	16400.00	90.00	179.82	8713.00	7468.84	-7482.83	-1537.89	0.00	374567.85	535732.25	N 32 1 47.10	W 104 13 4.90
	16500.00	90.00	179.82	8713.00	7568.84	-7582.83	-1537.58	0.00	374467.86	535732.56	N 32 1 46.11	W 104 13 4.90
	16600.00	90.00	179.82	8713.00	7668.84	-7682.83	-1537.26	0.00	374367.87	535732.88	N 32 1 45.12	W 104 13 4.90
	16700.00	90.00	179.82	8713.00	7768.84	-7782.83	-1536.94	0.00	374267.88	535733.20	N 32 1 44.13	W 104 13 4.90
	16800.00	90.00	179.82	8713.00	7868.84	-7882.83	-1536.63	0.00	374167.89	535733.51	N 32 1 43.14	W 104 13 4.89
	16900.00	90.00	179.82	8713.00	7968.84	-7982.83	-1536.31	0.00	374067.90	535733.83	N 32 1 42.15	W 104 13 4.89
	17000.00	90.00	179.82	8713.00	8068.83	-8082.83	-1535.99	0.00	373967.91	535734.15	N 32 1 41.16	W 104 13 4.89

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	90.00	179.82	8713.00	8168.83	-8182.83	-1535.67	0.00	373867.92	535734.47	N 32 1 40.17	W 104 13 4.89
	17200.00	90.00	179.82	8713.00	8268.83	-8282.83	-1535.36	0.00	373767.93	535734.78	N 32 1 39.18	W 104 13 4.88
	17300.00	90.00	179.82	8713.00	8368.83	-8382.82	-1535.04	0.00	373667.94	535735.10	N 32 1 38.19	W 104 13 4.88
	17400.00	90.00	179.82	8713.00	8468.83	-8482.82	-1534.72	0.00	373567.95	535735.42	N 32 1 37.20	W 104 13 4.88
	17500.00	90.00	179.82	8713.00	8568.83	-8582.82	-1534.41	0.00	373467.96	535735.73	N 32 1 36.21	W 104 13 4.88
	17600.00	90.00	179.82	8713.00	8668.82	-8682.82	-1534.09	0.00	373367.97	535736.05	N 32 1 35.22	W 104 13 4.87
	17700.00	90.00	179.82	8713.00	8768.82	-8782.82	-1533.77	0.00	373267.98	535736.37	N 32 1 34.23	W 104 13 4.87
	17800.00	90.00	179.82	8713.00	8868.82	-8882.82	-1533.46	0.00	373167.99	535736.68	N 32 1 33.24	W 104 13 4.87
	17900.00	90.00	179.82	8713.00	8968.82	-8982.82	-1533.14	0.00	373068.00	535737.00	N 32 1 32.25	W 104 13 4.87
	18000.00	90.00	179.82	8713.00	9068.82	-9082.82	-1532.82	0.00	372968.01	535737.32	N 32 1 31.26	W 104 13 4.86
	18100.00	90.00	179.82	8713.00	9168.82	-9182.82	-1532.51	0.00	372868.02	535737.63	N 32 1 30.27	W 104 13 4.86
	18200.00	90.00	179.82	8713.00	9268.81	-9282.82	-1532.19	0.00	372768.03	535737.95	N 32 1 29.28	W 104 13 4.86
	18300.00	90.00	179.82	8713.00	9368.81	-9382.82	-1531.87	0.00	372668.04	535738.27	N 32 1 28.29	W 104 13 4.86
	18400.00	90.00	179.82	8713.00	9468.81	-9482.82	-1531.55	0.00	372568.05	535738.59	N 32 1 27.30	W 104 13 4.85
	18500.00	90.00	179.82	8713.00	9568.81	-9582.82	-1531.24	0.00	372468.06	535738.90	N 32 1 26.32	W 104 13 4.85
	18600.00	90.00	179.82	8713.00	9668.81	-9682.82	-1530.92	0.00	372368.07	535739.22	N 32 1 25.33	W 104 13 4.85
	18700.00	90.00	179.82	8713.00	9768.81	-9782.82	-1530.60	0.00	372268.08	535739.54	N 32 1 24.34	W 104 13 4.85
	18800.00	90.00	179.82	8713.00	9868.80	-9882.82	-1530.29	0.00	372168.09	535739.85	N 32 1 23.35	W 104 13 4.85
	18900.00	90.00	179.82	8713.00	9968.80	-9982.82	-1529.97	0.00	372068.09	535740.17	N 32 1 22.36	W 104 13 4.84
	19000.00	90.00	179.82	8713.00	10068.80	-10082.82	-1529.65	0.00	371968.10	535740.49	N 32 1 21.37	W 104 13 4.84
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	19300.00	90.00	179.82	8713.00	10368.80	-10382.81	-1528.70	0.00	371668.13	535741.44	N 32 1 18.40	W 104 13 4.83
	19400.00	90.00	179.82	8713.00	10468.79	-10482.81	-1528.39	0.00	371568.14	535741.75	N 32 1 17.41	W 104 13 4.83
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LTP Cross	*19718.59*	*90.00*	*179.82*	*8713.00*	*10787.38*	*-10801.40*	*-1527.38*	*0.00*	*371249.59*	*535742.76*	*N 32 1 14.26*	*W 104 13 4.82*
HH SO 17 20 FED 003 301H - PBHL	19793.18	90.00	179.82	8713.00	10861.97	-10875.99	-1527.14	0.00	371175.00	535743.00	N 32 1 13.52	W 104 13 4.82

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	28.000	1/100.000	30.000	30.000		B001Mb_MWD+HRGM-Depth Only	HH SO 17 20 Fed 003 301H / Chevron HH SO 17 20 FED 003 301H Rev0 kFc 25Nov19
	1	28.000	19793.181	1/100.000	30.000	30.000		B001Mb_MWD+HRGM	HH SO 17 20 Fed 003 301H / Chevron HH SO 17 20 FED 003

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

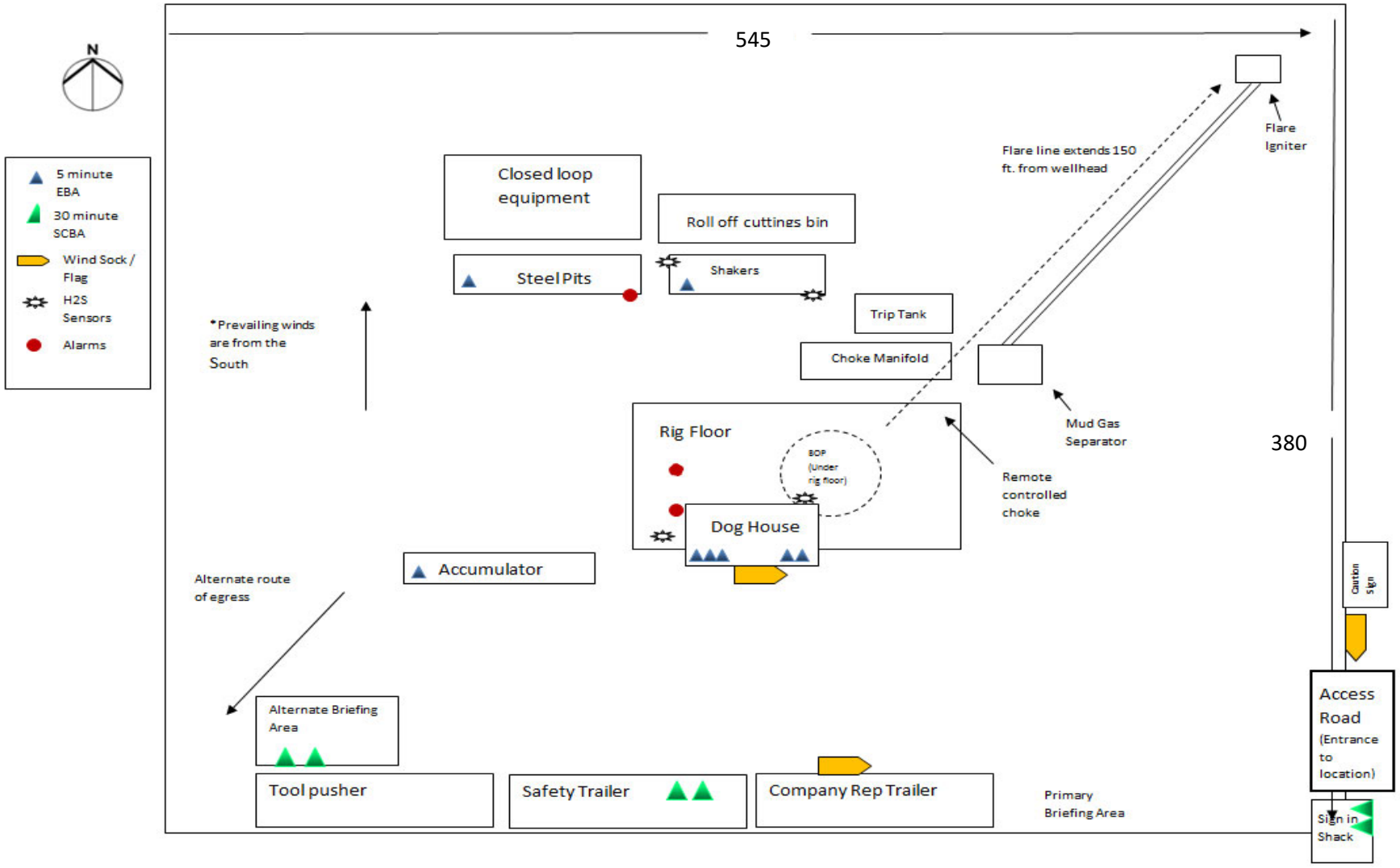
Public Safety - Emergency Assistance

Agency	Telephone Number
Eddy County Sheriff's Department	575-887-7551
Carlsbad Fire Department	575-885-3125
Carlsbad Medical Center	575-887-4100
Eddy County Emergency Management	575-885-3581
Poison Control Center	800-222-1222

Released to Imaging: 7/29/2021 1:33:05 PM

Received by OCD: 7/28/2021 6:59:09 AM

H_2S Preparedness and Contingency Plan Summary



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5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	*Sacks*	Yield	Density	%Excess	Water	*Volume*	Additives
Surface 13-3/8					(cu ft/sk)	(ppg)	Open Hole	gal/sk	cuft	
Tail	Class C	0'	450'	353	1.33	14.8	50	6.36	469	Extender, Antifoam, Retarder
Intermediate Csg 9-5/8										
Lead	Class C	0'	1,150'	217	2.49	11.9	50	14.11	540	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	1,150'	2,150'	382	1.33	14.8	50	6.36	507	Extender, Antifoam, Retarder, Viscosifier
Production 7"										
Lead	Class C	0'	7,465'	881	2.2	11.9	100	12.18	1939	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	7,465'	8,465'	161	1.4	14.5	50	6.82	226	Extender, Antifoam, Retarder, Viscosifier
Production Liner 4-1/2"										
Lead	Class C	8,165'	17,908'	598	1.84	13.2	20	9.86	1101	Extender, Antifoam, Retarder, Viscosifier
Tail	Acid Sol Class H	17,908'	19,783'	98	2.16	15	20	9.22	212	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 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	Viscosity	Filtrate	Notes
0'	450'	Fresh water mud	8.3 - 9.1	28-30	N/C	
450'	2,150'	Brine	8.8 - 10.2	28-31	15-25	
2,150'	8,465'	WBM	8.8 - 9.6	50-70	15-25	
8,465'	19,783'	OBM	9.2 - 13.0	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.

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

Drilling Plan Data Report
05/04/2021

APD ID: 10400052613
Submission Date: 12/30/2019
Operator Name: CHEVRON USA INCORPORATED
Well Name: HH SO 17 20 FED 003
Well Number: 301H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
613760	CASTILE	3251	650	650	ANHYDRITE, SALT	NONE	N
614232	LAMAR	1149	2102	2102	LIMESTONE, SHALE	NONE	N
613761	BELL CANYON	1120	2131	2131	LIMESTONE, SANDSTONE	NONE	N
613763	CHERRY CANYON	297	2954	2954	LIMESTONE, SANDSTONE, SILTSTONE	NONE	N
613764	BRUSHY CANYON	-785	4036	4036	LIMESTONE, SANDSTONE, SHALE	NONE	N
613765	BONE SPRING LIME	-2420	5671	5671	SHALE, SILTSTONE	NONE	N
613775	AVALON SAND	-2547	5798	5798	SHALE	NONE	N
613767	BONE SPRING 1ST	-3350	6601	6601	SANDSTONE, SHALE	NONE	N
613768	BONE SPRING 2ND	-3846	7097	7097	SANDSTONE, SHALE	NONE	N
613771	BONE SPRING 3RD	-4985	8236	8236	LIMESTONE, SANDSTONE, SHALE	NONE	N
613770	BONE SPRING 3RD	-5214	8465	8465	LIMESTONE, SANDSTONE, SHALE	NONE	N
613774	BONE SPRING 3RD	-5462	8713	19783	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 8713

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

Variance request: Chevron 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

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**

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.

BLOWOUT PREVENTER SCHEMATIC

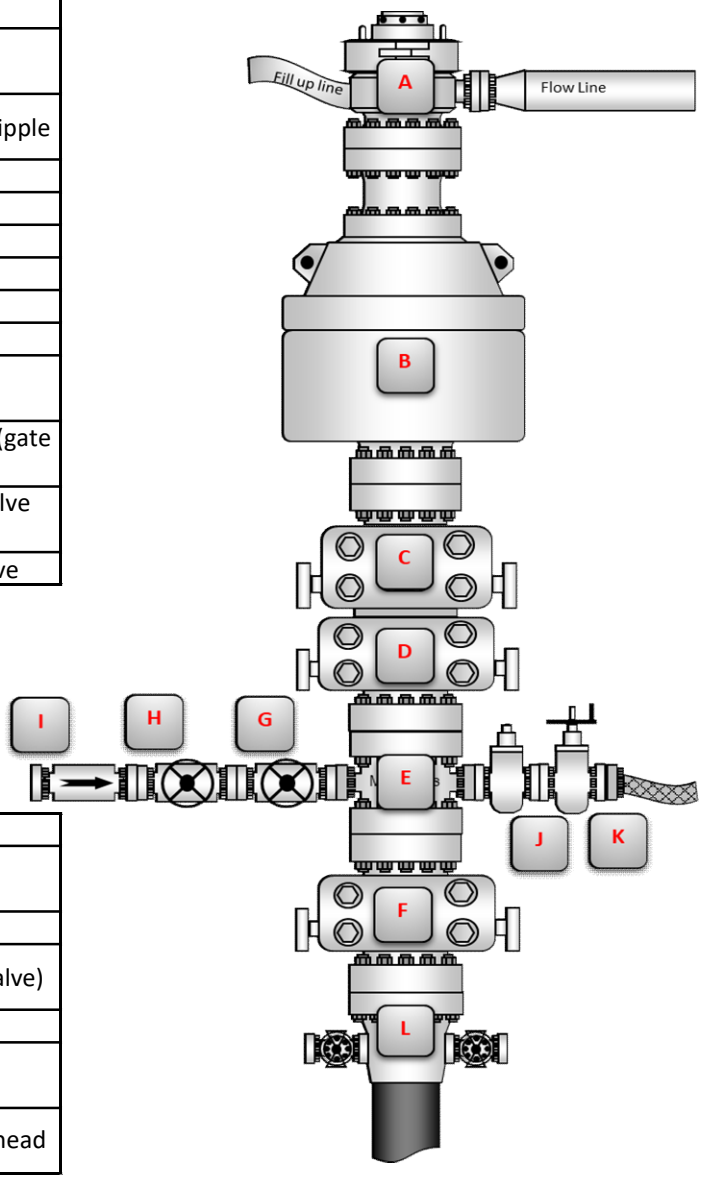
Operation:	Intermediate & Production Drilling Operations
Minimum System operation pressure	5,000 psi

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

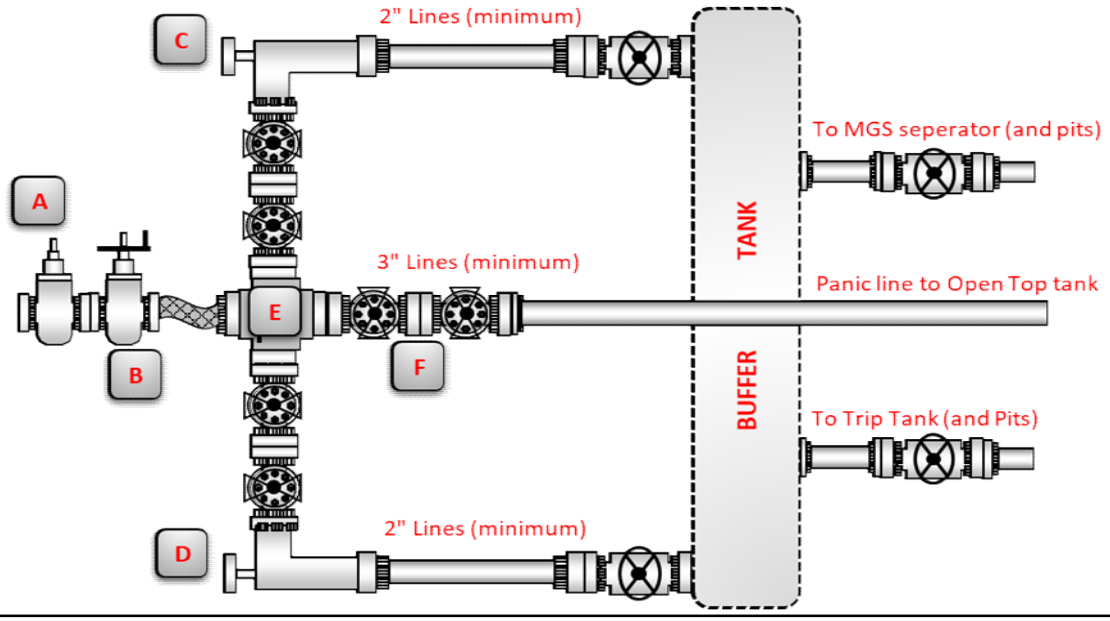
BOP Installation Checklist: *The following items must be verified and checked off prior to pressure testing BOP equipment*
The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment 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.

CHOKE MANIFOLD SCHEMATIC

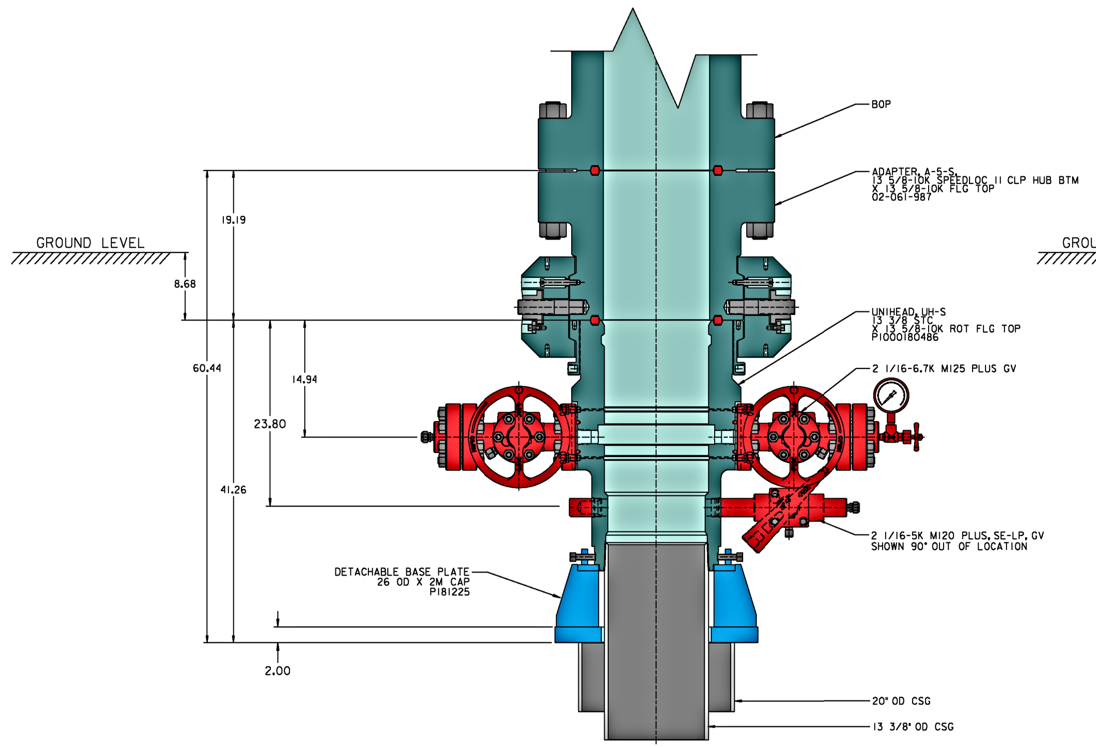
Operation:	Intermediate & Production
Minimum System operation pressure	5,000 psi

Choke Manifold

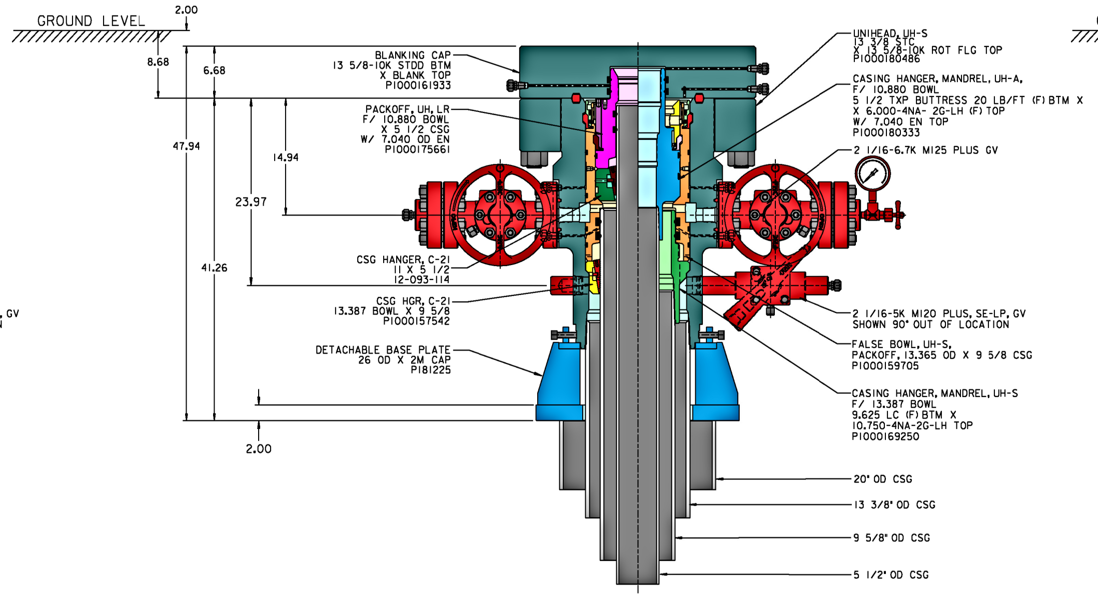
Part	Size	Pressure Rating	Description
A	3"	10,000	HCR (remotely operated)
B	3"	10,000	HCR (manually operated)
C	2"	10,000	Remotely operated choke
D	2"	10,000	Adjustable choke
E	3"	10,000	Crown valve with pressure gage
F	3"	10,000	Panic line valves



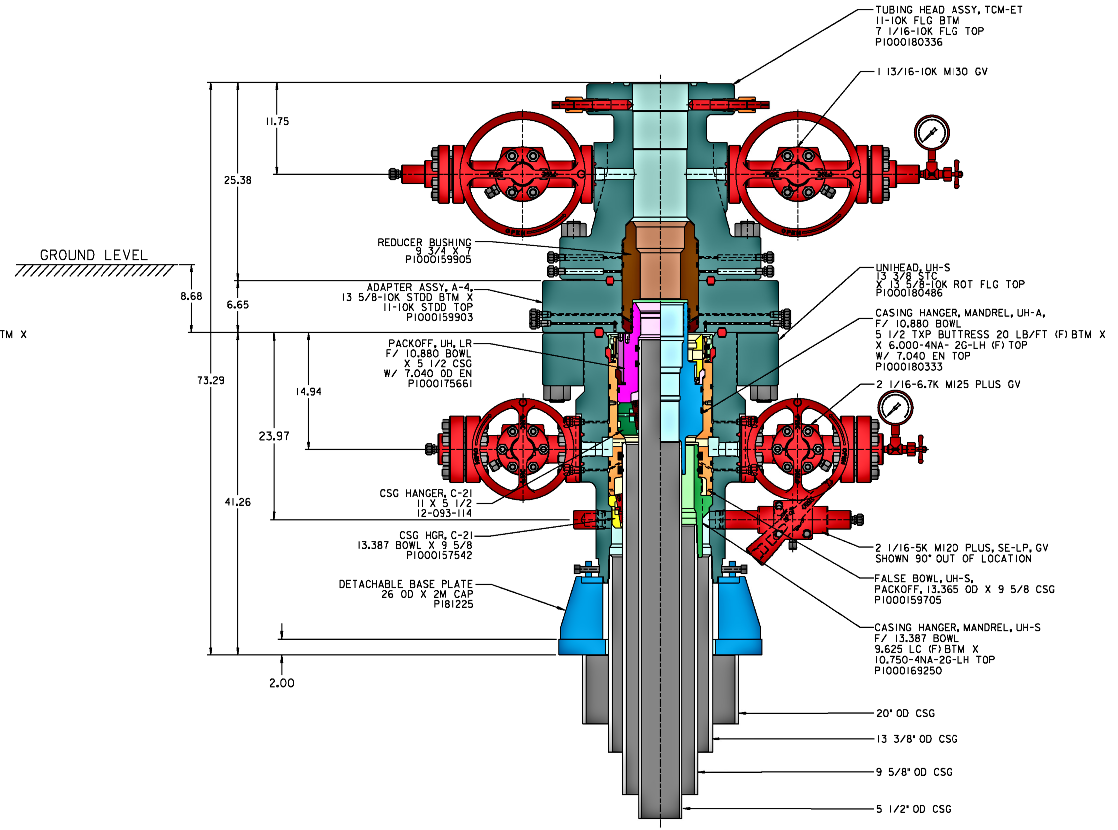
Choke Manifold Installation Checklist: *The following items must be verified and checked off prior to pressure testing BOP equipment*
The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent 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.



DRILLING MODE



CAPPING MODE



COMPLETION MODE

6650 PSI UH-S

CHEVRON

20 X 13 3/8 X 9 5/8 X 5 1/2

QUOTE 20331133
F110262
DBD10143378
SEQ DWG: DM100262890
REF: DM100220685
DM100219485

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		DESIGN REVIEW: M. HUSSEINI	DATE: 08-25-17	SHEET SIZE NA
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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 38476

COMMENTS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 38476
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 7/29/2021	7/29/2021

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CONDITIONS

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CONDITIONS

Created By	Condition	Condition Date
kpickford	Will require administrative order for non-standard spacing unit	7/29/2021
kpickford	Notify OCD 24 hours prior to casing & cement	7/29/2021
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	7/29/2021
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	7/29/2021
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	7/29/2021
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	7/29/2021