Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

HOBBS OCD
AUG 21 2019
RECEIVED

5. Lease Serial No.
NMLC061936

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
CO GRIZZLY 3 34 FED 0057H

2. Name of Operator
CHEVRON USA INCORPORATED
Contact: LAURA BECERRA
E-Mail: LBECERRA@CHEVRON.COM

9. API Well No.
30-025-45488-00-X1

3a. Address
6301 DEAUVILLE BLVD
MIDLAND, TX 79706

3b. Phone No. (include area code)
Ph: 432-687-7665

10. Field and Pool or Exploratory Area
COTTON DRAW

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 3 T25S R32E SENE 2640FNL 1015FEL
32.159538 N Lat, 103.657387 W Lon

11. County or Parish, State
LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original A PD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Chevron USA Inc respectfully requests the following changes to the original APD approved 12/21/2018:

FTP - From: 2,310' FNL, 1,782' FEL to 2,310' FNL, 550' FEL
LTP - From: 330' FNL, 1,782' FEL to 100' FNL, 550' FEL
BHL - From: 100' FNL, 1,782' FEL to 25' FNL, 550' FEL

OCD Hobbs

MD/TVD: 18,060'/10,738' to 18,411'/10,475'

See Additional COAs (Engineering)

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #475517 verified by the BLM Well Information System
For CHEVRON USA INCORPORATED, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 07/29/2019 (19PP2665SE)

Name *(Printed/Typed)* LAURA BECERRA — Title REGULATORY SPECIALIST

Signature (Electronic Submission) — Date 07/29/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By NDUNGU KAMAU — Title PETROLEUM ENGINEER — Date 08/05/2019

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Hobbs

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #475517 that would not fit on the form

32. Additional remarks, continued

Copy of a revised certified plat and a revised drilling plan with updated well information is attached.

Revisions to Operator-Submitted EC Data for Sundry Notice #475517

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMLC061936	NMLC061936
Agreement:		
Operator:	CHEVRON USA INC 6301 DEAUVILLE BLVD MIDLAND, TX 79706 Ph: 432-687-7665	CHEVRON USA INCORPORATED 6301 DEAUVILLE BLVD MIDLAND, TX 79706 Ph: 432.687.7100 Fx: 432-687-7221
Admin Contact:	LAURA BECERRA REGULATORY SPECIALIST E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7665	LAURA BECERRA REGULATORY SPECIALIST E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7665
Tech Contact:	LAURA BECERRA REGULATORY SPECIALIST E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7665	LAURA BECERRA REGULATORY SPECIALIST E-Mail: LBECERRA@CHEVRON.COM Ph: 432-687-7665
Location: State: County:	 NM LEA	 NM LEA
Field/Pool:	WC-025G06S253206M;BN SPRG	COTTON DRAW
Well/Facility:	CO GRIZZLY 3 34 FED 0057H Sec 3 T25S R32E Mer NMP SENE 2640FNL 1015FEL	CO GRIZZLY 3 34 FED 0057H Sec 3 T25S R32E SENE 2640FNL 1015FEL 32.159538 N Lat, 103.657387 W Lon

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME: CHEVRON USA INCORPORATED
LEASE NO.: NMLC061936
COUNTY: LEA

CO GRIZZLY 3 10 FED 0052H
LOCATION: Section 3, T.25 S., R.32 E., NMPM
SURFACE HOLE FOOTAGE: 2640'/N & 1040'/E
BOTTOM HOLE FOOTAGE: 25'/S & 550'/E

CO GRIZZLY 3 10 FED 0057H
LOCATION: Section 3, T.25 S., R.32 E., NMPM
SURFACE HOLE FOOTAGE: 2640'/N & 1115'/E
BOTTOM HOLE FOOTAGE: 25'/S & 2310'/E

CO GRIZZLY 3 10 FED 00510H
LOCATION: Section 3, T.25 S., R.32 E., NMPM
SURFACE HOLE FOOTAGE: 2640'/N & 1115'/E
BOTTOM HOLE FOOTAGE: 25'/S & 2310'/E

ALL PREVIOUS COAs STILL APPLY.

A. CASING

Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **880** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

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

string.

Intermediate casing must be kept 1/3 fluid filled to meet BLM minimum collapse requirement.

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.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **200 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 **200 feet** into previous casing string. Operator shall provide method of verification.

B. 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 **5000 (5M)** psi.

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.

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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ 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.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

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

NMK822019

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

February 02 2017

Tenaris

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110-IC
Min. Wall Thickness: 87.5 %

Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

PIPE BODY DATA

GEOMETRY

Nominal OD	**5.500** in.	Nominal Weight	**20.00** lbs/ft	Standard Drift Diameter	**4.653** in.
Nominal ID	**4.778** in.	Wall Thickness	**0.361** in.	Special Drift Diameter	**N/A**
Plain End Weight	**19.83** lbs/ft				

PERFORMANCE

Body Yield Strength	**641** x 1000 lbs	Internal Yield	**12630** psi	SMYS	**110000** psi
Collapse	**12100** psi				

TENARISXP® BTC CONNECTION DATA

GEOMETRY

Connection OD	**6.100** in.	Coupling Length	**9.450** in.	Connection ID	**4.766** in.
Critical Section Area	**5.828** sq. in.	Threads per in.	**5.00**	Make-Up Loss	**4.204** in.

PERFORMANCE

Tension Efficiency	**100** %	Joint Yield Strength	**641** x 1000 lbs	Internal Pressure Capacity(1)	**12630** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**641** x 1000 lbs	Structural Bending(2)	**92** °/100 ft
External Pressure Capacity	**12100** psi				

ESTIMATED MAKE-UP TORQUES(3)

Minimum	**11270** ft-lbs	Optimum	**12520** ft-lbs	Maximum	**13770** ft-lbs

OPERATIONAL LIMIT TORQUES

Operating Torque	**21500** ft-lbs	Yield Torque	**23900** ft-lbs		

BLANKING DIMENSIONS

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per

section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.

For additional information, please contact us at contact-tenarishydril@tenaris.com

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:
Elevation: 3494 ft

FORMATION	SUB-SEA TVD	TVD	MD	LITHOLOGIES	MIN. RESOURCES	PROD. FORMATION
Rustler	2634	860	860	ANHYD	N/A	
Castile	-26	3,520	3,520	SALT	N/A	
Lamar	-1253	4,747	4,747	LIMESTONE	N/A	
Bell Canyon	-1326	4,820	4,820	SAND STONE	N/A	
Cherry Canyon	-2216	5,710	5,710	SAND STONE	N/A	
Brushy Canyon	-3606	7,100	7,100	SAND STONE	N/A	
Bone Spring Limestone	-5216	8,710	8,710	SHALE	Oil	
Upr. Avalon	-5336	8,830	8,830	SHALE	Oil	
Top Bone Spring 1	-6216	9,710	9,710	SHALE	Oil	
Top Bone Spring 2	-6853	10,347	10,470	SHALE	Oil	
Estimated Target TVD	-6981	10,475	18,411	SHALE	Oil	yes

WELLBORE LOCATIONS	SUB-SEA TVD	RKB TVD	MD
SHL	3494	-	
KOP	-6408	9,902	9,947
FTP	-6981	10,475	10,847
LTP	-6981	10,475	18,411

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		750
Water	Rustler	860
Water	Bell Canyon	4820
Water	Cherry Canyon	5710
Oil/Gas	Brushy Canyon	7100
Oil/Gas	Bone Spring Limestone	8710
Oil/Gas	Upr. Avalon	8830
Oil/Gas	Top Bone Spring 1	9710
Oil/Gas	Top Bone Spring 2	10347
Oil/Gas	Estimated Target TVD	10,475

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'	880'	17-1/2"	13-3/8"	54.5 #	J-55	STC	New
Intermediate	0'	8,750'	12-1/4"	9-5/8"	43.5 #	L-80	LTC	New
Production	0'	18,667'	8-1/2"	5-1/2"	20.0 #	P-110	TXP BTC	New

Proposed	Hole Size	Casing Size	Top (MD)	Btm (MD)	Top (TVD)	Btm (TVD)	*Top (SSTVD)*	*Btm (SSTVD)*	Grade	Weight	Joint type
Surface	17-1/2"	13-3/8"	0'	880'	0'	880'	3,494'	2,614'	J-55	54.5 #	STC
Intermediate	12-1/4"	9-5/8"	0'	8,750'	0'	8,750'	3,494'	-5,256'	L-80	43.5 #	LTC
Production	8-1/2"	5-1/2"	0'	18,411'	0'	10,475'	3,494'	-6,981'	P110	20.0 #	TXP-BTC

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:	880'	ftTVD
Intermediate Casing:	8,750'	ftTVD
Production Casing:	18,411'	ftMD

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.41	2.06	2.80	1.77
Intermediate	1.28	3.01	1.84	1.58
Production	1.29	2.00	2.18	1.54

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

Burst Design	Surf	Int	Prod
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
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
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
Collapse Design	Surf	Int	Prod
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	Int	Prod
100k lb overpull	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	*Sacks*	Yield	Density	%Excess	Water	*Volume*	Additives
Surface					(cu ft/sk)	(ppg)	Open Hole	gal/sk	cuft	
Tail	Class C	0'	880'	1178	1.34	14.8	100	6.40	1579	Extender, Antifoam, Retarder
Intermediate Csg										
Lead	Class C	0'	7,750'	1233	2.56	11.9	30	14.66	3156	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	7,750'	8,750'	334	1.33	14.8	30	6.38	445	Extender, Antifoam, Retarder, Viscosifier
Production										
Lead 1	Class C	0'	10,000'	1028	2.46	11.9	10	14.05	2530	Extender, Antifoam, Retarder, Viscosifier
Lead 2	Class C	10,000'	17,411'	1009	1.85	13.2	10	9.87	1868	Extender, Antifoam, Retarder, Viscosifier
Tail	Acid Sol Class H	17,411'	18,411'	115	2.19	15	10	9.54	252	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
0'	880'	Fresh water mud	8.3 - 8.7	28-30	N/C
880'	8,750'	Brine/OBM	8.7 - 9.6	28-70	15-25
8,750'	18,411'	OBM	8.7 - 12.0	50-70	10 - 25

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: 4,362 psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

Schlumberger

Chevron

Chevron CO Grizzly 3 34 Fed 0057H Rev0 kFc 01May19 Proposal Geodetic Report

(Def Plan)

Report Date:	May 01, 2019 - 02:53 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chevron	**Vertical Section Azimuth:**	359.900 ° (Grid North)
Field:	NM Lea County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chevron CO Grizzly 3 Fed Pad 5 / 0057H	**TVD Reference Datum:**	RKB = 28ft
Well:	CO Grizzly 3 34 Fed 0057H	**TVD Reference Elevation:**	3522.000 ft above
Borehole:	CO Grizzly 3 34 Fed 0057H	**Seabed / Ground Elevation:**	3494.000 ft above
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.677 °
Survey Name:	Chevron CO Grizzly 3 34 Fed 0057H Rev0 kFc 01May19	**Total Gravity Field Strength:**	998.4280mgn (9.80665 Based)
Survey Date:	May 01, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	111.999 ° / 8676.271 ft / 6.232 / 0.828	**Total Magnetic Field Strength:**	47847.839 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.794 °
Location Lat / Long:	N 32° 9' 33.89380", W 103° 39' 24.88955"	**Declination Date:**	May 01, 2019
Location Grid N/E Y/X:	N 422374.000 ftUS, E 709325.000 ftUS	**Magnetic Declination Model:**	HDGM 2019
CRS Grid Convergence Angle:	0.3601 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99995928	**Grid Convergence Used:**	0.3601 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.3171 °
		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	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	100.00	0.00	116.21	100.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	200.00	0.00	116.21	200.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	300.00	0.00	116.21	300.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	400.00	0.00	116.21	400.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	500.00	0.00	116.21	500.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	600.00	0.00	116.21	600.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	700.00	0.00	116.21	700.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
13 3/8" Casing	800.00	0.00	116.21	800.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
Build 1.5°/100ft	900.00	0.00	116.21	900.00	0.00	0.00	0.00	0.00	422374.00	709325.00	N 32 9 33.89	W 103 39 24.89
	1000.00	1.50	116.21	999.99	-0.58	-0.58	1.17	1.50	422373.42	709326.17	N 32 9 33.89	W 103 39 24.88
	1100.00	3.00	116.21	1099.91	-2.32	-2.31	4.70	1.50	422371.69	709329.70	N 32 9 33.87	W 103 39 24.84
	1200.00	4.50	116.21	1199.69	-5.22	-5.20	10.56	1.50	422368.80	709335.56	N 32 9 33.84	W 103 39 24.77
	1300.00	6.00	116.21	1299.27	-9.28	-9.24	18.77	1.50	422364.76	709343.77	N 32 9 33.80	W 103 39 24.67
	1400.00	7.50	116.21	1398.57	-14.49	-14.44	29.32	1.50	422359.57	709354.32	N 32 9 33.75	W 103 39 24.55
	1500.00	9.00	116.21	1497.54	-20.85	-20.77	42.19	1.50	422353.23	709367.19	N 32 9 33.69	W 103 39 24.40
Hold	1599.98	10.50	116.21	1596.07	-28.35	-28.25	57.38	1.50	422345.75	709382.38	N 32 9 33.61	W 103 39 24.22
	1600.00	10.50	116.21	1596.09	-28.35	-28.25	57.38	0.00	422345.75	709382.38	N 32 9 33.61	W 103 39 24.22
	1700.00	10.50	116.21	1694.41	-36.43	-36.30	73.73	0.00	422337.70	709398.73	N 32 9 33.53	W 103 39 24.03
	1800.00	10.50	116.21	1792.74	-44.51	-44.35	90.08	0.00	422329.65	709415.08	N 32 9 33.45	W 103 39 23.84
	1900.00	10.50	116.21	1891.07	-52.59	-52.40	106.43	0.00	422321.60	709431.42	N 32 9 33.37	W 103 39 23.66
	2000.00	10.50	116.21	1989.39	-60.67	-60.45	122.78	0.00	422313.55	709447.77	N 32 9 33.29	W 103 39 23.47
	2100.00	10.50	116.21	2087.72	-68.75	-68.50	139.13	0.00	422305.50	709464.12	N 32 9 33.21	W 103 39 23.28
	2200.00	10.50	116.21	2186.04	-76.82	-76.55	155.47	0.00	422297.45	709480.47	N 32 9 33.13	W 103 39 23.09
	2300.00	10.50	116.21	2284.37	-84.90	-84.60	171.82	0.00	422289.40	709496.82	N 32 9 33.05	W 103 39 22.90
	2400.00	10.50	116.21	2382.69	-92.98	-92.65	188.17	0.00	422281.35	709513.16	N 32 9 32.97	W 103 39 22.71
	2500.00	10.50	116.21	2481.02	-101.06	-100.70	204.52	0.00	422273.30	709529.51	N 32 9 32.88	W 103 39 22.52
	2600.00	10.50	116.21	2579.34	-109.14	-108.75	220.87	0.00	422265.25	709545.86	N 32 9 32.80	W 103 39 22.33
	2700.00	10.50	116.21	2677.67	-117.21	-116.80	237.22	0.00	422257.20	709562.21	N 32 9 32.72	W 103 39 22.14
	2800.00	10.50	116.21	2776.00	-125.29	-124.85	253.57	0.00	422249.16	709578.56	N 32 9 32.64	W 103 39 21.95
	2900.00	10.50	116.21	2874.32	-133.37	-132.90	269.92	0.00	422241.11	709594.90	N 32 9 32.56	W 103 39 21.76
	3000.00	10.50	116.21	2972.65	-141.45	-140.95	286.26	0.00	422233.06	709611.25	N 32 9 32.48	W 103 39 21.57
	3100.00	10.50	116.21	3070.97	-149.53	-149.00	302.61	0.00	422225.01	709627.60	N 32 9 32.40	W 103 39 21.38
	3200.00	10.50	116.21	3169.30	-157.61	-157.05	318.96	0.00	422216.96	709643.95	N 32 9 32.32	W 103 39 21.19
	3300.00	10.50	116.21	3267.62	-165.68	-165.10	335.31	0.00	422208.91	709660.30	N 32 9 32.24	W 103 39 21.00
	3400.00	10.50	116.21	3365.95	-173.76	-173.15	351.66	0.00	422200.86	709676.64	N 32 9 32.16	W 103 39 20.81
	3500.00	10.50	116.21	3464.27	-181.84	-181.20	368.01	0.00	422192.81	709692.99	N 32 9 32.08	W 103 39 20.62
	3600.00	10.50	116.21	3562.60	-189.92	-189.25	384.36	0.00	422184.76	709709.34	N 32 9 32.00	W 103 39 20.43
	3700.00	10.50	116.21	3660.93	-198.00	-197.30	400.70	0.00	422176.71	709725.69	N 32 9 31.92	W 103 39 20.24
	3800.00	10.50	116.21	3759.25	-206.07	-205.35	417.05	0.00	422168.66	709742.04	N 32 9 31.84	W 103 39 20.05
Drop 1.5°/100ft	3858.40	10.50	116.21	3816.67	-210.79	-210.05	426.60	0.00	422163.96	709751.58	N 32 9 31.79	W 103 39 19.94
	3900.00	9.88	116.21	3857.62	-214.05	-213.30	433.20	1.50	422160.71	709758.18	N 32 9 31.76	W 103 39 19.87
	4000.00	8.38	116.21	3956.35	-221.08	-220.30	447.43	1.50	422153.71	709772.41	N 32 9 31.69	W 103 39 19.70
	4100.00	6.88	116.21	4055.48	-226.97	-226.17	459.34	1.50	422147.84	709784.32	N 32 9 31.63	W 103 39 19.56
	4200.00	5.38	116.21	4154.89	-231.70	-230.88	468.91	1.50	422143.13	709793.89	N 32 9 31.58	W 103 39 19.45
	4300.00	3.88	116.21	4254.56	-235.27	-234.44	476.14	1.50	422139.57	709801.12	N 32 9 31.54	W 103 39 19.37
	4400.00	2.38	116.21	4354.41	-237.69	-236.85	481.03	1.50	422137.16	709806.01	N 32 9 31.52	W 103 39 19.31
	4500.00	0.88	116.21	4454.36	-238.95	-238.10	483.58	1.50	422135.91	709808.56	N 32 9 31.51	W 103 39 19.28
Hold Vertical	4558.38	0.00	116.21	4512.74	-239.14	-238.30	483.98	1.50	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	4600.00	0.00	116.21	4554.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
9 5/8" Casing	*4645.64*	*0.00*	*116.21*	*4600.00*	*-239.14*	*-238.30*	*483.98*	*0.00*	*422135.71*	*709808.96*	*N 32 9 31.51*	*W 103 39 19.28*
	4700.00	0.00	116.21	4654.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	4800.00	0.00	116.21	4754.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	4900.00	0.00	116.21	4854.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5000.00	0.00	116.21	4954.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5100.00	0.00	116.21	5054.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5200.00	0.00	116.21	5154.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5300.00	0.00	116.21	5254.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5400.00	0.00	116.21	5354.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5500.00	0.00	116.21	5454.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5600.00	0.00	116.21	5554.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5700.00	0.00	116.21	5654.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5800.00	0.00	116.21	5754.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	5900.00	0.00	116.21	5854.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6000.00	0.00	116.21	5954.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6100.00	0.00	116.21	6054.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6200.00	0.00	116.21	6154.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6300.00	0.00	116.21	6254.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6400.00	0.00	116.21	6354.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6500.00	0.00	116.21	6454.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6600.00	0.00	116.21	6554.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6700.00	0.00	116.21	6654.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6800.00	0.00	116.21	6754.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	6900.00	0.00	116.21	6854.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7000.00	0.00	116.21	6954.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7100.00	0.00	116.21	7054.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7200.00	0.00	116.21	7154.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7300.00	0.00	116.21	7254.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7400.00	0.00	116.21	7354.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7500.00	0.00	116.21	7454.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7600.00	0.00	116.21	7554.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7700.00	0.00	116.21	7654.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7800.00	0.00	116.21	7754.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	7900.00	0.00	116.21	7854.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8000.00	0.00	116.21	7954.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8100.00	0.00	116.21	8054.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28

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 ° ' ")
	8200.00	0.00	116.21	8154.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8300.00	0.00	116.21	8254.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8400.00	0.00	116.21	8354.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8500.00	0.00	116.21	8454.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8600.00	0.00	116.21	8554.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8700.00	0.00	116.21	8654.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8800.00	0.00	116.21	8754.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	8900.00	0.00	116.21	8854.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9000.00	0.00	116.21	8954.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9100.00	0.00	116.21	9054.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9200.00	0.00	116.21	9154.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9300.00	0.00	116.21	9254.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9400.00	0.00	116.21	9354.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9500.00	0.00	116.21	9454.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9600.00	0.00	116.21	9554.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9700.00	0.00	116.21	9654.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9800.00	0.00	116.21	9754.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	9900.00	0.00	116.21	9854.36	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
KOP, Build 10°/100ft	9947.68	0.00	116.21	9902.04	-239.14	-238.30	483.98	0.00	422135.71	709808.96	N 32 9 31.51	W 103 39 19.28
	10000.00	5.23	358.90	9954.29	-236.76	-235.91	483.93	10.00	422138.10	709808.91	N 32 9 31.53	W 103 39 19.28
	10100.00	15.23	358.90	10052.57	-219.02	-218.17	483.59	10.00	422155.83	709808.57	N 32 9 31.70	W 103 39 19.28
	10200.00	25.23	358.90	10146.29	-184.49	-183.64	482.93	10.00	422190.37	709807.91	N 32 9 32.05	W 103 39 19.29
	10300.00	35.23	358.90	10232.58	-134.21	-133.36	481.97	10.00	422240.64	709806.95	N 32 9 32.54	W 103 39 19.29
	10400.00	45.23	358.90	10308.82	-69.71	-68.87	480.73	10.00	422305.13	709805.71	N 32 9 33.18	W 103 39 19.30
	10500.00	55.23	358.90	10372.71	7.05	7.88	479.26	10.00	422381.88	709804.24	N 32 9 33.94	W 103 39 19.31
	10600.00	65.23	358.90	10422.29	93.73	94.56	477.60	10.00	422468.56	709802.58	N 32 9 34.80	W 103 39 19.33
	10700.00	75.23	358.90	10456.07	187.70	188.53	475.80	10.00	422562.52	709800.78	N 32 9 35.73	W 103 39 19.34
	10800.00	85.23	358.90	10473.02	286.11	286.94	473.91	10.00	422660.93	709798.89	N 32 9 36.70	W 103 39 19.36
Landing Point	10847.67	90.00	358.90	10475.00	333.72	334.55	473.00	10.00	422708.53	709797.98	N 32 9 37.17	W 103 39 19.36
	10900.00	90.00	358.90	10475.00	386.04	386.87	472.00	0.00	422760.85	709796.98	N 32 9 37.69	W 103 39 19.37
	11000.00	90.00	358.90	10475.00	486.03	486.85	470.08	0.00	422860.83	709795.06	N 32 9 38.68	W 103 39 19.39
	11100.00	90.00	358.90	10475.00	586.01	586.83	468.17	0.00	422960.80	709793.15	N 32 9 39.67	W 103 39 19.40
Turn 2°/100ft	11111.73	90.00	358.90	10475.00	597.74	598.55	467.94	0.00	422972.53	709792.92	N 32 9 39.79	W 103 39 19.40
Hold	11161.72	90.00	359.90	10475.00	647.73	648.55	467.42	2.00	423022.52	709792.40	N 32 9 40.28	W 103 39 19.41
	11200.00	90.00	359.90	10475.00	686.01	686.82	467.35	0.00	423060.79	709792.33	N 32 9 40.66	W 103 39 19.40
	11300.00	90.00	359.90	10475.00	786.01	786.82	467.18	0.00	423160.79	709792.16	N 32 9 41.65	W 103 39 19.40
	11400.00	90.00	359.90	10475.00	886.01	886.82	467.01	0.00	423260.79	709791.99	N 32 9 42.64	W 103 39 19.39
	11500.00	90.00	359.90	10475.00	986.01	986.82	466.84	0.00	423360.78	709791.82	N 32 9 43.63	W 103 39 19.39
	11600.00	90.00	359.90	10475.00	1086.01	1086.82	466.67	0.00	423460.78	709791.65	N 32 9 44.62	W 103 39 19.38
	11700.00	90.00	359.90	10475.00	1186.01	1186.82	466.50	0.00	423560.77	709791.48	N 32 9 45.61	W 103 39 19.38
	11800.00	90.00	359.90	10475.00	1286.01	1286.82	466.33	0.00	423660.77	709791.31	N 32 9 46.60	W 103 39 19.37
	11900.00	90.00	359.90	10475.00	1386.01	1386.82	466.16	0.00	423760.76	709791.14	N 32 9 47.59	W 103 39 19.37
	12000.00	90.00	359.90	10475.00	1486.01	1486.82	465.99	0.00	423860.76	709790.97	N 32 9 48.58	W 103 39 19.36
	12100.00	90.00	359.90	10475.00	1586.01	1586.82	465.81	0.00	423960.75	709790.79	N 32 9 49.57	W 103 39 19.35
	12200.00	90.00	359.90	10475.00	1686.01	1686.82	465.64	0.00	424060.75	709790.62	N 32 9 50.56	W 103 39 19.35
	12300.00	90.00	359.90	10475.00	1786.01	1786.82	465.47	0.00	424160.75	709790.45	N 32 9 51.55	W 103 39 19.34
	12400.00	90.00	359.90	10475.00	1886.01	1886.82	465.30	0.00	424260.74	709790.28	N 32 9 52.54	W 103 39 19.34
	12500.00	90.00	359.90	10475.00	1986.01	1986.82	465.13	0.00	424360.74	709790.11	N 32 9 53.53	W 103 39 19.33
	12600.00	90.00	359.90	10475.00	2086.01	2086.82	464.96	0.00	424460.73	709789.94	N 32 9 54.51	W 103 39 19.33
	12700.00	90.00	359.90	10475.00	2186.01	2186.82	464.79	0.00	424560.73	709789.77	N 32 9 55.50	W 103 39 19.32
	12800.00	90.00	359.90	10475.00	2286.01	2286.82	464.62	0.00	424660.72	709789.60	N 32 9 56.49	W 103 39 19.32
	12900.00	90.00	359.90	10475.00	2386.01	2386.82	464.45	0.00	424760.72	709789.43	N 32 9 57.48	W 103 39 19.31
	13000.00	90.00	359.90	10475.00	2486.01	2486.82	464.28	0.00	424860.71	709789.26	N 32 9 58.47	W 103 39 19.31
	13100.00	90.00	359.90	10475.00	2586.01	2586.82	464.10	0.00	424960.71	709789.08	N 32 9 59.46	W 103 39 19.30
	13200.00	90.00	359.90	10475.00	2686.01	2686.82	463.93	0.00	425060.71	709788.91	N 32 10 0.45	W 103 39 19.30
	13300.00	90.00	359.90	10475.00	2786.01	2786.82	463.76	0.00	425160.70	709788.74	N 32 10 1.44	W 103 39 19.29
	13400.00	90.00	359.90	10475.00	2886.01	2886.82	463.59	0.00	425260.70	709788.57	N 32 10 2.43	W 103 39 19.29
	13500.00	90.00	359.90	10475.00	2986.01	2986.82	463.42	0.00	425360.69	709788.40	N 32 10 3.42	W 103 39 19.28
	13600.00	90.00	359.90	10475.00	3086.01	3086.82	463.25	0.00	425460.69	709788.23	N 32 10 4.41	W 103 39 19.27
	13700.00	90.00	359.90	10475.00	3186.01	3186.82	463.08	0.00	425560.68	709788.06	N 32 10 5.40	W 103 39 19.27
	13800.00	90.00	359.90	10475.00	3286.01	3286.82	462.91	0.00	425660.68	709787.89	N 32 10 6.39	W 103 39 19.26
	13900.00	90.00	359.90	10475.00	3386.01	3386.82	462.74	0.00	425760.67	709787.72	N 32 10 7.38	W 103 39 19.26
	14000.00	90.00	359.90	10475.00	3486.01	3486.82	462.57	0.00	425860.67	709787.55	N 32 10 8.37	W 103 39 19.25
	14100.00	90.00	359.90	10475.00	3586.01	3586.82	462.39	0.00	425960.67	709787.37	N 32 10 9.36	W 103 39 19.25
	14200.00	90.00	359.90	10475.00	3686.01	3686.82	462.22	0.00	426060.66	709787.20	N 32 10 10.35	W 103 39 19.24
	14300.00	90.00	359.90	10475.00	3786.01	3786.82	462.05	0.00	426160.66	709787.03	N 32 10 11.34	W 103 39 19.24
	14400.00	90.00	359.90	10475.00	3886.01	3886.82	461.88	0.00	426260.65	709786.86	N 32 10 12.33	W 103 39 19.23
	14500.00	90.00	359.90	10475.00	3986.01	3986.82	461.71	0.00	426360.65	709786.69	N 32 10 13.32	W 103 39 19.23
	14600.00	90.00	359.90	10475.00	4086.01	4086.82	461.54	0.00	426460.64	709786.52	N 32 10 14.31	W 103 39 19.22
	14700.00	90.00	359.90	10475.00	4186.01	4186.82	461.37	0.00	426560.64	709786.35	N 32 10 15.30	W 103 39 19.22
	14800.00	90.00	359.90	10475.00	4286.01	4286.82	461.20	0.00	426660.63	709786.18	N 32 10 16.28	W 103 39 19.21
	14900.00	90.00	359.90	10475.00	4386.01	4386.82	461.03	0.00	426760.63	709786.01	N 32 10 17.27	W 103 39 19.21
	15000.00	90.00	359.90	10475.00	4486.01	4486.82	460.85	0.00	426860.63	709785.83	N 32 10 18.26	W 103 39 19.20
	15100.00	90.00	359.90	10475.00	4586.01	4586.82	460.68	0.00	426960.62	709785.66	N 32 10 19.25	W 103 39 19.19
	15200.00	90.00	359.90	10475.00	4686.01	4686.82	460.51	0.00	427060.62	709785.49	N 32 10 20.24	W 103 39 19.19
	15300.00	90.00	359.90	10475.00	4786.01	4786.82	460.34	0.00	427160.61	709785.32	N 32 10 21.23	W 103 39 19.18
	15400.00	90.00	359.90	10475.00	4886.01	4886.82	460.17	0.00	427260.61	709785.15	N 32 10 22.22	W 103 39 19.18
	15500.00	90.00	359.90	10475.00	4986.01	4986.82	460.00	0.00	427360.60	709784.98	N 32 10 23.21	W 103 39 19.17
	15600.00	90.00	359.90	10475.00	5086.01	5086.82	459.83	0.00	427460.60	709784.81	N 32 10 24.20	W 103 39 19.17
	15700.00	90.00	359.90	10475.00	5186.01	5186.82	459.66	0.00	427560.60	709784.64	N 32 10 25.19	W 103 39 19.16
	15800.00	90.00	359.90	10475.00	5286.01	5286.82	459.49	0.00	427660.59	709784.47	N 32 10 26.18	W 103 39 19.16
	15900.00	90.00	359.90	10475.00	5386.01	5386.82	459.32	0.00	427760.59	709784.30	N 32 10 27.17	W 103 39 19.15
	16000.00	90.00	359.90	10475.00	5486.01	5486.82	459.14	0.00	427860.58	709784.12	N 32 10 28.16	W 103 39 19.15
	16100.00	90.00	359.90	10475.00	5586.01	5586.82	458.97	0.00	427960.58	709783.95	N 32 10 29.15	W 103 39 19.14
	16200.00	90.00	359.90	10475.00	5686.01	5686.82	458.80	0.00	428060.57	709783.78	N 32 10 30.14	W 103 39 19.14
	16300.00	90.00	359.90	10475.00	5786.01	5786.82	458.63	0.00	428160.57	709783.61	N 32 10 31.13	W 103 39 19.13
	16400.00	90.00	359.90	10475.00	5886.01	5886.82	458.46	0.00	428260.56	709783.44	N 32 10 32.12	W 103 39 19.13
	16500.00	90.00	359.90	10475.00	5986.01	5986.82	458.29	0.00	428360.56	709783.27	N 32 10 33.11	W 103 39 19.12
	16600.00	90.00	359.90	10475.00	6086.01	6086.82	458.12	0.00	428460.56	709783.10	N 32 10 34.10	W 103 39 19.11
	16700.00	90.00	359.90	10475.00	6186.01	6186.82	457.95	0.00	428560.55	709782.93	N 32 10 35.09	W 103 39 19.11
	16800.00	90.00	359.90	10475.00	6286.01	6286.82	457.78	0.00	428660.55	709782.76	N 32 10 36.08	W 103 39 19.10
	16900.00	90.00	359.90	10475.00	6386.01	6386.82	457.60	0.00	428760.54	709782.59	N 32 10 37.07	W 103 39 19.10
	17000.00	90.00	359.90	10475.00	6486.01	6486.81	457.43	0.00	428860.54	709782.41	N 32 10 38.05	W 103 39 19.09
	17100.00	90.00	359.90	10475.00	6586.01	6586.81	457.26	0.00	428960.53	709782.24	N 32 10 39.04	W 103 39 19.09
	17200.00	90.00	359.90	10475.00	6686.01	6686.81	457.09	0.00	429060.53	709782.07	N 32 10 40.03	W 103 39 19.08
	17300.00	90.00	359.90	10475.00	6786.01	6786.81	456.92	0.00	429160.52	709781.90	N 32 10 41.02	W 103 39 19.08
	17400.00	90.00	359.90	10475.00	6886.01	6886.81	456.75	0.00	429260.52	709781.73	N 32 10 42.01	W 103 39 19.07
	17500.00	90.00	359.90	10475.00	6986.01	6986.81	456.58	0.00	429360.52	709781.56	N 32 10 43.00	W 103 39 19.07
	17600.00	90.00	359.90	10475.00	7086.01	7086.81	456.41	0.00	429460.51	709781.39	N 32 10 43.99	W 103 39 19.06
	17700.00	90.00	359.90	10475.00	7186.01	7186.81	456.24	0.00	429560.51	709781.22	N 32 10 44.98	W 103 39 19.06
	17800.00	90.00	359.90	10475.00	7286.01	7286.81	456.07	0.00	429660.50	709781.05	N 32 10 45.97	W 103 39 19.05
	17900.00	90.00	359.90	10475.00	7386.01	7386.81	455.89	0.00	429760.50	709780.87	N 32 10 46.96	W 103 39 19.05
	18000.00	90.00	359.90	10475.00	7486.01	7486.81	455.72	0.00	429860.49	709780.70	N 32 10 47.95	W 103 39 19.04
	18100.00	90.00	359.90	10475.00	7586.01	7586.81	455.55	0.00	429960.49	709780.53	N 32 10 48.94	W 103 39 19.03
	18200.00	90.00	359.90	10475.00	7686.01	7686.81	455.38	0.00	430060.48	709780.36	N 32 10 49.93	W 103 39 19.03
	18300.00	90.00	359.90	10475.00	7786.01	7786.81	455.21	0.00	430160.48	709780.19	N 32 10 50.92	W 103 39 19.02
LTP Cross	*18336.69*	*90.00*	*359.90*	*10475.00*	*7822.69*	*7823.50*	*455.15*	*0.00*	*430197.17*	*709780.13*	*N 32 10 51.28*	*W 103 39 19.02*
	18400.00	90.00	359.90	10475.00	7886.01	7886.81	455.04	0.00	430260.48	709780.02	N 32 10 51.91	W 103 39 19.02
CO Grizzly 3 34 Fed 0057H - PBHL	18411.52	90.00	359.90	10475.00	7897.53	7898.34	455.02	0.00	430272.00	709780.00	N 32 10 52.02	W 103 39 19.02

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 97.071% Confidence 3.0000 sigma

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 ° ' ")

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		B001Ma_MWD+HDGM-Depth Only	CO Grizzly 3 34 Fed 0057H / Chevron CO Grizzly 3 34 Fed 0057H Rev0 kFc 01May19
	1	28.000	18411.525	1/100.000	30.000	30.000		B001Ma_MWD+HDGM	CO Grizzly 3 34 Fed 0057H / Chevron CO Grizzly 3 34 Fed