

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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.*5. Lease Serial No.
NMLC062300

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
CO YETI 15 22 FED COM 0056H9. API Well No.
30-025-45536-00-X110. Field and Pool or Exploratory Area
WILDCAT BONE SPRING11. County or Parish, State
LEA COUNTY, NM

SUBMIT IN TRIPLICATE - Other Instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

CHEVRON USA INCORPORATED

Contact: LAURA BECERRA

E-Mail: LBECCERRA@CHEVRON.COM

3a. Address

6301 DEAUVILLE BLVD
MIDLAND, TX 79706

3b. Phone No. (include area code)

Ph: 432-687-7665

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 15 T25S R32E NENE 10FNL 1210FEL
32.137733 N Lat, 103.658127 W Lon

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

TYPE OF SUBMISSION

TYPE OF ACTION

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

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 recompleat 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 1/22/2019:

Well field/pool: WC-025G07S253216D; Upper Wolfcamp

FTP - From: 330' FNL, 330' FEL to 100' FNL, 330' FEL

LTP - From: 330' FSL, 330' FEL to 100' FSL, 330' FEL

BHL - From: 100' FSL, 330' FEL to 25' FSL, 330' FEL

MD/TVD: 22,660'/12,094' to 23,039'/12,072'

Carlsbad Field Office
OCD Hobbs

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

Electronic Submission #476663 verified by the BLM Well Information System
For CHEVRON USA INCORPORATED, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 08/05/2019 (19PP2769SE)

Name (Printed/Typed) LAURA BECERRA

Title REGULATORY SPECIALIST

Signature (Electronic Submission)

Date 08/05/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By LONG VO

Title PETROLEUM ENGINEER

Date 08/12/2019

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 #476663 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.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CHEVRON USA INCORPORATED
LEASE NO.:	NMLC0062300
WELL NAME & NO.:	CO YETI 15 22 FED COM 0056H
SURFACE HOLE FOOTAGE:	10'/N & 1210'/E
BOTTOM HOLE FOOTAGE:	100'/S & 330'/E
LOCATION:	Section 15, T.25 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

COA

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

All Previous COAs Still Apply

A. CASING

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.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing shall be set at approximately 4700 feet is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

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

3. The minimum required fill of cement behind the 7-5/8 inch intermediate liner is:

- Cement should tie-back 100 feet into the previous casing. Operator shall provide method of verification.

4. The minimum required fill of cement behind the production casing is:

- Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
- Production hole size correction from 8-1/2 inch to 6-3/4 inch.

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. 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 10,000 (10M) 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.

C. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

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 integrity 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 integrity 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.

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	2684	810	810	ANHYD	N/A	
Castile	359	3,135	3,135	SALT	N/A	
Lamar	-1207	4,701	4,701	LIMESTONE	N/A	
Bell Canyon	-1258	4,752	4,752	SAND STONE	N/A	
Cherry Canyon	-2172	5,666	5,666	SAND STONE	N/A	
Brushy Canyon	-3580	7,074	7,074	SAND STONE	N/A	
Bone Spring Limestone	-5178	8,672	8,672	SHALE	Oil	
Upr. Avalon	-5296	8,790	8,790	SHALE	Oil	
Top Bone Spring 1	-6180	9,674	9,674	SHALE	Oil	
Top Bone Spring 2	-6784	10,278	10,278	SHALE	Oil	
Top Bone Spring 3	-7792	11,286	11,286	SHALE	Oil	
Wolfcamp	-8456	11,950	12,950	SHALE	Oil	
WCA X	-8481	11,975	13,000	SHALE	Oil	
WCA Y	-8560	12,054	13,100	SHALE	Oil	yes
WCA	-8578	12,072	23,039	SHALE	Oil	

WELLBORE LOCATIONS	SUB-SEA TVD	RKB TVD	MD
SHL	3494	-	-
KOP	-8026	11,520	11,600
FTP	-8569	12,063	12,550
LTP	-8569	12,063	22,660

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	810
Water	Castile	3,135
Water	Lamar	4,701
Oil/Gas	Bell Canyon	4,752
Oil/Gas	Cherry Canyon	5,666
Oil/Gas	Brushy Canyon	7,074
Oil/Gas	Bone Spring Limestone	8,672
Oil/Gas	Upr. Avalon	8,790
Oil/Gas	Top Bone Spring 1	9,674
Oil/Gas	Top Bone Spring 2	10,278
Oil/Gas	Top Bone Spring 3	11,286
Oil/Gas	Wolfcamp	11,950
Oil/Gas	WCA X	11,975

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 nipped 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/BTC	New

OK

Purpose	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/BTC

OK

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

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

c. 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'	RTVD
		RTVD
		RTVD
Production Casing:	22,660'	RTMD

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

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 - 9.0	28-30	N/C

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 transporting 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:

- Drill stem tests are not planned.
- 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

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

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

- No abnormal pressure or temperatures are expected. Estimated BHP is: psi (MASP)
- Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

Chevron CO Yeti 15 22 Fed Com 0056H Rev1 kFc 26Jul19 Proposal

Geodetic Report

(Def Plan)



Report Date: July 26, 2019 - 04:21 PM
 Client: Chevron
 Field: NM Lea County (NAD 27)
 Structure / Slot: Chevron CO Yeti 15 22 Fed Com Ped 5 / 0056H
 Well: CO Yeti 15 22 Fed Com 0056H
 Borehole: CO Yeti 15 22 Fed Com 0056H
 UWI / AP#s: Unknown / 30-025-45536
 Survey Name: Chevron CO Yeti 15 22 Fed Com 0056H Rev1 kFc 26Jul19
 Survey Date: July 25, 2019
 Tort / AHD / DDI / ERD Ratio: 115.873' / 12232.578 ft / 6.431' / 1.012
 Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 8' 15.39155", W 103° 39' 27.55093"
 Location Grid N/E Y/X: N 414440.000 RUS, E 709146.000 RUS
 CRS Grid Convergence Angle: 0.3594 °
 Grid Scale Factor: 0.9995919
 Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 179.720 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Elevation: 3478.000 ft above
 Seabed / Ground Elevation: 3450.000 ft above
 Magnetic Declination: 6.847 °
 Total Gravity Field Strength: 988.4272mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47798.757 nT
 Magnetic Dip Angle: 59.753 °
 Declination Date: July 25, 2019
 Magnetic Declination Model: HDGM 2019
 North Reference: Grid North
 Grid Convergence Used: 0.3594 °
 Total Corr Mag North-Grid North: 6.2880 °
 Local Coord Referenced To: Well Head

Comments	MD	Incl	Azin Grid	TVD	VSEC	NS	EW	DLS	Northing	Easting	Latitude	Longitude
	(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft/100ft)	(RUS)	(RUS)	(N/S ° ' ")	(E/W ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	100.00	0.00	54.07	100.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	200.00	0.00	54.07	200.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	300.00	0.00	54.07	300.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	400.00	0.00	54.07	400.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	500.00	0.00	54.07	500.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	600.00	0.00	54.07	600.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	700.00	0.00	54.07	700.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	800.00	0.00	54.07	800.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
Rustler	810.00	0.00	54.07	810.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
13 3/8" Casing	875.00	0.00	54.07	875.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	900.00	0.00	54.07	900.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
Build 1.5"/100ft	950.00	0.00	54.07	950.00	0.00	0.00	0.00	0.00	414440.00	709146.00	N 32° 8' 15.39" W 103° 39' 27.55"	
	1000.00	0.75	54.07	1000.00	-0.19	0.19	0.26	1.50	414440.19	709146.26	N 32° 8' 15.39" W 103° 39' 27.52"	
	1100.00	2.25	54.07	1099.96	-1.72	1.73	2.38	1.50	414441.73	709148.38	N 32° 8' 15.41" W 103° 39' 27.52"	
	1200.00	3.75	54.07	1199.82	-4.77	4.80	6.62	1.50	414444.80	709152.82	N 32° 8' 15.44" W 103° 39' 27.47"	
	1300.00	6.25	54.07	1199.51	-8.24	8.40	12.08	1.50	414449.40	709158.97	N 32° 8' 15.48" W 103° 39' 27.40"	
	1400.00	8.75	54.07	1198.96	-15.43	15.54	21.44	1.50	414455.54	709167.44	N 32° 8' 15.54" W 103° 39' 27.30"	
	1500.00	8.25	54.07	1198.10	-23.04	23.19	32.01	1.50	414463.19	709176.01	N 32° 8' 15.62" W 103° 39' 27.18"	
	1600.00	9.75	54.07	1196.87	-32.15	32.37	44.68	1.50	414472.37	709190.67	N 32° 8' 15.71" W 103° 39' 27.03"	
	1700.00	11.25	54.07	1185.19	-42.78	43.07	58.43	1.50	414483.06	709205.43	N 32° 8' 15.81" W 103° 39' 26.86"	
Hold	1718.68	11.50	54.07	1171.54	-44.69	45.00	62.08	1.50	414484.99	709208.09	N 32° 8' 15.83" W 103° 39' 26.83"	
	1800.00	11.50	54.07	1179.19	-54.37	54.74	75.55	0.00	414494.74	709221.54	N 32° 8' 15.83" W 103° 39' 26.87"	
	1900.00	11.50	54.07	1181.18	-65.98	66.44	91.89	0.00	414506.44	709237.69	N 32° 8' 16.04" W 103° 39' 26.48"	
	2000.00	11.50	54.07	1189.17	-77.81	78.14	107.83	0.00	414518.14	709253.83	N 32° 8' 16.18" W 103° 39' 26.29"	
	2100.00	11.50	54.07	1207.17	-89.23	89.84	123.98	0.00	414529.84	709269.97	N 32° 8' 16.27" W 103° 39' 26.10"	
	2200.00	11.50	54.07	1218.18	-100.85	101.54	140.12	0.00	414541.53	709286.12	N 32° 8' 16.39" W 103° 39' 25.91"	
	2300.00	11.50	54.07	1233.15	-112.47	113.24	156.27	0.00	414553.23	709302.26	N 32° 8' 16.50" W 103° 39' 25.73"	
	2400.00	11.50	54.07	1238.14	-124.09	124.94	172.41	0.00	414564.93	709318.40	N 32° 8' 16.62" W 103° 39' 25.54"	
	2500.00	11.50	54.07	1249.14	-135.71	136.63	188.55	0.00	414576.63	709334.55	N 32° 8' 16.73" W 103° 39' 25.35"	
	2600.00	11.50	54.07	1257.13	-147.33	148.33	204.70	0.00	414588.33	709350.69	N 32° 8' 16.85" W 103° 39' 25.16"	
	2700.00	11.50	54.07	1265.12	-158.95	160.03	220.84	0.00	414600.02	709366.83	N 32° 8' 16.96" W 103° 39' 24.97"	
	2800.00	11.50	54.07	1273.11	-170.57	171.73	236.99	0.00	414611.72	709382.98	N 32° 8' 17.08" W 103° 39' 24.78"	
	2900.00	11.50	54.07	1281.11	-182.19	183.43	253.13	0.00	414623.42	709399.12	N 32° 8' 17.19" W 103° 39' 24.59"	
	3000.00	11.50	54.07	1289.10	-193.81	185.13	269.27	0.00	414635.12	709415.26	N 32° 8' 17.31" W 103° 39' 24.41"	
	3100.00	11.50	54.07	1307.09	-205.43	206.83	285.42	0.00	414646.82	709431.41	N 32° 8' 17.42" W 103° 39' 24.22"	
Casid	3199.30	11.50	54.07	1315.08	-213.48	214.83	296.61	0.00	414658.52	709447.55	N 32° 8' 17.50" W 103° 39' 24.03"	
	3200.00	11.50	54.07	1315.08	-217.05	218.52	301.56	0.00	414658.52	709447.55	N 32° 8' 17.54" W 103° 39' 24.02"	
	3300.00	11.50	54.07	1323.08	-228.67	230.22	317.71	0.00	414670.21	709463.69	N 32° 8' 17.65" W 103° 39' 23.84"	
	3400.00	11.50	54.07	1331.07	-240.29	241.92	333.85	0.00	414681.91	709479.84	N 32° 8' 17.76" W 103° 39' 23.65"	
	3500.00	11.50	54.07	1345.06	-251.91	253.62	349.99	0.00	414693.61	709495.98	N 32° 8' 17.88" W 103° 39' 23.46"	
	3600.00	11.50	54.07	1355.05	-263.53	265.32	366.14	0.00	414705.31	709512.12	N 32° 8' 17.99" W 103° 39' 23.27"	
	3700.00	11.50	54.07	1365.05	-275.15	277.02	382.28	0.00	414717.01	709528.27	N 32° 8' 18.11" W 103° 39' 23.09"	
	3800.00	11.50	54.07	1375.04	-286.77	288.72	398.43	0.00	414728.70	709544.41	N 32° 8' 18.22" W 103° 39' 22.90"	
	3900.00	11.50	54.07	1385.03	-298.39	300.41	414.57	0.00	414740.40	709560.55	N 32° 8' 18.34" W 103° 39' 22.71"	
	4000.00	11.50	54.07	1395.02	-310.01	312.11	430.71	0.00	414752.10	709576.70	N 32° 8' 18.45" W 103° 39' 22.52"	
	4100.00	11.50	54.07	1404.02	-321.62	323.81	446.86	0.00	414763.80	709592.84	N 32° 8' 18.57" W 103° 39' 22.33"	
	4200.00	11.50	54.07	1414.01	-333.24	335.51	463.00	0.00	414775.50	709608.98	N 32° 8' 18.68" W 103° 39' 22.14"	
	4300.00	11.50	54.07	1424.00	-344.86	347.21	479.15	0.00	414787.19	709625.13	N 32° 8' 18.80" W 103° 39' 21.95"	
	4400.00	11.50	54.07	1434.99	-356.48	358.91	495.29	0.00	414798.89	709641.27	N 32° 8' 18.91" W 103° 39' 21.76"	
	4500.00	11.50	54.07	1443.98	-368.10	370.61	511.43	0.00	414810.59	709657.41	N 32° 8' 19.03" W 103° 39' 21.58"	
	4600.00	11.50	54.07	1453.98	-379.72	382.31	527.58	0.00	414822.29	709673.56	N 32° 8' 19.14" W 103° 39' 21.39"	
	4700.00	11.50	54.07	1463.97	-391.34	394.00	543.72	0.00	414833.99	709689.70	N 32° 8' 19.26" W 103° 39' 21.20"	
9 5/8" Casing	4768.38	11.50	54.07	4700.00	-399.05	401.77	554.44	0.00	414841.75	709700.00	N 32° 8' 19.33" W 103° 39' 21.07"	
Lamar	4767.38	11.50	54.07	4701.00	-399.17	401.89	554.80	0.00	414841.87	709700.58	N 32° 8' 19.33" W 103° 39' 21.07"	
	4800.00	11.50	54.07	4712.00	-402.98	405.88	569.87	0.00	414848.88	709705.84	N 32° 8' 19.37" W 103° 39' 21.01"	
Bel Canyon	4819.43	11.50	54.07	4752.00	-405.22	407.98	583.00	0.00	414847.98	709708.98	N 32° 8' 19.39" W 103° 39' 20.97"	
	4900.00	11.50	54.07	4830.95	-414.58	417.40	576.01	0.00	414857.38	709721.99	N 32° 8' 19.49" W 103° 39' 20.82"	
	5000.00	11.50	54.07	4928.95	-426.20	429.10	592.18	0.00	414868.08	709738.13	N 32° 8' 19.60" W 103° 39' 20.63"	
	5100.00	11.50	54.07	5026.94	-437.82	440.80	608.30	0.00	414878.78	709754.27	N 32° 8' 19.72" W 103° 39' 20.44"	
	5200.00	11.50	54.07	5124.93	-449.44	452.50	624.44	0.00	414889.48	709770.42	N 32° 8' 19.83" W 103° 39' 20.25"	
	5300.00	11.50	54.07	5222.92	-461.06	464.20	640.59	0.00	414900.18	709786.56	N 32° 8' 19.95" W 103° 39' 20.06"	
	5400.00	11.50	54.07	5320.92	-472.68	475.89	656.73	0.00	414910.87	709802.70	N 32° 8' 20.06" W 103° 39' 19.88"	
	5500.00	11.50	54.07	5418.91	-484.30	487.58	672.88	0.00	414921.57	709818.85	N 32° 8' 20.17" W 103° 39' 19.69"	
	5600.00	11.50	54.07	5516.90	-495.92	499.29	689.02	0.00	414932.27	709834.99	N 32° 8' 20.29" W 103° 39' 19.50"	
	5700.0											

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (s)	N9 (°)	EW (ft)	DLS (ft/100ft)	Northing (NUS)	Easting (EUS)	Latitude (N/S ° ° ' '')	Longitude (E/W ° ° ' '')
	7600.00	0.00	54.07	7796.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8000.00	0.00	54.07	7896.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8100.00	0.00	54.07	7896.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8200.00	0.00	54.07	8096.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8300.00	0.00	54.07	8196.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8400.00	0.00	54.07	8296.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8500.00	0.00	54.07	8396.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8600.00	0.00	54.07	8496.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8700.00	0.00	54.07	8596.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Bone Spring	8775.79	0.00	54.07	8672.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8800.00	0.00	54.07	8696.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Upper Avalon	8893.79	0.00	54.07	8760.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	8900.00	0.00	54.07	8786.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9000.00	0.00	54.07	8896.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9100.00	0.00	54.07	8996.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9200.00	0.00	54.07	9096.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9300.00	0.00	54.07	9196.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9400.00	0.00	54.07	9296.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9500.00	0.00	54.07	9396.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9600.00	0.00	54.07	9496.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9700.00	0.00	54.07	9596.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Top First Bone Spring	9777.79	0.00	54.07	9674.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9800.00	0.00	54.07	9696.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	9900.00	0.00	54.07	9796.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10000.00	0.00	54.07	9896.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10100.00	0.00	54.07	9996.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10200.00	0.00	54.07	10096.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
First Bone Spring Shale	10238.79	0.00	54.07	10135.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10300.00	0.00	54.07	10196.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Top Second Bone Spring	10381.79	0.00	54.07	10278.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10400.00	0.00	54.07	10296.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10500.00	0.00	54.07	10396.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Second Bone Spring Target 2	10539.79	0.00	54.07	10436.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Second Bone Spring 2nd Carb	10580.79	0.00	54.07	10477.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Second Bone Spring 2nd Carb Base	10594.79	0.00	54.07	10491.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10600.00	0.00	54.07	10496.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10700.00	0.00	54.07	10596.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Second Bone Spring Target 1	10769.79	0.00	54.07	10688.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10800.00	0.00	54.07	10696.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Second Bone Spring 3rd Carb	10878.79	0.00	54.07	10773.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	10900.00	0.00	54.07	10796.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Second Bone Spring 3rd Carb Base	10930.79	0.00	54.07	10827.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	11000.00	0.00	54.07	10896.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	11100.00	0.00	54.07	10996.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Second Bone Spring Shale	11106.79	0.00	54.07	11006.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	11200.00	0.00	54.07	11096.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	11300.00	0.00	54.07	11196.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	11389.79	0.00	54.07	11288.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Third Bone Spring 1st Carb	11400.00	0.00	54.07	11296.21	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
	11403.79	0.00	54.07	11300.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
7 5/8" Casing	11478.79	0.00	54.07	11375.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
Third Bone Spring 1st Carb base	11483.79	0.00	54.07	11380.00	-630.64	634.93	876.20	0.00	415074.90	710022.16	N 32	8 21.62 W 103 39 17.31
KOP, Build 8.1"/100ft	11500.00	1.31	179.72	11396.21	-630.45	634.74	876.20	8.10	415074.72	710022.16	N 32	8 21.62 W 103 39 17.31
	11600.00	9.41	179.72	11495.89	-621.12	625.41	876.25	8.10	415065.38	710022.21	N 32	8 21.53 W 103 39 17.32
Top Third Bone Spring	11601.33	9.52	179.72	11497.00	-620.90	625.19	876.25	8.10	415065.16	710022.21	N 32	8 21.52 W 103 39 17.32
	11700.00	17.51	179.72	11592.99	-667.85	602.14	876.38	8.10	415042.12	710022.32	N 32	8 21.30 W 103 39 17.32
	1200.00	25.81	179.72	11685.78	-561.13	564.42	876.78	8.10	415005.40	710022.50	N 32	8 21.62 W 103 39 17.32
	11800.00	33.71	179.72	11772.80	-511.68	515.97	876.78	8.10	414655.95	710022.74	N 32	8 20.44 W 103 39 17.32
	12000.00	41.81	179.72	11851.59	-450.50	454.79	877.08	8.10	414894.77	710023.04	N 32	8 19.84 W 103 39 17.32
	12100.00	49.91	179.72	11921.17	-378.79	383.08	877.43	8.10	414823.06	710023.39	N 32	8 19.13 W 103 39 17.32
Wolfcamp A	12148.82	53.69	179.72	11950.00	-342.15	346.45	877.61	8.10	414768.43	710023.57	N 32	8 18.77 W 103 39 17.32
Wolfcamp A X	12190.74	57.26	179.72	11975.00	-305.81	310.11	877.79	8.10	414750.09	710023.75	N 32	8 18.41 W 103 39 17.32
	12200.00	58.01	179.72	11978.96	-287.99	302.28	877.83	8.10	414742.27	710023.79	N 32	8 18.33 W 103 39 17.32
Wolfcamp A X Base	12274.45	64.04	179.72	12016.00	-232.89	237.18	878.15	8.10	414677.17	710024.11	N 32	8 17.88 W 103 39 17.32
	12300.00	68.11	179.72	12026.77	-209.72	214.01	878.26	8.10	414654.00	710024.22	N 32	8 17.45 W 103 39 17.32
Wolfcamp A Y	12378.81	72.33	179.72	12054.00	-137.94	142.23	878.61	8.10	414582.23	710024.57	N 32	8 16.74 W 103 39 17.32
	12400.00	74.21	179.72	12060.67	-115.73	120.03	878.72	8.10	414560.02	710024.68	N 32	8 16.52 W 103 39 17.32
Wolfcamp A Y TGT 1	12408.74	74.62	179.72	12063.00	-107.30	116.60	878.76	8.10	414551.59	710024.72	N 32	8 16.44 W 103 39 17.32
Wolfcamp A TGT	12447.25	78.04	179.72	12072.00	-99.87	74.17	878.94	8.10	414514.16	710024.90	N 32	8 16.07 W 103 39 17.32
	12500.00	82.31	179.72	12081.00	-17.90	22.20	879.20	8.10	414482.20	710025.16	N 32	8 15.56 W 103 39 17.32
	12600.00	90.41	179.72	12087.34	81.81	-77.51	879.68	8.10	414382.49	710025.65	N 32	8 14.57 W 103 39 17.33
FTP Cross	12603.68	90.71	179.72	12087.30	85.50	-81.20	879.70	8.10	414358.81	710025.66	N 32	8 14.53 W 103 39 17.33
	12700.00	90.71	179.72	12088.11	181.81	-177.51	880.17	0.00	414282.50	710026.14	N 32	8 13.58 W 103 39 17.33
	12800.00	90.71	179.72	12084.85	281.80	-277.50	880.68	0.00	414192.51	710026.62	N 32	8 12.59 W 103 39 17.33
	12900.00	90.71	179.72	12083.82	381.79	-377.49	881.15	0.00	414082.53	710027.11	N 32	8 11.60 W 103 39 17.33
	13000.00	90.71	179.72	12082.38	481.78	-477.48	881.64	0.00	413982.54	710027.60	N 32	8 10.61 W 103 39 17.33
	13100.00	90.71	179.72	12081.14</								

Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
MP, Drop 2"/100ft	17300.00	90.71	179.72	12029.00	4781.45	-4777.10	902.87	0.00	409583.11	710048.83	N 32 7 28.06 W 103 39 17.40	
	17400.00	90.71	179.72	12027.76	4881.44	-4877.09	903.18	0.00	409583.12	710049.12	N 32 7 27.07 W 103 39 17.41	
	17500.00	90.71	179.72	12026.52	4981.44	-4977.08	903.85	0.00	409583.13	710049.81	N 32 7 26.09 W 103 39 17.41	
	17600.00	90.71	179.72	12025.28	5081.43	-5077.07	904.14	0.00	409583.15	710050.10	N 32 7 25.10 W 103 39 17.41	
	17700.00	90.71	179.72	12024.04	5181.42	-5177.06	904.83	0.00	409583.16	710050.59	N 32 7 24.11 W 103 39 17.41	
	17783.87	90.71	179.72	12023.00	5285.09	-5280.73	905.03	0.00	409583.17	710051.00	N 32 7 23.28 W 103 39 17.41	
	17800.00	90.38	179.72	12022.84	5281.41	-5277.54	905.11	2.00	409583.17	710051.08	N 32 7 23.12 W 103 39 17.41	
	17800.48	90.38	179.72	12022.84	5281.90	-5277.54	905.12	2.00	409583.17	710051.08	N 32 7 23.11 W 103 39 17.41	
	17900.00	90.38	179.72	12022.19	5381.41	-5377.05	905.80	0.00	409583.18	710051.56	N 32 7 22.13 W 103 39 17.41	
	18000.00	90.38	179.72	12021.53	5481.41	-5477.05	906.09	0.00	409583.19	710052.05	N 32 7 21.14 W 103 39 17.41	
Hold	18100.00	90.38	179.72	12020.88	5581.41	-5577.04	906.58	0.00	409583.20	710052.54	N 32 7 20.15 W 103 39 17.42	
	18200.00	90.38	179.72	12020.23	5681.40	-5677.04	907.07	0.00	409583.20	710053.03	N 32 7 19.16 W 103 39 17.42	
	18300.00	90.38	179.72	12019.57	5781.40	-5777.04	907.56	0.00	409583.21	710053.52	N 32 7 18.17 W 103 39 17.42	
	18400.00	90.38	179.72	12018.92	5881.40	-5877.03	908.05	0.00	409583.22	710054.01	N 32 7 17.18 W 103 39 17.42	
	18500.00	90.38	179.72	12018.26	5981.40	-5977.03	908.54	0.00	409583.23	710054.50	N 32 7 16.19 W 103 39 17.42	
	18600.00	90.38	179.72	12017.61	6081.40	-6077.03	909.03	0.00	409583.23	710054.99	N 32 7 15.20 W 103 39 17.42	
	18700.00	90.38	179.72	12016.95	6181.39	-6177.02	909.52	0.00	409583.24	710055.48	N 32 7 14.21 W 103 39 17.43	
	18800.00	90.38	179.72	12016.30	6281.39	-6277.02	910.01	0.00	409583.25	710055.97	N 32 7 13.22 W 103 39 17.43	
	18845.59	90.38	179.72	12016.00	6326.68	-6322.60	910.23	0.00	409583.25	710056.19	N 32 7 12.77 W 103 39 17.43	
	18900.00	90.38	179.72	12015.64	6381.39	-6377.02	910.49	0.00	409583.26	710056.48	N 32 7 12.23 W 103 39 17.43	
Wolfcamp A X Base	19000.00	90.38	179.72	12014.99	6481.39	-6477.01	910.88	0.00	409583.28	710056.94	N 32 7 11.24 W 103 39 17.43	
	19100.00	90.38	179.72	12014.33	6581.38	-6577.01	911.47	0.00	409583.27	710057.43	N 32 7 10.25 W 103 39 17.43	
	19200.00	90.38	179.72	12013.68	6681.38	-6677.01	911.96	0.00	409583.28	710057.92	N 32 7 9.26 W 103 39 17.43	
	19300.00	90.38	179.72	12013.03	6781.38	-6777.00	912.45	0.00	409583.29	710058.41	N 32 7 8.27 W 103 39 17.44	
	19400.00	90.38	179.72	12012.37	6881.38	-6877.00	912.94	0.00	409583.30	710058.90	N 32 7 7.28 W 103 39 17.44	
	19500.00	90.38	179.72	12011.72	6981.38	-6977.00	913.43	0.00	409583.31	710059.39	N 32 7 6.29 W 103 39 17.44	
	19600.00	90.38	179.72	12011.06	7081.37	-7076.99	913.92	0.00	409583.31	710059.88	N 32 7 5.30 W 103 39 17.44	
	19700.00	90.38	179.72	12010.41	7181.37	-7176.99	914.41	0.00	409583.32	710060.37	N 32 7 4.32 W 103 39 17.44	
	19800.00	90.38	179.72	12009.75	7281.37	-7276.99	914.90	0.00	409583.33	710060.86	N 32 7 3.33 W 103 39 17.44	
	19900.00	90.38	179.72	12009.10	7381.37	-7376.98	915.38	0.00	409583.33	710061.35	N 32 7 2.34 W 103 39 17.45	
IFP1, Drop 2"/100ft	20000.00	90.38	179.72	12008.44	7481.37	-7476.98	915.87	0.00	409583.34	710061.83	N 32 7 1.35 W 103 39 17.45	
	20100.00	90.38	179.72	12007.79	7581.36	-7576.98	916.36	0.00	409583.35	710062.32	N 32 7 0.36 W 103 39 17.45	
	20200.00	90.38	179.72	12007.13	7681.36	-7676.97	916.85	0.00	409583.36	710062.81	N 32 6 59.37 W 103 39 17.45	
	20300.00	90.38	179.72	12006.48	7781.36	-7776.97	917.34	0.00	409583.36	710063.30	N 32 6 58.38 W 103 39 17.45	
	20373.37	90.38	179.72	12006.00	7854.73	-7850.34	917.70	0.00	409590.00	710063.88	N 32 6 57.65 W 103 39 17.45	
	20400.00	88.75	179.72	12005.95	7881.36	-7876.97	917.83	2.00	409583.37	710063.79	N 32 6 57.39 W 103 39 17.45	
	20454.62	88.75	179.72	12006.62	7935.97	-7931.58	918.10	2.00	409583.38	710064.06	N 32 6 56.85 W 103 39 17.46	
	20500.00	88.75	179.72	12007.81	7981.34	-7976.95	918.32	0.00	409583.39	710064.28	N 32 6 56.40 W 103 39 17.46	
	20600.00	88.75	179.72	12009.79	8081.32	-8076.92	918.81	0.00	409583.42	710064.77	N 32 6 55.41 W 103 39 17.46	
	20700.00	88.75	179.72	12011.67	8181.29	-8176.90	919.30	0.00	409583.45	710065.26	N 32 6 54.42 W 103 39 17.46	
Wolfcamp A X Base	20800.00	88.75	179.72	12014.15	8281.27	-8276.87	919.79	0.00	409583.48	710065.75	N 32 6 53.43 W 103 39 17.46	
	20884.80	88.75	179.72	12016.00	8365.85	-8361.45	920.20	0.00	409583.51	710066.18	N 32 6 52.59 W 103 39 17.46	
	20900.00	88.75	179.72	12016.34	8381.25	-8376.85	920.27	0.00	409583.51	710066.23	N 32 6 52.44 W 103 39 17.46	
	21000.00	88.75	179.72	12016.52	8481.22	-8476.82	920.76	0.00	409583.54	710066.72	N 32 6 51.45 W 103 39 17.46	
	21100.00	88.75	179.72	12020.70	8581.20	-8576.80	921.25	0.00	409583.57	710067.21	N 32 6 50.46 W 103 39 17.47	
	21200.00	88.75	179.72	12022.88	8681.17	-8676.77	921.74	0.00	409583.60	710067.70	N 32 6 49.47 W 103 39 17.47	
	21300.00	88.75	179.72	12025.06	8781.15	-8776.75	922.23	0.00	409583.63	710068.19	N 32 6 48.48 W 103 39 17.47	
	21400.00	88.75	179.72	12027.24	8881.13	-8876.72	922.72	0.00	409583.66	710068.68	N 32 6 47.50 W 103 39 17.47	
	21500.00	88.75	179.72	12029.42	8981.10	-8976.70	923.21	0.00	409583.69	710069.17	N 32 6 46.51 W 103 39 17.47	
	21600.00	88.75	179.72	12031.61	9081.08	-9076.67	923.70	0.00	409583.71	710069.66	N 32 6 45.52 W 103 39 17.47	
LTP Cross	21700.00	88.75	179.72	12033.79	9181.06	-9176.65	924.18	0.00	409583.74	710070.14	N 32 6 44.53 W 103 39 17.48	
	21800.00	88.75	179.72	12035.97	9281.03	-9276.62	924.67	0.00	409583.77	710070.63	N 32 6 43.54 W 103 39 17.48	
	21900.00	88.75	179.72	12038.15	9381.01	-9376.60	925.16	0.00	409583.80	710071.12	N 32 6 42.55 W 103 39 17.48	
	22000.00	88.75	179.72	12040.33	9480.98	-9476.57	925.65	0.00	409583.83	710071.61	N 32 6 41.56 W 103 39 17.48	
	22100.00	88.75	179.72	12042.51	9580.96	-9576.55	926.14	0.00	409583.86	710072.10	N 32 6 40.57 W 103 39 17.48	
	22200.00	88.75	179.72	12044.69	9680.94	-9676.52	926.63	0.00	409583.89	710072.59	N 32 6 39.58 W 103 39 17.48	
	22300.00	88.75	179.72	12046.88	9780.91	-9776.50	927.12	0.00	409583.92	710073.08	N 32 6 38.59 W 103 39 17.49	
	22400.00	88.75	179.72	12049.06	9880.89	-9876.47	927.61	0.00	409583.95	710073.57	N 32 6 37.60 W 103 39 17.49	
	22500.00	88.75	179.72	12051.24	9980.87	-9976.45	928.09	0.00	409583.98	710074.06	N 32 6 36.61 W 103 39 17.49	
	22600.00	88.75	179.72	12053.42	10080.84	-10076.42	928.58	0.00	409584.01	710074.54	N 32 6 35.62 W 103 39 17.49	
Wolfcamp A Y TGT 1	22700.00	88.75	179.72	12055.60	10180.82	-10176.40	929.07	0.00	409584.04	710075.03	N 32 6 34.63 W 103 39 17.49	
	22800.00	88.75	179.72	12057.78	10280.79	-10276.37	929.56	0.00	409584.07	710075.52	N 32 6 33.64 W 103 39 17.49	
	22900.00	88.75	179.72	12059.96	10380.77	-10376.35	930.05	0.00	409584.10	710076.01	N 32 6 32.65 W 103 39 17.50	
	22963.77	88.75	179.72	12061.36	10444.52	-10440.10	930.38	0.00	409584.12	710076.32	N 32 6 32.02 W 103 39 17.50	
	23000.00	88.75	179.72	12062.15	10480.75	-10476.32	930.54	0.00	409584.12	710076.50	N 32 6 31.87 W 103 39 17.50	
	23039.14	88.75	179.72	12063.00	10519.87	-10515.45	930.73	0.00	409584.12	710076.69	N 32 6 31.28 W 103 39 17.50	

Survey Type: Del 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	CO Yeti 15 22 Fed Com 0056H / Chevron CO Yeti 15 22 Fed Com 0056H Rev1 kFc 26Jul10
	1	28.000	23039.138	1/100.000	30.000	30.000		B001MB_MWD-HRGM	CO Yeti 15 22 Fed Com 0056H / Chevron CO Yeti 15 22 Fed Com

Outside Diameter		Min. Wall Thickness	87.5%	(*) Grade L80 Type 1	
Wall Thickness	0.375 in.	Connection OD Option	REGULAR	COUPLING	PIPE BODY
Grade	L80 Type 1	Drift	API Standard	Body: Red	1st Band: Red
		Type	Casing	1st Band: Brown	2nd Band: Brown
				2nd Band: -	3rd Band: -
				3rd Band: -	4th Band: -

PIPE BODY DATA

GEOMETRY

Nominal OD	7.625 in.	Nominal Weight	29.70 lbs/ft	Drift	6.75 in.
Nominal ID	6.875 in.	Wall Thickness	0.375 in.	Plain End Weight	29.06 lbs/ft
OD Tolerance	API				

PERFORMANCE

SMYS 80000 psi

CONNECTION DATA

GEOMETRY

Connection OD	7.625 in.	Connection ID	6.800 in.	Make-up Loss	4.420 in.
Threads per in	3.29	Connection OD Option	REGULAR		

PERFORMANCE

Tension Efficiency	60.0 %		lbs		
Compression Efficiency	75.2 %	Compression Strength	513.616 x1000 lbs	Max. Allowable Bending	28.8 °/100 ft

MAKE-UP TORQUES

Minimum	9000 ft-lbs	Optimum	10800 ft-lbs	Maximum	15800 ft-lbs
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OPERATION LIMIT TORQUES

Operating Torque	35000 ft-lbs	Yield Torque	53000 ft-lbs
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Notes

This connection is fully interchangeable with:

Wedge 523@ - 7.625 in. - 29.7 lbs/ft

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

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

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9 5/8" 43.50 ppf L80 IC - LTC
(USC Units)

PIPE BODY DATA					
GEOMETRY					
Nominal OD	9.625 in.	Nominal Weight	43.50 lbs/ft	Standard Drift Diameter	8.599 in.
Nominal ID	8.755 in.	Wall Thickness	0.435 in.	Special Drift Diameter	8.625 in.
Plain End Weight	42.73 lbs/ft				
PERFORMANCE					
Body Yield Strength	1005 x 1000 lbs	Internal Yield	6330 psi	Collapse	4830 psi
CONNECTION DATA					
GEOMETRY					
Coupling Regular OD	10.625 in.	Threads per inch	8	Hand-Tight Standoff Thread Turns	3.5
PERFORMANCE ⁽¹⁾					
Joint Strength	813 x 1000 lbs.	Internal Pressure Resistance	6330 psi		

(1) Non API size/grade combination for LTC.

Performance calculated according to API Standards SCT and 5B and API Technical Report 5C3.

Joint Strength as per API TR 5C3 1st Edition/ISO 10400:2007 - Section 9

Internal Pressure Resistance as per API TR 5C3 1st Edition/ISO 10400:2007 - Section 10

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

Printed on: 05/25/2017

Outside Diameter	5.5 in.	Min. Wall Thickness	87.5%	(*) Grade P110-ICY	
Wall Thickness	0.361 in.	Connection OD Option	REGULAR	COUPLING	PIPE BODY
Grade	X52	Drift	API Standard	Body: White	1st Band: White
		Type	Casing	1st Band: Pale Green	2nd Band: Pale Green
				2nd Band: -	3rd Band: Pale Green
				3rd Band: -	4th Band: -

PIPE BODY DATA**GEOMETRY**

Nominal OD	5.5 in.	Nominal Weight	19.83 lbs/ft	Drift	4.5 in.
Nominal ID	4.786 in.	Wall Thickness	0.361 in.	Plain End Weight	19.83 lbs/ft
OD Tolerance	API				

PERFORMANCE

Yield Strength	75,000 psi	SMYS	125,000 psi
Ultimate Tensile Strength	100,000 psi		

CONNECTION DATA**GEOMETRY**

Connection OD	9.45 in.	Coupling Length	9.45 in.	Connection ID	4.766 in.
Make-up Loss	4.204 in.	Threads per in	5	Connection OD Option	REGULAR

PERFORMANCE

Tension Efficiency	100 %	Yield Strength	75,000 x1000 lbs	Ultimate Tensile Strength	100,000 x1000 lbs
Compression Efficiency	100 %	Compression Strength	729,000 x1000 lbs	Max. Allowable Bending	104 /100 ft

MAKE-UP TORQUES

Minimum	11540 ft-lbs	Optimum	12820 ft-lbs	Maximum	14100 ft-lbs
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OPERATION LIMIT TORQUES

Operating Torque	22700 ft-lbs	Yield Torque	25250 ft-lbs
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Notes

This connection is fully interchangeable with:

TXP® BTC - 5.5 in. - 15.5 / 17 / 23 / 26 lbs/ft

[1] Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.

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

June 17 2015



Size: 5.000 in.
Wall: 0.362 in.
Weight: 18.00 lbs/ft
Grade: P110-IC
Min. Wall Thickness: 87.5 %

Connection: Wedge 521™
Casing/Tubing: CAS

PIPE BODY DATA

GEOMETRY			
Nominal OD	5.000 in.	Nominal Weight	18.00 lbs/ft
Nominal ID	4.276 in.	Wall Thickness	0.362 in.
Plain End Weight	17.95 lbs/ft	Standard Drift Diameter	4.151 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	580 x 1000 lbs	Internal Yield	13940 psi
Collapse	14840 psi	SMYS	110000 psi

WEDGE 521' CONNECTION DATA

GEOMETRY			
Connection OD	5.359 in.	Connection ID	4.226 in.
Critical Section Area	3.891 sq. in.	Threads per in.	3.36
		Make-Up Loss	3.620 in.
PERFORMANCE			
Tension Efficiency	73.8 %	Joint Yield Strength	428 x 1000 lbs
Compression Strength	514 x 1000 lbs	Compression Efficiency	88.7 %
External Pressure Capacity	14840 psi	Internal Pressure Capacity	13940 psi
		Bending	75 °/100 ft

MAKE-UP TORQUES

Minimum	6100 ft-lbs	Optimum	7300 ft-lbs	Maximum (±)	10700 ft-lbs
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OPERATIONAL LIMIT TORQUES

Operating Torque	17300 ft-lbs	Yield Torque	26000 ft-lbs
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BLANKING DIMENSIONS