Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM088134

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other
1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
MR. POTATO HEAD 11-14 FED COM
331H

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No.
326251
30-015-46425

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
333 West Sheridan Avenue Oklahoma City OK 73102	(800)583-3866	PIERCE CROSSING BONE SPRING, EA

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWNW / 350 FNL / 1105 FWL / LAT 32.2384591 / LONG -103.9602093
At proposed prod. zone SWSW / 20 FSL / 1100 FWL / LAT 32.210296 / LONG -103.9601929

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 11 / T24S / R29E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
	EDDY	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
350 feet	560	320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
1025 feet	10070 feet / 20221 feet	FED: NMB000807

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3052 feet	10/15/2020	45 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Erin Workman / Ph: (405)552-7970	09/17/2018

Title
Regulatory Compliance Professional

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	10/18/2019

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

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

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

APPROVED WITH CONDITIONS

Approval Date: 10/18/2019

(Continued on page 2)

*(Instructions on page 2)

RWP 10-28-19

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION CO. LP
LEASE NO.:	NMNM88134
WELL NAME & NO.:	331H – MR. POTATO HEAD 11-14 FED COM
SURFACE HOLE FOOTAGE:	350'/N & 1105'/W
BOTTOM HOLE FOOTAGE	20'/S & 990'/W
LOCATION:	Section 11 T.24 S., R.29 E., NMP
COUNTY:	EDDY 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

A. HYDROGEN SULFIDE

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

B. CASING

Primary Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **400 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **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 fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

Option 2:

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

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

b. Second stage above DV tool:

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

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 13-3/8" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.

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

    - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
      Cement excess is less than 25%, more cement might be required.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately **400 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    e. 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.
    f. 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)
    g. 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.
    h. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

5. The minimum required fill of cement behind the **8-5/8** 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.

c. 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.

d. Second stage above DV tool:

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

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 13-3/8" X 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.

Variance requested to drill 10.625" hole with TLW connection is Approved. Cement excess is less than -19%, more cement will be required.

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

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
  Cement excess is less than 25%, more cement might be required.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

Option 1:

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

D. 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)

☒ 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.

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.

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.

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.

devon

Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

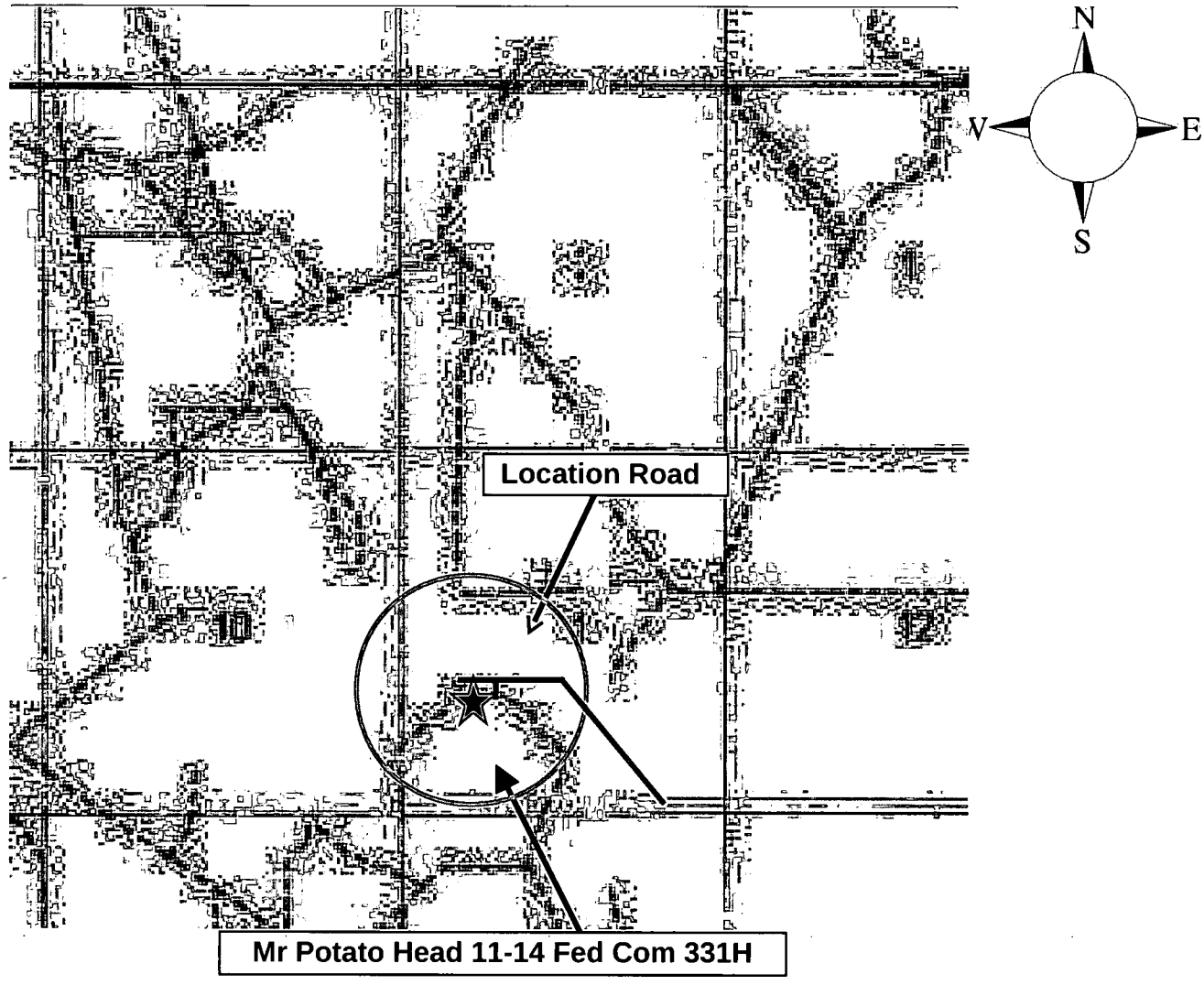
Hydrogen Sulfide (H_2S) Contingency Plan

For

Mr Potato Head 11-14 Fed Com 331H

Sec-11 T-24S R-29E
350' FNL & 1105' FWL
LAT. = 32.2384591' N (NAD83)
LONG = 103.9602093' W

Eddy County NM



Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe

distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies

will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)

2. The proper use and maintenance of personal protective equipment and life support systems.

3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days

prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

Visual warning systems:

A. Wind direction indicators as shown on well site diagram

B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. Mud program:

The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. Metallurgy:

A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

B. All elastomers used for packing and seals shall be H_2S trim.

6. Communication:

A. Company personnel have/use cellular telephones in the field.

B. Land line (telephone) communications at Office

7. Well testing:

A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation

fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

B. There will be no drill stem testing.

Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600

	24 HR		(505) 827-9126
	National Emergency Response Center		(800) 424-8802
	National Pollution Control Center: Direct		(703) 872-6000
	For Oil Spills		(800) 280-7118
	Emergency Services		
	Wild Well Control		(281) 784-4700
	Cudd Pressure Control	(915) 699-0139	(915) 563-3356
	Halliburton		(575) 746-2757
	B. J. Services		(575) 746-3569
Give GPS position :	Native Air – Emergency Helicopter – Hobbs		(575) 392-6429
	Flight For Life - Lubbock, TX		(806) 743-9911
	Aerocare - Lubbock, TX		(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM		(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM		(800) 222-1222
	Poison Control (24/7)		(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service		(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov		

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 11-T24S-R29E
Mr. Potato Head 11-14 Fed Com 331H

Wellbore #1

Plan: Permit Plan 2

Standard Planning Report - Geographic

04 April, 2019

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mr. Potato Head 11-14 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Project Eddy County (NAD 83 NM Eastern)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec 11-T24S-R29E

Site Position:		**Northing:**	451,030.14 usft	**Latitude:**	32.239417
From:	Map	**Easting:**	655,595.01 usft	**Longitude:**	-103.963784
Position Uncertainty:	5.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.20 °

Well Mr. Potato Head 11-14 Fed Com 331H

Well Position	**+N/-S**	0.00 ft	**Northing:**	450,685.36 usft	**Latitude:**	32.238459
	+E/-W	0.00 ft	**Easting:**	656,701.50 usft	**Longitude:**	-103.960210
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,052.30 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/3/2019	6.94	59.99	47,723.90776844

Design Permit Plan 2

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	179.77

Plan Survey Tool Program **Date** 4/4/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,221.24	Permit Plan 2 (Wellbore #1)	MWD+HDGM OWSG MWD + HDGM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,738.27	1.38	14.93	2,738.25	1.61	0.43	1.00	1.00	0.00	14.93	
9,056.68	1.38	14.93	9,054.83	148.93	39.71	0.00	0.00	0.00	0.00	
9,148.86	0.00	0.00	9,147.00	150.00	40.00	1.50	-1.50	0.00	180.00	
9,498.90	0.00	0.00	9,497.04	150.00	40.00	0.00	0.00	0.00	0.00	
10,398.90	90.00	180.00	10,070.00	-422.96	40.04	10.00	10.00	0.00	180.00	PBHL - Mr. Potatohea
20,221.24	90.00	180.00	10,070.00	-10,245.29	40.65	0.00	0.00	0.00	0.00	PBHL - Mr. Potatohea

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mr. Potato Head 11-14 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
100.00	0.00	0.00	100.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
200.00	0.00	0.00	200.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
300.00	0.00	0.00	300.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
400.00	0.00	0.00	400.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
500.00	0.00	0.00	500.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
600.00	0.00	0.00	600.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
700.00	0.00	0.00	700.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
800.00	0.00	0.00	800.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
900.00	0.00	0.00	900.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,000.00	0.00	0.00	1,000.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,100.00	0.00	0.00	1,100.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,200.00	0.00	0.00	1,200.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,300.00	0.00	0.00	1,300.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,400.00	0.00	0.00	1,400.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,500.00	0.00	0.00	1,500.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,600.00	0.00	0.00	1,600.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,700.00	0.00	0.00	1,700.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,800.00	0.00	0.00	1,800.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
1,900.00	0.00	0.00	1,900.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,000.00	0.00	0.00	2,000.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,100.00	0.00	0.00	2,100.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,200.00	0.00	0.00	2,200.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,300.00	0.00	0.00	2,300.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,400.00	0.00	0.00	2,400.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,500.00	0.00	0.00	2,500.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,600.00	0.00	0.00	2,600.00	0.00	0.00	450,685.36	656,701.50	32.238459	-103.960210
2,700.00	1.00	14.93	2,699.99	0.84	0.22	450,686.20	656,701.73	32.238462	-103.960209
2,738.27	1.38	14.93	2,738.25	1.61	0.43	450,686.97	656,701.93	32.238464	-103.960208
2,800.00	1.38	14.93	2,799.97	3.05	0.81	450,688.41	656,702.32	32.238468	-103.960207
2,900.00	1.38	14.93	2,899.94	5.38	1.44	450,690.74	656,702.94	32.238474	-103.960205
3,000.00	1.38	14.93	2,999.91	7.71	2.06	450,693.07	656,703.56	32.238480	-103.960203
3,100.00	1.38	14.93	3,099.88	10.05	2.68	450,695.41	656,704.18	32.238487	-103.960201
3,200.00	1.38	14.93	3,199.85	12.38	3.30	450,697.74	656,704.81	32.238493	-103.960199
3,300.00	1.38	14.93	3,299.82	14.71	3.92	450,700.07	656,705.43	32.238500	-103.960197
3,400.00	1.38	14.93	3,399.79	17.04	4.54	450,702.40	656,706.05	32.238506	-103.960195
3,500.00	1.38	14.93	3,499.76	19.37	5.17	450,704.73	656,706.67	32.238512	-103.960193
3,600.00	1.38	14.93	3,599.74	21.70	5.79	450,707.06	656,707.29	32.238519	-103.960191
3,700.00	1.38	14.93	3,699.71	24.03	6.41	450,709.39	656,707.91	32.238525	-103.960189
3,800.00	1.38	14.93	3,799.68	26.37	7.03	450,711.73	656,708.54	32.238532	-103.960187
3,900.00	1.38	14.93	3,899.65	28.70	7.65	450,714.06	656,709.16	32.238538	-103.960184
4,000.00	1.38	14.93	3,999.62	31.03	8.27	450,716.39	656,709.78	32.238544	-103.960182
4,100.00	1.38	14.93	4,099.59	33.36	8.90	450,718.72	656,710.40	32.238551	-103.960180
4,200.00	1.38	14.93	4,199.56	35.69	9.52	450,721.05	656,711.02	32.238557	-103.960178
4,300.00	1.38	14.93	4,299.53	38.02	10.14	450,723.38	656,711.64	32.238564	-103.960176
4,400.00	1.38	14.93	4,399.50	40.36	10.76	450,725.72	656,712.27	32.238570	-103.960174
4,500.00	1.38	14.93	4,499.47	42.69	11.38	450,728.05	656,712.89	32.238576	-103.960172
4,600.00	1.38	14.93	4,599.44	45.02	12.00	450,730.38	656,713.51	32.238583	-103.960170
4,700.00	1.38	14.93	4,699.42	47.35	12.63	450,732.71	656,714.13	32.238589	-103.960168
4,800.00	1.38	14.93	4,799.39	49.68	13.25	450,735.04	656,714.75	32.238596	-103.960166
4,900.00	1.38	14.93	4,899.36	52.01	13.87	450,737.37	656,715.37	32.238602	-103.960164
5,000.00	1.38	14.93	4,999.33	54.34	14.49	450,739.70	656,716.00	32.238608	-103.960162
5,100.00	1.38	14.93	5,099.30	56.68	15.11	450,742.04	656,716.62	32.238615	-103.960160
5,200.00	1.38	14.93	5,199.27	59.01	15.74	450,744.37	656,717.24	32.238621	-103.960158
5,300.00	1.38	14.93	5,299.24	61.34	16.36	450,746.70	656,717.86	32.238628	-103.960156

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mr. Potato Head 11-14 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	1.38	14.93	5,399.21	63.67	16.98	450,749.03	656,718.48	32.238634	-103.960154
5,500.00	1.38	14.93	5,499.18	66.00	17.60	450,751.36	656,719.11	32.238640	-103.960152
5,600.00	1.38	14.93	5,599.15	68.33	18.22	450,753.69	656,719.73	32.238647	-103.960150
5,700.00	1.38	14.93	5,699.12	70.66	18.84	450,756.02	656,720.35	32.238653	-103.960148
5,800.00	1.38	14.93	5,799.10	73.00	19.47	450,758.36	656,720.97	32.238660	-103.960146
5,900.00	1.38	14.93	5,899.07	75.33	20.09	450,760.69	656,721.59	32.238666	-103.960144
6,000.00	1.38	14.93	5,999.04	77.66	20.71	450,763.02	656,722.21	32.238672	-103.960142
6,100.00	1.38	14.93	6,099.01	79.99	21.33	450,765.35	656,722.84	32.238679	-103.960140
6,200.00	1.38	14.93	6,198.98	82.32	21.95	450,767.68	656,723.46	32.238685	-103.960138
6,300.00	1.38	14.93	6,298.95	84.65	22.57	450,770.01	656,724.08	32.238692	-103.960136
6,400.00	1.38	14.93	6,398.92	86.98	23.20	450,772.34	656,724.70	32.238698	-103.960134
6,500.00	1.38	14.93	6,498.89	89.32	23.82	450,774.68	656,725.32	32.238704	-103.960132
6,600.00	1.38	14.93	6,598.86	91.65	24.44	450,777.01	656,725.94	32.238711	-103.960129
6,700.00	1.38	14.93	6,698.83	93.98	25.06	450,779.34	656,726.57	32.238717	-103.960127
6,800.00	1.38	14.93	6,798.80	96.31	25.68	450,781.67	656,727.19	32.238724	-103.960125
6,900.00	1.38	14.93	6,898.77	98.64	26.30	450,784.00	656,727.81	32.238730	-103.960123
7,000.00	1.38	14.93	6,998.75	100.97	26.93	450,786.33	656,728.43	32.238736	-103.960121
7,100.00	1.38	14.93	7,098.72	103.31	27.55	450,788.67	656,729.05	32.238743	-103.960119
7,200.00	1.38	14.93	7,198.69	105.64	28.17	450,791.00	656,729.67	32.238749	-103.960117
7,300.00	1.38	14.93	7,298.66	107.97	28.79	450,793.33	656,730.30	32.238756	-103.960115
7,400.00	1.38	14.93	7,398.63	110.30	29.41	450,795.66	656,730.92	32.238762	-103.960113
7,500.00	1.38	14.93	7,498.60	112.63	30.04	450,797.99	656,731.54	32.238769	-103.960111
7,600.00	1.38	14.93	7,598.57	114.96	30.66	450,800.32	656,732.16	32.238775	-103.960109
7,700.00	1.38	14.93	7,698.54	117.29	31.28	450,802.65	656,732.78	32.238781	-103.960107
7,800.00	1.38	14.93	7,798.51	119.63	31.90	450,804.99	656,733.40	32.238788	-103.960105
7,900.00	1.38	14.93	7,898.48	121.96	32.52	450,807.32	656,734.03	32.238794	-103.960103
8,000.00	1.38	14.93	7,998.45	124.29	33.14	450,809.65	656,734.65	32.238801	-103.960101
8,100.00	1.38	14.93	8,098.43	126.62	33.77	450,811.98	656,735.27	32.238807	-103.960099
8,200.00	1.38	14.93	8,198.40	128.95	34.39	450,814.31	656,735.89	32.238813	-103.960097
8,300.00	1.38	14.93	8,298.37	131.28	35.01	450,816.64	656,736.51	32.238820	-103.960095
8,400.00	1.38	14.93	8,398.34	133.61	35.63	450,818.97	656,737.14	32.238826	-103.960093
8,500.00	1.38	14.93	8,498.31	135.95	36.25	450,821.31	656,737.76	32.238833	-103.960091
8,600.00	1.38	14.93	8,598.28	138.28	36.87	450,823.64	656,738.38	32.238839	-103.960089
8,700.00	1.38	14.93	8,698.25	140.61	37.50	450,825.97	656,739.00	32.238845	-103.960087
8,800.00	1.38	14.93	8,798.22	142.94	38.12	450,828.30	656,739.62	32.238852	-103.960085
8,900.00	1.38	14.93	8,898.19	145.27	38.74	450,830.63	656,740.24	32.238858	-103.960083
9,000.00	1.38	14.93	8,998.16	147.60	39.36	450,832.96	656,740.87	32.238865	-103.960081
9,056.68	1.38	14.93	9,054.83	148.93	39.71	450,834.29	656,741.22	32.238868	-103.960079
9,100.00	0.73	14.93	9,098.14	149.70	39.92	450,835.06	656,741.42	32.238870	-103.960079
9,148.86	0.00	0.00	9,147.00	150.00	40.00	450,835.36	656,741.50	32.238871	-103.960079
9,200.00	0.00	0.00	9,198.14	150.00	40.00	450,835.36	656,741.50	32.238871	-103.960079
9,300.00	0.00	0.00	9,298.14	150.00	40.00	450,835.36	656,741.50	32.238871	-103.960079
9,400.00	0.00	0.00	9,398.14	150.00	40.00	450,835.36	656,741.50	32.238871	-103.960079
9,498.90	0.00	0.00	9,497.04	150.00	40.00	450,835.36	656,741.50	32.238871	-103.960079
KOP & FTP @ 9499' MD, 200' FNL, 1100' FWL									
9,500.00	0.11	180.00	9,498.14	150.00	40.00	450,835.36	656,741.50	32.238871	-103.960079
9,600.00	10.11	180.00	9,597.61	141.10	40.00	450,826.46	656,741.51	32.238847	-103.960079
9,700.00	20.11	180.00	9,694.03	115.07	40.00	450,800.43	656,741.51	32.238775	-103.960079
9,800.00	30.11	180.00	9,784.47	72.69	40.00	450,758.05	656,741.51	32.238659	-103.960079
9,900.00	40.11	180.00	9,866.17	15.25	40.01	450,700.61	656,741.51	32.238501	-103.960080
10,000.00	50.11	180.00	9,936.66	-55.51	40.01	450,629.85	656,741.52	32.238306	-103.960081
10,100.00	60.11	180.00	9,993.78	-137.43	40.02	450,547.93	656,741.52	32.238081	-103.960082
10,200.00	70.11	180.00	10,035.82	-228.03	40.02	450,457.33	656,741.53	32.237832	-103.960083
10,300.00	80.11	180.00	10,061.48	-324.55	40.03	450,360.82	656,741.53	32.237567	-103.960084

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mr. Potato Head 11-14 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,398.90	90.00	180.00	10,070.00	-422.96	40.04	450,262.40	656,741.54	32.237296	-103.960085
10,400.00	90.00	180.00	10,070.00	-424.06	40.04	450,261.31	656,741.54	32.237293	-103.960085
10,500.00	90.00	180.00	10,070.00	-524.06	40.04	450,161.31	656,741.55	32.237018	-103.960086
10,600.00	90.00	180.00	10,070.00	-624.06	40.05	450,061.31	656,741.55	32.236743	-103.960087
10,700.00	90.00	180.00	10,070.00	-724.06	40.05	449,961.31	656,741.56	32.236468	-103.960088
10,800.00	90.00	180.00	10,070.00	-824.06	40.06	449,861.31	656,741.57	32.236194	-103.960089
10,900.00	90.00	180.00	10,070.00	-924.06	40.07	449,761.31	656,741.57	32.235919	-103.960090
11,000.00	90.00	180.00	10,070.00	-1,024.06	40.07	449,661.31	656,741.58	32.235644	-103.960091
11,100.00	90.00	180.00	10,070.00	-1,124.06	40.08	449,561.31	656,741.58	32.235369	-103.960093
11,200.00	90.00	180.00	10,070.00	-1,224.06	40.09	449,461.31	656,741.59	32.235094	-103.960094
11,300.00	90.00	180.00	10,070.00	-1,324.06	40.09	449,361.31	656,741.60	32.234819	-103.960095
11,400.00	90.00	180.00	10,070.00	-1,424.06	40.10	449,261.31	656,741.60	32.234544	-103.960096
11,500.00	90.00	180.00	10,070.00	-1,524.06	40.10	449,161.31	656,741.61	32.234269	-103.960097
11,600.00	90.00	180.00	10,070.00	-1,624.06	40.11	449,061.31	656,741.62	32.233995	-103.960098
11,700.00	90.00	180.00	10,070.00	-1,724.06	40.12	448,961.31	656,741.62	32.233720	-103.960099
11,800.00	90.00	180.00	10,070.00	-1,824.06	40.12	448,861.31	656,741.63	32.233445	-103.960100
11,900.00	90.00	180.00	10,070.00	-1,924.06	40.13	448,761.31	656,741.63	32.233170	-103.960101
12,000.00	90.00	180.00	10,070.00	-2,024.06	40.14	448,661.31	656,741.64	32.232895	-103.960103
12,100.00	90.00	180.00	10,070.00	-2,124.06	40.14	448,561.31	656,741.65	32.232620	-103.960104
12,200.00	90.00	180.00	10,070.00	-2,224.06	40.15	448,461.31	656,741.65	32.232345	-103.960105
12,300.00	90.00	180.00	10,070.00	-2,324.06	40.15	448,361.31	656,741.66	32.232070	-103.960106
12,400.00	90.00	180.00	10,070.00	-2,424.06	40.16	448,261.31	656,741.67	32.231795	-103.960107
12,500.00	90.00	180.00	10,070.00	-2,524.06	40.17	448,161.31	656,741.67	32.231521	-103.960108
12,600.00	90.00	180.00	10,070.00	-2,624.06	40.17	448,061.31	656,741.68	32.231246	-103.960109
12,700.00	90.00	180.00	10,070.00	-2,724.06	40.18	447,961.31	656,741.68	32.230971	-103.960110
12,800.00	90.00	180.00	10,070.00	-2,824.06	40.19	447,861.31	656,741.69	32.230696	-103.960111
12,900.00	90.00	180.00	10,070.00	-2,924.06	40.19	447,761.31	656,741.70	32.230421	-103.960112
13,000.00	90.00	180.00	10,070.00	-3,024.06	40.20	447,661.31	656,741.70	32.230146	-103.960114
13,100.00	90.00	180.00	10,070.00	-3,124.06	40.20	447,561.31	656,741.71	32.229871	-103.960115
13,200.00	90.00	180.00	10,070.00	-3,224.06	40.21	447,461.31	656,741.72	32.229596	-103.960116
13,300.00	90.00	180.00	10,070.00	-3,324.06	40.22	447,361.31	656,741.72	32.229322	-103.960117
13,400.00	90.00	180.00	10,070.00	-3,424.06	40.22	447,261.31	656,741.73	32.229047	-103.960118
13,500.00	90.00	180.00	10,070.00	-3,524.06	40.23	447,161.31	656,741.73	32.228772	-103.960119
13,600.00	90.00	180.00	10,070.00	-3,624.06	40.24	447,061.31	656,741.74	32.228497	-103.960120
13,700.00	90.00	180.00	10,070.00	-3,724.06	40.24	446,961.31	656,741.75	32.228222	-103.960121
13,800.00	90.00	180.00	10,070.00	-3,824.06	40.25	446,861.31	656,741.75	32.227947	-103.960122
13,900.00	90.00	180.00	10,070.00	-3,924.06	40.25	446,761.31	656,741.76	32.227672	-103.960123
14,000.00	90.00	180.00	10,070.00	-4,024.06	40.26	446,661.31	656,741.77	32.227397	-103.960125
14,100.00	90.00	180.00	10,070.00	-4,124.06	40.27	446,561.31	656,741.77	32.227122	-103.960126
14,200.00	90.00	180.00	10,070.00	-4,224.06	40.27	446,461.31	656,741.78	32.226848	-103.960127
14,300.00	90.00	180.00	10,070.00	-4,324.06	40.28	446,361.31	656,741.78	32.226573	-103.960128
14,400.00	90.00	180.00	10,070.00	-4,424.06	40.29	446,261.31	656,741.79	32.226298	-103.960129
14,500.00	90.00	180.00	10,070.00	-4,524.06	40.29	446,161.31	656,741.80	32.226023	-103.960130
14,600.00	90.00	180.00	10,070.00	-4,624.06	40.30	446,061.31	656,741.80	32.225748	-103.960131
14,700.00	90.00	180.00	10,070.00	-4,724.06	40.30	445,961.31	656,741.81	32.225473	-103.960132
14,800.00	90.00	180.00	10,070.00	-4,824.06	40.31	445,861.31	656,741.82	32.225198	-103.960133
14,900.00	90.00	180.00	10,070.00	-4,924.06	40.32	445,761.31	656,741.82	32.224923	-103.960134
14,905.00	90.00	180.00	10,070.00	-4,929.06	40.32	445,756.31	656,741.82	32.224910	-103.960135
Cross Section @ 14905' MD, 0' FNL, 1100' FWL									
15,000.00	90.00	180.00	10,070.00	-5,024.06	40.32	445,661.31	656,741.83	32.224648	-103.960136
15,100.00	90.00	180.00	10,070.00	-5,124.06	40.33	445,561.32	656,741.83	32.224374	-103.960137
15,200.00	90.00	180.00	10,070.00	-5,224.06	40.34	445,461.32	656,741.84	32.224099	-103.960138
15,300.00	90.00	180.00	10,070.00	-5,324.06	40.34	445,361.32	656,741.85	32.223824	-103.960139
15,400.00	90.00	180.00	10,070.00	-5,424.06	40.35	445,261.32	656,741.85	32.223549	-103.960140

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mr. Potato Head 11-14 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,500.00	90.00	180.00	10,070.00	-5,524.06	40.35	445,161.32	656,741.86	32.223274	-103.960141
15,600.00	90.00	180.00	10,070.00	-5,624.06	40.36	445,061.32	656,741.87	32.222999	-103.960142
15,700.00	90.00	180.00	10,070.00	-5,724.06	40.37	444,961.32	656,741.87	32.222724	-103.960143
15,800.00	90.00	180.00	10,070.00	-5,824.06	40.37	444,861.32	656,741.88	32.222449	-103.960144
15,900.00	90.00	180.00	10,070.00	-5,924.06	40.38	444,761.32	656,741.88	32.222175	-103.960146
16,000.00	90.00	180.00	10,070.00	-6,024.06	40.39	444,661.32	656,741.89	32.221900	-103.960147
16,100.00	90.00	180.00	10,070.00	-6,124.06	40.39	444,561.32	656,741.90	32.221625	-103.960148
16,200.00	90.00	180.00	10,070.00	-6,224.06	40.40	444,461.32	656,741.90	32.221350	-103.960149
16,300.00	90.00	180.00	10,070.00	-6,324.06	40.40	444,361.32	656,741.91	32.221075	-103.960150
16,400.00	90.00	180.00	10,070.00	-6,424.06	40.41	444,261.32	656,741.92	32.220800	-103.960151
16,500.00	90.00	180.00	10,070.00	-6,524.06	40.42	444,161.32	656,741.92	32.220525	-103.960152
16,600.00	90.00	180.00	10,070.00	-6,624.06	40.42	444,061.32	656,741.93	32.220250	-103.960153
16,700.00	90.00	180.00	10,070.00	-6,724.06	40.43	443,961.32	656,741.93	32.219975	-103.960154
16,800.00	90.00	180.00	10,070.00	-6,824.06	40.44	443,861.32	656,741.94	32.219701	-103.960155
16,900.00	90.00	180.00	10,070.00	-6,924.06	40.44	443,761.32	656,741.95	32.219426	-103.960157
17,000.00	90.00	180.00	10,070.00	-7,024.06	40.45	443,661.32	656,741.95	32.219151	-103.960158
17,100.00	90.00	180.00	10,070.00	-7,124.06	40.45	443,561.32	656,741.96	32.218876	-103.960159
17,200.00	90.00	180.00	10,070.00	-7,224.06	40.46	443,461.32	656,741.97	32.218601	-103.960160
17,300.00	90.00	180.00	10,070.00	-7,324.06	40.47	443,361.32	656,741.97	32.218326	-103.960161
17,400.00	90.00	180.00	10,070.00	-7,424.06	40.47	443,261.32	656,741.98	32.218051	-103.960162
17,500.00	90.00	180.00	10,070.00	-7,524.06	40.48	443,161.32	656,741.98	32.217776	-103.960163
17,600.00	90.00	180.00	10,070.00	-7,624.06	40.49	443,061.32	656,741.99	32.217501	-103.960164
17,700.00	90.00	180.00	10,070.00	-7,724.06	40.49	442,961.32	656,742.00	32.217227	-103.960165
17,800.00	90.00	180.00	10,070.00	-7,824.06	40.50	442,861.32	656,742.00	32.216952	-103.960166
17,900.00	90.00	180.00	10,070.00	-7,924.06	40.50	442,761.32	656,742.01	32.216677	-103.960168
18,000.00	90.00	180.00	10,070.00	-8,024.06	40.51	442,661.32	656,742.02	32.216402	-103.960169
18,100.00	90.00	180.00	10,070.00	-8,124.06	40.52	442,561.32	656,742.02	32.216127	-103.960170
18,200.00	90.00	180.00	10,070.00	-8,224.06	40.52	442,461.32	656,742.03	32.215852	-103.960171
18,300.00	90.00	180.00	10,070.00	-8,324.06	40.53	442,361.32	656,742.03	32.215577	-103.960172
18,400.00	90.00	180.00	10,070.00	-8,424.06	40.54	442,261.32	656,742.04	32.215302	-103.960173
18,500.00	90.00	180.00	10,070.00	-8,524.06	40.54	442,161.32	656,742.05	32.215028	-103.960174
18,600.00	90.00	180.00	10,070.00	-8,624.06	40.55	442,061.32	656,742.05	32.214753	-103.960175
18,700.00	90.00	180.00	10,070.00	-8,724.06	40.55	441,961.32	656,742.06	32.214478	-103.960176
18,800.00	90.00	180.00	10,070.00	-8,824.06	40.56	441,861.32	656,742.07	32.214203	-103.960177
18,900.00	90.00	180.00	10,070.00	-8,924.06	40.57	441,761.32	656,742.07	32.213928	-103.960179
19,000.00	90.00	180.00	10,070.00	-9,024.06	40.57	441,661.32	656,742.08	32.213653	-103.960180
19,100.00	90.00	180.00	10,070.00	-9,124.06	40.58	441,561.32	656,742.08	32.213378	-103.960181
19,200.00	90.00	180.00	10,070.00	-9,224.06	40.59	441,461.32	656,742.09	32.213103	-103.960182
19,300.00	90.00	180.00	10,070.00	-9,324.06	40.59	441,361.32	656,742.10	32.212828	-103.960183
19,400.00	90.00	180.00	10,070.00	-9,424.06	40.60	441,261.32	656,742.10	32.212554	-103.960184
19,500.00	90.00	180.00	10,070.00	-9,524.06	40.60	441,161.32	656,742.11	32.212279	-103.960185
19,600.00	90.00	180.00	10,070.00	-9,624.06	40.61	441,061.32	656,742.12	32.212004	-103.960186
19,700.00	90.00	180.00	10,070.00	-9,724.06	40.62	440,961.32	656,742.12	32.211729	-103.960187
19,800.00	90.00	180.00	10,070.00	-9,824.06	40.62	440,861.32	656,742.13	32.211454	-103.960189
19,900.00	90.00	180.00	10,070.00	-9,924.06	40.63	440,761.32	656,742.13	32.211179	-103.960190
20,000.00	90.00	180.00	10,070.00	-10,024.06	40.64	440,661.32	656,742.14	32.210904	-103.960191
20,100.00	90.00	180.00	10,070.00	-10,124.06	40.64	440,561.33	656,742.15	32.210629	-103.960192
20,121.24	90.00	180.00	10,070.00	-10,145.30	40.64	440,540.09	656,742.15	32.210571	-103.960192
LTP @ 20121' MD, 120' FSL, 1100' FWL									
20,200.00	90.00	180.00	10,070.00	-10,224.06	40.65	440,461.33	656,742.15	32.210354	-103.960193
20,221.23	90.00	180.00	10,070.00	-10,245.29	40.65	440,440.10	656,742.15	32.210296	-103.960193
PBHL; 20' FSL, 1100' FWL									
20,221.24	90.00	180.00	10,070.00	-10,245.29	40.65	440,440.09	656,742.15	32.210296	-103.960193

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mr. Potato Head 11-14 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Mr. Potatohead	0.00	0.00	0.00	-10,245.29	40.65	440,440.09	656,742.15	32.210296	-103.960193
- plan misses target center by 10070.00ft at 20221.24ft MD (10070.00 TVD, -10245.29 N, 40.65 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
9,498.90	9,497.04	150.00	40.00	KOP & FTP @ 9499' MD, 200' FNL, 1100' FWL
14,905.00	10,070.00	-4,929.06	40.32	Cross Section @ 14905' MD, 0' FNL, 1100' FWL
20,121.24	10,070.00	-10,145.30	40.64	LTP @ 20121' MD, 120' FSL, 1100' FWL
20,221.23	10,070.00	-10,245.29	40.65	PBHL; 20' FSL, 1100' FWL

1. Geologic Formations

TVD of target	10070	Pilot hole depth	N/A
MD at TD:	20221	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	375		
Top Salt	500		
Base of Salt	2700		
Delaware	2600		
Lamar	3106		
Bell Canyon	3157		
Brushy Canyon	5230		
Bone Spring Lime	6812		
1st BSPG Sand	7872		
Bone Spring 2nd	8716		
Bone Spring 3rd	9791		
Wolfcamp	10133		
Wolfcamp XY	10164		
Wolfcamp 100	10268		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program (Primary Design)

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
17 1/2	0	400 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	8741 TVD	7 5/8	29.7	P110	Flushmax III	1.125	1.25	1.6
6 3/4	0	TD	5 1/2	20.0	P110	Vam SG	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.

• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.

• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

Casing Program (Alternative Design)

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
17 1/2	0	400 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	8741 TVD	8 5/8	32.0	P110	TLW	1.125	1.25	1.6
7 7/8	0	TD	5 1/2	17.0	P110	BTC	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.
• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.
• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
•Variance requested to drill 10.625" hole instead of 9.875" for intermediate 1, the 8.625" connection will change from TLW to BTC.
• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specficition sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	328	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	739	Surf	9	3.27	Lead: Class C Cement + additives
	104	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w/ DV @ TVD of Delaware	677	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	93	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	209	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	93	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9	1.44	Squeeze Lead: Class C Cement + additives
	739	Surf	9	3.27	Lead: Class C Cement + additives
	104	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	37	8241	9.0	3.3	Lead: Class H /C + additives
	684	9499	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

3. Cementing Program (Alternative Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	328	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	451	Surf	9	3.27	Lead: Class C Cement + additives
	67	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	397	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	140	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	451	Surf	9	3.27	Lead: Class C Cement + additives
	67	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 (10.625" Hole Size)	713	Surf	9	3.27	Lead: Class C Cement + additives
	105	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	73	8241	9.0	3.3	Lead: Class H /C + additives
	1419	9499	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-58"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular (5M)	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
			Annular (5M)		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
Y	A variance is requested to run a 5 M annular on a 10M system

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Production	OBM	8.5-9

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well - vertical portion of hole). Stated logs run will be in the Completion Rpeort and sbumitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain.
	Coring? If yes, explain.

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	4713
Abnormal temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogren Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S plan attached.