NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 25 2019
RECEIVED

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
731H

9. API Well No.
30-015-46419

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

3a. Address
333 West Sheridan Avenue Oklahoma City OK 73102

3b. Phone No. *(include area code)*
(800)583-3866

10. Field and Pool, or Exploratory
PURPLE SAGE-WOLFCAMP / WOLFCAI

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

At surface NWNW / 200 FNL / 1045 FWL / LAT 32.2388713 / LONG -103.9604039

At proposed prod. zone SWSW / 20 FSL / 330 FWL / LAT 32.2102891 / LONG -103.962682

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
EDDY

13. State
NM

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

16. No of acres in lease
560

17. Spacing Unit dedicated to this well
640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
1025 feet

19. Proposed Depth
10600 feet / 20903 feet

20. BLM/BIA Bond No. in file
FED: NMB000807

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3053 feet

22. Approximate date work will start*
10/15/2020

23. Estimated duration
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.

GCP 10/25/19

APPROVED WITH CONDITIONS

NSL Required.

(Continued on page 2)

Approval Date: 10/18/2019

*(Instructions on page 2)

RVP 10-28-19

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION CO. LP
LEASE NO.:	NMNM88134
WELL NAME & NO.:	731H – MR. POTATO HEAD 11-14 FED COM
SURFACE HOLE FOOTAGE:	200'/N & 1045'/W
BOTTOM HOLE FOOTAGE	230'/S & 330'/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.

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 BTC 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 **10,000 (10M)** 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 **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.

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.

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION CO. LP
LEASE NO.:	NMNM88134
WELL NAME & NO.:	731H – MR. POTATO HEAD 11-14 FED COM
SURFACE HOLE FOOTAGE:	200'/N & 1045'/W
BOTTOM HOLE FOOTAGE	230'/S & 330'/W
LOCATION:	Section 11 T.24 S., R.29 E., NMP
COUNTY:	EDDY County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

Approval Date: 10/18/2019

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Sub Pad and Final Pad Stipulations / Conditions of Approval
Devon will only build and grade the 400'x400' surface sub pad. The 600'x'600' pad will not be graded or built. To extend the 400'x400' sub pad, an additional APD must be submitted and approved before the additional 200' extension can be graded and built.

Hydrology Stipulations / Conditions of Approval
The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Range Stipulations / Conditions of Approval

Cattleguards

Where a permanent cattlegaurd is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Livestock Watering Requirement

Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action

Potash Minerals

Measures to minimize impacts to potash mineral reserves have been considered during the BLM's planning process by establishment of the Twin Wells Drill Island. No additional special mitigation or requirements have been identified by the BLM.

Karst Stipulations / Conditions of Approval

CONSTRUCTION IMPACT ANAYLSIS

The construction of roads, pipelines, compressor station pads and utilities can impact bedrock integrity and reroute, impede, focus, or erode natural surface drainage systems. Increased silting and sedimentation from construction can plug downstream sinkholes, caves, springs, and other components of aquifer recharge systems and result in adverse impacts to aquifer quality and cave environments. Any contaminants released into the environment during or after construction can impact aquifers and cave systems. A possibility exists for slow subsidence or sudden surface collapse during construction operations due to collapse of underlying cave passages and voids. This would cause associated safety hazards to the operator and the potential for increased environmental impact. Subsidence processes can be triggered by blasting, intense vibrations, rerouting of surface drainages, focusing of surface drainage, and general surface disturbance.

Blasting fractures in bedrock can serve as direct conduits for transfer of contaminants into cave and groundwater systems. Blasting also creates an expanded volume of rock rubble that cannot be reclaimed to natural contours, soil condition, or native vegetative condition. As such, surface and subsurface disruptions from blasting procedures can lead to permanent changes in vegetation, rainfall percolation, silting/erosion factors, aquifer recharge, and freshwater quality and can increase the risk of contaminant migration from drilling/production facilities built atop the blast are additional or special Conditions of Approval may apply at that time.

CONSTRUCTION MITIGATION

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD or project:

- In the event that any underground voids are encountered during construction activities, construction activities will be halted and the BLM will be notified immediately.
- No Blasting to prevent geologic structure instabilities.
- Pad Berming to minimize effects of any spilled contaminates.

DRILLING IMPACT ANALYSIS

During drilling, previously unknown cave and karst features could be encountered. If a void is encountered while drilling and a loss of circulation occurs, lost drilling fluids can directly contaminate groundwater recharge areas, aquifers, and groundwater quality. Drilling operations can also lead to sudden collapse of underground voids. Cementing operations may plug or alter groundwater flow, potentially reducing the water quantity at springs and water wells. Inadequate subsurface cementing, casing, and cave/aquifer protection measures can lead to the migration of oil, gas, drilling fluids, and produced saltwater into cave systems and freshwater aquifers.

DRILLING MITIGATION

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures are taken to prevent contamination to the environment. Due to the extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required.

- Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.
- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.
- Directional Drilling allowed after at least 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost Circulation zones logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
- Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See Drilling COAs.

PRODUCTION IMPACT ANALYSIS

Production facilities such as tank batteries, pump-jacks, compressors, transfer stations, and pipe may fail and allow contaminants to enter caves and freshwater systems. Downhole casing and

cementing failures can allow migration of fluids and/or gas between formations and aquifers. Facilities may also be subject to slow subsidence or sudden collapse of the underlying bedrock.

PRODUCTION MITIGATION

In order to mitigate the impacts from production activities and due to the nature of karst terrain, the following Conditions of Approval will apply to this APD:

- Tank battery liners and berms to minimize the impact resulting from leaks.
- Leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of line failures used in production or drilling.

RESIDUAL AND CUMULATIVE IMPACT ANALYSIS

Any industrial activities that take place upon or within karst terrains or freshwater aquifer zones have the potential to create both short-term and long-term negative impacts to freshwater aquifers and cave systems. While a number of mitigation measures can be implemented to mitigate many impacts, it is still possible for impacts to occur from containment failures, well blowouts, accidents, spills, and structural collapses. It is therefore necessary to implement long-term monitoring studies to determine if current mitigations measures are sufficient enough to prevent long-term or cumulative impacts.

RESIDUAL AND CUMULATIVE MITIGATION

- Nontoxic fluorescent dyes will be added to the drilling fluid when the hole is spudded and will be circulated to the bottom of the karst layers. This provides data as part of a long-term monitoring study.
- Annual pressure monitoring will be performed by the operator. If the test results indicate a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

PLUGGING AND ABANDONMENT IMPACT ANALYSIS

Failure of a plugged and abandoned well can lead to migration of contaminants to karst resources and fresh water aquifers. While this action does not specifically approve plugging and abandonment procedures, the operator should be made aware that additional or special Conditions of Approval may apply at that time.

PLUGGING AND ABANDONMENT MITIGATION

Abandonment Cementing: Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

MITIGATING MEASURES for ROADS:

- Roads will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction and no further construction will be done until clearance has been issued by the Authorized Officer.

- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to increase or decrease the natural flow of water into or out of cave or karst features.

- Special restoration stipulations or realignment may be required.

MITIGATING MEASURES FOR POWERLINES:

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features.

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction.

- No further construction will be done until clearance has been issued by the Authorized Officer.

- Special restoration stipulations or realignment may be required.

MITIGATING MEASURES for BURIED PIPELINES AND CABLES:

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.

- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.

- Special restoration stipulations or realignment may be required at such intersections, if any.

- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.

MITIGATING MEASURES for SURFACE FLOWLINES:

- Flowlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize the possibility of leaks and spills from entering karst systems.

- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.

- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.

- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

Special Status Plans Species Stipulations

For projects with potential for direct impacts but not direct displacement

No blading would be authorized within proposed project. Occupied habitat areas at high risk for habitat degradation and/or displacement of special status plant species individuals would be barricaded from project-related activities, as specified in the Conditions of Approval or by a BLM Authorized Officer. All surface disturbance within 50 meters of known special status plant species locations will be mulched after construction, as specified in the Conditions of Approval or by a BLM Authorized Officer.

To prevent direct impacts to the Tharp's Blue Star individuals that were observed during field surveys, the individuals will be visibly marked and barricaded to impede accidental pedestrian, vehicle or equipment travel over the individual. Project participants will be briefed about the avoidance area and trained in Tharp's Blue Star identification prior to initiating any ground disturbing activities, including vehicle travel. Upon project completion, the barricade and visible markings will be removed, and the condition of the individual will be documented and reported to the Authorized Officer and BLM Botanist.

To limit any impacts to vegetation and to protect any special status plant species that were not observed during field surveys, vehicles and equipment would be kept on existing roads and approved surfaces and would avoid travel across undisturbed surfaces; workers would be instructed not to park off roads or in undisturbed areas more than 20 meters from fenceline.

Blading of vegetation within undisturbed areas will not be allowed: maximum width of blading operations will not exceed 0 feet. The fenceline is included in this area. (Blading is defined as the complete removal of brush and ground vegetation).

BLM special status plant surveys would be required for subsequent actions tiered from this analysis when the impacts effects zones of the proposed actions intersect SSPS potential habitat that has not been surveyed within three years prior to the notice of application for the proposed action. If occupied habitat is observed within the impacts effects zones for the proposed action(s), the proposed action(s) would avoid occupied habitat and mitigate anticipated impacts as determined appropriate for the conservation of the species by the Authorized Officer in coordination with a BLM biologist.

Vehicles and equipment will be kept on existing roads and approved surfaces only, and will avoid travel across undisturbed surfaces; workers will be instructed not to park off the roads or in undisturbed areas. Alterations to project design and additions of project components will require SSPS surveys and re-analysis of impacts if those project elements intersect SSPS suitable habitat.

SEISMIC MITIGATION MEASURES

Tharp's Blue Star:

- Project field participants will be trained in identification of the relevant BLM special status plant species, and any suspected observations of the relevant species will be avoided and reported (via an e-mail including an image and GPS coordinates for each observation) to the Authorized Officer as soon as possible.

- Vibroseis equipment will only travel along pre-surveyed, pre-approved routes. Devon shall be responsible for identifying and maintaining these restrictions. If any alteration of travel routes occurs, Devon will immediately request authorization from the BLM. Devon will be responsible for any remediation, including impact monitoring, which becomes necessary as a result of any damage to special status species and their occupied habitats caused by geophysical activities.

    - Vibroseis equipment will be assisted by an onboard GPS navigation system to help keep the equipment on the predetermined route between source points.

    - Vibroseis equipment will be equipped by an onboard GPS data collection system to document actual travel routes.

    - Devon will provide the BLM with a GIS line feature class of actual source line routes traveled during operations. This data will be provided to the BLM within 5 business days of notification of project completion.

- Vibroseis equipment will only emit signals at pre-surveyed, pre-approved locations. Devon shall be responsible for identifying and maintaining these restrictions. If any alteration of source signal locations occurs, Devon will immediately request authorization from the BLM. Devon will be responsible for any remediation, including impact monitoring, which becomes necessary as a result of any damage to special status species and their occupied habitats caused by geophysical activities.

    - Vibroseis equipment will be assisted by an onboard GPS navigation system to help navigate the equipment to the predetermined source points.

    - Vibroseis equipment will be equipped by an onboard GPS data collection system to document actual source emission locations.

    - Devon will provide the BLM with a GIS points feature class of actual source line travel turn-around locations and actual seismic source emission

locations. This data will be provided to the BLM within 5 business days of notification of project completion.

- All frequent vehicle travel routes (routed expected to be traversed by any wheeled and/or motorized vehicle greater than 2 times) will utilize existing roads, trails, and existing disturbance whenever available. This shall include, but not be limited to, buggies, ATV/OHVs, pickup trucks, and other vehicles.

    - All frequent vehicle travel routes (routed expected to be traversed by any wheeled and/or motorized vehicle greater than 2 times) that do not utilize existing roads, trails, and existing disturbance shall follow pre-surveyed, pre-approved locations. This shall include, but not be limited to, buggies, ATV/OHVs, pickup trucks, and other vehicles.

    - Devon shall be responsible for identifying and maintaining these restrictions. If vehicles deviate from approved routes, Devon will immediately notify the BLM. Devon will be responsible for any remediation, including impact monitoring, which becomes necessary as a result of any damage to special status species and their occupied habitats caused by geophysical activities.

Prior to beginning operations in an area, Devon will survey all source and off-road frequent vehicle travel routes for any occurrences of Tharp's Blue Star; any occurrences will be documented and mapped for avoidance, and survey results will be reported to the BLM. Any occurrences will be avoided by a 20 meter buffer, and vehicle travel of any kind will not be allowed within these buffer areas unless explicitly authorized. If any damage occurs, Devon will immediately notify the BLM. Devon will be responsible for any remediation, including impact monitoring, which becomes necessary as a result of any damage to special status species and their occupied habitats caused by geophysical activities.

Drilling Plan Data Report

10/21/2019

APD ID: 10400033913 **Submission Date:** 09/17/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: MR. POTATO HEAD 11-14 FED COM **Well Number:** 731H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3044	0	0	ALLUVIUM	NONE	N
2	TOP SALT	2695	349	349	SALT	NONE	N
3	BASE OF SALT	-31	3075	3075	SALT	NONE	N
4	BELL CANYON	-91	3135	3135	SANDSTONE	NATURAL GAS,OIL	N
5	CHERRY CANYON	-909	3953	3953	SANDSTONE	NATURAL GAS,OIL	N
6	BRUSHY CANYON	-2186	5230	5230	SANDSTONE	NATURAL GAS,OIL	N
7	BONE SPRING	-3768	6812	6812	SANDSTONE	NATURAL GAS,OIL	N
8	WOLFCAMP	-7091	10135	10135	SHALE	NATURAL GAS,OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 9791

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below surface casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

5M_BOPE__CK_20190611092002.pdf

BOP Diagram Attachment:

5M_BOPE__CK_20190611092012.pdf

devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

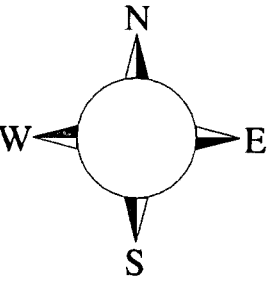
Mr Potato Head 11-14 Fed Com 731H

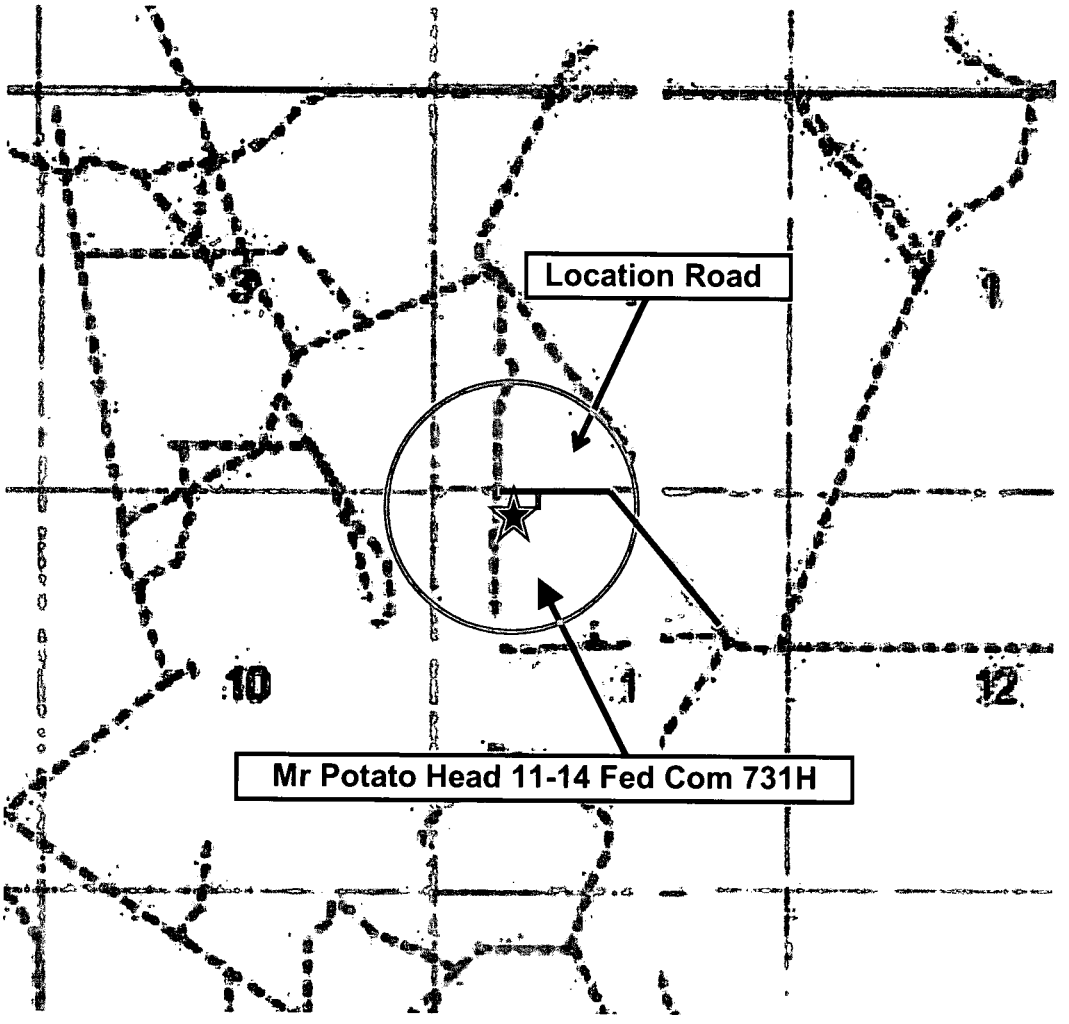
Sec-11 T-24S R-29E
200' FNL & 1045' FWL
LAT. = 32.2388713' N (NAD83)
LONG = 103.9604039' W

Eddy County NM

Mr Potato Head 11-14 Fed Com 731H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





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:**

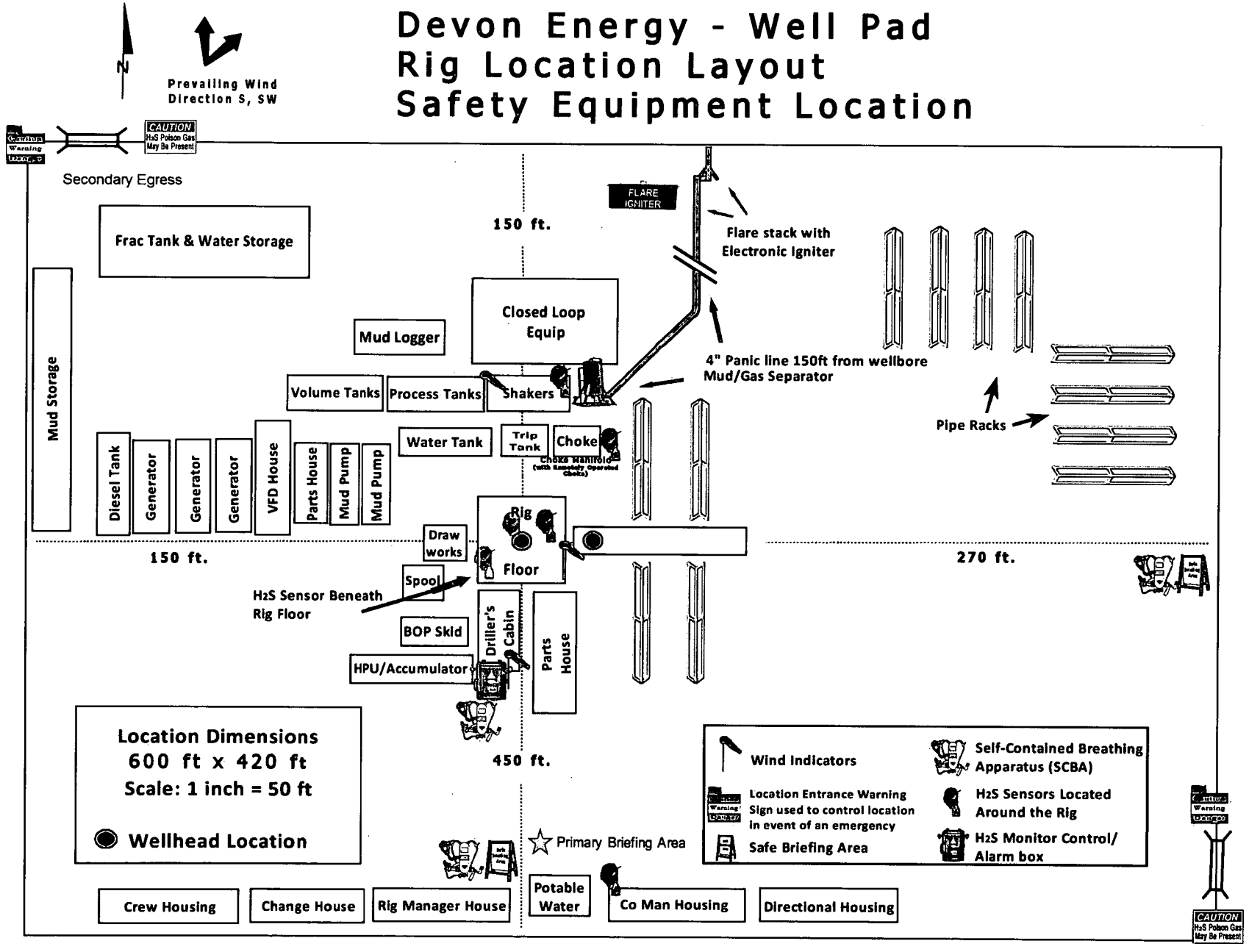
   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing 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	

Prepared in conjunction with
Dave Small SHARP communications and consulting

Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location



WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 11-T24S-R29E
Mr. Potato Head 11-14 Fed Com 731H

Wellbore #1

Plan: Permit Plan 2

Standard Planning Report - Geographic

04 June, 2019

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.80ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.80ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 731H	**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 731H

Well Position	**+N/-S**	0.00 ft	**Northing:**	450,835.09 usft	**Latitude:**	32.238871
	+E/-W	0.00 ft	**Easting:**	656,640.81 usft	**Longitude:**	-103.960404
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,052.80 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/3/2019	6.94	59.99	47,724.12707345

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	183.68

Plan Survey Tool Program **Date** 6/4/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,042.73	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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,116.57	6.17	281.85	3,115.38	6.80	-32.44	1.00	1.00	0.00	281.85	
9,404.31	6.17	281.85	9,366.75	145.46	-693.38	0.00	0.00	0.00	0.00	
9,815.35	0.00	0.00	9,777.00	150.00	-715.00	1.50	-1.50	0.00	180.00	
10,165.39	0.00	0.00	10,127.04	150.00	-715.00	0.00	0.00	0.00	0.00	
11,065.40	90.00	179.75	10,700.00	-422.95	-712.47	10.00	10.00	0.00	179.75	PBHL - Mr. Potato He
21,042.73	90.00	179.75	10,700.00	-10,400.19	-668.47	0.00	0.00	0.00	0.00	PBHL - Mr. Potato He

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.80ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.80ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 731H	**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	450,835.09	656,640.81	32.238871	-103.960404
100.00	0.00	0.00	100.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
200.00	0.00	0.00	200.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
300.00	0.00	0.00	300.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
400.00	0.00	0.00	400.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
500.00	0.00	0.00	500.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
600.00	0.00	0.00	600.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
700.00	0.00	0.00	700.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
800.00	0.00	0.00	800.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
900.00	0.00	0.00	900.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,000.00	0.00	0.00	1,000.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,100.00	0.00	0.00	1,100.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,200.00	0.00	0.00	1,200.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,300.00	0.00	0.00	1,300.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,400.00	0.00	0.00	1,400.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,500.00	0.00	0.00	1,500.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,600.00	0.00	0.00	1,600.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,700.00	0.00	0.00	1,700.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,800.00	0.00	0.00	1,800.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
1,900.00	0.00	0.00	1,900.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
2,000.00	0.00	0.00	2,000.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
2,100.00	0.00	0.00	2,100.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
2,200.00	0.00	0.00	2,200.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
2,300.00	0.00	0.00	2,300.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
2,400.00	0.00	0.00	2,400.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
2,500.00	0.00	0.00	2,500.00	0.00	0.00	450,835.09	656,640.81	32.238871	-103.960404
2,600.00	1.00	281.85	2,599.99	0.18	-0.85	450,835.27	656,639.96	32.238872	-103.960407
2,700.00	2.00	281.85	2,699.96	0.72	-3.42	450,835.81	656,637.40	32.238873	-103.960415
2,800.00	3.00	281.85	2,799.86	1.61	-7.68	450,836.70	656,633.13	32.238876	-103.960429
2,900.00	4.00	281.85	2,899.68	2.87	-13.66	450,837.96	656,627.16	32.238879	-103.960448
3,000.00	5.00	281.85	2,999.37	4.48	-21.34	450,839.57	656,619.48	32.238884	-103.960473
3,100.00	6.00	281.85	3,098.90	6.44	-30.72	450,841.53	656,610.10	32.238889	-103.960503
3,116.57	6.17	281.85	3,115.38	6.80	-32.44	450,841.89	656,608.38	32.238890	-103.960509
3,200.00	6.17	281.85	3,198.33	8.64	-41.21	450,843.73	656,599.61	32.238896	-103.960537
3,300.00	6.17	281.85	3,297.75	10.85	-51.72	450,845.94	656,589.10	32.238902	-103.960571
3,400.00	6.17	281.85	3,397.17	13.06	-62.23	450,848.15	656,578.59	32.238908	-103.960605
3,500.00	6.17	281.85	3,496.59	15.26	-72.74	450,850.35	656,568.07	32.238914	-103.960639
3,600.00	6.17	281.85	3,596.01	17.47	-83.25	450,852.56	656,557.56	32.238920	-103.960673
3,700.00	6.17	281.85	3,695.44	19.67	-93.76	450,854.76	656,547.05	32.238926	-103.960707
3,800.00	6.17	281.85	3,794.86	21.88	-104.28	450,856.97	656,536.54	32.238932	-103.960741
3,900.00	6.17	281.85	3,894.28	24.08	-114.79	450,859.17	656,526.03	32.238939	-103.960775
4,000.00	6.17	281.85	3,993.70	26.29	-125.30	450,861.38	656,515.52	32.238945	-103.960809
4,100.00	6.17	281.85	4,093.12	28.49	-135.81	450,863.58	656,505.00	32.238951	-103.960843
4,200.00	6.17	281.85	4,192.54	30.70	-146.32	450,865.79	656,494.49	32.238957	-103.960877
4,300.00	6.17	281.85	4,291.97	32.90	-156.83	450,867.99	656,483.98	32.238963	-103.960911
4,400.00	6.17	281.85	4,391.39	35.11	-167.35	450,870.20	656,473.47	32.238969	-103.960945
4,500.00	6.17	281.85	4,490.81	37.31	-177.86	450,872.40	656,462.96	32.238976	-103.960979
4,600.00	6.17	281.85	4,590.23	39.52	-188.37	450,874.61	656,452.45	32.238982	-103.961013
4,700.00	6.17	281.85	4,689.65	41.72	-198.88	450,876.81	656,441.94	32.238988	-103.961047
4,800.00	6.17	281.85	4,789.07	43.93	-209.39	450,879.02	656,431.42	32.238994	-103.961081
4,900.00	6.17	281.85	4,888.49	46.13	-219.90	450,881.22	656,420.91	32.239000	-103.961115
5,000.00	6.17	281.85	4,987.92	48.34	-230.41	450,883.43	656,410.40	32.239006	-103.961149
5,100.00	6.17	281.85	5,087.34	50.54	-240.93	450,885.63	656,399.89	32.239013	-103.961183
5,200.00	6.17	281.85	5,186.76	52.75	-251.44	450,887.84	656,389.38	32.239019	-103.961217

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.80ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.80ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 731H	**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
5,300.00	6.17	281.85	5,286.18	54.95	-261.95	450,890.04	656,378.87	32.239025	-103.961251
5,400.00	6.17	281.85	5,385.60	57.16	-272.46	450,892.25	656,368.35	32.239031	-103.961285
5,500.00	6.17	281.85	5,485.02	59.36	-282.97	450,894.45	656,357.84	32.239037	-103.961319
5,600.00	6.17	281.85	5,584.45	61.57	-293.48	450,896.66	656,347.33	32.239043	-103.961353
5,700.00	6.17	281.85	5,683.87	63.78	-304.00	450,898.87	656,336.82	32.239050	-103.961387
5,800.00	6.17	281.85	5,783.29	65.98	-314.51	450,901.07	656,326.31	32.239056	-103.961421
5,900.00	6.17	281.85	5,882.71	68.19	-325.02	450,903.28	656,315.80	32.239062	-103.961455
6,000.00	6.17	281.85	5,982.13	70.39	-335.53	450,905.48	656,305.29	32.239068	-103.961489
6,100.00	6.17	281.85	6,081.55	72.60	-346.04	450,907.69	656,294.77	32.239074	-103.961523
6,200.00	6.17	281.85	6,180.97	74.80	-356.55	450,909.89	656,284.26	32.239080	-103.961557
6,300.00	6.17	281.85	6,280.40	77.01	-367.06	450,912.10	656,273.75	32.239087	-103.961590
6,400.00	6.17	281.85	6,379.82	79.21	-377.58	450,914.30	656,263.24	32.239093	-103.961624
6,500.00	6.17	281.85	6,479.24	81.42	-388.09	450,916.51	656,252.73	32.239099	-103.961658
6,600.00	6.17	281.85	6,578.66	83.62	-398.60	450,918.71	656,242.22	32.239105	-103.961692
6,700.00	6.17	281.85	6,678.08	85.83	-409.11	450,920.92	656,231.70	32.239111	-103.961726
6,800.00	6.17	281.85	6,777.50	88.03	-419.62	450,923.12	656,221.19	32.239117	-103.961760
6,900.00	6.17	281.85	6,876.93	90.24	-430.13	450,925.33	656,210.68	32.239124	-103.961794
7,000.00	6.17	281.85	6,976.35	92.44	-440.65	450,927.53	656,200.17	32.239130	-103.961828
7,100.00	6.17	281.85	7,075.77	94.65	-451.16	450,929.74	656,189.66	32.239136	-103.961862
7,200.00	6.17	281.85	7,175.19	96.85	-461.67	450,931.94	656,179.15	32.239142	-103.961896
7,300.00	6.17	281.85	7,274.61	99.06	-472.18	450,934.15	656,168.64	32.239148	-103.961930
7,400.00	6.17	281.85	7,374.03	101.26	-482.69	450,936.35	656,158.12	32.239154	-103.961964
7,500.00	6.17	281.85	7,473.45	103.47	-493.20	450,938.56	656,147.61	32.239160	-103.961998
7,600.00	6.17	281.85	7,572.88	105.67	-503.71	450,940.76	656,137.10	32.239167	-103.962032
7,700.00	6.17	281.85	7,672.30	107.88	-514.23	450,942.97	656,126.59	32.239173	-103.962066
7,800.00	6.17	281.85	7,771.72	110.08	-524.74	450,945.17	656,116.08	32.239179	-103.962100
7,900.00	6.17	281.85	7,871.14	112.29	-535.25	450,947.38	656,105.57	32.239185	-103.962134
8,000.00	6.17	281.85	7,970.56	114.50	-545.76	450,949.59	656,095.05	32.239191	-103.962168
8,100.00	6.17	281.85	8,069.98	116.70	-556.27	450,951.79	656,084.54	32.239197	-103.962202
8,200.00	6.17	281.85	8,169.41	118.91	-566.78	450,954.00	656,074.03	32.239204	-103.962236
8,300.00	6.17	281.85	8,268.83	121.11	-577.30	450,956.20	656,063.52	32.239210	-103.962270
8,400.00	6.17	281.85	8,368.25	123.32	-587.81	450,958.41	656,053.01	32.239216	-103.962304
8,500.00	6.17	281.85	8,467.67	125.52	-598.32	450,960.61	656,042.50	32.239222	-103.962338
8,600.00	6.17	281.85	8,567.09	127.73	-608.83	450,962.82	656,031.99	32.239228	-103.962372
8,700.00	6.17	281.85	8,666.51	129.93	-619.34	450,965.02	656,021.47	32.239234	-103.962406
8,800.00	6.17	281.85	8,765.94	132.14	-629.85	450,967.23	656,010.96	32.239241	-103.962440
8,900.00	6.17	281.85	8,865.36	134.34	-640.36	450,969.43	656,000.45	32.239247	-103.962474
9,000.00	6.17	281.85	8,964.78	136.55	-650.88	450,971.64	655,989.94	32.239253	-103.962508
9,100.00	6.17	281.85	9,064.20	138.75	-661.39	450,973.84	655,979.43	32.239259	-103.962542
9,200.00	6.17	281.85	9,163.62	140.96	-671.90	450,976.05	655,968.92	32.239265	-103.962576
9,300.00	6.17	281.85	9,263.04	143.16	-682.41	450,978.25	655,958.40	32.239271	-103.962610
9,400.00	6.17	281.85	9,362.46	145.37	-692.92	450,980.46	655,947.89	32.239278	-103.962644
9,404.31	6.17	281.85	9,366.75	145.46	-693.38	450,980.55	655,947.44	32.239278	-103.962645
9,500.00	4.73	281.85	9,462.00	147.33	-702.27	450,982.42	655,938.55	32.239283	-103.962674
9,600.00	3.23	281.85	9,561.76	148.75	-709.06	450,983.84	655,931.76	32.239287	-103.962696
9,700.00	1.73	281.85	9,661.66	149.64	-713.30	450,984.73	655,927.52	32.239289	-103.962709
9,800.00	0.23	281.85	9,761.65	149.99	-714.97	450,985.08	655,925.85	32.239290	-103.962715
9,815.35	0.00	0.00	9,777.00	150.00	-715.00	450,985.09	655,925.82	32.239290	-103.962715
9,900.00	0.00	0.00	9,861.65	150.00	-715.00	450,985.09	655,925.82	32.239290	-103.962715
10,000.00	0.00	0.00	9,961.65	150.00	-715.00	450,985.09	655,925.82	32.239290	-103.962715
10,100.00	0.00	0.00	10,061.65	150.00	-715.00	450,985.09	655,925.82	32.239290	-103.962715
10,165.39	0.00	0.00	10,127.04	150.00	-715.00	450,985.09	655,925.82	32.239290	-103.962715
KOP @ 10165' MD, 50' FNL, 330' FWL									
10,200.00	3.46	179.75	10,161.63	148.96	-715.00	450,984.05	655,925.82	32.239288	-103.962715

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.80ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.80ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 731H	**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
10,300.00	13.46	179.75	10,260.41	134.26	-714.93	450,969.35	655,925.89	32.239247	-103.962715
10,400.00	23.46	179.75	10,355.15	102.64	-714.79	450,937.73	655,926.02	32.239160	-103.962715
10,406.54	24.11	179.75	10,361.13	100.00	-714.78	450,935.09	655,926.04	32.239153	-103.962715
FTP @ 10407' MD, 100' FNL, 330' FWL									
10,500.00	33.46	179.75	10,442.95	55.04	-714.58	450,890.13	655,926.23	32.239029	-103.962715
10,600.00	43.46	179.75	10,521.15	-7.08	-714.31	450,828.01	655,926.51	32.238859	-103.962715
10,700.00	53.46	179.75	10,587.38	-81.83	-713.98	450,753.26	655,926.84	32.238653	-103.962714
10,800.00	63.46	179.75	10,639.62	-166.95	-713.60	450,668.14	655,927.21	32.238419	-103.962714
10,900.00	73.46	179.75	10,676.29	-259.85	-713.19	450,575.24	655,927.62	32.238164	-103.962714
11,000.00	83.46	179.75	10,696.27	-357.70	-712.76	450,477.39	655,928.06	32.237895	-103.962713
11,065.40	90.00	179.75	10,700.00	-422.95	-712.47	450,412.14	655,928.34	32.237716	-103.962713
11,100.00	90.00	179.75	10,700.00	-457.56	-712.32	450,377.53	655,928.50	32.237620	-103.962713
11,200.00	90.00	179.75	10,700.00	-557.56	-711.88	450,277.53	655,928.94	32.237345	-103.962713
11,300.00	90.00	179.75	10,700.00	-657.56	-711.44	450,177.54	655,929.38	32.237071	-103.962712
11,400.00	90.00	179.75	10,700.00	-757.55	-711.00	450,077.54	655,929.82	32.236796	-103.962712
11,500.00	90.00	179.75	10,700.00	-857.55	-710.56	449,977.54	655,930.26	32.236521	-103.962712
11,600.00	90.00	179.75	10,700.00	-957.55	-710.12	449,877.54	655,930.70	32.236246	-103.962712
11,700.00	90.00	179.75	10,700.00	-1,057.55	-709.67	449,777.54	655,931.14	32.235971	-103.962711
11,800.00	90.00	179.75	10,700.00	-1,157.55	-709.23	449,677.54	655,931.58	32.235696	-103.962711
11,900.00	90.00	179.75	10,700.00	-1,257.55	-708.79	449,577.54	655,932.02	32.235421	-103.962711
12,000.00	90.00	179.75	10,700.00	-1,357.55	-708.35	449,477.54	655,932.46	32.235146	-103.962710
12,100.00	90.00	179.75	10,700.00	-1,457.55	-707.91	449,377.55	655,932.91	32.234872	-103.962710
12,200.00	90.00	179.75	10,700.00	-1,557.55	-707.47	449,277.55	655,933.35	32.234597	-103.962710
12,300.00	90.00	179.75	10,700.00	-1,657.55	-707.03	449,177.55	655,933.79	32.234322	-103.962709
12,400.00	90.00	179.75	10,700.00	-1,757.54	-706.59	449,077.55	655,934.23	32.234047	-103.962709
12,500.00	90.00	179.75	10,700.00	-1,857.54	-706.15	448,977.55	655,934.67	32.233772	-103.962709
12,600.00	90.00	179.75	10,700.00	-1,957.54	-705.71	448,877.55	655,935.11	32.233497	-103.962708
12,700.00	90.00	179.75	10,700.00	-2,057.54	-705.26	448,777.55	655,935.55	32.233222	-103.962708
12,800.00	90.00	179.75	10,700.00	-2,157.54	-704.82	448,677.55	655,935.99	32.232947	-103.962708
12,900.00	90.00	179.75	10,700.00	-2,257.54	-704.38	448,577.55	655,936.43	32.232672	-103.962708
13,000.00	90.00	179.75	10,700.00	-2,357.54	-703.94	448,477.56	655,936.87	32.232398	-103.962707
13,100.00	90.00	179.75	10,700.00	-2,457.54	-703.50	448,377.56	655,937.32	32.232123	-103.962707
13,200.00	90.00	179.75	10,700.00	-2,557.54	-703.06	448,277.56	655,937.76	32.231848	-103.962707
13,300.00	90.00	179.75	10,700.00	-2,657.54	-702.62	448,177.56	655,938.20	32.231573	-103.962706
13,400.00	90.00	179.75	10,700.00	-2,757.54	-702.18	448,077.56	655,938.64	32.231298	-103.962706
13,500.00	90.00	179.75	10,700.00	-2,857.53	-701.74	447,977.56	655,939.08	32.231023	-103.962706
13,600.00	90.00	179.75	10,700.00	-2,957.53	-701.30	447,877.56	655,939.52	32.230748	-103.962705
13,700.00	90.00	179.75	10,700.00	-3,057.53	-700.85	447,777.56	655,939.96	32.230473	-103.962705
13,800.00	90.00	179.75	10,700.00	-3,157.53	-700.41	447,677.57	655,940.40	32.230198	-103.962705
13,900.00	90.00	179.75	10,700.00	-3,257.53	-699.97	447,577.57	655,940.84	32.229924	-103.962704
14,000.00	90.00	179.75	10,700.00	-3,357.53	-699.53	447,477.57	655,941.29	32.229649	-103.962704
14,100.00	90.00	179.75	10,700.00	-3,457.53	-699.09	447,377.57	655,941.73	32.229374	-103.962704
14,200.00	90.00	179.75	10,700.00	-3,557.53	-698.65	447,277.57	655,942.17	32.229099	-103.962703
14,300.00	90.00	179.75	10,700.00	-3,657.53	-698.21	447,177.57	655,942.61	32.228824	-103.962703
14,400.00	90.00	179.75	10,700.00	-3,757.53	-697.77	447,077.57	655,943.05	32.228549	-103.962703
14,500.00	90.00	179.75	10,700.00	-3,857.52	-697.33	446,977.57	655,943.49	32.228274	-103.962703
14,600.00	90.00	179.75	10,700.00	-3,957.52	-696.88	446,877.57	655,943.93	32.227999	-103.962702
14,700.00	90.00	179.75	10,700.00	-4,057.52	-696.44	446,777.58	655,944.37	32.227725	-103.962702
14,800.00	90.00	179.75	10,700.00	-4,157.52	-696.00	446,677.58	655,944.81	32.227450	-103.962702
14,900.00	90.00	179.75	10,700.00	-4,257.52	-695.56	446,577.58	655,945.25	32.227175	-103.962701
15,000.00	90.00	179.75	10,700.00	-4,357.52	-695.12	446,477.58	655,945.70	32.226900	-103.962701
15,100.00	90.00	179.75	10,700.00	-4,457.52	-694.68	446,377.58	655,946.14	32.226625	-103.962701
15,200.00	90.00	179.75	10,700.00	-4,557.52	-694.24	446,277.58	655,946.58	32.226350	-103.962700
15,300.00	90.00	179.75	10,700.00	-4,657.52	-693.80	446,177.58	655,947.02	32.226075	-103.962700

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.80ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.80ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 731H	**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
15,400.00	90.00	179.75	10,700.00	-4,757.52	-693.36	446,077.58	655,947.46	32.225800	-103.962700
15,500.00	90.00	179.75	10,700.00	-4,857.51	-692.92	445,977.59	655,947.90	32.225525	-103.962699
15,600.00	90.00	179.75	10,700.00	-4,957.51	-692.47	445,877.59	655,948.34	32.225251	-103.962699
15,700.00	90.00	179.75	10,700.00	-5,057.51	-692.03	445,777.59	655,948.78	32.224976	-103.962699
15,722.00	90.00	179.75	10,700.00	-5,079.51	-691.94	445,755.59	655,948.88	32.224915	-103.962699
Cross section @ 15722' MD, 0' FNL, 330' FWL									
15,800.00	90.00	179.75	10,700.00	-5,157.51	-691.59	445,677.59	655,949.22	32.224701	-103.962699
15,900.00	90.00	179.75	10,700.00	-5,257.51	-691.15	445,577.59	655,949.66	32.224426	-103.962698
16,000.00	90.00	179.75	10,700.00	-5,357.51	-690.71	445,477.59	655,950.11	32.224151	-103.962698
16,100.00	90.00	179.75	10,700.00	-5,457.51	-690.27	445,377.59	655,950.55	32.223876	-103.962698
16,200.00	90.00	179.75	10,700.00	-5,557.51	-689.83	445,277.59	655,950.99	32.223601	-103.962697
16,300.00	90.00	179.75	10,700.00	-5,657.51	-689.39	445,177.59	655,951.43	32.223326	-103.962697
16,400.00	90.00	179.75	10,700.00	-5,757.51	-688.95	445,077.60	655,951.87	32.223051	-103.962697
16,500.00	90.00	179.75	10,700.00	-5,857.51	-688.51	444,977.60	655,952.31	32.222777	-103.962696
16,600.00	90.00	179.75	10,700.00	-5,957.50	-688.06	444,877.60	655,952.75	32.222502	-103.962696
16,700.00	90.00	179.75	10,700.00	-6,057.50	-687.62	444,777.60	655,953.19	32.222227	-103.962696
16,800.00	90.00	179.75	10,700.00	-6,157.50	-687.18	444,677.60	655,953.63	32.221952	-103.962695
16,900.00	90.00	179.75	10,700.00	-6,257.50	-686.74	444,577.60	655,954.07	32.221677	-103.962695
17,000.00	90.00	179.75	10,700.00	-6,357.50	-686.30	444,477.60	655,954.52	32.221402	-103.962695
17,100.00	90.00	179.75	10,700.00	-6,457.50	-685.86	444,377.60	655,954.96	32.221127	-103.962694
17,200.00	90.00	179.75	10,700.00	-6,557.50	-685.42	444,277.60	655,955.40	32.220852	-103.962694
17,300.00	90.00	179.75	10,700.00	-6,657.50	-684.98	444,177.61	655,955.84	32.220577	-103.962694
17,400.00	90.00	179.75	10,700.00	-6,757.50	-684.54	444,077.61	655,956.28	32.220303	-103.962694
17,500.00	90.00	179.75	10,700.00	-6,857.50	-684.10	443,977.61	655,956.72	32.220028	-103.962693
17,600.00	90.00	179.75	10,700.00	-6,957.49	-683.65	443,877.61	655,957.16	32.219753	-103.962693
17,700.00	90.00	179.75	10,700.00	-7,057.49	-683.21	443,777.61	655,957.60	32.219478	-103.962693
17,800.00	90.00	179.75	10,700.00	-7,157.49	-682.77	443,677.61	655,958.04	32.219203	-103.962692
17,900.00	90.00	179.75	10,700.00	-7,257.49	-682.33	443,577.61	655,958.48	32.218928	-103.962692
18,000.00	90.00	179.75	10,700.00	-7,357.49	-681.89	443,477.61	655,958.93	32.218653	-103.962692
18,100.00	90.00	179.75	10,700.00	-7,457.49	-681.45	443,377.62	655,959.37	32.218378	-103.962691
18,200.00	90.00	179.75	10,700.00	-7,557.49	-681.01	443,277.62	655,959.81	32.218103	-103.962691
18,300.00	90.00	179.75	10,700.00	-7,657.49	-680.57	443,177.62	655,960.25	32.217829	-103.962691
18,400.00	90.00	179.75	10,700.00	-7,757.49	-680.13	443,077.62	655,960.69	32.217554	-103.962690
18,500.00	90.00	179.75	10,700.00	-7,857.49	-679.69	442,977.62	655,961.13	32.217279	-103.962690
18,600.00	90.00	179.75	10,700.00	-7,957.48	-679.24	442,877.62	655,961.57	32.217004	-103.962690
18,700.00	90.00	179.75	10,700.00	-8,057.48	-678.80	442,777.62	655,962.01	32.216729	-103.962690
18,800.00	90.00	179.75	10,700.00	-8,157.48	-678.36	442,677.62	655,962.45	32.216454	-103.962689
18,900.00	90.00	179.75	10,700.00	-8,257.48	-677.92	442,577.62	655,962.89	32.216179	-103.962689
19,000.00	90.00	179.75	10,700.00	-8,357.48	-677.48	442,477.63	655,963.34	32.215904	-103.962689
19,100.00	90.00	179.75	10,700.00	-8,457.48	-677.04	442,377.63	655,963.78	32.215630	-103.962688
19,200.00	90.00	179.75	10,700.00	-8,557.48	-676.60	442,277.63	655,964.22	32.215355	-103.962688
19,300.00	90.00	179.75	10,700.00	-8,657.48	-676.16	442,177.63	655,964.66	32.215080	-103.962688
19,400.00	90.00	179.75	10,700.00	-8,757.48	-675.72	442,077.63	655,965.10	32.214805	-103.962687
19,500.00	90.00	179.75	10,700.00	-8,857.48	-675.28	441,977.63	655,965.54	32.214530	-103.962687
19,600.00	90.00	179.75	10,700.00	-8,957.48	-674.83	441,877.63	655,965.98	32.214255	-103.962687
19,700.00	90.00	179.75	10,700.00	-9,057.47	-674.39	441,777.63	655,966.42	32.213980	-103.962686
19,800.00	90.00	179.75	10,700.00	-9,157.47	-673.95	441,677.64	655,966.86	32.213705	-103.962686
19,900.00	90.00	179.75	10,700.00	-9,257.47	-673.51	441,577.64	655,967.31	32.213430	-103.962686
20,000.00	90.00	179.75	10,700.00	-9,357.47	-673.07	441,477.64	655,967.75	32.213156	-103.962685
20,100.00	90.00	179.75	10,700.00	-9,457.47	-672.63	441,377.64	655,968.19	32.212881	-103.962685
20,200.00	90.00	179.75	10,700.00	-9,557.47	-672.19	441,277.64	655,968.63	32.212606	-103.962685
20,300.00	90.00	179.75	10,700.00	-9,657.47	-671.75	441,177.64	655,969.07	32.212331	-103.962685
20,400.00	90.00	179.75	10,700.00	-9,757.47	-671.31	441,077.64	655,969.51	32.212056	-103.962684
20,500.00	90.00	179.75	10,700.00	-9,857.47	-670.86	440,977.64	655,969.95	32.211781	-103.962684

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 731H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3077.80ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3077.80ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 731H	**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
20,600.00	90.00	179.75	10,700.00	-9,957.47	-670.42	440,877.64	655,970.39	32.211506	-103.962684
20,700.00	90.00	179.75	10,700.00	-10,057.46	-669.98	440,777.65	655,970.83	32.211231	-103.962683
20,800.00	90.00	179.75	10,700.00	-10,157.46	-669.54	440,677.65	655,971.27	32.210956	-103.962683
20,900.00	90.00	179.75	10,700.00	-10,257.46	-669.10	440,577.65	655,971.72	32.210682	-103.962683
20,962.73	90.00	179.75	10,700.00	-10,320.19	-668.82	440,514.92	655,971.99	32.210509	-103.962682
LTP @ 20963' MD, 100' FSL, 330' FWL									
21,000.00	90.00	179.75	10,700.00	-10,357.46	-668.66	440,477.65	655,972.16	32.210407	-103.962682
21,042.72	90.00	179.75	10,700.00	-10,400.18	-668.47	440,434.93	655,972.34	32.210289	-103.962682
PBHL; 20' FSL, 330' FWL									
21,042.73	90.00	179.75	10,700.00	-10,400.19	-668.47	440,434.92	655,972.34	32.210289	-103.962682

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. Potato Head	0.00	0.00	0.00	-10,400.19	-668.47	440,434.92	655,972.34	32.210289	-103.962682
- plan misses target center by 10421.65ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
10,165.39	10,127.04	150.00	-715.00	KOP @ 10165' MD, 50' FNL, 330' FWL
10,406.54	10,361.13	100.00	-714.78	FTP @ 10407' MD, 100' FNL, 330' FWL
15,722.00	10,700.00	-5,079.51	-691.94	Cross section @ 15722' MD, 0' FNL, 330' FWL
20,962.73	10,700.00	-10,320.19	-668.82	LTP @ 20963' MD, 100' FSL, 330' FWL
21,042.72	10,700.00	-10,400.18	-668.47	PBHL; 20' FSL, 330' FWL

1. Geologic Formations

TVD of target	10700	Pilot hole depth	N/A
MD at TD:	21043	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	9791 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	9791 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	529	Surf	9	3.27	Lead: Class C Cement + additives
	783	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w/ DV @ TVD of Delaware	763	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
	529	Surf	9	3.27	Lead: Class C Cement + additives
	783	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	61	8165	9.0	3.3	Lead: Class H /C + additives
	694	10165	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	329	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	448	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
	329	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 (10.625" Hole Size)	508	Surf	9	3.27	Lead: Class C Cement + additives
	768	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	117	8165	9.0	3.3	Lead: Class H /C + additives
	1440	10165	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	10-10.5

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	5842
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.

8. Other facets of operation

Is this a walking operation? Potentially

1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1 Spudder rig will move in and batch drill surface hole.
    a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.,
2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pa.
6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7 Drilling operations will be performed with drilling rig. A that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
_____ Other, describe