

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMLC0029415B
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator MACK ENERGY CORPORATION		8. Lease Name and Well No. NOSLER 12 FEDERAL DB 42H 319535
3a. Address 11344 Lovington HWY Artesia NM 88211	3b. Phone No. (include area code) (575)748-1288	9. API Well No. 50-015-46417
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENE / 1020 FNL / 650 FEL / LAT 32.8536232 / LONG -103.8338335 At proposed prod. zone NWNE / 990 FNL / 1321 FEL / LAT 32.8537335 / LONG -103.8188179		10. Field and Pool, or Exploratory FREN / GLORIETA YESO
11. Sec., T, R, M, or Blk. and Survey or Area SEC 11 / T17S / R31E / NMP		
14. Distance in miles and direction from nearest town or post office* 3.3 miles		12. County or Parish EDDY
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 220 feet	16. No of acres in lease 1920	17. Spacing Unit dedicated to this well 120
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet	19. Proposed Depth 5997 feet / 10291 feet	20. BLM/BIA Bond No. in file FED: NMB000286
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3979 feet	22. Approximate date work will start* 11/01/2019	23. Estimated duration 20 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.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

25. Signature (Electronic Submission)	Name (Printed/Typed) Deana Weaver / Ph: (575)748-1288	Date 02/25/2019
Title Production Clerk		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 10/24/2019
Title Assistant Field Manager Lands & Minerals CARLSBAD		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

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

**APPROVED WITH CONDITIONS**  
Approval Date: 10/24/2019

Rev 10-28-19

# PECOS DISTRICT DRILLING OPERATIONS CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Mack Energy Corporation</b>
<b>LEASE NO.:</b>	<b>NMLC0029415B</b>
<b>WELL NAME &amp; NO.:</b>	<b>Nosler 12 Federal DB 42H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>1020' FNL &amp; 650' FEL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>990' FNL &amp; 1321' FEL</b>
<b>LOCATION:</b>	<b>Section 11, T 17S, R 31E, NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Variance	<input checked="" type="radio"/> None	<input type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input checked="" type="radio"/> Conventional	<input type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input type="checkbox"/> Unit

## A. HYDROGEN SULFIDE

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated **500 feet** prior to drilling into the **Grayburg/Jackson** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

## B. CASING

1. The **13-3/8"** surface casing shall be set at approximately **800'** (a minimum of 25' into the Rustler Anhydrite and above the salt) and cemented to surface.
  - a. **If cement does not circulate to 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 **6 hours** after pumping cement, ideally between 8-10 hours after completing the cement job.
  - b. WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
  - c. If cement falls back, remedial cementing will be done prior to drilling out that string.
  - d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.

2. The **9-5/8"** intermediate casing shall be set at approximately **2000'** and cemented to surface.
  - a. **If cement does not circulate to surface**, see B.1.a, c & d.
3. The **7" & 5-1/2"** production casing shall be cemented with at least 200' tie-back into the previous casing.
  - a. 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.
    - i. 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 the second stage.
    - ii. Second stage via DV tool: Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Stage 2 excess calculates to 8%, more cement may be required.**

#### **C. PRESSURE CONTROL**

1. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi**.
2. A full opening safety valve, with appropriate wrench and subs for the drill string being utilized, shall be in the open position and accessible on the rig floor.

**DR 10/7/2019**

## **GENERAL REQUIREMENTS**

1. 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. BOP/BOPE tests (minimum of 4 hours)
      - ☒ Eddy County  
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822
      - ☒ Lea County  
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,  
(575) 393-3612
  2. 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:
      - i. Notify the BLM when moving in and removing the Spudder Rig.
      - ii. Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - iii. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
  3. 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.
  4. 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 available upon request. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.
- A. CASING**
1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or

if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

#### **B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. 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. 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.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
  - c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
  - 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. All tests are required to be recorded on a calibrated test chart and shall be made available upon request.
- f. 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. This test shall be performed prior to the test at full stack pressure.
- g. 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**

- 1. 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**

- 1. 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.
- 2. 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: Mack Energy Corporation  
LEASE NO.: NMLC0029415B  
LOCATION: Section 11, T.17 S., R.31 E., NMPM  
COUNTY: Eddy County, New Mexico

## **Nosler 12 Federal DB 42H**

Surface Hole Location: 1020' FNL & 650' FEL, Section 11, T. 17 S., R. 31 E.

Bottom Hole Location: 990' FNL & 1321' FEL, Section 12, T. 17 S, R 31 E.

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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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Hydrology
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

## **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.

## **I. 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.)

## **II. 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.

## **III. 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.

## **IV. SPECIAL REQUIREMENT(S)**

### **Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:**

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad

construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Timing Limitation Exceptions:**

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

**Ground-level Abandoned Well Marker to avoid raptor perching:** Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

**Hydrology:**

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. 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 berm shall be maintained through the life of the well and 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.

**SURFACE LINE(S):**

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.

## **V. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which

creates the smallest possible surface disturbance, consistent with safety and operational needs.

#### **F. EXCLOSURE FENCING (CELLARS & PITS)**

##### **Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

#### **G. ON LEASE ACCESS ROADS**

##### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

##### **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

##### **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

##### **Ditching**

Ditching shall be required on both sides of the road.

### Turnouts

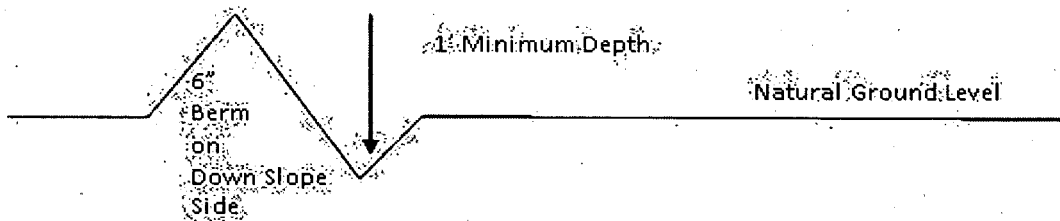
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route 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 cattle guards that are in place and are utilized during lease operations.

**Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

**Livestock Watering Requirement**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

**Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

### Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

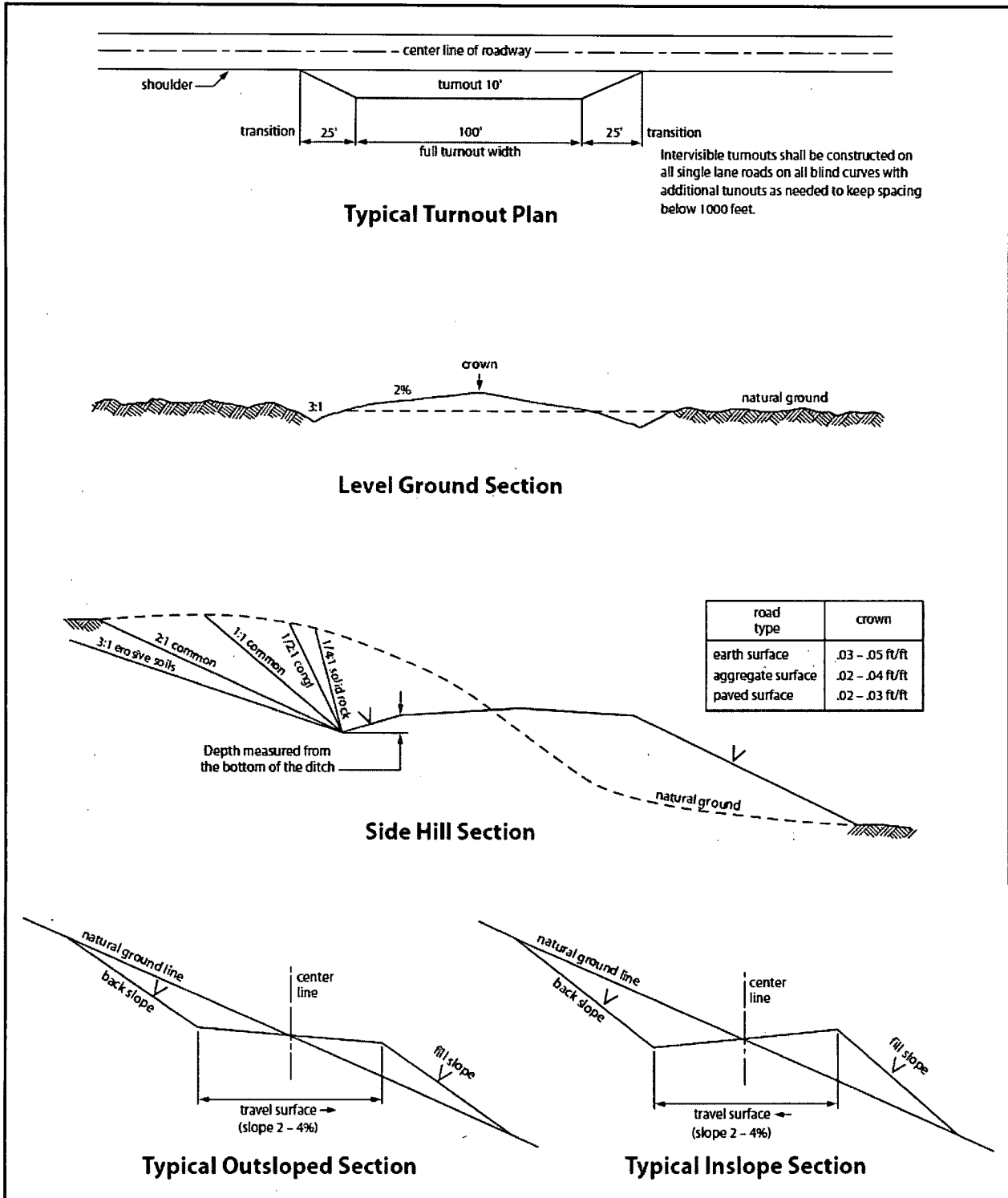


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

**Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

**Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

**B. SURFACE PIPELINES**

**A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.



4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing
  - (2) Earth-disturbing and earth-moving work
  - (3) Blasting
  - (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of **30** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 6 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made

by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

## **VII. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **VIII. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

## Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed



## Application for Permit to Drill

### APD Package Report

Date Printed: 10/24/2019 09:26 AM

APD ID: 10400039502

Well Status: AAPD

APD Received Date: 02/25/2019 02:15 PM

Well Name: NOSLER 12 FEDERAL DB

Operator: MACK ENERGY CORPORATION

Well Number: 42H

#### APD Package Report Contents

- Form 3160-3
- Operator Certification Report
- Application Report
- Application Attachments
  - Well Plat: 1 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
  - Blowout Prevention Choke Diagram Attachment: 2 file(s)
  - Blowout Prevention BOP Diagram Attachment: 1 file(s)
  - Casing Design Assumptions and Worksheet(s): 5 file(s)
  - Proposed horizontal/directional/multi-lateral plan submission: 6 file(s)
- SUPO Report
- SUPO Attachments
  - Existing Road Map: 1 file(s)
  - New Road Map: 1 file(s)
  - Attach Well map: 1 file(s)
  - Production Facilities map: 2 file(s)
  - Water source and transportation map: 3 file(s)
  - Construction Materials source location attachment: 1 file(s)
  - Well Site Layout Diagram: 1 file(s)
  - Recontouring attachment: 1 file(s)
  - Other SUPO Attachment: 1 file(s)
- PWD Report
- PWD Attachments
  - None
- Bond Report
- Bond Attachments

-- None



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

## Operator Certification Data Report

10/24/2019

### Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.*

**NAME:** Deana Weaver

**Signed on:** 02/25/2019

**Title:** Production Clerk

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:** (575)748-1288

**Email address:** dweaver@mec.com

### Field Representative

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**





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

## Application Data Report

10/24/2019

APD ID: 10400039502

Submission Date: 02/25/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - General

APD ID: 10400039502

Tie to previous NOS? Y

Submission Date: 02/25/2019

BLM Office: CARLSBAD

User: Deana Weaver

Title: Production Clerk

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMLC0029415B

Lease Acres: 1920

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: MACK ENERGY CORPORATION

Operator letter of designation:

### Operator Info

Operator Organization Name: MACK ENERGY CORPORATION

Operator Address: 11344 Lovington HWY

Zip: 88211

Operator PO Box:

Operator City: Artesia

State: NM

Operator Phone: (575)748-1288

Operator Internet Address: jerrys@mec.com

### Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: FREN

Pool Name: GLORIETA YESO

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Is the proposed well in a Helium production area? N

Use Existing Well Pad? YES

New surface disturbance? N

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:  
NOSLER 12 FEDERAL DB

Number: 4H

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town: 3.3 Miles

Distance to nearest well: 20 FT

Distance to lease line: 220 FT

Reservoir well spacing assigned acres Measurement: 120 Acres

Well plat: NOSLER\_12\_FEDERAL\_DB\_42H\_Plat\_20190926102241.pdf

Well work start Date: 11/01/2019

Duration: 20 DAYS

### Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 7347A

Reference Datum:

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce
SHL Leg #1	102 0	FNL	650	FEL	17S	31E	11	Aliquot NENE	32.85362 32	- 103.8338 335	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 029418 B	397 9	0	0	
KOP Leg #1	102 0	FNL	650	FEL	17S	31E	11	Aliquot NENE	32.85362 32	- 103.8338 335	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 029418 B	397 9	0	0	
PPP Leg #1	990	FNL	100	FWL	17S	31E	12	Aliquot NWN W	32.85370 95	- 103.8313 92	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 029415 B	- 116 4	514 3	514 3	

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

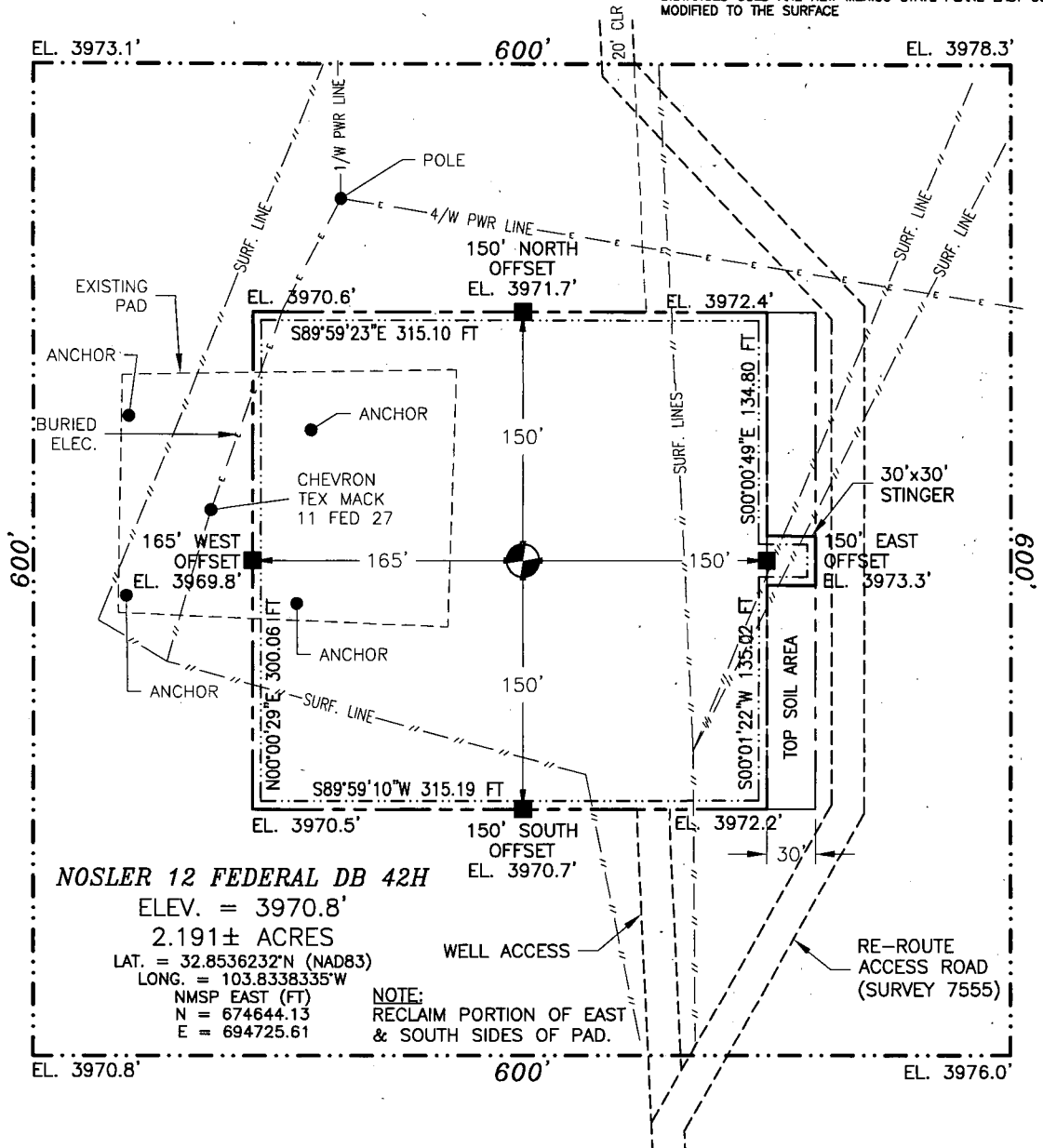
Well Number: 42H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce
EXIT Leg #1	990	FNL	142 0	FEL	17S	31E	12	Aliquot NWNE	32.85373 3	- 103.8191 402	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 029415 B	- 201 8	102 91	599 7	
BHL Leg #1	990	FNL	132 1	FEL	17S	31E	12	Aliquot NWNE	32.85373 35	- 103.8188 179	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 029415 B	- 201 8	102 91	599 7	

CONFIDENTIAL

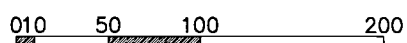
SECTION 11, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
**SITE MAP**

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE



**NOSLER 12 FEDERAL DB 42H**  
ELEV. = 3970.8'  
2.191± ACRES  
LAT. = 32.8536232°N (NAD83)  
LONG. = 103.8338335°W  
NMSP EAST (FT)  
N = 674644.13  
E = 694725.61

NOTE: RECLAIM PORTION OF EAST & SOUTH SIDES OF PAD.

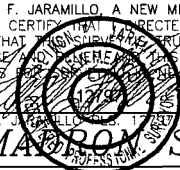


SCALE 1" = 100'

**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF STATE HIGHWAY 82 AND CR 124 (SUPEE) GO SOUTHWEST ON STATE HIGHWAY 82 FOR APPROX. 3.6 MILES, GO NORTHWEST ON 20' CALICHE LEASE ROAD FOR APPROX. 0.3 OF A MILE, CONTINUE ON 20' CALICHE LEASE ROAD IN A NORTH-NORTHEAST DIRECTION FOR APPROX. 1.7 MILES, CONTINUE EAST ON 20' CALICHE LEASE ROAD APPROX. 0.4 OF A MILE, CONTINUE NORTH ON 20' CALICHE LEASE ROAD FOR APPROX. 0.5 OF A MILE, LOCATION IS APPROX. 100' WEST.

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I PREPARED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS OF THE NEW MEXICO SURVEYING ACT.



9/9/19  
DATE

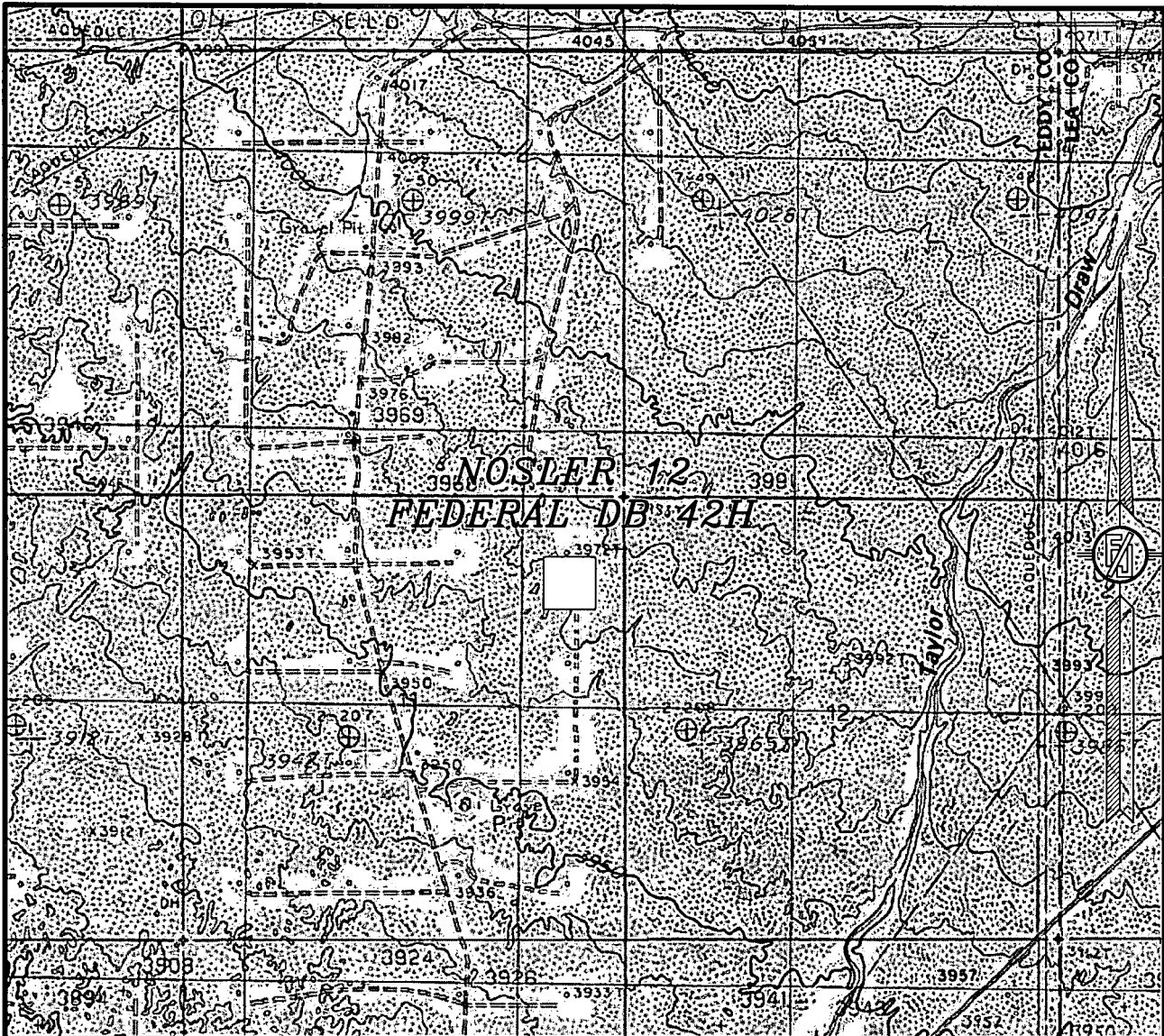
**MACK ENERGY CORPORATION**  
**NOSLER 12 FEDERAL DB 42H**  
**LOCATED 1020 FT. FROM THE NORTH LINE**  
**AND 650 FT. FROM THE EAST LINE OF**  
**SECTION 11, TOWNSHIP 17 SOUTH,**  
**RANGE 31 EAST, N.M.P.M.**  
**EDDY COUNTY, STATE OF NEW MEXICO**

SEPTEMBER 5, 2019

SURVEY NO. 7347A

**MACK SURVEYING, INC.** 301 SOUTH CANAL (575) 234-3341 **CARLSBAD, NEW MEXICO**

SECTION 11, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.  
 EDDY COUNTY, STATE OF NEW MEXICO  
 LOCATION VERIFICATION MAP



USGS QUAD MAP:  
 MALJAMAR

NOT TO SCALE

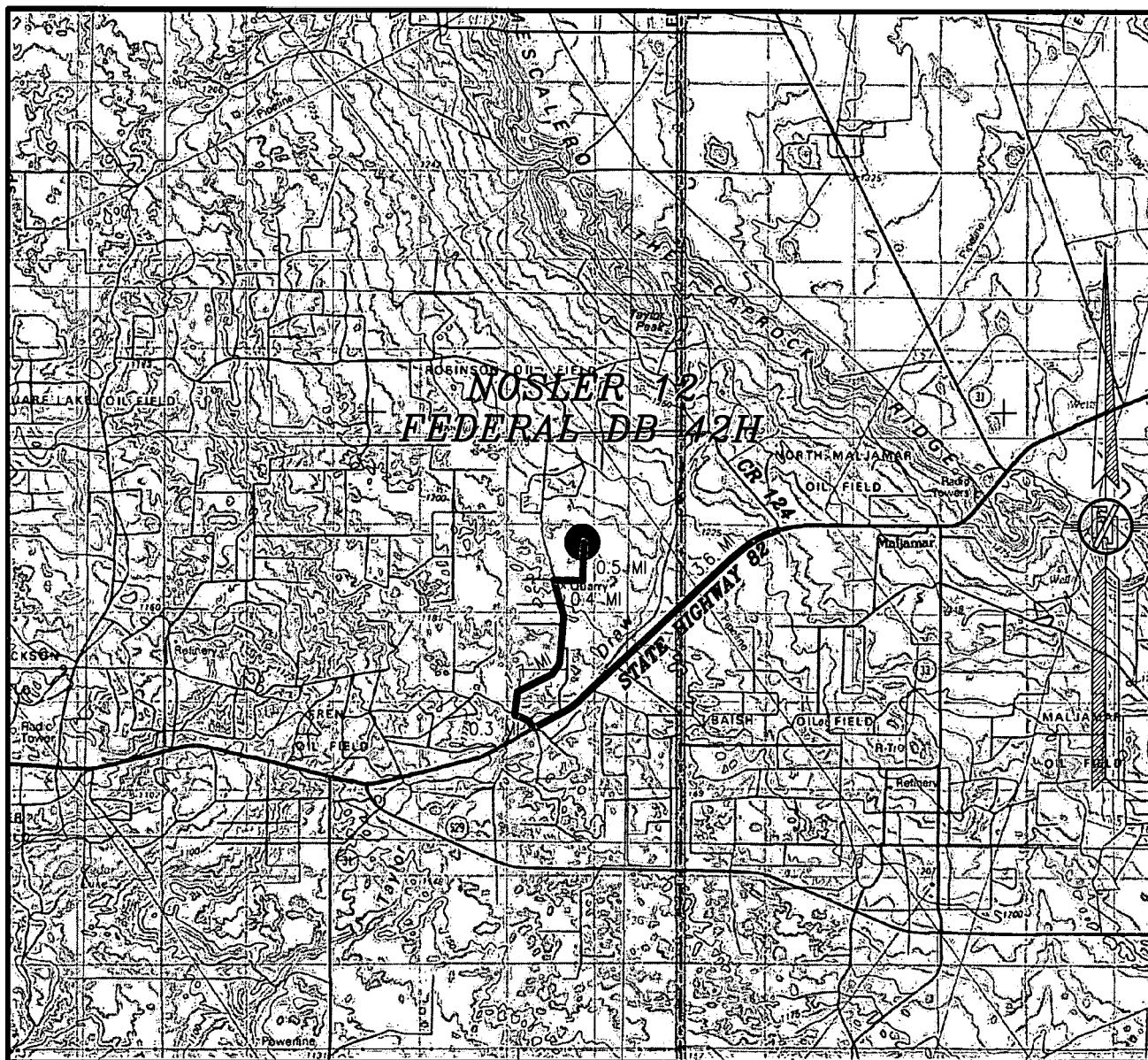
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 EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 5, 2019

SURVEY NO. 7347A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 11, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF STATE HIGHWAY 82 AND CR 124 (SUPEE) GO SOUTHWEST ON STATE HIGHWAY 82 FOR APPROX. 3.6 MILES, GO NORTHWEST ON 20' CALICHE LEASE ROAD FOR APPROX. 0.3 OF A MILE, CONTINUE ON 20' CALICHE LEASE ROAD IN A NORTH-NORTHEAST DIRECTION FOR APPROX. 1.7 MILES, CONTINUE EAST ON 20' CALICHE LEASE ROAD APPROX. 0.4 OF A MILE, CONTINUE NORTH ON 20' CALICHE LEASE ROAD FOR APPROX. 0.5 OF A MILE. LOCATION IS APPROX. 100' WEST.

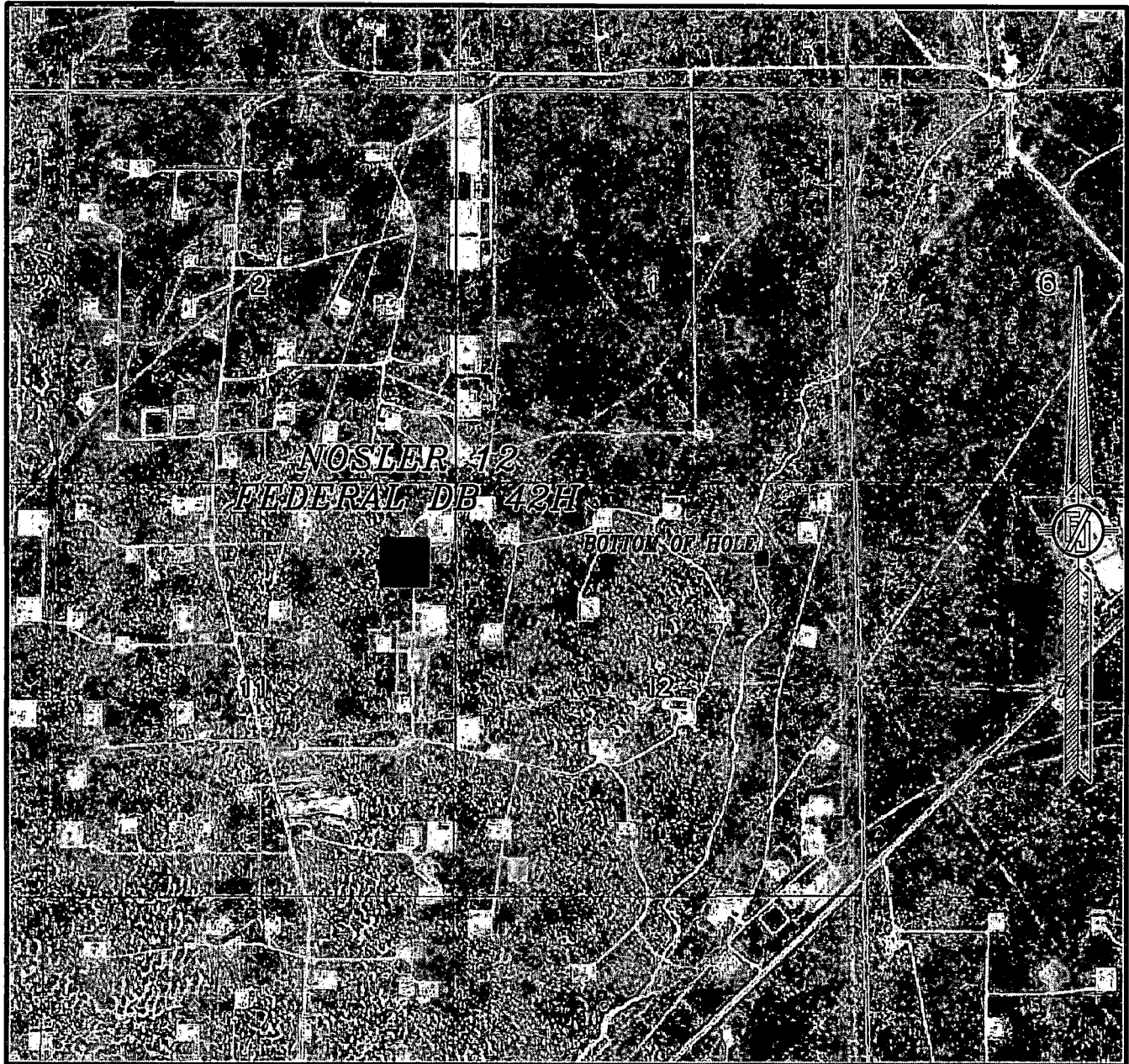
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EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 5, 2019

SURVEY NO. 7347A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 11, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
AERIAL PHOTO



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
NOVEMBER 2017

**MACK ENERGY CORPORATION**  
**NOSLER 12 FEDERAL DB 42H**  
LOCATED 1020 FT. FROM THE NORTH LINE  
AND 650 FT. FROM THE EAST LINE OF  
SECTION 11, TOWNSHIP 17 SOUTH,  
RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

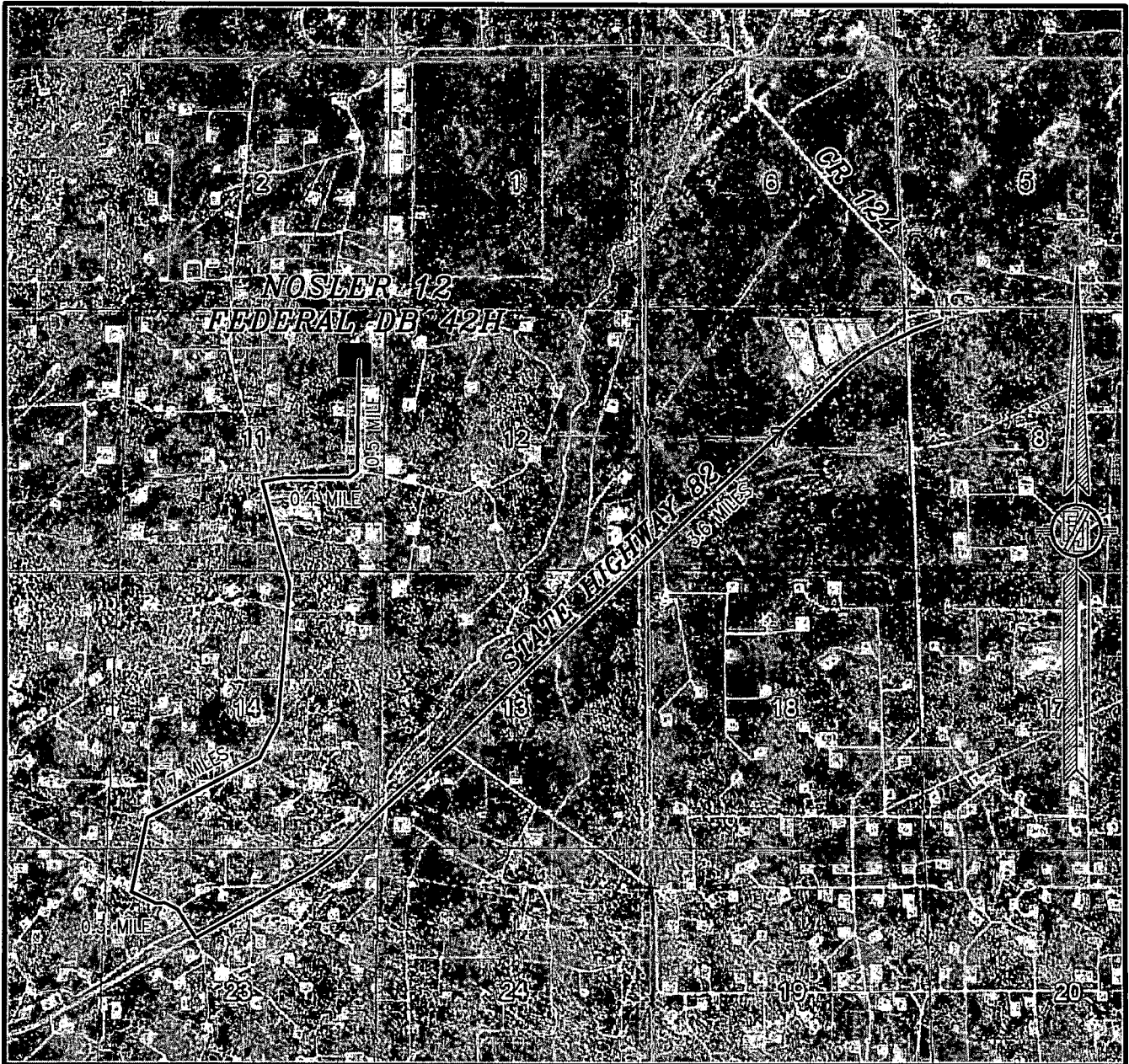
SEPTEMBER 5, 2019

SURVEY NO. 7347A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO



11, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
ACCESS AERIAL ROUTE MAP



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
NOVEMBER 2017

**MACK ENERGY CORPORATION**  
**NOSLER 12 FEDERAL DB 42H**  
**LOCATED 1020 FT. FROM THE NORTH LINE**  
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**SECTION 11, TOWNSHIP 17 SOUTH,**  
**RANGE 31 EAST, N.M.P.M.**  
**EDDY COUNTY, STATE OF NEW MEXICO**

SEPTEMBER 5, 2019

*SURVEY NO. 7347A*

*MADRON SURVEYING, INC.* 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*





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

## Drilling Plan Data Report

10/24/2019

APD ID: 10400039502

Submission Date: 02/25/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	QUATERNARY	3979	0	0	ALLUVIUM	NONE	N
2	BASE OF SALT	2105	1874	1874	SALT	NONE	N
3	YATES	1921	2058	2058	SILTSTONE	NATURAL GAS,OIL	N
4	SEVEN RIVERS	1622	2357	2357	SILTSTONE,DOLOMITE	NATURAL GAS,OIL	N
5	QUEEN	1001	2978	2978	SILTSTONE	NATURAL GAS,OIL	N
6	GRAYBURG	577	3402	3402	SILTSTONE,DOLOMITE	NATURAL GAS,OIL	N
7	SAN ANDRES	262	3717	3717	DOLOMITE	NATURAL GAS,OIL	N
8	GLORIETA	-1244	5223	5223	SILTSTONE	NATURAL GAS,OIL	Y
9	YESO	-1317	5296	5296	SILTSTONE	NATURAL GAS,OIL	Y

### Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 10290

Equipment: Rotating Head, Mud-Gas Separator

Requesting Variance? NO

Variance request:

**Testing Procedure:** 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.

**Choke Diagram Attachment:**

choke\_manifold\_diagram\_20190225095912.pdf

choke\_manifold\_20190225095922.pdf

**BOP Diagram Attachment:**

bop\_diagram\_20190225095933.pdf

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

choke\_manifold\_diagram\_20190225095912.pdf

choke\_manifold\_20190225095922.pdf

bop\_diagram\_20190225095933.pdf

### Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	800	0	800			800	J-55	48	ST&C	1.852	4.587	BUOY	13.217	BUOY	4.74
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2000	0	2000			2000	J-55	36	ST&C	2.023	6.499	BUOY	6.414	BUOY	7.04
3	PRODUCTION	8.75	7.0	NEW	API	N	0	6450	0	6450			6450	L-80	26	LT&C	1.773	2.46	BUOY	7.442	BUOY	2.453
4	PRODUCTION	8.75	5.5	NEW	API	N	6450	10291	6450	6450			3841	L-80	17	BUTT	1.965	2.675	BUOY	6.29	BUOY	2.631

### Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

### Casing Design Assumptions and Worksheet(s):

Tubing Head Running Procedure\_20190225100713.pdf

Nosler\_12\_Fed\_DB\_42H\_Surface\_Csg\_20190926095228.pdf

**Operator Name:** MACK ENERGY CORPORATION

**Well Name:** NOSLER 12 FEDERAL DB

**Well Number:** 42H

#### Casing Attachments

---

**Casing ID:** 2      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Nosler\_12\_Fed\_DB\_42H\_Inter.\_Csg\_20190926095413.pdf

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**Casing ID:** 3      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Nosler\_12\_Fed\_DB\_42H\_Production\_Csg\_20190926095848.pdf

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**Casing ID:** 4      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Nosler\_12\_Fed\_DB\_42H\_Production\_Csg\_20190926095836.pdf

---

#### Section 4 - Cement

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead	790	0	790	535	1.73	13.5	556	100	Class C+4% PF20+1% PF+0.125#/skPF 29+ .4 PF45	20bbbs Gelled Water, 50sx of 11# Scavenger Cement
SURFACE	Tail		0	790	200	1.34	14.8		100	Class C + 1% PF 1	20bbbs gelled water 50sx of 11# scavenger cemetrn
INTERMEDIATE	Lead	2000	0	2000	485	1.73	13.5	674	100	Class C+ 4% PF20+1% PF1+0.125#/sk PF29+.4% PF45	20bbbs gelled water, 50sx of 11# scavenger cement
INTERMEDIATE	Tail		0	2000	200	1.33	14.8		100	Class C+.1 PF1	20bbbs gelled water 50sx of 11# scavenger cement
PRODUCTION	Lead	4700	0	1029 1	305	1.82	12.6	676	35	36/65 Perlite/C5% PF44+6% PF20+.2%PF13+ 3ppsPF 42+.4ppsPF45+.1	0bbbs Gelled Water, 20bbbs Chemical Wash 50sx of 11# scavenger cement
PRODUCTION	Tail		0	1029 1	150	14.8	13		35	PVL+1.3%PF44( BWOW)+5% PF174+.5%PF50 6+0.1%PF153+.4 #PF45	50sx of 11# scavenger
PRODUCTION	Lead	4700	0	1029 1	1135	1.48	13	676	35	PVL+1.3%PF44 (BWOW) +5% PF174+.5%PF50 6+0.1%PF153+.4 #PF45	20bbbs gelled water, 20bbbs chemical wash, 50sx of 11# scavenger cement

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

### Section 5 - Circulating Medium

Mud System Type: Open

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: BOPE Brine Water

Describe the mud monitoring system utilized: Pason PVT with Pit Volume Recorder

### Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	800	SPUD MUD	8.5	10							
2000	1029 1	LSND/GEL	8.3	10	74.8	0.1	11		120000	15	
800	2000	LSND/GEL	8.3	10	74.8	0.1	11		120000	15	

### Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

None

List of open and cased hole logs run in the well:

CNL/FDC,CDL,DLL,GR

Coring operation description for the well:

None

**Operator Name:** MACK ENERGY CORPORATION

**Well Name:** NOSLER 12 FEDERAL DB

**Well Number:** 42H

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 3193

**Anticipated Surface Pressure:** 1873.66

**Anticipated Bottom Hole Temperature(F):** 95

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** NO

**Hydrogen sulfide drilling operations plan:**

### Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Tubing\_Head\_Running\_Procedure\_20190225105715.pdf

Nosler\_12\_Fed\_DB\_42H\_Gas\_Capture\_Plan\_20190910085354.pdf

Horizontal\_Well\_Plan\_20190910151426.pdf

Hydrogen\_Sulfide\_Drilling\_Operation\_Plan\_20190910153253.pdf

Horizontal\_Plan\_20190926101610.pdf

Drilling\_Program\_20190926101844.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

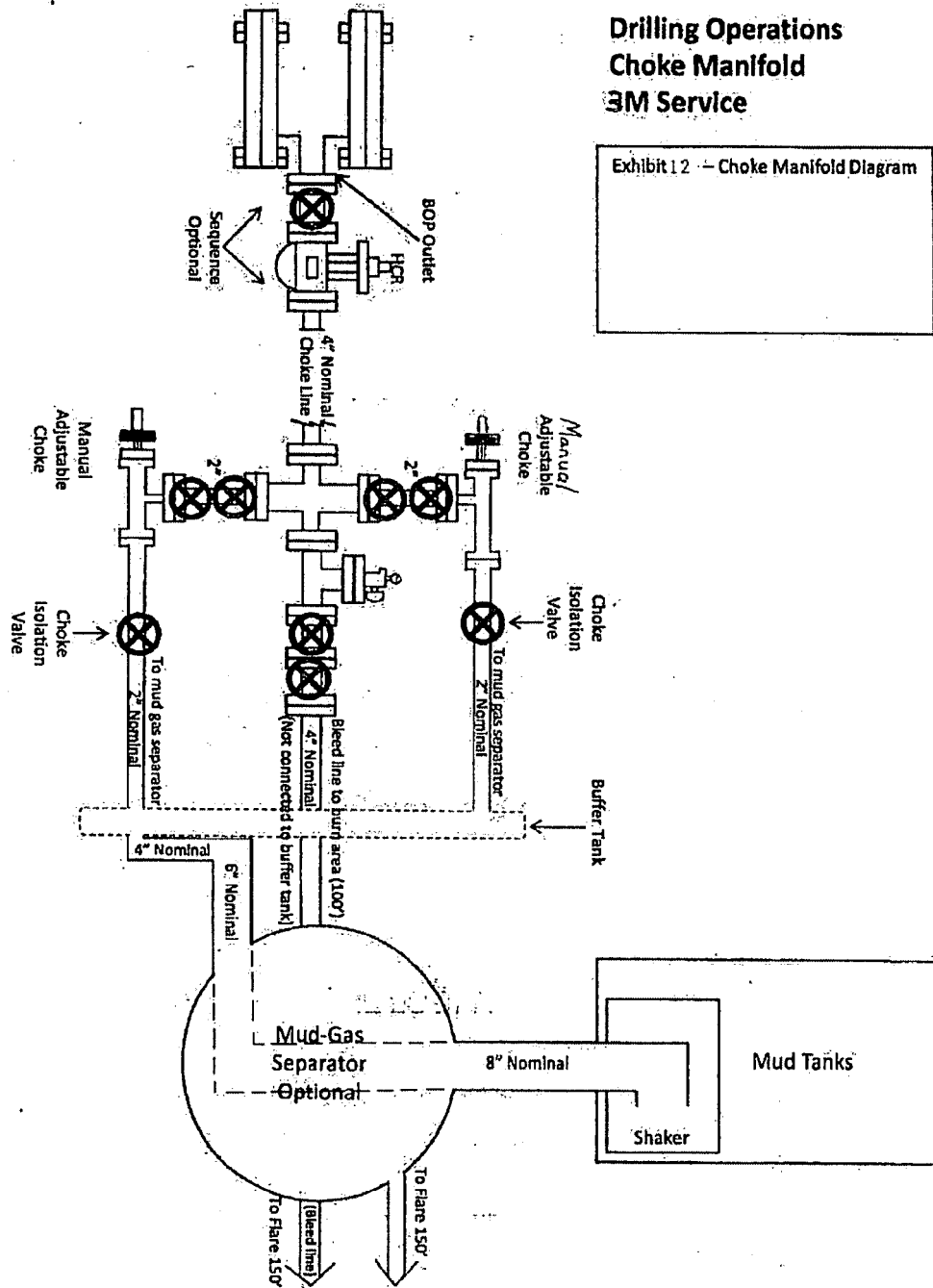
**Other Variance attachment:**

# Mack Energy Corporation

MANIFOLD SCHEMATIC  
Exhibit #12

## Drilling Operations Choke Manifold 3M Service

Exhibit 12 - Choke Manifold Diagram



# Mack Energy Corporation

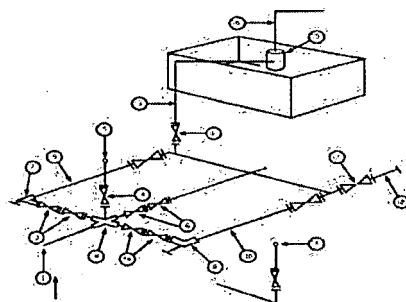
Exhibit #11

## MINIMUM CHOKE MANIFOLD

3,000, 5,000, and 10,000 PSI Working Pressure

3M will be used

3 MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

\* Location of separator optional

Below Substructure

### Minimum requirements

3,000 MWP

5,000 MWP

10,000 MWP

No.		I.D.	Nominal	Rating	I.D.	Nominal	Rating	I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure gauge			3,000			5,000			10,000
15	Gas Separator		2' x 5'			2' x 5'			2' x 5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

(1) Only one required in Class 3M

(2) Gate valves only shall be used for Class 10 M

(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

### EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

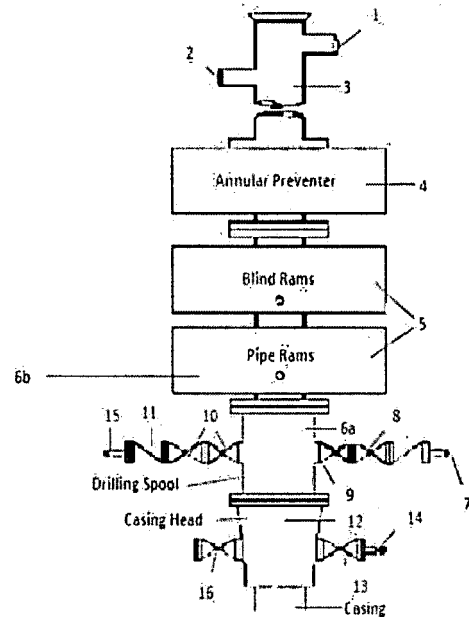
- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles; and replacements shall be available.
- alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees



**Mack Energy Corporation**  
**Minimum Blowout Preventer Requirements**  
**5000 psi Working Pressure**  
**13 5/8 inch - 5 MWP**  
**11 Inch - 5 MWP**

**Stack Requirements**

NO.	Items	Min. I.D.	Min. Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a. above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"



**OPTIONAL**

16	Flanged Valve	1 13/16	
----	---------------	---------	--

**CONTRACTOR'S OPTION TO FURNISH:**

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

**MEC TO FURNISH:**

1. Bradenhead or casing head and side valves.
2. Wear bushing, if required.

10.

ME

**GENERAL NOTES:**

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position.
4. Chokes will be positioned so as not to hamper or delay changing of choke beans.

- Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 89210  
District III  
1000 Rio Brazos Road, Aztec, NM 874 1 0  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

GAS CAPTURE PLAN

Date: 9/5/2019

☒ Original

Operator & OGRID No.: Mack Energy Corporation - 013837

☐ Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC)

**Well(s)/Production Facility - Name of facility**

The well(s) that will be located at the production facility are shown in the table below

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Nösler 12 Fed DB 42H		Sec 11 T17S R31E	1020 FNL & 650 FEL	50		

**Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP Midstream and will be connected to DCP Midstream low/high pressure gathering system located in Chaves County, New Mexico. It will require 0 (existing) of pipeline to connect the facility to low/high pressure gathering system. Mack Energy Corporation provides (periodically) to DCP Midstream a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Mack Energy Corporation and DCP Midstream have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP Midstream Linam Ranch Processing Plant located in Sec. 6, Twn. 19S, Rng. 37E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

**Flowback Strategy**

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP Midstream system at that time. Based on current information, it is Mack Energy Corporation belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the Use Of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

**Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

• Power Generation - On lease

Only a portion of gas is consumed operating the generator, remainder of gas will be flared

Compressed Natural Gas - On lease

Gas flared would be minimal, but might be uneconomical to operate when gas volume declines

NGL Removal - On lease

Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

# Nosler 12 Federal DB 42H, Plan 1

<b>Operator</b> Mack Energy Corp	<b>Units</b> feet, °/100ft	14:04 Tuesday, September 10, 2019 Page 1 of 4
<b>Field</b> Fren	<b>County</b> Eddy	<b>Vertical Section Azimuth</b> 89.23
<b>Well Name</b> Nosler 12 Federal DB 42H	<b>State</b> New Mexico	<b>Survey Calculation Method</b> Minimum Curvature
<b>Plan</b> 1	<b>Country</b> USA	<b>Database</b> Access

<b>Location</b> SL: 1020 FNL & 650 FEL Section 11-T17S-R31E BHL: 990 FNL & 1321 FEL Section 12-T17S-31E	<b>Map Zone</b> UTM	<b>Lat Long Ref</b>
<b>Site</b>	<b>Surface X</b> 1998597.9	<b>Surface Long</b>
<b>Slot Name</b>	<b>Surface Y</b> 11927308.8	<b>Surface Lat</b>
<b>Well Number</b> 42H	<b>Surface Z</b> 3983.8	<b>Global Z Ref</b> Mean Sea Level
<b>Project</b>	<b>Ground Level</b> 3970.8	<b>Local North Ref</b> Grid
<b>UWI</b>		
<b>API</b>		
<b>MD/TVD Ref</b> KB		

## DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
*** TIE (at MD = 5143.00)										
5143.00	0.00	0.0	5143.00	0.00	0.00		0.00	1998597.90	11927308.80	-1159.20
5150.00	0.00	0.0	5150.00	0.00	0.00	0.00	0.00	1998597.90	11927308.80	-1166.20
5200.00	0.00	0.0	5200.00	0.00	0.00	0.00	0.00	1998597.90	11927308.80	-1216.20
*** KOP 8 DEGREES (at MD = 5243.00)										
5243.00	0.00	0.0	5243.00	0.00	0.00	0.00	0.00	1998597.90	11927308.80	-1259.20
5250.00	0.56	89.2	5250.00	0.00	0.03	8.00	0.03	1998597.93	11927308.80	-1266.20
5300.00	4.56	89.2	5299.94	0.03	2.27	8.00	2.27	1998600.17	11927308.83	-1316.14
5350.00	8.56	89.2	5349.60	0.11	7.98	8.00	7.98	1998605.88	11927308.91	-1365.80
5400.00	12.56	89.2	5398.75	0.23	17.14	8.00	17.14	1998615.04	11927309.03	-1414.95
5450.00	16.56	89.2	5447.13	0.40	29.70	8.00	29.71	1998627.60	11927309.20	-1463.33
5500.00	20.56	89.2	5494.52	0.61	45.61	8.00	45.62	1998643.51	11927309.41	-1510.72
5550.00	24.56	89.2	5540.68	0.87	64.79	8.00	64.80	1998662.69	11927309.67	-1556.88
5600.00	28.56	89.2	5585.40	1.17	87.14	8.00	87.15	1998685.04	11927309.97	-1601.60
5650.00	32.56	89.2	5628.44	1.51	112.56	8.00	112.57	1998710.46	11927310.31	-1644.64
5700.00	36.56	89.2	5669.61	1.89	140.91	8.00	140.92	1998738.81	11927310.69	-1685.81
5750.00	40.56	89.2	5708.70	2.31	172.07	8.00	172.08	1998769.97	11927311.11	-1724.90
5800.00	44.56	89.2	5745.52	2.77	205.88	8.00	205.90	1998803.78	11927311.57	-1761.72
5850.00	48.56	89.2	5779.90	3.25	242.17	8.00	242.19	1998840.07	11927312.05	-1796.10
5900.00	52.56	89.2	5811.65	3.77	280.77	8.00	280.80	1998878.67	11927312.57	-1827.85
*** 55 DEGREE TANGENT (at MD = 5930.50)										
5930.50	55.00	89.2	5829.67	4.10	305.38	8.00	305.40	1998903.28	11927312.90	-1845.87
5950.00	55.00	89.2	5840.86	4.32	321.35	0.00	321.38	1998919.25	11927313.12	-1857.06
6000.00	55.00	89.2	5869.54	4.87	362.30	0.00	362.33	1998960.20	11927313.67	-1885.74
6050.00	55.00	89.2	5898.22	5.42	403.26	0.00	403.29	1999001.16	11927314.22	-1914.42
6100.00	55.00	89.2	5926.90	5.97	444.21	0.00	444.25	1999042.11	11927314.77	-1943.10
*** 12 DEGREE BUILD (at MD = 6130.50)										
6130.50	55.00	89.2	5944.39	6.31	469.19	0.00	469.23	1999067.09	11927315.11	-1960.59
6150.00	57.34	89.2	5955.25	6.52	485.39	12.00	485.43	1999083.29	11927315.32	-1971.45
6200.00	63.34	89.2	5979.98	7.11	528.81	12.00	528.86	1999126.71	11927315.91	-1996.18
6250.00	69.34	89.2	6000.03	7.72	574.58	12.00	574.64	1999172.48	11927316.52	-2016.23
6300.00	75.34	89.2	6015.19	8.36	622.20	12.00	622.26	1999220.10	11927317.16	-2031.39
6350.00	81.34	89.2	6025.29	9.02	671.14	12.00	671.20	1999269.04	11927317.82	-2041.49
6400.00	87.34	89.2	6030.22	9.69	720.87	12.00	720.94	1999318.77	11927318.49	-2046.42
*** LANDING POINT (at MD = 6426.33)										
6426.33	90.50	89.2	6030.72	10.04	747.20	12.00	747.26	1999345.10	11927318.84	-2046.92
6450.00	90.50	89.2	6030.51	10.36	770.86	0.00	770.93	1999368.76	11927319.16	-2046.71
6500.00	90.50	89.2	6030.08	11.03	820.85	0.00	820.93	1999418.75	11927319.83	-2046.28
6550.00	90.50	89.2	6029.64	11.70	870.85	0.00	870.92	1999468.75	11927320.50	-2045.84

# Nosler 12 Federal DB 42H, Plan 1

<b>Operator</b> Mack Energy Corp	<b>Units</b> feet, °/100ft	14:04 Tuesday, September 10, 2019 Page 2 of 4
<b>Field</b> Fren	<b>County</b> Eddy	<b>Vertical Section Azimuth</b> 89.23
<b>Well Name</b> Nosler 12 Federal DB 42H	<b>State</b> New Mexico	<b>Survey Calculation Method</b> Minimum Curvature
<b>Plan</b> 1	<b>Country</b> USA	<b>Database Access</b>

<b>Location</b> SL: 1020 FNL & 650 FEL Section 11-T17S-R31E BHL: 990 FNL & 1321 FEL Section 12-T17S-31E	<b>Map Zone</b> UTM	<b>Lat Long Ref</b>
<b>Site</b>	<b>Surface X</b> 1998597.9	<b>Surface Long</b>
<b>Slot Name</b>	<b>Surface Y</b> 11927308.8	<b>Surface Lat</b>
<b>Well Number</b> 42H	<b>Surface Z</b> 3983.8	<b>Global Z Ref</b> Mean Sea Level
<b>Project</b>	<b>Ground Level</b> 3970.8	<b>Local North Ref</b> Grid
<b>UWI</b>		
<b>API</b>		
<b>MD/TVD Ref</b> KB		

## DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
6600.00	90.50	89.2	6029.20	12.38	920.84	0.00	920.92	1999518.74	11927321.18	-2045.40
6650.00	90.50	89.2	6028.77	13.05	970.83	0.00	970.92	1999568.73	11927321.85	-2044.97
6700.00	90.50	89.2	6028.33	13.72	1020.83	0.00	1020.92	1999618.73	11927322.52	-2044.53
6750.00	90.50	89.2	6027.90	14.39	1070.82	0.00	1070.92	1999668.72	11927323.19	-2044.10
6800.00	90.50	89.2	6027.46	15.06	1120.81	0.00	1120.92	1999718.71	11927323.86	-2043.66
6850.00	90.50	89.2	6027.02	15.74	1170.81	0.00	1170.91	1999768.71	11927324.54	-2043.22
6900.00	90.50	89.2	6026.59	16.41	1220.80	0.00	1220.91	1999818.70	11927325.21	-2042.79
6950.00	90.50	89.2	6026.15	17.08	1270.79	0.00	1270.91	1999868.69	11927325.88	-2042.35
7000.00	90.50	89.2	6025.71	17.75	1320.79	0.00	1320.91	1999918.69	11927326.55	-2041.91
7050.00	90.50	89.2	6025.28	18.42	1370.78	0.00	1370.91	1999968.68	11927327.22	-2041.48
7100.00	90.50	89.2	6024.84	19.10	1420.78	0.00	1420.90	2000018.68	11927327.90	-2041.04
7150.00	90.50	89.2	6024.41	19.77	1470.77	0.00	1470.90	2000068.67	11927328.57	-2040.61
7200.00	90.50	89.2	6023.97	20.44	1520.76	0.00	1520.90	2000118.66	11927329.24	-2040.17
7250.00	90.50	89.2	6023.53	21.11	1570.76	0.00	1570.90	2000168.66	11927329.91	-2039.73
7300.00	90.50	89.2	6023.10	21.78	1620.75	0.00	1620.90	2000218.65	11927330.58	-2039.30
7350.00	90.50	89.2	6022.66	22.45	1670.74	0.00	1670.89	2000268.64	11927331.25	-2038.86
7400.00	90.50	89.2	6022.22	23.13	1720.74	0.00	1720.89	2000318.64	11927331.93	-2038.42
7450.00	90.50	89.2	6021.79	23.80	1770.73	0.00	1770.89	2000368.63	11927332.60	-2037.99
7500.00	90.50	89.2	6021.35	24.47	1820.72	0.00	1820.89	2000418.62	11927333.27	-2037.55
7550.00	90.50	89.2	6020.91	25.14	1870.72	0.00	1870.89	2000468.62	11927333.94	-2037.11
7600.00	90.50	89.2	6020.48	25.81	1920.71	0.00	1920.89	2000518.61	11927334.61	-2036.68
7650.00	90.50	89.2	6020.04	26.49	1970.71	0.00	1970.88	2000568.61	11927335.29	-2036.24
7700.00	90.50	89.2	6019.61	27.16	2020.70	0.00	2020.88	2000618.60	11927335.96	-2035.81
7750.00	90.50	89.2	6019.17	27.83	2070.69	0.00	2070.88	2000668.59	11927336.63	-2035.37
7800.00	90.50	89.2	6018.73	28.50	2120.69	0.00	2120.88	2000718.59	11927337.30	-2034.93
7850.00	90.50	89.2	6018.30	29.17	2170.68	0.00	2170.88	2000768.58	11927337.97	-2034.50
7900.00	90.50	89.2	6017.86	29.85	2220.67	0.00	2220.87	2000818.57	11927338.65	-2034.06
7950.00	90.50	89.2	6017.42	30.52	2270.67	0.00	2270.87	2000868.57	11927339.32	-2033.62
8000.00	90.50	89.2	6016.99	31.19	2320.66	0.00	2320.87	2000918.56	11927339.99	-2033.19
8050.00	90.50	89.2	6016.55	31.86	2370.65	0.00	2370.87	2000968.55	11927340.66	-2032.75
8100.00	90.50	89.2	6016.11	32.53	2420.65	0.00	2420.87	2001018.55	11927341.33	-2032.31
8150.00	90.50	89.2	6015.68	33.21	2470.64	0.00	2470.86	2001068.54	11927342.01	-2031.88
8200.00	90.50	89.2	6015.24	33.88	2520.63	0.00	2520.86	2001118.53	11927342.68	-2031.44
8250.00	90.50	89.2	6014.81	34.55	2570.63	0.00	2570.86	2001168.53	11927343.35	-2031.01
8300.00	90.50	89.2	6014.37	35.22	2620.62	0.00	2620.86	2001218.52	11927344.02	-2030.57
8350.00	90.50	89.2	6013.93	35.89	2670.62	0.00	2670.86	2001268.52	11927344.69	-2030.13
8400.00	90.50	89.2	6013.50	36.56	2720.61	0.00	2720.85	2001318.51	11927345.36	-2029.70

# Nosler 12 Federal DB 42H, Plan 1

<b>Operator</b> Mack Energy Corp	<b>Units</b> feet, °/100ft	14:04 Tuesday, September 10, 2019 Page 3 of 4
<b>Field</b> Fren	<b>County</b> Eddy	<b>Vertical Section Azimuth</b> 89:23
<b>Well Name</b> Nosler 12 Federal DB 42H	<b>State</b> New Mexico	<b>Survey Calculation Method</b> Minimum Curvature
<b>Plan</b> 1	<b>Country</b> USA	<b>Database</b> Access

<b>Location</b> SL: 1020 FNL & 650 FEL Section 11-T17S-R31E BHL: 990 FNL & 1321 FEL Section 12-T17S-31E	<b>Map Zone</b> UTM	<b>Lat Long Ref</b>
<b>Site</b>	<b>Surface X</b> 1998597.9	<b>Surface Long</b>
<b>Slot Name</b>	<b>Surface Y</b> 11927308.8	<b>Surface Lat</b>
<b>Well Number</b> 42H	<b>Surface Z</b> 3983.8	<b>Global Z Ref</b> Mean Sea Level
<b>Project</b>	<b>Ground Level</b> 3970.8	<b>Local North Ref</b> Grid
<b>UWI</b>		
<b>API</b>		
<b>MD/TVD Ref</b> KB		

## DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
8450.00	90.50	89.2	6013.06	37.24	2770.60	0.00	2770.85	2001368.50	11927346.04	-2029.26
8500.00	90.50	89.2	6012.62	37.91	2820.60	0.00	2820.85	2001418.50	11927346.71	-2028.82
8550.00	90.50	89.2	6012.19	38.58	2870.59	0.00	2870.85	2001468.49	11927347.38	-2028.39
8600.00	90.50	89.2	6011.75	39.25	2920.58	0.00	2920.85	2001518.48	11927348.05	-2027.95
8650.00	90.50	89.2	6011.32	39.92	2970.58	0.00	2970.85	2001568.48	11927348.72	-2027.52
8700.00	90.50	89.2	6010.88	40.60	3020.57	0.00	3020.84	2001618.47	11927349.40	-2027.08
8750.00	90.50	89.2	6010.44	41.27	3070.56	0.00	3070.84	2001668.46	11927350.07	-2026.64
8800.00	90.50	89.2	6010.01	41.94	3120.56	0.00	3120.84	2001718.46	11927350.74	-2026.21
8850.00	90.50	89.2	6009.57	42.61	3170.55	0.00	3170.84	2001768.45	11927351.41	-2025.77
8900.00	90.50	89.2	6009.13	43.28	3220.54	0.00	3220.84	2001818.44	11927352.08	-2025.33
8950.00	90.50	89.2	6008.70	43.96	3270.54	0.00	3270.83	2001868.44	11927352.76	-2024.90
9000.00	90.50	89.2	6008.26	44.63	3320.53	0.00	3320.83	2001918.43	11927353.43	-2024.46
9050.00	90.50	89.2	6007.82	45.30	3370.53	0.00	3370.83	2001968.43	11927354.10	-2024.02
9100.00	90.50	89.2	6007.39	45.97	3420.52	0.00	3420.83	2002018.42	11927354.77	-2023.59
9150.00	90.50	89.2	6006.95	46.64	3470.51	0.00	3470.83	2002068.41	11927355.44	-2023.15
9200.00	90.50	89.2	6006.52	47.32	3520.51	0.00	3520.82	2002118.41	11927356.12	-2022.72
9250.00	90.50	89.2	6006.08	47.99	3570.50	0.00	3570.82	2002168.40	11927356.79	-2022.28
9300.00	90.50	89.2	6005.64	48.66	3620.49	0.00	3620.82	2002218.39	11927357.46	-2021.84
9350.00	90.50	89.2	6005.21	49.33	3670.49	0.00	3670.82	2002268.39	11927358.13	-2021.41
9400.00	90.50	89.2	6004.77	50.00	3720.48	0.00	3720.82	2002318.38	11927358.80	-2020.97
9450.00	90.50	89.2	6004.33	50.67	3770.47	0.00	3770.81	2002368.37	11927359.47	-2020.53
9500.00	90.50	89.2	6003.90	51.35	3820.47	0.00	3820.81	2002418.37	11927360.15	-2020.10
9550.00	90.50	89.2	6003.46	52.02	3870.46	0.00	3870.81	2002468.36	11927360.82	-2019.66
9600.00	90.50	89.2	6003.03	52.69	3920.45	0.00	3920.81	2002518.35	11927361.49	-2019.23
9650.00	90.50	89.2	6002.59	53.36	3970.45	0.00	3970.81	2002568.35	11927362.16	-2018.79
9700.00	90.50	89.2	6002.15	54.03	4020.44	0.00	4020.81	2002618.34	11927362.83	-2018.35
9750.00	90.50	89.2	6001.72	54.71	4070.44	0.00	4070.80	2002668.34	11927363.51	-2017.92
9800.00	90.50	89.2	6001.28	55.38	4120.43	0.00	4120.80	2002718.33	11927364.18	-2017.48
9850.00	90.50	89.2	6000.84	56.05	4170.42	0.00	4170.80	2002768.32	11927364.85	-2017.04
9900.00	90.50	89.2	6000.41	56.72	4220.42	0.00	4220.80	2002818.32	11927365.52	-2016.61
9950.00	90.50	89.2	5999.97	57.39	4270.41	0.00	4270.80	2002868.31	11927366.19	-2016.17
10000.00	90.50	89.2	5999.53	58.07	4320.40	0.00	4320.79	2002918.30	11927366.87	-2015.73
10050.00	90.50	89.2	5999.10	58.74	4370.40	0.00	4370.79	2002968.30	11927367.54	-2015.30
10100.00	90.50	89.2	5998.66	59.41	4420.39	0.00	4420.79	2003018.29	11927368.21	-2014.86
10150.00	90.50	89.2	5998.23	60.08	4470.38	0.00	4470.79	2003068.28	11927368.88	-2014.43
10200.00	90.50	89.2	5997.79	60.75	4520.38	0.00	4520.79	2003118.28	11927369.55	-2013.99
10250.00	90.50	89.2	5997.35	61.43	4570.37	0.00	4570.78	2003168.27	11927370.23	-2013.55

# Nosler 12 Federal DB 42H, Plan 1

<b>Operator</b> Mack Energy Corp	<b>Units</b> feet, °/100ft	14:04 Tuesday, September 10, 2019 Page 4 of 4
<b>Field</b> Fren	<b>County</b> Eddy	<b>Vertical Section Azimuth</b> 89.23
<b>Well Name</b> Nosler 12 Federal DB 42H	<b>State</b> New Mexico	<b>Survey Calculation Method</b> Minimum Curvature
<b>Plan</b> 1	<b>Country</b> USA	<b>Database</b> Access

<b>Location</b> SL: 1020 FNL & 650 FEL Section 11-T17S-R31E BHL: 990 FNL & 1321 FEL Section 12-T17S-31E	<b>Map Zone</b> UTM	<b>Lat Long Ref</b>
<b>Site</b>	<b>Surface X</b> 1998597.9	<b>Surface Long</b>
<b>Slot Name</b>	<b>Surface Y</b> 11927308.8	<b>Surface Lat</b>
<b>Well Number</b> 42H	<b>Surface Z</b> 3983.8	<b>Global Z Ref</b> Mean Sea Level
<b>Project</b>	<b>Ground Level</b> 3970.8	<b>Local North Ref</b> Grid

## DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	%/100ft	ft	ft	ft	ft
*** TD (at MD = 10290.03)										
10290.03	90.50	89.2	5997.00	61.96	4610.40	0.00	4610.82	2003208.30	11927370.76	-2013.20

**Mack Energy Corporation**  
**Onshore Order #6**  
**Hydrogen Sulfide Drilling Operation Plan**

**I. HYDROGEN SULFIDE 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<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S 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<sub>2</sub>S on 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<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. The concentrations of H<sub>2</sub>S of wells in this area from surface to TD are low enough that a contingency plan is not required.

**II. H<sub>2</sub>S SAFETY EQUIPMENT AND SYSTEMS**

Note: All H<sub>2</sub>S 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<sub>2</sub>S.

**1. Well Control Equipment:**

- A. Flare line.
- B. Choke manifold.
- 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 & rotating head.

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

- A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

**3. H2S detection and monitoring equipment:**

- A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

**4. Visual warning systems:**

- A. Wind direction indicators as shown on well site diagram (Exhibit #8).
- B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

**5. Mud program:**

- A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

**6. Metallurgy:**

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- B. All elastomers used for packing and seals shall be H2S trim.

**7. Communication:**

- A. Radio communications in company vehicles including cellular telephone and 2-way radio.
- B. Land line (telephone) communication at Office.

**8. Well testing:**

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely 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 H2S environment will use the closed chamber method of testing.



Attached to Form 3160-3  
Mack Energy Corporation  
Nosler 12 Federal DB #42H NMLC-0029415B  
SHL : 1020 FNL & 650 FEL, NENE, Sec. 11 T17S R31E  
BHL : 990 FNL & 1321 FEL, NWNE, Sec. 12 T17S R31E  
Eddy County, NM

**EXHIBIT #7**

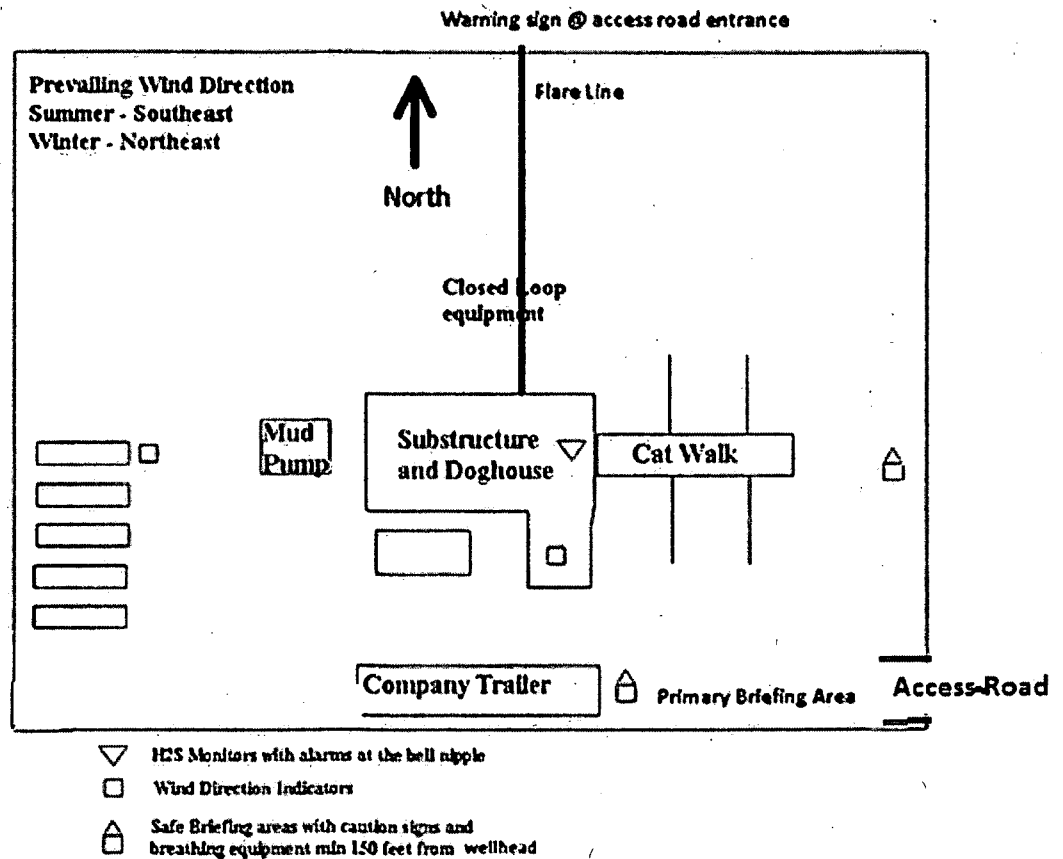
**WARNING**

**YOU ARE ENTERING AN H2S  
AUTHORIZED PERSONNEL ONLY**

1. BEARDS OR CONTACT LENSES NOT ALLOWED
2. HARD HATS REQUIRED
3. SMOKING IN DESIGNATED AREAS ONLY
4. BE WIND CONSCIOUS AT ALL TIMES
5. CHECK WITH MACK ENERGY FOREMAN AT OFFICE

**MACK ENERGY CORPORATION**

**1-575-748-1288**

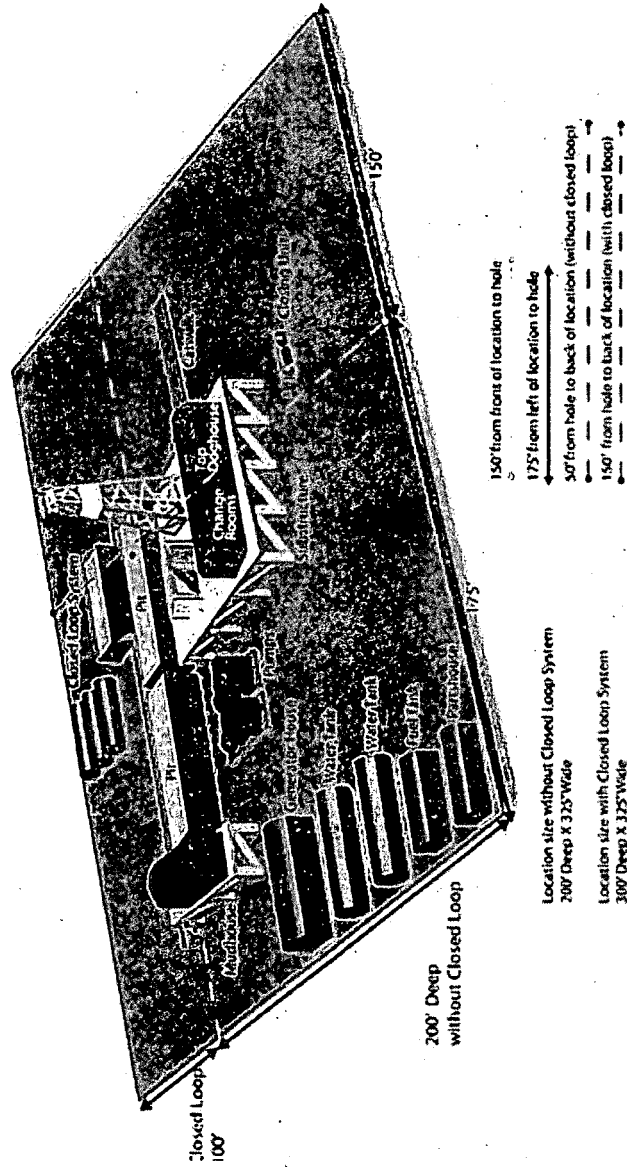


B. There will be no drill stem testing.

DRILLING LOCATION H2S SAFTY EQUIPMENT

Exhibit # 8

Location Layout



**Mack Energy Corporation Call List, Eddy County**

<b>Artesia (575)</b>	<b>Cellular</b>	<b>Office</b>
Jim Krogman.....	432-934-1596.....	748-1288
Emilio Martinez.....	432-934-7586.....	748-1288

**Agency Call List (575)****Artesia**

State Police.....	746-2703
City Police.....	746-2703
Sheriff's Office.....	746-9888
Ambulance.....	911
Fire Department.....	746-2701
LEPC (Local Emergency Planning Committee.....)	746-2122
NMOCD.....	748-1283

**Carlsbad**

State Police.....	885-3137
City Police.....	885-2111
Sheriff's Office.....	887-7551
Ambulance.....	911
Fire Department.....	885-2111
LEPC (Local Emergency Planning Committee.....)	887-3798
Bureau of Land Management.....	887-6544
New Mexico Emergency Response Commission.....	(505)476-9690
24 Hour.....	(505)827-9126
National Emergency Response Center (Washington).....	(800)424-8802

**Emergency Services**

Boots & Coots IWC.....	1-800-256-9688 or (281)931-8884
Cudd pressure Control.....	(915)699-0139 or (915)563-3356
Halliburton.....	746-2757
Par Five.....	748-9539
Flight For Life-Lubbock, TX.....	(806)743-9911
Aerocare-Lubbock, TX.....	(806)747-8923
Med Flight Air Amb-Albuquerque, NM.....	(505)842-4433
Lifeguard Air Med Svc. Albuquerque, NM.....	(505)272-3115

Intent ☐ XXX As Drilled ☐

API #		
Operator Name: <b>MACK ENERGY CORPORATION</b>	Property Name: <b>NOSLER 12 FEDERAL DB</b>	Well Number <b>42H</b>

Kick Off Point (KOP)

UL <b>A</b>	Section <b>11</b>	Township <b>17S</b>	Range <b>31E</b>	Lot	Feet <b>1020</b>	From N/S <b>NORTH</b>	Feet <b>650</b>	From E/W <b>EAST</b>	County <b>EDDY</b>
Latitude <b>32.536232</b>					Longitude <b>103.8338335</b>			NAD <b>83</b>	

First Take Point (FTP)

UL <b>D</b>	Section <b>12</b>	Township <b>17S</b>	Range <b>31E</b>	Lot	Feet <b>990</b>	From N/S <b>NORTH</b>	Feet <b>100</b>	From E/W <b>WEST</b>	County <b>EDDY</b>
Latitude <b>32.8537095</b>					Longitude <b>103.8313920</b>			NAD <b>83</b>	

Last Take Point (LTP)

UL <b>B</b>	Section <b>12</b>	Township <b>17S</b>	Range <b>31E</b>	Lot	Feet <b>990</b>	From N/S <b>NORTH</b>	Feet <b>1420</b>	From E/W <b>EAST</b>	County <b>EDDY</b>
Latitude <b>32.8537330</b>					Longitude <b>103.8191402</b>			NAD <b>83</b>	

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

Attached to Form 3160-3  
Mack Energy Corporation  
Nosler 12 Federal DB #42H NMLC-0029415B  
SHL : 1020 FNL & 650 FEL, NENE, Sec. 11 T17S R31E  
BHL : 990 FNL & 1321 FEL, NWNE, Sec. 12 T17S R31E  
Eddy County, NM

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## DRILLING PROGRAM

### 1. Geologic Name of Surface Formation

Quaternary

### 2. Estimated Tops of Important Geologic Markers:

Anhydrite	698'
Salt	883'
Base of Salt	1874'
Yates	2058'
Seven Rivers	2357'
Queen	2978'
Grayburg	3402'
San Andres	3717'
Glorieta	5223'
Yeso	5296'

### 3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150'	Fresh Water
Yates	2058'	Oil/Gas
Seven Rivers	2357'	Oil/Gas
Queen	2978'	Oil/Gas
Grayburg	3402'	Oil/Gas
San Andres	3717'	Oil/Gas
Glorieta	5223'	Oil/Gas
Yeso	5296'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 790' and circulating cement back to surface will protect the surface fresh water sand. Salt section and shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 1/2" production casing, sufficient cement will be pumped to circulate back to surface.

### 4. Casing Program:

**All Casing will be New API Approved Material**  
**MW=10 PPG in Design Factor Calculations**

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
17 1/2"	0-800'	13 3/8"	48#, J-55, ST&C, New, 1.852965/4.587334/4.74
12 1/4"	0-2000'	9 5/8"	36#, J-55, ST&C, New, 2.023237/6.499261/7.04

Attached to Form 3160-3  
Mack Energy Corporation  
Nosler 12 Federal DB #42H NMLC-0029415B  
SHL : 1020 FNL & 650 FEL, NENE, Sec. 11 T17S R31E  
BHL : 990 FNL & 1321 FEL, NWNE, Sec. 12 T17S R31E  
Eddy County, NM

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8 3/4"	0-6450'	7"	26#, L-80, LT&C, Buttress, New, 1.773102/2.460677/2.453522
8 3/4"	6450-10291'	5 1/2"	17#, L-80, Buttress, New, 1.966336/2.675448/2.630613

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##### 5. Cement Program:

13 3/8" Surface Casing: Lead 500sx, Class C + 4%PF20+1% PF1+0.25#/skPF29+.4% PF 45, yld 1.73, wt 13.5 ppg, 9.123 gals/sx, excess 100%. Tail: 200sx, Class C+1% PF1, yld 1.34, wt 14.8 ppg, 6.307 gals/sx, excess 100%

9 5/8" Intermediate Casing: Lead 485sx Class C + 4% PF20+1% PF1+0.125#/skPF29+.4% PF 45, yld 1.73, wt 13.5 ppg, 9.123gal/sx, excess 100%. Tail: 200sx, Class C+.1% PF1, yld 1.33, wt 14.8 ppg, 6.307 gals/sx, excess 100%

7" & 5 1/2" Production Casing: Stage 1- Tail: 1135sx, PVL+1.3% PF44(BWOW)+5% PF1 74+.5%PF506+0.1%PF153+.4# PF45 yld 1.48, wt 13 ppg, 7.57 gals/sx, excess 35%, Slurry Top 4,700', DV Tool @ 4,700'  
Stage 2- Lead: 305sx, 35/65 Perlite/C 5% PF44+6%PF20+.2% PF13+3ppsPF 42+.4ppsPF45+.125ppsPF29 yld 1.82, wt 12.9, 7.57gals/sx, 35% excess, Slurry Top Surface  
Tail: 150sx, PVL+1.3% PF44(BWOW)+5% PF174+.5%PF506+0.1%PF153+.4# PF45, yld 14.8, wt 13.0, 7.57gals/sx, 35% excess. Slurry Top 3,000'.

##### 6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #10 will consist of a double ram-type (3000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The 11" BOP will be nipped up on the 8 5/8" surface casing and tested by a 3<sup>rd</sup> party to 2000 psi used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with a minimum 2000 psi WP rating

##### 7. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of fresh and cut brine mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-800'	Fresh Water	8.5	28	N.C.
800-2000'	Cut Brine	9.1	29	N.C.
2000'-TD'	Cut Brine	9.1	29	N.C.

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

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Eddy County, NM

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**8. Auxiliary Well Control and Monitoring Equipment:**

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

**9. Logging, Testing and Coring Program:**

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log from T.D. to 8 5/8 casing shoe.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined at TD.

**10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:**

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 3193 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H<sub>2</sub>S may be present while drilling of the well; a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

**11. Anticipated Starting Date and Duration of Operations:**

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is November 1, 2019. Once commenced, the drilling operation should be finished in approximately 20 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

**Attachment to Exhibit #10  
NOTES REGARDING THE BLOWOUT PREVENTERS  
Nosler 12 Federal DB #42H  
Eddy County, New Mexico**

- 1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
- 2. Wear ring to be properly installed in head.
- 3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
- 4. All fittings to be flanged.
- 5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
- 6. All choke and fill lines to be securely anchored especially ends of choke lines.

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SHL : 1020 FNL & 650 FEL, NENE, Sec. 11 T17S R31E  
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Eddy County, NM

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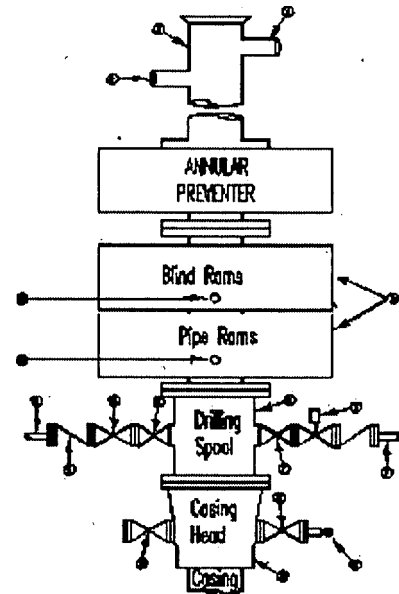
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.



**Mack Energy Corporation**  
**Minimum Blowout Preventer Requirements**  
 3000 psi Working Pressure  
 13 3/8 inch- 3 MWP  
 11 Inch - 3 MWP  
 EXHIBIT #10

**Stack Requirements**

NO.	Items	Min. I.D.	Min. Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"



**OPTIONAL**

16	Flanged Valve	1 13/16	
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**CONTRACTOR'S OPTION TO FURNISH:**

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

**MEC TO FURNISH:**

1. Bradenhead or casing head and side valves.
2. Wear bushing. If required.

10.

ME

**GENERAL NOTES:**

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans.

Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.

5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

# Mack Energy Corporation

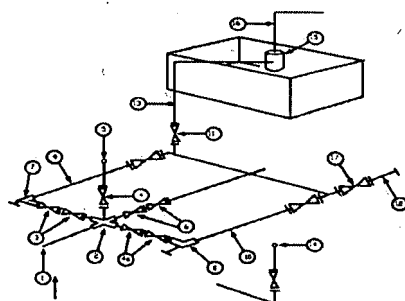
Exhibit #11

## MINIMUM CHOKE MANIFOLD

2,000, 5,000, and 10,000 PSI Working Pressure

3M will be used

2'MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

\* Location of separator optional

Below Substructure

### Minimum requirements

No.		3,000 MWP			5,000 MWP			10,000 MWP		
		I.D.	Nominal	Rating	I.D.	Nominal	Rating	I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x 5'			2' x 5'			2' x 5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

(1) Only one required in Class 2M

(2) Gate valves only shall be used for Class 10 M

(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

### EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

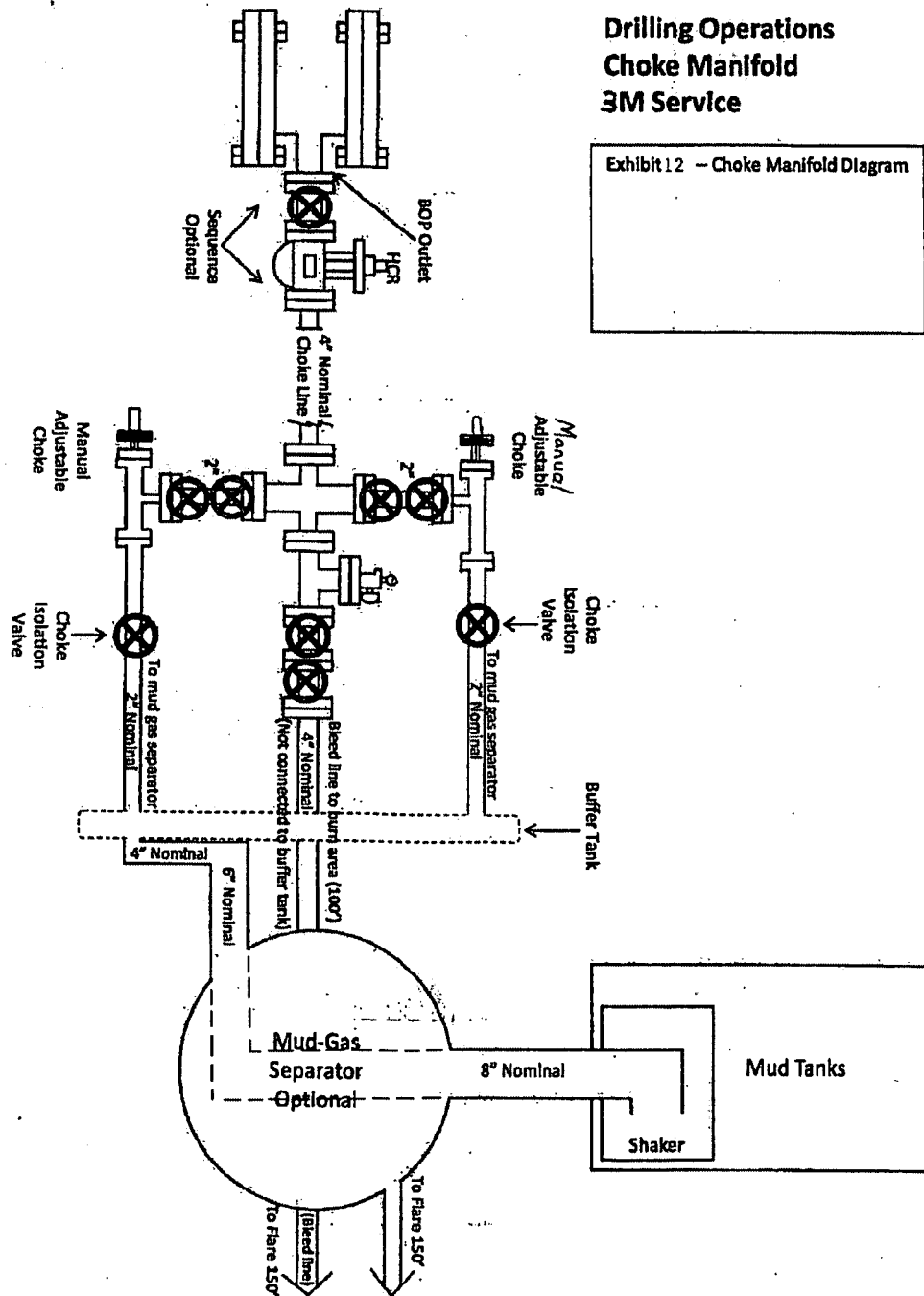
# Mack Energy Corporation

## MANIFOLD SCHEMATIC

Exhibit #12

### Drilling Operations Choke Manifold 3M Service

Exhibit 12 - Choke Manifold Diagram





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

## SUPO Data Report

10/24/2019

APD ID: 10400039502

Submission Date: 02/25/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: MACK ENERGY CORPORATION

Well Name: NOSLER 12 FEDERAL DB

Well Number: 42H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

REROUTE\_ACCESS\_NOSLER\_12\_FEDERAL\_DB\_42H\_20190926101944.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

### Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

REROUTE\_ACCESS\_NOSLER\_12\_FEDERAL\_DB\_42H\_20190926102016.pdf

New road type: TWO-TRACK

Length: 693.25 Feet

Width (ft.): 14

Max slope (%): 1

Max grade (%): 2

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

**New road access erosion control:** The maximum width of the running surface will be 14'. The road will be crowned and ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 3' wide. Water will be drainage patterns. The average grade will be less than 1%. No turnouts are planned, No culverts, cattleguard, gates, low water crossings or fence cuts are necessary. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM approved caliche pit located Sec. 19 T15S R29E and Sec 34 T15S R29E.

**New road access plan or profile prepared?** NO

**New road access plan attachment:**