

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

| | | |
|---|-----------------------------------|---|
| 1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER | | 5. Lease Serial No. |
| 1b. Type of Well: <input 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 type="checkbox"/> Multiple Zone | | 7. If Unit or CA Agreement, Name and No. |
| 2. Name of Operator [372043] | | 8. Lease Name and Well No. [328302] |
| 3a. Address | 3b. Phone No. (include area code) | 9. API Well No. 52/247/69969 |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone | | 10. Field and Pool, or Exploratory [98098] |
| 14. Distance in miles and direction from nearest town or post office* | | 11. Sec., T. R. M. or Blk. and Survey or Area |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) | | 12. County or Parish |
| 16. No of acres in lease | | 13. State |
| 17. Spacing Unit dedicated to this well | | |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. | | |
| 19. Proposed Depth | | |
| 20. BLM/BIA Bond No. in file | | |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) | | |
| 22. Approximate date work will start* | | |
| 23. Estimated duration | | |
| 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 | Name (Printed/Typed) | Date |
| Title | | |
| Approved by (Signature) | Name (Printed/Typed) | Date |
| Title | | |
| Office | | |

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

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

GCP Rec 09/17/2020

SL

(Continued on page 2)



32244242

*(Instructions on page 2)

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

| | |
|-----------------------------|-------------------------|
| OPERATOR'S NAME: | Tap Rock Operating LLC |
| WELL NAME & NO.: | Mulva Fed Com 218H |
| LOCATION: | Sec 27-24S-35E-NMP |
| COUNTY: | Eddy County, New Mexico |

COA

| | | | |
|----------------------|--|--|-------------------------------------|
| H2S | <input type="radio"/> Yes | <input checked="" 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 |
| Cave/Karst Potential | <input type="radio"/> Critical | | |
| Variance | <input type="radio"/> None | <input checked="" type="radio"/> Flex Hose | <input type="radio"/> Other |
| Wellhead | <input type="radio"/> Conventional | <input checked="" 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 checked="" type="checkbox"/> Fluid Filled | <input type="checkbox"/> Cement Squeeze | <input type="checkbox"/> Pilot Hole |
| Special Requirements | <input type="checkbox"/> Water Disposal | <input checked="" type="checkbox"/> COM | <input type="checkbox"/> Unit |

A. HYDROGEN SULFIDE

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately 550 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours

after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
3. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
 - Cement should tie-back at least 3
 - 00 feet into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **50 feet** on top of Capitan Reef top. If cement does not circulate see B.1.a, c-d above.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.

- Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - e. The results of the test shall be reported to the appropriate BLM office.

- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

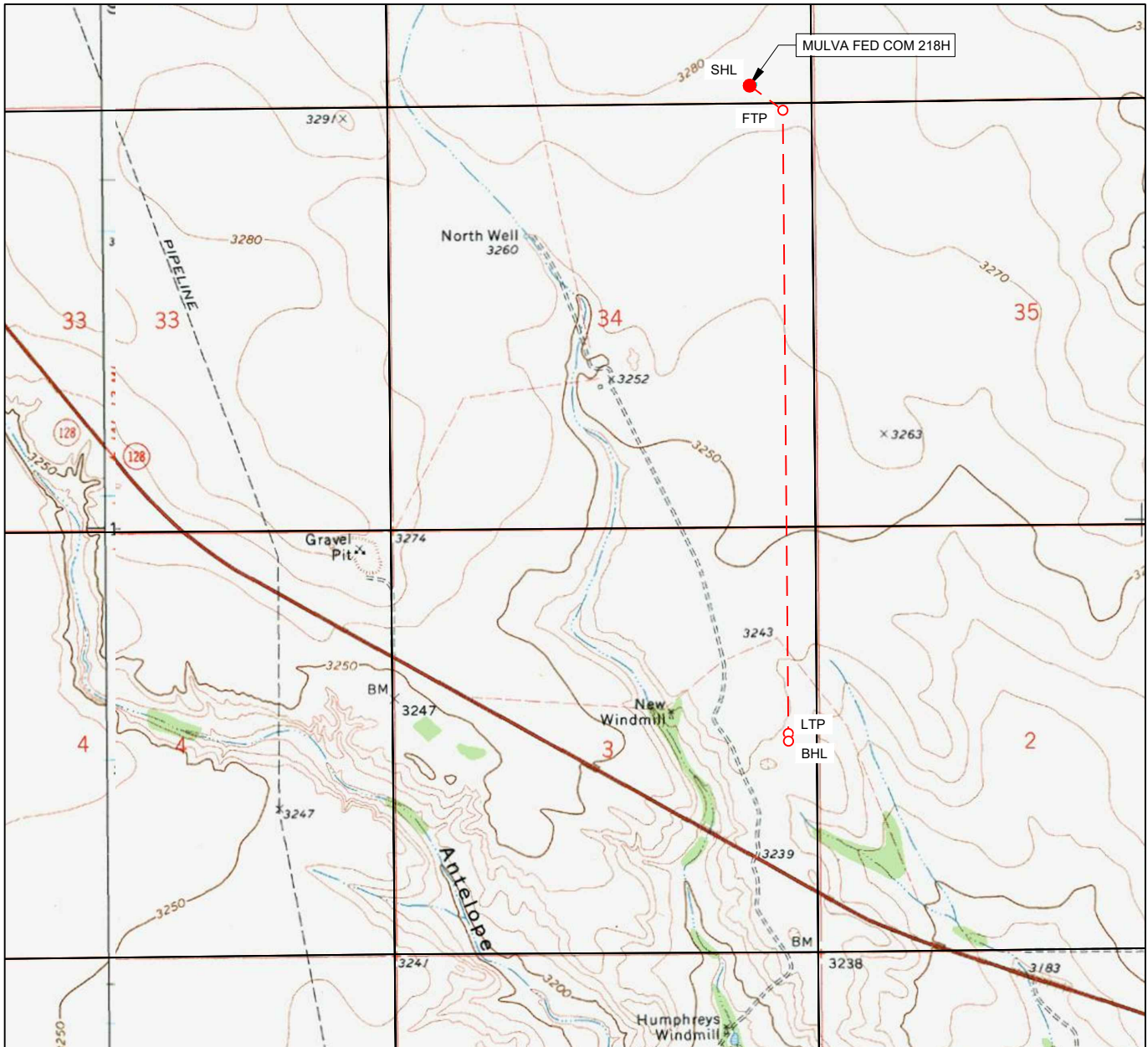
Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME & WELL NO.: MULVA FED COM 218H

SECTION 27 TWP 24-S RGE 35-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM ELEVATION 3278'
 DESCRIPTION 210' FSL & 741' FEL

LATITUDE N 32.1818157 LONGITUDE W 103.3492351



SCALE: 1" = 2000'
 0' 1000' 2000'

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

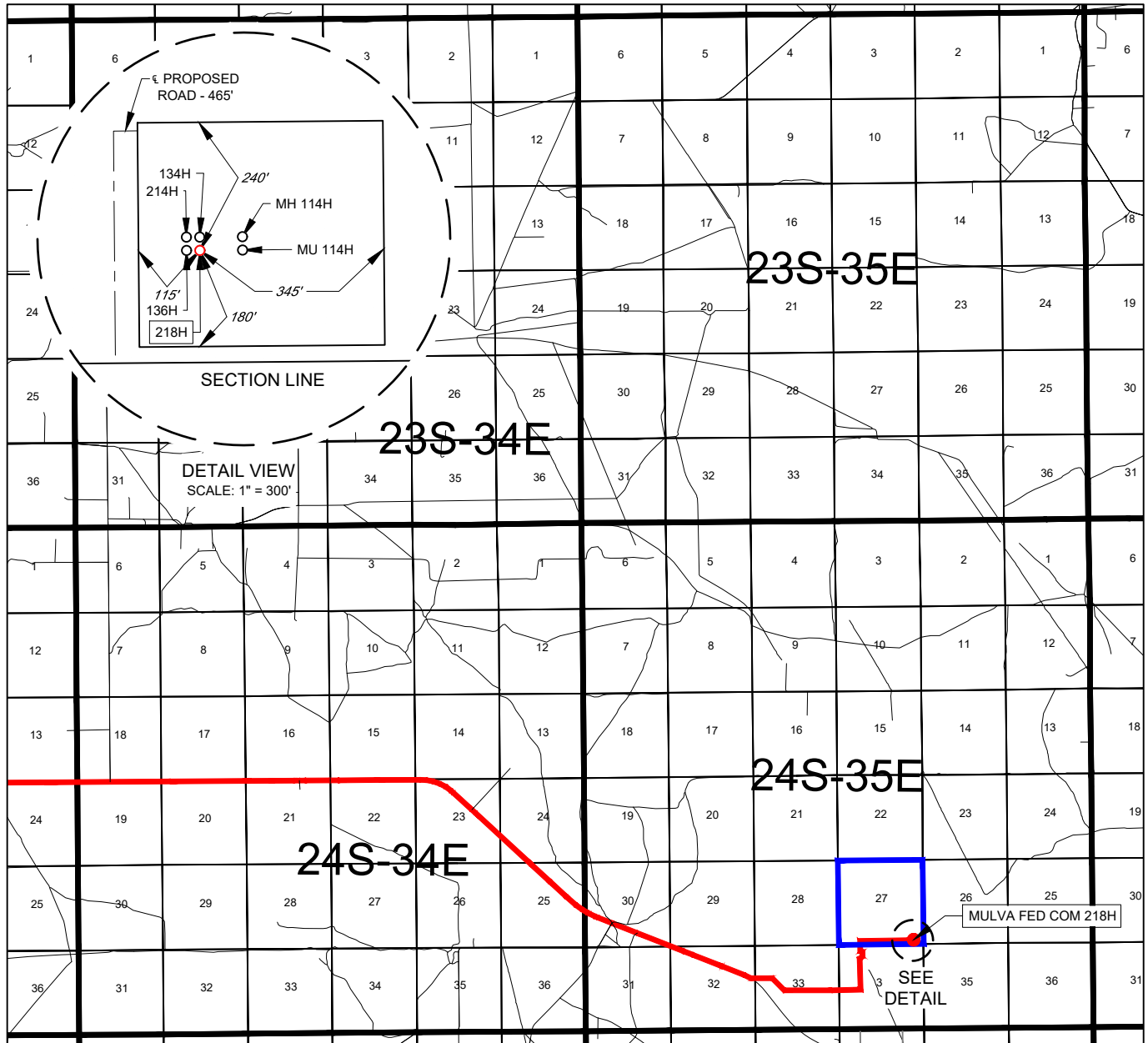
ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.



TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY

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 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

EXHIBIT 2 VICINITY MAP



LEASE NAME & WELL NO.: MULVA FED COM 218H

SECTION 27 TWP 24-S RGE 35-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM
 DESCRIPTION 210' FSL & 741' FEL

DISTANCE & DIRECTION

FROM INT. OF NM-128 & DELAWARE BASIN RD., GO EAST ON NM-128
 ±9.7 MILES, THENCE NORTHEAST (LEFT) ON A LEASE RD. ±3.1 MILES,
 THENCE NORTH (LEFT) ON A PROPOSED RD. ±465 FEET TO A POINT
 ±253 FEET NORTHWEST OF THE LOCATION.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY
 SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA
 PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR
 ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS
 TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW
 MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.



SCALE: 1" = 10000'
 0' 5000' 10000'



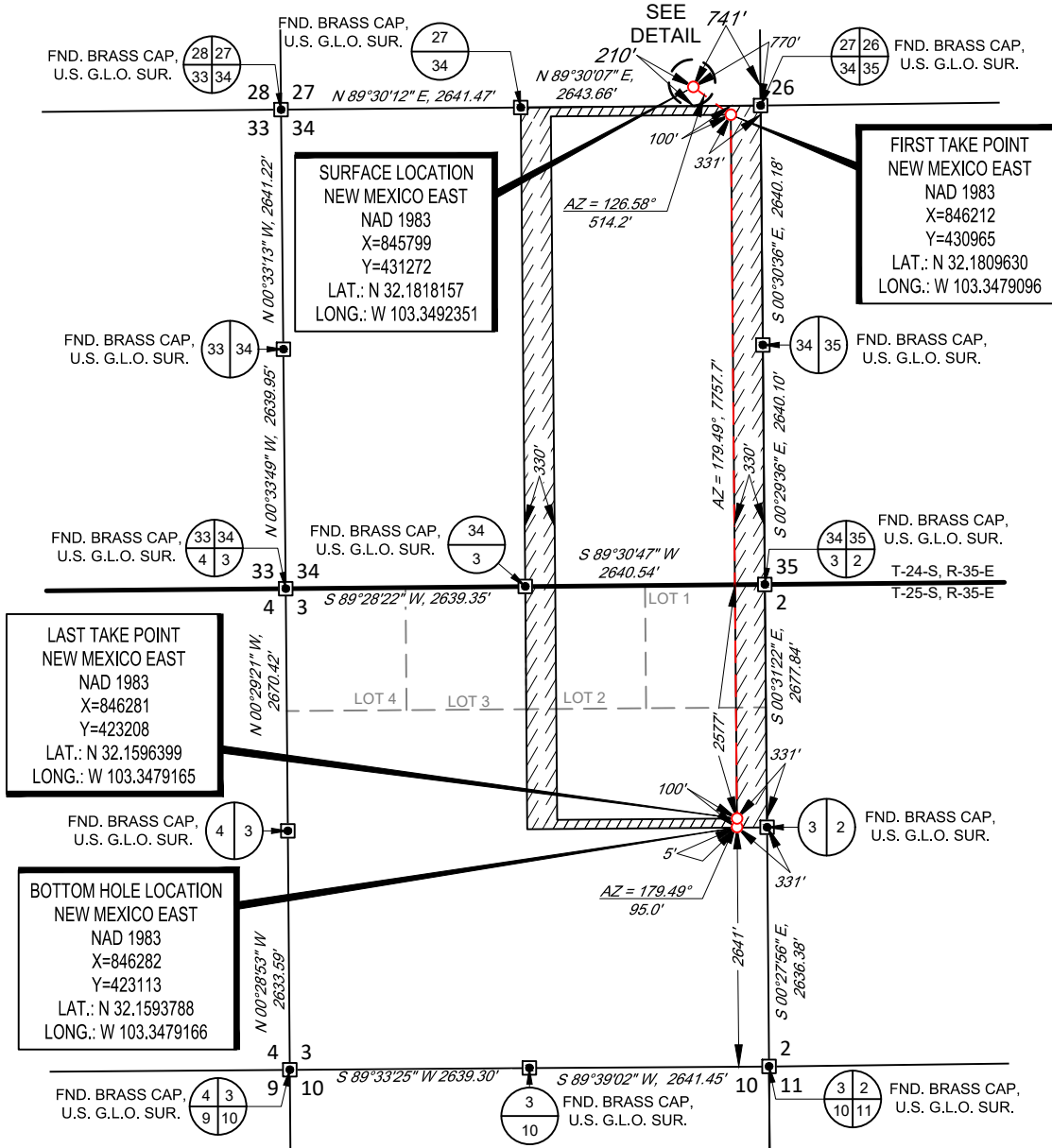
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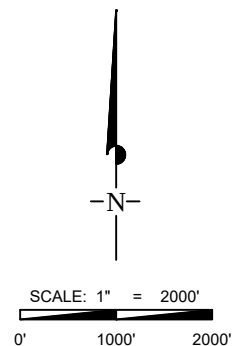
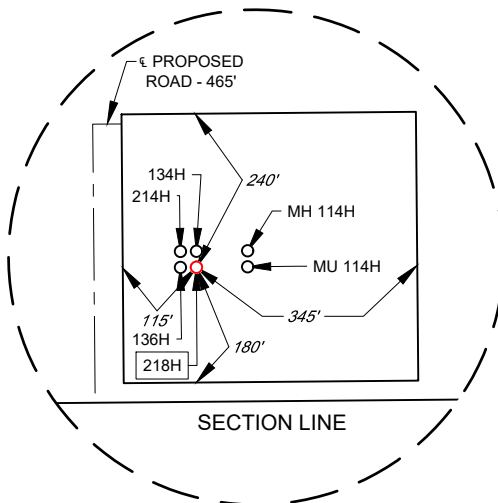


EXHIBIT 2A

SECTION 27, TOWNSHIP 24-S, RANGE 35-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



DETAIL VIEW
SCALE: 1" = 300'



LEASE NAME & WELL NO.: MULVA FED COM 218H

SECTION 27 TWP 24-S RGE 35-E SURVEY N.M.P.M.
COUNTY LEA STATE NM
DESCRIPTION 210' FSL & 741' FEL

DISTANCE & DIRECTION
FROM INT. OF NM-128 & DELAWARE BASIN RD., GO EAST ON NM-128
±9.7 MILES, THENCE NORTHEAST (LEFT) ON A LEASE RD. ±3.1 MILES,
THENCE NORTH (LEFT) ON A PROPOSED RD. ±465 FEET TO A POINT
±253 FEET NORTHWEST OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID
BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY
FEET.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND
UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF
SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC THIS CERTIFICATION IS MADE AND
LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS
NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.



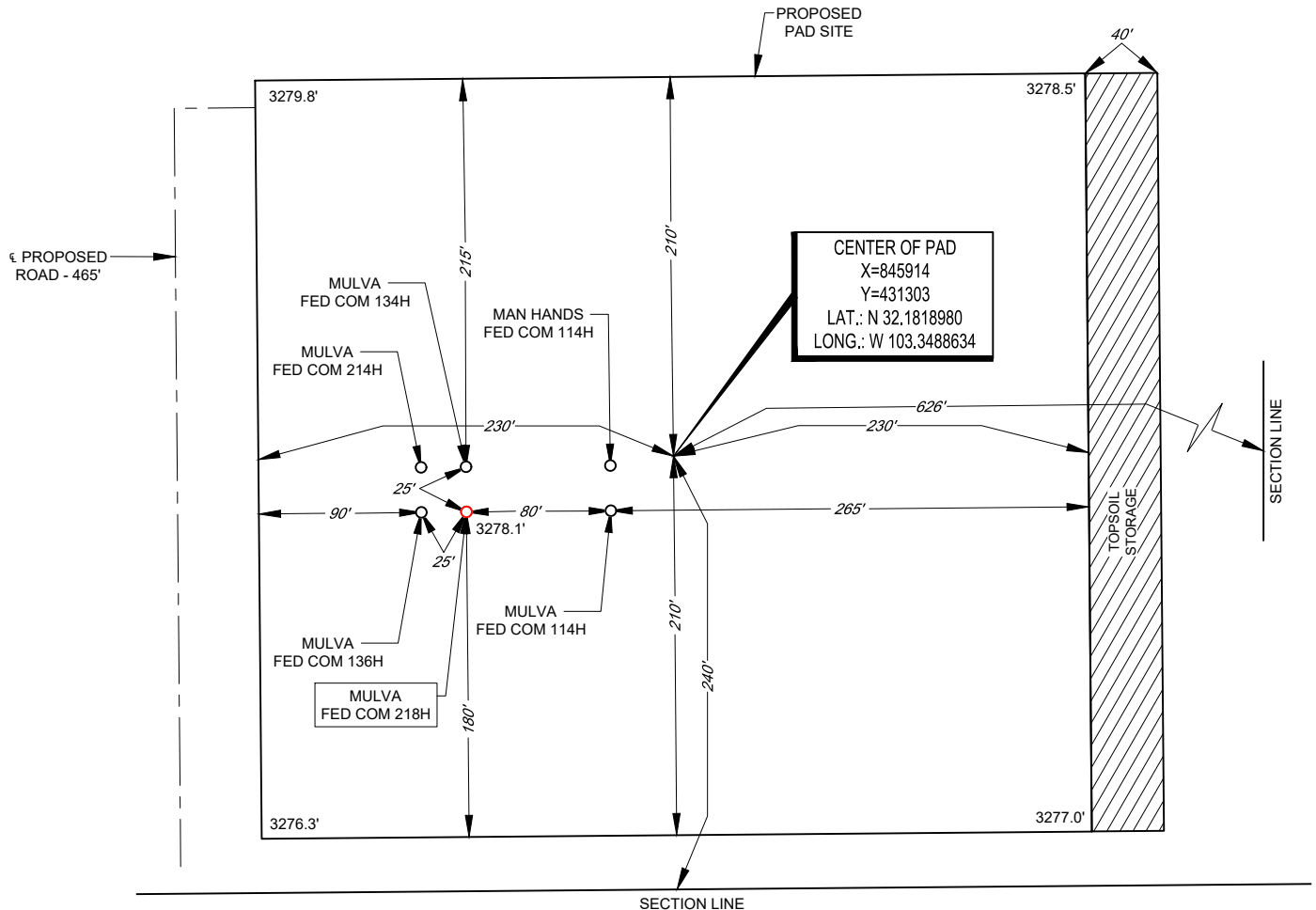
John Trevor Carnegie, P.S. No. 11401

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LOYALTY INNOVATION LEGACY
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EXHIBIT 2B



SECTION 27, TOWNSHIP 24-S, RANGE 35-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: MULVA FED COM 218H
218H LATITUDE N 32.1818157 218H LONGITUDE W 103.3492351
CENTER OF PAD IS 240' FSL & 626' FEL



John Trevor Carnegie, P.S. No. 11401

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET, ELEVATIONS USED ARE NAVD88, OBTAINED THROUGH AN OPUS SOLUTION.

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ORIGINAL DOCUMENT SIZE: 8.5" X 11"



SCALE: 1" = 100'
0' 50' 100'



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LOYALTY INNOVATION LEGACY

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Hydrogen Sulfide Drilling

Operations Plan

Tap Rock Resources

1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system and briefing areas
- Evacuation procedures, routes and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30min pressure demand air packs

2 H2S Detection and Alarm Systems:

- H2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure / cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary
- An audio alarm system will be installed on the derrick floor and in the doghouse

3 Windssocks and / Wind Streamers:

- Windssocks at mud pit area should be high enough to be visible
- Windssock on the rig floor and / top of doghouse should be high enough to be visible

4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
 - Green Flag – Normal Safe Operation Condition
 - Yellow Flag – Potential Pressure and Danger
 - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

5 Well Control Equipment:

- See Drilling Operations Plan Schematics

6 Communication:

- While working under masks chalkboards will be used for communications
- Hand signals will be used where chalk board is inappropriate
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.



7 Drilling Stem Testing:

- No DST cores are planned at this time

8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubulars good and other mechanical equipment

9 If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary

11 Emergency Contacts

| Emergency Contacts | | |
|----------------------------|--------------|-----|
| Carlsbad Police Department | 575.887.7551 | 911 |
| Carlsbad Medical Center | 575.887.4100 | 911 |
| Eddy County Fire Service | 575.628.5450 | 911 |
| Eddy County Sherriff | 575.887.7551 | 911 |
| Lea County Fire Service | 575.391.2983 | 911 |
| Lea County Sherriff | 575.396.3611 | 911 |
| Jal Police Department | 575.395.2121 | 911 |
| Jal Fire Department | 575.395.2221 | 911 |
| Tap Rock Resources | 720.772.5090 | |

H2S Diagram
Mulva E2E2 Pad
Tap Rock Operating, LLC
27-24S-35E
Lea County, NM

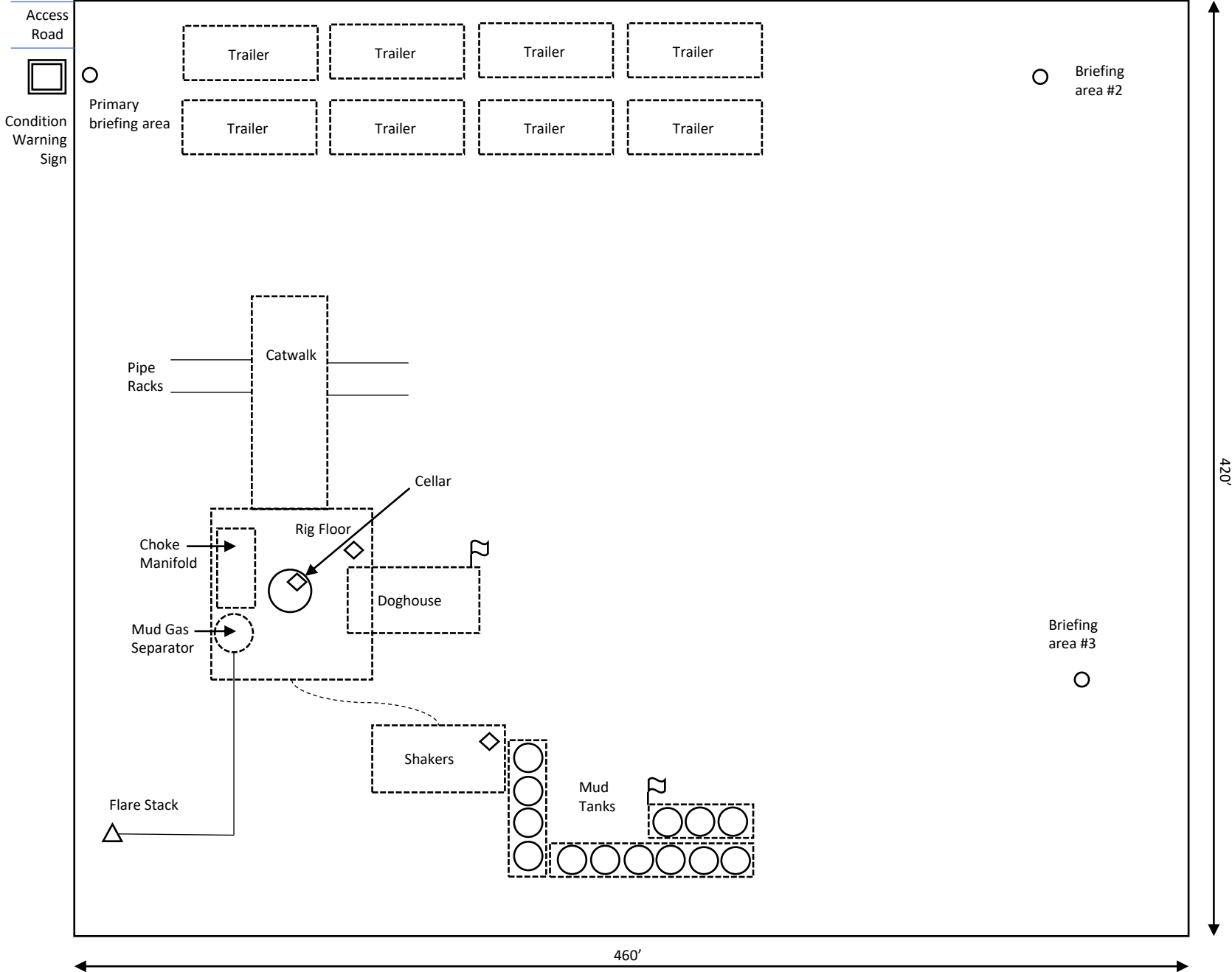
- N

↑
- Briefing Area
- Current Well
- △

Flare Stack
- ◇

H2S Monitor
- 🚩

Wind Indicator
- Mud Gas Separator

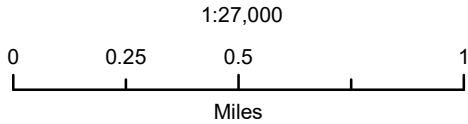


Tap Rock Operating, LLC

Mulva E2E2 Pad
H2S Contingency Plan:
Radius Map

Section 27, Township 24S, Range 35E
Lea County, New Mexico

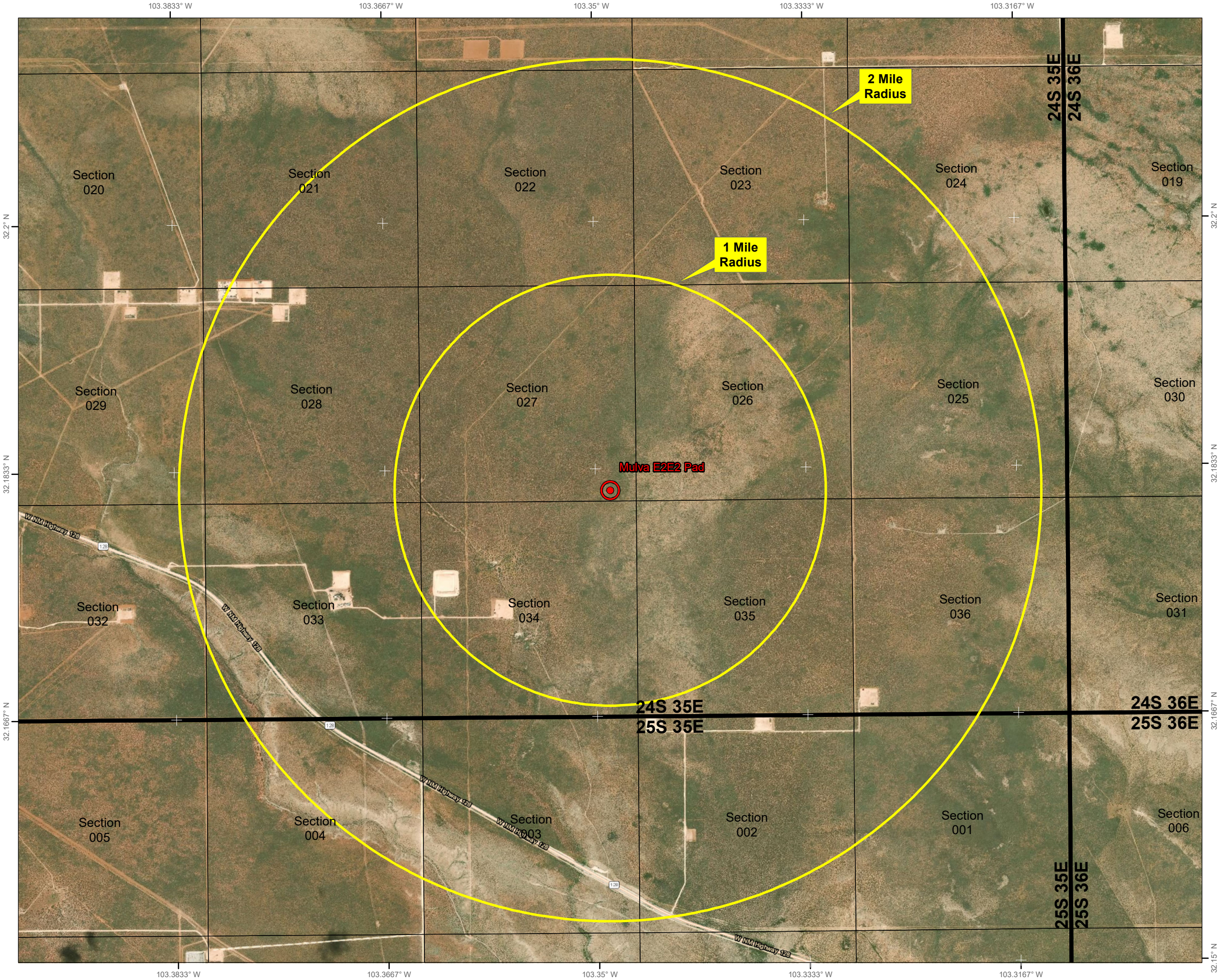
 Pad Center Point



NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., February 7, 2020
for Tap Rock Operating, LLC





Tap Rock Resources, LLC

**Lea County, NM (NAD 83 NME)
(Mulva Fed) Sec-27_T-24-S_R-35-E
Mulva Fed Com #218H**

OWB

Plan: Plan #2

Standard Planning Report

24 July, 2020



| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------|
| Database: | EDM 5000.15 Single User Db | Local Co-ordinate Reference: | Well Mulva Fed Com #218H |
| Company: | Tap Rock Resources, LLC | TVD Reference: | KB @ 3304.0usft |
| Project: | Lea County, NM (NAD 83 NME) | MD Reference: | KB @ 3304.0usft |
| Site: | (Mulva Fed) Sec-27_T-24-S_R-35-E | North Reference: | Grid |
| Well: | Mulva Fed Com #218H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OWB | | |
| Design: | Plan #2 | | |

| | | | |
|--------------------|-----------------------------|----------------------|----------------|
| Project | Lea County, NM (NAD 83 NME) | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | New Mexico Eastern Zone | | |

| | | | | | | |
|-----------------------|-----|----------------------------------|-----------------|------------|-------------------|--------|
| Site | | (Mulva Fed) Sec-27_T-24-S_R-35-E | | | | |
| Site Position: | | Northing: | 431,446.00 usft | Latitude: | 32° 10' 56.609 N | |
| From: | Map | Easting: | 841,909.00 usft | Longitude: | 103° 21' 42.490 W | |
| Position Uncertainty: | | 0.0 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | 0.52 ° |

| Well | Mulva Fed Com #218H | | | | | |
|----------------------|---------------------|--------------|---------------------|-----------------|---------------|-------------------|
| Well Position | +N/-S | -174.0 usft | Northing: | 431,272.00 usft | Latitude: | 32° 10' 54.537 N |
| | +E/-W | 3,890.0 usft | Easting: | 845,799.00 usft | Longitude: | 103° 20' 57.249 W |
| Position Uncertainty | 0.0 usft | | Wellhead Elevation: | | Ground Level: | 3,278.0 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OWB | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 01/16/20 | 6.56 | 60.02 | 47,671.40322210 |

| | | | | |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| Design | Plan #2 | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
| | 0.0 | 0.0 | 0.0 | 179.49 |

| | | | | |
|---------------------------------|------------------------|--------------------------|---------------------|----------------|
| Plan Survey Tool Program | Date | 07/24/20 | | |
| Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
| 1 | 0.0 | 19,932.3 Plan #2 (OWB) | MWD | |
| | | | OWSG MWD - Standard | |

| | | | | | | | | | | |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|-------------------------------|------------------------------|----------------|-------------------|
| Plan Sections | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,500.0 | 0.00 | 0.00 | 2,500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,825.0 | 6.50 | 121.89 | 2,824.3 | -9.7 | 15.6 | 2.00 | 2.00 | 0.00 | 121.89 | |
| 6,796.9 | 6.50 | 121.89 | 6,770.7 | -247.3 | 397.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,121.9 | 0.00 | 0.00 | 7,095.0 | -257.0 | 413.0 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 11,703.9 | 0.00 | 0.00 | 11,677.0 | -257.0 | 413.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 12,602.9 | 89.90 | 179.49 | 12,250.0 | -828.9 | 418.1 | 10.00 | 10.00 | 19.97 | 179.49 | |
| 19,933.3 | 89.90 | 179.49 | 12,263.0 | -8,159.0 | 483.0 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL (Mulva Fed C |



| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------|
| Database: | EDM 5000.15 Single User Db | Local Co-ordinate Reference: | Well Mulva Fed Com #218H |
| Company: | Tap Rock Resources, LLC | TVD Reference: | KB @ 3304.0usft |
| Project: | Lea County, NM (NAD 83 NME) | MD Reference: | KB @ 3304.0usft |
| Site: | (Mulva Fed) Sec-27_T-24-S_R-35-E | North Reference: | Grid |
| Well: | Mulva Fed Com #218H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OWB | | |
| Design: | Plan #2 | | |

| Planned Survey | | | | | | | | | |
|-----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 965.0 | 0.00 | 0.00 | 965.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| Rustler Anhydrite | | | | | | | | | |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 0.00 | 0.00 | 1,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,300.0 | 0.00 | 0.00 | 1,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,345.0 | 0.00 | 0.00 | 1,345.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| Top Salt | | | | | | | | | |
| 1,400.0 | 0.00 | 0.00 | 1,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 0.00 | 0.00 | 1,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,700.0 | 0.00 | 0.00 | 1,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 0.00 | 0.00 | 1,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 0.00 | 0.00 | 1,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 0.00 | 0.00 | 2,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 0.00 | 0.00 | 2,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 0.00 | 0.00 | 2,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 0.00 | 0.00 | 2,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 0.00 | 0.00 | 2,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 0.00 | 0.00 | 2,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| NUDGE - Build 2.00 | | | | | | | | | |
| 2,600.0 | 2.00 | 121.89 | 2,600.0 | -0.9 | 1.5 | 0.9 | 2.00 | 2.00 | 0.00 |
| 2,700.0 | 4.00 | 121.89 | 2,699.8 | -3.7 | 5.9 | 3.7 | 2.00 | 2.00 | 0.00 |
| 2,800.0 | 6.00 | 121.89 | 2,799.5 | -8.3 | 13.3 | 8.4 | 2.00 | 2.00 | 0.00 |
| 2,825.0 | 6.50 | 121.89 | 2,824.3 | -9.7 | 15.6 | 9.9 | 2.00 | 2.00 | 0.00 |
| HOLD - 3972.0 at 2825.0 MD | | | | | | | | | |
| 2,900.0 | 6.50 | 121.89 | 2,898.8 | -14.2 | 22.8 | 14.4 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 6.50 | 121.89 | 2,998.2 | -20.2 | 32.5 | 20.5 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 6.50 | 121.89 | 3,097.5 | -26.2 | 42.1 | 26.5 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 6.50 | 121.89 | 3,196.9 | -32.2 | 51.7 | 32.6 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 6.50 | 121.89 | 3,296.3 | -38.1 | 61.3 | 38.7 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 6.50 | 121.89 | 3,395.6 | -44.1 | 70.9 | 44.7 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 6.50 | 121.89 | 3,495.0 | -50.1 | 80.5 | 50.8 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 6.50 | 121.89 | 3,594.3 | -56.1 | 90.1 | 56.9 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 6.50 | 121.89 | 3,693.7 | -62.1 | 99.7 | 62.9 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 6.50 | 121.89 | 3,793.0 | -68.0 | 109.3 | 69.0 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 6.50 | 121.89 | 3,892.4 | -74.0 | 119.0 | 75.1 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 6.50 | 121.89 | 3,991.8 | -80.0 | 128.6 | 81.1 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 6.50 | 121.89 | 4,091.1 | -86.0 | 138.2 | 87.2 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 6.50 | 121.89 | 4,190.5 | -92.0 | 147.8 | 93.3 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 6.50 | 121.89 | 4,289.8 | -97.9 | 157.4 | 99.3 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 6.50 | 121.89 | 4,389.2 | -103.9 | 167.0 | 105.4 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 6.50 | 121.89 | 4,488.5 | -109.9 | 176.6 | 111.5 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 6.50 | 121.89 | 4,587.9 | -115.9 | 186.2 | 117.5 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------|
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| Project: | Lea County, NM (NAD 83 NME) | MD Reference: | KB @ 3304.0usft |
| Site: | (Mulva Fed) Sec-27_T-24-S-R-35-E | North Reference: | Grid |
| Well: | Mulva Fed Com #218H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OWB | | |
| Design: | Plan #2 | | |

| Planned Survey | | | | | | | | | |
|-----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 4,700.0 | 6.50 | 121.89 | 4,687.3 | -121.9 | 195.8 | 123.6 | 0.00 | 0.00 | 0.00 |
| 4,758.1 | 6.50 | 121.89 | 4,745.0 | -125.3 | 201.4 | 127.1 | 0.00 | 0.00 | 0.00 |
| Base Salt | | | | | | | | | |
| 4,800.0 | 6.50 | 121.89 | 4,786.6 | -127.8 | 205.4 | 129.7 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 6.50 | 121.89 | 4,886.0 | -133.8 | 215.1 | 135.7 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 6.50 | 121.89 | 4,985.3 | -139.8 | 224.7 | 141.8 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 6.50 | 121.89 | 5,084.7 | -145.8 | 234.3 | 147.9 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 6.50 | 121.89 | 5,184.0 | -151.8 | 243.9 | 153.9 | 0.00 | 0.00 | 0.00 |
| 5,266.4 | 6.50 | 121.89 | 5,250.0 | -155.7 | 250.3 | 158.0 | 0.00 | 0.00 | 0.00 |
| Delaware Mountain Gp | | | | | | | | | |
| 5,271.4 | 6.50 | 121.89 | 5,255.0 | -156.0 | 250.8 | 158.3 | 0.00 | 0.00 | 0.00 |
| Lamar | | | | | | | | | |
| 5,276.5 | 6.50 | 121.89 | 5,260.0 | -156.3 | 251.2 | 158.6 | 0.00 | 0.00 | 0.00 |
| Bell Canyon | | | | | | | | | |
| 5,281.5 | 6.50 | 121.89 | 5,265.0 | -156.6 | 251.7 | 158.9 | 0.00 | 0.00 | 0.00 |
| Ramsey Sand | | | | | | | | | |
| 5,300.0 | 6.50 | 121.89 | 5,283.4 | -157.7 | 253.5 | 160.0 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 6.50 | 121.89 | 5,382.8 | -163.7 | 263.1 | 166.1 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 6.50 | 121.89 | 5,482.1 | -169.7 | 272.7 | 172.1 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 6.50 | 121.89 | 5,581.5 | -175.7 | 282.3 | 178.2 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 6.50 | 121.89 | 5,680.8 | -181.7 | 291.9 | 184.3 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 6.50 | 121.89 | 5,780.2 | -187.6 | 301.6 | 190.3 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 6.50 | 121.89 | 5,879.5 | -193.6 | 311.2 | 196.4 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 6.50 | 121.89 | 5,978.9 | -199.6 | 320.8 | 202.5 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 6.50 | 121.89 | 6,078.3 | -205.6 | 330.4 | 208.5 | 0.00 | 0.00 | 0.00 |
| 6,167.2 | 6.50 | 121.89 | 6,145.0 | -209.6 | 336.8 | 212.6 | 0.00 | 0.00 | 0.00 |
| Cherry Canyon | | | | | | | | | |
| 6,200.0 | 6.50 | 121.89 | 6,177.6 | -211.6 | 340.0 | 214.6 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 6.50 | 121.89 | 6,277.0 | -217.6 | 349.6 | 220.7 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 6.50 | 121.89 | 6,376.3 | -223.5 | 359.2 | 226.7 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 6.50 | 121.89 | 6,475.7 | -229.5 | 368.8 | 232.8 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 6.50 | 121.89 | 6,575.0 | -235.5 | 378.4 | 238.9 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 6.50 | 121.89 | 6,674.4 | -241.5 | 388.0 | 244.9 | 0.00 | 0.00 | 0.00 |
| 6,796.9 | 6.50 | 121.89 | 6,770.7 | -247.3 | 397.4 | 250.8 | 0.00 | 0.00 | 0.00 |
| DROP --2.00 | | | | | | | | | |
| 6,800.0 | 6.44 | 121.89 | 6,773.8 | -247.5 | 397.7 | 251.0 | 2.00 | -2.00 | 0.00 |
| 6,900.0 | 4.44 | 121.89 | 6,873.3 | -252.5 | 405.7 | 256.1 | 2.00 | -2.00 | 0.00 |
| 7,000.0 | 2.44 | 121.89 | 6,973.1 | -255.6 | 410.8 | 259.3 | 2.00 | -2.00 | 0.00 |
| 7,100.0 | 0.44 | 121.89 | 7,073.1 | -257.0 | 412.9 | 260.6 | 2.00 | -2.00 | 0.00 |
| 7,121.9 | 0.00 | 0.00 | 7,095.0 | -257.0 | 413.0 | 260.7 | 2.00 | -2.00 | 0.00 |
| HOLD - 4582.0 at 7121.9 MD | | | | | | | | | |
| 7,200.0 | 0.00 | 0.00 | 7,173.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 0.00 | 0.00 | 7,273.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 0.00 | 0.00 | 7,373.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 0.00 | 0.00 | 7,473.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 0.00 | 0.00 | 7,573.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 7,631.9 | 0.00 | 0.00 | 7,605.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| Brushy Canyon | | | | | | | | | |
| 7,700.0 | 0.00 | 0.00 | 7,673.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 0.00 | 0.00 | 7,773.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 0.00 | 0.00 | 7,873.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 0.00 | 0.00 | 7,973.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 0.00 | 0.00 | 8,073.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------|
| Database: | EDM 5000.15 Single User Db | Local Co-ordinate Reference: | Well Mulva Fed Com #218H |
| Company: | Tap Rock Resources, LLC | TVD Reference: | KB @ 3304.0usft |
| Project: | Lea County, NM (NAD 83 NME) | MD Reference: | KB @ 3304.0usft |
| Site: | (Mulva Fed) Sec-27_T-24-S-R-35-E | North Reference: | Grid |
| Well: | Mulva Fed Com #218H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OWB | | |
| Design: | Plan #2 | | |

| Planned Survey | | | | | | | | | |
|-----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 8,200.0 | 0.00 | 0.00 | 8,173.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 0.00 | 0.00 | 8,273.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 0.00 | 0.00 | 8,373.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 0.00 | 0.00 | 8,473.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 0.00 | 0.00 | 8,573.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 0.00 | 0.00 | 8,673.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 0.00 | 0.00 | 8,773.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 0.00 | 0.00 | 8,873.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 8,936.9 | 0.00 | 0.00 | 8,910.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| Bone Spring Lime | | | | | | | | | |
| 8,986.9 | 0.00 | 0.00 | 8,960.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| Upper Avalon | | | | | | | | | |
| 9,000.0 | 0.00 | 0.00 | 8,973.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 0.00 | 0.00 | 9,073.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 0.00 | 0.00 | 9,173.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,226.9 | 0.00 | 0.00 | 9,200.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| Middle Avalon | | | | | | | | | |
| 9,300.0 | 0.00 | 0.00 | 9,273.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 0.00 | 0.00 | 9,373.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 0.00 | 0.00 | 9,473.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 0.00 | 0.00 | 9,573.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,661.9 | 0.00 | 0.00 | 9,635.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| Lower Avalon | | | | | | | | | |
| 9,700.0 | 0.00 | 0.00 | 9,673.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 0.00 | 0.00 | 9,773.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 0.00 | 0.00 | 9,873.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 0.00 | 0.00 | 9,973.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 0.00 | 0.00 | 10,073.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,141.9 | 0.00 | 0.00 | 10,115.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 1st Bone Spring Sand | | | | | | | | | |
| 10,200.0 | 0.00 | 0.00 | 10,173.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,300.0 | 0.00 | 0.00 | 10,273.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,336.9 | 0.00 | 0.00 | 10,310.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 2nd Bone Spring Carb | | | | | | | | | |
| 10,400.0 | 0.00 | 0.00 | 10,373.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,500.0 | 0.00 | 0.00 | 10,473.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 0.00 | 0.00 | 10,573.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,691.9 | 0.00 | 0.00 | 10,665.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 2nd Bone Spring Sand | | | | | | | | | |
| 10,700.0 | 0.00 | 0.00 | 10,673.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 0.00 | 0.00 | 10,773.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 0.00 | 0.00 | 10,873.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 0.00 | 0.00 | 10,973.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 0.00 | 0.00 | 11,073.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 0.00 | 0.00 | 11,173.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,246.9 | 0.00 | 0.00 | 11,220.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 3rd Bone Spring Carb | | | | | | | | | |
| 11,300.0 | 0.00 | 0.00 | 11,273.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 0.00 | 0.00 | 11,373.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 0.00 | 0.00 | 11,473.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 0.00 | 0.00 | 11,573.1 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| 11,703.9 | 0.00 | 0.00 | 11,677.0 | -257.0 | 413.0 | 260.7 | 0.00 | 0.00 | 0.00 |
| KOP - DLS 10.00 TFO 179.49 | | | | | | | | | |

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|------------------|----------------------------------|-------------------------------------|--------------------------|
| Database: | EDM 5000.15 Single User Db | Local Co-ordinate Reference: | Well Mulva Fed Com #218H |
| Company: | Tap Rock Resources, LLC | TVD Reference: | KB @ 3304.0usft |
| Project: | Lea County, NM (NAD 83 NME) | MD Reference: | KB @ 3304.0usft |
| Site: | (Mulva Fed) Sec-27_T-24-S_R-35-E | North Reference: | Grid |
| Well: | Mulva Fed Com #218H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OWB | | |
| Design: | Plan #2 | | |

Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 11,750.0 | 4.61 | 179.49 | 11,723.0 | -258.9 | 413.0 | 262.5 | 10.00 | 10.00 | 0.00 |
| 11,800.0 | 9.61 | 179.49 | 11,772.6 | -265.0 | 413.1 | 268.7 | 10.00 | 10.00 | 0.00 |
| 11,850.0 | 14.61 | 179.49 | 11,821.5 | -275.5 | 413.2 | 279.2 | 10.00 | 10.00 | 0.00 |
| 11,900.0 | 19.61 | 179.49 | 11,869.3 | -290.2 | 413.3 | 293.9 | 10.00 | 10.00 | 0.00 |
| 11,950.0 | 24.61 | 179.49 | 11,915.6 | -309.0 | 413.5 | 312.7 | 10.00 | 10.00 | 0.00 |
| 11,999.9 | 29.60 | 179.49 | 11,960.0 | -331.8 | 413.7 | 335.4 | 10.00 | 10.00 | 0.00 |
| 3rd Bone Spring Sand | | | | | | | | | |
| 12,000.0 | 29.61 | 179.49 | 11,960.1 | -331.8 | 413.7 | 335.5 | 10.00 | 10.00 | 0.00 |
| 12,050.0 | 34.61 | 179.49 | 12,002.4 | -358.4 | 413.9 | 362.0 | 10.00 | 10.00 | 0.00 |
| 12,100.0 | 39.61 | 179.49 | 12,042.3 | -388.5 | 414.2 | 392.2 | 10.00 | 10.00 | 0.00 |
| 12,116.7 | 41.28 | 179.49 | 12,055.0 | -399.4 | 414.3 | 403.0 | 10.00 | 10.00 | 0.00 |
| 3rd BS W Sand | | | | | | | | | |
| 12,150.0 | 44.61 | 179.49 | 12,079.4 | -422.0 | 414.5 | 425.7 | 10.00 | 10.00 | 0.00 |
| 12,200.0 | 49.61 | 179.49 | 12,113.4 | -458.7 | 414.8 | 462.3 | 10.00 | 10.00 | 0.00 |
| 12,218.3 | 51.44 | 179.49 | 12,125.0 | -472.8 | 414.9 | 476.4 | 10.00 | 10.00 | 0.00 |
| Wolfcamp A X Sand | | | | | | | | | |
| 12,250.0 | 54.61 | 179.49 | 12,144.1 | -498.1 | 415.1 | 501.8 | 10.00 | 10.00 | 0.00 |
| 12,278.5 | 57.46 | 179.49 | 12,160.0 | -521.7 | 415.3 | 525.4 | 10.00 | 10.00 | 0.00 |
| Wolfcamp A Y Sand | | | | | | | | | |
| 12,300.0 | 59.61 | 179.49 | 12,171.2 | -540.1 | 415.5 | 543.8 | 10.00 | 10.00 | 0.00 |
| 12,350.0 | 64.61 | 179.49 | 12,194.6 | -584.3 | 415.9 | 587.9 | 10.00 | 10.00 | 0.00 |
| 12,400.0 | 69.61 | 179.49 | 12,214.1 | -630.3 | 416.3 | 634.0 | 10.00 | 10.00 | 0.00 |
| 12,417.8 | 71.39 | 179.49 | 12,220.0 | -647.1 | 416.5 | 650.8 | 10.00 | 10.00 | 0.00 |
| Wolfcamp A Lower | | | | | | | | | |
| 12,450.0 | 74.61 | 179.49 | 12,229.4 | -677.9 | 416.7 | 681.5 | 10.00 | 10.00 | 0.00 |
| 12,500.0 | 79.61 | 179.49 | 12,240.6 | -726.6 | 417.2 | 730.3 | 10.00 | 10.00 | 0.00 |
| 12,550.0 | 84.61 | 179.49 | 12,247.4 | -776.1 | 417.6 | 779.8 | 10.00 | 10.00 | 0.00 |
| 12,602.9 | 89.90 | 179.49 | 12,250.0 | -828.9 | 418.1 | 832.6 | 10.00 | 10.00 | 0.00 |
| EOC - 7330.4 hold at 12602.9 MD | | | | | | | | | |
| 12,700.0 | 89.90 | 179.49 | 12,250.1 | -926.0 | 418.9 | 929.7 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 89.90 | 179.49 | 12,250.3 | -1,026.0 | 419.8 | 1,029.7 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 89.90 | 179.49 | 12,250.5 | -1,126.0 | 420.7 | 1,129.7 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 89.90 | 179.49 | 12,250.7 | -1,226.0 | 421.6 | 1,229.7 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 89.90 | 179.49 | 12,250.8 | -1,326.0 | 422.5 | 1,329.7 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 89.90 | 179.49 | 12,251.0 | -1,426.0 | 423.4 | 1,429.7 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 89.90 | 179.49 | 12,251.2 | -1,526.0 | 424.2 | 1,529.7 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 89.90 | 179.49 | 12,251.4 | -1,626.0 | 425.1 | 1,629.7 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 89.90 | 179.49 | 12,251.6 | -1,726.0 | 426.0 | 1,729.7 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 89.90 | 179.49 | 12,251.7 | -1,826.0 | 426.9 | 1,829.7 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 89.90 | 179.49 | 12,251.9 | -1,926.0 | 427.8 | 1,929.7 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 89.90 | 179.49 | 12,252.1 | -2,026.0 | 428.7 | 2,029.7 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 89.90 | 179.49 | 12,252.3 | -2,126.0 | 429.6 | 2,129.7 | 0.00 | 0.00 | 0.00 |
| 14,000.0 | 89.90 | 179.49 | 12,252.4 | -2,226.0 | 430.4 | 2,229.7 | 0.00 | 0.00 | 0.00 |
| 14,100.0 | 89.90 | 179.49 | 12,252.6 | -2,326.0 | 431.3 | 2,329.7 | 0.00 | 0.00 | 0.00 |
| 14,200.0 | 89.90 | 179.49 | 12,252.8 | -2,425.9 | 432.2 | 2,429.7 | 0.00 | 0.00 | 0.00 |
| 14,300.0 | 89.90 | 179.49 | 12,253.0 | -2,525.9 | 433.1 | 2,529.7 | 0.00 | 0.00 | 0.00 |
| 14,400.0 | 89.90 | 179.49 | 12,253.2 | -2,625.9 | 434.0 | 2,629.7 | 0.00 | 0.00 | 0.00 |
| 14,500.0 | 89.90 | 179.49 | 12,253.3 | -2,725.9 | 434.9 | 2,729.7 | 0.00 | 0.00 | 0.00 |
| 14,600.0 | 89.90 | 179.49 | 12,253.5 | -2,825.9 | 435.8 | 2,829.7 | 0.00 | 0.00 | 0.00 |
| 14,700.0 | 89.90 | 179.49 | 12,253.7 | -2,925.9 | 436.6 | 2,929.7 | 0.00 | 0.00 | 0.00 |
| 14,800.0 | 89.90 | 179.49 | 12,253.9 | -3,025.9 | 437.5 | 3,029.7 | 0.00 | 0.00 | 0.00 |
| 14,900.0 | 89.90 | 179.49 | 12,254.0 | -3,125.9 | 438.4 | 3,129.7 | 0.00 | 0.00 | 0.00 |
| 15,000.0 | 89.90 | 179.49 | 12,254.2 | -3,225.9 | 439.3 | 3,229.7 | 0.00 | 0.00 | 0.00 |



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| Database: | EDM 5000.15 Single User Db | Local Co-ordinate Reference: | Well Mulva Fed Com #218H |
| Company: | Tap Rock Resources, LLC | TVD Reference: | KB @ 3304.0usft |
| Project: | Lea County, NM (NAD 83 NME) | MD Reference: | KB @ 3304.0usft |
| Site: | (Mulva Fed) Sec-27_T-24-S_R-35-E | North Reference: | Grid |
| Well: | Mulva Fed Com #218H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OWB | | |
| Design: | Plan #2 | | |

Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 15,100.0 | 89.90 | 179.49 | 12,254.4 | -3,325.9 | 440.2 | 3,329.7 | 0.00 | 0.00 | 0.00 |
| 15,200.0 | 89.90 | 179.49 | 12,254.6 | -3,425.9 | 441.1 | 3,429.7 | 0.00 | 0.00 | 0.00 |
| 15,300.0 | 89.90 | 179.49 | 12,254.8 | -3,525.9 | 442.0 | 3,529.7 | 0.00 | 0.00 | 0.00 |
| 15,400.0 | 89.90 | 179.49 | 12,254.9 | -3,625.9 | 442.8 | 3,629.7 | 0.00 | 0.00 | 0.00 |
| 15,500.0 | 89.90 | 179.49 | 12,255.1 | -3,725.9 | 443.7 | 3,729.7 | 0.00 | 0.00 | 0.00 |
| 15,600.0 | 89.90 | 179.49 | 12,255.3 | -3,825.9 | 444.6 | 3,829.7 | 0.00 | 0.00 | 0.00 |
| 15,700.0 | 89.90 | 179.49 | 12,255.5 | -3,925.9 | 445.5 | 3,929.7 | 0.00 | 0.00 | 0.00 |
| 15,800.0 | 89.90 | 179.49 | 12,255.6 | -4,025.9 | 446.4 | 4,029.7 | 0.00 | 0.00 | 0.00 |
| 15,900.0 | 89.90 | 179.49 | 12,255.8 | -4,125.9 | 447.3 | 4,129.7 | 0.00 | 0.00 | 0.00 |
| 16,000.0 | 89.90 | 179.49 | 12,256.0 | -4,225.9 | 448.2 | 4,229.7 | 0.00 | 0.00 | 0.00 |
| 16,100.0 | 89.90 | 179.49 | 12,256.2 | -4,325.9 | 449.0 | 4,329.7 | 0.00 | 0.00 | 0.00 |
| 16,200.0 | 89.90 | 179.49 | 12,256.4 | -4,425.9 | 449.9 | 4,429.7 | 0.00 | 0.00 | 0.00 |
| 16,300.0 | 89.90 | 179.49 | 12,256.5 | -4,525.9 | 450.8 | 4,529.7 | 0.00 | 0.00 | 0.00 |
| 16,400.0 | 89.90 | 179.49 | 12,256.7 | -4,625.9 | 451.7 | 4,629.7 | 0.00 | 0.00 | 0.00 |
| 16,500.0 | 89.90 | 179.49 | 12,256.9 | -4,725.9 | 452.6 | 4,729.7 | 0.00 | 0.00 | 0.00 |
| 16,600.0 | 89.90 | 179.49 | 12,257.1 | -4,825.9 | 453.5 | 4,829.7 | 0.00 | 0.00 | 0.00 |
| 16,700.0 | 89.90 | 179.49 | 12,257.2 | -4,925.8 | 454.4 | 4,929.7 | 0.00 | 0.00 | 0.00 |
| 16,800.0 | 89.90 | 179.49 | 12,257.4 | -5,025.8 | 455.2 | 5,029.7 | 0.00 | 0.00 | 0.00 |
| 16,900.0 | 89.90 | 179.49 | 12,257.6 | -5,125.8 | 456.1 | 5,129.7 | 0.00 | 0.00 | 0.00 |
| 17,000.0 | 89.90 | 179.49 | 12,257.8 | -5,225.8 | 457.0 | 5,229.7 | 0.00 | 0.00 | 0.00 |
| 17,100.0 | 89.90 | 179.49 | 12,258.0 | -5,325.8 | 457.9 | 5,329.7 | 0.00 | 0.00 | 0.00 |
| 17,200.0 | 89.90 | 179.49 | 12,258.1 | -5,425.8 | 458.8 | 5,429.7 | 0.00 | 0.00 | 0.00 |
| 17,300.0 | 89.90 | 179.49 | 12,258.3 | -5,525.8 | 459.7 | 5,529.7 | 0.00 | 0.00 | 0.00 |
| 17,400.0 | 89.90 | 179.49 | 12,258.5 | -5,625.8 | 460.6 | 5,629.7 | 0.00 | 0.00 | 0.00 |
| 17,500.0 | 89.90 | 179.49 | 12,258.7 | -5,725.8 | 461.4 | 5,729.7 | 0.00 | 0.00 | 0.00 |
| 17,600.0 | 89.90 | 179.49 | 12,258.8 | -5,825.8 | 462.3 | 5,829.7 | 0.00 | 0.00 | 0.00 |
| 17,700.0 | 89.90 | 179.49 | 12,259.0 | -5,925.8 | 463.2 | 5,929.7 | 0.00 | 0.00 | 0.00 |
| 17,800.0 | 89.90 | 179.49 | 12,259.2 | -6,025.8 | 464.1 | 6,029.7 | 0.00 | 0.00 | 0.00 |
| 17,900.0 | 89.90 | 179.49 | 12,259.4 | -6,125.8 | 465.0 | 6,129.7 | 0.00 | 0.00 | 0.00 |
| 18,000.0 | 89.90 | 179.49 | 12,259.6 | -6,225.8 | 465.9 | 6,229.7 | 0.00 | 0.00 | 0.00 |
| 18,100.0 | 89.90 | 179.49 | 12,259.7 | -6,325.8 | 466.8 | 6,329.7 | 0.00 | 0.00 | 0.00 |
| 18,200.0 | 89.90 | 179.49 | 12,259.9 | -6,425.8 | 467.6 | 6,429.7 | 0.00 | 0.00 | 0.00 |
| 18,300.0 | 89.90 | 179.49 | 12,260.1 | -6,525.8 | 468.5 | 6,529.7 | 0.00 | 0.00 | 0.00 |
| 18,400.0 | 89.90 | 179.49 | 12,260.3 | -6,625.8 | 469.4 | 6,629.7 | 0.00 | 0.00 | 0.00 |
| 18,500.0 | 89.90 | 179.49 | 12,260.4 | -6,725.8 | 470.3 | 6,729.7 | 0.00 | 0.00 | 0.00 |
| 18,600.0 | 89.90 | 179.49 | 12,260.6 | -6,825.8 | 471.2 | 6,829.7 | 0.00 | 0.00 | 0.00 |
| 18,700.0 | 89.90 | 179.49 | 12,260.8 | -6,925.8 | 472.1 | 6,929.7 | 0.00 | 0.00 | 0.00 |
| 18,800.0 | 89.90 | 179.49 | 12,261.0 | -7,025.8 | 473.0 | 7,029.7 | 0.00 | 0.00 | 0.00 |
| 18,900.0 | 89.90 | 179.49 | 12,261.2 | -7,125.8 | 473.8 | 7,129.7 | 0.00 | 0.00 | 0.00 |
| 19,000.0 | 89.90 | 179.49 | 12,261.3 | -7,225.8 | 474.7 | 7,229.7 | 0.00 | 0.00 | 0.00 |
| 19,100.0 | 89.90 | 179.49 | 12,261.5 | -7,325.7 | 475.6 | 7,329.7 | 0.00 | 0.00 | 0.00 |
| 19,200.0 | 89.90 | 179.49 | 12,261.7 | -7,425.7 | 476.5 | 7,429.7 | 0.00 | 0.00 | 0.00 |
| 19,300.0 | 89.90 | 179.49 | 12,261.9 | -7,525.7 | 477.4 | 7,529.7 | 0.00 | 0.00 | 0.00 |
| 19,400.0 | 89.90 | 179.49 | 12,262.1 | -7,625.7 | 478.3 | 7,629.7 | 0.00 | 0.00 | 0.00 |
| 19,500.0 | 89.90 | 179.49 | 12,262.2 | -7,725.7 | 479.2 | 7,729.7 | 0.00 | 0.00 | 0.00 |
| 19,600.0 | 89.90 | 179.49 | 12,262.4 | -7,825.7 | 480.0 | 7,829.7 | 0.00 | 0.00 | 0.00 |
| 19,700.0 | 89.90 | 179.49 | 12,262.6 | -7,925.7 | 480.9 | 7,929.7 | 0.00 | 0.00 | 0.00 |
| 19,800.0 | 89.90 | 179.49 | 12,262.8 | -8,025.7 | 481.8 | 8,029.7 | 0.00 | 0.00 | 0.00 |
| 19,900.0 | 89.90 | 179.49 | 12,262.9 | -8,125.7 | 482.7 | 8,129.7 | 0.00 | 0.00 | 0.00 |
| 19,933.3 | 89.90 | 179.49 | 12,263.0 | -8,159.0 | 483.0 | 8,163.0 | 0.00 | 0.00 | 0.00 |

TD at 19933.3

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------|
| Database: | EDM 5000.15 Single User Db | Local Co-ordinate Reference: | Well Mulva Fed Com #218H |
| Company: | Tap Rock Resources, LLC | TVD Reference: | KB @ 3304.0usft |
| Project: | Lea County, NM (NAD 83 NME) | MD Reference: | KB @ 3304.0usft |
| Site: | (Mulva Fed) Sec-27_T-24-S_R-35-E | North Reference: | Grid |
| Well: | Mulva Fed Com #218H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OWB | | |
| Design: | Plan #2 | | |

Design Targets

Target Name

| - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|--|------------------|-----------------|---------------|-----------------|-----------------|--------------------|-------------------|------------------|-------------------|
| FTP (Mulva Fed Com - plan misses target center by 202.8usft at 12181.9usft MD (12101.4 TVD, -445.0 N, 414.7 E) - Point | 0.00 | 0.00 | 12,250.0 | -307.0 | 413.0 | 430,965.00 | 846,212.00 | 32° 10' 51.462 N | 103° 20' 52.477 W |
| PBHL (Mulva Fed Cor - plan hits target center - Rectangle (sides W100.0 H7,853.0 D40.0) | 0.10 | 179.49 | 12,263.0 | -8,159.0 | 483.0 | 423,113.00 | 846,282.00 | 32° 9' 33.763 N | 103° 20' 52.499 W |
| LTP (Mulva Fed Com - plan misses target center by 0.2usft at 19838.3usft MD (12262.8 TVD, -8064.0 N, 482.2 E) - Point | 0.00 | 0.00 | 12,263.0 | -8,064.0 | 482.0 | 423,208.00 | 846,281.00 | 32° 9' 34.703 N | 103° 20' 52.500 W |

Formations

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|-----------------------------|-----------------------------|----------------------|-----------|------------|-------------------------|
| 965.0 | 965.0 | Rustler Anhydrite | | | |
| 1,345.0 | 1,345.0 | Top Salt | | | |
| 4,758.1 | 4,745.0 | Base Salt | | | |
| 5,266.4 | 5,250.0 | Delaware Mountain Gp | | | |
| 5,271.4 | 5,255.0 | Lamar | | | |
| 5,276.5 | 5,260.0 | Bell Canyon | | | |
| 5,281.5 | 5,265.0 | Ramsey Sand | | | |
| 6,167.2 | 6,145.0 | Cherry Canyon | | | |
| 7,631.9 | 7,605.0 | Brushy Canyon | | | |
| 8,936.9 | 8,910.0 | Bone Spring Lime | | | |
| 8,986.9 | 8,960.0 | Upper Avalon | | | |
| 9,226.9 | 9,200.0 | Middle Avalon | | | |
| 9,661.9 | 9,635.0 | Lower Avalon | | | |
| 10,141.9 | 10,115.0 | 1st Bone Spring Sand | | | |
| 10,336.9 | 10,310.0 | 2nd Bone Spring Carb | | | |
| 10,691.9 | 10,665.0 | 2nd Bone Spring Sand | | | |
| 11,246.9 | 11,220.0 | 3rd Bone Spring Carb | | | |
| 11,999.9 | 11,960.0 | 3rd Bone Spring Sand | | | |
| 12,116.7 | 12,055.0 | 3rd BS W Sand | | | |
| 12,218.3 | 12,125.0 | Wolfcamp A X Sand | | | |
| 12,278.5 | 12,160.0 | Wolfcamp A Y Sand | | | |
| 12,417.8 | 12,220.0 | Wolfcamp A Lower | | | |

Plan Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------------|-----------------------------|-------------------|-----------------|---------------------------------|
| | | +N/-S (usft) | +E/-W (usft) | |
| 2,500.0 | 2,500.0 | 0.0 | 0.0 | NUDGE - Build 2.00 |
| 2,825.0 | 2,824.3 | -9.7 | 15.6 | HOLD - 3972.0 at 2825.0 MD |
| 6,796.9 | 6,770.7 | -247.3 | 397.4 | DROP --2.00 |
| 7,121.9 | 7,095.0 | -257.0 | 413.0 | HOLD - 4582.0 at 7121.9 MD |
| 11,703.9 | 11,677.0 | -257.0 | 413.0 | KOP - DLS 10.00 TFO 179.49 |
| 12,602.9 | 12,250.0 | -828.9 | 418.1 | EOC - 7330.4 hold at 12602.9 MD |
| 19,933.3 | 12,263.0 | -8,159.0 | 483.0 | TD at 19933.3 |



Drilling Operations Plan
Mulva Fed Com 218H
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BHL 2641' FSL & 331' FEL, Sec. 3
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BHL- T. 25S, R. 35E Lea County, NM

Elevation above Sea Level: 3278'

DRILLING PROGRAM

1. Estimated Tops

| Formation | TVD | MD | Lithologies | Bearing |
|---------------------|------------|-----------|--------------------|----------------|
| Quaternary Deposits | 0 | 0 | Surface | None |
| Rustler Anhydrite | 965 | 965 | | Salt |
| Salado | 1345 | 1345 | Salt | Salt |
| Base Salt | 4745 | 4758 | | Salt |
| Lamar | 5255 | 5271 | Limestone | None |
| Bell Canyon | 5260 | 5277 | Sandstone | Hydrocarbons |
| Cherry Canyon | 6145 | 6167 | Sandstone | Hydrocarbons |
| Brushy Canyon | 7605 | 7632 | Sandstone | Hydrocarbons |
| Bone Spring | 8910 | 8937 | Limestone | Hydrocarbons |
| 1st Bone Spring | 10115 | 10142 | Sandstone | Hydrocarbons |
| 2nd Bone Spring | 10310 | 10337 | Sandstone | Hydrocarbons |
| 3rd Bone Spring | 11220 | 11247 | Sandstone | Hydrocarbons |
| 3rd BS W Sand | 12055 | 12117 | Sandstone | Hydrocarbons |
| KOP | 11677 | 11703 | Sandstone | Hydrocarbons |
| Wolfcamp | 12125 | 12218 | Shale | Hydrocarbons |
| TD | 12263 | 19933 | Shale | Hydrocarbons |

2. Notable Zones

Wolfcamp is the formation target.

3. Pressure Control

Pressure Control Equipment (See Schematics):

A 15,000', 10,000 psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A top drive check valve and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. The wellhead will be a multi-bowl speed head.



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BOP Test procedure will be as follows:

After surface casing is set and the BOP is nipped up, the BOP pressure tests will be made with a third party tester to 250 psi low, 5000 psi high, and the annular preventer will be tested to 2,500 psi. The BOP will be tested in this manner after nipple-up if any break of the stack occurs. Before drilling out from 7.625" casing shoe, the BOP pressure tests will be made with a third party tester to 250 psi low, 10,000 psi high, and the annular preventer will be tested to 5,000 psi. The BOP will be tested in this manner if passage of allotted time occurs.

Variance Requests:

Tap Rock requests a variance to run a multi-bowl speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Tap Rock requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Tap Rock requests a variance to have the option of batch drilling this well with other wells on the same pad. In the event that this well is batch drilled, after drilling surface, 1st intermediate, and 2nd intermediate hole sections and cementing 2nd intermediate casing, a 10M dry hole cap with bleed off valve will be installed. The rig will then walk to another well on the pad. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test. Tap Rock requests a variance to run 7-5/8" BTC casing inside 9-5/8" BTC casing will be less than the 0.422" stand off regulation. Through conversations with BLM representatives, Tap Rock has received approval for this design as long as the 7-5/8" flush casing was run throughout the entire 300' cement tie back section between 9-5/8" and 7-5/8" casing. Tap Rock requests a variance to use a 5000 psi annular BOP on a 10M BOP stack. The annular will be tested to 250 psi low and 5000 psi high.

Tap Rock requests approval to possibly utilize a spudder rig to drill and set casing for the surface interval on this well. The spudder rig will be possibly utilized in order to reduce cost and save time. The wellhead will be installed and tested as soon as the surface casing is cut off per the existing COAs. A blind flange with the same pressure rating as the wellhead will be installed on the well. Once the spudder rig is removed, Tap Rock will secure the wellhead area by placing a guard rail around the cellar. Pressure will be monitored and a means for intervention will be maintained while the drilling rig is not over the well. Spudder rig operations are expected to take 2-3 days per well. Three wells on the pad will have surface casing set by the spudder rig as a part of this operation. The BLM will be notified 24 hours prior to commencing spudder rig operations. Within 90 days of the departure of the spudder rig, drilling operations will recommence on these wells. This rig will have a BOP stack equal or greater to the pressure rating required in the COAs. The BLM will be notified 24 hours before the larger rig moves on the pre-set wells. Tap Rock will have supervision on the spudder rig to ensure compliance with all BLM and NMOCD regulations.



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4. Casing & Cement

All Casing will be new.

| Name | Hole Size | Casing Size | Standard | Tapered | Top MD | Bottom MD | Top TVD | BTM TVD | Grade | Weight | Thread | Collapse | Burst | Tension |
|------------------|-----------|-------------|----------|---------|--------|-----------|---------|---------|-------|--------|--------|----------|-------|---------|
| Surface | 17 1/2 | 13 3/8 | API | No | 0 | 1040 | 0 | 1040 | J-55 | 54.5 | BUTT | 1.13 | 1.15 | 1.6 |
| 1st Intermediate | 12 1/4 | 9 5/8 | API | No | 0 | 5291 | 0 | 5275 | J-55 | 40 | BUTT | 1.13 | 1.15 | 1.6 |
| 2nd Intermediate | 8 3/4 | 7 5/8 | API | No | 0 | 4991 | 0 | 4975 | P-110 | 29.7 | BUTT | 1.13 | 1.15 | 1.6 |
| 2nd Intermediate | 8 3/4 | 7 5/8 | NON API | Yes | 4991 | 11603 | 4975 | 11577 | P-110 | 29.7 | W-513 | 1.13 | 1.15 | 1.6 |
| Production | 6 3/4 | 5 1/2 | NON API | No | 0 | 11403 | 0 | 11377 | P-110 | 20 | TXP | 1.13 | 1.15 | 1.6 |
| Production | 6 3/4 | 5 | NON API | Yes | 11403 | 19933 | 11377 | 12263 | P-110 | 18 | W-521 | 1.13 | 1.15 | 1.6 |

| Name | Type | Top MD | Sacks | Yield | Cu. Ft | Weight | Excess | Cement | Additives |
|------------------|------|--------|-------|-------|--------|--------|--------|--------|--|
| Surface | Tail | 0 | 1070 | 1.35 | 1445 | 14.8 | 100% | C | 5% NCI + LCM |
| 1st Intermediate | Lead | 0 | 1003 | 2.18 | 2187 | 12.7 | 65% | C | Bentonite + 1% CaCL ₂ + 8% NaCl + LCM |
| | Tail | 4233 | 411 | 1.33 | 547 | 14.8 | 65% | C | 5% NaCl + LCM |
| 2nd Intermediate | Lead | 4991 | 343 | 2.22 | 761 | 11.5 | 35% | TXI | Fluid Loss + Dispersant + Retarder + LCM |
| | Tail | 10603 | 99 | 1.37 | 136 | 13.2 | 35% | H | Fluid Loss + Dispersant + Retarder + LCM |
| Production | Tail | 10903 | 1064 | 1.19 | 1266 | 15.8 | 25% | H | Fluid Loss + Dispersant + Retarder + LCM |

5. Mud Program

| Name | Top | Bottom | Type | Mud Weight | Visc | Fluid Loss |
|----------------|-------|--------|--------------|------------|-------|------------|
| Surface | 0 | 1040 | FW Spud Mud | 8.30 | 28 | NC |
| Intermediate | 1040 | 5291 | Brine Water | 10.00 | 30-32 | NC |
| Intermediate 2 | 5291 | 11603 | FW/Cut Brine | 9.00 | 30-32 | NC |
| Production | 11603 | 19933 | Oil Base Mud | 11.50 | 50-70 | <10 |

Electronic Pason mud monitor system complying with Onshore Order 1 will be used. All necessary mud products (e. g., barite, cedar bark) for weight addition and fluid loss control will always be on site. Mud program is subject to change due to hole conditions. A closed loop system will be used.

6. Cores, Tests, & Logs

- Electric Logging Program: No open-hole logs are planned at this time for the pilot hole.
- GR will be collected while drilling through the MWD tools from 9.625" casing shoe to TD.
- A 2-person mud logging program will be used from 9.625" casing shoe to TD.
- No DSTs or cores are planned at this time.
- CBL w/ CCL from as far as gravity will let it fall to TOC.



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7. Down Hole Conditions

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is $\approx 7,330$ psi. Expected bottom hole temperature is $\approx 170^{\circ}$ F.

Tap Rock does not anticipate that there will be enough H₂S from the surface to the Wolfcamp formations to meet the BLM's Onshore Order 6 requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Tap Rock has an H₂S safety package on all wells and an "H₂S Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be safely flared. All personnel will be familiar with all aspects of safe operation of equipment being used.

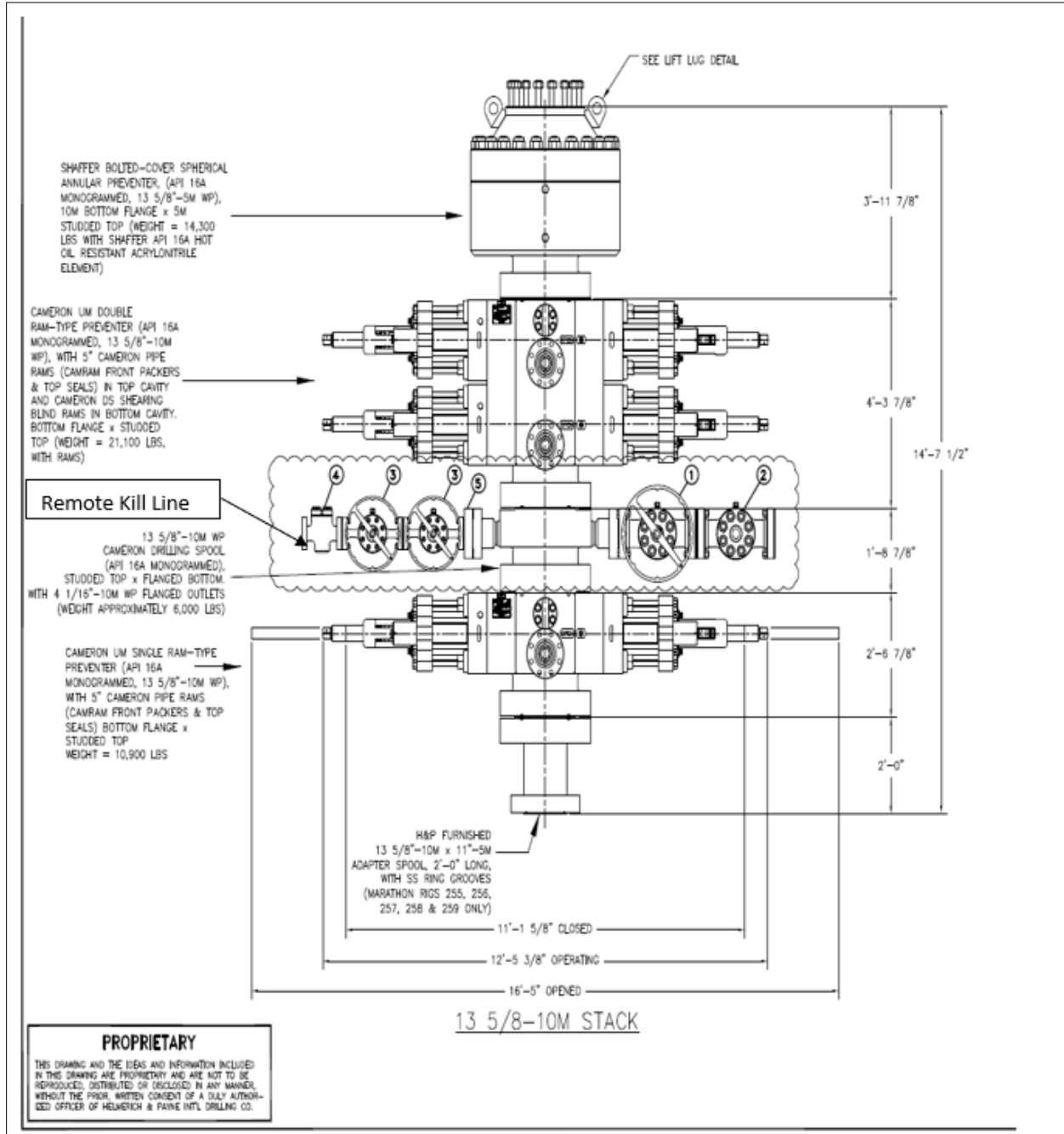
8. Other Information

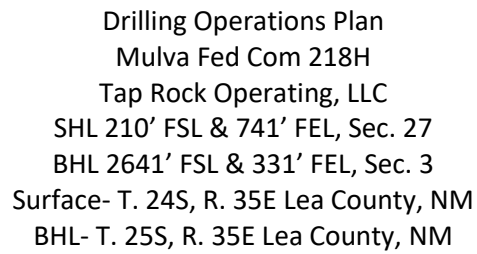
Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 30 days. If production casing is run an additional 60 days will be required to complete and construct surface facilities.



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10,000 psi BOP Stack

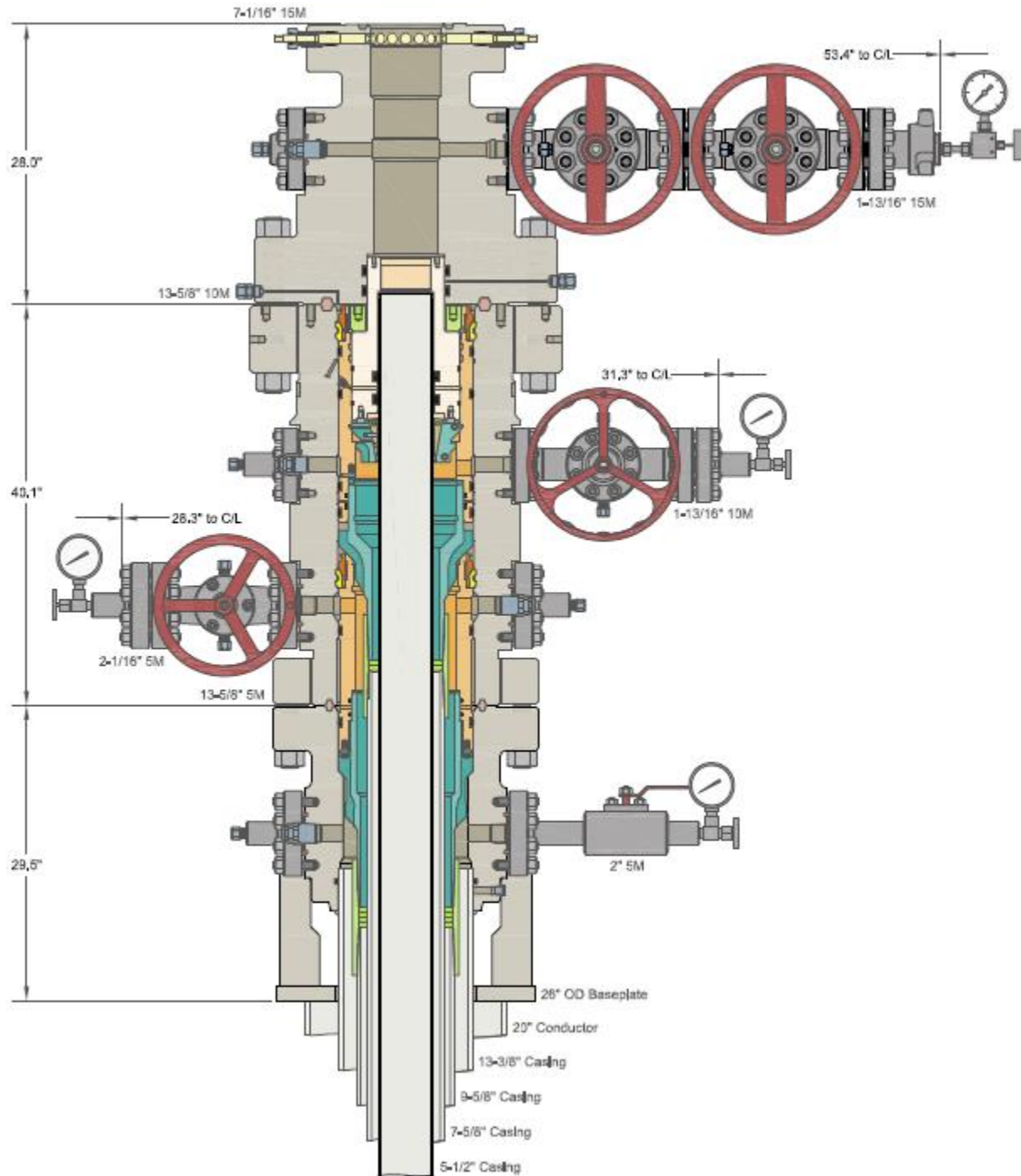


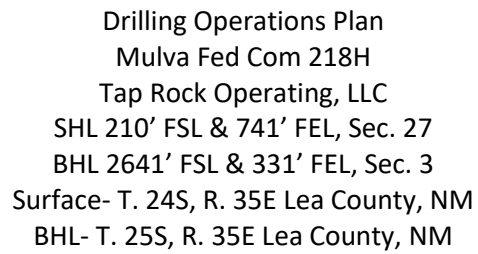
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Multi-bowl Wellhead



[illegible]

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|--|---|---|
| ¹ API Number 30-025-47747 | ² Pool Code 98098 | ³ Pool Name WC-025 G-09 S243532M; WOLFBONE |
| ⁴ Property Code 328302 | ⁵ Property Name MULVA FED COM | |
| ⁷ OGRID No. 372043 | ⁸ Operator Name TAP ROCK OPERATING, LLC. | ⁶ Well Number 218H |
| | | ⁹ Elevation 3278' |

¹⁰Surface Location

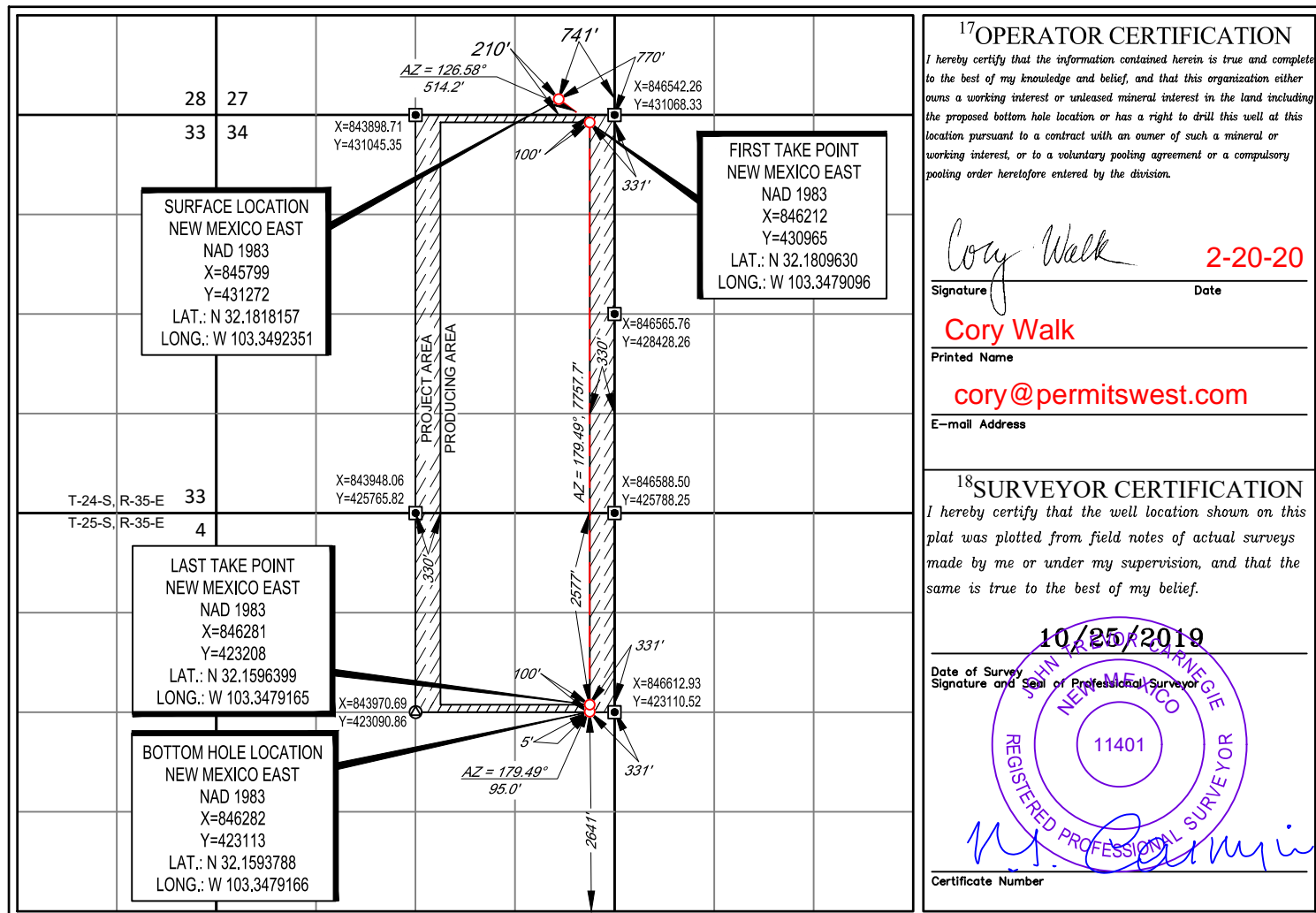
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|-----------|-------------|-------------|----------|---------------|------------------|---------------|----------------|------------|
| P | 27 | 24-S | 35-E | - | 210' | SOUTH | 741' | EAST | LEA |

¹¹Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|----------|-------------|-------------|----------|---------------|------------------|---------------|----------------|------------|
| H | 3 | 25-S | 35-E | - | 2641' | SOUTH | 331' | EAST | LEA |

| | | | |
|--|-------------------------------|----------------------------------|-------------------------|
| ¹² Dedicated Acres 481.78 | ¹³ Joint or Infill | ¹⁴ Consolidation Code | ¹⁵ Order No. |
|--|-------------------------------|----------------------------------|-------------------------|

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



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District III
1000 Rio Brazos Road, Aztec, NM 87410
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: 1/22/2020

☒ Original Operator & OGRID No.: 372043
☐ 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, recomple 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 |
|--------------------|--------------|-----------------------|----------------------|----------------|------------------|---|
| MULVA FED COM #218 | 30-025-47747 | P SEC 27 T24S R35E | 210' FSL 741' FEL | +/- 8000 | 21 days | Gas will be flared for ~21 days during flowback before being turned to the TB. Time est. depends on sales connect and well cleanup. |

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 should be connected to Lucid Energy Group, LLC and will be connected to Lucid Energy Group LLC's low/high pressure gathering system located in Eddy County, New Mexico. It will require approximately 2500' of pipeline to connect the facility to low/high pressure gathering system. Tap Rock Operating, LLC provides (periodically) to Lucid Energy Group, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Tap Rock Operating, LLC and Lucid Energy Group, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be Processed at Lucid Energy Group, LLC 's Red Hills processing facility located in Lea County, New Mexico, and, although unanticipated, any issues with downstream facilities could cause flaring at the wellhead. 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 Lucid's system at that time. Based on current information, it is Tap Rock Operating, LLC's 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