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JAN 16 2019

Carlsbad Field Office

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Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM117125

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
BRAD LUMMIS FED COM
201H (324861)

2. Name of Operator
MATADOR PRODUCTION COMPANY (228937)

9. API Well No.
30-025-45513

3a. Address
5400 LBJ Freeway, Suite 1500 Dallas TX 75240

3b. Phone No. *(include area code)*
(972)371-5200

10. Field and Pool, or Exploratory
WOLFCAMP / ANTELOPE RIDGE; BS, N (2220)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWNW / 432 FNL / 453 FWL / LAT 32.2091025 / LONG -103.4478128
At proposed prod. zone SWSW / 240 FSL / 330 FWL / LAT 32.1964375 / LONG -103.4482168

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 23 / T24S / R34E / NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
LEA

13. State
NM

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

16. No of acres in lease
400

17. Spacing Unit dedicated to this well
320

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

19. Proposed Depth
12275 feet / 17030 feet

20. BLM/BIA Bond No. in file
FED: NMB001079

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3492 feet

22. Approximate date work will start*
12/01/2018

23. Estimated duration
30 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Lara Thompson / Ph: (505)254-1115	08/31/2018

Title
Assistant Project Manager

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	12/07/2018

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

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

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

GCP Rec 1/16/19

APPROVED WITH CONDITIONS

KZ 01/17/19

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 12/07/2018

Double sided

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

1. SHL: NWNW / 432 FNL / 453 FWL / TWSP: 24S / RANGE: 34E / SECTION: 23 / LAT: 32.2091025 / LONG: -103.4478128 (TVD: 0 feet, MD: 0 feet)
   PPP: NWNW / 330 FNL / 330 FWL / TWSP: 24S / RANGE: 34E / SECTION: 23 / LAT: 32.2093843 / LONG: -103.4482115 (TVD: 12275 feet, MD: 12685 feet)
   BHL: SWSW / 240 FSL / 330 FWL / TWSP: 24S / RANGE: 34E / SECTION: 23 / LAT: 32.1964375 / LONG: -103.4482168 (TVD: 12275 feet, MD: 17030 feet)

BLM Point of Contact

Name: Tenille Ortiz
Title: Legal Instruments Examiner
Phone: 5752342224
Email: tortiz@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MATADOR PRODUCTION COMPANY
LEASE NO.:	NMNM 117125
WELL NAME & NO.:	BRAD LUMIS FED COM 201H
SURFACE HOLE FOOTAGE:	432'/N & 453'/W
BOTTOM HOLE FOOTAGE	240'/S & 330'/W
LOCATION:	SECTION 23, T24S, R34E, NMPM
COUNTY:	LEA

Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. HYDROGEN SULFIDE

1. 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 **1150** feet (a minimum of 25 feet 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 first 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 X 7** inch second intermediate casing is:

   - Cement should tie-back at least **200** feet into previous casing string. If cement does not circulate see B.1.a, c-d above.

4. The minimum required fill of cement behind the **5 1/2 X 4 1/2** inch production casing is:

   - Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

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

2.

Option 1:

i. 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.

ii. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7 5/8 X 7** inch second intermediate casing shoe shall be **10,000 (10M)** psi. **Varinace is approved to use a 5M Annular which shall be tested to 5000 psi.**

Option 2:

i. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use 5M Annular which shall be tested to 5000 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. 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.

D. SPECIAL REQUIREMENT(S)

Communitization Agreement

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

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GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after

installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MATADOR PRODUCTION COMPANY
LEASE NO.:	NMNM 117125
WELL NAME & NO.:	BRAD LUMIS FED COM 201H
SURFACE HOLE FOOTAGE:	432'/N & 453'/W
BOTTOM HOLE FOOTAGE	240'/S & 330'/W
LOCATION:	SECTION 23, T24S, R34E, NMPM
COUNTY:	LEA

TABLE OF CONTENTS

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

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

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.

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.

Raptor Nest Mitigation

For portions of the project being constructed during the nesting season (March 1–August 31), the operator should contact a BLM biologist and conduct pre-construction nest surveys up to 2 weeks prior of vegetation removal and avoidance buffers around any occupied nest could be established (distances to be specified by the BLM) to ensure compliance with the MBTA.

Hydrology:

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

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must

be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

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

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

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

-OR-

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.

VI. 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.

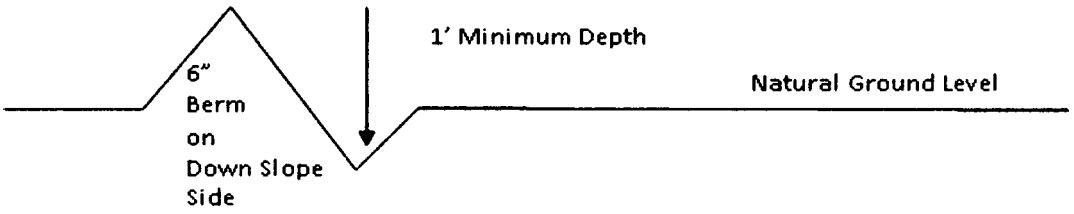
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping 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 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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

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

-OR-

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

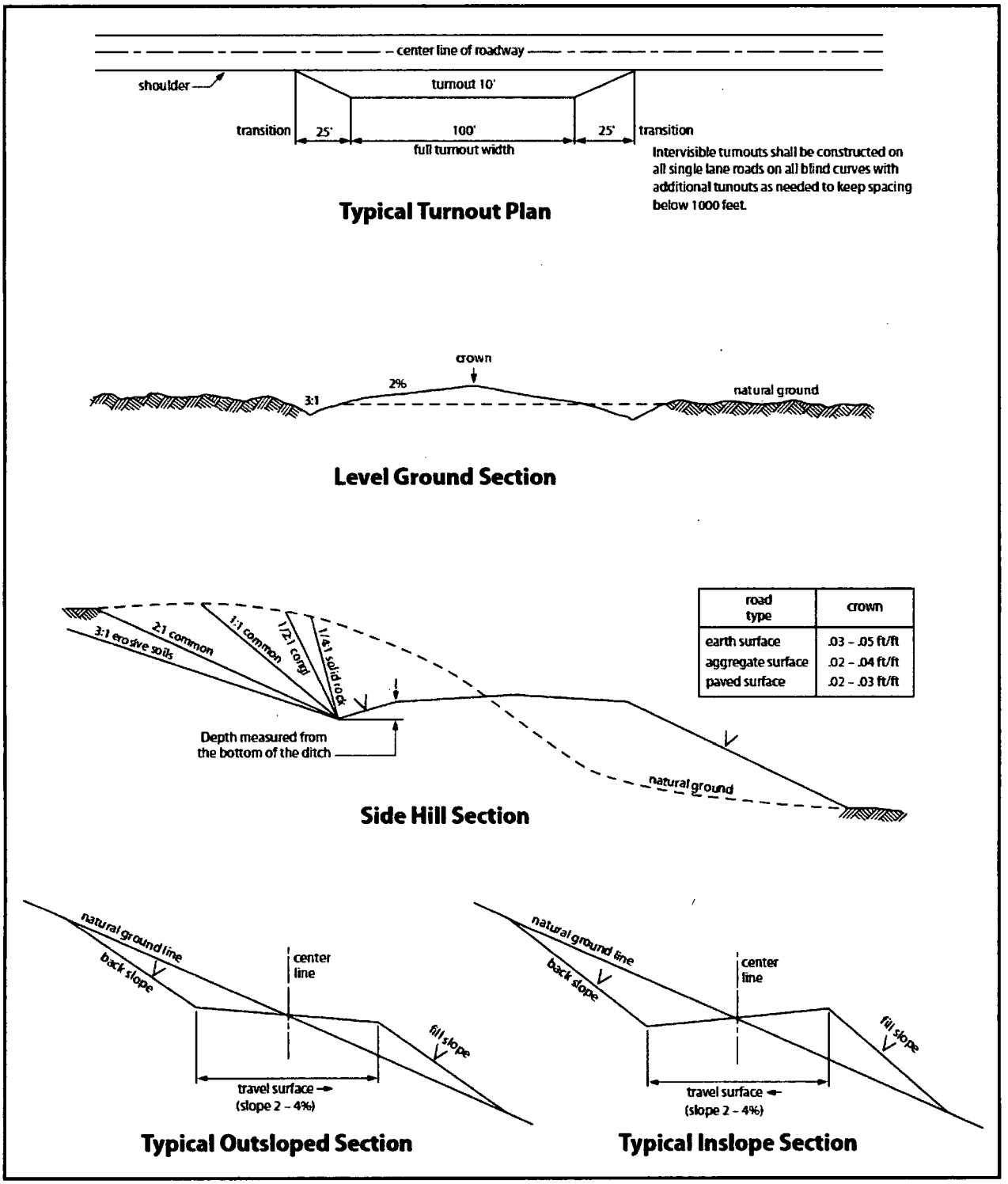


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

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.

VRM Facility Requirement
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. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you 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. The 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. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards 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 especially, 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. The 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 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 agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil 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 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 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 the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. 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.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

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. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
(X) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. 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. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. 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 before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (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 actions to prevent the loss of significant 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.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities 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, geophysical exploration other than 3-D operations, and 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. 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 ft. from the source of the noise.

VIII. 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).

IX. 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).

Below 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.

Seed Mixture for LPC Sand/Shinnery Sites

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 shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall 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). 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. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may 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:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

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

AFMSS

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

Operator Certification Data Report

12/10/2018

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: Lara Thompson **Signed on:** 08/29/2018

Title: Assistant Project Manager

Street Address: 5647 Jefferson Street NE

City: Albuquerque **State:** NM **Zip:** 87109

Phone: (505)254-1115

Email address: Lara.Thompson@swca.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS

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

Application Data Report

12/10/2018

APD ID: 10400033633 **Submission Date:** 08/31/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Highlighted data reflects the most recent changes

Show Final Text

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

Section 1 - General

APD ID: 10400033633 **Tie to previous NOS?** **Submission Date:** 08/31/2018

BLM Office: CARLSBAD **User:** Lara Thompson **Title:** Assistant Project Manager

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM117125 **Lease Acres:** 400

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? YES **APD Operator:** MATADOR PRODUCTION COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: MATADOR PRODUCTION COMPANY

Operator Address: 5400 LBJ Freeway, Suite 1500 **Zip:** 75240

Operator PO Box:

Operator City: Dallas **State:** TX

Operator Phone: (972)371-5200

Operator Internet Address: amonroe@matadorresources.com

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** WOLFCAMP **Pool Name:** ANTELOPE RIDGE; BS, NORTH

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

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** SLOT 1 **Number:** 6

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: **Distance to nearest well:** 30 FT **Distance to lease line:** 432 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: BO_BRAD_LUMMIS_SLOT_1_SURFACE_PAD_SITE_S_20180612150129.pdf

1Mile_Radius_Map_20180830124817.docx

BradLummis__201H_20180830131258.pdf

Well work start Date: 12/01/2018 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	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
SHL Leg #1	432	FNL	453	FWL	24S	34E	23	Aliquot NWNW	32.2091025	-103.4478128	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 117125	3492	0	0
KOP Leg #1	432	FNL	453	FWL	24S	34E	23	Aliquot NWNW	32.2091025	-103.4478128	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 117125	-8200	11708	11692

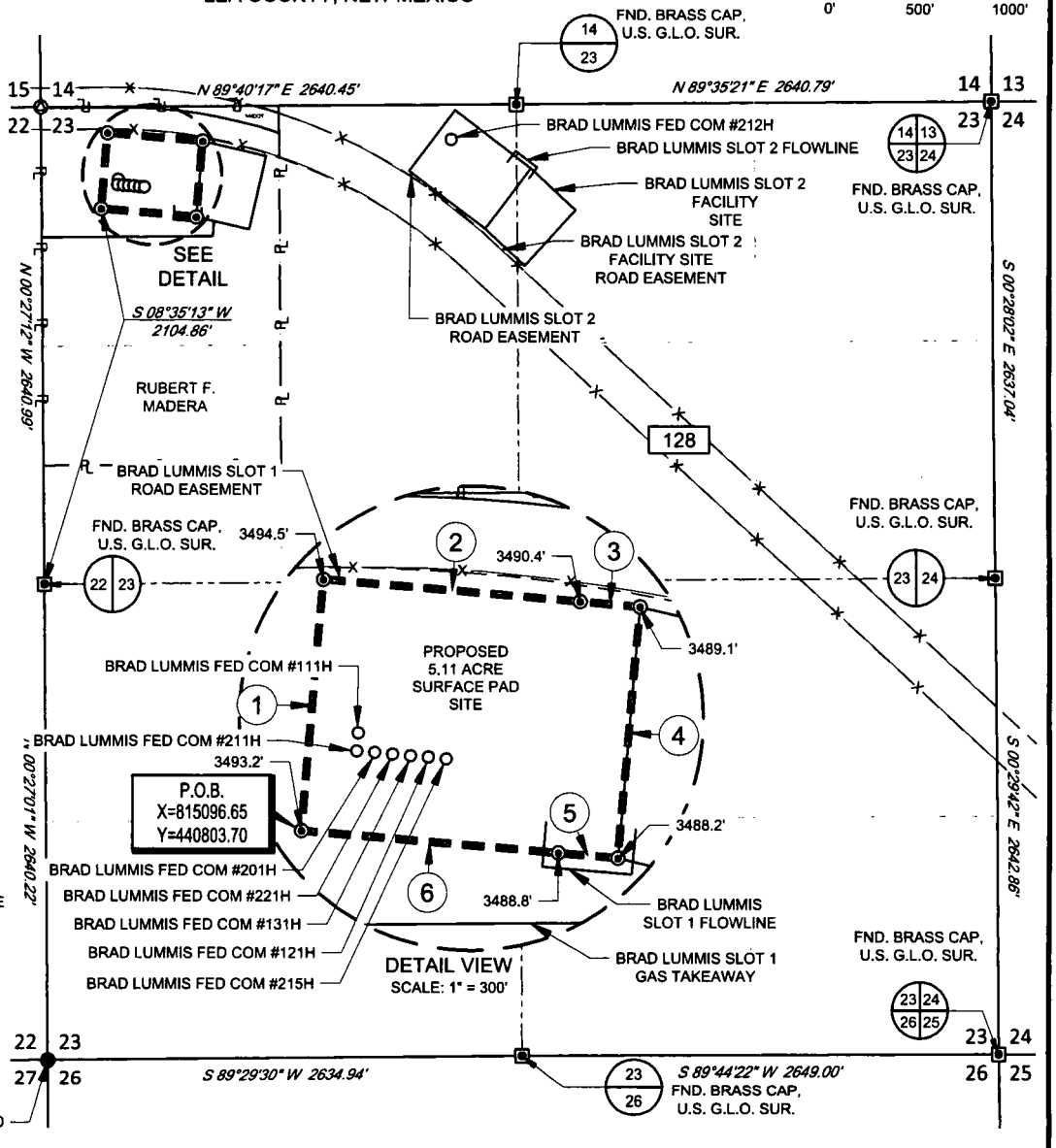
Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

	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
PPP Leg #1	330	FNL	330	FWL	24S	34E	23	Aliquot NWNW	32.2093843	-103.4482115	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 117125	-8783	12685	12275
EXIT Leg #1	330	FSL	330	FWL	24S	34E	23	Aliquot SWSW	32.1966849	-103.4482167	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 117125	-8783	16940	12275
BHL Leg #1	240	FSL	330	FWL	24S	34E	23	Aliquot SWSW	32.1964375	-103.4482168	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 117125	-8783	17030	12275

SECTION 23, TOWNSHIP 24-S, RANGE 34-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SCALE: 1" = 1000'
0' 500' 1000'



BRAD LUMMIS SLOT 1 SURFACE PAD SITE

Metes and Bounds Description of a proposed 5.11 surface pad site located within Section 23, Township 24 South, Range 34 East, N.M.P.M., in Lea County, New Mexico.

BEGINNING at a 1/2" iron rod with cap stamped "Topographic" set for the Southwest corner of this site, from whence a brass cap found for the West quarter corner of said Section 23, bears: S 08°35'13" W, a distance of 2104.86 feet;

Thence N 04°56'08" E, a distance of 420.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northwest corner of this site;

Thence S 85°03'52" E, a distance of 430.00 feet to a 1/2" iron rod with cap stamped "Topographic"

Thence S 85°03'52" E, a distance of 100.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northeast corner of this site;

Thence S 04°56'08" W, a distance of 420.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Southeast corner of this site;

Thence N 85°03'52" W, a distance of 100.00 feet to a 1/2" iron rod with cap stamped "Topographic"

Thence N 85°03'52" W, a distance of 430.00 feet to the Point of Beginning.

LEGEND

- SURVEY/SECTION LINE
- QUARTER SECTION LINE
- SIXTEENTH SECTION LINE
- PROPOSED SITE
- R TRACT BORDER
- ROAD WAY
- X FENCE LINE
- IRON ROD SET
- MONUMENT
- CALCULATED CORNER
- IRON ROD FOUND

LINE TABLE

LINE	BEARING	DISTANCE
1	N 04°56'08" E	420.00'
2	S 85°03'52" E	430.00'
3	S 85°03'52" E	100.00'
4	S 04°56'08" W	420.00'
5	N 85°03'52" W	100.00'
6	N 85°03'52" W	430.00'

Matador PRODUCTION COMPANY

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
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MICHAEL B. BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
APRIL 27, 2018

BRAD LUMMIS SLOT 1 SURFACE PAD SITE	REVISION: INT	DATE
DATE: 04/27/18		
FILE: BO_BRAD_LUMMIS_SLOT_1_SURFACE_PAD_SITE		
DRAWN BY: EAH		
SHEET: 1 OF 2		

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
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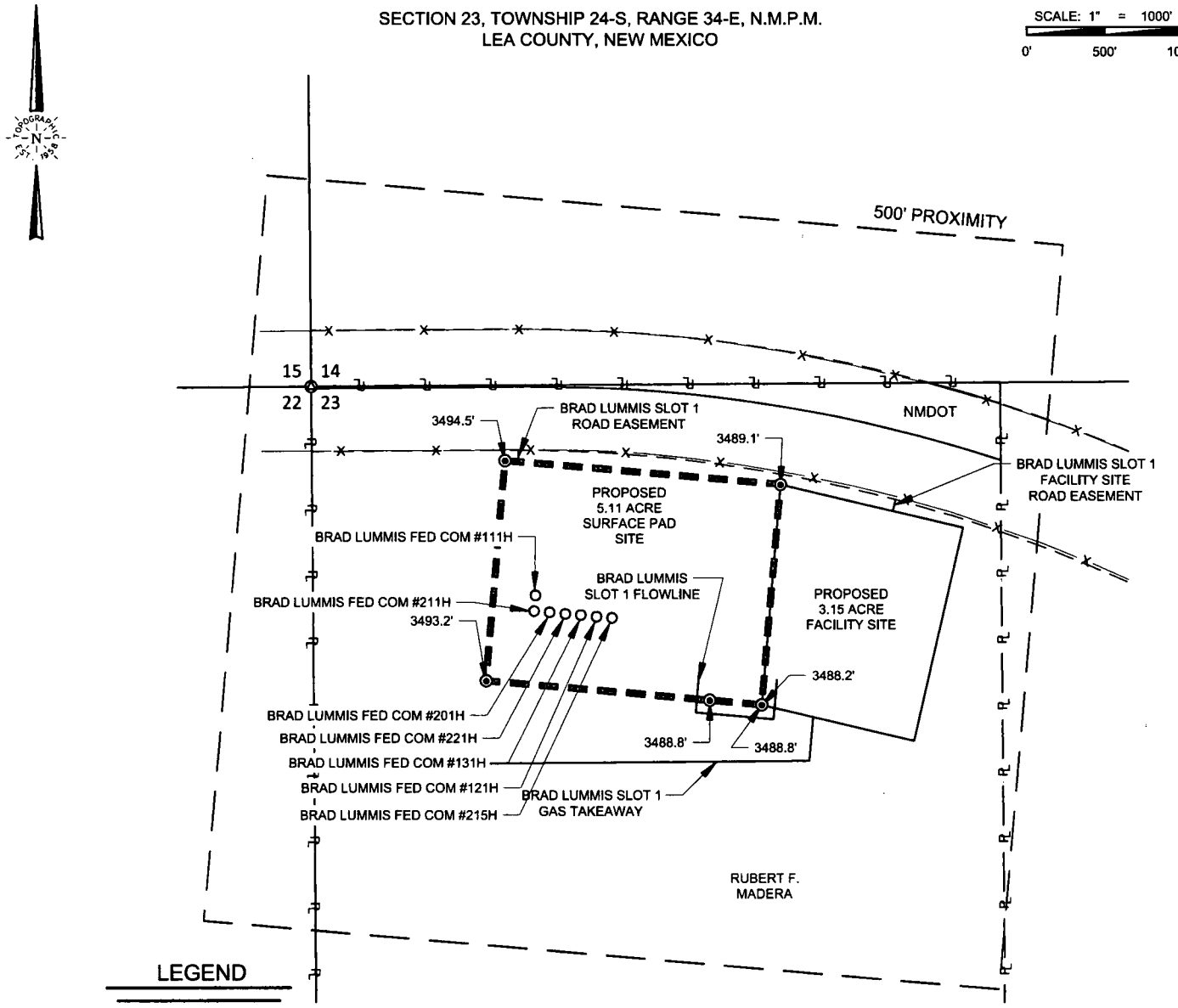
4. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING
5. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT
6. ADJOINER INFORMATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.

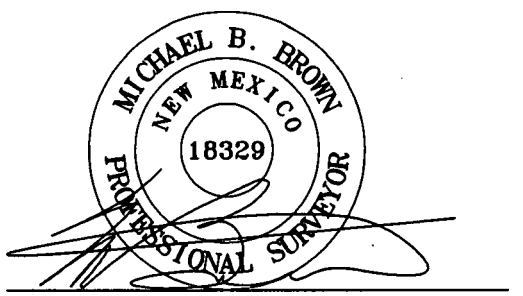
SECTION 23, TOWNSHIP 24-S, RANGE 34-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SCALE: 1" = 1000'
0' 500' 1000'



LEGEND

- SURVEY/SECTION LINE
- 500' OFFSET
- SIXTEENTH SECTION LINE
- PROPOSED SITE
- TRACT BORDER
- ROAD WAY
- FENCE LINE
- IRON ROD SET
- CALCULATED CORNER



Michael Blake Brown, P.S. No. 18329
APRIL 27, 2018

Matador PRODUCTION COMPANY

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BRAD LUMMIS SLOT 1 SURFACE PAD SITE -PROXIMITY MAP-	REVISION:	
	INT	DATE
DATE: 04/27/18		
FILE: BO_BRAD_LUMMIS_SLOT_1_SURFACE_PAD_SITE		
DRAWN BY: EAH		
SHEET: 2 OF 2		

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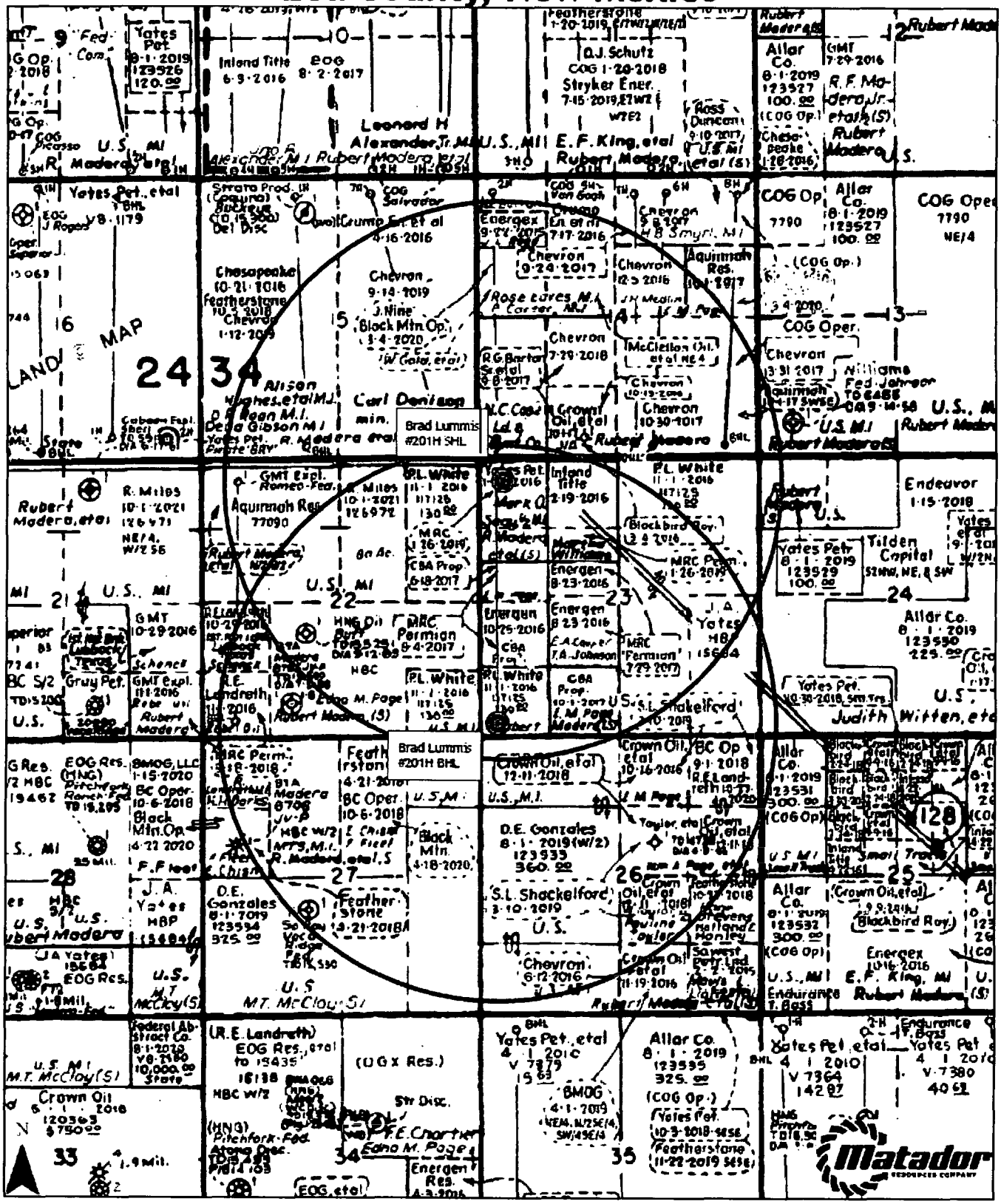
S:\SURVEY\MATADOR_RESOURCES\BRAD_LUMMIS_SLOT_1_SURFACE_PAD_SITE\FINAL_PRODUCTS\BO_BRAD_LUMMIS_SLOT_1_SURFACE_PAD_SITE.DWG 5/2/2018 9:34:07 AM bgregory

Lea County, New Mexico



1 inch = 2,500 feet

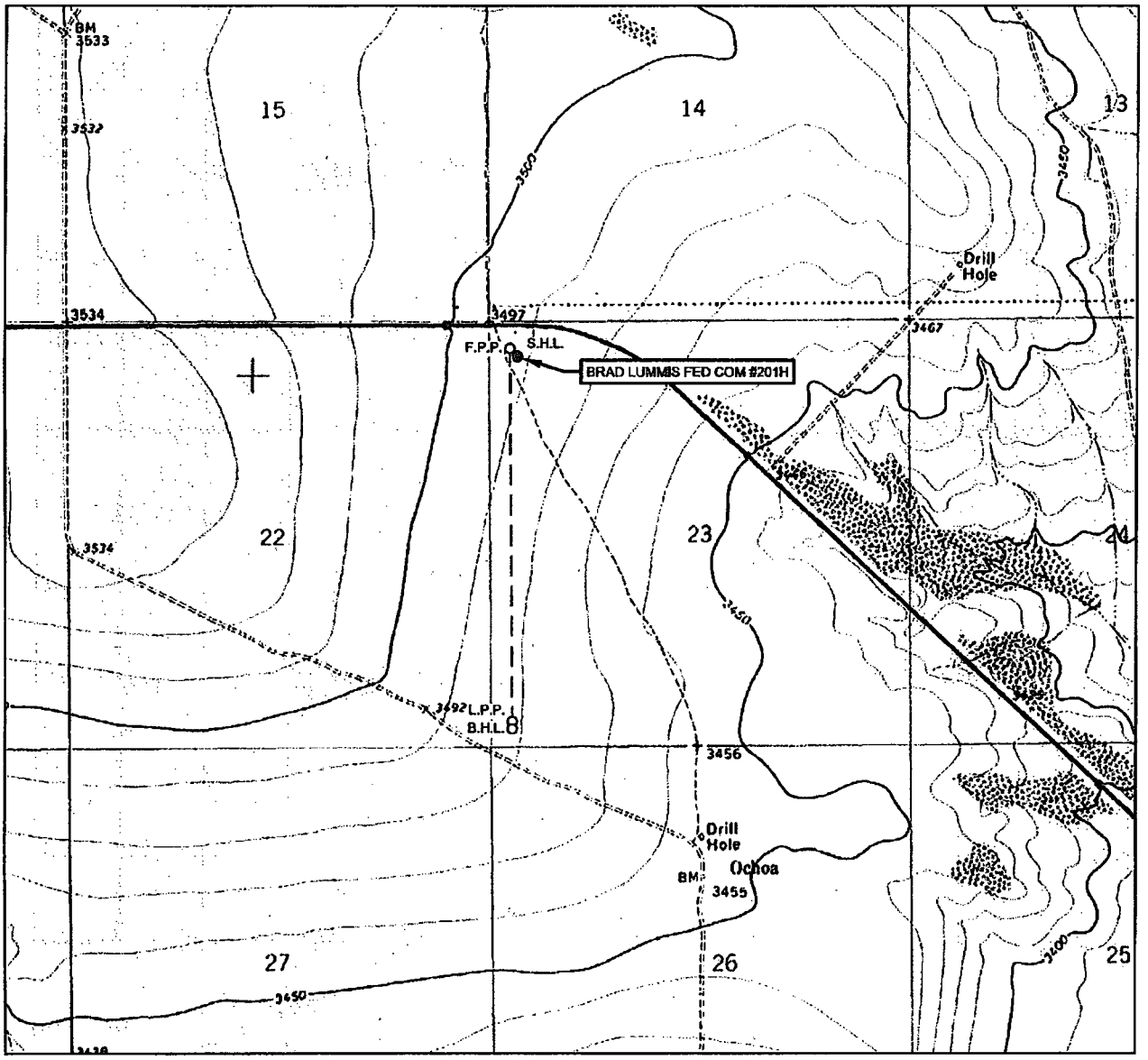
Projection: NAD_1927_StatePlane_New_Mexico_East_FIPS_3001 (feet)

Feet

0 2,500 5,000 10,000

Map Prepared by: AGreen
Date: May 8, 2018
Filename: CrossSectionMap_Plat
Sources: IHS Energy; Midland Map Company; Environmental Systems Research Institute (ESRI)

LOCATION & ELEVATION VERIFICATION MAP



Matador PRODUCTION COMPANY

LEASE NAME & WELL NO.: BRAD LUMMIS FED COM #201H

SECTION 23 TWP 24-S RGE 34-E SURVEY N.M.P.M.
COUNTY LEA STATE NM ELEVATION 3492'
DESCRIPTION 432' FNL & 453' FWL

LATITUDE N 32.2091025 LONGITUDE W 103.4478128

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 MATADOR PRODUCTION COMPANY. 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.

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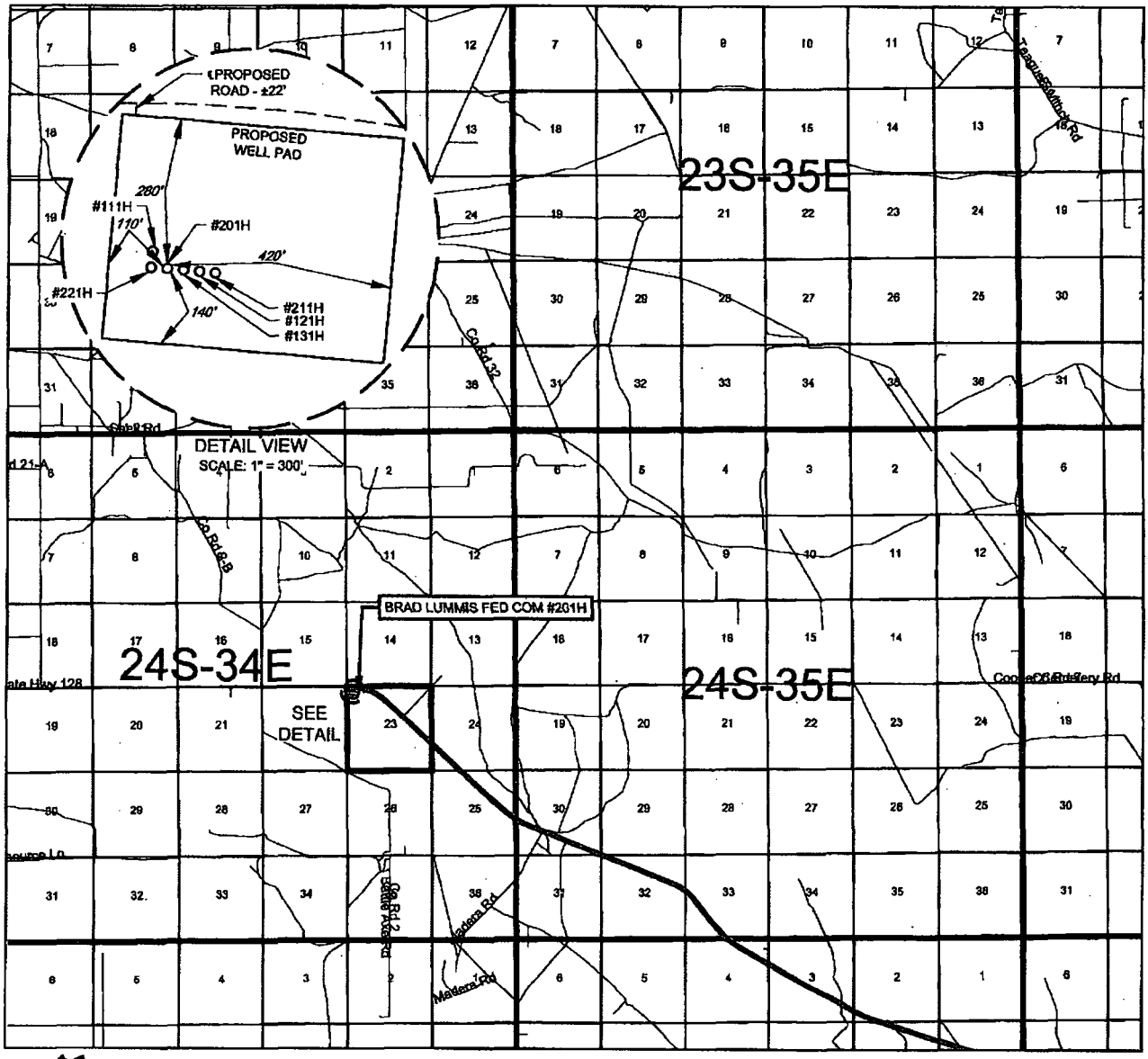
VICINITY MAP



Matador PRODUCTION COMPANY

LEASE NAME & WELL NO.: BRAD LUMMIS FED COM #201H

SECTION 23 TWP 24-S RGE 34-E SURVEY N.M.P.M.
COUNTY LEA STATE NM
DESCRIPTION 432' FNL & 453' FWL

DISTANCE & DIRECTION

FROM INT. OF NM-128 & NM-18, GO WEST ON NM-128 ±16.9 MILES. THENCE SOUTH (LEFT) ON PROPOSED RD. ±22 FEET TO A POINT ±293 FEET NORTHWEST OF THE LOCATION.

SCALE: 1" = 10000'

0' 5000' 10000'

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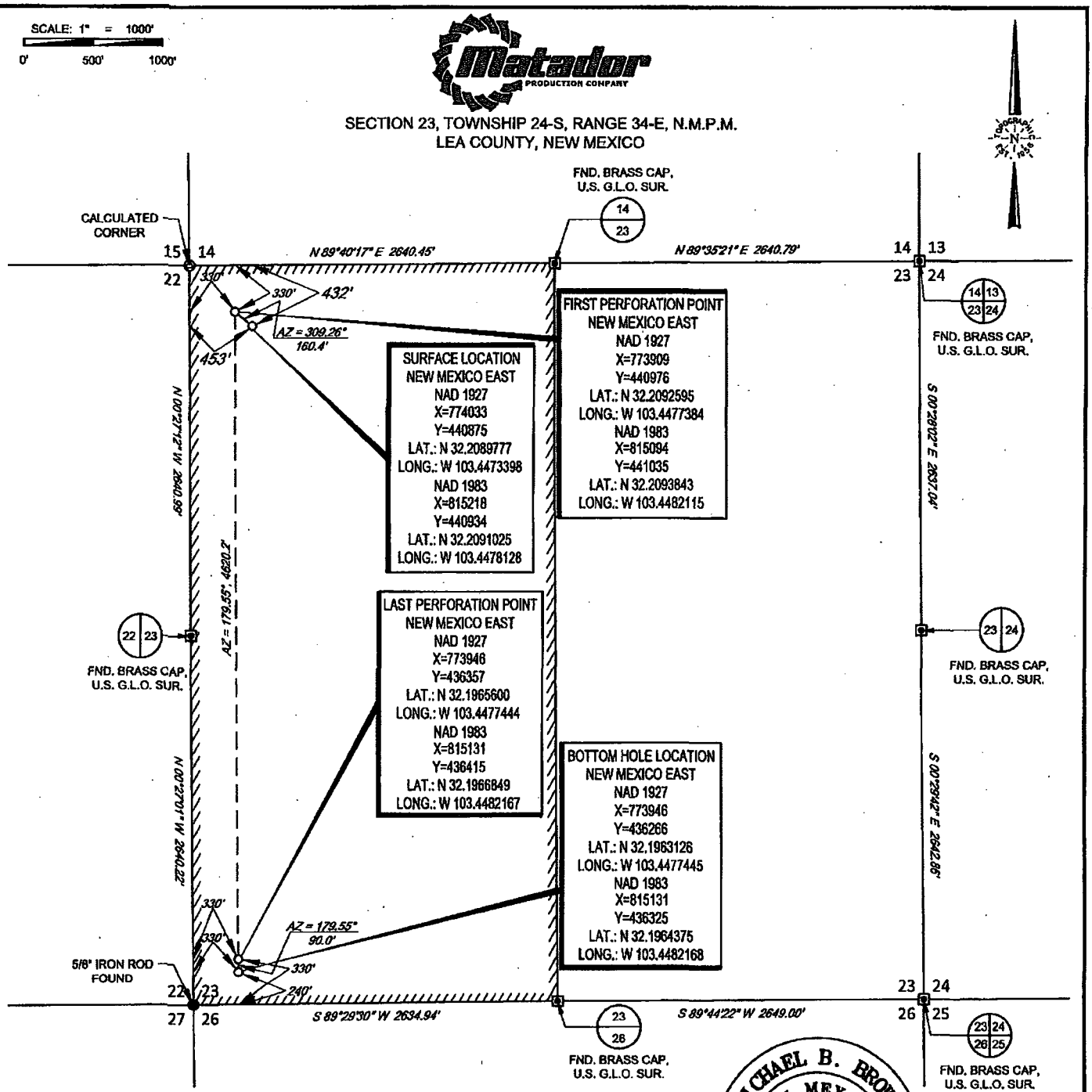

LEASE NAME & WELL NO.: BRAD LUMMIS FED COM #201H

SECTION 23 TWP 24-S RGE 34-E SURVEY N.M.P.M.

COUNTY LEA STATE NM

DESCRIPTION 432' FNL & 453' FWL

DISTANCE & DIRECTION

FROM INT. OF NM-128 & NM-18, GO WEST ON NM-128 ±16.9 MILES, THENCE SOUTH (LEFT) ON PROPOSED RD. ±22 FEET TO A POINT ±293 FEET NORTHWEST OF THE LOCATION.

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AS OF THE DATE OF SURVEY, ALL ABOVE GROUND APPURTENANCES WITHIN 300' OF THE STAKED LOCATION ARE SHOWN HEREON.

MICHAEL B. BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
MAY 03, 2018

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LOYALTY INNOVATION LEGACY
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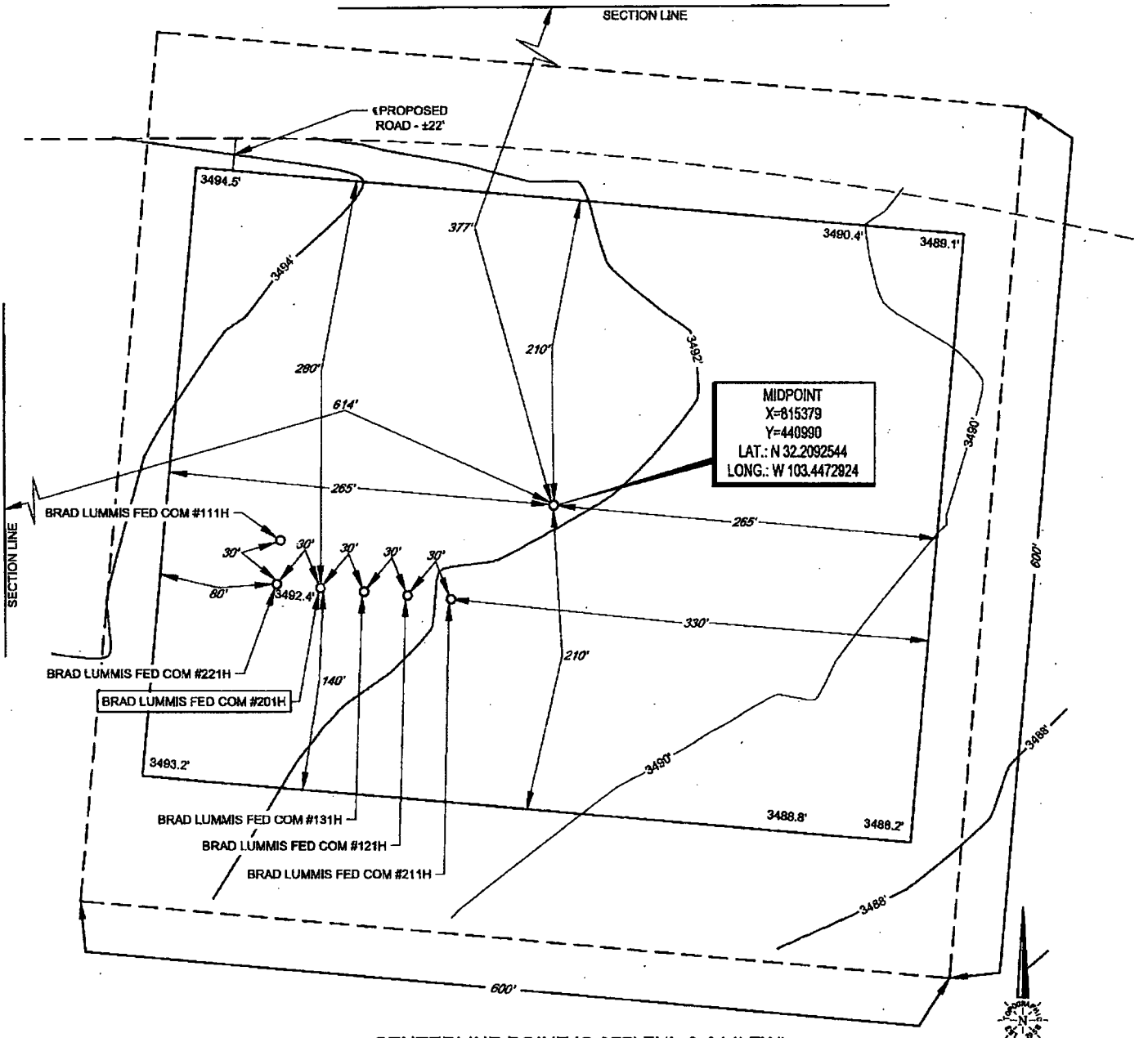
SECTION 23, TOWNSHIP 24-S, RANGE 34-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



CENTERLINE POINT IS 377' FNL & 614' FWL

LEGEND

EXISTING ROAD
PROPOSED ROAD

LEASE NAME & WELL NO.: BRAD LUMMIS FED COM #201H

#201H LATITUDE N 32.2091025 #201H LONGITUDE W 103.4476128

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

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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 MATADOR PRODUCTION COMPANY. 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.

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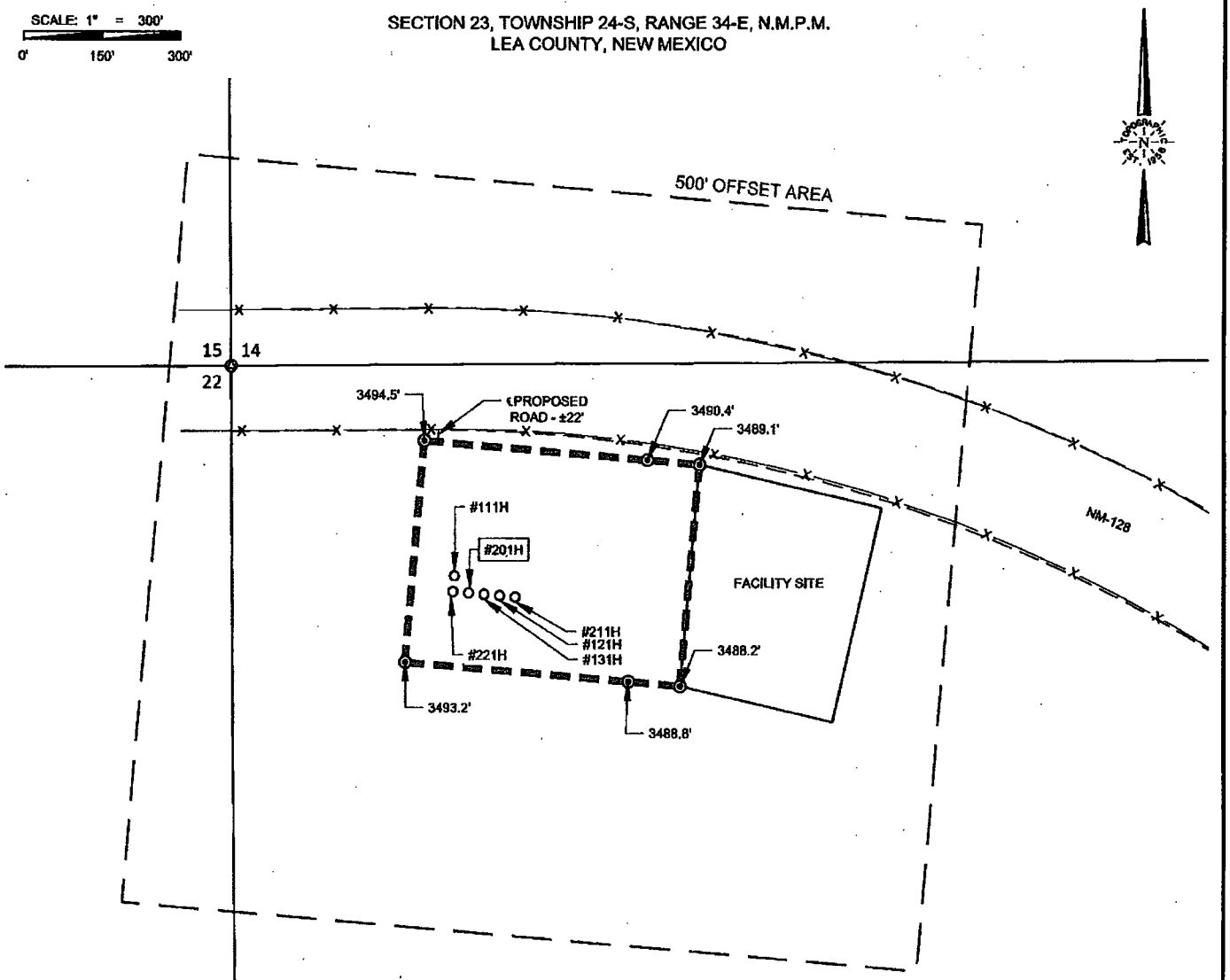
ORIGINAL DOCUMENT SIZE: 8.5" X 11" S:\SURVEY\MATADOR_RESOURCES\BRAD_LUMMIS_23-24S-34E\FINAL_PRODUCTS\LO_BRAD_LUMMIS_FED_COM_201H_REV1.DWG 6/7/2018 11:13:21 AM bgregory

SCALE: 1" = 300'

0' 150' 300'

SECTION 23, TOWNSHIP 24-S, RANGE 34-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEGEND

- PROPOSED SITE
- 500' PROXIMITY
- SURVEY/SECTION LINE
- FENCE
- ROAD WAY
- CALCULATED CORNER
- IRON ROD SET

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Matador PRODUCTION COMPANY

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Michael Blake Brown, P.S. No. 18329
MAY 03, 2018

BRAD LUMMIS FED COM 201H -PROXIMITY MAP-	REVISION:	
	MML	05/03/18
DATE: 04/18/18		
FILE: LO_BRAD_LUMMIS_FED_COM_201H_REV1		
DRAWN BY: EAH		
SHEET: 7 OF 7		

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AFMSS

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

Drilling Plan Data Report

12/10/2018

APD ID: 10400033633 **Submission Date:** 08/31/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3492	1103	1103		USEABLE WATER	No
2	TOP SALT	1925	1568	1568		NONE	No
3	CASTILE	-299	3792	3792		NONE	No
4	BASE OF SALT	-1877	5370	5370		NONE	No
5	BELL CANYON	-1920	5413	5413		NATURAL GAS,OIL	No
6	CHERRY CANYON	-3072	6565	6565		NATURAL GAS,OIL	No
7	BRUSHY CANYON	-4272	7765	7765		NATURAL GAS,OIL	No
8	BONE SPRING LIME	-5756	9249	9249		NATURAL GAS,OIL	No
9	BONE SPRING 1ST	-6439	9932	9973		NATURAL GAS,OIL	No
10	BONE SPRING 2ND	-7089	10581	10581		NATURAL GAS,OIL	No
11	BONE SPRING 3RD	-7808	11300	11300		NATURAL GAS,OIL	No
12	WOLFCAMP	-8630	12122	12122		NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 15000

Equipment: A BOP consisting of 3 rams with 2 pipe rams, 1 blind ram and one annular preventer. The BOP will be utilized 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 Kelly cock 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. A third party company will test the BOPs.

Requesting Variance? YES

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Variance request: Matador requests a variance to have the option of running a speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Matador 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 (see Exhibit E-2). The hose is not required by the manufacturer to be anchored. If the specific hose is not available, then one of equal or higher rating will be used. Matador 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. Matador requests a variance to run 7-5/8" BTC casing inside 9-5/8" BTC casing which will be less than the 0.422" stand off regulation. Matador has met with Christopher Walls and Mustafa Haque as well as other BLM representatives and determined that this would be acceptable 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. Matador Resources requests a variance to drill this well using a 5M annular preventer with a 10M BOP ram stack. The "Well Control Plan For 10M MASP Section of Wellbore" is attached.

Testing Procedure: After setting surface casing, a minimum 5M BOPE system will be installed. Test pressures will be 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high before drilling below surface shoe. In the event that the rig drills multiple wells on the pad and the BOPs are removed after setting Intermediate 2 casing, a full BOP test will be performed when the rig returns and a 10M BOPE system will be installed. Test pressures will be 250 psi low and 10000 psi high with the annular being tested to 250 psi low and 5000 psi high before drilling below the Intermediate 2 shoe.

Choke Diagram Attachment:

BLM_10M_Choke_Manifold_20181107163732.pdf

BOP Diagram Attachment:

BOP_297_001_20180829173801.pdf

297Co_Flex_Certs__Brad_Lummis_Fed_Com__201H_20180831131236.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	Y	0	1150	0	1150			1150	J-55	54.5	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	5400	0	5400			5400	J-55	40	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
3	PRODUCTION	6.125	5.5	NEW	NON API	Y	0	11900	0	11900			11900	P-110	20	OTHER - DWCC-IS-MS	1.125	1.125	BUOY	1.8	BUOY	1.8
4	INTERMEDIATE	8.75	7.625	NEW	NON API	Y	5000	12000	5000	12000			7000	P-110	29.7	OTHER - VAM HTF-NR	1.125	1.125	BUOY	1.8	BUOY	1.8

Casing Attachments

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

VRCC_16_1177___CDS___7.625_in_29.70_ppf_P110_EC_VAM___HTF_NR_Rev02_20180619124429.pdf

Tapered String Spec:

Tapered_String_Spec_Sheet_20180830110314.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20180830095735.pdf

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

Inspection Document:

Spec Document:

5.500in_x_20__VST_P110EC_DWC_C_IS_MS_CDS_20180614144434.PDF

Tapered String Spec:

Tapered_String_Spec_Sheet_20180830110421.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20180830095819.pdf

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

Inspection Document:

Spec Document:

5.500in_x_20___0.361in__P110RY_DWC_C_HT_IS_PLUS_Casing_CDS_20180830110558.PDF

Tapered String Spec:

Tapered_String_Spec_Sheet_20180830110613.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20180830095803.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Casing Attachments

Casing ID: 4 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

7.625___29.7__P110_VAM_HTF_NR_20180830110845.pdf

Tapered String Spec:

Tapered_String_Spec_Sheet_20180830111050.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20180830111008.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	850	650	1.75	13.5	1138	100	C	Bentonite + 2% CaCL2 + 3% NaCl + LCM
SURFACE	Tail		850	1150	330	1.38	14.8	455	100	C	5% NaCl + LCM
INTERMEDIATE	Lead		0	4320	1300	1.85	12.8	2405	100	C	Bentonite + 1% CaCL2 + 8% NaCl + LCM
INTERMEDIATE	Tail		4320	5400	515	1.38	14.8	711	100	C	5% NaCl + LCM
INTERMEDIATE	Lead		4400	10897	425	2.35	11.5	999	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		10897	12897	300	1.39	13.2	417	60	TXI	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		11597	17412	555	1.17	15.8	649	25	H	Fluid Loss + Dispersant + Retarder + LCM

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Section 5 - Circulating Medium

Mud System Type: Closed

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: All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions

Describe the mud monitoring system utilized: An electronic Pason mud monitoring system complying with Onshore Order 2 will be used

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
1150	5400	SALT SATURATED	10	10							
12636	12650	OIL-BASED MUD	12.5	12.5							
0	1150	SPUD MUD	8.3	8.3							
5400	12636	OTHER : FW/cut brine	9	9							

Section 6 - Test, Logging, Coring

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

A 2-person mud logging program will be utilized from the ~5400' to TD. No electic OH logs are planned at this time.

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

CBL,GR,MUDLOG

Coring operation description for the well:

There will be no coring on this well.

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 8223 **Anticipated Surface Pressure:** 8223

Anticipated Bottom Hole Temperature(F): 170

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Emergency_Contacts_20180829174020.docx
Matador_Hydrogen_Sulfide_Drilling_20180829174021.docx
MRC_Energy_Co__Drilling_Contingency_plan_20180829174025.doc

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

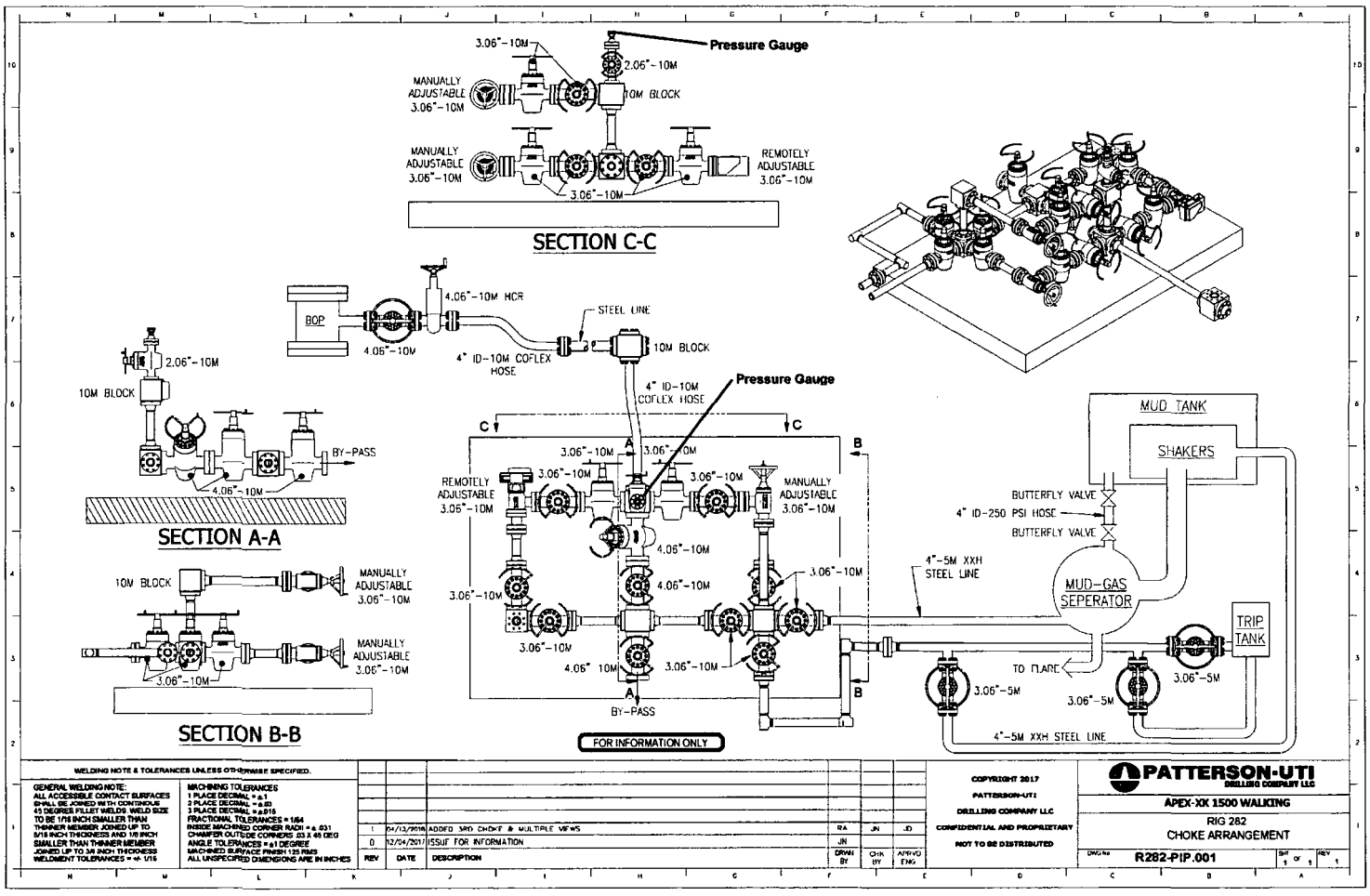
Matador_BradLummisFedCom_201H_PrelimA_WPReport_20180829174048.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

10M_Well_Control_Plan_20180829175738.docx
Close_Loop_System_20180829175739.docx
Gas_Capture_Plan___Brad_Lummis_Fed_Com___121H__131H__201H__211H__215H__2..._20180830130122.docx
Full_Wellhead_4_String_20181107163824.pdf

Other Variance attachment:



WELDING NOTE & TOLERANCES UNLESS OTHERWISE SPECIFIED.

GENERAL WELDING NOTE:
ALL ACCESSIBLE CONTACT SURFACES SHALL BE JOINED WITH CONTINUOUS 45 DEGREES FILLET WELDS. WELD SIZE TO BE 1/16 INCH SMALLER THAN THINNER MEMBER. JOINED UP TO 5/16 INCH THICKNESS AND 1/8 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/4 INCH THICKNESS. WELDMENT TOLERANCES = +/- 1/16

MACHINING TOLERANCES
1 PLACE DECIMAL = ±.1
2 PLACE DECIMAL = ±.03
3 PLACE DECIMAL = ±.015
FRACTIONAL TOLERANCES = 1/64
INSIDE MACHINED CORNER RADII = ±.031
CHAMFER OUTSIDE CORNERS .03 X 45 DEG
ANGLE TOLERANCES = ±1 DEGREE
MACHINED SURFACE FINISH 125 RMS
ALL UNSPECIFIED DIMENSIONS ARE IN INCHES

REV	DATE	DESCRIPTION	DRWN BY	CHK BY	APVD ENG
1	04/13/2018	ADDED 3RD CHOKE & MULTIPLE VIEWS	RA	JN	JD
0	12/04/2017	ISSUE FOR INFORMATION	JN		

PATTERSON-UTI DRILLING COMPANY LLC

APEX-XK 1500 WALKING

RIG 282

CHOKE ARRANGEMENT

DWG No R282-PIP.001

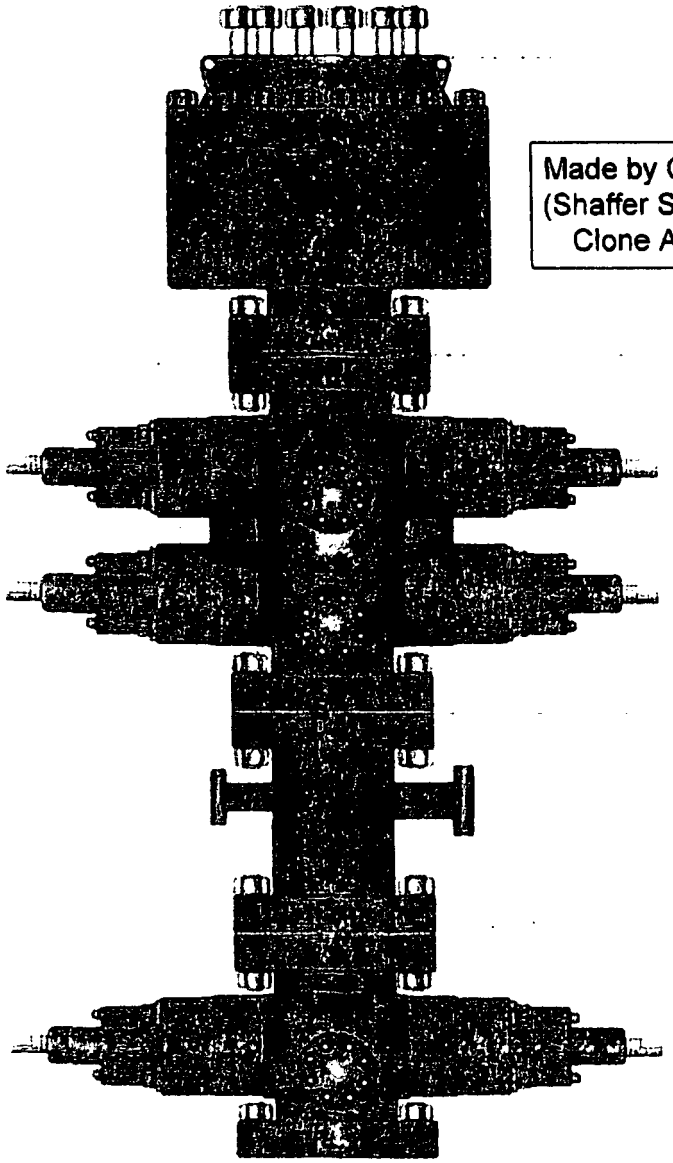
SHT 1 OF 1

REV 1

Exhibit E-1: BOP
Brad Lummis Fed Com #201H
Matador Resources Company

PATTERSON-UTI
Well Control

RIG: 297



Made by Cameron
(Shaffer Spherical)
Clone Annular

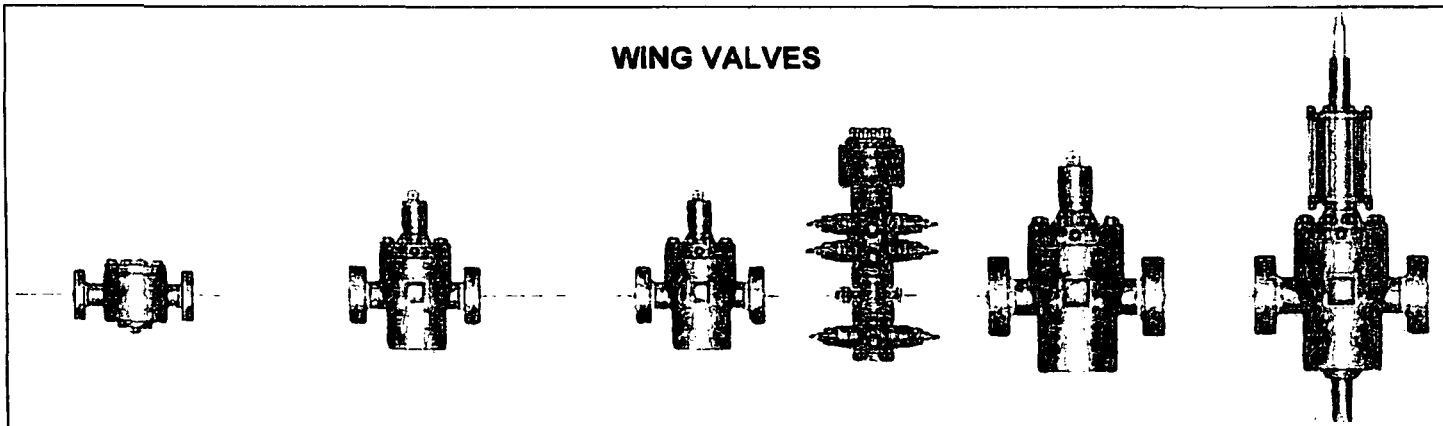
PATTERSON-UTI # PS2-628
STYLE: New Shaffer Spherical
BORE 13 5/8" **PRESSURE** 5,000
HEIGHT: 48 ½" **WEIGHT:** 13,800 lbs

PATTERSON-UTI # PC2-128
STYLE: New Cameron Type U
BORE 13 5/8" **PRESSURE** 10,000
RAMS: TOP 5" Pipe BTM Blinds
HEIGHT: 66 5/8" **WEIGHT:** 24,000 lbs

Length 40" **Outlets** 4" 10M
DSA 4" 10M x 2" 10M

PATTERSON-UTI # PC2-228
STYLE: New Cameron Type U
BORE 13 5/8" **PRESSURE** 10,000
RAMS: 5" Pipe
HEIGHT: 41 5/8" **WEIGHT:** 13,000 lbs

WING VALVES



2" Check Valve | 2" Manual Valve | 2" Manual Valve | 4" Manual Valve | 4" Hydraulic Valve

Exhibit E-2: Co-Flex Certifications
Brad Lummis Fed Com #201H
Matador Resources Company

Midwest Hose & Specialty, Inc.

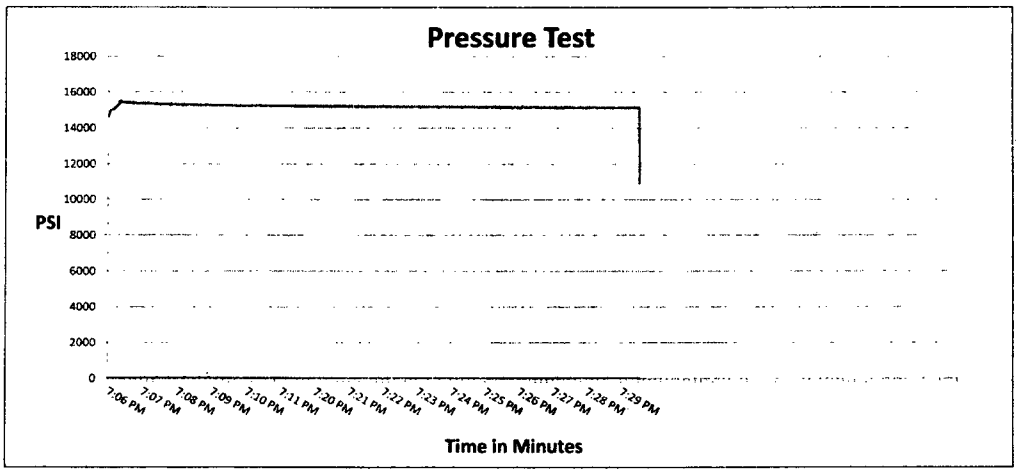
Internal Hydrostatic Test Graph

December 8, 2014

Customer: Patterson

Pick Ticket #: 284918

Hose Specifications		Verification	
Hose Type	**Length**	**Type of Fitting**	**Coupling Method**
Ck	10'	4-1/16 10K	Swage
I.D.	**O.D.**	**Die Size**	**Final O.D.**
3"	4.79"	5.37"	5.37"
Working Pressure	**Burst Pressure**	**Hose Serial #**	**Hose Assembly Serial #**
10000 PSI	Standard Safety Multiplier Applies	10490	284918-2



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	15 2/4 Minutes		15732 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Tyler Hill

Approved By: Ryan Adams

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-2	Hose O.D. (Inches)	5.30"
Hose Assembly Length	10'	Armor (yes/no)	YES

Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	91996	Stem (Heat #)	91996
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.
Test Pressure Hold Time (minutes)	15 1/2	

Date Tested	Tested By	Approved By
12/8/2014		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **260471**
Sales Order # **236404**	*Date Assembled:* **12/8/2014**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**287918-2**	*Hose Lot # and Date Code*	**10490-01/13**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
Ryan Adams	**12/9/2014**

Exhibit E-2: Co-Flex Certifications
Brad Lummis Fed Com #201H
Matador Resources Company

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

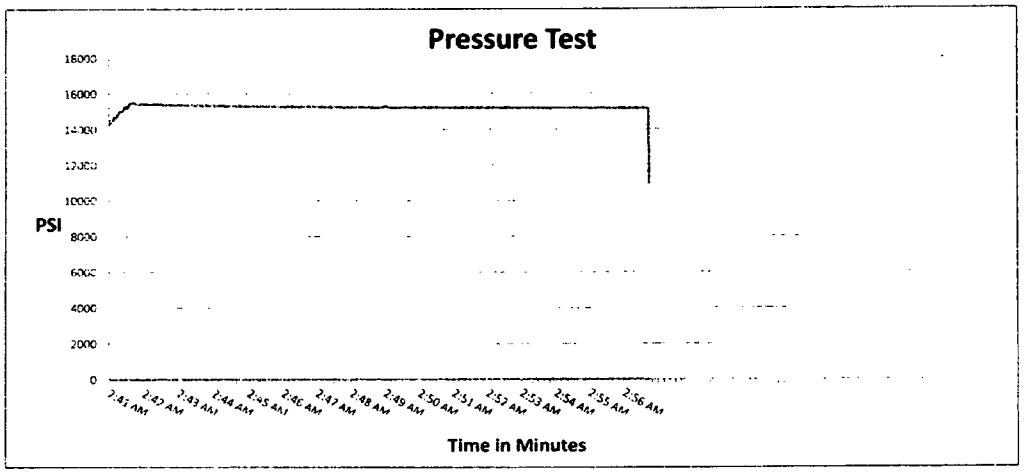
December 9, 2014

Customer: Patterson

Pick Ticket #: 284918

R297

Hose Specifications		Verification	
Hose Type	**Length**	**Type of Fitting**	**Coupling Method**
Ck	20'	4-1/16 10K	Swage
I.D.	**O.D.**	**Die Size**	**Final O.D.**
3"	4.77"	5.37"	5.40"
Working Pressure	**Burst Pressure**	**Hose Serial #**	**Hose Assembly Serial #**
10000 PSI	Standard Safety Multiplier Applies	10490	284918-1



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	15 2/4 Minutes		15893 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Tyler Hill*

Approved By: *Ryan Adams*

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-1	Hose O.D. (Inches)	5.30"
Hose Assembly Length	20'	Armor (yes/no)	YES

Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	A141420	Stem (Heat #)	A141420
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)	V3579	Connection (Heat #)	V3579
Dies Used	5.37	Dies Used	5.37

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	15 1/2	

Date Tested	Tested By	Approved By
12/9/2014		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **260471**
Sales Order # **236404**	*Date Assembled:* **12/8/2014**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**287918-1**	*Hose Lot # and Date Code*	**10490-01/13**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
	12/9/2014

Exhibit E-2: Co-Flex Certifications
Brad Lummis Fed Com #201H
Matador Resources Company

Midwest Hose & Specialty, Inc.

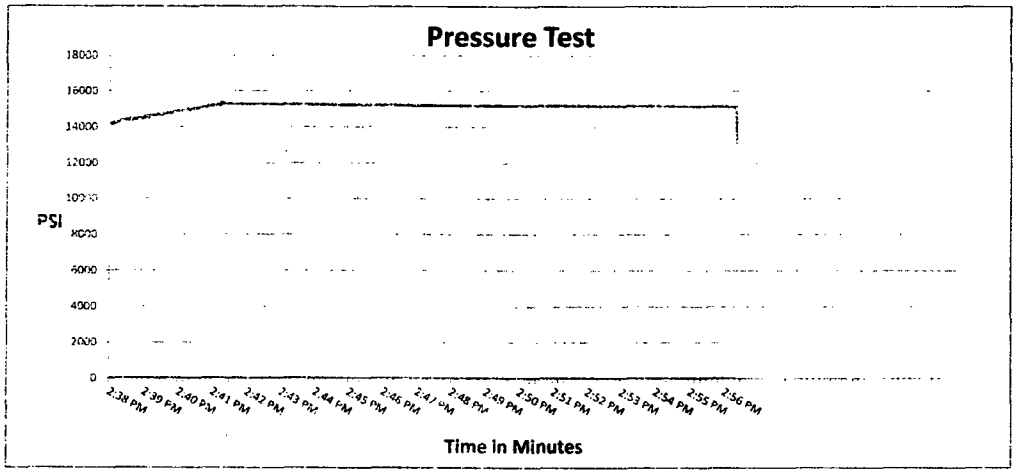
Internal Hydrostatic Test Graph

December 9, 2014

Customer: Patterson

Pick Ticket #: 284918

Hose Specifications		Verification	
Hose Type	**Length**	**Type of Fitting**	**Coupling Method**
Mud	70'	4 1/16 10K	Swage
I.D.	**O.D.**	**Die Size**	**Final O.D.**
3"	4.79"	5.37"	5.37"
Working Pressure	**Burst Pressure**	**Hose Serial #**	**Hose Assembly Serial #**
10000 PSI	Standard Safety Multiplier Applies	10490	284918-3



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	16 3/4 Minutes		15410 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Tyler Hill*

Approved By: *Ryan Adams*

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-3	Hose O.D. (Inches)	5.23"
Hose Assembly Length	70'	Armor (yes/no)	YES

Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	A141420	Stem (Heat #)	A141420
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	16 3/4	

Date Tested	Tested By	Approved By
12/9/2014		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **260471**
Sales Order # **236404**	*Date Assembled:* **12/8/2014**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**287918-3**	*Hose Lot # and Date Code*	**10490-01/13**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
	12/9/2014

Issued on: 12 Janv. 2017 by T. DELBOSCO

VRCC 16-1177 Rev02 for Houston Field Service

DATA ARE INFORMATIVE ONLY.
BASED ON SI_PD-101836 P&B

VAM® HTF-NR™
Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	P110 EC	6.750 in.	VAM® HTF NR

PIPE PROPERTIES	
Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	Enhanced API
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi
Tensile Yield Strength	1 068 klb
Internal Yield Pressure	10 760 psi
Collapse pressure	7 360 psi

CONNECTION PROPERTIES	
Connection Type	Premium Integral Flush
Connection OD (nom)	7.701 in.
Connection ID (nom)	6.782 in.
Make-Up Loss	4.657 in.
Critical Cross Section	4.971 sqin.
Tension Efficiency	58 % of pipe
Compression Efficiency	72.7 % of pipe
Compression Efficiency with Sealability	34.8 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES	
Tensile Yield Strength	619 klb
Compression Resistance	778 klb
Compression with Sealability	372 klb
Internal Yield Pressure	10 760 psi
External Pressure Resistance	7 360 psi
Max. Bending	44 °/100ft
Max. Bending with Sealability	17 °/100ft

TORQUE VALUES	
Min. Make-up torque	9 600 ft.lb
Opti. Make-up torque	11 300 ft.lb
Max. Make-up torque	13 000 ft.lb
Max. Torque with Sealability	58 500 ft.lb
Max. Torsional Value	73 000 ft.lb

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to acheive better cementation in highly deviated and critical High Pressure / High Temperature wells.

Looking ahea on the outcoming testing industry standards, VAM® decided to create an upgraded design and launch on the market the VAM® HTF-NR as the new standard version of VAM® extreme high torque flush connection. The VAM® HTF-NR has extensive tests as per API RP 5C5:2015 CAL II which include the gas sealability having load points with bending, internal pressure and high temperature at 135°C.

Do you need help on this product? - Remember no one knows VAM® like VAM®

canada@vamfieldservice.com *uk@vamfieldservice.com* *china@vamfieldservice.com*
usa@vamfieldservice.com *dubai@vamfieldservice.com* *baku@vamfieldservice.com*
mexico@vamfieldservice.com *nigeria@vamfieldservice.com* *singapore@vamfieldservice.com*
brazil@vamfieldservice.com *angola@vamfieldservice.com* *australia@vamfieldservice.com*

Over 180 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

Other Connection Data Sheets are available at www.vamservices.com

Vallourec Group

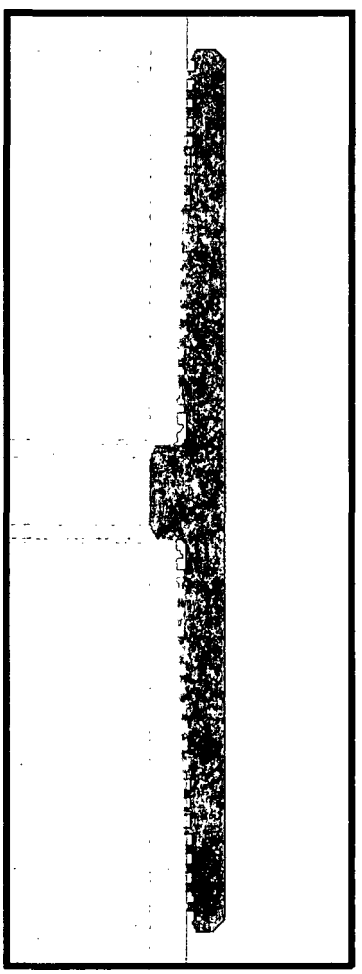
vallourec

Technical Specifications

Connection Type:	Size(O.D.):	Weight (Wall):	Grade:
DWC/C-IS MS Casing	5-1/2 in	20.00 lb/ft (0.361 in)	VST P110 EC
standard			

	Material
VST P110 EC	Grade
125,000	Minimum Yield Strength (psi)
135,000	Minimum Ultimate Strength (psi)
	Pipe Dimensions
5.500	Nominal Pipe Body O.D. (in)
4.778	Nominal Pipe Body I.D.(in)
0.361	Nominal Wall Thickness (in)
20.00	Nominal Weight (lbs/ft)
19.83	Plain End Weight (lbs/ft)
5.828	Nominal Pipe Body Area (sq in)
	Pipe Body Performance Properties
729,000	Minimum Pipe Body Yield Strength (lbs)
12,090	Minimum Collapse Pressure (psi)
14,360	Minimum Internal Yield Pressure (psi)
13,100	Hydrostatic Test Pressure (psi)
	Connection Dimensions
6.115	Connection O.D. (in)
4.778	Connection I.D. (in)
4.653	Connection Drift Diameter (in)
4.13	Make-up Loss (in)
5.828	Critical Area (sq in)
100.0	Joint Efficiency (%)
	Connection Performance Properties
729,000	Joint Strength (lbs)
26,040	Reference String Length (ft) 1.4 Design Factor
728,000	API Joint Strength (lbs)
729,000	Compression Rating (lbs)
12,090	API Collapse Pressure Rating (psi)
14,360	API Internal Pressure Resistance (psi)
104.2	Maximum Uniaxial Bend Rating [degrees/100 ft]
	Appoximated Field End Torque Values
16,100	Minimum Final Torque (ft-lbs)
18,600	Maximum Final Torque (ft-lbs)
21,100	Connection Yield Torque (ft-lbs)

VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com

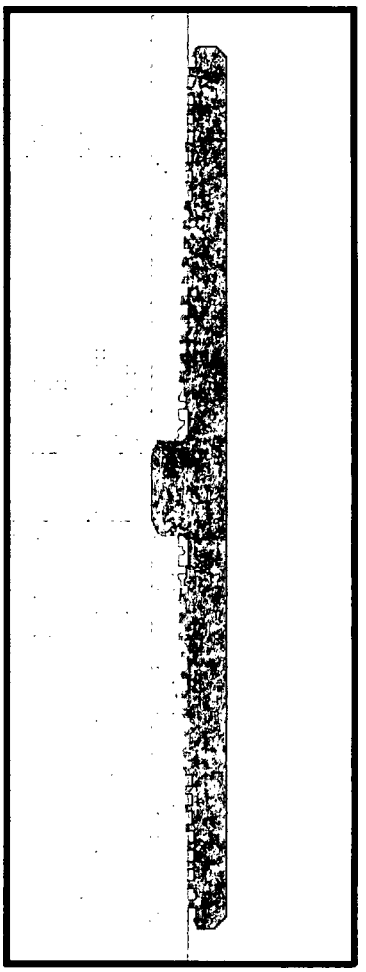


For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

1/11/2017 8:38:10 AM

DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a give pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



1/11/2017 8:38:10 AM

Issued on: 12 Janv. 2017 by T. DELBOSCO

VRCC 16-1177 Rev02 for Houston Field Service

DATA ARE INFORMATIVE ONLY.
BASED ON SI_PD-101836 P&B

VAM® HTF-NR™
Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	P110 EC	6.750 in.	VAM® HTF NR

PIPE PROPERTIES	
Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	Enhanced API
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi
Tensile Yield Strength	1 068 klb
Internal Yield Pressure	10 760 psi
Collapse pressure	7 360 psi

CONNECTION PROPERTIES	
Connection Type	Premium Integral Flush
Connection OD (nom)	7.701 in.
Connection ID (nom)	6.782 in.
Make-Up Loss	4.657 in.
Critical Cross Section	4.971 sqin.
Tension Efficiency	58 % of pipe
Compression Efficiency	72.7 % of pipe
Compression Efficiency with Sealability	34.8 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES	
Tensile Yield Strength	619 klb
Compression Resistance	778 klb
Compression with Sealability	372 klb
Internal Yield Pressure	10 760 psi
External Pressure Resistance	7 360 psi
Max. Bending	44 °/100ft
Max. Bending with Sealability	17 °/100ft

TORQUE VALUES	
Min. Make-up torque	9 600 ft.lb
Opti. Make-up torque	11 300 ft.lb
Max. Make-up torque	13 000 ft.lb
Max. Torque with Sealability	58 500 ft.lb
Max. Torsional Value	73 000 ft.lb

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to acheive better cementation in highly deviated and critical High Pressure / High Temperature wells.

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Do you need help on this product? - Remember no one knows VAM® like VAM®

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brazil@vamfieldservice.com *angola@vamfieldservice.com* *australia@vamfieldservice.com*

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Vallourec Group

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Tapered String Spec Sheet-Brad Lummis #201H

Name	Hole Size	Top Setting Depth (MD)	Top Setting Depth (TVD)	Bottom Setting Depth (MD)	Bottom Setting Depth (TVD)	Casing Size	Wt/Grade	Joint Type	API Standard
Surface	17-1/2"	0	0	1150	1150	13-3/8" (new)	54.5# J-55	BUTT	Yes
Intermediate	12-1/4"	0	0	5400	5400	9-5/8" (new)	40# J-55	BUTT	Yes
Intermediate 2 Top	8-3/4"	0	0	5000	5000	7-5/8" (new)	29.7# P-110	BUTT	Yes
Intermediate 2 Middle	8-3/4"	5000	5000	12000	12000	7-5/8" (new)	29.7# P-110	VAM HTF-NR	No
Intermediate 2 Bottom	8-3/4"	12000	12000	12897	12636	7" (new)	29# P-110	BUTT	Yes
Production Top	6-1/8"	0	0	11900	11900	5-1/2" (new)	20# P-110	DWCC-IS MS	No
Production Bottom	6-1/8"	11900	11900	17412	12650	4-1/2" (new)	13.5# P-110	DWCC-HT-IS	No

Safety Design Factors: Collapse: 1.125, Burst: 1.125, Body Tensile: 1.8 (Buoyant), Joint Tensile: 1.8 (Buoyant)

Tapered String Spec Sheet-Brad Lummis #201H

Name	Hole Size	Top Setting Depth (MD)	Top Setting Depth (TVD)	Bottom Setting Depth (MD)	Bottom Setting Depth (TVD)	Casing Size	Wt/Grade	Joint Type	API Standard
Surface	17-1/2"	0	0	1150	1150	13-3/8" (new)	54.5# J-55	BUTT	Yes
Intermediate	12-1/4"	0	0	5400	5400	9-5/8" (new)	40# J-55	BUTT	Yes
Intermediate 2 Top	8-3/4"	0	0	5000	5000	7-5/8" (new)	29.7# P-110	BUTT	Yes
Intermediate 2 Middle	8-3/4"	5000	5000	12000	12000	7-5/8" (new)	29.7# P-110	VAM HTF-NR	No
Intermediate 2 Bottom	8-3/4"	12000	12000	12897	12636	7" (new)	29# P-110	BUTT	Yes
Production Top	6-1/8"	0	0	11900	11900	5-1/2" (new)	20# P-110	DWCC-IS MS	No
Production Bottom	6-1/8"	11900	11900	17412	12650	4-1/2" (new)	13.5# P-110	DWCC-HT-IS	No

Safety Design Factors: Collapse: 1.125, Burst: 1.125, Body Tensile: 1.8 (Buoyant), Joint Tensile: 1.8 (Buoyant)

Tapered String Spec Sheet-Brad Lummis #201H

Name	Hole Size	Top Setting Depth (MD)	Top Setting Depth (TVD)	Bottom Setting Depth (MD)	Bottom Setting Depth (TVD)	Casing Size	Wt/Grade	Joint Type	API Standard
Surface	17-1/2"	0	0	1150	1150	13-3/8" (new)	54.5# J-55	BUTT	Yes
Intermediate	12-1/4"	0	0	5400	5400	9-5/8" (new)	40# J-55	BUTT	Yes
Intermediate 2 Top	8-3/4"	0	0	5000	5000	7-5/8" (new)	29.7# P-110	BUTT	Yes
Intermediate 2 Middle	8-3/4"	5000	5000	12000	12000	7-5/8" (new)	29.7# P-110	VAM HTF-NR	No
Intermediate 2 Bottom	8-3/4"	12000	12000	12897	12636	7" (new)	29# P-110	BUTT	Yes
Production Top	6-1/8"	0	0	11900	11900	5-1/2" (new)	20# P-110	DWCC-IS MS	No
Production Bottom	6-1/8"	11900	11900	17412	12650	4-1/2" (new)	13.5# P-110	DWCC-HT-IS	No

Safety Design Factors: Collapse: 1.125, Burst: 1.125, Body Tensile: 1.8 (Buoyant), Joint Tensile: 1.8 (Buoyant)

Tapered String Spec Sheet-Brad Lummis #201H

Name	Hole Size	Top Setting Depth (MD)	Top Setting Depth (TVD)	Bottom Setting Depth (MD)	Bottom Setting Depth (TVD)	Casing Size	Wt/Grade	Joint Type	API Standard
Surface	17-1/2"	0	0	1150	1150	13-3/8" (new)	54.5# J-55	BUTT	Yes
Intermediate	12-1/4"	0	0	5400	5400	9-5/8" (new)	40# J-55	BUTT	Yes
Intermediate 2 Top	8-3/4"	0	0	5000	5000	7-5/8" (new)	29.7# P-110	BUTT	Yes
Intermediate 2 Middle	8-3/4"	5000	5000	12000	12000	7-5/8" (new)	29.7# P-110	VAM HTF-NR	No
Intermediate 2 Bottom	8-3/4"	12000	12000	12897	12636	7" (new)	29# P-110	BUTT	Yes
Production Top	6-1/8"	0	0	11900	11900	5-1/2" (new)	20# P-110	DWCC-IS MS	No
Production Bottom	6-1/8"	11900	11900	17412	12650	4-1/2" (new)	13.5# P-110	DWCC-HT-IS	No

Safety Design Factors: Collapse: 1.125, Burst: 1.125, Body Tensile: 1.8 (Buoyant), Joint Tensile: 1.8 (Buoyant)

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_B=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_B=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Exhibit E-6: H2S Contingency Plan Emergency Contacts
Brad Lummis Fed Com #201H
Matador Resources Company
Sec. 23, 24S, 34E
Lea County, NM

Company Office			
Matador Resources Company	(972)-371-5200		
Key Personnel			
Name	**Title**	**Office**	**Mobile**
Billy Goodwin	Vice President Drilling	972-371-5210	817-522-2928
Dee Smith	Drilling Superintendent	972-371-5447	972-822-1010
Blake Hermes	Drilling Engineer	972-371-5485	713-876-8558
	Construction Superintendent		
	Construction Superintendent		

Artesia	
Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283
Carlsbad	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
New Mexico Oil Conservation Division	575-887-6544
Santa Fe	
New Mexico Emergency Response Comission (Santa Fe)	505-476-9600
New Mexico Emergency Response Comission (Santa Fe) 24 hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National	
National Emegency Response Center (Washington, D.C.)	800-424-8802
Medical	
Flight for Life- 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare- R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb- 2301 Yale Blvd S.E., D3; Albuquerque, NM	505-842-4433
SB Air Med Service- 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other		
Boots & Coots IWC	800-256-9688	or 281-931-8884
Cudd Pressure Control	432-699-0139	or 432-563-3356

Haliburton	575-746-2757
B.J. Services	575-746-3569

Hydrogen Sulfide Drilling

Operations Plan

Matador 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 Windsocks and / Wind Streamers:

- Windsocks at mud pit area should be high enough to be visible
- Windsock 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 Exhibit E-1

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

- See exhibit E-6

HYDROGEN SULFIDE CONTINGENCY PLAN
Drilling, Testing, & Completion

MRC ENERGY CO.

Brad Lummis Fed Com #201H

Reviewers

---------- Operations Manager
---------- Operations Supt.
---------- Staff RES
---------- Field Supv.
Blake Hermes---Engineering

Latitude: 32.2089777" N
Longitude: 103.4473398" W

SHL 432' FNL & 453' FWL, Sec. 23
BHL 240' FSL & 330' FWL, Sec. 23

H2S Contingency Plan # 0165 **Revision# 0**

This H2S Contingency Plan is subject to updating

Effective date: July 8, 2015

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INTRODUCTION

The H2S equipment will be rigged up 2 days prior to reaching a potential H2S containing zone. Drilling into any potential H2S zone shall not commence until the on-site MRC Drilling Supervisor has confirmed this plan in place.

The onsite Drilling Foreman will give Total Safety one week (7 days) notice to prepare for rig up of H2S equipment)

To be effective, the plan requires the cooperation and effort of each person participating in the drilling of an H_2S well. Each person must know his/her responsibilities and all emergency and safety procedures. He/she should thoroughly understand and be able to use with accuracy, all safety equipment while performing his/her normal duties, if the circumstance should arise. He/she should therefore familiarize himself/herself with the location of all safety equipment and check to see that it is properly stored, easily accessible at all times, and routinely maintained.

It is the intention of MRC ENERGY CO. and the Drilling Contractor to make every effort to provide adequate safeguards against harm to persons on the rig and in the immediate vicinity from the effects of hydrogen sulfide, which may be released into the atmosphere under emergency conditions. However, the initiative rests with the individual in utilizing the safeguards provided. The ideas and suggestions of the individuals involved in the drilling of this well are highly welcomed and act as a fundamental tool for providing the safest working conditions possible.

The drilling representative is required to enforce these procedures. They are set up for your safety and the safety of all others.

II. PURPOSE

It is MRC Energy Co.'s intent to provide a safe working place, not only for its employees, but also for other contractors who are aiding in the drilling of this well. The safety of the general public is of utmost concern. All precautions will be taken to keep a safe working environment and protect the public.

There is a possibility of encountering toxic hydrogen sulfide gas. Safety procedures must be adhered to in order to protect all personnel connected with the operations as well as people living within the area.

The MRC Energy Co. representative will enforce all aspects of the H2S Contingency Plan. This job will become easier by a careful study of the following pages and training and informing all personnel that will be working on the well, their duties and responsibilities.

A. OPERATING PROCEDURES

DEFINITIONS:

For purpose of this plan, on-site personnel shall be referred to as "In Scope Personnel" or "Out of Scope Personnel", per the following definitions:

In Scope Personnel – Personnel who will be working or otherwise present in potential H2S release areas, including the rig floor, cellar, pits, and shaker areas.

Out of Scope Personnel – Personnel who will not be working or Otherwise present in potential H2S areas. Such personnel include rig Site visitor, delivery and camp services personnel.

GENERAL:

Before this H_2S contingency plan becomes operational, all regularly assigned In Scope Personnel (primarily the MRC, drilling contractor, and certain service personnel,) shall be thoroughly trained in the use of breathing equipment, emergency procedures, and responsibilities. Total Safety Technician or a designee assigned by the MRC Drilling Foreman shall keep a list of all personnel who have been through the on-site H_2S training program at the drill site.

All In Scope Personnel shall be given H2S training and the steps to be taken during H2S conditions under which the well may be drilled. General information will be explained about toxic gases, as well as the physiological effects of H_2S and the various classified operating conditions. In addition, the reader will be informed his/her general responsibility concerning safety equipment and emergency procedures.

The Total Safety H_2S Safety Technician or MRC on-site RSE Technician shall make available the H2S Contingency Plan for all personnel to review.

Without exception, all personnel that arrive on location must proceed directly to and sign-in with the on-site MRC RSE Technician. In Scope Personnel will be required to complete an on-site H2S training and respirator fit testing before starting work, or produce evidence that they have received equivalent training. Out of Scope Personnel will be required to complete a site H2S awareness and general safety briefing. This briefing will consist of a H2S hazard overview, alarm review and required response to alarms.

B. PROCEDURES TO BE INITIATED PRIOR TO H2S CONTINGENCY PLAN COMPLIANCE:

A list of emergency phone numbers and contacts will be on location and posted at the following locations:

1. MRC ENERGY CO.'S Representative's Office
2. Drilling Contractor's, Toolpusher Office
3. Living Quarters Area

All safety equipment and H_2S related hardware must be set up as required by MRC Energy Co. with regard to location of briefing areas, breathing equipment, etc. All safety equipment must be inspected periodically (at least weekly) with particular attention to resuscitators and breathing equipment.

In Scope Personnel working in the well site area will be assigned breathing apparatus. Operator and drilling contractor personnel required to work in the following areas will be provided with Self Contained Breathing Apparatus:

1. Rig Floor
2. Mud Pits
3. Derrick
4. Shale Shaker
5. Cellar

The Total Safety H_2S Safety Technician will be responsible for rigging up all H_2S continuous monitoring-type detectors. The Total Safety Technician will monitor and bump test the detector units periodically (at least at least once a week to test alarm function during drilling conditions. In the event H_2S is detected, or when drilling in a zone confirmed to contain H_2S, the units shall be bump tested at least once every 24 hours. A bump test/calibration log will be kept on location. All results will be reported to the MRC on-site Drilling Foreman.

All Total Safety H2S equipment will be maintained and inspected by a Total Safety Technician on at least a Weekly basis.

C. DRILLING BELOW CONTINGENCY PLAN DEPTH

H2S response drills will be held at least once per week if possible or as often as necessary to acquaint the crews and service company personnel of their responsibilities and the proper procedures to shut-in a well. Initial drills will be performed until crews demonstrate competency donning and working under mask. After the MRC Energy Co.'s representative is satisfied with initial blowout drill procedures, a drill will be conducted weekly with each crew, as necessary. The H2S Safety Technician or designee will conduct safety talks and maintain the safety equipment, consult and carry out the instructions of the drilling supervisor. All personnel allowed in the well work area during drilling or testing operations will be instructed in the use of breathing equipment until supervisory personnel are satisfied that they are capable of using it.

After familiarization, each person must perform a drill with breathing equipment. The drill should include getting the breathing equipment, donning the breathing apparatus, and performing expected duties for a short period. A record shall be kept of all personnel drilled and the date of the drill. H2S training records will be kept on location for all personnel.

Rig crews and service company personnel shall be made aware of the location of spare air bottles, resuscitation equipment, portable fire extinguishers, H_2S monitors and detectors. Knowledge of the location of the H_2S monitors and detectors are vital in determining as our gas location and the severity of the emergency conditions.

After any device has initially detected H2S, all areas of poor ventilation shall be inspected periodically by means of a portable H_2S detector instrument. The buddy system will be utilized. (When an alarm sounds, personnel will don an SCBA, shut the well in, and proceed to SBA for roll call. The H2S Technician or designee will mask up, with a buddy and will verify source of H2S and report back to the on-site MRC Foreman.)

D. PROCEDURES PROGRAM

1. Drill Site

   a. The drilling rig will be located to allow prevailing winds to blow across the reserve pit.

   b. A Safe Briefing Area will be provided with a breathing air cascade trailer and or 30-minute SCBA's at the Primary Area. Personnel will assemble at the most up-wind station under alarm conditions, or when so ordered by the MRC Energy Co. representative, the Contractor representative, or

the Total Safety H_2S Safety Technician. Windsocks or streamers will be anchored to various strategic places on a pole about 10 feet high, so it is in easy view from the rig floor at all times.

c. Warning signs will be posted on the perimeters. "No Smoking" signs will be posted by MRC Energy Co.as well.

d. One multi-channel automatic H_2S monitor will be provided by Total Safety and the detector heads will be at the shale shaker, bell nipple, mud pits, rig floor, and quarter's area. The monitor will be located inside HSE or Company man trailer. Should the alarm be shut off to silence the sirens, the blinker light must continue to warn of H_2S presence. The Total Safety H2S Safety Technician or designee will continuously monitor the detectors and will reactivate the alarm if H_2S concentrations increase to a dangerous level.

e. A method of escape will be open at all times.

f. If available, land line telephone service will be provided or cell phones provided. (Primary communications provided)

g. A rig communication system will be provided, as needed.

h. A gas trap, choke manifold, and degasser will be installed.

i. A kill line, securely anchored and of ample strength, will be laid to the well-head from a safe location. This line is to be used only in an emergency.

General

a. The MRC Energy Co. representative and/or the Contractor's Toolpusher will be available at all times. The drilling supervisor, while on duty, will have complete charge of the rig and location operations and will take whatever action is deemed necessary to insure personnel safety, to protect the well, and to prevent damage.

b b. A Mud Engineer will be on location at all times when
c drilling takes place at the depth H_2S may be expected. The mud engineer will be able to verify the presence or absence of H2S.

III. CONDITIONS AND EMERGENCY PROCEDURES

A. DEFINITION OF OPERATIONAL "CONDITIONS"

CONDITION I **"POSSIBLE DANGER"**

Warning Flags — Green

Alarms — No Alarm. Less than 10 ppm

Characterized By: Drilling operations in zones that may contain hydrogen sulfide. This condition remains in effect unless H_2S is detected and it becomes necessary to go to Condition II.

General Action:

a. Be alert for a condition change

b. Check all safety equipment for availability and proper functioning.

c. Perform all drills for familiarization and proficiency.

CONDITION II **"MODERATE DANGER"**

Warning Flags — Yellow

Alarms: Actuates at 10 ppm. Continuous flashing light.

Characterized By: Drilling operations in zones containing hydrogen sulfide. This condition will remain in effect until adding chemicals to the mud system neutralizes the hydrogen sulfide or it becomes necessary to go to Condition III.

General Action:

a. Be alert for a condition change

b. WHEN DRILLING AHEAD - Driller and designated crewmember will don 30 min SCBA, shut-in the well and immediately proceed to the Safe Briefing Area.

WHEN TRIPPING – Driller and two designated crewmembers will don 30 min SCBA, shut in the well and immediately proceed to the Safe Briefing Area. The Derrickman will

don a 5-minute escape pack, descend to the rig floor, don a 30-min SCBA (if necessary) and immediately proceed to the Safe Briefing Area.

c. All In Scope Personnel will proceed directly to the appropriate Safe Briefing Area.

d. Remain in safe briefing area, take roll call and wait for instructions

e. Contact the Total H2S Technician if not on location.

f. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering an H_2S contaminated area to provide assistance to anyone who may be injured or overcome by toxic gases.

g. All Out of Scope Personnel will report to the appropriate Safe Briefing Area.

CONDITION III "EXTREME DANGER"

Warning Flags: Red

Alarms: Actuate at 15 ppm. Continuous Sirens and Flashing Lights

Characterized by: Critical well operations which pose an immediate threat of H_2S exposure to on-site personnel and a potential threat to the public.

General Action:

a. WHEN DRILLING AHEAD - Driller and designated crewmember will don 30 min SCBA, shut-in the well and immediately proceed to the Safe Briefing Area.

WHEN TRIPPING – Driller and two designated crewmembers will don 30

min SCBA, shut in the well and immediately proceed to the Safe Briefing Area. The Derrickman will don a 5-minute escape pack, descend to the rig floor, don a 30-min SCBA (if necessary) and immediately proceed to the Safe Briefing Area.

b. All In Scope Personnel should don SCBA if nearby and immediately proceed to Safe Briefing Area. If SCBA in not nearby at time of alarm, DO NOT GO TOWARDS RIG AREA, but proceed directly to the Safe Briefing Area

c. All out of Scope Personnel shall evacuate the location.

d. Remain in the Safe Briefing Area, take roll call and wait for instructions.

e. Contact the Total H2S Technician if not on location.

f. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering an H_2S contaminated area to provide assistance to anyone who may be injured or overcome by toxic gases. Use the buddy system.

g. Remain in safe briefing area, take roll call and wait for instructions.

h. A cascade breathing air systems shall be mobilized and utilized to conduct any additional on rig work required to correct the H2S release condition.

i. If well is ignited do not assume area is safe. SO2 is hazardous and not all H2S will burn.

H_2S EMERGENCY PROCEDURES; IN SCOPE PERSONNEL

A. Day To Day Drilling Operations

1. Upon discovering a release of H_2S gas in the ambient air by warning alarms or in any other way **Do Not Panic**.

2. Hold your breath donning the nearest Self Contained Breathing Apparatus and rapidly move up or across-wind away from the areas where H_2S sensing devices are in place, to the closest available safe briefing area. Continue to use breathing apparatus until it has been determined that the exposure of H_2S gas in the ambient air no longer exists. **Do Not Panic**!

3. Utilize the "Buddy System", i.e.; select and pair up each person participating in the drilling of an H_2S well prior to an emergency situation.

4. Help anyone who is overcome or affected by the H_2S gas by taking him/her up-wind out of the contaminated area. (This should be done utilizing an SCBA and with a buddy.)

5. Take necessary steps to confirm the release of the H_2S gas into the ambient air.

    - When an H2S alarm activates, two designated personnel using the buddy system, while wearing their self contained breathing apparatus, will determine by the read-out on the fixed monitor which sensing device has detected the release of the H_2S gas.

    - They will utilize the hand-held sniffer type device at the particular sensing point disclosed on the fixed monitor to corroborate the fact that H_2S gas has actually been released. This will rule out the possibility of a false alarm. This will be done with a buddy and under mask after reporting to the Safe Briefing Area for roll call and instructions by on-site MRC Foreman.

6. Refer to the Emergency Phone Numbers and call emergency personnel.

7. Take the necessary steps to suppress the release of H_2S gas into the ambient air. Comply with the MRC Energy Co. Representative to physically suppress the release of H_2S gas at the actual release point.

8. Check all of MRC Energy Co.'s monitoring devices and increase gas-monitoring activities with the portable hand-operated H_2S and gas detector units.

Do Not Panic!

The MRC Energy Co. representative will assess the situation and with assistance of the Contractor's Representative and Total Safety's H_2S Safety Technician or on site designee, will assign duties to each person to bring the situation under control.

B. RESPONSIBILITIES OF WELL-SITE PERSONNEL

In the event of a release of potentially hazardous amounts of H_2S, all personnel will immediately don their protective breathing apparatus, the well will be shut in and personnel will proceed upwind to the nearest designated safe briefing area for roll call and instructions by MRC Foreman. Consideration will be given to evacuating Out of Scope Personnel, as situation warrants.

1. MRC ENERGY CO.'S Well-site Representatives

a. If MRC Energy Co.'s well-site representative is incapacitated or not on location, this responsibility will fall to the Toolpusher/Driller.

b. Immediately upon assessing the situation, set this plan into Action by initiating the proper procedures to contain the gas and notify the appropriate people and agencies.

c. Ensure that the alarm area indicated by the fixed H_2S Monitor is checked and verified with a portable H_2S detector. (Safety Technician if on location or MRC assigned designee with a buddy utilizing SCBA's)

d. Consult Pusher/driller of remedial actions as needed.

e. Ensure that non-essential personnel proceed to the safe briefing area.

f. Ensure location entrance barricades are positioned. Keep the number of persons on location to a minimum during hazardous operations.

g. Consult each contractor, Service Company and all others allowed to enter the site, that H2S gas may be encountered and the potential hazards that may exist.

h. Authorize the evacuation of local residents if H_2S threatens Their safety.

i. Non essential personnel should be evacuated from location if Situation warrants.

2. Toolpusher

a. Toolpusher/Driller will assume responsibilities of MRC Energy Co.'s well-site representative if that person is incapacitated or not on location.

b. Ensure that the alarm area indicated by the fixed H_2S monitor is checked and verified with a portable H_2S gas detector. (Alarm area indicated by the monitor will be Checked by the H2S Technician and a buddy, under mask.) This will be done after checking in and roll call at the Upwind Safe Briefing Area.

c. Confer with MRC Energy Co.'s well-site representative or superintendent and direct remedial action to suppress the H_2S and control the well.

d. Ensure that personnel at the safe briefing area are instructed on emergency actions required.

e. Ensure that personnel at the drill floor area are instructed on emergency actions required.

f. Ensure that all personnel observe the appropriate safety and emergency procedures.

g. Ensure that all persons are accounted for and provided emergency assistance as necessary.

3. Mud Engineer

a. Run a sulfide check on the flowline mud.

b. Take steps to determine the source of the H_2S and suppress it. Lime and H_2S scavenger shall be added to the mud as necessary.

4. Total H_2S Safety Technician, if on location, or MRC Designee

a. H2S Safety Technician or designee don nearest SCBA and report to Safe Briefing Area for roll call, take a buddy masked up and check monitor and verify with a portable H_2S detector the alarm area indicated by the fixed H_2S monitor. Advise the Toolpusher/Driller and MRC Energy Co.'s well-site representative of findings. Record all findings.

b. If H_2S is flared, check for sulfur dioxide (SO_2) near the flare as necessary. Take hourly readings at different perimeters, log readings and record on location.

c. Ensure that personnel at the safe briefing area are instructed on emergency actions required.

d. Ensure that the appropriate warning flags are displayed.

e. Ensure that all personnel are in S.C.B.A. as necessary.

f. Ensure that all persons are accounted for and provide emergency assistance as necessary.

g. Be prepared to evacuate rig if order is issued.

5. General Personnel & Visitors

a. All In Scope Personnel, if not specifically designated to shut the well in or control the well, shall proceed to the (upwind) safe briefing area. All Out of Scope Personnel shall immediately proceed to the appropriate (upwind) safe briefing area or evacuate the site as conditions warrant.

b. During any emergency, use the "buddy" system to prevent anyone from entering or being left in a gas area alone, even wearing breathing apparatus.

c. Provide assistance to anyone who may be injured or overcome by toxic gases. Personnel shall ensure that their breathing apparatus is properly fitted and operational before entering a potentially H_2S contaminated area.

d. Remain in safe briefing area and wait for instructions.

C. INSTRUCTIONS FOR IGNITING THE WELL

1. The Toolpusher/Driller will confer with MRC Energy Co.'s well-site representative who will secure the approval of the "Texas Wells Delivery Manager, prior to igniting the well, if at all possible.

   The Toolpusher/Driller will be responsible for igniting the well in the event of severe well control problems. This decision should be made only as a last resort in situations where it is clear that:

   a. Human life and property are endangered, or

   b. There is no hope of controlling the well under current conditions.

2. Once the decision has been made, the following procedures should be followed:

   a. Two people wearing self-contained breathing apparatus will be needed for the actual lighting of the well. They must first establish the flammable perimeter by using an explosimeter. This should be established at 30% to 40% of the lower flammable limits.

   b. After the flammable perimeter has been established and everyone removed from the area, the ignition team should select a site upwind of the well from which to ignite the well. This site should offer the maximum protection and have a clear path for retreat from the area.

c. The ignition team should have safety belts and lifeline attached and manned before attempting ignition. If the leak is not ignited on the first attempt, move in 20 to 30 feet and fire again. Continue to monitor with the explosimeter and NEVER fire from an area with over 75% of the Lower Explosive Limit (LEL). If having trouble igniting the well, try firing 40 degrees to 90 degrees on either side of the well.

d. If ignition is not possible due to the makeup of the gas, the toxic perimeter must be established and evacuation continued until the well is contained.

e. All personnel must act only as directed by the person in charge of the operations.

NOTE: After the well is ignited, burning hydrogen sulfide (H_2S) will convert to sulfur dioxide (SO_2), which is also a highly toxic gas.

DO NOT ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED

D. CORING PROCEDURES

Only essential personnel shall be on the rig floor. Ten (10) stands prior to retrieving core barrel; all personnel on drill floor and in derrick shall confirm self-Contained breathing apparatus available and ready for use.

A Total H2S Technician will don a SCBA with a buddy assigned from the rig crew, and continuously monitor for H2S at each connection. Any levels detected will require operations to be shut down and all involved personnel to don SCBAs. Precautions will remain in place until barrel is laid down.

All involved personnel will don SCBAs when removing the inner barrel from the outer barrel. SCBAs can be removed once the absence of H2S in confirmed by the Total H2S Technician.

Cores will be appropriately marked and sealed for transportation.

Normal Operations

1. **Responsibilities of well-site personnel**

   a. Well-site Representative

   1. Notify H_2S Technician of expected date to reach Contingency Plan implementation depth (Two (2) days prior to reaching suspected H_2S bearing zone) or prior to starting well work.

   2. Ensure H_2S Safety Technician completes rig-up procedures prior to reaching Contingency Plan effective depth.

   3. Restrict the number of personnel at the drilling rig or well site to a minimum while drilling, starting well work, testing or coring.

   4. Ensure weekly H_2S drills/training are performed, if possible.

   B. Toolpusher

   1. Ensure that necessary H_2S safety equipment is provided on the rig, and that it is properly inspected and maintained.

   2. Ensure that all personnel that work in the well area, are thoroughly trained in the use of H_2S safety equipment and periodic drills are held to maintain an adequate level of proficiency.

   C. In Scope Personnel

   1. Remain clean-shaven. Beards and long sideburns do not allow a proper facepiece seal.

   2. Receive H_2S safety training on location, or confirm prior training by certification that is one year within date.

   3. Familiarize yourself with the rig's Contingency Plan.

   4. Inspect and practice putting on your breathing apparatus.

5. Know the location of the "safe briefing areas".

6. Keep yourself "wind conscious". Be prepared to quickly move upwind and away in the event of any emergency involving release of H_2S.

D. Total Safety H_2S Safety Technician or MRC Designee

1. Conduct training as necessary to ensure all personnel working in well area are familiar with the contingency procedures and the operation of emergency equipment.

2. Check all H_2S safety equipment to ensure that it is ready for emergency use:

   - Check pressure weekly for each shift on breathing apparatus (both 30-minute and hip-packs) to make sure they are charged to full volume.

   - Check pressure on cascade air bottles, if on location, to see that they are capable of recharging breathing apparatus.

   - Check oxygen resuscitator, if on location, to ensure that it is charged to full volume.

   - Check H_2S detectors weekly for each shift (fixed and portable), and explosimeter, to ensure they are working properly.

3. Provide a weekly report to MRC Energy Co.'s well-site representative documenting:

   - Calibrations performed on H_2S detectors.

   - Proper location and working order of H_2S safety equipment.

   - Attendance of all personnel, trained or retrained, and their company.

   - Weekly drills, if held and a list of personnel participating and summary of actions.

OUT OF SCOPE PERSONNEL

MRC Energy Co. policy will not require Out of Scope Personnel to be clean shaven, have processed medical questionnaires, fit testing, or have certified H2S Training.

SAFETY EQUIPMENT

All respirators will be designed, selected, used and maintained in conformance with ANSI Z88.2, American National Standard for respiratory protection.

Personal protective equipment must be provided and used. Those who are expected to use respiratory equipment in case of an emergency will be carefully instructed in the proper use and told why the equipment is being used. Careful attention will be given to the minute details in order to avoid possible misuse of the equipment during periods of extreme stress.

Self-contained breathing apparatus provides complete respiratory and eye protection in any concentration of toxic gases and under any condition of oxygen deficiency. The wearer is independent of the surrounding atmosphere because he/she is breathing with a system admitting no outside air. It consists of a full face mask, breathing tube, pressure demand regulator, air supply cylinder, and harness. Pure breathing air from the supply cylinder flows to the mask automatically through the pressure demand regulator which reduces the pressure to a breathing level. Upon inhalation, air flows into the mask at a rate precisely regulated to the user's demand. Upon exhalation, the flow to the mask stops and the exhaled breath passes through a valve in the face piece to the surrounding atmosphere. The apparatus includes an alarm & gauge which warns the wearer to leave the contaminated area for a new cylinder of air or cylinder refill.

The derrickman is provided with a full face piece unit attached to a 5– minute escape cylinder. He will also have his own self-contained 30-minute unit breathing apparatus located on the drilling floor. He will use the 5-minute unit to exit the derrick to the floor, donning the 30-minute unit located on the floor, if needed.

All respiratory protective equipment, when not in use, should be stored in a clean, cool, dry place, and out of direct sunlight to retard the deterioration of rubber parts. After each use, the mask assembly will be scrubbed with soap and water, rinsed thoroughly, and dried. Air cylinders can be recharged to a full condition from a cascade system.

Personnel in each crew will be trained in the proper techniques of bottle filling.

The primary piece of equipment to be utilized, should anyone be overcome by hydrogen sulfide, is the oxygen resuscitator, if on location.

When asphyxiation occurs, the victim must be moved to fresh air and immediately given artificial respiration. In order to assure readiness, the bottles of oxygen will be checked at regular intervals and an extra tank kept on hand.

Hand-operated pump-type detectors incorporating detector tubes will give more accurate readings of hydrogen sulfide. The pump-type draws air to be tested through the detector tube containing lead acetate-silica gel granules. Presence of hydrogen sulfide in the air sample is shown by the development of a dark brown stain on the granules, which is the

scale reading of the concentration of hydrogen sulfide. By changing the type of detector tube used, this detector may also be used for sulfur dioxide (SO_2) detection when hydrogen sulfide (H_2S) is being burned in the flare area.

Provisions must be made for the storage of all safety equipment as is evident from the foregoing discussion. All equipment must be stored in an available location so that anyone engaged in normal work situations is no more than "one breath away' from a mask.

V – TOXICITY OF VARIOUS GASES

Common Name	Chemical Formula	Specific Gravity[1]	PEL (OSHA)[2]	STEL[3]	Lethal ppm[4]
Hydrogen Cyanide	HCN	0.94	10	150	300
Hydrogen Sulfide	H_2S	1.18	20	Peak- 50ppm	600
Note: The ACGIH(7) recommends a TWA(6) value of 10ppm as the TLV(5) for H2S and an STEL of 15ppm.					
Sulfur Dioxide	SO_2	2.21	2	5 ppm	1000
Chlorine	CL_2	2.45	1		
Carbon Monoxide	CO	0.97	35	200/1 Hour	1000
Carbon Dioxide	CO_2	1.52	5000	5%	10%
Methane	CH_4	0.55	90000		

[1] **Air = 1.0**

[2] **Permissible** - Concentration at which is believed that all workers may repeatedly be exposed, day after day, without adverse effect.

[3] **STEL** - Short Term Exposure Limit. A 15-minute time weighted average.

[4] **Lethal** - Concentration that will cause death with short-term exposure.

TLV – Threshold Limit Value; a concentration recommended by the American Conference of Governmental Industrial Hygienists (ACGIH)

TWA – Time Weighted Average; the average concentration of contaminant one can be exposed to over a given eight-hour period.

ACGIH – (American Conference of Governmental Industrial Hygienists) is an organization comprised of Occupational Health Professionals believed by many to be the top experts in the field of Industrial Hygiene. They are recognized as an expert rexource by OSHA. The ACGIH releases a bi-annual publication "Threshold Limit Values and Biological Indices" that many safety professionals consider to be the authoritative document on airborne contaminants.

Reference: API RP-49, September 1974 - Reissued August 1978

VI. PROPERTIES OF GASES

A. CARBON DIOXIDE

1. Carbon Dioxide (CO_2) is usually considered inert and is commonly used to extinguish fires. It is 1.52 times heavier than air and will concentrate in low areas of still air. Humans cannot breathe air containing more than 10% CO_2 without losing conscience or becoming disorientation in a few minutes. Continued exposure to CO_2 after being affected will cause convulsions, coma, and respiratory failure.
2. The threshold limit of CO_2 is 5000 ppm. Short-term exposure to 50,000 ppm (5%) is reasonable. This gas is colorless, odorless, and can be tolerated in relatively high concentrations.

B. HYDROGEN SULFIDE

1. Hydrogen Sulfide (H_2S) is a colorless, transparent, flammable gas. It is heavier than air and, hence, may accumulate in low places.
2. Although the slightest presence of H_2S in the air is normally detectable by its characteristic "rotten egg" odor, it is dangerous to rely on the odor as a means of detecting excessive concentrations because the sense of smell is rapidly lost, allowing lethal concentrations to be accumulated without warning. The following table indicates the poisonous nature of H_2S.

CONCENTRATION			EFFECTS
% H_2S	PPM	GR/100 SCF[1]	
0.001	10	.65	Safe for 8 hours without respirator. Obvious and unpleasant odor.
0.0015	15	0.975	Safe for 15 minutes of exposure without respirator.
0.01	100	6.48	Kills smell in 3-15 minutes; may sting eyes and throat.
0.02	200	12.96	Kills smell quickly; stings eyes and throat.
0.05	500	32.96	Dizziness; breathing ceases in a few minutes; need prompt artificial respiration.
0.07	700	45.92	Rapid Unconsciousness; death will result if not rescued promptly.
0.1	1000	64.80	Instant unconsciousness, followed by death within minutes.

[1] Grains per 100 Cubic Feet

VII. Treatment Procedures for Hydrogen Sulfide Poisoning

A. Remove the victim to fresh air.

B. If breathing has ceased or is labored, begin resuscitation immediately.
Note: This is the quickest and preferred method of clearing victim's lungs of contaminated air; however, under disaster conditions, it may not be practical to move the victim to fresh air. In such instances, where those rendering first aid must continue to wear masks, a resuscitator should be used.

C. Apply resuscitator to help purge H_2S from the blood stream.

D. Keep the victim at rest and prevent chilling.

E. Get victim under physician's care as soon as possible.

C. SULPHUR DIOXIDE

1. Sulfur Dioxide (SO_2) is a colorless, non-flammable, transparent gas.

2. SO_2 is produced during the burning of H_2S. Although SO_2 is heavier than air, it can be picked up by a breeze and carried downwind at elevated temperatures. Since SO_2 is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect. The following table indicates the toxic nature of SO_2:

CONCENTRATION		EFFECTS
% SO_2	PPM	
0.0005	3 to 5	Pungent odor, normally a person can detect SO_2 in this range.
0.0012	12	Throat irritation, coughing, constriction of the chest, tearing and smarting of eyes.
0.015	150	So irritating that it can only be endured for a few minutes.
.05	500	Causes a sense of suffocation, event with the first breath.

VIII. BREATHING AIR EQUIPMENT DRILLS FOR ON & OFF DUTY PERSONNEL

An H_2S Drill and Training Session must be given once a week to ALL on-duty personnel with off duty personnel. On-duty and Off-duty personnel will reverse roles on alternate drills.

An H2S drill and training session must be given once a week to all off-duty personnel in coincidence with on-duty personnel reversing roles on alternate drills.

The purpose of this drill is to instruct the crews in the operation and use of breathing air and H_2S related emergency equipment and to allow the personnel to become acquainted with using the equipment under working conditions. The crews should be trained to put on the breathing air equipment within one minute when required or requested to do so.

The following procedure should be used for weekly drills. The MRC supervisor must be satisfied that the crews are proficient with the equipment.

1. All personnel should be informed that a drill will be held.

2. The Total H2S Safety Technician or a designee assigned by the MRC Drilling Foreman should initiate the drill by signaling as he/she would if H2S was detected.

3. Personnel should don their breathing apparatus.

4. Once the breathing air equipment is on, the H2S Technician should check all personnel to insure proper operation.

A training and information session will be conducted after each drill to answer any H_2S related questions and to cover any gaps identified from one of the following topics:

- Condition II, and III alerts and steps to be taken by all personnel.
- The importance of wind direction when dealing with H_2S.
- Proper use and storage of all types of breathing equipment.
- Proper use and storage of oxygen resuscitators.
- Proper use and storage of H_2S detectors (Mini Checks or equivalent).
- The "buddy system" and the procedure for rescuing a person overcome by H_2S.
- Responsibilities and duties.
- Location of H_2S safety equipment.
- Other parts of the "H_2S Contingency Plan" that should be reviewed.

NOTE: A record of attendance must be kept for weekly drills and training sessions.

IX. HYDROGEN SULFIDE TRAINING CURRICULUM

(FOR EMPLOYERS, VISITORS, AND CONTRACTORS)

EACH PERSON WILL BE INFORMED ON THE RESTRICTIONS OF HAVING BEARDS AND CONTACT LENS. THEY WILL ALSO BE INFORMED OF THE AVAILABILITY OF SPECTACLE KITS.

AFTER THE H2S EQUIPMENT IS RIGGED UP, ALL IN SCOPE PERSONNEL WILL BE H2S TRAINED AND PUT THROUGH A DRILL. ANY DEFICIENCIES WILL BE CORRECTED.

Training Completion cards are good for one year and will indicate date of completion or expiration. Personnel previously trained on another facility and visiting, must attend a "supplemental briefing" on H2S equipment and procedures before beginning duty. Visitors

who remain on the location more than 24 hours must receive full H2S training given all crew members. A "supplemental briefing" will include but not be limited to: Location of respirators, familiarization with safe briefing areas, alarms with instruction on responsibilities in the event of a release and hazards of H2S and (SO2, if applicable). A training and drill log will be kept.

Topics for full H2S training shall include the following equipment if on location, but not be limited to the following:

1. **Brief Introduction on H2S**
   - A. Slide or Computer presentation (If Available)
   - B. H2S material will be distributed
   - C. Re-emphasize the properties, toxicity, and hazards of H2S
   - D. Source of SO2 (if applicable)

2. **H2S Detection**
   - A. Description of H2S sensors
   - B. Description of warning system (how it works & it's location)
   - C. Actual location of H2S sensors
   - D. Instruction on use of pump type detector (Gastec)
   - E. Use of card detectors, ampoules, or dosimeters
   - F. Use of combustible gas detector
   - G. Other personnel detectors used
   - H. Alarm conditions I & II,
   - I. SO2 alarms (if applicable)

3. **H2S Protection**
   - A. Types of breathing apparatus provided (30-minute SCBA & 5-minute SCBA (with voice diaphragms for communication if supplied)
   - B. Principle of how breathing apparatus works
   - C. Demonstration on how to use breathing apparatus
   - D. Location of breathing apparatus

4. **Cascade System**
   - A. Description of cascade system
   - B. How system works
   - C. Cascade location of rig with reference to briefing areas

D. How to use cascade system (with 5-minute hose work line units & refill, if supplied)
E. Importance of wind direction and actual location of Windsocks
F. Purpose of compressor/function (if one is on site)

5. **H2S Rescue and First Aid**
   A. Importance of wind direction
   B. Safe briefing area
   C. Buddy system
   D. H2S symptoms
   E. Methods of rescue

6. **Hands on Training**
   A. Donning/familiarization of SCBA 30-minue unit
   B. Donning/familiarization of SKADA 5- MIN. Packs
   C. Familiarization of cascades
   D. Use of O2 resuscitator
   E. Alarm conditions - upwind briefing areas, etc...
   F. Duties and responsibilities of all personnel
   G. Procedures for evacuation
   H. Search and Rescue teams

7. **Certification**
   A. Testing on material covered

TOTAL SAFETY US INC., FIT TEST

X. EMPLOYEE INFORMATION

Employee Name: _____ Date: _____

Date of Employee Medical Evaluation: _____

Medical Status (circle): Unrestricted Limitations on Use Use Not Authorized

RESPIRATOR INFORMATIOIN

Respirator Type (Dustmask, SCBA, etc):_____

Brand:_____

Size: (circle): XS S M L XL

FIT TEST INFORMATION

Type of Fit Test Performed:

Quantitative

Porta Count Fit Factor:_____

Fittester 3000 Fit Factor:_____

Qualitative

Irritant Smoke Passed / Failed

Isoamyl Acetate (Banana Oil) Passed / Failed

Saccharin Passed / Failed

Bitrex Passed / Failed

I hereby certify that this fittest was conducted in accordance with the OSHA Fit Testing Protocols found in Appendix A of 1910.134.

Fit Tester Name (Print):_____

Signature:_____ Date:_____

XI. H_2S SAFETY SERVICES

HYDROGEN SULFIDE SAFETY PACKAGE – Contained on location in Total Safety H2S Equipment Trailer, unless otherwise noted:

RESPIRATORY SAFETY SYSTEMS

QTY	DESCRIPTION
12	30-Minute Pressure Demand SCBA (4-Primary Safe Briefing Area, 4-Secondary Safe Briefing Area, 4-floor with one of these for derrick man)
9	Hose Line 5-minute Work Unit w/Escape Cylinder (1 in derrick, 6 on drill floor, 1 in mud pit wt area, 1 in shaker area)

The following shall be part of the package if requested by the MRC Foremen (at least one trailer with cascade system is required to be located in the MRC Magnolia asset for use as needed)

1	Breathing air cascade of 10 bottles w/regulator
2	Refill lines to refill 30-minute units on location
1	6-Man manifold that can be rigged up to work area on floor, if needed
6	25 foot hose lines
2	50 foot hose lines
100	Feet of hose line to rig cascade up to 12 man manifold on floor
12	30-minute Self Contained Breathing apparatus

DETECTION AND ALARM SAFETY SYSTEM

1	H2S Fixed Monitor w/8Channels (Loc determined at rig up) suggested. (Mud pit area, shaker area, bell nipple area, floor/driller area, & outside quarters)
5	H2S Sensors
3	Explosion Proof Alarms (Light and Siren) (1 on floor, 1 in work area, 1 in trailer area where quarters are located)
2	Personal H2S monitors
1	Portable Tri-Gas Hand Held Meter (O2, LEL, H2S)
1	Sensidyne/Gastech Manual Pump Type Detector
8	Boxes H2S Tubes Various Ranges
2	Boxes SO2 Tubes Various Ranges
1	Calibration Gas
1	Set Paper Work for Records: Training, Cal, Inspection, other

ADDITIONAL SAFETY RELATED EQUIPMENT

QTY	DESCRIPTION
2	Windsocks with Pole and Bracket
1	Set Well Condition Sign w/Green, Yellow, Red Flags
1	Primary Safe Briefing Area Sign
1	Secondary Safe Briefing Area Sign
6	Operating Condition Signs for Work Areas & Living Quarters

TRAILER WITH BREATHING AIR CASCADE WILL ALSO INCLUDE THE FOLLOWING:

This equipment will be part of the H2S equipment stored in the trailer, when on location

1	First aid kit
1	Fire Blanket
1	Eye wash station
2	Safety Harness w/150' safety line

XII. EMERGENCY PHONE NUMBERS (Updated March 18, 2009)

EMERGENCY PHONE NUMBERS

MRC Energy Co. Emergency Phone #
MRC Energy Co. Permian Operations Phone----------
MRC Energy Co. Production
113 Daw Rd
Mansfield LA 71052

Title	Names	Phone	Cell
Operations Manager			
Operation Supt.			
Operations Supervisor			
Operations Supervisor			
Office Supervisor			
HSE			
Scheduler Planner			

Hydrogen Sulfide Safety Consultants

Total Safety W. Bender Blvd. Hobbs, NM	575-392-2973	After Hours 24 Hour Call Center Through Office Number
Tommy Throckmorton Operations Manager	575-392-2973	940-268-9614
Rodney Jourdan Sales Contact	575-392-2973	432-349-3928

MRC Energy Co. MEDICAL RESPONSE PLAN AND IT'S MEDICAL PROTOCOLS WILL BE FOLLOWED

MEDICAL COORDINATOR # ----------

Emergency Numbers & Directions

Hospitals (911)

Artesia General Hospital 702 N. 13th St. Artesia, NM 88210	**Main Phone Number**	**575-748-3333**
Nor-Lea General Hospital 1600 N. Main Ave. Lovington, NM 88260	**Main Phone Number**	**575-396-6611**
Lea Regional Medical Center 5419 N. Lovington Hwy Hobbs, NM 88240	**Main Phone Number**	**575-492-5260**
Carlsbad General Hospital 2430 W. Pierce St. Carlsbad, NM	**Main Phone Number**	**575-887-4100**
Lovelace Regional Hospital 117 E. 19th St Roswell, NM 88201	**Main Phone Number**	**575-627-7000**
Winkler Co. Memorial Hospital 821 Jeffee Dr. Kermit, Texas 79745	**Main Phone Number**	**432-586-8299**
Reeves County Hospital 2323 Texas St. Pecos, Texas 79772	**Main Phone Number**	**432-447-3551**

State Police (911)

Texas DPS Loving co. 225 N.Pecos Mentone, Texas 79754	Office Number	432-377-2411
Texas DPS Winkler Co. 100 E Winkler Kermit, Texas 79745	Office Number	432-586-3465
Texas DPS Pecos Co. 148 N I-20 Frontage RD Pecos, Texas 79772	Office Number	432-447-3532
New Mexico State Police 3300 W. Main St Artesia, NM	Office Number	575-748-9718
New Mexico State Police 304 N. Canyon St Carlsbad, NM 88220	Office Number	575-885-3137
New Mexico State Police 5100 Jack Gomez Blvd. Hobbs, NM 88240	Office Number	575-392-5588

Local Law Enforcement (911) (Sheriff)

Reeves Co. Sheriff 500 N. Oak ST Pecos, Texas 79722	Office Number	432-445-4901
Winkler Co. Sheriff 1300 Bellaire St. Kermit, Texas 79745	Office Number	432-586-3461
Loving Co. Sheriff Courthouse Mentone, Texas	Office Number	432-377-2411
Lea Co. Sheriff 1417 S. Commercial St. Lovington, NM 88260	Office Number	
Eddy Co. Sheriff 305 N 7th St. Artesia, NM 88210	Office Number	575-766-9888
Eddy Co. Sheriff 305 N 7th St. Carlsbad, NM 88220	Office Number	575-746-9888

Federal & State Agencies

OSHA Lubbock Area Office 1205 Texas Av. Room 806 Lubbock, Texas 79401	**Main Number**	**806-472-7681 EXT 7685**
New Mexico Environment Department 400 N Pennsylvania Roswell, NM 88201	**Joe Fresquez**	**575-623-3935**
Texas Railroad Commission Midland, Texas	**Main Number**	**844-773-0305**
BLM Carlsbad, NM Field Office 620 E. Green ST Carlsbad, NM 88220	**Main Number**	**575-234-5972**
BLM Hobbs Field Station 414 W. Taylor Rd. Hobbs, NM 88240	**Main Number**	**575-393-3612**
BLM Roswell District Office 2909 W. Second St. Roswell, NM 88201	**Main Number**	**575-627-0272**
TECQ Texas Commission on Environmental Quality	**Main Number**	**800-832-8224**
New Mexico OCD		
U.S. Environmental Protection Agency Region 6 Texas/New Mexico	**Main Number**	**214-655-2222**
National Response Center Toxic Chemicals & Oil Spills	**Main Number**	**800-424-8802**

Rig Company

XIII. EVACUATION OF THE GENERAL PUBLIC

The procedure to be used in alerting nearby persons in the event of any occurrence that could pose a threat to life or property will be arranged and completed with public officials in detail, prior to drilling into the hydrogen sulfide formations.

In the event of an actual emergency, the following steps will be immediately taken:

1. The MRC Energy Co.'s representative will dispatch sufficient personnel to immediately warn each resident and transients down-wind within radius of exposure from the well site. Then warn all residence in the radius of exposure. Additional evacuation zones may be necessary as the situation warrants.

2. The MRC Energy Co.'s representative will immediately notify proper authorities, including the Sheriff's Office, Highway Patrol, and any other public officials as described above and will enlist their assistance in warning residents and transients in the calculated radius of exposure.

3. The MRC Energy Co.'s representative will dispatch sufficient personnel to divert traffic in the vicinity away from the potentially dangerous area. A guard to the entrance of the well site will be posted to monitor essential and non essential traffic.

4. General:

    A. The area included within the radius of exposure is considered to be the zone of maximum potential hazard from a hydrogen sulfide gas escape. Immediate evacuation of public areas, in accordance with the provisions of this contingency plan, is imperative. When it is determined that conditions exist which create an additional area (beyond the initial zone of maximum potential hazard) vulnerable to possible hazard, public areas in the additional hazardous area will be evacuated in accordance with the contingency plan.

    B. In the event of a disaster, after the public areas have been evacuated and traffic stopped, it is expected that local civil authorities will have arrived and within a few hours will have assumed direction of and control of the public, including all public areas. MRC Energy Co. will cooperate with these authorities to the fullest extent and will exert every effort by careful advice to such authorities to prevent panic or rumors.

    C. MRC Energy Co. will dispatch appropriate management personnel at the disaster site as soon as possible. The company's personnel

will cooperate with and provide such information to civil authorities as they might require.

D. One of the products of the combustion of hydrogen sulfide is sulfur dioxide (SO_2). Under certain conditions this gas may be equally as dangerous as H_2S. A pump type detector device, which determines the percent of SO_2 in air through concentrations in ppm, will be available. Although normal air movement is sufficient to dissipate this material to safe levels, the SO_2 detector should be utilized to check concentrations in the proximity of the well once every hour, or as necessary and the situation warrants. Also, if any low areas are suspected of having high concentrations, personnel should be made aware of these areas, and steps should be taken to determine whether or not these low areas are hazardous.

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well #201H
Project:	Lea County, NM	**TVD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Site:	Brad Lummis Fed Com	**MD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Well:	#201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim A	**Database:**	WellPlanner1

Project	Lea County, NM		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Brad Lummis Fed Com				
Site Position:		**Northing:**	440,907.00 usft	**Latitude:**	32.209066
From:	Map	**Easting:**	774,006.00 usft	**Longitude:**	-103.447427
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.47 °

Well	#201H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	440,875.00 usft	**Latitude:**	32.208978
	+E/-W	0.00 usft	**Easting:**	774,033.00 usft	**Longitude:**	-103.447341
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,492.00 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	5/24/2018	6.73	59.92	48,003.30

Design	Prelim A					
Audit Notes:						
Version:		**Phase:**	PLAN	**Tie On Depth:**		0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**		
	0.00	0.00	0.00	179.55		

Survey Tool Program **Date** 5/29/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,030.09	Prelim A (OH)	MWD+HDGM	OWSG MWD + HRGM

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	1.00	348.75	499.99	0.86	-0.17	-0.86	1.00	1.00	0.00
600.00	2.00	348.75	599.96	3.42	-0.68	-3.43	1.00	1.00	0.00
700.00	3.00	348.75	699.86	7.70	-1.53	-7.71	1.00	1.00	0.00
800.00	4.00	348.75	799.68	13.69	-2.72	-13.71	1.00	1.00	0.00

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well #201H
Project:	Lea County, NM	**TVD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Site:	Brad Lummis Fed Com	**MD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Well:	#201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim A	**Database:**	WellPlanner1

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)
899.76	5.00	348.75	899.12	21.36	-4.25	-21.40	1.00	1.00	0.00
1,000.00	5.00	348.75	998.99	29.93	-5.95	-29.97	0.00	0.00	0.00
1,100.00	5.00	348.75	1,098.61	38.47	-7.65	-38.53	0.00	0.00	0.00
1,200.00	5.00	348.75	1,198.23	47.02	-9.35	-47.09	0.00	0.00	0.00
1,300.00	5.00	348.75	1,297.85	55.56	-11.05	-55.64	0.00	0.00	0.00
1,400.00	5.00	348.75	1,397.46	64.10	-12.75	-64.20	0.00	0.00	0.00
1,500.00	5.00	348.75	1,497.08	72.65	-14.45	-72.76	0.00	0.00	0.00
1,600.00	5.00	348.75	1,596.70	81.19	-16.15	-81.32	0.00	0.00	0.00
1,700.00	5.00	348.75	1,696.32	89.73	-17.85	-89.87	0.00	0.00	0.00
1,800.00	5.00	348.75	1,795.94	98.28	-19.55	-98.43	0.00	0.00	0.00
1,900.00	5.00	348.75	1,895.56	106.82	-21.25	-106.99	0.00	0.00	0.00
2,000.00	5.00	348.75	1,995.18	115.37	-22.95	-115.54	0.00	0.00	0.00
2,100.00	5.00	348.75	2,094.80	123.91	-24.65	-124.10	0.00	0.00	0.00
2,200.00	5.00	348.75	2,194.42	132.45	-26.35	-132.66	0.00	0.00	0.00
2,300.00	5.00	348.75	2,294.04	141.00	-28.05	-141.21	0.00	0.00	0.00
2,400.00	5.00	348.75	2,393.66	149.54	-29.75	-149.77	0.00	0.00	0.00
2,500.00	5.00	348.75	2,493.28	158.09	-31.45	-158.33	0.00	0.00	0.00
2,600.00	5.00	348.75	2,592.90	166.63	-33.15	-166.88	0.00	0.00	0.00
2,700.00	5.00	348.75	2,692.52	175.17	-34.85	-175.44	0.00	0.00	0.00
2,800.00	5.00	348.75	2,792.14	183.72	-36.55	-184.00	0.00	0.00	0.00
2,900.00	5.00	348.75	2,891.76	192.26	-38.25	-192.56	0.00	0.00	0.00
3,000.00	5.00	348.75	2,991.38	200.80	-39.95	-201.11	0.00	0.00	0.00
3,100.00	5.00	348.75	3,091.00	209.35	-41.65	-209.67	0.00	0.00	0.00
3,200.00	5.00	348.75	3,190.62	217.89	-43.35	-218.23	0.00	0.00	0.00
3,300.00	5.00	348.75	3,290.24	226.44	-45.05	-226.78	0.00	0.00	0.00
3,400.00	5.00	348.75	3,389.86	234.98	-46.75	-235.34	0.00	0.00	0.00
3,500.00	5.00	348.75	3,489.48	243.52	-48.45	-243.90	0.00	0.00	0.00
3,600.00	5.00	348.75	3,589.10	252.07	-50.15	-252.45	0.00	0.00	0.00
3,700.00	5.00	348.75	3,688.72	260.61	-51.85	-261.01	0.00	0.00	0.00
3,800.00	5.00	348.75	3,788.34	269.16	-53.55	-269.57	0.00	0.00	0.00
3,900.00	5.00	348.75	3,887.96	277.70	-55.25	-278.12	0.00	0.00	0.00
4,000.00	5.00	348.75	3,987.58	286.24	-56.95	-286.68	0.00	0.00	0.00
4,100.00	5.00	348.75	4,087.20	294.79	-58.65	-295.24	0.00	0.00	0.00
4,200.00	5.00	348.75	4,186.82	303.33	-60.35	-303.80	0.00	0.00	0.00
4,300.00	5.00	348.75	4,286.44	311.87	-62.05	-312.35	0.00	0.00	0.00
4,400.00	5.00	348.75	4,386.06	320.42	-63.75	-320.91	0.00	0.00	0.00
4,500.00	5.00	348.75	4,485.68	328.96	-65.45	-329.47	0.00	0.00	0.00
4,600.00	5.00	348.75	4,585.30	337.51	-67.15	-338.02	0.00	0.00	0.00
4,700.00	5.00	348.75	4,684.92	346.05	-68.85	-346.58	0.00	0.00	0.00
4,800.00	5.00	348.75	4,784.54	354.59	-70.55	-355.14	0.00	0.00	0.00
4,900.00	5.00	348.75	4,884.16	363.14	-72.25	-363.69	0.00	0.00	0.00
4,945.06	5.00	348.75	4,929.05	366.99	-73.02	-367.55	0.00	0.00	0.00

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well #201H
Project:	Lea County, NM	**TVD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Site:	Brad Lummis Fed Com	**MD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Well:	#201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim A	**Database:**	WellPlanner1

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)
5,000.00	4.17	348.75	4,983.81	371.30	-73.87	-371.86	1.50	-1.50	0.00
5,100.00	2.67	348.75	5,083.63	377.15	-75.04	-377.73	1.50	-1.50	0.00
5,200.00	1.17	348.75	5,183.57	380.44	-75.69	-381.03	1.50	-1.50	0.00
5,278.23	0.00	0.00	5,261.80	381.23	-75.85	-381.81	1.50	-1.50	0.00
5,300.00	0.00	0.00	5,283.57	381.23	-75.85	-381.81	0.00	0.00	0.00
5,400.00	0.00	0.00	5,383.57	381.23	-75.85	-381.81	0.00	0.00	0.00
5,500.00	0.00	0.00	5,483.57	381.23	-75.85	-381.81	0.00	0.00	0.00
5,600.00	0.00	0.00	5,583.57	381.23	-75.85	-381.81	0.00	0.00	0.00
5,700.00	0.00	0.00	5,683.57	381.23	-75.85	-381.81	0.00	0.00	0.00
5,800.00	0.00	0.00	5,783.57	381.23	-75.85	-381.81	0.00	0.00	0.00
5,900.00	0.00	0.00	5,883.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,000.00	0.00	0.00	5,983.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,100.00	0.00	0.00	6,083.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,200.00	0.00	0.00	6,183.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,300.00	0.00	0.00	6,283.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,400.00	0.00	0.00	6,383.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,500.00	0.00	0.00	6,483.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,600.00	0.00	0.00	6,583.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,700.00	0.00	0.00	6,683.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,800.00	0.00	0.00	6,783.57	381.23	-75.85	-381.81	0.00	0.00	0.00
6,900.00	0.00	0.00	6,883.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,000.00	0.00	0.00	6,983.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,100.00	0.00	0.00	7,083.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,200.00	0.00	0.00	7,183.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,300.00	0.00	0.00	7,283.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,400.00	0.00	0.00	7,383.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,500.00	0.00	0.00	7,483.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,600.00	0.00	0.00	7,583.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,700.00	0.00	0.00	7,683.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,800.00	0.00	0.00	7,783.57	381.23	-75.85	-381.81	0.00	0.00	0.00
7,900.00	0.00	0.00	7,883.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,000.00	0.00	0.00	7,983.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,100.00	0.00	0.00	8,083.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,200.00	0.00	0.00	8,183.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,300.00	0.00	0.00	8,283.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,400.00	0.00	0.00	8,383.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,500.00	0.00	0.00	8,483.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,600.00	0.00	0.00	8,583.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,700.00	0.00	0.00	8,683.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,800.00	0.00	0.00	8,783.57	381.23	-75.85	-381.81	0.00	0.00	0.00
8,900.00	0.00	0.00	8,883.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,000.00	0.00	0.00	8,983.57	381.23	-75.85	-381.81	0.00	0.00	0.00

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well #201H
Project:	Lea County, NM	**TVD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Site:	Brad Lummis Fed Com	**MD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Well:	#201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim A	**Database:**	WellPlanner1

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)
9,100.00	0.00	0.00	9,083.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,200.00	0.00	0.00	9,183.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,300.00	0.00	0.00	9,283.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,400.00	0.00	0.00	9,383.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,500.00	0.00	0.00	9,483.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,600.00	0.00	0.00	9,583.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,700.00	0.00	0.00	9,683.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,800.00	0.00	0.00	9,783.57	381.23	-75.85	-381.81	0.00	0.00	0.00
9,900.00	0.00	0.00	9,883.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,000.00	0.00	0.00	9,983.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,100.00	0.00	0.00	10,083.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,200.00	0.00	0.00	10,183.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,300.00	0.00	0.00	10,283.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,400.00	0.00	0.00	10,383.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,500.00	0.00	0.00	10,483.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,600.00	0.00	0.00	10,583.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,700.00	0.00	0.00	10,683.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,800.00	0.00	0.00	10,783.57	381.23	-75.85	-381.81	0.00	0.00	0.00
10,900.00	0.00	0.00	10,883.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,000.00	0.00	0.00	10,983.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,100.00	0.00	0.00	11,083.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,200.00	0.00	0.00	11,183.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,300.00	0.00	0.00	11,283.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,400.00	0.00	0.00	11,383.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,500.00	0.00	0.00	11,483.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,600.00	0.00	0.00	11,583.57	381.23	-75.85	-381.81	0.00	0.00	0.00
11,708.23	0.00	0.00	11,691.80	381.23	-75.85	-381.81	0.00	0.00	0.00
11,750.00	4.18	188.40	11,733.53	379.72	-76.07	-380.31	10.00	10.00	0.00
11,800.00	9.18	188.40	11,783.17	373.98	-76.92	-374.57	10.00	10.00	0.00
11,850.00	14.18	188.40	11,832.12	363.97	-78.40	-364.57	10.00	10.00	0.00
11,900.00	19.18	188.40	11,880.01	349.78	-80.49	-350.40	10.00	10.00	0.00
11,950.00	24.18	188.40	11,926.46	331.51	-83.19	-332.16	10.00	10.00	0.00
12,000.00	29.18	188.40	11,971.12	309.31	-86.47	-309.98	10.00	10.00	0.00
12,050.00	34.18	188.40	12,013.66	283.35	-90.30	-284.05	10.00	10.00	0.00
12,100.00	39.18	188.40	12,053.74	253.81	-94.67	-254.55	10.00	10.00	0.00
12,150.00	44.18	188.40	12,091.08	220.93	-99.52	-221.71	10.00	10.00	0.00
12,200.00	49.18	188.40	12,125.37	184.96	-104.83	-185.78	10.00	10.00	0.00
12,208.23	50.00	188.40	12,130.71	178.76	-105.75	-179.58	10.00	10.00	0.00
12,250.00	54.00	186.88	12,156.42	146.14	-110.11	-147.01	10.00	9.58	-3.63
12,300.00	58.82	185.26	12,184.08	104.74	-114.50	-105.64	10.00	9.63	-3.25
12,350.00	63.65	183.79	12,208.13	61.06	-117.94	-61.99	10.00	9.66	-2.94
12,400.00	68.49	182.44	12,228.41	15.44	-120.41	-16.39	10.00	9.69	-2.70

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well #201H
Project:	Lea County, NM	**TVD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Site:	Brad Lummis Fed Com	**MD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Well:	#201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim A	**Database:**	WellPlanner1

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)
12,450.00	73.35	181.18	12,244.75	-31.77	-121.90	30.81	10.00	9.71	-2.52
12,500.00	78.21	179.98	12,257.03	-80.22	-122.38	79.26	10.00	9.73	-2.40
12,518.37	80.00	179.55	12,260.50	-98.26	-122.31	97.30	10.00	9.73	-2.34
12,550.00	81.90	179.55	12,265.47	-129.49	-122.06	128.53	6.00	6.00	0.00
12,600.00	84.90	179.55	12,271.22	-179.16	-121.67	178.19	6.00	6.00	0.00
12,650.00	87.90	179.55	12,274.36	-229.05	-121.28	228.09	6.00	6.00	0.00
12,685.04	90.00	179.55	12,275.01	-264.08	-121.01	263.12	6.00	6.00	0.00
12,700.00	90.00	179.55	12,275.01	-279.04	-120.89	278.08	0.00	0.00	0.00
12,800.00	90.00	179.55	12,275.01	-379.04	-120.11	378.08	0.00	0.00	0.00
12,900.00	90.00	179.55	12,275.01	-479.03	-119.33	478.08	0.00	0.00	0.00
13,000.00	90.00	179.55	12,275.01	-579.03	-118.54	578.08	0.00	0.00	0.00
13,100.00	90.00	179.55	12,275.01	-679.03	-117.76	678.08	0.00	0.00	0.00
13,200.00	90.00	179.55	12,275.01	-779.02	-116.98	778.08	0.00	0.00	0.00
13,300.00	90.00	179.55	12,275.01	-879.02	-116.20	878.08	0.00	0.00	0.00
13,400.00	90.00	179.55	12,275.01	-979.02	-115.41	978.08	0.00	0.00	0.00
13,500.00	90.00	179.55	12,275.01	-1,079.02	-114.63	1,078.08	0.00	0.00	0.00
13,600.00	90.00	179.55	12,275.01	-1,179.01	-113.85	1,178.08	0.00	0.00	0.00
13,700.00	90.00	179.55	12,275.01	-1,279.01	-113.06	1,278.08	0.00	0.00	0.00
13,800.00	90.00	179.55	12,275.01	-1,379.01	-112.28	1,378.08	0.00	0.00	0.00
13,900.00	90.00	179.55	12,275.01	-1,479.00	-111.50	1,478.08	0.00	0.00	0.00
14,000.00	90.00	179.55	12,275.01	-1,579.00	-110.72	1,578.08	0.00	0.00	0.00
14,100.00	90.00	179.55	12,275.00	-1,679.00	-109.93	1,678.08	0.00	0.00	0.00
14,200.00	90.00	179.55	12,275.00	-1,778.99	-109.15	1,778.08	0.00	0.00	0.00
14,300.00	90.00	179.55	12,275.00	-1,878.99	-108.37	1,878.08	0.00	0.00	0.00
14,400.00	90.00	179.55	12,275.00	-1,978.99	-107.59	1,978.08	0.00	0.00	0.00
14,500.00	90.00	179.55	12,275.00	-2,078.99	-106.80	2,078.08	0.00	0.00	0.00
14,600.00	90.00	179.55	12,275.00	-2,178.98	-106.02	2,178.08	0.00	0.00	0.00
14,700.00	90.00	179.55	12,275.00	-2,278.98	-105.24	2,278.08	0.00	0.00	0.00
14,800.00	90.00	179.55	12,275.00	-2,378.98	-104.45	2,378.08	0.00	0.00	0.00
14,900.00	90.00	179.55	12,275.00	-2,478.97	-103.67	2,478.08	0.00	0.00	0.00
15,000.00	90.00	179.55	12,275.00	-2,578.97	-102.89	2,578.08	0.00	0.00	0.00
15,100.00	90.00	179.55	12,275.00	-2,678.97	-102.11	2,678.08	0.00	0.00	0.00
15,200.00	90.00	179.55	12,275.00	-2,778.96	-101.32	2,778.08	0.00	0.00	0.00
15,300.00	90.00	179.55	12,275.00	-2,878.96	-100.54	2,878.08	0.00	0.00	0.00
15,400.00	90.00	179.55	12,275.00	-2,978.96	-99.76	2,978.08	0.00	0.00	0.00
15,500.00	90.00	179.55	12,275.00	-3,078.95	-98.98	3,078.08	0.00	0.00	0.00
15,600.00	90.00	179.55	12,275.00	-3,178.95	-98.19	3,178.08	0.00	0.00	0.00
15,700.00	90.00	179.55	12,275.00	-3,278.95	-97.41	3,278.08	0.00	0.00	0.00
15,800.00	90.00	179.55	12,275.00	-3,378.95	-96.63	3,378.08	0.00	0.00	0.00
15,900.00	90.00	179.55	12,275.00	-3,478.94	-95.85	3,478.08	0.00	0.00	0.00
16,000.00	90.00	179.55	12,275.00	-3,578.94	-95.06	3,578.08	0.00	0.00	0.00
16,100.00	90.00	179.55	12,275.00	-3,678.94	-94.28	3,678.08	0.00	0.00	0.00

Company:	Matador Resources	**Local Co-ordinate Reference:**	Well #201H
Project:	Lea County, NM	**TVD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Site:	Brad Lummis Fed Com	**MD Reference:**	GL: 3492' + KB: 28.5' @ 3520.50usft (Patterson 274)
Well:	#201H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim A	**Database:**	WellPlanner1

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)
16,200.00	90.00	179.55	12,275.00	-3,778.93	-93.50	3,778.08	0.00	0.00	0.00
16,300.00	90.00	179.55	12,275.00	-3,878.93	-92.71	3,878.08	0.00	0.00	0.00
16,400.00	90.00	179.55	12,275.00	-3,978.93	-91.93	3,978.08	0.00	0.00	0.00
16,500.00	90.00	179.55	12,275.00	-4,078.92	-91.15	4,078.08	0.00	0.00	0.00
16,600.00	90.00	179.55	12,275.00	-4,178.92	-90.37	4,178.08	0.00	0.00	0.00
16,700.00	90.00	179.55	12,275.00	-4,278.92	-89.58	4,278.08	0.00	0.00	0.00
16,800.00	90.00	179.55	12,275.00	-4,378.91	-88.80	4,378.08	0.00	0.00	0.00
16,900.00	90.00	179.55	12,275.00	-4,478.91	-88.02	4,478.08	0.00	0.00	0.00
17,000.00	90.00	179.55	12,275.00	-4,578.91	-87.24	4,578.08	0.00	0.00	0.00
17,030.09	90.00	179.55	12,275.00	-4,609.00	-87.00	4,608.17	0.00	0.00	0.00

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
BHL(B L F C #201H)	0.00	0.00	12,275.00	-4,609.00	-87.00	436,266.00	773,946.00	32.196311	-103.447745
- plan hits target center - Point									
LPP(B L F C #201H)	0.00	0.00	12,275.00	-4,518.00	-87.00	436,357.00	773,946.00	32.196561	-103.447743
- plan misses target center by 0.71usft at 16939.10usft MD (12275.00 TVD, -4518.01 N, -87.71 E) - Point									
FPP(B L F C #201H)	0.00	0.00	12,275.00	101.00	-124.00	440,976.00	773,909.00	32.209258	-103.447739
- plan misses target center by 77.99usft at 12347.70usft MD (12207.11 TVD, 63.12 N, -117.80 E) - Point									

Checked By: _____ Approved By: _____ Date: _____

Well Control Plan For 10M MASP Section of Wellbore

Component and Preventer Compatibility Table:

The table below covers the drilling and casing of the 10M MASP portion of the well and outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

Component	OD	Preventer	RWP
Drill pipe	4"	Lower 3.5-5.5" VBR Upper 3.5-5.5" VBR	10M
HWDP	4"		
Jars/Agitator	4.75-5"		
Drill collars and MWD tools	4.75-5.25"		
Mud Motor	4.75-5.25"		
Production casing	4.5-5.5"		
ALL	0-13.625"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram with compatible range listed in chart
HWDP = Heavy Weight Drill Pipe
MWD = Measurement While Drilling

Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the Bottom Hole Assembly (BHA) through the Blowout Preventers (BOP). The maximum pressure at which well control is transferred from the annular to another compatible ram is 3,000 psi.

General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps and stop rotary
4. Shut-in well with the annular preventer (The Hydraulic Control Remote (HCR) valve and choke will already be in the closed position)
5. Confirm shut-in
6. Notify tool pusher and company representative
7. Read and record the following:
    - SIDPP and SICP
    - Pit gain
    - Time of shut in
8. Regroup and identify forward plan

9. If pressure has increased or is anticipated to increase above 3,000 psi, confirm spacing and close the upper pipe rams

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in well with annular preventer (The HCR valve and choke will already be in the closed position)
5. Confirm shut-in
6. Notify tool pusher and company representative
7. Read and record the following:
    - SIDPP and SICP
    - Pit gain
    - Time of shut in
8. Regroup and identify forward plan
9. If pressure has increased or is anticipated to increase above 3,000 psi, confirm spacing and close the upper pipe rams

General Procedure While Running Casing

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string
4. Shut-in well with annular preventer (The HCR valve and choke will already be in the closed position)
5. Confirm shut-in
6. Notify tool pusher and company representative
7. Read and record the following:
    - SIDPP and SICP
    - Pit gain
    - Time of shut in
8. Regroup and identify forward plan

9. If pressure has increased or is anticipated to increase above 3,000 psi, confirm spacing and close the upper pipe rams

General Procedure with No Pipe In Hole

1. At any point when the BOP stack is clear of pipe or BHA, the well will be shut in with blind rams, the HCR valve will be open, and choke will be closed. If pressure increase is observed:
2. Sound alarm (alert crew)
3. Confirm shut-in
4. Notify tool pusher and company representative
5. Read and record the following:
    - SICP
    - Time of shut in
6. Regroup and identify forward plan

General Procedure While Pulling BHA through Stack

1. Prior to pulling last joint/stand of drill pipe through the stack, perform flow check. If flowing:
    a. Sound alarm (alert crew)
    b. Stab full opening safety valve and close
    c. Space out drill string
    d. Shut-in well with annular preventer (The HCR valve and choke will already be in the closed position)
    e. Confirm shut-in
    f. Notify tool pusher and company representative
    g. Read and record the following:
        - SIDPP and SICP
        - Pit gain
        - Time of shut in
    h. Regroup and identify forward plan

2. With BHA in the stack and compatible ram preventer and pipe combo immediately available:
    a. Sound alarm (alert crew)
    b. Stab crossover and full opening safety valve and close

c. Space out drill string with the upset just beneath the compatible pipe ram

d. Shut-in well using compatible pipe rams (The HCR valve and choke will already be in the closed position)

e. Confirm shut-in

f. Notify tool pusher and company representative

g. Read and record the following:

- SIDPP and SICP
- Pit gain
- Time of shut in

h. Regroup and identify forward plan

3. With BHA in the stack and no compatible ram preventer and pipe combo immediately available:

a. Sound alarm (alert crew)

b. If possible to pick up high enough, pull BHA clear of the stack

b.i. Follow "No Pipe in Hole" procedure above

c. If impossible to pick up high enough to pull string clear of the stack:

c.i. Stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close

c.ii. Space out drill string with the upset just beneath the compatible pipe ram

c.iii. Shut-in well using compatible pipe rams (The HCR valve and choke will already be in the closed position)

c.iv. Confirm shut-in

c.v. Notify tool pusher and company representative

c.vi. Read and record the following:

- SIDPP and SICP
- Pit gain
- Time of shut in

c.vii. Regroup and identify forward plan

Well Control Drills

Well Control Plan For 10M MASP Section of Wellbore

Well control drills are specific to the rig equipment, personnel, and operations. Each crew will execute one drill weekly relevant to ongoing operations, but will make a reasonable attempt to vary the type of drills. The drills will be recorded in the daily drilling log.

Closed-Loop System

Operating and Maintenance Plan:

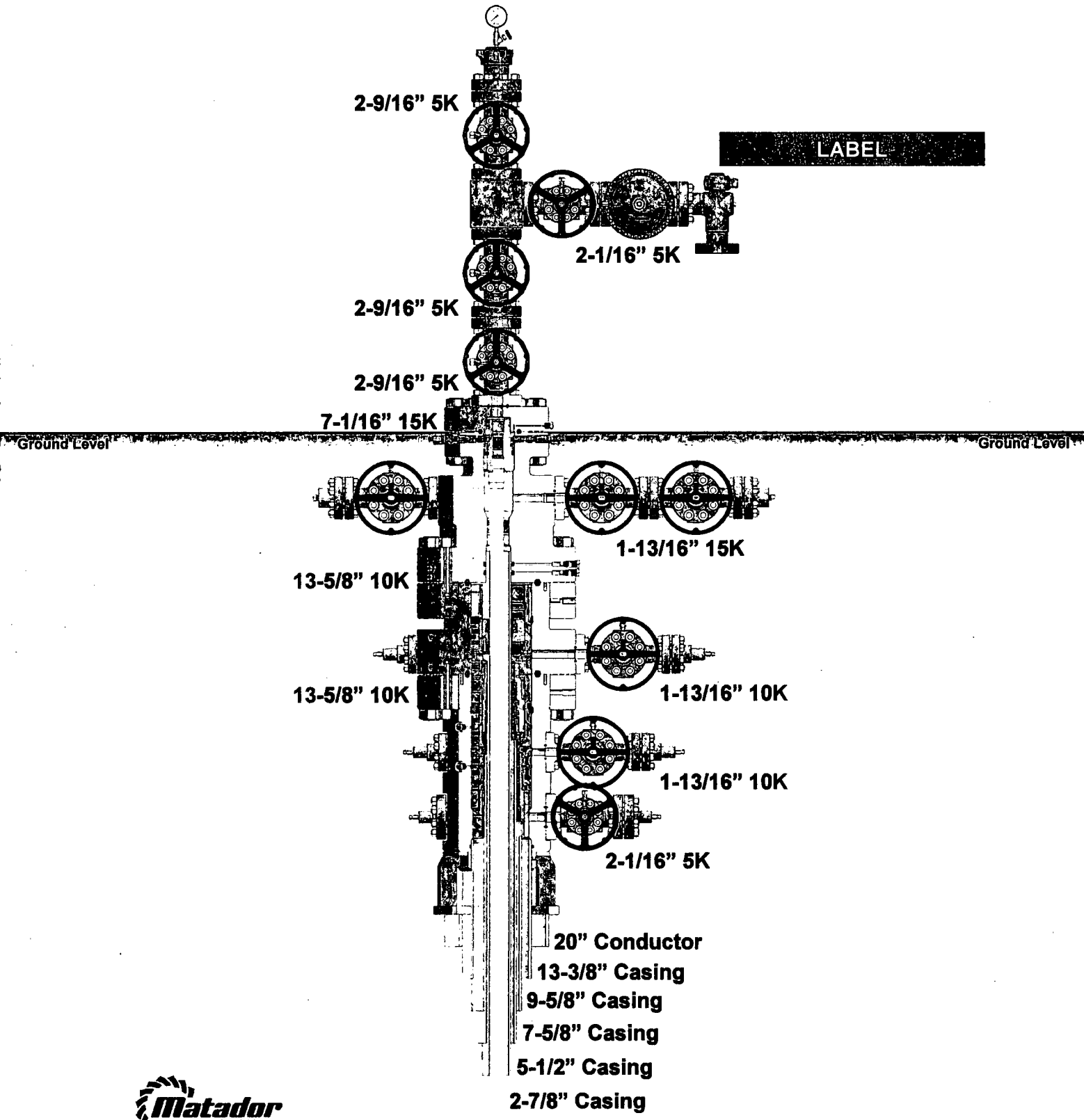
During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluids and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

Closure Plan:

During drilling operations, third party service companies will haul off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.

CAMERON
A Schlumberger Company

13-5/8" 10K MN-DS Wellhead
13-3/8 x 9-5/8 x 7-5/8 x 5-1/2 Casing Program



Matador RESOURCES COMPANY

2018-147-02

NOTE: All dimensions on this drawing are estimated measurements and should be evaluated by engineering.

APD ID: 10400033633
Submission Date: 08/31/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM
Well Number: 201H

Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes.

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Existing_Roads_Screenshot_20180612152943.JPG

Existing Road Purpose: ACCESS

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? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

OCD_Existing_Wells_Map_20180614150552.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description:

Production Facilities map:

SK_300X400_FACILITY_SITE_LAYOUT_20180730114207.PDF

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION

Water source type: GW WELL

Describe type:

Source latitude: 32.21486

Source longitude: -103.45763

Source datum: NAD83

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 4761.905

Source volume (acre-feet): 0.6137766

Source volume (gal): 200000

Water source and transportation map:

OSE_Water_Wells_1_Mile_Radius_map_20180615105016.JPG

OSE_Water_Wells_1_Mile_Radius_20180615104313.pdf

Water source comments:

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description:

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: Trash generated by drilling crew

Amount of waste: 50 pounds

Waste disposal frequency : Weekly

Safe containment description: garbage cans

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** OTHER

Disposal type description:

Disposal location description: Lea County Landfill

Waste type: DRILLING

Waste content description: drill cuttings, mud, salts and other chemicals

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: steel tanks

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Located in Halfway, NM

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Steel tanks located on adjacent facility site

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Location_Layout_Flipped_20180829172318.pdf

Comments:

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: BRAD LUMMIS FED COM **Well Number:** 201H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** SLOT 1

Multiple Well Pad Number: 6

Recontouring attachment:

Drainage/Erosion control construction: per BLM COAs

Drainage/Erosion control reclamation: per BLM COAs

Well pad proposed disturbance (acres): 5.11
Road proposed disturbance (acres): 0.03
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 0
Total proposed disturbance: 5.14

Well pad interim reclamation (acres): 1.25
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 1.25

Well pad long term disturbance (acres): 3.86
Road long term disturbance (acres): 0
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0
Total long term disturbance: 3.86

Disturbance Comments:

Reconstruction method: Per BLM COAs

Topsoil redistribution: The areas planned for interim reclamation will be harrowed on the contour to match pre-construction grades. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. Topsoil and brush will be evenly respread over the entire disturbed area. Disturbed areas will be seeded in accordance with the surface owner's requirements. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
Soil treatment: Per BLM COAs

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used?

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project?

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation?

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Per BLM COAs

Weed treatment plan attachment:

Monitoring plan description: Per BLM COAs

Monitoring plan attachment:

Success standards: Per BLM COAs

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

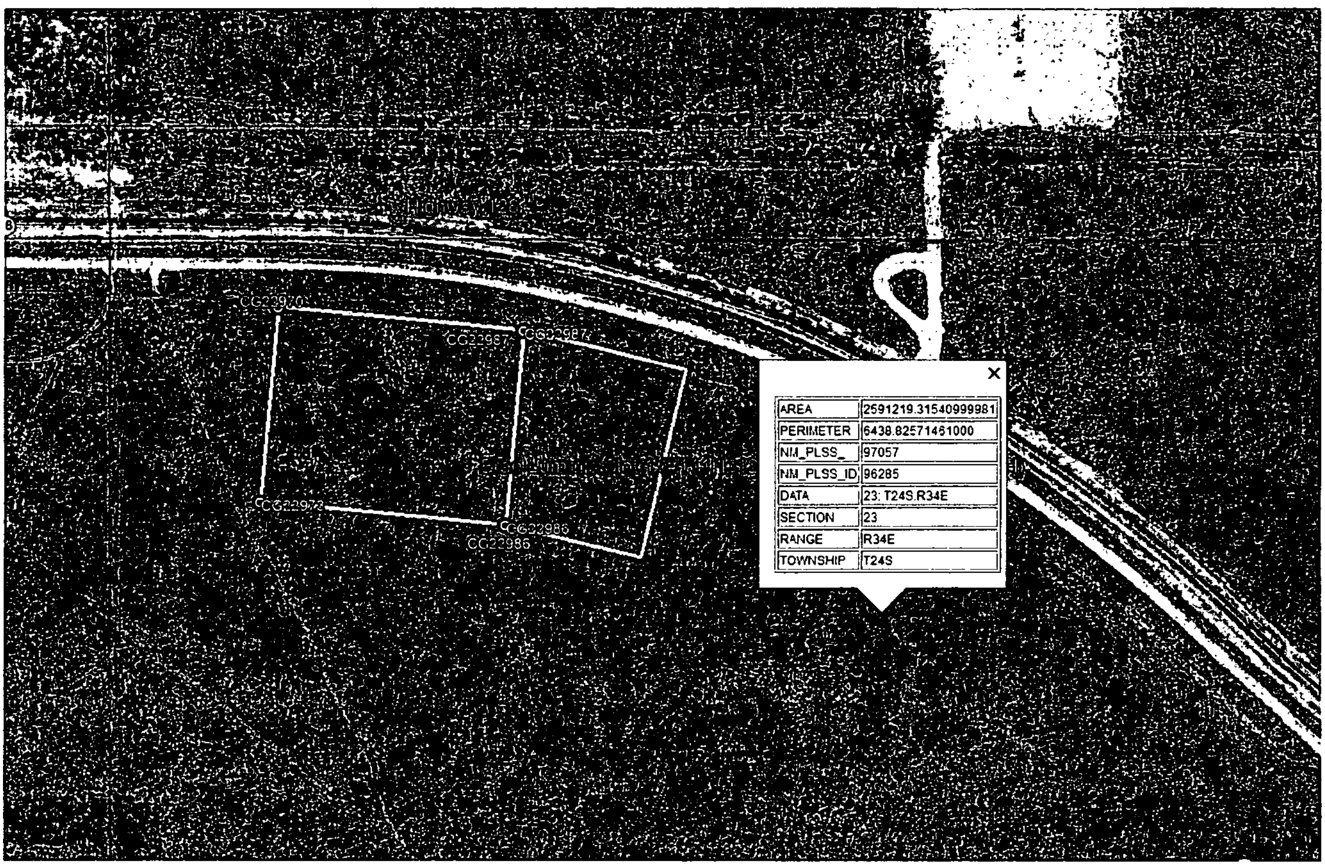
SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: Onsite conducted on 4/24/18 with Jesse Bassett, and covered well pad (with 7 wells) and adjacent facility site.

Other SUPO Attachment

BradLummis_Surface_Use_Plan_of_Operations_20180829143025.docx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CG22987
CG22987
CG22986
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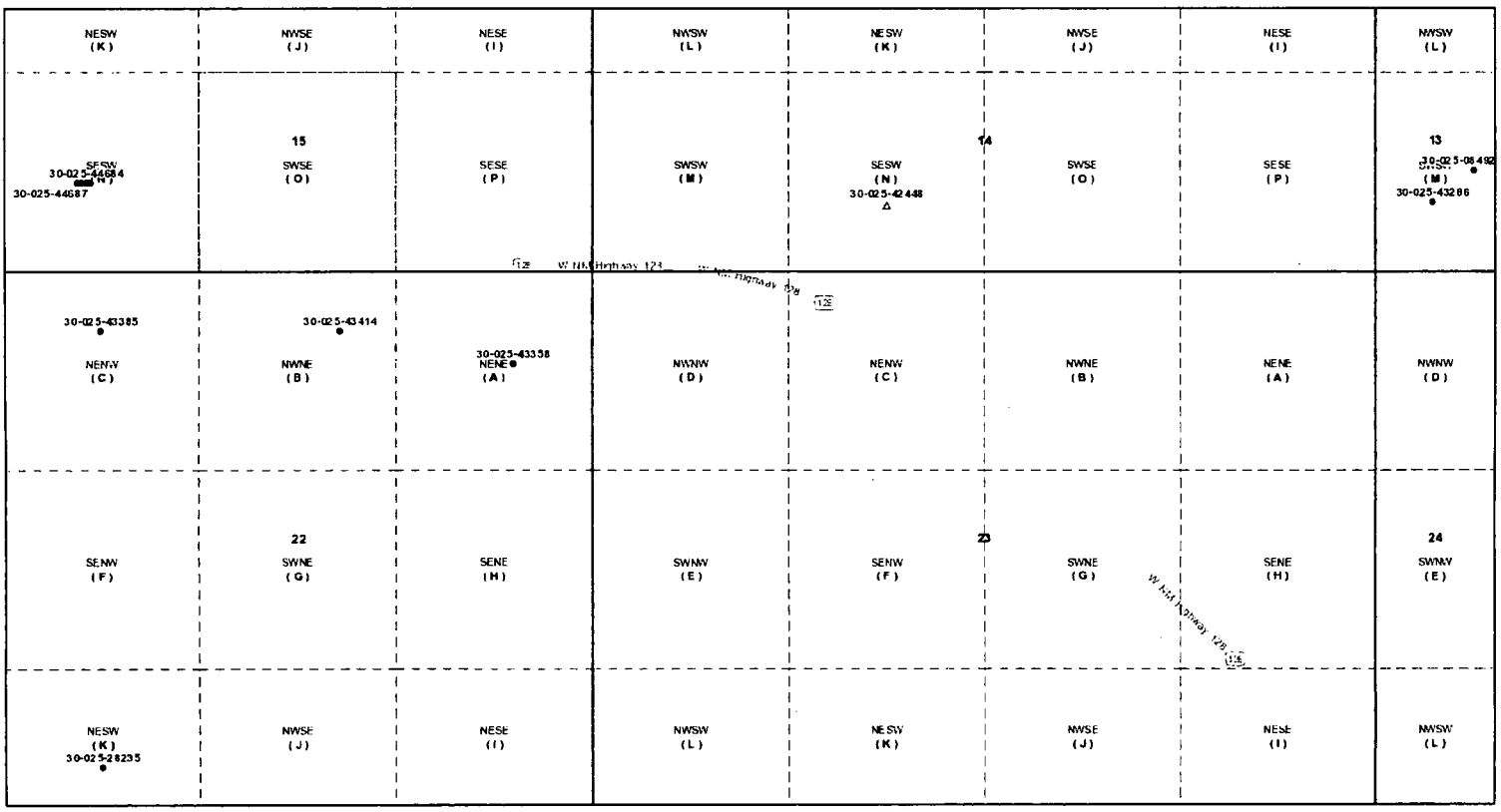
PERIMETER 6438.82571461000
NM_PLSS_ 97057
NM_PLSS_ID 96285
DATA 23: T24S.R34E
SECTION 23
RANGE R34E
TOWNSHIP T24S

OCD Well Locations



6/14/2018, 3:05:18 PM

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

OCD, BLM, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA

Well Locations - Small Scale
- Active
- New
- Plugged
- Cancelled
- Temporarily Abandoned

Well Locations - Large Scale
- Miscellaneous
- CO2 Active
- CO2 Cancelled
- CO2 New
- CO2, Plugged

- CO2, Temporarily Abandoned
- Gas Active
- Gas, Cancelled, Never Drilled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned

- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active

- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abondoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled

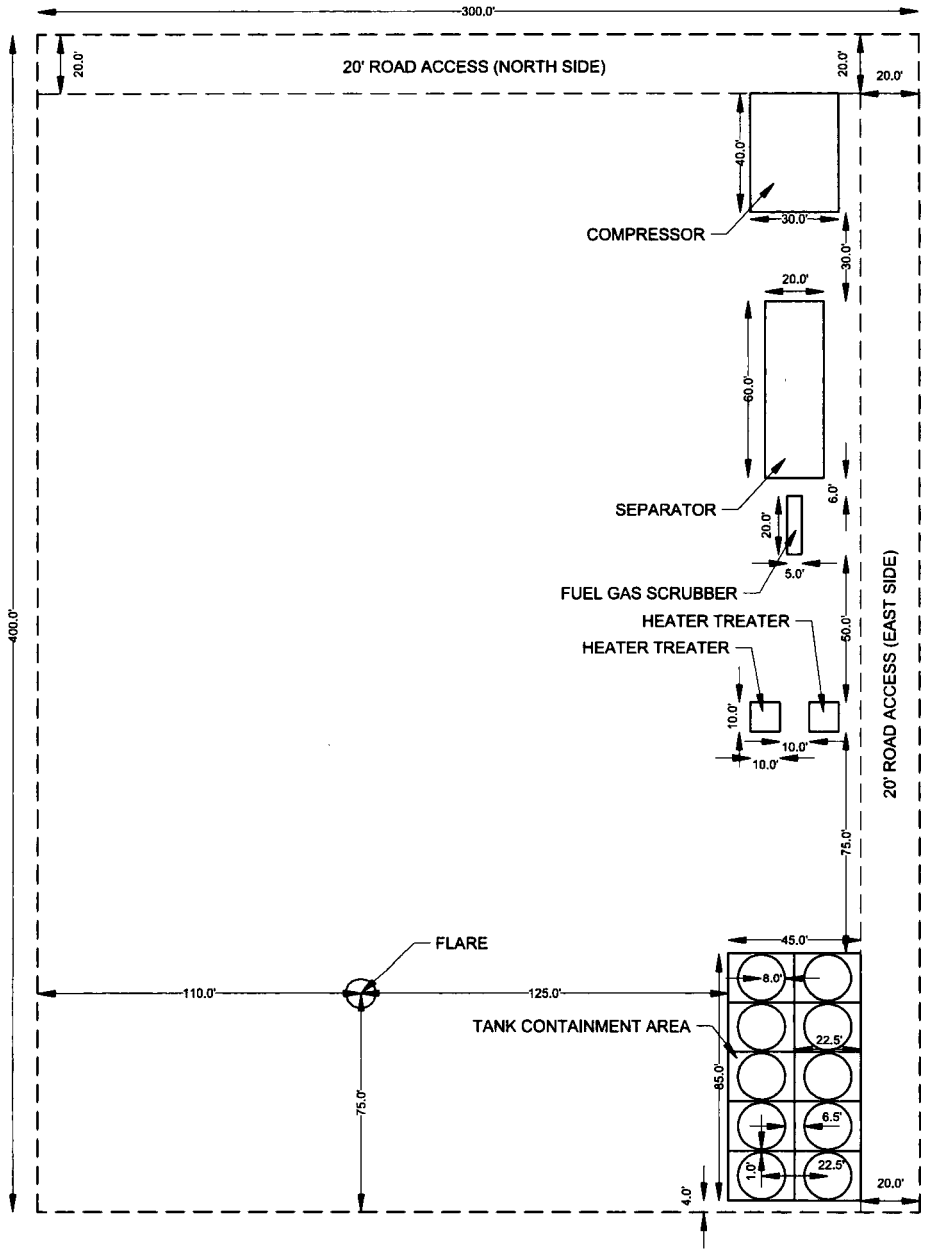
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water InjectionTemporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New

New Mexico Oil Conservation Division

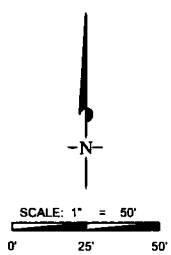
NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/: New Mexico Oil Conservation Division

Matador PRODUCTION COMPANY

SECTION –, TOWNSHIP –, RANGE –, N.M.P.M.
– COUNTY, NEW MEXICO



SKETCH NAME : 300' X 400' FACILITY SITE LAYOUT

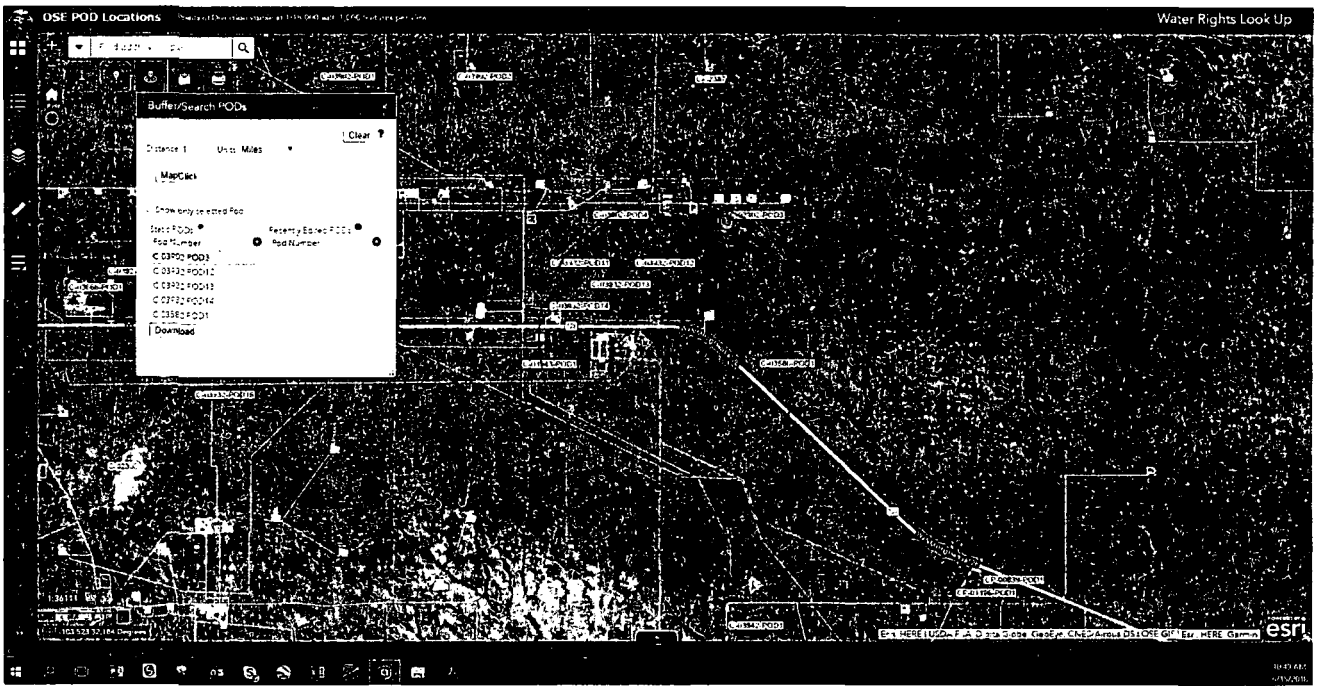


ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

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 MATADOR PRODUCTION COMPANY. 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.

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

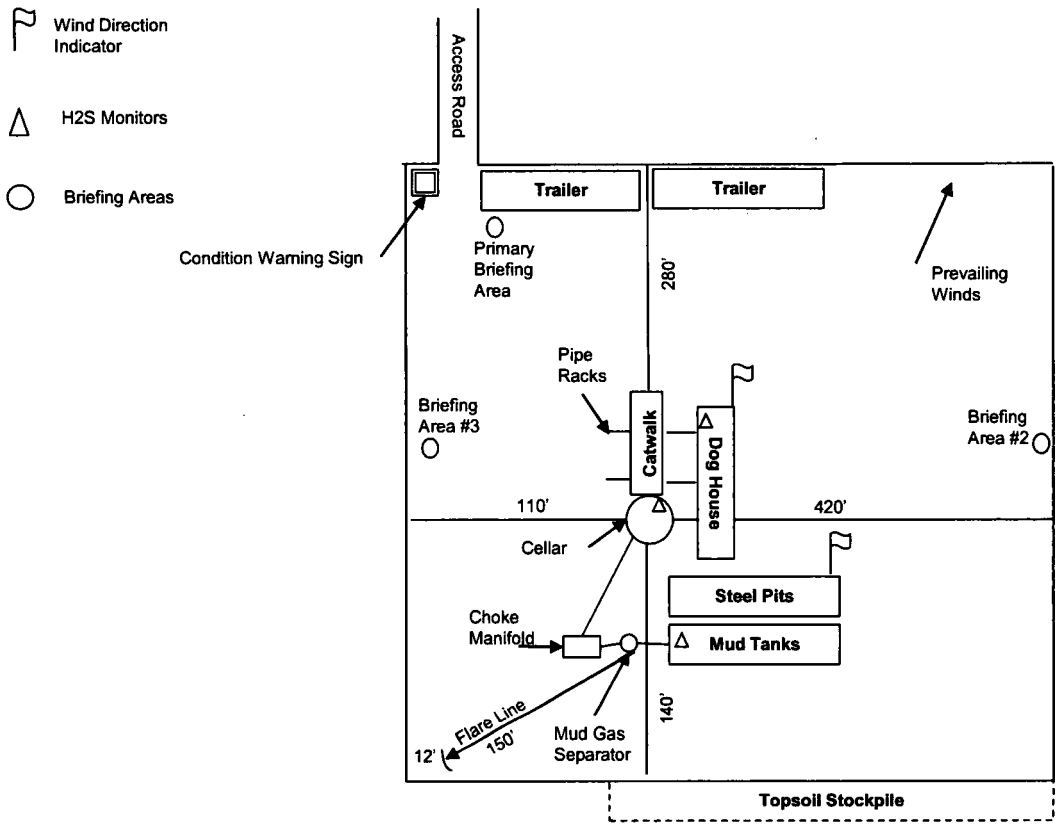
ORIGINAL DOCUMENT SIZE: 8.5" X 11"


OSE POD Locations
Water Rights Look Up
Buffer/Search PODs
Clear
Distance 1
Units Miles
MapClick
Show only selected Pod
Download
esri

OSE Label	Use	Well Use	status	pod_status	Owner-Last Name	wner-First Nar	depth_well	depth_water	distance_to_center	utm_easting	utm_northing
C 03902 POD3	EXP	null	PMT	PEN	KARGER	BRYCE	null	null	1428.038	646936.5	3566027.2
C 03932 POD12	EXP	null	PMT	PEN	KARGER	BRYCE	null	null	986.426	645834.2	3565459.6
C 03932 POD13	EXP	null	PMT	ACT	KARGER	BRYCE	90	null	1244.687	645314.2	3565203.5
C 03580 POD1	EXP	null	null	PEN	INTERCONTINENTAL POTASH CORP	null	null	null	965.065	647336.4	3564313.3

Rig Diagram

Exhibit E-3: Rig Diagram
Brad Lummis Fed Com #201H
Matador Resources Company
23-24S-34E
SHL 432' FNL & 453' FWL
BHL 240' FSL & 330' FWL
Lea County, NM



Surface Use Plan of Operations- Brad Lummis Federal

Wells #111, 121, 131, 201, 211, 221

Existing Roads

1. Improvements to the driving surface of existing roads will be done as needed to Gold Book standards. No new surface disturbance along existing roads will be done.
2. The existing access road route to the proposed project does not cross lease or unit boundaries.
3. The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if damaged or deteriorated beyond practical use.

New or Reconstructed Access Roads

1. Additional access roads will be needed for this proposed project. See the survey plat for the location and length of the access road. The new roads will be constructed to BLM standards.
2. Total width of disturbance when constructing the access road will be 30 feet. The driving width of the access road (permanent disturbance) will be 14 feet. All areas outside of the driving surface will be revegetated after construction is complete.
3. The access road will be capped with compacted caliche from a BLM-approved third party source.
4. The road will have a 0% slope from the tip of the road crown to the edge of the driving surface. The maximum grade for the access road will be 1%.
5. The access road will be constructed with a ditch on each side.
6. No turnouts will be constructed on the proposed access road.
7. No culverts will be constructed for this proposed access road.
8. No low water crossings will be constructed for the access road.

Production Facilities

1. Topsoil removed during the construction of the well pad (420' X 530') for all six wells will have will be stored along the south side of pad
    a. Reclamation area will be along the east side of the pad (130' x 420')
2. A facility site (360' X 416' X 300' X 420') will be built adjacent to the eastern edge of the well pad
    a. See Well Site Layout Diagram for dimension of reclamation areas and topsoil storage areas
3. No electrical line will be installed as part of this project.

4. A buried gas takeaway line will be installed, with a 30ft-wide permanent easement and a 20ft-wide temporary workspace. The disturbance with be reclaimed and revegetated after construction.
5. A flowline easement between well pad and surface facility site will be installed, with a 50ft-wide permanent easement and a 25ft-wide temporary workspace. The disturbance with be reclaimed and revegetated after construction.

Location and Types of Water

1. Water source: see 1-Mile OSE Water Well Map
    a. Transport method: temporary surface water lines
    b. Water source volume: estimated 180,000 barrels

Waste Disposal

1. Drilling: drill cuttings, mud, salts and other chemicals will be stored in steel tanks and hauled to state approved private commercial facility in Halfway, NM. Estimated volume of drilling waste is 2000 barrels. The well will be drilled utilizing a closed loop system.
2. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at Lea County Landfill. All trash on and around the well site will be collected for disposal.
3. Human waste and grey water will be properly contained and disposed of properly at Carlsbad Wastewater Treatment Plant.

Topsoil Salvaging

1. The top 6 inches of soil material will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road. Grass, forbs, and small woody vegetation, such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and respread evenly on the site following topsoil respreading. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

Surface Reclamation Procedures

1. The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.
2. If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed.
3. Interim reclamation will be performed on the well site after the final well on well pad is drilled and completed. Reclamation diagrams depict the location and dimensions of the planned interim reclamation for the well sites.
4. Within 30 days of well completion, the well location and surrounding areas will be cleared of all materials, trash, and equipment not required for production.

5. In areas planned for interim reclamation, all the surface material will be removed and returned to the original location or recycled to repair/build roads and well pads.
6. The areas planned for interim reclamation will be harrowed on the contour to match pre-construction grades. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour.
7. Topsoil and brush will be evenly respread over the entire disturbed area. Disturbed areas will be seeded in accordance with the surface owner's requirements. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
8. Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.
9. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

Final Reclamation (well pad, buried pipelines, etc.)

1. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.
2. All surfacing material will be removed and returned to the original location or recycled to repair/build roads and well pads.
3. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured as best as possible to match pre-construction grades. The topsoil that was spread over the interim reclamation areas will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
4. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper seed mixture, free of noxious weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
5. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.
6. All unused equipment and structures including pipelines, electric line poles, tanks, etc. that serviced the well will be removed.
7. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

12/10/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001079

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: