

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

5. Lease Serial No.  
NMNM119275

6. If Indian, Allottee or Tribe Name

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

1a. Type of work:  DRILL  REENTER  
1b. Type of Well:  Oil Well  Gas Well  Other  Single Zone  Multiple Zone

8. Lease Name and Well No. **32079B**  
CASEY JONES 16 FED COM 701H

2. Name of Operator  
EOG RESOURCES INCORPORATED

9. API Well No.  
**30-015-44698**

3a. Address  
1111 Bagby Sky Lobby2 Houston TX 77002

3b. Phone No. (include area code)  
(713)651-7000

10. Field and Pool, or Exploratory **PURPLESAGE**  
~~WILD CAT / WILDCAT WOLF CAMP OIL~~ **GAS**

4. Location of Well (Report location clearly and in accordance with any State requirements.)\*  
At surface SWSW / 280 FSL / 510 FWL / LAT 32.0360285 / LONG -103.8932212  
At proposed prod. zone NWNW / 230 FNL / 330 FWL / LAT 32.0638489 / LONG -103.893778

11. Sec., T. R. M. or Blk. and Survey or Area  
SEC 16 / T26S / R30E / NMP

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

12. County or Parish  
EDDY

13. State  
NM

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

16. No. of acres in lease  
480

17. Spacing Unit dedicated to this well  
640

18. Distance from proposed location\* to nearest well, drilling, completed, 665 feet applied for, on this lease, ft.

19. Proposed Depth  
10592 feet / 20744 feet

20. BLM/BIA Bond No. on file  
FED: NM2308

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3033 feet

22. Approximate date work will start\*  
11/01/2017

23. Estimated duration  
25 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature  
(Electronic Submission)

Name (Printed/Typed)  
Stan Wagner / Ph: (432)686-3689

Date  
05/05/2017

Title  
Regulatory Specialsit

Approved by (Signature)  
(Electronic Submission)

Name (Printed/Typed)  
Cody Layton / Ph: (575)234-5959

Date  
02/02/2018

Title  
Supervisor Multiple Resources

Office  
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.

(Continued on page 2)

\*(Instructions on page 2)

ARTESIA DISTRICT  
FEB 15 2018  
RECEIVED

**APPROVED WITH CONDITIONS**  
Approval Date: 02/02/2018

RVP 2-19-18



## Application for Permit to Drill

U.S. Department of the Interior  
Bureau of Land Management

### APD Package Report

Date Printed: 02/06/2018 09:32 AM

APD ID: 10400013554	Well Status: AAPD
APD Received Date: 05/05/2017 12:44 PM	Well Name: CASEY JONES 16 FED COM
Operator: EOG RESOURCES INCORPORATED	Well Number: 701H

#### APD Package Report Contents

- Form 3160-3
- Operator Certification Report
- Application Report
- Application Attachments
  - Well Plat: 1 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
  - Blowout Prevention Choke Diagram Attachment: 3 file(s)
  - Blowout Prevention BOP Diagram Attachment: 1 file(s)
  - Casing Taperd String Specs: 2 file(s)
  - Casing Design Assumptions and Worksheet(s): 3 file(s)
  - Hydrogen sulfide drilling operations plan: 1 file(s)
  - Proposed horizontal/directional/multi-lateral plan submission: 2 file(s)
  - Other Facets: 8 file(s)
- SUPO Report
- SUPO Attachments
  - Existing Road Map: 1 file(s)
  - New Road Map: 3 file(s)
  - Attach Well map: 1 file(s)
  - Production Facilities map: 4 file(s)
  - Water source and transportation map: 1 file(s)
  - Construction Materials source location attachment: 1 file(s)
  - Well Site Layout Diagram: 3 file(s)
  - Recontouring attachment: 1 file(s)
  - Other SUPO Attachment: 4 file(s)
- PWD Report
- PWD Attachments
  - None

BUREAU OF LAND MANAGEMENT  
ARTESIA DISTRICT

FEB 15 2018

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**PECOS DISTRICT  
DRILLING OPERATIONS  
CONDITIONS OF APPROVAL**

<b>OPERATOR'S NAME:</b>	<b>EOG Resources, Inc.</b>
<b>LEASE NO.:</b>	<b>NMNM-119275</b>
<b>WELL NAME &amp; NO.:</b>	<b>Casey Jones 16 Fed Com 701H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>0280' FSL &amp; 0510' FWL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>0230' FNL &amp; 0330' FWL</b>
<b>LOCATION:</b>	<b>Section 16, T. 26 S., R 30 E., NMPM</b>
<b>COUNTY:</b>	<b>County, New Mexico</b>

**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.

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

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

**Eddy County**

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

**A. Hydrogen Sulfide**

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Option – Setting surface casing with Surface Rig
  - a. Notify the BLM when removing the Surface Rig.
  - b. Notify the BLM when moving in the H&P Flex Rig. Rig to be moved in within 60 days of notification that Ashton Oilfield Services Rig has left the location. Failure to notify or have rig on location within 60 days will result in an Incident of Non-Compliance.
  - c. Once the H&P Flex Rig is on location, it shall not be removed from over the hole without prior approval unless the production casing has been run and cemented or the well has been properly plugged. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
  - d. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as H&P Flex Rig is rigged up on well. CIT for the surface casing shall be performed and results recorded on subsequent sundry – pressure to be 1200 psi.
4. 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 is located, this does not include the dog house or stairway area.
5. **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

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

**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.

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.

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

**Medium Cave/Karst**

**Possibility of water flows in the Castile and Salado.**

**Possibility of lost circulation in the Rustler, Red Beds, and Delaware.**

1. The 10-3/4 inch surface casing shall be set at approximately 880 feet 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 is to include the lead cement slurry.**
  - 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.

**Formation below the 10-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

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

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

**If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.**

**Formation below the 7-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

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

- Cement should as proposed by operator. Operator shall provide method of verification. **Excess calculates to 9% - Additional cement may be required.**

4. 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.

## **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 53.
2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **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 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. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
  - 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.**

**Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)**

**10M 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. **The appropriate BLM office shall be notified a minimum of 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).
- a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
- b. 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.
- c. The results of the test shall be reported to the appropriate BLM office.
- d. 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.**
- e. 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.
- f. 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. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**E. 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.

**JAM 011018**

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	EOG Resources Inc
LEASE NO.:	NM119275
WELL NAME & NO.:	Casey Jones 16 Fed Com – 701H
SURFACE HOLE FOOTAGE:	280'/S & 510'/W
BOTTOM HOLE FOOTAGE:	230'/N & 330'/W, sec. 9
LOCATION:	Section 16, T. 26 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

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

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
  - Cave/Karst
  - Phantom Bank Heronries
  - Watershed
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- Interim Reclamation**
- Final Abandonment & Reclamation**

## **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)

### **Cave and Karst**

\*\* Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

#### **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

#### **No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

#### **Pad Berming:**

The entire perimeter of the 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 high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- 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.
- 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 access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

#### **Tank Battery Liners and Berms:**

Tank battery locations and all facilities 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.

#### **Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

**Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

**Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

**Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**

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

**Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

**Phantom Bank Heronries**

Surface disturbance will not be allowed within 660 feet of active heronries or by delaying activity for up to 120 days, or a combination of both. Exhaust noise from engines must be muffled or otherwise controlled so as not to exceed 75 decibels measured at 30 feet from the source of the noise.

## **Watershed**

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

## **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**

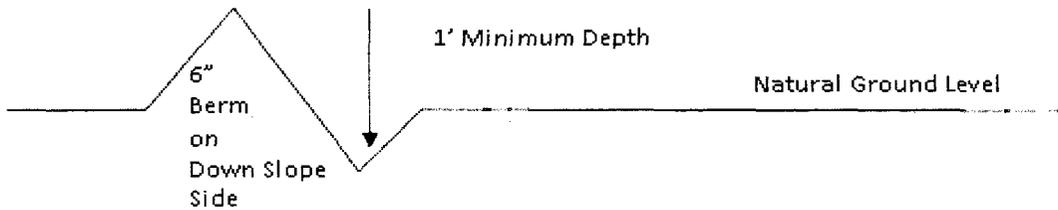
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

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

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

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



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

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

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

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

### Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

### Fence Requirement

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

### 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

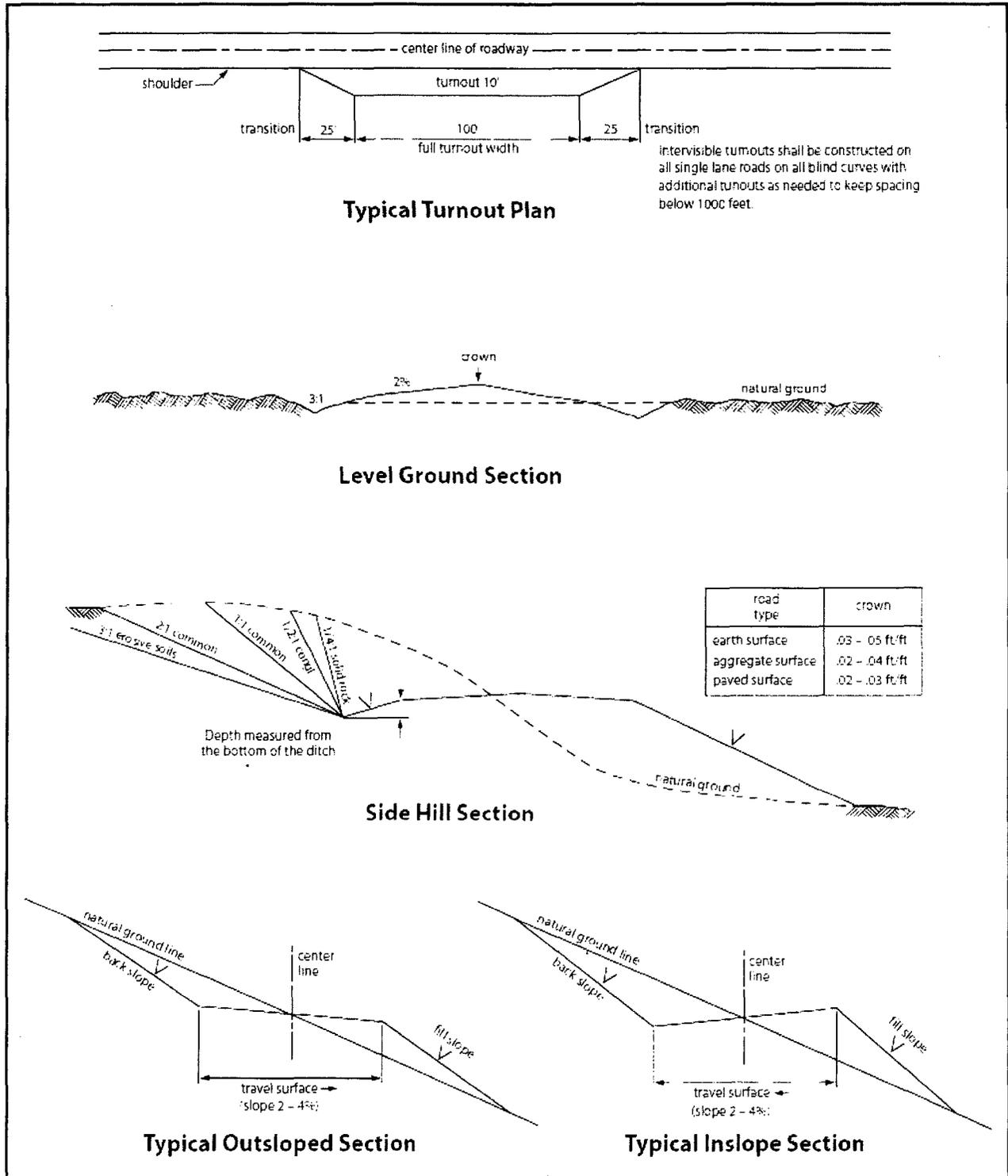


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **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.

### **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.

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> seed mixture 1 | <input type="checkbox"/> seed mixture 3          |
| <input type="checkbox"/> seed mixture 2            | <input type="checkbox"/> seed mixture 4          |
| <input type="checkbox"/> seed mixture 2/LPC        | <input type="checkbox"/> 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.

### **C. ELECTRIC LINES**

#### **STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

**A copy of the grant and attachments, including stipulations, 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. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching

deterrence shall be placed on all vertical poles that extend past the cross arms.

6. 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 the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate 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.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

## **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).

**Seed Mixture 1 for Loamy 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 shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed 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 shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/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 shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The 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:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass ( <i>Eragrostis intermedia</i> )	0.5
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sideoats grama ( <i>Bouteloua curtipendula</i> )	5.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

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

## 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:** Stan Wagner**Signed on:** 05/05/2017**Title:** Regulatory Specialist**Street Address:** 5509 Champions Drive**City:** Midland**State:** TX**Zip:** 79702**Phone:** (432)686-3689**Email address:** Stan\_Wagner@eogresources.com

## Field Representative

**Representative Name:** Michael Yemm**Street Address:** 5509 Champions Drive**City:** Midland**State:** TX**Zip:** 79706**Phone:** (432)556-7258**Email address:** michael\_yemm@eogresources.com

**APD ID:** 10400013554**Submission Date:** 05/05/2017Highlighted data  
reflects the most  
recent changes**Operator Name:** EOG RESOURCES INCORPORATED**Well Name:** CASEY JONES 16 FED COM**Well Number:** 701H[Show Final Text](#)**Well Type:** OIL WELL**Well Work Type:** Drill

### Section 1 - General

**APD ID:** 10400013554**Tie to previous NOS?****Submission Date:** 05/05/2017**BLM Office:** CARLSBAD**User:** Stan Wagner**Title:** Regulatory Specialsit**Federal/Indian APD:** FED**Is the first lease penetrated for production Federal or Indian?** FED**Lease number:** NMNM119275**Lease Acres:** 480**Surface access agreement in place?****Allotted?****Reservation:****Agreement in place?** NO**Federal or Indian agreement:****Agreement number:****Agreement name:****Keep application confidential?** NO**Permitting Agent?** NO**APD Operator:** EOG RESOURCES INCORPORATED**Operator letter of designation:**

### Operator Info

**Operator Organization Name:** EOG RESOURCES INCORPORATED**Operator Address:** 1111 Bagby Sky Lobby2**Zip:** 77002**Operator PO Box:****Operator City:** Houston**State:** TX**Operator Phone:** (713)651-7000**Operator Internet Address:**

### 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:** CASEY JONES 16 FED COM**Well Number:** 701H**Well API Number:****Field/Pool or Exploratory?** Field and Pool**Field Name:** WILDCAT**Pool Name:** WILDCAT  
WOLFCAMP OIL**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL

Operator Name: EOG RESOURCES INCORPORATED

Well Name: CASEY JONES 16 FED COM

Well Number: 701H

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: CASEY JONES 16 FED COM

Number: 701H/702H

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 32 Miles

Distance to nearest well: 665 FT

Distance to lease line: 230 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: Casey\_Jones\_16\_FC\_701H\_signed\_C\_102\_05-05-2017.pdf

Well work start Date: 11/01/2017

Duration: 25 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	280	FSL	510	FWL	26S	30E	16	Aliquot SWS W	32.0360285	-103.8932212	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	3033	0	0
KOP Leg #1	49	FSL	344	FWL	26S	30E	16	Aliquot SWS W	32.0353969	-103.8937601	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	-7063	10103	10096
PPP Leg #1	330	FSL	330	FWL	26S	30E	16	Aliquot SWS W	32.036464	-103.8938002	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	-7516	10667	10549

**APD ID:** 10400013554

**Submission Date:** 05/05/2017

Highlighted data reflects the most recent changes

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

[Show Final Text](#)

**Well Type:** OIL WELL

**Well Work Type:** Drill

**Section 1 - Geologic Formations**

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	PERMIAN	3033	0	0	ANHYDRITE	NONE	No
2	RUSTLER	2239	794	794	ANHYDRITE	NONE	No
3	TOP SALT	1905	1128	1128	SALT	NONE	No
4	BASE OF SALT	-41	3074	3074	SALT	NONE	No
5	LAMAR	-387	3420	3420	LIMESTONE	NONE	No
6	BELL CANYON	-416	3449	3449	SANDSTONE	NATURAL GAS,OIL	No
7	CHERRY CANYON	-1313	4346	4346	SANDSTONE	NATURAL GAS,OIL	No
8	BRUSHY CANYON	-2646	5679	5679	SANDSTONE	NATURAL GAS,OIL	No
9	BONE SPRING LIME	-4218	7251	7251	LIMESTONE	NONE	No
10	BONE SPRING 1ST	-5151	8184	8184	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 2ND	-5747	8780	8780	SANDSTONE	NATURAL GAS,OIL	No
12	BONE SPRING 3RD	-7047	10080	10080	SANDSTONE	NATURAL GAS,OIL	No
13	WOLFCAMP	-7425	10458	10458	SHALE	NATURAL GAS,OIL	Yes

**Section 2 - Blowout Prevention**

Operator Name: EOG RESOURCES INCORPORATED

Well Name: CASEY JONES 16 FED COM

Well Number: 701H

Pressure Rating (PSI): 10M

Rating Depth: 10592

**Equipment:** The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (10,000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil and Gas order No. 2.

**Requesting Variance?** YES

**Variance request:** Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line). Variance is requested to wave the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation. Variance is also requested to wave any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

**Testing Procedure:** Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

**Choke Diagram Attachment:**

Casey\_Jones\_16\_FC\_701H\_Co\_Flex\_Hose\_Cert\_05-05-2017.PDF

Casey\_Jones\_16\_FC\_701H\_Co\_Flex\_Hose\_Chart\_05-05-2017.pdf

10M\_Choke\_Manifold\_07-14-2017.pdf

**BOP Diagram Attachment:**

10M\_BOPE\_07-14-2017.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	14.75	10.75	NEW	API	N	0	820	0	820	3033	2213	820	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	Y	0	9600	0	9600	3033	-6567	9600	HCP-110	29.7	LTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	PRODUCTION	6.75	5.5	NEW	API	Y	0	20744	0	10592	3033	-7559	20744	P-110	20	OTHER - DW/C-IS MS	1.125	1.25	BUOY	1.6	BUOY	1.6

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CÁSEY JONES 16 FED COM

**Well Number:** 701H

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Casey\_Jones\_16\_FC\_701H\_BLM\_Plan\_05-05-2017.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

Casey\_Jones\_16\_FC\_701H\_BLM\_Plan\_05-05-2017.pdf

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

See\_previously\_attached\_Drill\_Plan\_05-05-2017.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

See\_previously\_attached\_Drill\_Plan\_05-05-2017.pdf

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

See\_previously\_attached\_Drill\_Plan\_05-05-2017.pdf

---

**Section 4 - Cement**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	820	400	1.73	13.5	692	25	Class C	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl2 + 0.25 lb/sk Cello-Flake (TOC @ Surface)
SURFACE	Tail		820	820	200	1.34	14.8	268	25	Class C	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
INTERMEDIATE	Lead		0	9600	2250	1.38	14.8	3105	25	Class C	Class C + 5% Gypsum + 3% CaCl2 pumped via Bradenhead. (TOC @ surface)
INTERMEDIATE	Tail		9600	9600	550	1.2	14.4	660	25	Class H	50:50 Class H:Poz + 0.25% CPT20A + 0.40% CPT49 + 0.20% CPT35 + 0.80% CPT16A + 0.25% CPT503P pumped conventionally
PRODUCTION	Lead		9100	2074 4	850	1.26	14.1	1071	25	Class H	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 9,100')

## 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:** (A) A Kelly cock will be kept in the drill string at all times. (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times. (C) H2S monitoring and detection equipment will be utilized from surface casing point to TD.

**Describe the mud monitoring system utilized:** An electronic pit volume totalizer (PVT) will be utilized on the circulating system to monitor pit volume, flow rate, pump pressure and stroke rate.

## Circulating Medium Table

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CÁSEY JONES 16 FED COM

**Well Number:** 701H

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
820	9600	SALT SATURATED	8.8	10							
9600	2074 4	OIL-BASED MUD	10	14							
0	820	WATER-BASED MUD	8.6	8.8							

### Section 6 - Test, Logging, Coring

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

Open-hole logs are not planned for this well.

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

DS

**Coring operation description for the well:**

None

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6334

**Anticipated Surface Pressure:** 4003.76

**Anticipated Bottom Hole Temperature(F):** 168

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

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Casey\_Jones\_16\_FC\_701H\_H2S\_Plan\_Summary\_05-05-2017.pdf

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

## Section 8 - Other Information

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

Casey\_Jones\_16\_FC\_701H\_Planning\_Report\_05-05-2017.pdf

Casey\_Jones\_16\_FC\_701H\_Wall\_Plot\_05-05-2017.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

Casey\_Jones\_16\_FC\_701H\_5.5in\_20.00\_VST\_P110EC\_DWC\_C\_IS\_MS\_05-05-2017.pdf

Casey\_Jones\_16\_FC\_701H\_5.5in\_20.00\_VST\_P110EC\_VAM\_SFC\_05-05-2017.pdf

Casey\_Jones\_16\_FC\_701H\_7.625in\_29.7\_P110EC\_VAM\_SLIJ\_II\_05-05-2017.pdf

Casey\_Jones\_16\_FC\_701H\_7.625in\_29.70\_P\_110\_FlushMax\_III\_05-05-2017.pdf

Casey\_Jones\_16\_FC\_701H\_Rig\_Layout\_05-05-2017.pdf

Casey\_Jones\_16\_FC\_701H\_Wellbore\_05-05-2017.pdf

Casey\_Jones\_16\_FC\_701H\_Wellhead\_Cap\_Diagram\_05-05-2017.pdf

CaseyJones16\_FC\_701\_deficiency\_response\_07-17-2017.pdf

**Other Variance attachment:**

**Manufacturer: Midwest Hose & Specialty**

**Serial Number: SN#90067**

**Length: 35'**

**Size: OD = 8" ID = 4"**

**Ends: Flanges Size: 4-1/16"**

**WP Rating: 10,000 psi    Anchors required by manufacturer: No**

**M I D W E S T**  
**HOSE AND SPECIALTY INC.**

<b>INTERNAL HYDROSTATIC TEST REPORT</b>		
<b>Customer:</b> CACTUS	<b>P.O. Number:</b> RIG #123 Asset # M10761	
<b>HOSE SPECIFICATIONS</b>		
<b>Type:</b> CHOKER LINE	<b>Length:</b> 35'	
<b>I.D.</b> 4" INCHES	<b>O.D.</b> 8" INCHES	
<b>WORKING PRESSURE</b> 10,000 PSI	<b>TEST PRESSURE</b> 15,000 PSI	<b>BURST PRESSURE</b> PSI
<b>COUPLINGS</b>		
<b>Type of End Fitting</b> 4 1/16 10K FLANGE		
<b>Type of Coupling:</b> SWEDGED	<b>MANUFACTURED BY</b> MIDWEST HOSE & SPECIALTY	
<b>PROCEDURE</b>		
<i>Hose assembly pressure tested with water at ambient temperature.</i>		
<b>TIME HELD AT TEST PRESSURE</b> 1 MIN.	<b>ACTUAL BURST PRESSURE:</b> 0 PSI	
<b>COMMENTS:</b> SN#90067 M10761 Hose is covered with stainless steel armour cover and wrapped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes		
<b>Date:</b> 6/6/2011	<b>Tested By:</b> BOBBY FINK	<b>Approved:</b> MENDI JACKSON



Midwest Hose  
& Specialty, Inc.

## Internal Hydrostatic Test Graph

Customer: CACTUS

SALES ORDER# 90067

**Hose Type**  
C & K  
**L.D.**  
4"  
**Working Pressure**  
10000 PSI

**Hose Specifications**  
**Length**  
35'  
**O.D.**  
8"

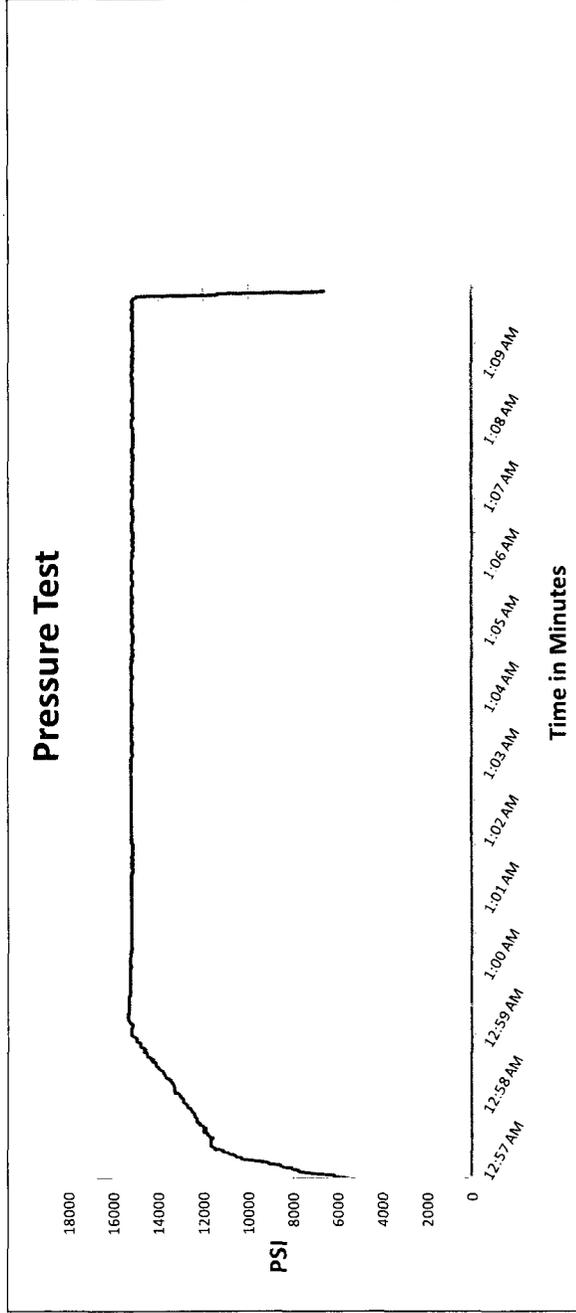
**Type of Fitting**  
4 1/16 10K  
**Die Size**  
6.62"

**Coupling Method**  
Swage  
**Final I.O.D.**  
6.68"

### Verification

**Burst Pressure**  
Standard Safety Multiplier Applies

**Hose Serial #**  
90067  
**Hose Assembly Serial #**  
90067



**Test Pressure**  
15000 PSI

**Time Held at Test Pressure**  
11 1/4 Minutes

**Actual Burst Pressure**

**Peak Pressure**  
15439 PSI

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

**Tested By:** Bobby Fink

**Approved By:** Mendi Jackson

*Mendi Jackson*

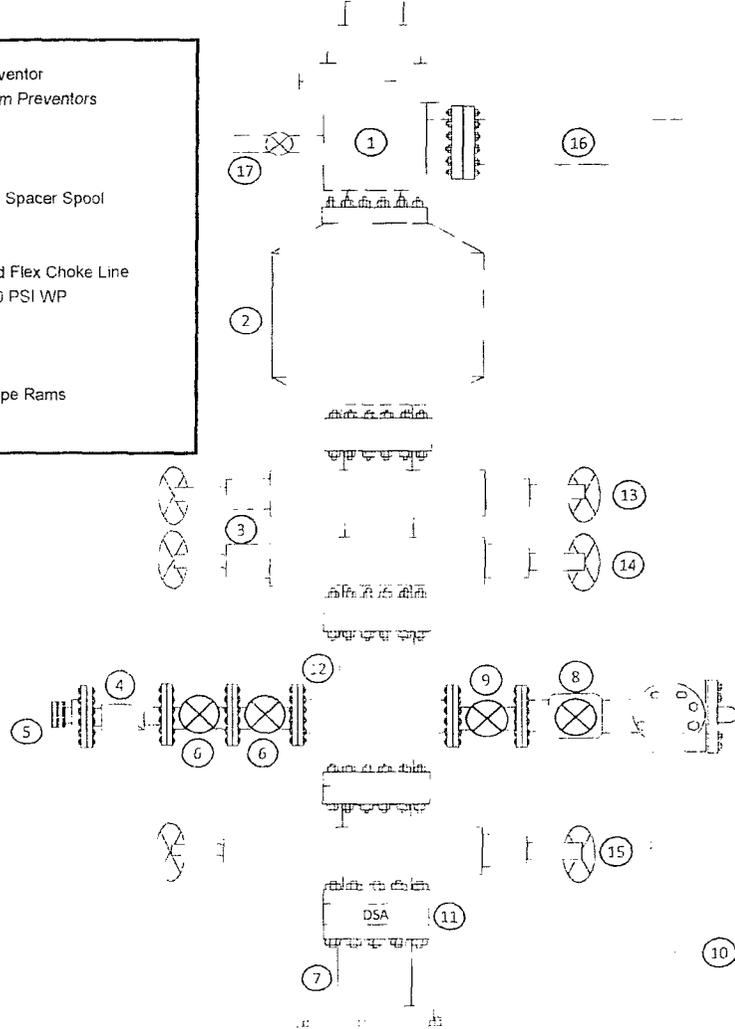


# Exhibit 1 EOG Resources 10M BOPE

Rig Floor



- |  |
|--|
| 1. 13 5/8" Rotating Head                                       |
| 2. Hydril 13 5/8" 10,000 PSI WP GK Annular Preventor           |
| 3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors       |
| 4. 2 1/16" - 10,000 PSI WP Check Valve                         |
| 5. 10,000 PSI WP - 1502 Union to kill line                     |
| 6. 2 1/16" - 10,000 PSI WP Manual Valves                       |
| 7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool    |
| 8. 4 1/16" 10,000 PSI WP HCR Valve                             |
| 9. 4 1/16" 10,000 PSI WP Manual Valve                          |
| 10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line |
| 11. DSA 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP           |
| 12. Mud Cross - 13 5/8" 10,000 PSI WP                          |
| 13. Blind Rams   |
| 14. Pipe Rams  |
| 15. 13 5/8" Cameron Type "U" 10,000 PSI WP Pipe Rams           |
| 16. Flow Line  |
| 17. 2" Fill Line   |



**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM NO. 701H**

**1. GEOLOGIC NAME OF SURFACE FORMATION:**

Permian

**2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:**

Rustler	794'
Top of Salt	1,128'
Base of Salt / Top Anhydrite	3,074'
Base Anhydrite	3,420'
Lamar	3,420'
Bell Canyon	3,449'
Cherry Canyon	4,346'
Brushy Canyon	5,679'
Bone Spring Lime	7,251'
1 <sup>st</sup> Bone Spring Sand	8,184'
2 <sup>nd</sup> Bone Spring Shale	8,502'
2 <sup>nd</sup> Bone Spring Sand	8,780'
3 <sup>rd</sup> Bone Spring Carb	9,456'
3 <sup>rd</sup> Bone Spring Sand	10,080'
Wolfcamp	10,458'
TD	10,592'

**3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	4,346'	Oil
Brushy Canyon	5,679'	Oil
1 <sup>st</sup> Bone Spring Sand	8,184'	Oil
2 <sup>nd</sup> Bone Spring Shale	8,502'	Oil
2 <sup>nd</sup> Bone Spring Sand	8,780'	Oil
3 <sup>rd</sup> Bone Spring Carb	9,456'	Oil
3 <sup>rd</sup> Bone Spring Sand	10,080'	Oil
Wolfcamp	10,458'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 10.75" casing at 820' and circulating cement back to surface.

**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM NO. 701H**

**4. CASING PROGRAM - NEW**

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF <sub>min</sub> Collapse	DF <sub>min</sub> Burst	DF <sub>min</sub> Tension
14.75"	0 – 820'	10.75"	40.5#	J55	STC	1.125	1.25	1.60
9.875"	0 – 1,000'	7.625"	29.7#	HCP-110	LTC	1.125	1.25	1.60
9.875"	1,000' – 3,000'	7.625"	29.7#	P-110EC	SLIJ II	1.125	1.25	1.60
8.75"	3,000' – 9,600'	7.625"	29.7#	HCP-110	FlushMax III	1.125	1.25	1.60
6.75"	0' – 9,100'	5.5"	20#	P-110EC	DWC/C-IS MS	1.125	1.25	1.60
6.75"	9,100'-20,744'	5.5"	20#	P-110EC	VAM SFC	1.125	1.25	1.60

Variance is requested to wave the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to wave any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

**Cementing Program:**

Depth	No. Sacks	Wt. ppg	Yld Ft <sup>3</sup> /ft	Mix Water Gal/sk	Slurry Description
10-3/4" 820'	400	13.5	1.73	9.13	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl <sub>2</sub> + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	6.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
7-5/8" 9,600'	250	14.8	1.38	6.48	Class C + 5% Gypsum + 3% CaCl <sub>2</sub> pumped via Bradenhead (TOC @ Surface)
	2000	14.8	1.38	6.48	Class C + 5% Gypsum + 3% CaCl <sub>2</sub> pumped via Bradenhead
	550	14.4	1.20	4.81	50:50 Class H: Poz + 0.25% CPT20A + 0.40% CPT49 + 0.20% CPT35 + 0.80% CPT16A + 0.25% CPT503P pumped Conventionally
5-1/2" 20,744'	850	14.1	1.26	5.80	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 9,100')

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM NO. 701H**

**5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:**

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 3500/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 3500/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

**6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:**

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

<b>Depth</b>	<b>Type</b>	<b>Weight (ppg)</b>	<b>Viscosity</b>	<b>Water Loss</b>
0 – 820'	Fresh - Gel	8.6-8.8	28-34	N/c
820' – 9,600'	Brine	8.8-10.0	28-34	N/c
9,600' – 20,744' Lateral	Oil Base	10.0-14.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 14.0 ppg may be utilized.

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM NO. 701H**

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

**7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:**

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- (C) H<sub>2</sub>S monitoring and detection equipment will be utilized from surface casing point to TD.

**8. LOGGING, TESTING AND CORING PROGRAM:**

Open-hole logs are not planned for this well.

GR-CCL Will be run in cased hole during completions phase of operations.

**9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:**

The estimated bottom-hole temperature (BHT) at TD is 168 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 6334 psig (based on 11.5 ppg MW). No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from 7,300' to Intermediate casing point.

**10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:**

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

- (A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM NO. 701H**

**11. WELLHEAD:**

A multi-bowl wellhead system will be utilized.

After running the 10-3/4" surface casing, a 13-5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi pressure test. This pressure test will be repeated at least every 30 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 5000 psi.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Stream Flo FBD100 Multi-Bowl WH system has been sent to the NM BLM office in Carlsbad, NM.

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

Both the surface and intermediate casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM #701H**

## **Hydrogen Sulfide Plan Summary**

- A. All personnel shall receive proper H<sub>2</sub>S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:

- Well control equipment
  - a. Flare line 150' from wellhead to be ignited by flare gun.
  - b. Choke manifold with a remotely operated choke.
  - c. Mud/gas separator
- Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escapes packs — 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

- H<sub>2</sub>S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

(Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
  - a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  - b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  - c. Two wind socks will be placed in strategic locations, visible from all angles.

**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM #701H**

- **Mud program:**  
The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H<sub>2</sub>S bearing zones.
  
- **Metallurgy:**  
All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
  
- **Communication:**  
Communication will be via cell phones and land lines where available.

**EOG RESOURCES, INC.**  
**CASEY JONES 16 FED COM #701H**

**Emergency Assistance Telephone List**

<b><u>PUBLIC SAFETY:</u></b>	<b><u>911 or</u></b>
Eddy County Sheriff's Department	(575) 887-7551
Kent Waller	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174

**EOG Resources, Inc.**

EOG / Midland	Office (432) 686-3600
---------------	-----------------------

**Company Drilling Consultants:**

Jett Dueitt	Cell (432) 230-4840
Blake Burney	

**Drilling Engineer**

Steve Munsell	Office (432) 686-3609
	Cell (432) 894-1256

**Drilling Manager**

Floyd Hernandez	Office (432) 686-3716
	Cell (817) 682-4569

**Drilling Superintendent**

Jason Fitzgerald	Office (432) 848-9029
	Cell (318) 347-3916

**H&P Drilling**

H&P Drilling	Office (432) 563-5757
H&P 415 Drilling Rig	Rig (432) 230-4840

**Tool Pusher:**

Johnathan Craig	Cell (817) 760-6374
Brad Garrett	

**Safety**

Brian Chandler (HSE Manager)	Office (432) 686-3695
	Cell (817) 239-0251



## **EOG Resources - Midland**

**Eddy County, NM (NAD 83 NME)**

**Casey Jones 16 Fed Com**

**#701H**

**OH**

**Plan: Plan #0.1**

## **Standard Survey Report**

**25 April, 2017**



**EOG Resources, Inc.**

Survey Report

Company: EOG Resources - Midland  
 Project: Eddy County, NM (NAD 83 NME)  
 Site: Casey Jones 16 Fed Com  
 Well: #701H  
 Wellbore: OH  
 Design: Plan #0.1

Local Co-ordinate Reference: Well #701H  
 TVD Reference: KB = 25' @ 3058.0usft  
 MD Reference: KB = 25' @ 3058.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.1 Single User Db

<b>Project</b>	Eddy County, NM (NAD 83 NME)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

**Site** Casey Jones 16 Fed Com

**Site Position:** **From:** Map  
**Position Uncertainty:** 0.0 usft  
**Northing:** 377,123.00 usft  
**Easting:** 677,714.00 usft  
**Slot Radius:** 13-3/16 "  
**Latitude:** 32° 2' 9.698 N  
**Longitude:** 103° 53' 35.599 W  
**Grid Convergence:** 0.23 °

**Well** #701H

**Well Position** **+N-S** 0.0 usft **Northing:** 377,123.00 usft **Latitude:** 32° 2' 9.698 N  
**+E-W** 0.0 usft **Easting:** 677,714.00 usft **Longitude:** 103° 53' 35.599 W  
**Position Uncertainty** 0.0 usft **Wellhead Elevation:** 0.0 usft **Ground Level:** 3,033.0 usft

**Wellbore** OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/25/2017	7.10	59.84	47,810

**Design** Plan #0.1

**Audit Notes:**

**Version:** **Phase:** PLAN **Tie On Depth:** 0.0

Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	358.79

**Survey Tool Program** Date 4/25/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,744.4	Plan #0.1 (OH)	MWD	MWD - Standard

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland  
 Project: Eddy County, NM (NAD 83 NME)  
 Site: Casey Jones 16 Fed Com  
 Well: #701H  
 Wellbore: OH  
 Design: Plan #0.1

Local Co-ordinate Reference: Well #701H  
 TVD Reference: KB = 25' @ 3058.0usft  
 MD Reference: KB = 25' @ 3058.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.1 Single User Db

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)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	1.00	215.79	4,100.0	-0.7	-0.5	-0.7	1.00	1.00	0.00
4,200.0	2.00	215.79	4,200.0	-2.8	-2.0	-2.8	1.00	1.00	0.00
4,272.4	2.72	215.79	4,272.3	-5.3	-3.8	-5.2	1.00	1.00	0.00
4,300.0	2.72	215.79	4,299.9	-6.3	-4.6	-6.2	0.00	0.00	0.00
4,400.0	2.72	215.79	4,399.8	-10.2	-7.3	-10.0	0.00	0.00	0.00
4,500.0	2.72	215.79	4,499.6	-14.0	-10.1	-13.8	0.00	0.00	0.00
4,600.0	2.72	215.79	4,599.5	-17.9	-12.9	-17.6	0.00	0.00	0.00
4,700.0	2.72	215.79	4,699.4	-21.7	-15.7	-21.4	0.00	0.00	0.00
4,800.0	2.72	215.79	4,799.3	-25.6	-18.4	-25.2	0.00	0.00	0.00
4,900.0	2.72	215.79	4,899.2	-29.4	-21.2	-29.0	0.00	0.00	0.00
5,000.0	2.72	215.79	4,999.1	-33.3	-24.0	-32.8	0.00	0.00	0.00
5,100.0	2.72	215.79	5,099.0	-37.2	-26.8	-36.6	0.00	0.00	0.00
5,200.0	2.72	215.79	5,198.8	-41.0	-29.6	-40.4	0.00	0.00	0.00



**EOG Resources, Inc.**

Survey Report

**Company:** EOG Resources - Midland  
**Project:** Eddy County, NM (NAD 83 NME)  
**Site:** Casey Jones 16 Fed Com  
**Well:** #701H  
**Wellbore:** OH  
**Design:** Plan #0.1

**Local Co-ordinate Reference:** Well #701H  
**TVD Reference:** KB = 25' @ 3058.0usft  
**MD Reference:** KB = 25' @ 3058.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

**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)
5,300.0	2.72	215.79	5,298.7	-44.9	-32.3	-44.2	0.00	0.00	0.00
5,400.0	2.72	215.79	5,398.6	-48.7	-35.1	-48.0	0.00	0.00	0.00
5,500.0	2.72	215.79	5,498.5	-52.6	-37.9	-51.8	0.00	0.00	0.00
5,600.0	2.72	215.79	5,598.4	-56.4	-40.7	-55.6	0.00	0.00	0.00
5,700.0	2.72	215.79	5,698.3	-60.3	-43.5	-59.3	0.00	0.00	0.00
5,800.0	2.72	215.79	5,798.2	-64.1	-46.2	-63.1	0.00	0.00	0.00
5,900.0	2.72	215.79	5,898.1	-68.0	-49.0	-66.9	0.00	0.00	0.00
6,000.0	2.72	215.79	5,997.9	-71.8	-51.8	-70.7	0.00	0.00	0.00
6,100.0	2.72	215.79	6,097.8	-75.7	-54.6	-74.5	0.00	0.00	0.00
6,200.0	2.72	215.79	6,197.7	-79.6	-57.4	-78.3	0.00	0.00	0.00
6,300.0	2.72	215.79	6,297.6	-83.4	-60.1	-82.1	0.00	0.00	0.00
6,400.0	2.72	215.79	6,397.5	-87.3	-62.9	-85.9	0.00	0.00	0.00
6,500.0	2.72	215.79	6,497.4	-91.1	-65.7	-89.7	0.00	0.00	0.00
6,600.0	2.72	215.79	6,597.3	-95.0	-68.5	-93.5	0.00	0.00	0.00
6,700.0	2.72	215.79	6,697.2	-98.8	-71.3	-97.3	0.00	0.00	0.00
6,800.0	2.72	215.79	6,797.0	-102.7	-74.0	-101.1	0.00	0.00	0.00
6,900.0	2.72	215.79	6,896.9	-106.5	-76.8	-104.9	0.00	0.00	0.00
7,000.0	2.72	215.79	6,996.8	-110.4	-79.6	-108.7	0.00	0.00	0.00
7,100.0	2.72	215.79	7,096.7	-114.2	-82.4	-112.5	0.00	0.00	0.00
7,200.0	2.72	215.79	7,196.6	-118.1	-85.1	-116.3	0.00	0.00	0.00
7,300.0	2.72	215.79	7,296.5	-122.0	-87.9	-120.1	0.00	0.00	0.00
7,400.0	2.72	215.79	7,396.4	-125.8	-90.7	-123.9	0.00	0.00	0.00
7,500.0	2.72	215.79	7,496.3	-129.7	-93.5	-127.7	0.00	0.00	0.00
7,600.0	2.72	215.79	7,596.1	-133.5	-96.3	-131.5	0.00	0.00	0.00
7,700.0	2.72	215.79	7,696.0	-137.4	-99.0	-135.3	0.00	0.00	0.00
7,800.0	2.72	215.79	7,795.9	-141.2	-101.8	-139.0	0.00	0.00	0.00
7,900.0	2.72	215.79	7,895.8	-145.1	-104.6	-142.8	0.00	0.00	0.00
8,000.0	2.72	215.79	7,995.7	-148.9	-107.4	-146.6	0.00	0.00	0.00
8,100.0	2.72	215.79	8,095.6	-152.8	-110.2	-150.4	0.00	0.00	0.00
8,200.0	2.72	215.79	8,195.5	-156.7	-112.9	-154.2	0.00	0.00	0.00
8,300.0	2.72	215.79	8,295.3	-160.5	-115.7	-158.0	0.00	0.00	0.00
8,400.0	2.72	215.79	8,395.2	-164.4	-118.5	-161.8	0.00	0.00	0.00
8,500.0	2.72	215.79	8,495.1	-168.2	-121.3	-165.6	0.00	0.00	0.00
8,600.0	2.72	215.79	8,595.0	-172.1	-124.1	-169.4	0.00	0.00	0.00
8,700.0	2.72	215.79	8,694.9	-175.9	-126.8	-173.2	0.00	0.00	0.00
8,800.0	2.72	215.79	8,794.8	-179.8	-129.6	-177.0	0.00	0.00	0.00
8,900.0	2.72	215.79	8,894.7	-183.6	-132.4	-180.8	0.00	0.00	0.00
9,000.0	2.72	215.79	8,994.6	-187.5	-135.2	-184.6	0.00	0.00	0.00
9,100.0	2.72	215.79	9,094.4	-191.3	-137.9	-188.4	0.00	0.00	0.00
9,200.0	2.72	215.79	9,194.3	-195.2	-140.7	-192.2	0.00	0.00	0.00
9,300.0	2.72	215.79	9,294.2	-199.1	-143.5	-196.0	0.00	0.00	0.00
9,400.0	2.72	215.79	9,394.1	-202.9	-146.3	-199.8	0.00	0.00	0.00
9,500.0	2.72	215.79	9,494.0	-206.8	-149.1	-203.6	0.00	0.00	0.00



**EOG Resources, Inc.**

Survey Report

**Company:** EOG Resources - Midland  
**Project:** Eddy County, NM (NAD 83 NME)  
**Site:** Casey Jones 16 Fed Com  
**Well:** #701H  
**Wellbore:** OH  
**Design:** Plan #0.1

**Local Co-ordinate Reference:** Well #701H  
**TVD Reference:** KB = 25' @ 3058.0usft  
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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

**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)
9,600.0	2.72	215.79	9,593.9	-210.6	-151.8	-207.4	0.00	0.00	0.00
9,700.0	2.72	215.79	9,693.8	-214.5	-154.6	-211.2	0.00	0.00	0.00
9,800.0	2.72	215.79	9,793.7	-218.3	-157.4	-215.0	0.00	0.00	0.00
9,900.0	2.72	215.79	9,893.5	-222.2	-160.2	-218.7	0.00	0.00	0.00
10,000.0	2.72	215.79	9,993.4	-226.0	-163.0	-222.5	0.00	0.00	0.00
10,103.1	2.72	215.79	10,096.4	-230.0	-165.8	-226.5	0.00	0.00	0.00
10,125.0	1.66	284.82	10,118.3	-230.4	-166.4	-226.8	12.00	-4.86	314.60
10,150.0	3.78	334.81	10,143.3	-229.5	-167.1	-225.9	12.00	8.51	199.97
10,175.0	6.62	345.88	10,168.2	-227.4	-167.8	-223.8	12.00	11.36	44.29
10,200.0	9.56	350.26	10,192.9	-223.9	-168.5	-220.3	12.00	11.75	17.50
10,225.0	12.53	352.59	10,217.4	-219.2	-169.2	-215.6	12.00	11.87	9.30
10,250.0	15.51	354.03	10,241.7	-213.2	-169.9	-209.5	12.00	11.92	5.78
10,275.0	18.50	355.02	10,265.6	-205.9	-170.6	-202.2	12.00	11.94	3.95
10,300.0	21.49	355.74	10,289.1	-197.4	-171.3	-193.7	12.00	11.96	2.88
10,325.0	24.48	356.29	10,312.1	-187.6	-172.0	-184.0	12.00	11.97	2.21
10,350.0	27.47	356.73	10,334.6	-176.7	-172.7	-173.0	12.00	11.98	1.75
10,375.0	30.47	357.09	10,356.5	-164.6	-173.3	-160.9	12.00	11.98	1.43
10,400.0	33.46	357.39	10,377.7	-151.4	-173.9	-147.7	12.00	11.98	1.20
10,425.0	36.46	357.64	10,398.1	-137.1	-174.6	-133.4	12.00	11.99	1.02
10,450.0	39.46	357.86	10,417.9	-121.7	-175.2	-118.0	12.00	11.99	0.89
10,475.0	42.45	358.06	10,436.7	-105.4	-175.8	-101.6	12.00	11.99	0.78
10,500.0	45.45	358.23	10,454.7	-88.0	-176.3	-84.3	12.00	11.99	0.70
10,525.0	48.45	358.39	10,471.8	-69.8	-176.8	-66.0	12.00	11.99	0.63
10,550.0	51.45	358.53	10,487.9	-50.6	-177.4	-46.9	12.00	11.99	0.57
10,575.0	54.45	358.67	10,502.9	-30.7	-177.8	-26.9	12.00	11.99	0.53
10,600.0	57.44	358.79	10,516.9	-10.0	-178.3	-6.2	12.00	11.99	0.49
10,625.0	60.44	358.90	10,529.8	11.4	-178.7	15.2	12.00	11.99	0.46
10,650.0	63.44	359.01	10,541.6	33.5	-179.1	37.3	12.00	11.99	0.43
10,675.0	66.44	359.11	10,552.2	56.1	-179.5	59.9	12.00	11.99	0.41
10,700.0	69.44	359.21	10,561.6	79.3	-179.9	83.1	12.00	11.99	0.39
10,725.0	72.44	359.30	10,569.7	102.9	-180.2	106.7	12.00	11.99	0.38
10,750.0	75.44	359.39	10,576.6	126.9	-180.4	130.7	12.00	11.99	0.36
10,775.0	78.43	359.48	10,582.3	151.3	-180.7	155.1	12.00	12.00	0.35
10,800.0	81.43	359.57	10,586.7	175.9	-180.9	179.7	12.00	12.00	0.35
10,825.0	84.43	359.65	10,589.7	200.7	-181.0	204.5	12.00	12.00	0.34
10,850.0	87.43	359.74	10,591.5	225.6	-181.2	229.4	12.00	12.00	0.34
10,871.4	90.00	359.81	10,592.0	247.1	-181.3	250.8	12.00	12.00	0.34
10,900.0	90.00	359.81	10,592.0	275.6	-181.4	279.4	0.00	0.00	0.00
11,000.0	90.00	359.81	10,592.0	375.6	-181.7	379.4	0.00	0.00	0.00
11,100.0	90.00	359.81	10,592.0	475.6	-182.0	479.4	0.00	0.00	0.00
11,200.0	90.00	359.81	10,592.0	575.6	-182.3	579.4	0.00	0.00	0.00
11,300.0	90.00	359.81	10,592.0	675.6	-182.7	679.3	0.00	0.00	0.00
11,400.0	90.00	359.81	10,592.0	775.6	-183.0	779.3	0.00	0.00	0.00



**EOG Resources, Inc.**  
Survey Report

**Company:** EOG Resources - Midland  
**Project:** Eddy County, NM (NAD 83 NME)  
**Site:** Casey Jones 16 Fed Corn  
**Well:** #701H  
**Wellbore:** OH  
**Design:** Plan #0.1

**Local Co-ordinate Reference:** Well #701H  
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**MD Reference:** KB = 25' @ 3058.0usft  
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**Survey Calculation Method:** Minimum Curvature  
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**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,500.0	90.00	359.81	10,592.0	875.6	-183.3	879.3	0.00	0.00	0.00
11,600.0	90.00	359.81	10,592.0	975.6	-183.7	979.3	0.00	0.00	0.00
11,700.0	90.00	359.81	10,592.0	1,075.6	-184.0	1,079.3	0.00	0.00	0.00
11,800.0	90.00	359.81	10,592.0	1,175.6	-184.3	1,179.3	0.00	0.00	0.00
11,900.0	90.00	359.81	10,592.0	1,275.6	-184.7	1,279.2	0.00	0.00	0.00
12,000.0	90.00	359.81	10,592.0	1,375.6	-185.0	1,379.2	0.00	0.00	0.00
12,100.0	90.00	359.81	10,592.0	1,475.6	-185.3	1,479.2	0.00	0.00	0.00
12,200.0	90.00	359.81	10,592.0	1,575.6	-185.7	1,579.2	0.00	0.00	0.00
12,300.0	90.00	359.81	10,592.0	1,675.6	-186.0	1,679.2	0.00	0.00	0.00
12,400.0	90.00	359.81	10,592.0	1,775.6	-186.3	1,779.2	0.00	0.00	0.00
12,500.0	90.00	359.81	10,592.0	1,875.6	-186.7	1,879.1	0.00	0.00	0.00
12,600.0	90.00	359.81	10,592.0	1,975.6	-187.0	1,979.1	0.00	0.00	0.00
12,700.0	90.00	359.81	10,592.0	2,075.6	-187.3	2,079.1	0.00	0.00	0.00
12,800.0	90.00	359.81	10,592.0	2,175.6	-187.7	2,179.1	0.00	0.00	0.00
12,900.0	90.00	359.81	10,592.0	2,275.6	-188.0	2,279.1	0.00	0.00	0.00
13,000.0	90.00	359.81	10,592.0	2,375.6	-188.3	2,379.1	0.00	0.00	0.00
13,100.0	90.00	359.81	10,592.0	2,475.6	-188.7	2,479.1	0.00	0.00	0.00
13,200.0	90.00	359.81	10,592.0	2,575.6	-189.0	2,579.0	0.00	0.00	0.00
13,300.0	90.00	359.81	10,592.0	2,675.6	-189.3	2,679.0	0.00	0.00	0.00
13,400.0	90.00	359.81	10,592.0	2,775.6	-189.6	2,779.0	0.00	0.00	0.00
13,500.0	90.00	359.81	10,592.0	2,875.6	-190.0	2,879.0	0.00	0.00	0.00
13,600.0	90.00	359.81	10,592.0	2,975.6	-190.3	2,979.0	0.00	0.00	0.00
13,700.0	90.00	359.81	10,592.0	3,075.6	-190.6	3,079.0	0.00	0.00	0.00
13,800.0	90.00	359.81	10,592.0	3,175.6	-191.0	3,178.9	0.00	0.00	0.00
13,900.0	90.00	359.81	10,592.0	3,275.6	-191.3	3,278.9	0.00	0.00	0.00
14,000.0	90.00	359.81	10,592.0	3,375.6	-191.6	3,378.9	0.00	0.00	0.00
14,100.0	90.00	359.81	10,592.0	3,475.6	-192.0	3,478.9	0.00	0.00	0.00
14,200.0	90.00	359.81	10,592.0	3,575.6	-192.3	3,578.9	0.00	0.00	0.00
14,300.0	90.00	359.81	10,592.0	3,675.6	-192.6	3,678.9	0.00	0.00	0.00
14,400.0	90.00	359.81	10,592.0	3,775.6	-193.0	3,778.8	0.00	0.00	0.00
14,500.0	90.00	359.81	10,592.0	3,875.6	-193.3	3,878.8	0.00	0.00	0.00
14,600.0	90.00	359.81	10,592.0	3,975.6	-193.6	3,978.8	0.00	0.00	0.00
14,700.0	90.00	359.81	10,592.0	4,075.6	-194.0	4,078.8	0.00	0.00	0.00
14,800.0	90.00	359.81	10,592.0	4,175.6	-194.3	4,178.8	0.00	0.00	0.00
14,900.0	90.00	359.81	10,592.0	4,275.6	-194.6	4,278.8	0.00	0.00	0.00
15,000.0	90.00	359.81	10,592.0	4,375.6	-195.0	4,378.8	0.00	0.00	0.00
15,100.0	90.00	359.81	10,592.0	4,475.6	-195.3	4,478.7	0.00	0.00	0.00
15,200.0	90.00	359.81	10,592.0	4,575.6	-195.6	4,578.7	0.00	0.00	0.00
15,300.0	90.00	359.81	10,592.0	4,675.6	-195.9	4,678.7	0.00	0.00	0.00
15,400.0	90.00	359.81	10,592.0	4,775.6	-196.3	4,778.7	0.00	0.00	0.00
15,500.0	90.00	359.81	10,592.0	4,875.6	-196.6	4,878.7	0.00	0.00	0.00
15,600.0	90.00	359.81	10,592.0	4,975.6	-196.9	4,978.7	0.00	0.00	0.00
15,700.0	90.00	359.81	10,592.0	5,075.6	-197.3	5,078.6	0.00	0.00	0.00
15,800.0	90.00	359.81	10,592.0	5,175.6	-197.6	5,178.6	0.00	0.00	0.00



**EOG Resources, Inc.**

Survey Report

Company: EOG Resources - Midland  
 Project: Eddy County, NM (NAD 83 NME)  
 Site: Casey Jones 16 Fed Com  
 Well: #701H  
 Wellbore: OH  
 Design: Plan #0.1

Local Co-ordinate Reference: Well #701H  
 TVD Reference: KB = 25' @ 3058.0usft  
 MD Reference: KB = 25' @ 3058.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.1 Single User Db

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,900.0	90.00	359.81	10,592.0	5,275.6	-197.9	5,278.6	0.00	0.00	0.00
16,000.0	90.00	359.81	10,592.0	5,375.6	-198.3	5,378.6	0.00	0.00	0.00
16,100.0	90.00	359.81	10,592.0	5,475.6	-198.6	5,478.6	0.00	0.00	0.00
16,200.0	90.00	359.81	10,592.0	5,575.6	-198.9	5,578.6	0.00	0.00	0.00
16,300.0	90.00	359.81	10,592.0	5,675.6	-199.3	5,678.5	0.00	0.00	0.00
16,400.0	90.00	359.81	10,592.0	5,775.6	-199.6	5,778.5	0.00	0.00	0.00
16,500.0	90.00	359.81	10,592.0	5,875.6	-199.9	5,878.5	0.00	0.00	0.00
16,600.0	90.00	359.81	10,592.0	5,975.6	-200.3	5,978.5	0.00	0.00	0.00
16,700.0	90.00	359.81	10,592.0	6,075.6	-200.6	6,078.5	0.00	0.00	0.00
16,800.0	90.00	359.81	10,592.0	6,175.6	-200.9	6,178.5	0.00	0.00	0.00
16,900.0	90.00	359.81	10,592.0	6,275.6	-201.3	6,278.4	0.00	0.00	0.00
17,000.0	90.00	359.81	10,592.0	6,375.6	-201.6	6,378.4	0.00	0.00	0.00
17,100.0	90.00	359.81	10,592.0	6,475.6	-201.9	6,478.4	0.00	0.00	0.00
17,200.0	90.00	359.81	10,592.0	6,575.6	-202.2	6,578.4	0.00	0.00	0.00
17,300.0	90.00	359.81	10,592.0	6,675.6	-202.6	6,678.4	0.00	0.00	0.00
17,400.0	90.00	359.81	10,592.0	6,775.6	-202.9	6,778.4	0.00	0.00	0.00
17,500.0	90.00	359.81	10,592.0	6,875.6	-203.2	6,878.4	0.00	0.00	0.00
17,600.0	90.00	359.81	10,592.0	6,975.6	-203.6	6,978.3	0.00	0.00	0.00
17,700.0	90.00	359.81	10,592.0	7,075.6	-203.9	7,078.3	0.00	0.00	0.00
17,800.0	90.00	359.81	10,592.0	7,175.6	-204.2	7,178.3	0.00	0.00	0.00
17,900.0	90.00	359.81	10,592.0	7,275.6	-204.6	7,278.3	0.00	0.00	0.00
18,000.0	90.00	359.81	10,592.0	7,375.6	-204.9	7,378.3	0.00	0.00	0.00
18,100.0	90.00	359.81	10,592.0	7,475.6	-205.2	7,478.3	0.00	0.00	0.00
18,200.0	90.00	359.81	10,592.0	7,575.6	-205.6	7,578.2	0.00	0.00	0.00
18,300.0	90.00	359.81	10,592.0	7,675.6	-205.9	7,678.2	0.00	0.00	0.00
18,400.0	90.00	359.81	10,592.0	7,775.6	-206.2	7,778.2	0.00	0.00	0.00
18,500.0	90.00	359.81	10,592.0	7,875.6	-206.6	7,878.2	0.00	0.00	0.00
18,600.0	90.00	359.81	10,592.0	7,975.6	-206.9	7,978.2	0.00	0.00	0.00
18,700.0	90.00	359.81	10,592.0	8,075.6	-207.2	8,078.2	0.00	0.00	0.00
18,800.0	90.00	359.81	10,592.0	8,175.6	-207.6	8,178.1	0.00	0.00	0.00
18,900.0	90.00	359.81	10,592.0	8,275.6	-207.9	8,278.1	0.00	0.00	0.00
19,000.0	90.00	359.81	10,592.0	8,375.6	-208.2	8,378.1	0.00	0.00	0.00
19,100.0	90.00	359.81	10,592.0	8,475.6	-208.5	8,478.1	0.00	0.00	0.00
19,200.0	90.00	359.81	10,592.0	8,575.6	-208.9	8,578.1	0.00	0.00	0.00
19,300.0	90.00	359.81	10,592.0	8,675.6	-209.2	8,678.1	0.00	0.00	0.00
19,400.0	90.00	359.81	10,592.0	8,775.6	-209.5	8,778.1	0.00	0.00	0.00
19,500.0	90.00	359.81	10,592.0	8,875.6	-209.9	8,878.0	0.00	0.00	0.00
19,600.0	90.00	359.81	10,592.0	8,975.6	-210.2	8,978.0	0.00	0.00	0.00
19,700.0	90.00	359.81	10,592.0	9,075.6	-210.5	9,078.0	0.00	0.00	0.00
19,800.0	90.00	359.81	10,592.0	9,175.6	-210.9	9,178.0	0.00	0.00	0.00
19,900.0	90.00	359.81	10,592.0	9,275.6	-211.2	9,278.0	0.00	0.00	0.00
20,000.0	90.00	359.81	10,592.0	9,375.6	-211.5	9,378.0	0.00	0.00	0.00
20,100.0	90.00	359.81	10,592.0	9,475.6	-211.9	9,477.9	0.00	0.00	0.00



**EOG Resources, Inc.**

Survey Report

**Company:** EOG Resources - Midland  
**Project:** Eddy County, NM (NAD 83 NME)  
**Site:** Casey Jones 16 Fed Com  
**Well:** #701H  
**Wellbore:** OH  
**Design:** Plan #0.1

**Local Co-ordinate Reference:** Well #701H  
**TVD Reference:** KB = 25' @ 3058.0usft  
**MD Reference:** KB = 25' @ 3058.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

**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)
20,200.0	90.00	359.81	10,592.0	9,575.6	-212.2	9,577.9	0.00	0.00	0.00
20,300.0	90.00	359.81	10,592.0	9,675.6	-212.5	9,677.9	0.00	0.00	0.00
20,400.0	90.00	359.81	10,592.0	9,775.6	-212.9	9,777.9	0.00	0.00	0.00
20,500.0	90.00	359.81	10,592.0	9,875.6	-213.2	9,877.9	0.00	0.00	0.00
20,600.0	90.00	359.81	10,592.0	9,975.6	-213.5	9,977.9	0.00	0.00	0.00
20,700.0	90.00	359.81	10,592.0	10,075.6	-213.9	10,077.8	0.00	0.00	0.00
20,744.4	90.00	359.81	10,592.0	10,120.0	-214.0	10,122.3	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
FTP (C J 16 Fed Com # - plan misses target center by 39.4usft at 10683.4usft MD (10555.5 TVD, 63.8 N, -179.6 E) - Point	0.00	0.00	10,592.0	49.0	-180.0	377,172.00	677,534.00	32° 2' 10.190 N	103° 53' 37.688 W
PBHL (C J 16 Fed Com - plan hits target center - Point	0.00	0.00	10,592.0	10,120.0	-214.0	387,243.00	677,500.00	32° 3' 49.855 N	103° 53' 37.606 W

Checked By: _____	Approved By: _____	Date: _____
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**Eddy County, NM (NAD 83 NME)**  
**Casey Jones 16 Fed Com #701H**  
**Plan #0.1**

**PROJECT DETAILS: Eddy County, NM (NAD 83 NME)**  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Mean Sea Level



**Azimuths to Grid North**  
 True North: -0.23°  
 Magnetic North: 6.87°

**Magnetic Field Strength: 47809.7 nanT**  
 Dip Angle: 59.84°  
 Date: 4/25/2017  
 Model: IGRF2015

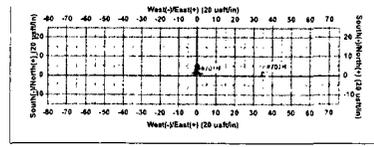
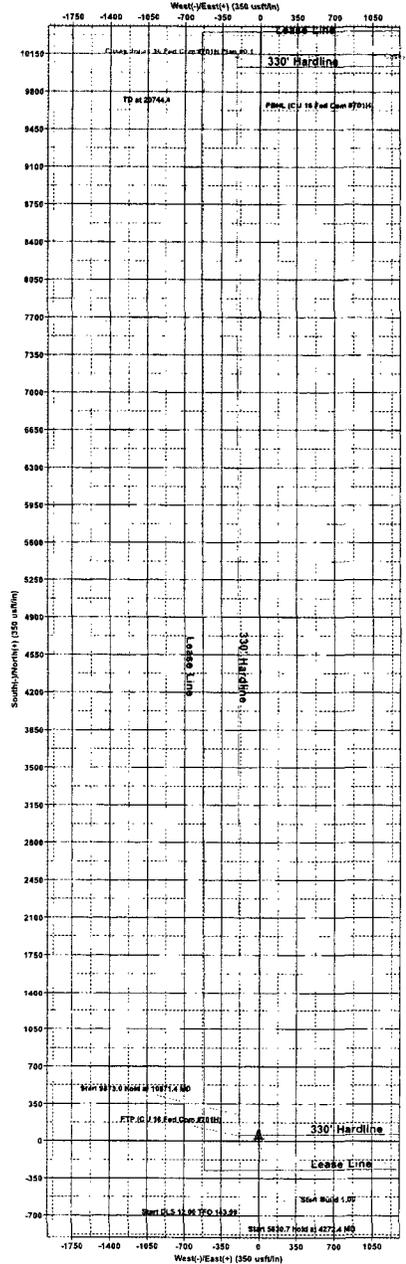
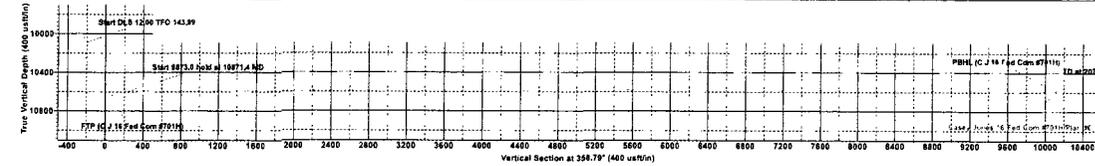
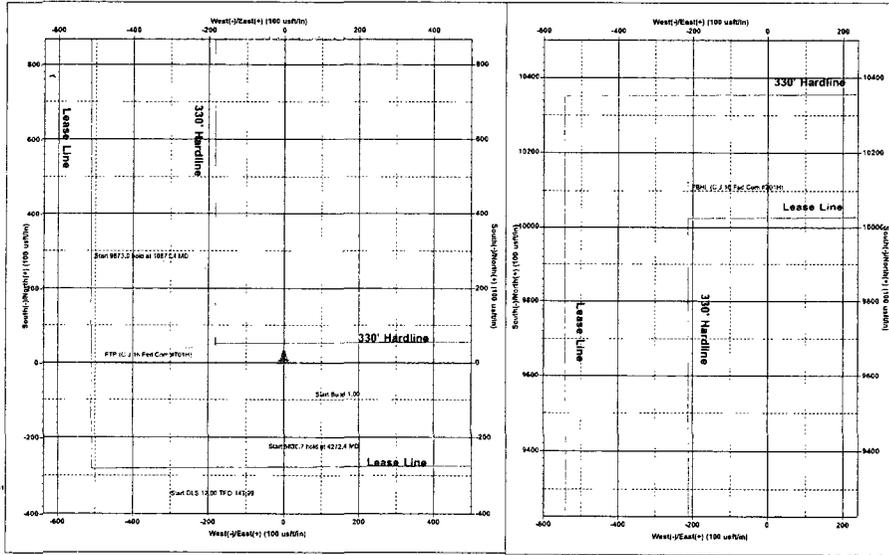
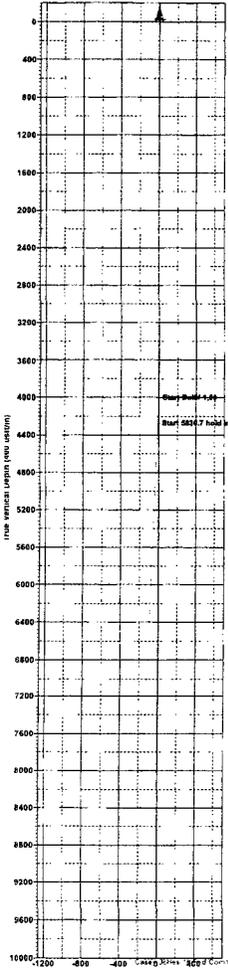
To convert a Magnetic Direction to a Grid Direction, Add 6.87°  
 To convert a Magnetic Direction to a True Direction, Add 7.10° East  
 To convert a True Direction to a Grid Direction, Subtract 0.23°

WELL DETAILS: #701H			
Ground Level:	3033.0		
KB = 25' @ 3058.0usft			
Northing	Easting	Latitude	Longitude
377123.00	677714.00	32° 2' 9.698 N	103° 53' 35.599 W

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4000.0	0.00	0.00	4000.0	0.0	0.0	0.00	0.00	0.0	
3	4272.4	2.72	215.79	4272.3	-5.3	-3.8	1.00	215.79	-5.2	
4	10103.1	2.72	215.79	10096.4	-230.0	-165.8	0.00	0.00	-226.5	
5	10871.4	90.00	359.81	10592.0	247.1	-181.3	12.00	143.99	250.8	
6	20744.4	90.00	359.81	10592.0	10120.0	-214.0	0.00	0.00	10122.3	PBHL (C J 16 Fed Com #701H)

**CASING DETAILS**  
 No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)					
Name	TVD	+N-S	+E-W	Northing	Easting
FTP (C J 16 Fed Com #701H)	10592.0	49.0	-180.0	377172.00	677534.00
PBHL (C J 16 Fed Com #701H)	10592.0	10120.0	-214.0	387243.00	677500.00



**WELL LOG**  
 Well Name: #701H  
 Date: 4/25/2017  
 Operator: EOG Resources

<b>OD</b>	<b>Weight</b>	<b>Wall Th.</b>	<b>Grade</b>	<b>API Drift</b>	<b>Connection</b>
7 5/8 in.	29.70 lb/ft	0.375 in.	VM 110 HC	6.750 in.	VAM® SLIJ-II

PIPE PROPERTIES	
Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	High Collapse
Min. Yield Strength	110 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	125 ksi

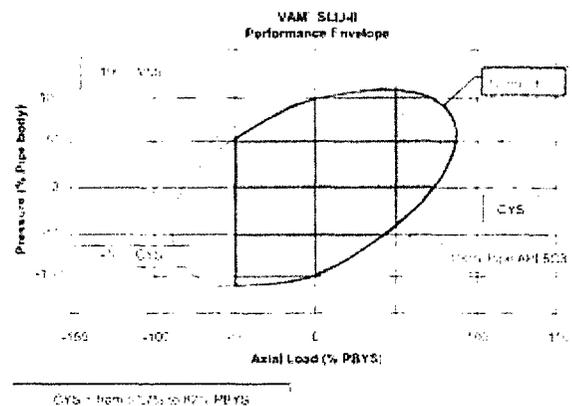
CONNECTION PROPERTIES	
Connection Type	Premium integral semi-flush
Connection OD (nom)	7.711 in.
Connection ID (nom)	6.820 in.
Make-up Loss	4.822 in.
Critical Cross Section	5.912 sqin.
Tension Efficiency	69.2 % of pipe
Compression Efficiency	48.5 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES	
Tensile Yield Strength	651 klb
Compression Resistance	455 klb
Internal Yield Pressure	9470 psi
Uniaxial Collapse Pressure	7890 psi
Max. Bending Capacity	TDB
Max Bending with Sealability	20 °/100 ft

FIELD TORQUE VALUES	
Min Make-up torque	11300 ft.lb
Opti. Make-up torque	12600 ft.lb
Max Make-up torque	13900 ft.lb

**VAM® SLIJ-II** is a semi-flush integral premium connection for all casing applications. It combines a near flush design with high performances in tension, compression and gas sealability.

**VAM® SLIJ-II** has been validated according to the most stringent tests protocols, and has an excellent performance history in the world's most prolific HPHT wells.



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

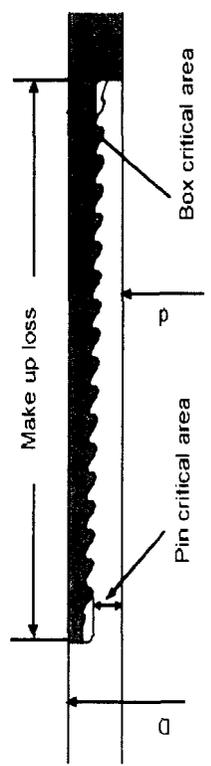
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uk@vamfieldservice.com  
 dubai@vamfieldservice.com  
 nigeria@vamfieldservice.com  
 angola@vamfieldservice.com

china@vamfieldservice.com  
 baku@vamfieldservice.com  
 singapore@vamfieldservice.com  
 australia@vamfieldservice.com

Over 140 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

Other Connection Data Sheets are available at [www.vamservices.com](http://www.vamservices.com)



Pipe Body	Imperial	S.I.
Grade	P110	P110
Pipe OD ( D )	7.5/8 in	193.68 mm
Weight	29.7 lb/ft	44.25 kg/m
Actual weight	29.0 lb/ft	43.26 kg/m
Wall thickness ( t )	0.375 in	9.53 mm
Pipe ID ( d )	6.875 in	174.63 mm
Pipe body cross section	8.537 in <sup>2</sup>	5,508 mm <sup>2</sup>
Drift Dia.	6.750 in	171.45 mm

Connection	
Box OD ( W )	7.625 in
PIN ID	6.875 in
Pin critical area	4.420 in <sup>2</sup>
Box critical area	4.424 in <sup>2</sup>
Joint load efficiency	60 %
Make up loss	3.040 in
Thread taper	1/16 ( 3/4 in per ft )
Number of threads	5 thread per in.

Connection Performance Properties		
Tensile Yield load	563.4 kips	2,506 kN
M.I.Y.P.	7,574 psi	52.2 MPa
Collapse strength	5,350 psi	36.9 MPa

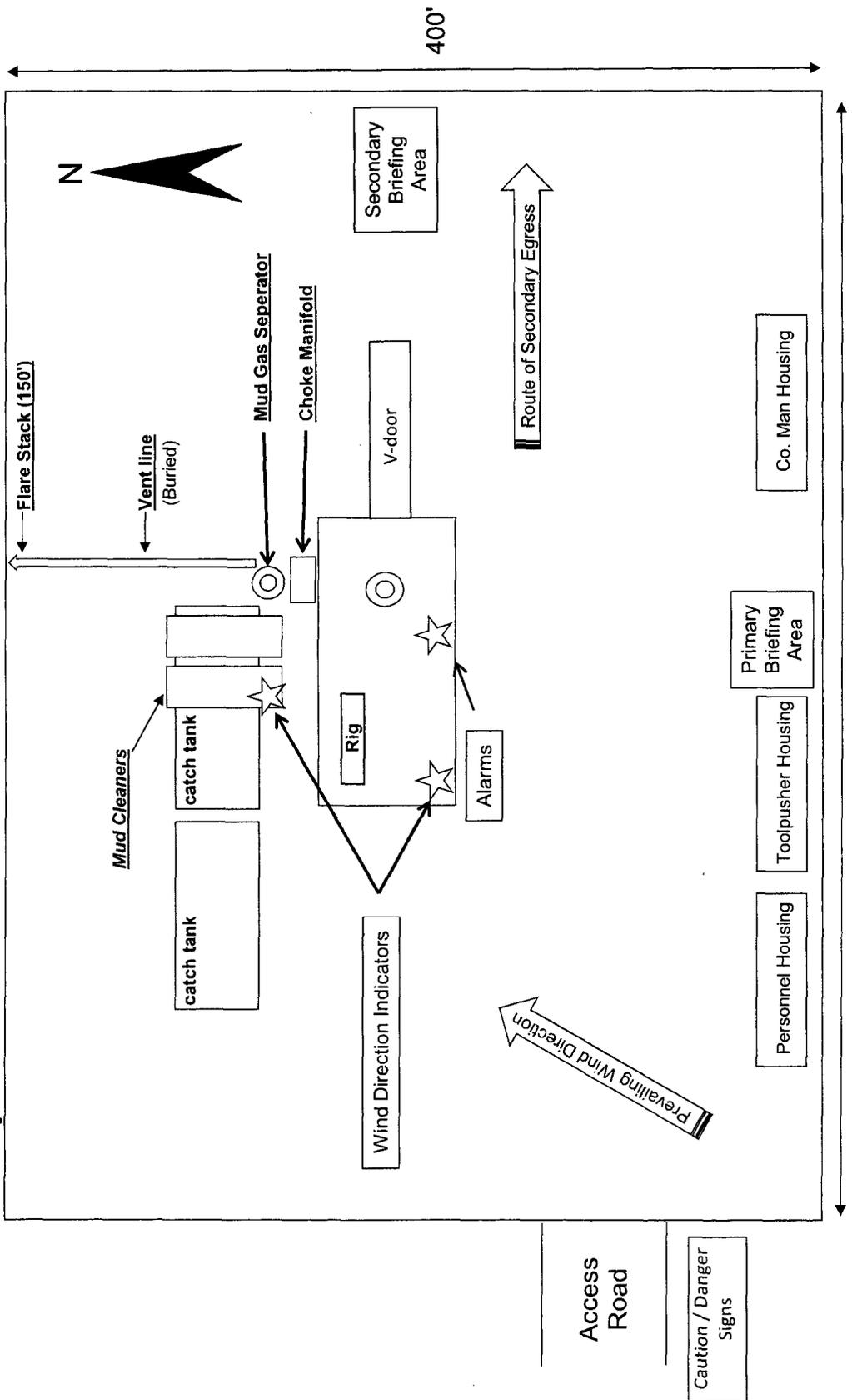
Note  
 M.I.Y.P. = Minimum Internal Yield Pressure of the connection

Torque Recommended		
Min.	8,700 ft-lb	11,700 N-m
Opti.	9,700 ft-lb	13,100 N-m
Max.	10,700 ft-lb	14,500 N-m
Operational Max.	23,600 ft-lb	32,000 N-m

Note: Operational Max. torque can be applied for high torque application

Exhibit 4  
 EOG Resources  
 Casey Jones 16 Fed Com #701H

Well Site Diagram



400'

455'

Access Road

Caution / Danger Signs

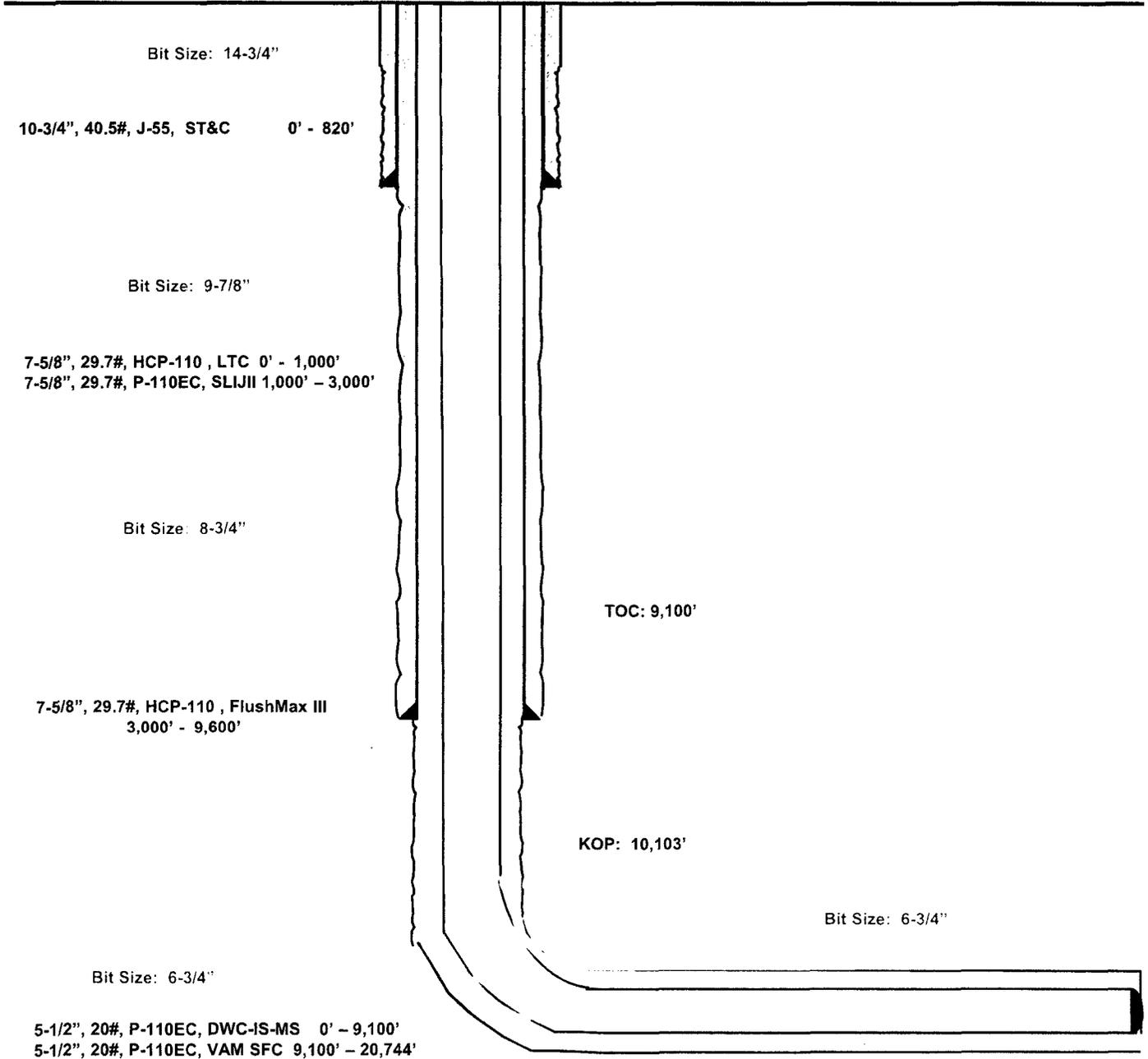
Casey Jones 16 Fed Com #701H

Eddy County, New Mexico  
Proposed Wellbore

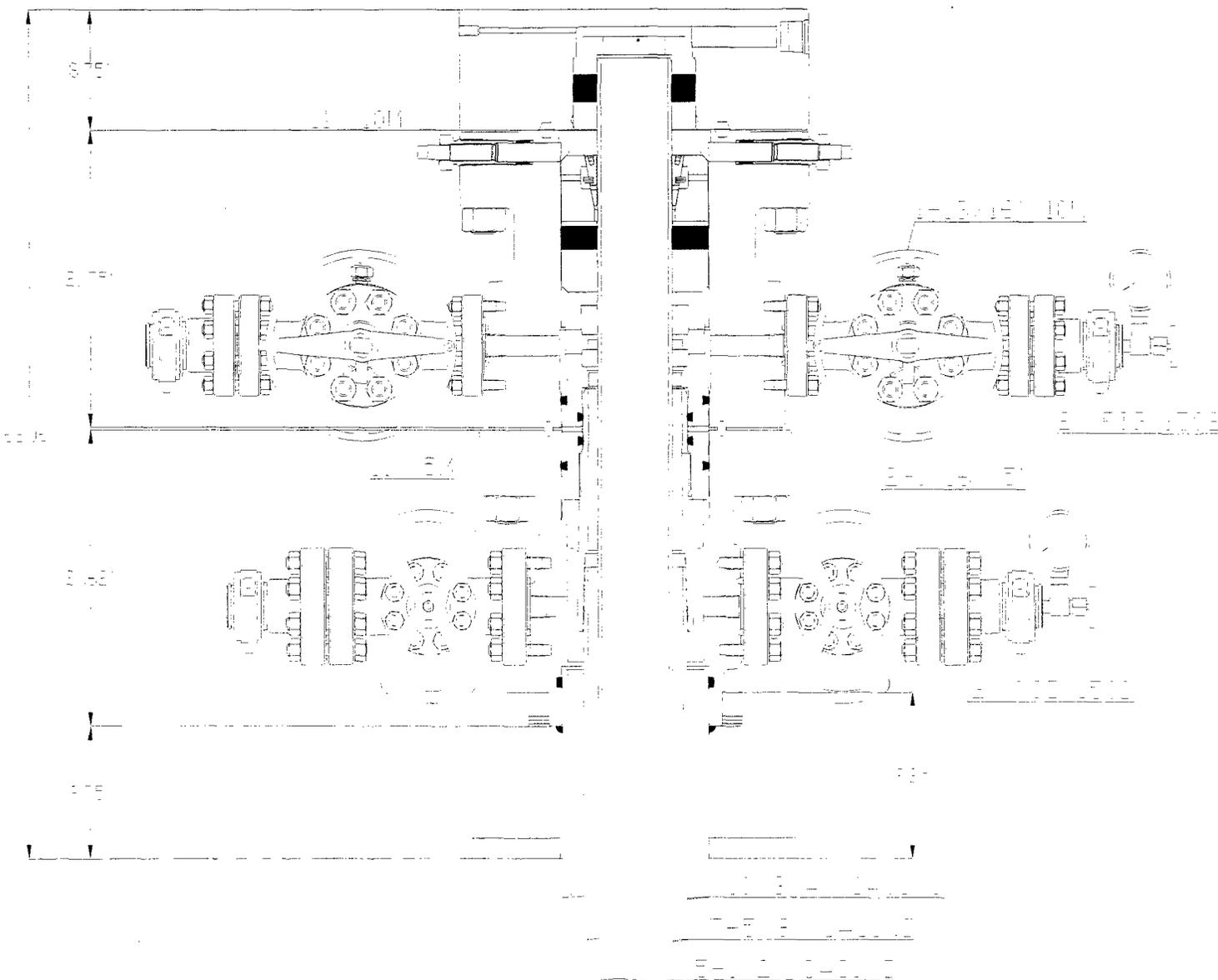
280' FSL  
510' FWL  
Section 16  
T-26-S, R-30-E

API: 30-015-\*\*\*\*\*

KB: 3,058'  
GL: 3,033'



Lateral: 20,744' MD, 10,592' TVD  
Upper Most Perf:  
330' FSL & 330' FWL Sec. 16  
Lower Most Perf:  
330' FNL & 330' FWL Sec. 9  
BH Location: 230' FNL & 330' FWL  
Section 9  
T-26-S, R-30-E



1. GENERAL NOTES  
 2. MATERIALS  
 3. EQUIPMENT  
 4. ELECTRICAL  
 5. PIPING  
 6. STRUCTURE  
 7. FINISHES  
 8. MECHANICAL  
 9. SANITARY  
 10. SPECIAL NOTES

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	11/15/00
2	ISSUED FOR CONSTRUCTION	01/10/01
3	ISSUED FOR AS-BUILT	03/15/01



Worldwide Expertise - Global Strength

PROJECT NO. 00-0000  
 SHEET NO. 00-0000  
 DATE 00-00-00



# United States Department of the Interior



BUREAU OF LAND MANAGEMENT  
CARLSBAD FIELD OFFICE  
620 E. GREENE ST.  
CARLSBAD, NM 88220  
BLM.NM.CFO.APD@BLM.GOV

In Reply To:  
3160 (Office Code)  
[ NMNM119275 ]

06/28/2017

Attn: STAN WAGNER  
EOG RESOURCES INC  
1111 BAGBY SKY LOBBY2  
HOUSTON, TX 77002

Re: Receipt and Acceptability of Application for Permit to Drill (APD)

**FEDERAL - NMNM119275**

Well Name Number: **CASEY JONES 16 FED COM / 701H**  
Legal Description: T26S. R30E., SEC 16. SWSW  
County, State: EDDY, NM  
Date APD Received: 05/05/2017

Dear Operator:

The BLM received your Application for Permit to Drill (APD), for the referenced well, on 05/05/2017. The BLM reviewed the APD package pursuant to part III.D of Onshore Oil and Gas Order No.1 and it is:

1.  Incomplete/Deficient (*The BLM cannot process the APD until you submit the identified items within 45 calendar days of the date of this notice or the BLM will return your APD.*)

- Well Plat
- Drilling Plan
- Surface Use Plan of Operations (SU PO)
- Certification of Private Surface Owner Access Agreement
- Bonding
- Onsite (The BLM has scheduled the onsite to be on \_\_\_\_\_ )  
This requirement is exempt of the 45-day timeframe to submit deficiencies. This requirement will be satisfied on the date of the onsite.
- Other

*[Please See Addendum for further clarification of deficiencies]*

2.  Missing Necessary Information (*The BLM can start, but cannot complete the analysis until you submit the identified items. This is an early notice and the BLM will restate this in a 30-day deferral letter, if you have not submitted the information at that time. You will have two (2) years from the date of the deferral to submit this information or the BLM will deny your APD.*)

*{Please See Addendum for further clarification of deficiencies}*

NOTE: The BLM will return your APD package to you, unless you correct all deficiencies identified above (item 1) within 45 calendar days.

- The BLM will not refund an APD processing fee or apply it to another APD for any returned APD.

**Extension Requests:**

- If you know you will not be able to meet the 45-day timeframe for reasons beyond your control, you must submit a written request through email/standard mail for extension prior to the 45<sup>th</sup> calendar day from this notice. **08/12/2017**.
- The BLM will consider the extension request if you can demonstrate your diligence (providing reasons and examples of why the delay is occurring beyond your control) in attempting to correct the deficiencies and can provide a date by which you will correct the deficiencies. If the BLM determines that the request does not warrant an extension, the BLM will return the APD as incomplete after the 45 calendar days have elapsed.

The BLM will determine whether to grant an extension beyond the required 45 calendar days and will document this request in the well file. If you fail to submit deficiencies by the date defined in the extension request, the BLM will return the APD.

**APDs remaining Incomplete:**

- If the APD is still not complete, the BLM will notify you and allow 10 additional business days to submit a written request to the BLM for an extension. The request must describe how you will address all outstanding deficiencies and the timeframe you request to complete the deficiencies.

The BLM will consider the extension request if you can prove your diligence (providing reasons and examples of why the delay is occurring) in attempting to correct the deficiencies and you can provide a date by which you will correct the deficiencies. If the BLM determines that the request does not warrant an additional extension, the BLM will return the APD as incomplete.

If you have any questions, please contact Deborah McKinney at (575) 234-5931.

Sincerely,

*Cody Layton*  
*Assistant Field Manager*

cc: Official File

## ADDENDUM - Deficient

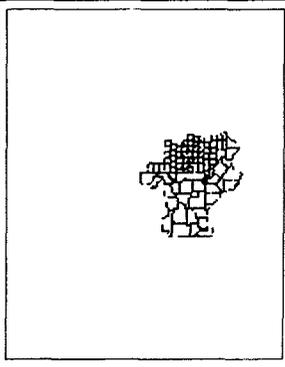
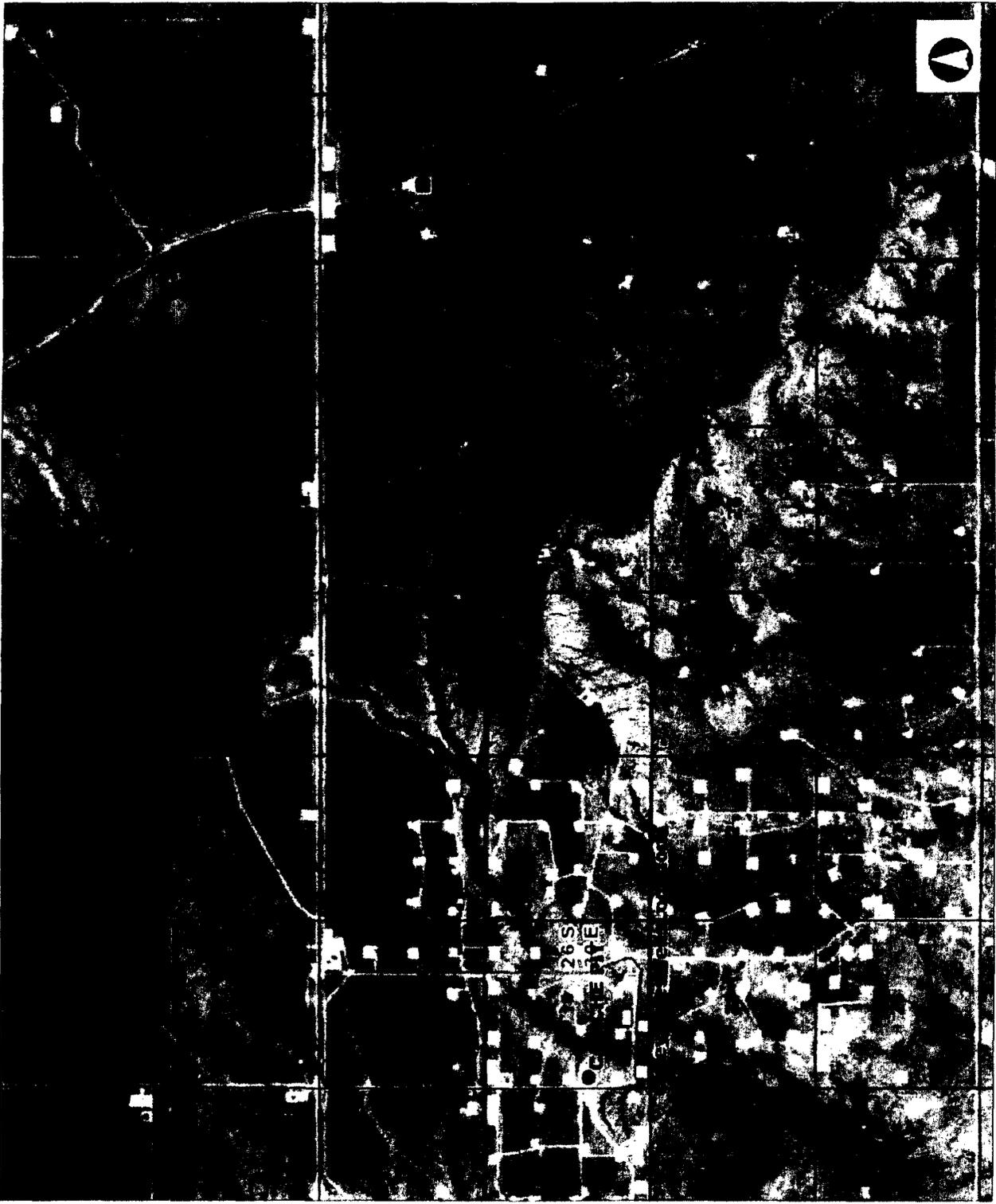
## Surface Comments

- Location and Type of Water Supply Deficiency:  
Please provide a second source of water. *A 1 c c*
- Construction Materials Deficiency:  
Please provide a second location for caliche. *AAA 1 c c*
- Well Site Layout Deficiency:  
Please show plat with southeast corner dog-eared due to resource concerns. *See plat*

## Engineering Comments

- BOP requirements are not met
  1. BOP Schematic must have a 10M Annular. Please resubmit with correction.
  2. 10M BOP Choke manifold is required. Please resubmit with correction.
- Engineering Review: Other identified drilling plan deficiencies  
Not a deficiency but cannot approve APD without a waste minimization plan. Please attach state submitted gas capture plan (this will be a sufficient substitute for waste minimization plan).

*See plat*



Legend

**geog resources**  
MIDLAND DIVISION

Author:

This map is a user generated static output from an internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Date: 4/12/2017

10,833.3 0 5,416.67 10,833.3 Feet



1: 65,000

Projection: WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere



Legend

Water Pits

Water Pits

Caliche

Caliche



MIDLAND DIVISION

Author

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Date: 7/14/2017

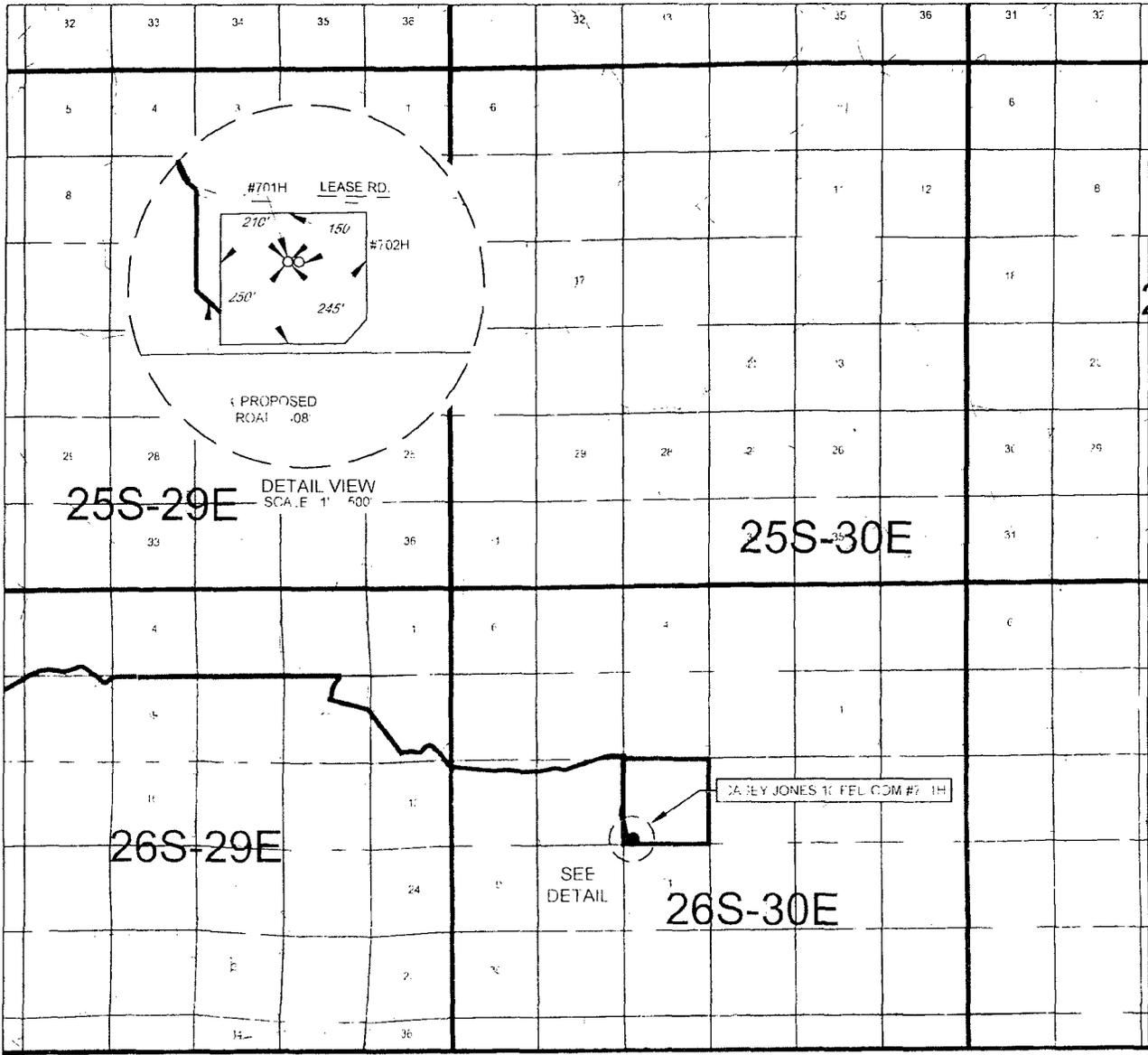
16,666.7 0 8,333.33 16,666.7 Feet



1 100,000

Projection: WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere

EXHIBIT 2  
VICINITY MAP



LEASE NAME & WELL NO. CASEY JONES 16 FED COM #701H

SECTION 16 TWP 26-S RGE 30-E SURVEY N.M.P.M  
 COUNTY EDDY STATE NM  
 DESCRIPTION 280' FSL & 510' FWL

DISTANCE & DIRECTION  
 FROM INT. OF US-285 & CR. 720, GO SOUTH ON US-285 ±12.6 MILES,  
 THENCE NORTHEAST (LEFT) ON WHITEHORN RD. ±4.1 MILES, THENCE  
 EAST (LEFT) ON PIPELINE RD. ±2.8 MILES, THENCE SOUTH (RIGHT) ON  
 TARBRUSH RD. ±4.2 MILES, THENCE SOUTH (RIGHT) ON LEASE RD. ±1.0  
 MILES, THENCE CONTINUING ON A PROPOSED ACCESS ROAD ±408  
 FEET TO A POINT ±250 FEET SOUTHWEST OF THE LOCATION.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED IN THE ABOVE MENTIONED COUNTY BY SUPERVISOR AND PREPARED ACCORDING TO THE EVIDENCE OBTAINED AT THE TIME OF SURVEY AND DATA PROVIDED BY THE SURVEYOR. THIS CERTIFICATE IS MADE AND LIMITED TO THE ABOVE MENTIONED PARTIES ONLY AND IS NOT TO BE USED FOR ANY OTHER PURPOSES.

ALL BEARINGS AND DISTANCES ARE IN FEET. ALL DISTANCE VALUES CONTAINED HEREIN ARE BASED ON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM. THE STATE PLANE COORDINATE SYSTEM IS BASED ON THE NAD 83 DATUM.

SCALE: 1" = 1000'

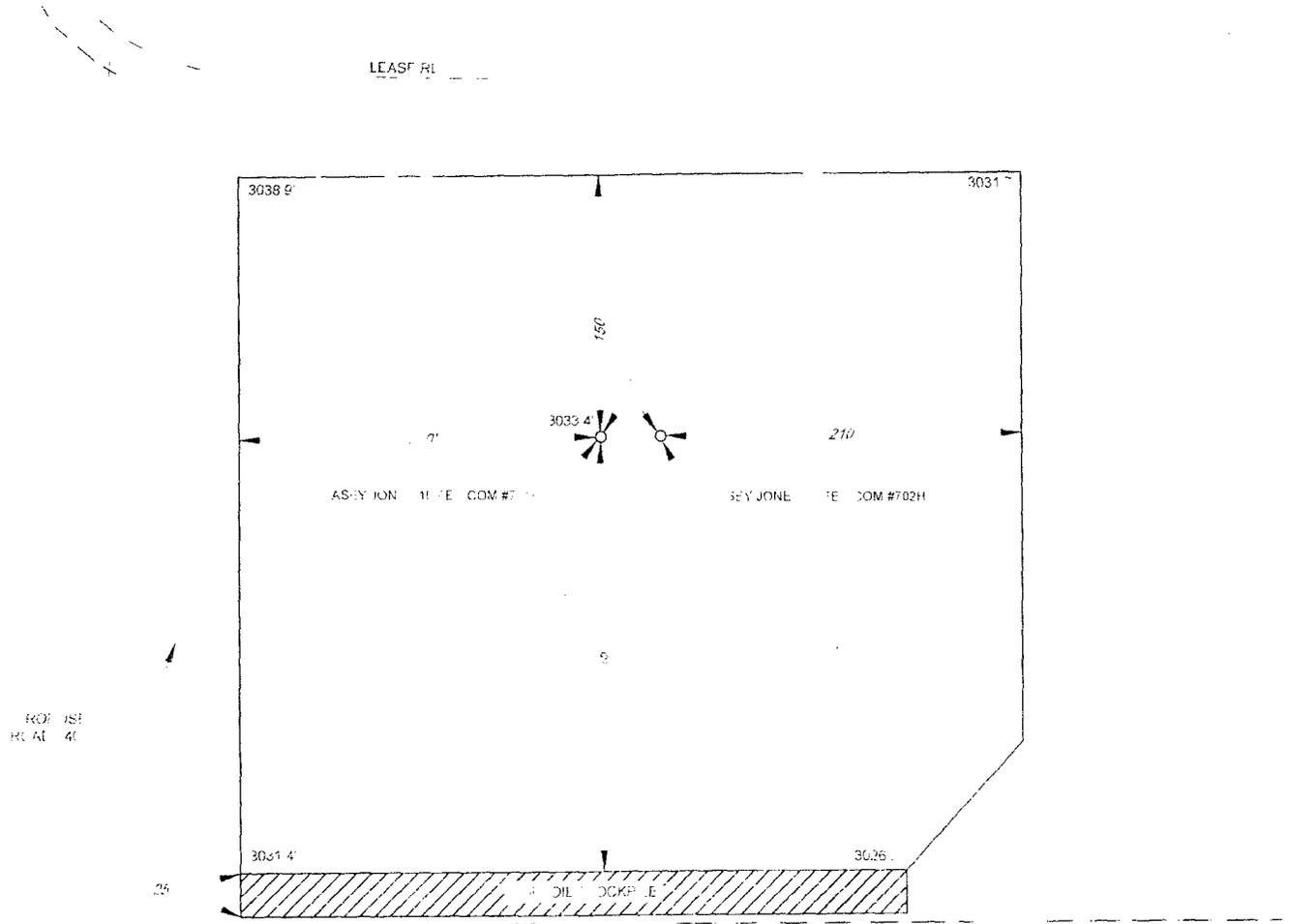
**TOPOGRAPHIC**  
 SURVEYING & MAPPING COMPANY  
 1450 EVERMANN PARKWAY, SUITE 107, FT. WORTH, TEXAS 76106  
 TELEPHONE: (817) 744-7511 - FAX: (817) 744-7546  
 2901 NORTH BIG SPRING, MIDLAND, TEXAS 79706  
 TELEPHONE: (432) 682-1133 OR (767) 1653 - FAX: (432) 682-7423  
 WWW.TOPOGRAFIC.COM

# EXHIBIT 2B

## **eog resources, inc.**

SECTION 16, TOWNSHIP 26-S, RANGE 30-E N.M.P.M.  
EDDY COUNTY NEW MEXICO

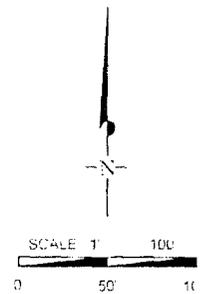
DETAIL VIEW  
SCALE 1" = 100'



LEASE NAME & WELL NO., CASEY JONES 16 FED COM #701H  
 #701H LATITUDE N 32.0360285      #701H LONGITUDE W 103.8932212

### LEGEND

-  EXISTING ROAD
-  SECTION RL
-  PROPOSED RL



ALL BEARING, DISTANCE AND ANGLE INFORMATION ON THIS SURVEY IS BASED ON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, ZONE 10 NORTH AMERICAN 1983, WITH A MEAN SEA LEVEL DATUM.

THIS PROPOSED SURVEY IS A RECONSTRUCTION OF AN OLD SURVEY AND IS NOT A FIELD SURVEY. THE SURVEY IS BASED ON THE EVIDENCE FOUND AT THE TIME OF THE RECONSTRUCTION AND IS NOT A FIELD SURVEY. THE SURVEY IS NOT A FIELD SURVEY AND IS NOT A FIELD SURVEY. THE SURVEY IS NOT A FIELD SURVEY AND IS NOT A FIELD SURVEY.



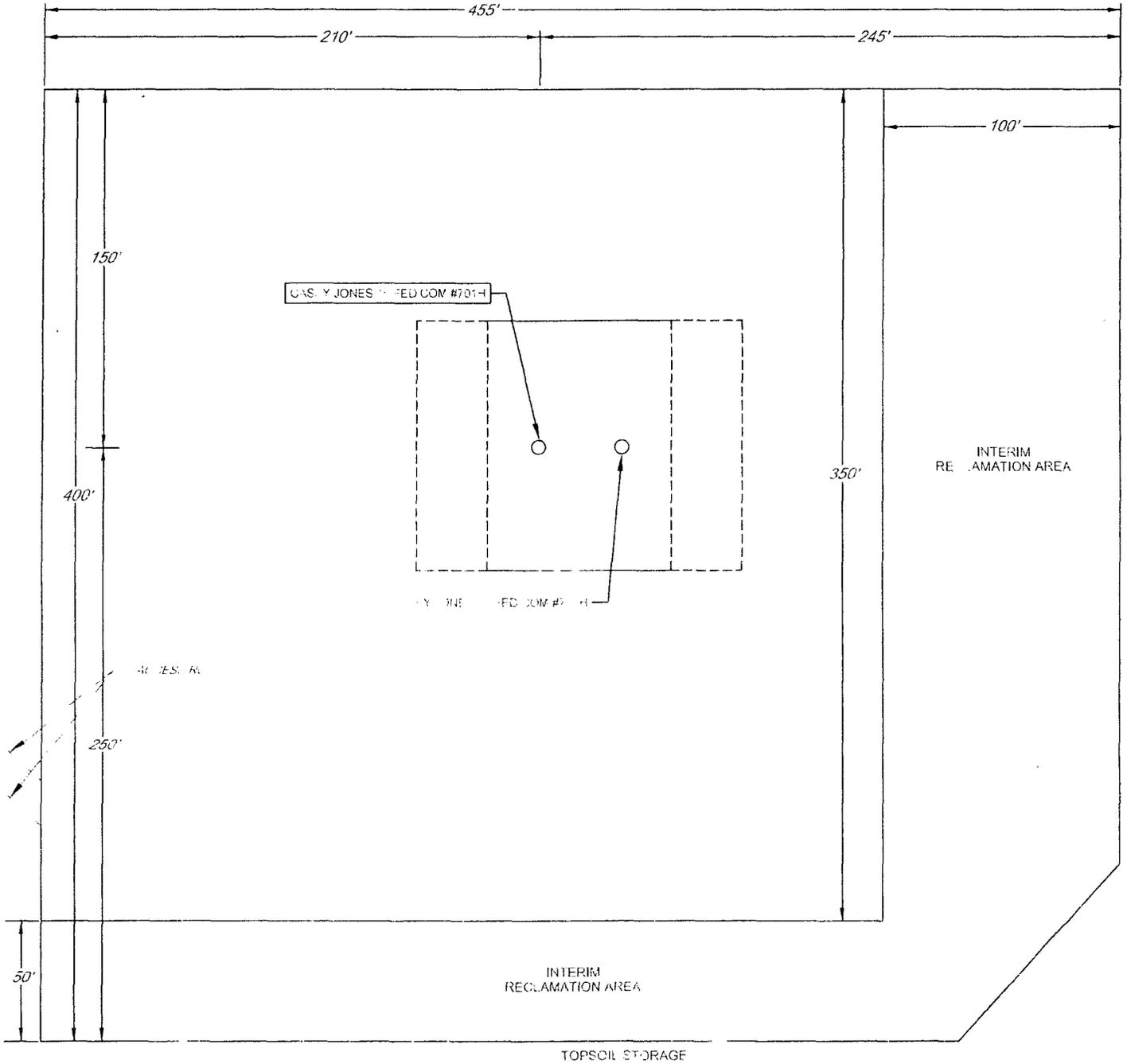
1406 EVERMAN PARKWAY, SUITE 150 • FT. WORTH, TEXAS 76146  
 TELEPHONE (817) 744-7512 • FAX (817) 744-7548  
 2603 NORTH BIG SPRING • MIDLAND, TEXAS 79706  
 TELEPHONE (409) 862-1653 OR (806) 787-1653 • FAX (432) 682-1743  
 WWW.TOPOGRAPHIC.COM

# EXHIBIT 2C

## RECLAMATION AND FACILITY DIAGRAM - PRODUCTION FACILITIES DIAGRAM

SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

DETAIL VIEW  
SCALE 1" = 60'



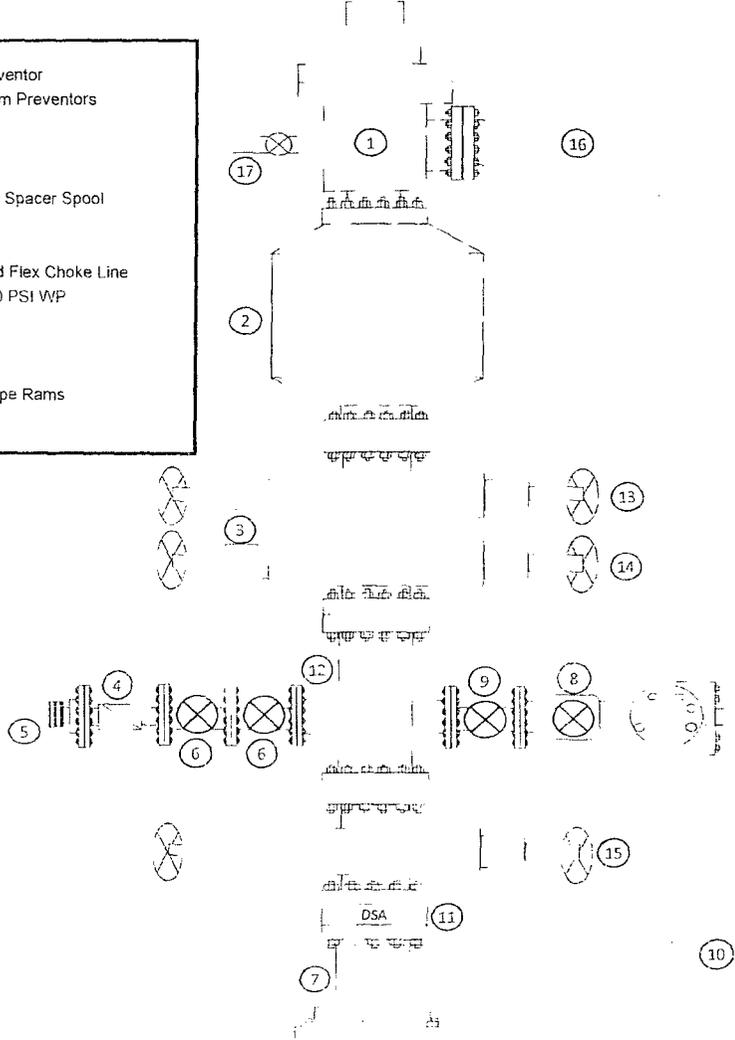
LEASE NAME & WELL NO. CASEY JONES 16 FED COM #701H  
 #701H LATITUDE N 32.0360285 #701H LONGITUDE W 103.8932212

# Exhibit 1 EOG Resources 10M BOPE

Rig Floor



- |  |
|--|
| 1. 13 5/8" Rotating Head                                       |
| 2. Hydril 13 5/8" 10,000 PSI WP GK Annular Preventor           |
| 3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors       |
| 4. 2 1/16" - 10,000 PSI WP Check Valve                         |
| 5. 10,000 PSI WP - 1502 Union to kill line                     |
| 6. 2 1/16" - 10,000 PSI WP Manual Valves                       |
| 7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool    |
| 8. 4 1/16" 10,000 PSI WP HCR Valve                             |
| 9. 4 1/16" 10,000 PSI WP Manual Valve                          |
| 10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line |
| 11. DSA 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP           |
| 12. Mud Cross - 13 5/8" 10,000 PSI WP                          |
| 13. Blind Rams   |
| 14. Pipe Rams  |
| 15. 13 5/8" Cameron Type "U" 10,000 PSI WP Pipe Rams           |
| 16. Flow Line  |
| 17. 2" Fill Line   |





**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

**New road access plan attachment:**

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** 6" of Compacted Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** An adequate amount of topsoil/root zone will be stripped by dozer from the proposed well location and stockpiled along the side of the well location as depicted on the well site diagram / survey plat.

**Access other construction information:**

**Access miscellaneous information:**

**Number of access turnouts:**

**Access turnout map:**

### **Drainage Control**

**New road drainage crossing:** OTHER

**Drainage Control comments:** No drainage crossings

**Road Drainage Control Structures (DCS) description:** N/A

**Road Drainage Control Structures (DCS) attachment:**

### **Access Additional Attachments**

**Additional Attachment(s):**

### **Section 3 - Location of Existing Wells**

**Existing Wells Map?** YES

**Attach Well map:**

CASEYJONES16FC701H\_radius\_05-05-2017.pdf

**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:** Central Tank Battery located in SW/4 of section 16

**Production Facilities map:**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

Casey\_Jones\_16\_Fed\_Com\_Electric\_line\_05-05-2017.pdf

Casey\_Jones\_16\_Fed\_Com\_GGS\_Trunk\_Line\_05-05-2017.pdf

Casey\_Jones\_16\_Fed\_Com\_infrastructure\_05-05-2017.pdf

Casey\_Jones\_16\_Fed\_Com\_WGS\_Main\_Line\_05-05-2017.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source use type:** OTHER

**Water source type:** RECYCLED

**Describe type:**

**Source latitude:**

**Source longitude:**

**Source datum:**

**Water source permit type:** WATER RIGHT

**Source land ownership:** FEDERAL

**Water source transport method:** PIPELINE,TRUCKING

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 0

**Source volume (acre-feet):** 0

**Source volume (gal):** 0

**Water source and transportation map:**

CaseyJones16\_FC\_Caliche\_Water\_Map\_05-05-2017.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:**

**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.):**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

## Section 6 - Construction Materials

**Construction Materials description:** Caliche will be supplied from pits shown on the attached caliche source map. Caliche utilized for the drilling pad will be obtained either from an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by "Flipping" the well location. A mineral material permit will be obtained from BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad. The procedure for "Flipping" a well location is as follows: \* -An adequate amount of topsoil/root zone (usually top 6 inches of soil) will be stripped from the proposed well location and stockpiled along the side of the well location as depicted on the well site diagram/survey plat. -An area will be used within the proposed well site dimensions to excavate caliche. Subsoil will be removed and stockpiled within the surveyed well pad dimensions. -Once caliche/surfacing mineral is found, the mineral material will be excavated and stock piled within the approved drilling pad dimensions. -Then, subsoil will be pushed back in the excavated hole and caliche will be spread accordingly across the entire well pad and road (if available). -Neither caliche, nor subsoil will be stock piled outside of the well pad dimensions. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat. \* In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or federal land.

**Construction Materials source location attachment:**

CaseyJones16\_FC\_Caliche\_Water\_Map\_05-05-2017.pdf

## Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** Drill fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly. Human waste and grey water will be properly contained of and disposed of properly. After drilling and completion operations; trash, chemicals, salts, frac sand, and other waste material will be removed and disposed of properly at a state approved disposal facility.

**Amount of waste:** 0 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** Steel Tanks

**Safe containmant attachment:**

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

**Disposal type description:**

**Disposal location description:** Trucked to NMOCD approved disposal facility

## Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

**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** Closed Loop System. Drill cuttings will be disposed of into steel tanks and taken to an NMOCD approved disposal facility.

**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:**

Casey\_Jones\_16\_FC\_701H\_Rig\_Layout\_05-05-2017.pdf

CASEYJONES16FC701H\_padsite\_05-05-2017.pdf

CASEYJONES16FC701H\_wellsite\_05-05-2017.pdf

**Comments:** Exhibit 2A-Wellsite & Exhibit 2B-Padsite Rig Layout Exhibit 4

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance

**Multiple Well Pad Name:** CASEY JONES 16 FED COM

**Multiple Well Pad Number:** 701H/702H

**Recontouring attachment:**

CASEYJONES16FC701H\_reclamation\_05-05-2017.pdf

**Drainage/Erosion control construction:** Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.

**Drainage/Erosion control reclamation:** The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

**Wellpad long term disturbance (acres):** 2.852388

**Wellpad short term disturbance (acres):** 4.178145

**Access road long term disturbance (acres):** 0.224793

**Access road short term disturbance (acres):** 0.224793

**Pipeline long term disturbance (acres):** 1.5358126

**Pipeline short term disturbance (acres):** 2.5596879

**Other long term disturbance (acres):** 0

**Other short term disturbance (acres):** 0

**Total long term disturbance:** 4.6129937

**Total short term disturbance:** 6.962626

**Reconstruction method:** In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. Areas planned for interim reclamation will be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

**Topsoil redistribution:** Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts and fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. 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:** Re-seed according to BLM standards. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

**Existing Vegetation at the well pad:** 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 respreads evenly on the site following topsoil resspreading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, 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 to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils.

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:** All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

**Existing Vegetation Community at the road attachment:**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

**Existing Vegetation Community at the pipeline:** All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:** All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?** NO

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** NO

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** NO

**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:**

<b>Seed Type</b>	<b>Pounds/Acre</b>
------------------	--------------------

**Seed reclamation attachment:**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

### Operator Contact/Responsible Official Contact Info

**First Name:** Stan

**Last Name:** Wagner

**Phone:** (432)686-3689

**Email:** stan\_wagner@eogresources.com

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, erosion is controlled, and free of noxious weeds. Weeds will be treated if found.

**Weed treatment plan attachment:**

**Monitoring plan description:** Reclamation will be completed within 6 months of well plugging. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, erosion is controlled, and free of noxious weeds.

**Monitoring plan attachment:**

**Success standards:** N/A

**Pit closure description:** NA

**Pit closure attachment:**

### Section 11 - Surface Ownership

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT, STATE GOVERNMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:** STATE OF NEW MEXICO

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** CASEY JONES 16 FED COM

**Well Number:** 701H

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Fee Owner:** Oliver Kiehne

**Fee Owner Address:** P.O. Box 135 Orla, TX 79770

**Phone:** (575)399-9281

**Email:**

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** surface use agreement

**Surface Access Bond BLM or Forest Service:**

**BLM Surface Access Bond number:**

**USFS Surface access bond number:**

## Section 12 - Other Information

**Right of Way needed?** YES

**Use APD as ROW?** YES

**ROW Type(s):** 281001 ROW - ROADS

## ROW Applications

**SUPO Additional Information:** An onsite meeting was conducted 3/28/17. Poly lines are planned to transport water for operations. Will truck if necessary. See attached SUPO Plan.

**Use a previously conducted onsite?** NO

**Previous Onsite information:**

## Other SUPO Attachment

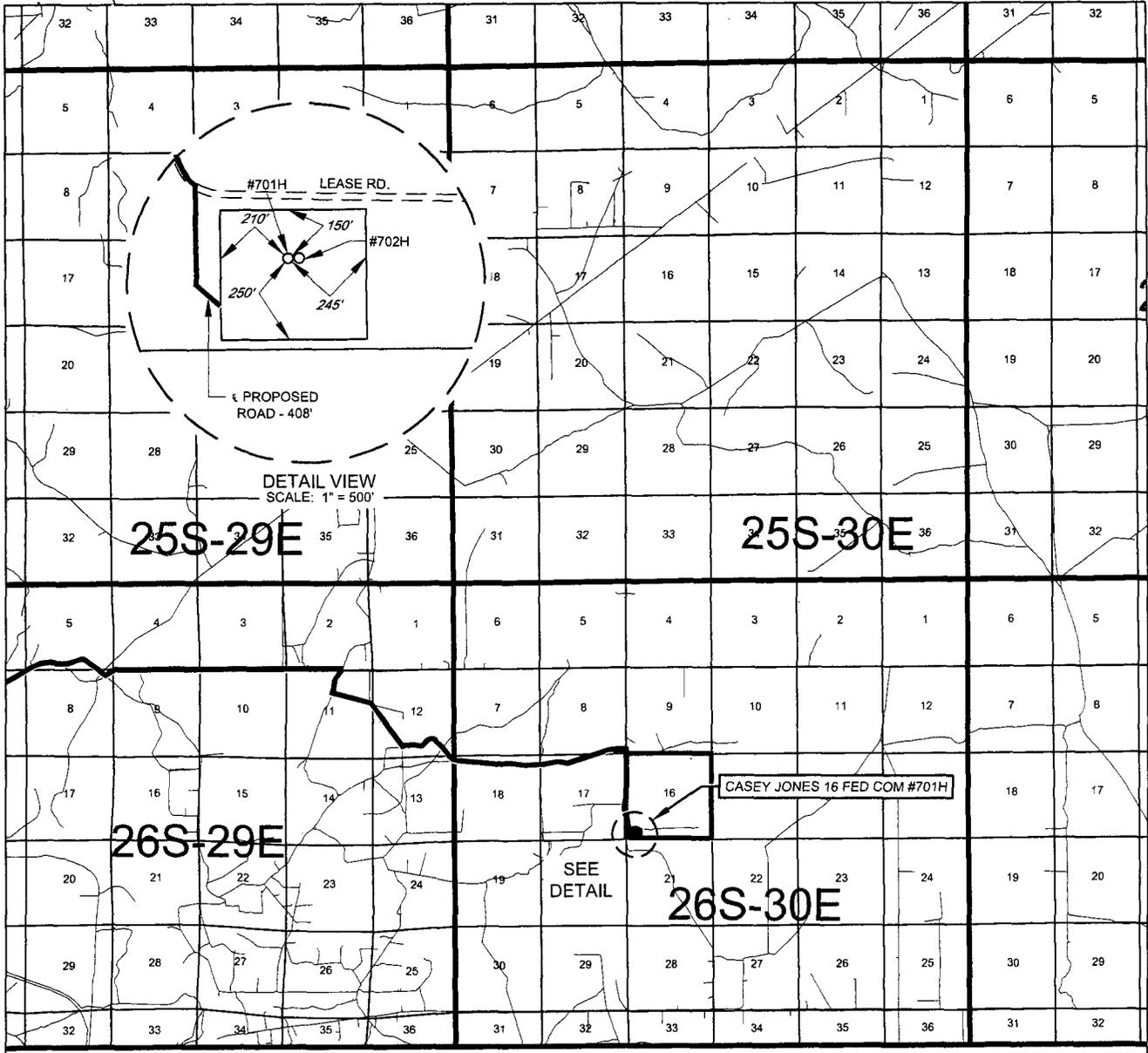
SUPO\_Casey\_Jones\_16\_Fed\_Com\_701H\_05-05-2017.pdf

CASEYJONES16FC701H\_elevation\_05-05-2017.pdf

CASEYJONES16FC701\_702\_cut\_fill\_05-05-2017.pdf

CaseyJones16\_FC\_701\_deficiency\_response\_07-17-2017.pdf

EXHIBIT 2  
VICINITY MAP



LEASE NAME & WELL NO.: CASEY JONES 16 FED COM #701H

SECTION 16 TWP 26-S RGE 30-E SURVEY N.M.P.M.  
COUNTY EDDY STATE NM

DESCRIPTION 280' FSL & 510' FWL

DISTANCE & DIRECTION

FROM INT. OF US-285 & CR. 720. GO SOUTH ON US-285 ±12.6 MILES.  
THENCE NORTHEAST (LEFT) ON WHITEHORN RD. ±4.1 MILES. THENCE  
EAST (LEFT) ON PIPELINE RD. ±2.8 MILES, THENCE SOUTH (RIGHT) ON  
TARBRUSH RD. ±4.2 MILES, THENCE SOUTH (RIGHT) ON LEASE RD. ±1.0  
MILES, THENCE CONTINUING ON A PROPOSED ACCESS ROAD ±408  
FEET, TO A POINT ±250 FEET SOUTHWEST OF THE LOCATION.

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

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



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



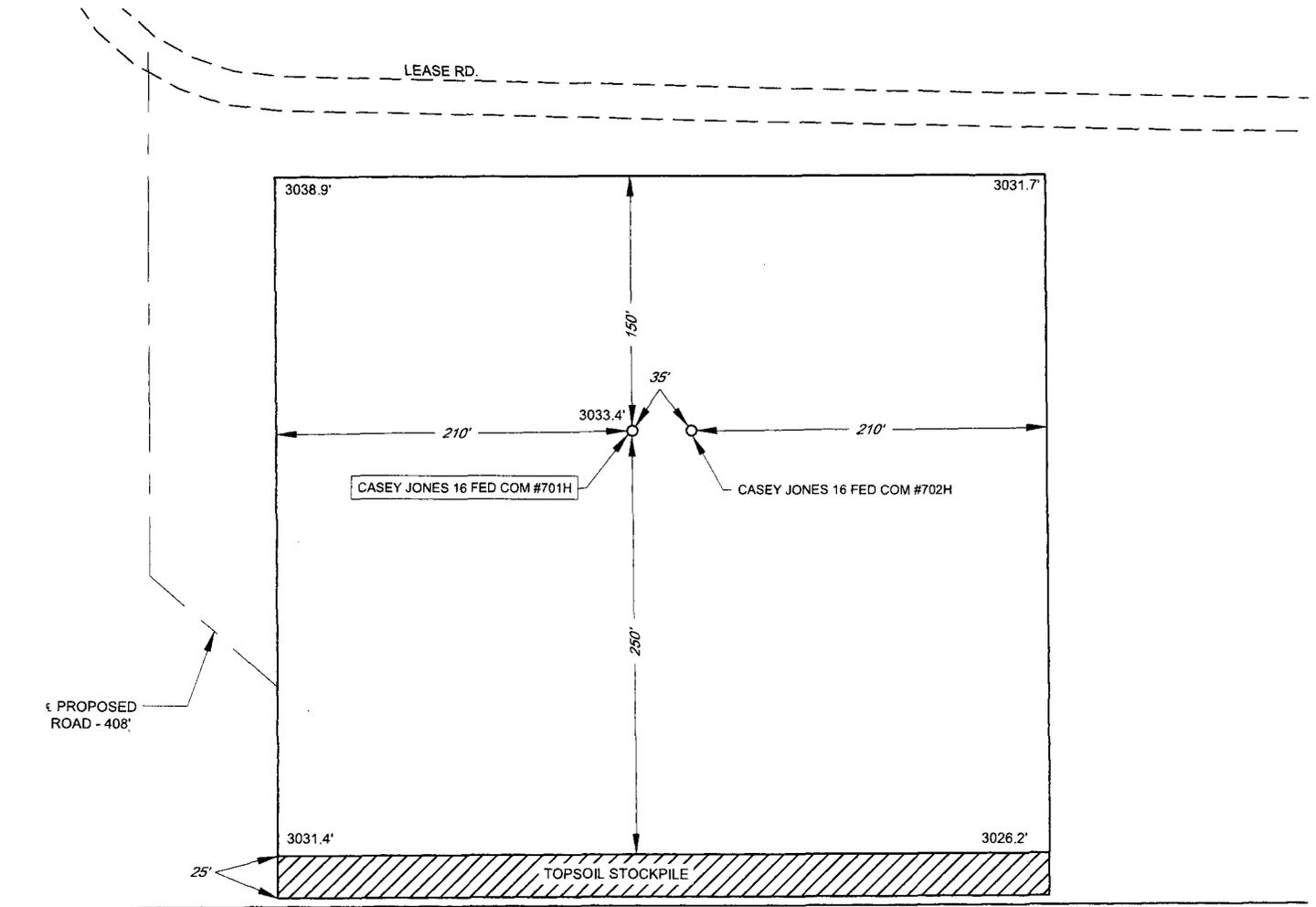
1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140  
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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
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# EXHIBIT 2B

## eog resources, Inc.

SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

DETAIL VIEW  
SCALE: 1" = 100'



LEASE NAME & WELL NO.: CASEY JONES 16 FED COM #701H  
 #701H LATITUDE N 32.0360285 #701H LONGITUDE W 103.8932212

### LEGEND

- EXISTING ROAD
- SECTION LINE
- PROPOSED ROAD



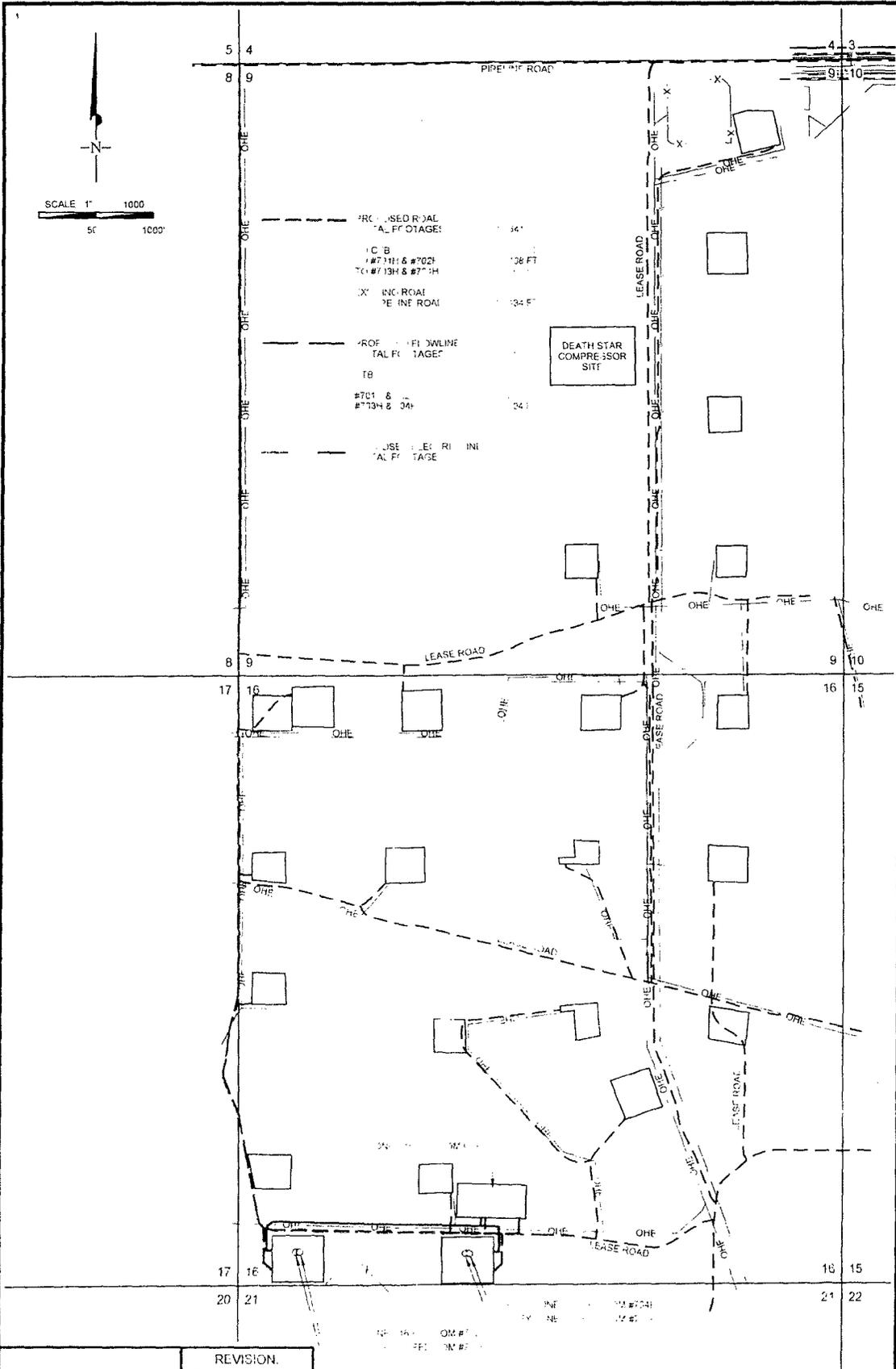
SCALE: 1" = 100'

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 1983, 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 EOG RESOURCES, INC. 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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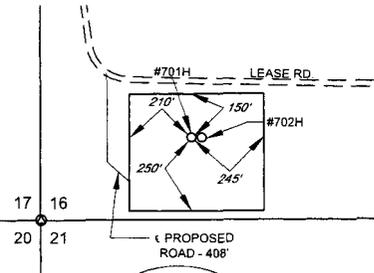
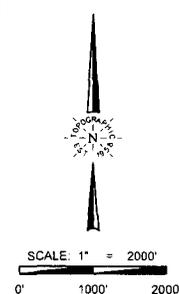
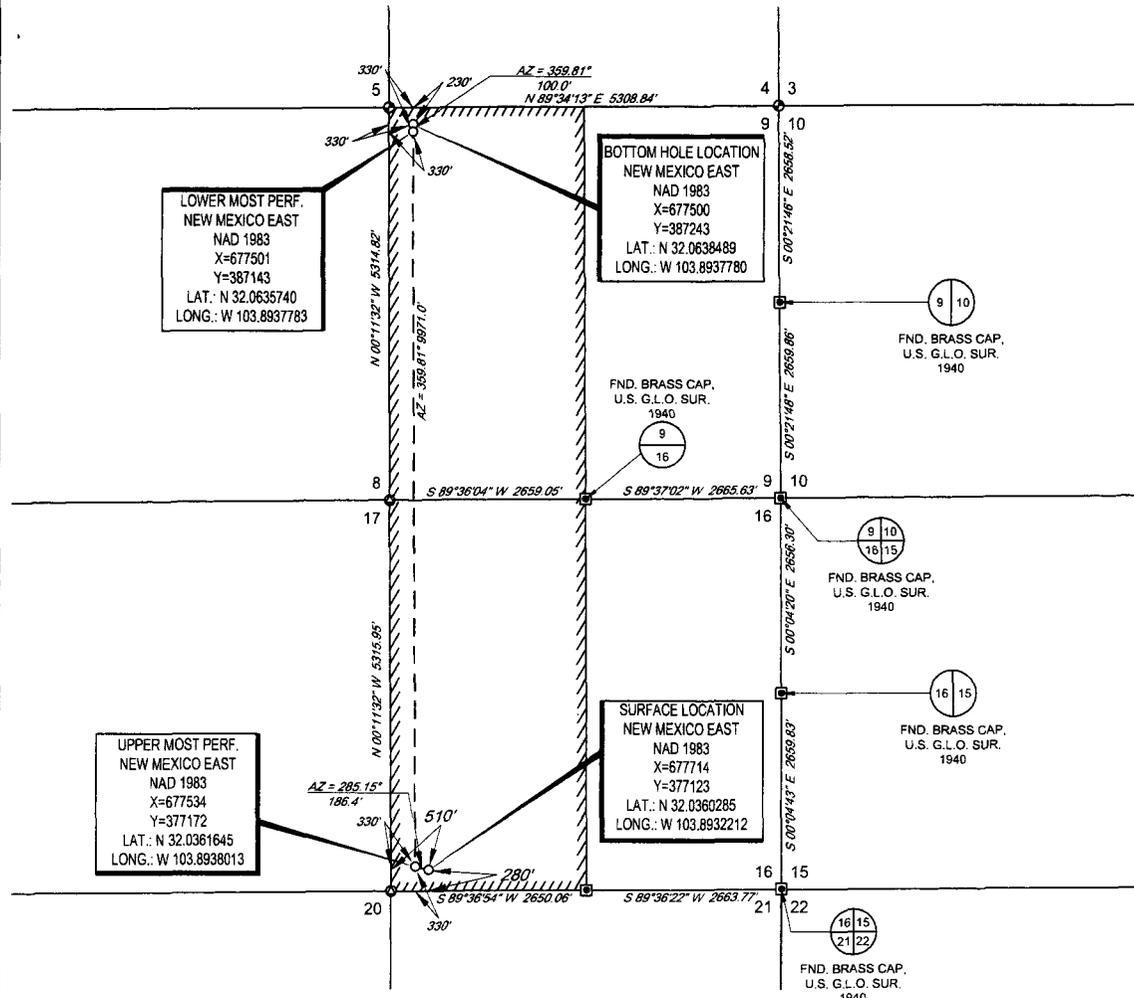


REVISION.	
CASEY JONES 16 FED COM SKETCH	A.C.C. 04/13/17
DATE: 03/27/17	
FILE:SK_CASEY_16_FED_COM_REV1	
DRAWN BY: A.C.C.	
SHEET 1 OF 1	

**EXHIBIT 5**  
 SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
 EDDY COUNTY, NEW MEXICO  
**CASEY JONES 16 FED COM**  
**SKETCH**

**EXHIBIT 2A**

SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: CASEY JONES 16 FED COM #701H

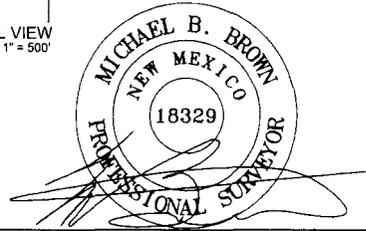
SECTION 16 TWP 26-S RGE 30-E SURVEY N.M.P.M.  
 COUNTY EDDY STATE NM  
 DESCRIPTION 280' FSL & 510' FWL

**DISTANCE & DIRECTION**  
 FROM INT. OF US-285 & CR. 720, GO SOUTH ON US-285 ±12.6 MILES,  
 THENCE NORTHEAST (LEFT) ON WHITEHORN RD. ±4.1 MILES, THENCE  
 EAST (LEFT) ON PIPELINE RD. ±2.8 MILES, THENCE SOUTH (RIGHT) ON  
 TARBRUSH RD. ±4.2 MILES, THENCE SOUTH (RIGHT) ON LEASE RD. ±1.0  
 MILES, THENCE CONTINUING ON A PROPOSED ACCESS ROAD ±408  
 FEET, TO A POINT ±250 FEET SOUTHWEST OF THE LOCATION.

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 1983, U.S. SURVEY FEET

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND  
 UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF  
 SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. 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.

DETAIL VIEW  
SCALE: 1" = 500'



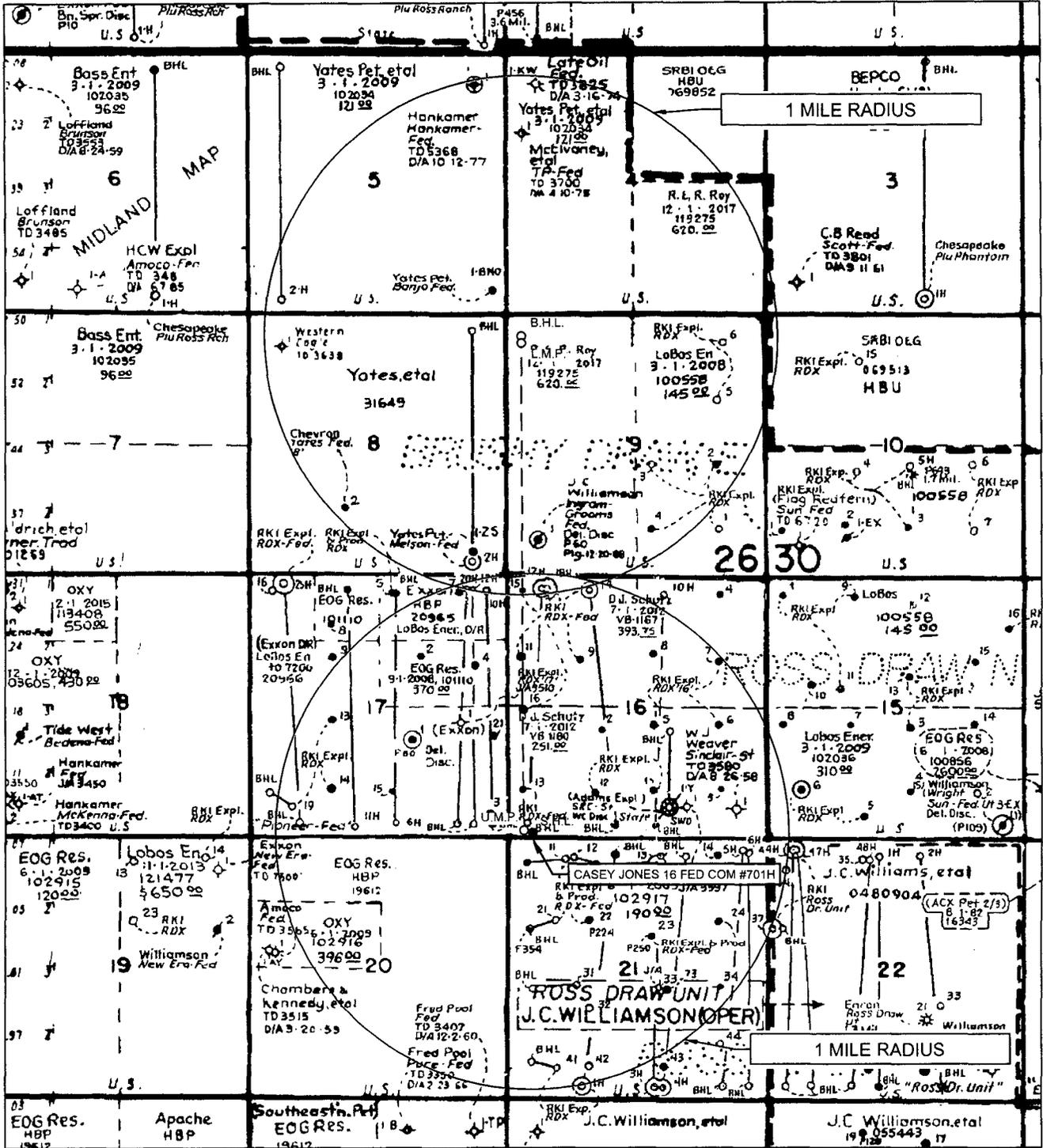
Michael Blake Brown, P.S. No. 18329  
APRIL 3, 2017

**TOPOGRAPHIC**  
LOYALTY INNOVATION LEGACY

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EXHIBIT 3

SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: CASEY JONES 16 FED COM #701H

SCALE: NTS

#701H LATITUDE N 32.0360285

#701H LONGITUDE W 103.8932212

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 1983, U.S. SURVEY FEET

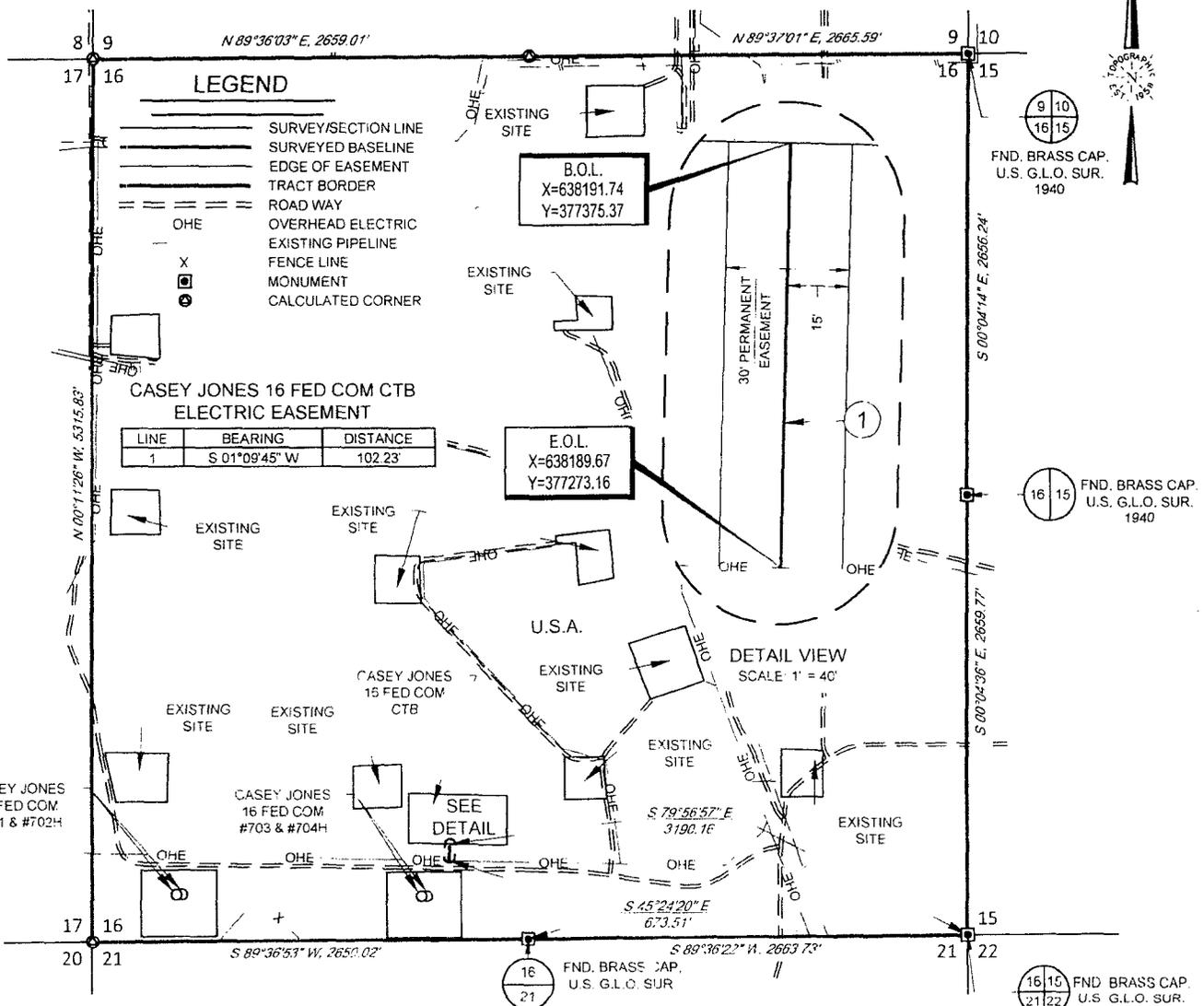
THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS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



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TELEPHONE: (432) 682-1653 OR (800) 787-1653 • FAX (432) 682-1743  
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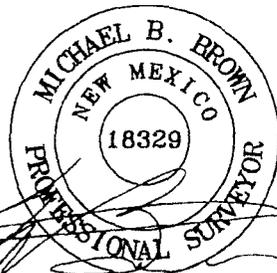
SCALE 1" = 1000'  
0' 500' 1000'

SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



**CASEY JONES 16 FED COM CTB  
ELECTRIC EASEMENT**

Being a proposed electric easement being 30 feet in width, 15 feet left, and 15 feet right of the above platted centerline total line footage containing 102.23 feet or 6.26 rods, containing 0.07 acres more or less.



Michael Blake Brown, P.S. No. 18329  
MARCH 29, 2017



1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140  
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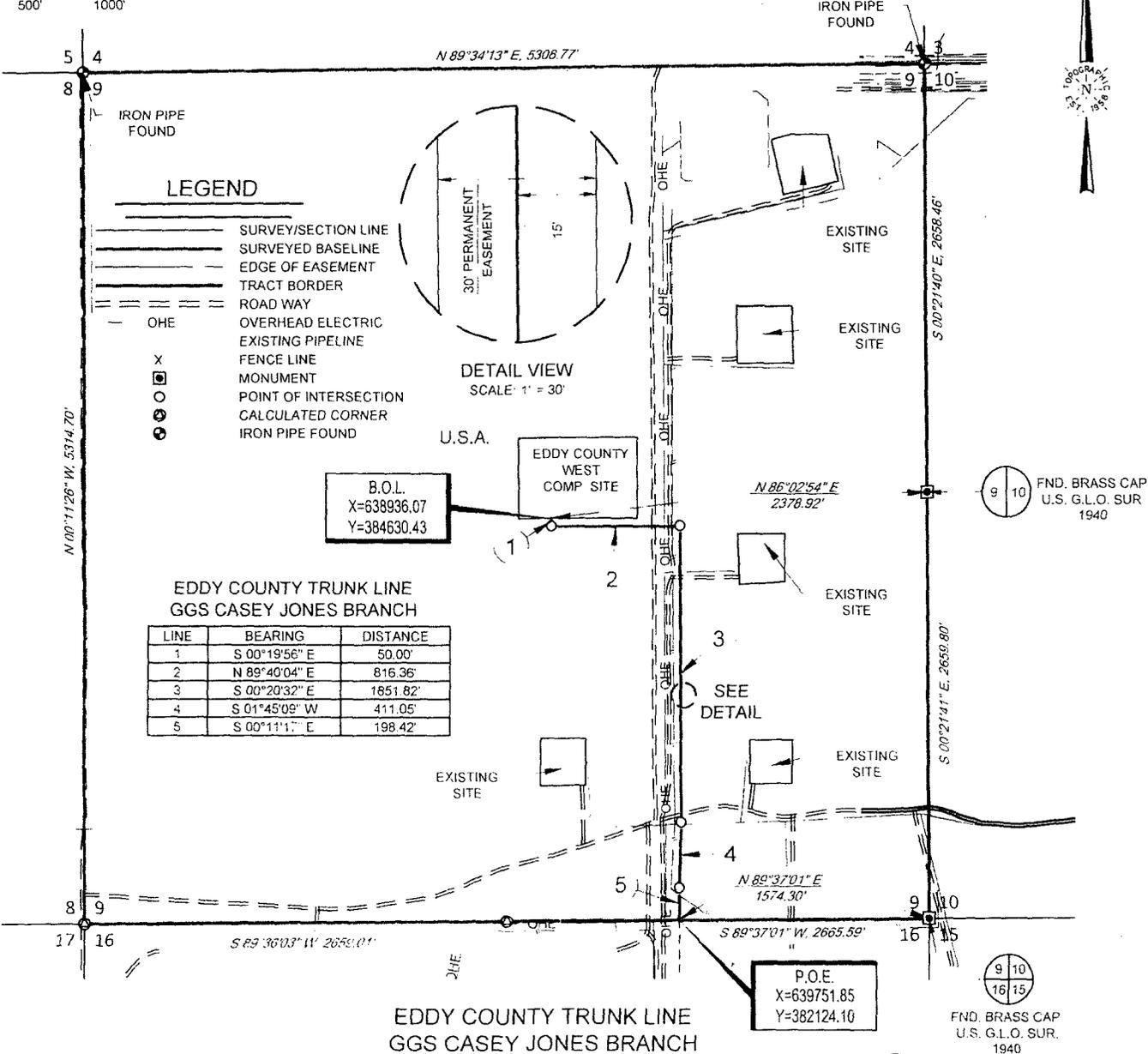


CASEY JONES 16 FED COM CTB ELECTRIC EASEMENT		REVISION:	NOTES
DATE:	03/29/17		1 ORIGINAL DOCUMENT SIZE 8.5" X 11"
FILE:	EP_CASEY_JONES_16_FED_COM_CTBELECTRIC		2 ALL BEARINGS, DISTANCES AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927.
DRAWN BY:	GJU		3 CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY EOG RESOURCES, INC. ONLY UTILITIES EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON TRANSFERABLE AND MADE FOR THIS TRANSACTION ONLY.
SHEET:	1 OF 1		4 E.O.L. = BEGINNING OF LINE
			5 E.O.L. = END OF LINE

3 SURVEYED FOR MIDLAND CASEY JONES 16 FED COM CTB ELECTRIC EASEMENT BY MICHAEL B. BROWN, P.S. NO. 18329, DATE 03/29/17, 10:03 AM CST

SECTION 9, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

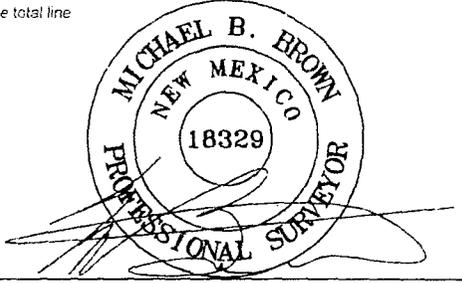
SCALE: 1" = 1000'  
0' 500' 1000'



Being a proposed gas line easement being 30 feet in width 15 feet left and 15 feet right of the above platted centerline total line footage containing 3327.65 feet or 201.68 rods containing .29 acres more or less



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Michael Blake Brown, P.S. No. 18329  
MARCH 24, 2017



EDDY COUNTY TRUNK LINE GGS CASEY JONES BRANCH		REVISION:	NOTES
DATE:	03/24/17		1 ORIGINAL DOCUMENT SIZE 8.5 X 11
FILE:	EDDY COUNTY TRUNK LINE GGS CASEY JONES BRANCH		2 ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM EAST ZONE U.S. SURVEY FEET NORTH AMERICAN DATUM 1927
DRAWN BY:	GJU		3 CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY MADE ON THE GROUND UNDER MY SUPERVISION AND USING DOCUMENTATION PROVIDED BY EOG RESOURCES INC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AND SHOWN HEREON OF WHICH I HAVE KNOWLEDGE THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON TRANSFERABLE AND MADE FOR THIS TRANSACTION ONLY
SHEET	1 OF 1		4 B.O.L. BEGINNING OF LINE
			5 P.O.E. POINT OF EXIT

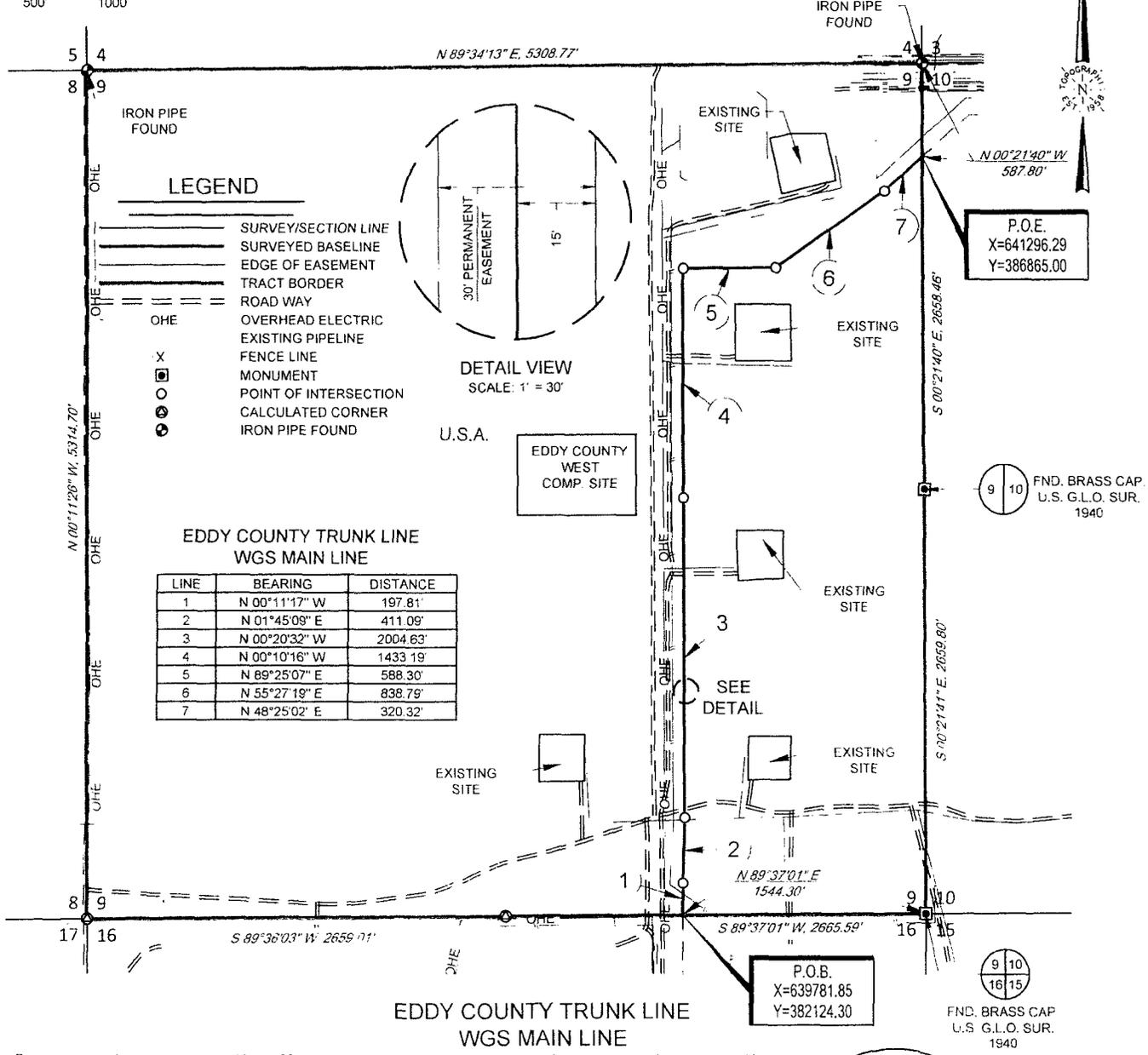




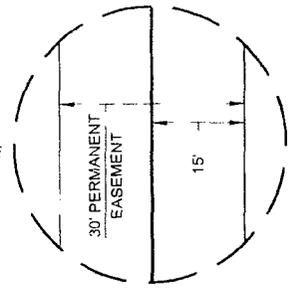


SECTION 9, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

SCALE: 1" = 1900'  
0' 500' 1000'



- LEGEND**
- SURVEY/SECTION LINE
  - SURVEYED BASELINE
  - EDGE OF EASEMENT
  - TRACT BORDER
  - ROAD WAY
  - OVERHEAD ELECTRIC
  - EXISTING PIPELINE
  - FENCE LINE
  - MONUMENT
  - POINT OF INTERSECTION
  - CALCULATED CORNER
  - IRON PIPE FOUND



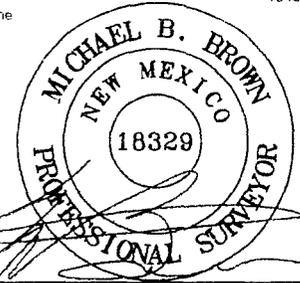
**EDDY COUNTY TRUNK LINE  
WGS MAIN LINE**

LINE	BEARING	DISTANCE
1	N 00°11'17\" W	197.81'
2	N 01°45'09\" E	411.09'
3	N 00°20'32\" W	2004.63'
4	N 00°10'16\" W	1433.19'
5	N 89°25'07\" E	588.30'
6	N 55°27'19\" E	838.79'
7	N 48°25'02\" E	320.32'

Being a proposed water line easement being 30 feet in width, 15 feet left, and 15 feet right of the above platting centerline total line footage containing 5794.13 feet or 351.16 rods, containing 1.99 acres more or less.



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Michael Blake Brown, P.S. No. 18329  
APRIL 4, 2017



EDDY COUNTY TRUNK LINE WGS MAIN LINE	REVISION:	
	DATE:	04/04/17
	FILE:	EDDY COUNTY TRUNK LINE WGS MAIN LINE 0509
	DRAWN BY:	GJU
	SHEET:	1 OF 1

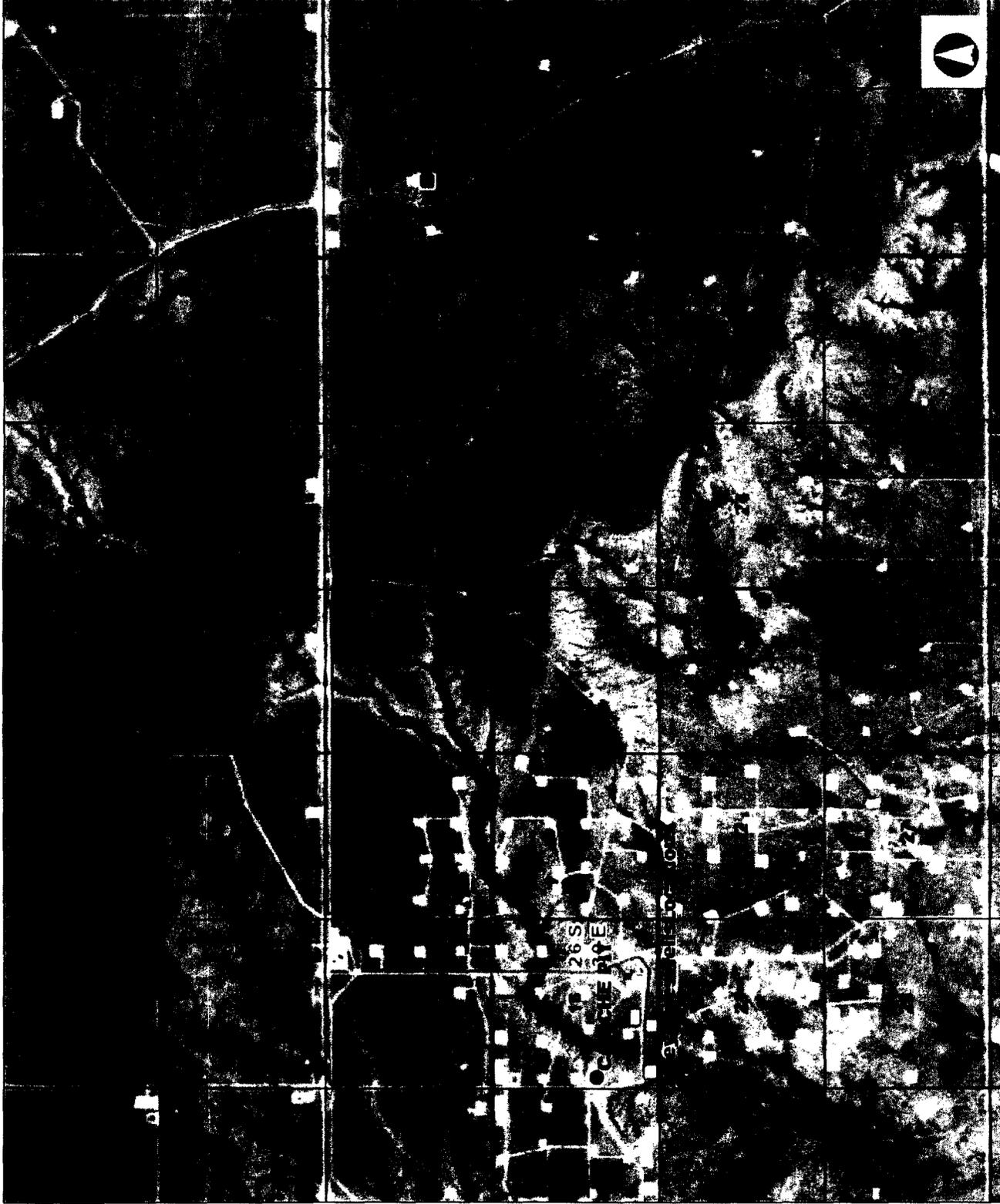
- NOTES:**
1. ORIGINAL DOCUMENT SIZE: 8 5/8" X 11"
  2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927
  3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY MADE ON THE GROUND UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY EOG RESOURCES INC ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
  4. P.O.B. = POINT OF BEGINNING
  5. P.O.E. = POINT OF EXIT



Legend

**geogresources**  
MIDLAND DIVISION

Author:



This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Date: 4/12/2017

10,833.3 0 5,416.67 10,833.3 Feet

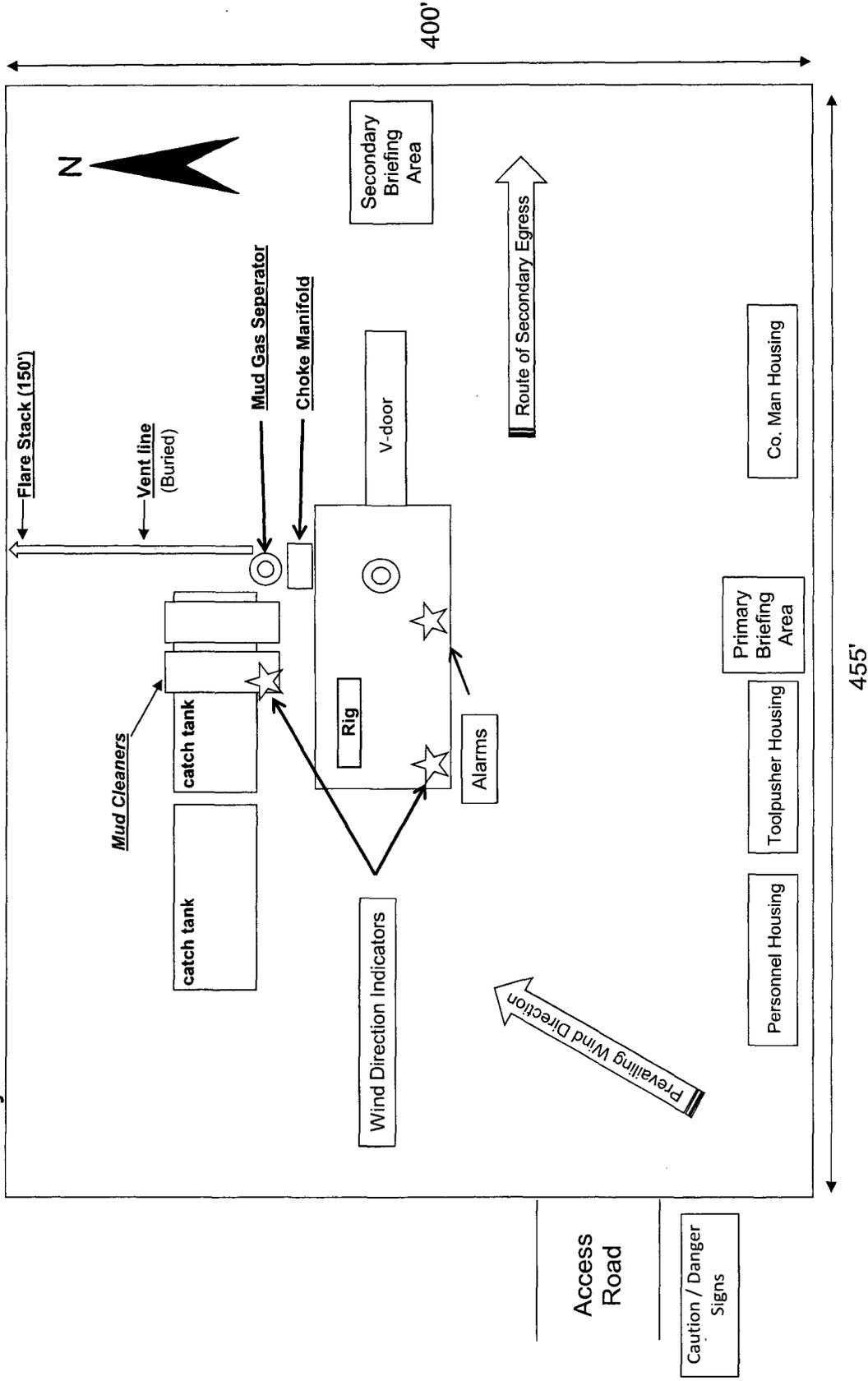


1: 65,000

Projection: WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere

Exhibit 4  
EOG Resources  
Casey Jones 16 Fed Com #701H

Well Site Diagram



# Surface Use Plan of Operations

## Introduction

The following surface use plan of operations will be followed and carried out once the APD is approved. No other disturbance will be created other than what was submitted in this surface use plan. If any other surface disturbance is needed after the APD is approved, a BLM approved sundry notice or right of way application will be acquired prior to any new surface disturbance.

Before any surface disturbance is created, stakes or flagging will be installed to mark boundaries of permitted areas of disturbance, including soils storage areas. As necessary, slope, grade, and other construction control stakes will be placed to ensure construction in accordance with the surface use plan. All boundary markers will be maintained in place until final construction cleanup is completed. If disturbance boundary markers are disturbed or knocked down, they will be replaced before construction proceeds.

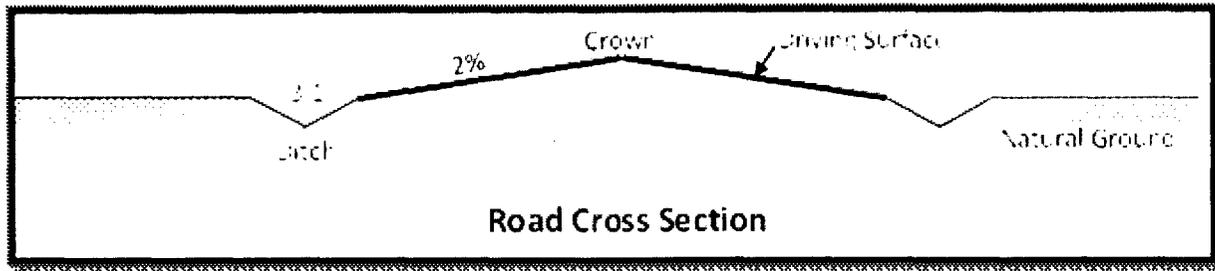
If terms and conditions are attached to the approved APD and amend any of the proposed actions in this surface use plan, we will adhere to the terms and conditions.

## 1. Existing Roads

- a. The existing access road route to the proposed project is depicted on Casey Jones 16 Fed Com 701H vicinity map. Improvements to the driving surface will be done where necessary. No new surface disturbance will be done, unless otherwise noted in the New or Reconstructed Access Roads section of this surface use plan.
- b. The existing access road route to the proposed project does cross lease boundaries and a BLM road right-of-way will be acquired from the BLM prior to construction activities.
- c. The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattleguards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use.
- d. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

## 2. New or Reconstructed Access Roads

- a. An access road will be needed for this proposed project. See the survey plat for the location of the access road.
- b. The length of access road needed to be constructed for this proposed project is about 408 feet.
- c. The maximum driving width of the access road will be 24 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. All areas outside of the driving surface will be revegetated.
- d. The access road will be constructed with 6 inches of compacted caliche.
- e. When the road travels on fairly level ground, the road will be crowned and ditched with a 2% slope from the tip of the road crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. See Road Cross Section diagram below.



- f. The access road will be constructed with a ditch on each side of the road.
- g. The maximum grade for the access road will be 2 percent.
- h. No turnouts will be constructed on the proposed access road.
- i. No cattleguards will be installed for this proposed access road.
- j. No BLM right-of-way grant is needed for the construction of this access road.
- k. No culverts will be constructed for this proposed access road.
- l. No low water crossings will be constructed for the access road.
- m. Since the access road is on level ground, no lead-off ditches will be constructed for the proposed access road.
- n. Newly constructed or reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management, will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road.

### 3. Location of Existing Wells

- a. Casey Jones 16 Fed Com 701H radius map of the APD depicts all known wells within a one mile radius of the proposed well.
- b. There is no other information regarding wells within a one mile radius.

### 4. Location of Existing and/or Proposed Production Facilities

- a. All permanent, lasting more than 6 months, above ground structures including but not limited to pumpjacks, storage tanks, barrels, pipeline risers, meter housing, etc. that are not subject to safety requirements will be painted a non-reflective paint color, Shale Green, from the BLM Standard Environmental Colors chart, unless another color is required in the APD Conditions of Approval.
- b. If any type of production facilities are located on the well pad, they will be strategically placed to allow for maximum interim reclamation, recontouring, and revegetation of the well location.
- c. A production facility is proposed to be installed off the proposed well location. Production from the well will be processed at this production facility. Casey Jones 16 Fed Com infrastructure depicts the location of the production facilities.
- d. The proposed production facility will have a secondary containment structure that is constructed to hold the capacity of 1-1/2 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

- e. There is no other diagram that depicts production facilities.
- f. A pipeline to transport production from the proposed well to the production facility will be installed.
  - i. We plan to install a 4 inch buried poly pipeline from the proposed well to the offsite production facility. The proposed length of the pipeline will be 2230 feet. The working pressure of the pipeline will be about 125 psi. A 50 feet wide work area will be needed to install the buried pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.
  - ii. Casey Jones 16 Fed Com infrastructure depicts the proposed production pipeline route from the well to the existing production facility.
  - iii. The proposed pipeline does not cross lease boundaries, so a right of way grant will not need to be acquired from the BLM.

**If any plans change regarding the production facility or other infrastructure (pipeline, electric line, etc.), we will submit a sundry notice or right of way (if applicable) prior to installation or construction.**

#### **Additional Pipeline(s)**

We propose to install 3 additional pipeline(s):

- 1. Buried gas lift pipeline:
  - a. We plan to install a 4 inch buried flex steel pipeline from the proposed well to the central tank battery. The proposed length of the pipeline will be 2230 feet. The working pressure of the pipeline will be about 125 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.
  - b. Casey Jones 16 Fed Com infrastructure depicts the proposed gas lift pipeline route.
  - c. The proposed pipeline does not cross lease boundaries, so a right of way grant will not need to be acquired from the BLM.
- 2. Buried produced water pipeline:
  - a. We plan to install a 24 inch buried poly pipeline from the central battery to the water disposal tie-in. The proposed length of the pipeline will be 13363 feet. The working pressure of the pipeline will be about 125 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.
  - b. Casey Jones 16 Fed Com WGS Main Line depicts the proposed produced water pipeline route.
  - c. Since the proposed pipeline crosses lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

3. Buried gas sales pipeline:

a. We plan to install a 20 inch buried steel pipeline from the central battery to the gas sales tie-in. The proposed length of the pipeline will be 10686 feet. The working pressure of the pipeline will be about 125 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

b. Casey Jones 16 Fed Com GGS Trunk Line depicts the proposed gas sales pipeline route.

c. Since the proposed pipeline crosses lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

**Electric Line(s)**

a. We plan to install an overhead electric line for the proposed well. The proposed length of the electric line will be 102 feet. Casey Jones 16 Fed Com electric line depicts the location of the proposed electric line route. The electric line will be construction to provide protection from raptor electrocution.

b. The proposed electric line does not cross lease boundaries, so a right of way grant will not need to be acquired from the BLM.

**5. Location and Types of Water**

a. The source and location of the water supply are as follows: Water will be supplied from the frac pond as shown on the attached water source map This location will be drilled using a combination of water mud systems (outlined in the drilling program) The water will be obtained from commercial water stations in the area or recycled treated water and hauled to location by trucks or poly pipelines using existing and proposed roads depicted on the proposed existing access road maps In these cases where a poly pipeline is used to transport fresh water for drilling purposes\_ proper authorizations will be secured by the contractor.

b. Casey Jones 16 Fed Com water source and caliche map depicts the proposed route for a 12 inch poly temporary (<90 days) water pipeline supplying water for drilling operations.

**6. Construction Material**

a. Caliche will be supplied from pits shown on the attached caliche source map.

Caliche utilized for the drilling pad will be obtained either from an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by “Flipping” the well location. A mineral material permit will be obtained from BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad. The procedure for “Flipping” a well location is as follows:

\*

-An adequate amount of topsoil/root zone (usually top 6 inches of soil) will be stripped from the proposed well location and stockpiled along the side of the well location as depicted on the well site diagram/survey plat.

-An area will be used within the proposed well site dimensions to excavate caliche.

Subsoil will be removed and stockpiled within the surveyed well pad dimensions.

-Once caliche/surfacing mineral is found, the mineral material will be excavated and stock piled within the approved drilling pad dimensions.

-Then, subsoil will be pushed back in the excavated hole and caliche will be spread accordingly across the entire well pad and road (if available).

-Neither caliche, nor subsoil will be stock piled outside of the well pad dimensions. Topsoil will be stockpiled

along the edge of the pad as depicted in the Well Site Layout or survey plat.

\*

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or federal land.

## 7. Methods for Handling Waste

- a. Drilling fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility.
- b. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.
- c. Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.
- d. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at a state approved disposal facility.
- e. The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

## 8. Ancillary Facilities

- a. No ancillary facilities will be needed for this proposed project.

## 9. Well Site Layout

- a. The following information is presented in the well site survey plat or diagram:
  - i. reasonable scale (near 1":50')
  - ii. well pad dimensions
  - iii. well pad orientation
  - iv. drilling rig components
  - v. proposed access road
  - vi. elevations of all points
  - vii. topsoil stockpile
  - viii. reserve pit location/dimensions if applicable
  - ix. other disturbances needed (flare pit, stinger, frac farm pad, etc.)
  - x. existing structures within the 600' x 600' archaeological surveyed area (pipelines, electric lines, well pads, etc)
- b. The proposed drilling pad was staked and surveyed by a professional surveyor. The attached survey plat of the well site depicts the drilling pad layout as staked.
- c. A title of a well site diagram is Casey Jones 16 Fed Com 701H rig layout. This diagram depicts the rig layout.
- d. Topsoil Salvaging
  - i. 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 depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, 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 to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. 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.

## 10. Plans for Surface Reclamation

### Reclamation Objectives

- i. The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.
- ii. The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.
- iii. The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.
- iv. 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.
- v. Interim reclamation will be performed on the well site after the well is drilled and completed. Casey Jones 16 Fed Com 701H interim reclamation depicts the location and dimensions of the planned interim reclamation for the well site.

### Interim Reclamation Procedures (If performed)

1. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.
2. In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
3. The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
4. Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. 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 area to control erosion, runoff and siltation of the

surrounding area.

6. 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 mineral pit or recycled to repair or build roads and well pads.
3. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil 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 BLM 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.

## **11. Surface Ownership**

- a. The surface ownership of the proposed project is State of New Mexico.

## **12. Other Information**

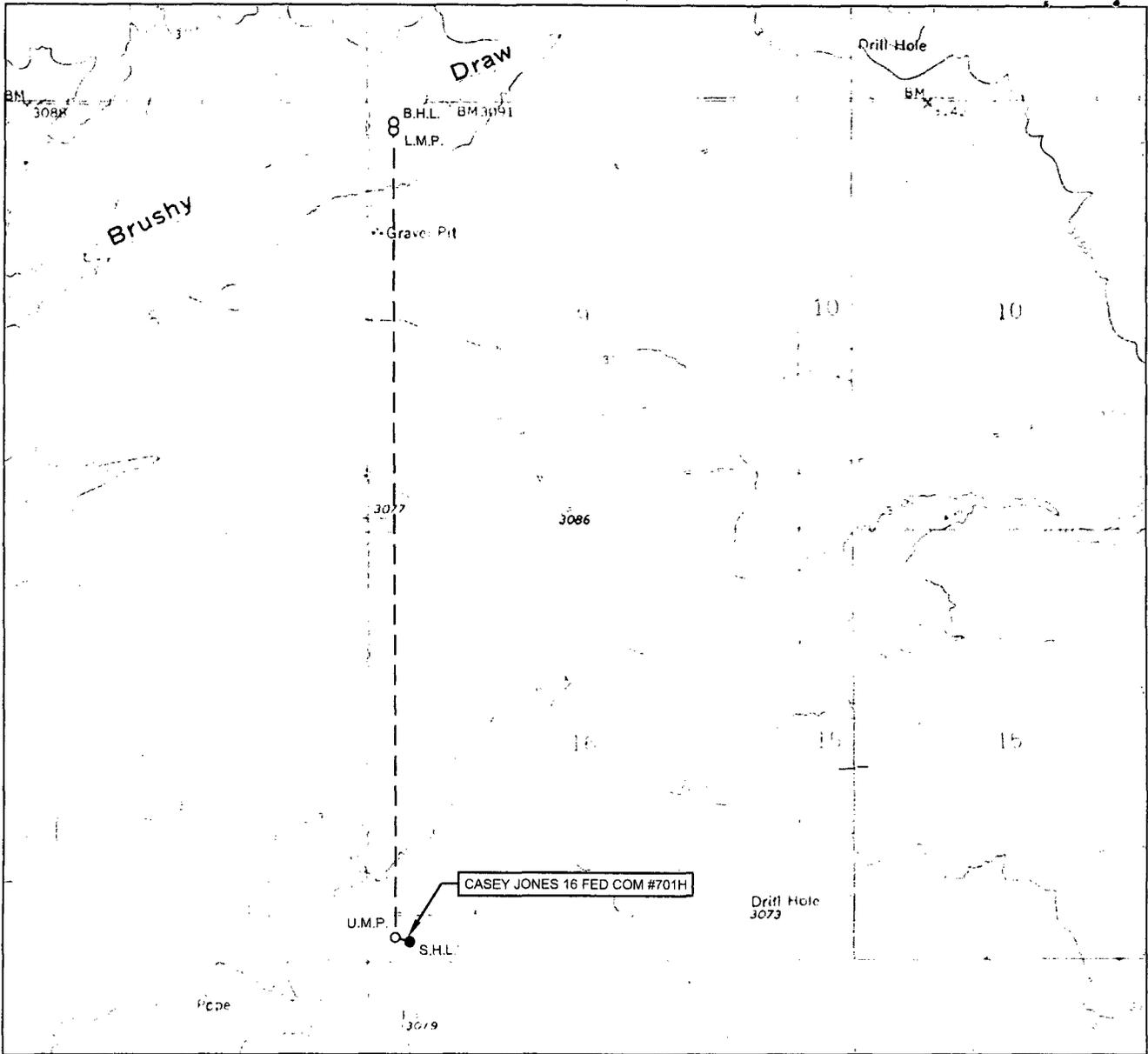
- a. An onsite meeting was conducted 03/28/17.  
We plan to use 2, 12-inch lay flat hoses to transport water with an option to use 7, 4-inch poly lines for drilling and frac operations.  
We are asking for 4 associated pipelines all depicted on the attached Casey Jones 16 Fed Com infrastructure sketch and associated plats:  
One 4-inch flex steel gas lift line per well  
One 4-inch flex steel production flowline per well  
One 24-inch produced water disposal from the CTB to the existing disposal line.  
One 20-inch gas sales line from the CTB to the gas sales tie-in.  
The well is planned to be produced using gas lift as the artificial lift method.  
Produced water will be transported via pipeline to the EOG produced water gathering system.

## **13. Maps and Diagrams**

Casey Jones 16 Fed Com 701H vicinity map - Existing Road

- Casey Jones 16 Fed Com 701H radius map - Wells Within One Mile
- Casey Jones 16 Fed Com infrastructure - Production Facilities Diagram
- Casey Jones 16 Fed Com infrastructure - Production Pipeline
- Casey Jones 16 Fed Com infrastructure - gas lift Pipeline
- Casey Jones 16 Fed Com WGS Main Line - produced water Pipeline
- Casey Jones 16 Fed Com GGS Trunk Line - gas sales Pipeline
- Casey Jones 16 Fed Com electric line - Electric Line
- Casey Jones 16 Fed Com water source and caliche map - Drilling Water Pipeline
- Casey Jones 16 Fed Com 701H rig layout - Well Site Diagram
- Casey Jones 16 Fed Com 701H interim reclamation - Interim Reclamation

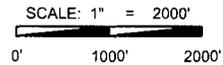
# LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME & WELL NO.: CASEY JONES 16 FED COM #701H

SECTION 16 TWP 26-S RGE 30-E SURVEY N.M.P.M.  
 COUNTY EDDY STATE NM ELEVATION 3033'  
 DESCRIPTION 280' FSL & 510' FWL

LATITUDE N 32.0360285 LONGITUDE W 103.8932212



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 EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

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

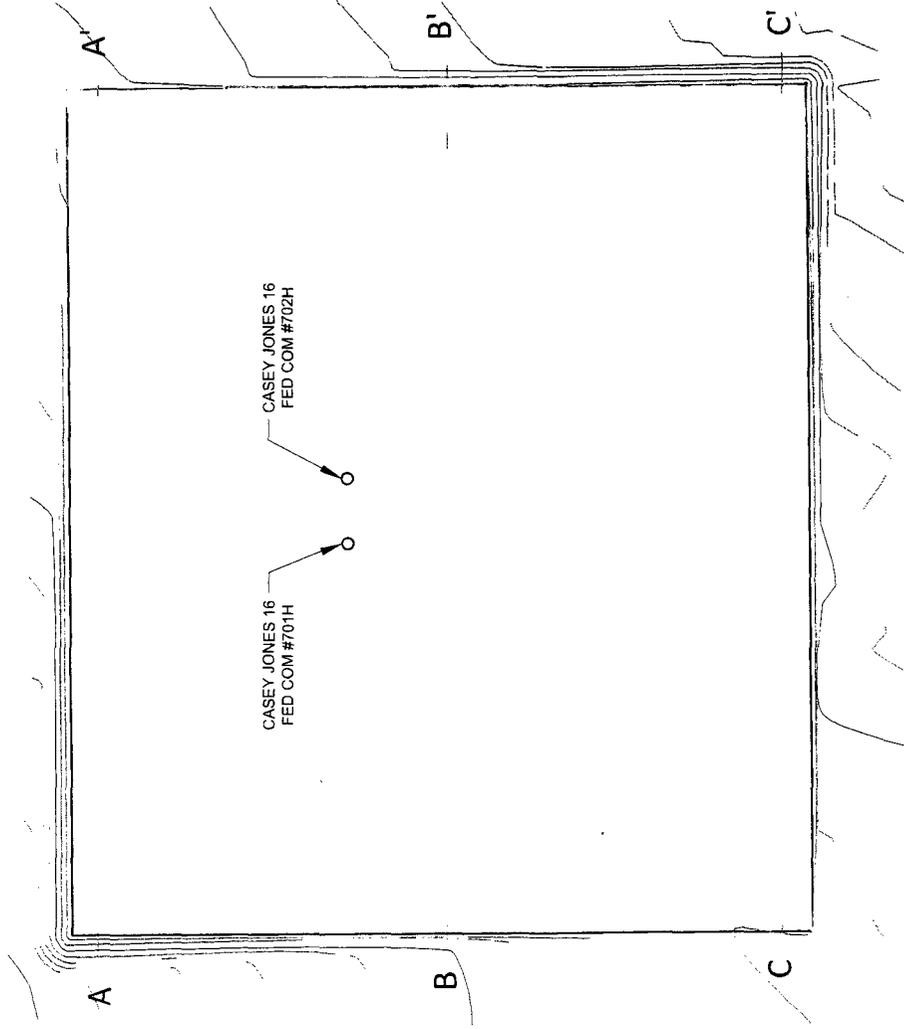


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 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
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**EXHIBIT 6**  
SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



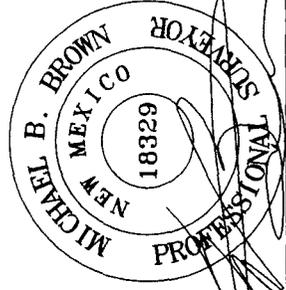
SCALE: 1" = 100'  
0' 50' 100'

Top of pad elevation: 3032.0043  
Cut Slope: 33.33% 3,000:1 18.43°  
Fill Slope: 33.33% 3,000:1 18.43°  
Balance Tolerance (C.Y.): 0.00  
Cut Swell Factor: 1.00  
Fill Shrink Factor: 1.00  
Pad Earthwork Volumes  
Cut: 212,353.5 C.F., 7,864.95 C.Y.  
Fill: 212,353.5 C.F., 7,864.94 C.Y.  
Area: 198646.4 Sq.Ft., 4.560 Acres

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DATE: 04/18/17		
FILE: CO_CASEY_JONES_16_FED_COM_701H_702H_SITE		
DRAWN BY: GJU		
SHEET: 1 OF 2		

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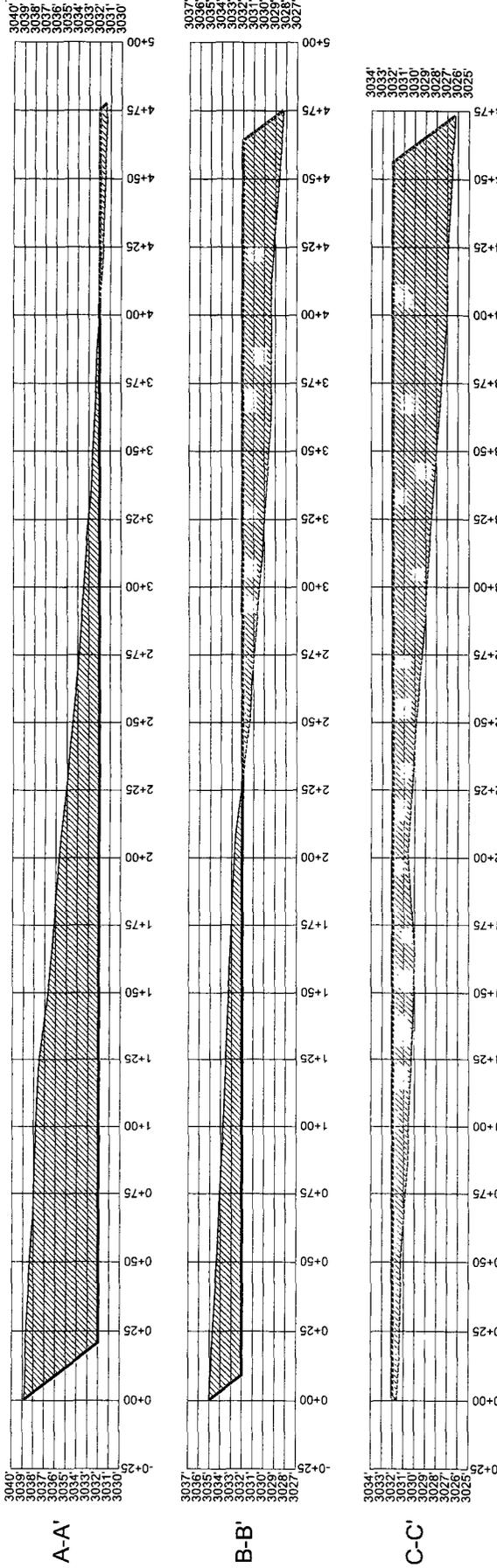


Michael Blake Brown, P.S. No. 18329  
APRIL 18, 2017

Field note description of even date accompanies this plat.



**EXHIBIT 6**  
SECTION 16, TOWNSHIP 26-S, RANGE 30-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



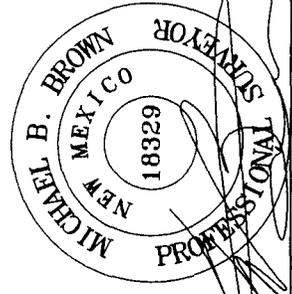
Horizontal Scale = 1:60  
Vertical Scale = 1:5

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	INT	DATE
DATE: 04/18/17		
FILE: CD_CASEY_JONES_16_FED_COM_701H_702H_SITE		
DRAWN BY: GJU		
SHEET: 2 OF 2		

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Michael Blake Brown, P.S. No. 18329  
APRIL 18, 2017

Field note description of even date accompanies this plat.

## 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:

Describe 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:

Describe 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:**

**Assigned injection well API number?**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

**Injection well name:**

**Injection well API number:**

## **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:**

**Bond Information**

**Federal/Indian APD:** FED

**BLM Bond number:** NM2308

**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:**