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Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM002748

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.
DATA FEDERAL
3H
327083

2. Name of Operator
EOG RESOURCES INCORPORATED

9. API Well No.
30 015 46701

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
1111 Bagby Sky Lobby2 Houston TX 77002	(713)651-7000	SHELF / ABO

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NENE / 1209 FNL / 654 FEL / LAT 32.85296 / LONG -103.9361159
At proposed prod. zone NWNW / 525 FNL / 100 FWL / LAT 32.8548217 / LONG -103.9508463

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 11 / T17S / R30E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
	EDDY	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
654 feet	1240	240

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
450 feet	4815 feet / 19048 feet	FED: NM2308

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3743 feet	07/01/2019	60 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Tina Huerta / Ph: (575)748-4168	01/11/2019
Title: Regulatory Specialist		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 01/29/2020
Title: Assistant Field Manager Lands & Minerals	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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 01/29/2020

KS 2-10-20

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**EOG RESOURCES INC**
LEASE NO.:	**NMNM002748**
WELL NAME & NO.:	**DATA FEDERAL 3H**
SURFACE HOLE FOOTAGE:	**1209'/N & 654'/E**
BOTTOM HOLE FOOTAGE	**525'/N & 100'/W**
LOCATION:	**Section 11, T.17 S., R.30 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

COA

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☐ Unit

A. Hydrogen Sulfide

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **400** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to

include the lead cement)

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Option 1

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2

Operator has proposed a DV tool if water flow is encountered, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. The minimum required fill of cement behind the **7 X 5-1/2** inch production casing is:

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

C. PRESSURE CONTROL

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

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

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

GENERAL REQUIREMENTS

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

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

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

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

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

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

a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
b. When the operator proposes to set surface casing with Spudder Rig
   - Notify the BLM when moving in and removing the Spudder Rig.
   - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.

- BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

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

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

A. CASING

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

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

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

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

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

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

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

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

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

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

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

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

   a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

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

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

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

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

   g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi.

The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

JJP01262020

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

Data Fed Com #1H #2H #3H
Bones Fed Com #4H #5H #6H
Lease Number NMLC 0029338B

Well Pad, Flowlines/Gas Lift Line, and Reroute Lease Road
EOG Resources Inc.

Data Fed Com #1H
Surface Hole Location: 1289' FNL & 651' FEL, Section 11, T. 17 S., R. 30 E.
Bottom Hole Location: 2100' FNL & 100' FWL, Section 11, T. 17 S., R. 30 E.

Data Fed Com #2H
Surface Hole Location: 1249' FNL & 653' FEL, Section 11, T. 17 S., R. 30 E.
Bottom Hole Location: 1312' FNL & 100' FWL, Section 11, T. 17 S., R. 30 E.

Data Fed Com #3H
Surface Hole Location: 1209' FNL & 654' FEL, Section 11, T. 17 S., R. 30 E.
Bottom Hole Location: 525' FNL & 100' FWL, Section 11, T. 17 S., R. 30 E.

Bones Fed Com #4H
Surface Hole Location: 1284' FNL & 501' FEL, Section 11, T. 17 S., R. 30 E.
Bottom Hole Location: 2100' FNL & 100' FWL, Section 11, T. 17 S., R. 30 E.

Bones Fed Com #5H
Surface Hole Location: 1244' FNL & 503' FEL, Section 11, T. 17 S., R. 30 E.
Bottom Hole Location: 1312' FNL & 100' FWL, Section 11, T. 17 S., R. 30 E.

Bones Fed Com #6H
Surface Hole Location: 1204' FNL & 504' FEL, Section 11, T. 17 S., R. 30 E.
Bottom Hole Location: 525' FNL & 100' FWL, Section 11, T. 17 S., R. 30 E.

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

Approval Date: 01/29/2020

Lesser Prairie-Chicken Timing Stipulations
Ground-level Abandoned Well Marker

☐ **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)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

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

CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

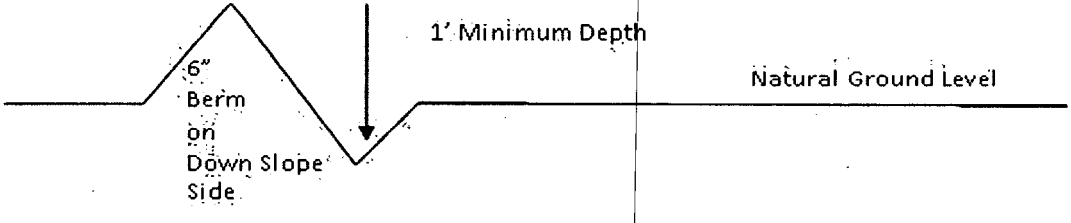
Ditching
Ditching shall be required on both sides of the road.

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

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

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

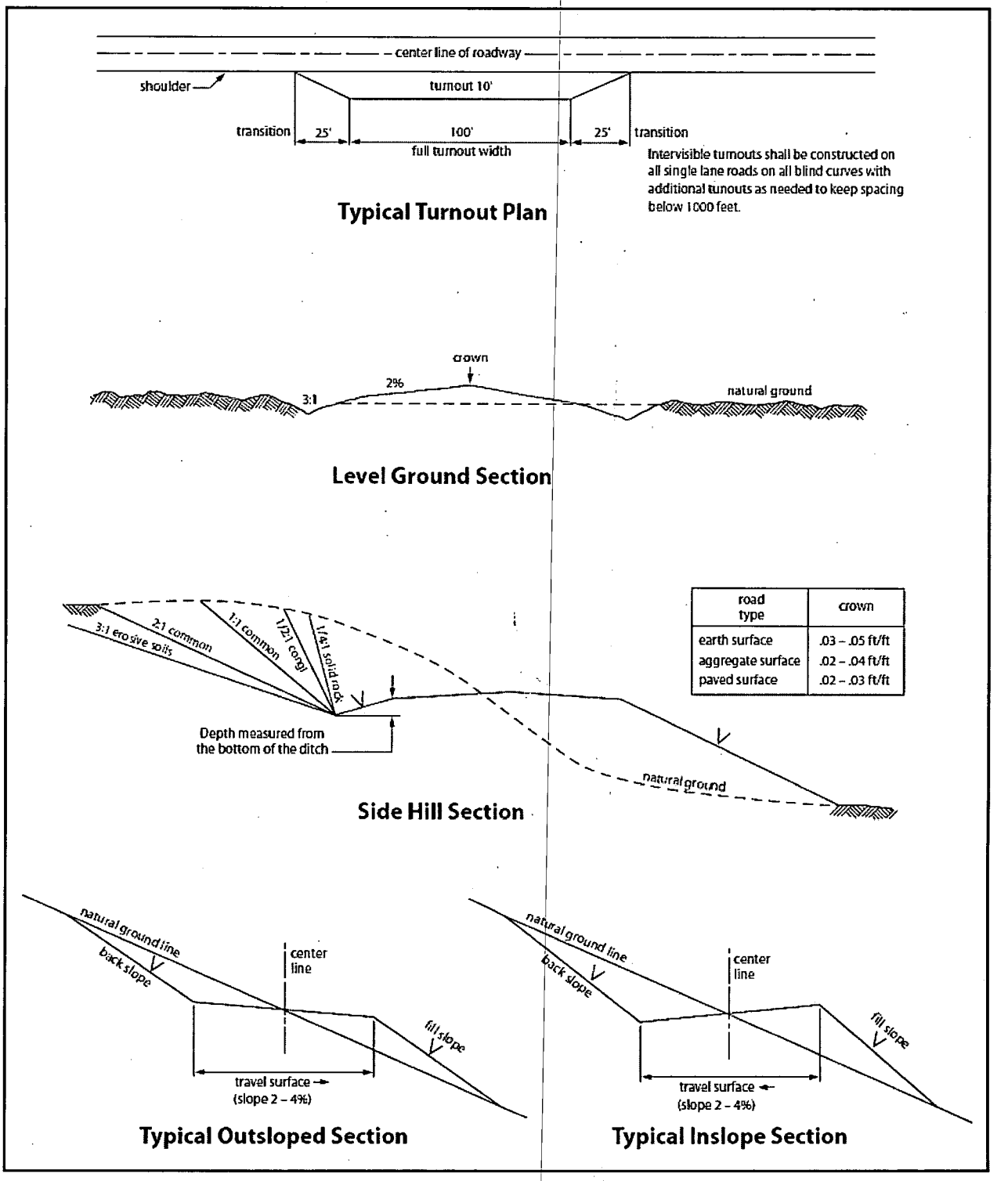


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VI. 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 **30** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

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

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

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

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

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

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

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

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

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

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

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

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

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

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

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) 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 activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.

(2) Earth-disturbing and earth-moving work.
(3) Blasting.
(4) Vandalism and sabotage.

c. Acts of God.

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

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

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the 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 the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

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

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

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

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

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

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

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

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

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

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

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

18. Special Stipulations:

a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted.

b. This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

VII. INTERIM RECLAMATION

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

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

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

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

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

VIII. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

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

*Pounds of pure live seed:

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

EOG RESOURCES, INC.
DATA FEDERAL NO. 3H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	436'
Tansill	1,292'
Yates	1,465'
Seven Rivers	1,720'
Queen	2,329'
Grayburg	2,737'
San Andres	3,052'
Glorieta	4,492'
Yeso	4,599'
TD	9,048'

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

Rustler	436'	Fresh Water, Oil
Grayburg	2,737'	Oil
San Andres	3,052'	Oil
Glorieta	4,492'	Oil
Yeso	4,599'	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 13.375" casing at 400' and circulating cement back to surface.

4. CASING PROGRAM - NEW

Hole & Casing String:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
17.5"	0'-400'	13.375"	48#	H-40/ J-55	STC	1.125	1.25	1.60
12.25"	0' –100'	9.625	40#	J-55	LTC	1.125	1.25	1.60
12.25"	100' – 3,300'	9.625	36#	J-55	LTC	1.125	1.25	1.60
12.25"	3,300' – 3,500'	9.625	40#	J-55	LTC	1.125	1.25	1.60
8.75"	0' – 5,082'	7"	29#	L-80	BTC	1.125	1.25	1.60
8.75"	5,082'-9,048'	5 ½"	17#	L-80	BTC	1.125	1.25	1.60

Cementing Program:

Note: Cement volumes based on bit size plus at least 100% excess on surface, 100% excess in Contingency Intermediate and 35% excess in production string.

Cement Design:

Depth	No. Sacks	Wt. lb/gal	Yld Ft^3/ft	Volume Ft^3	Slurry Description
400'	415	14.8	1.34	95	Tail: Class 'C' + 2%PF1(Calcium Chloride) (100% excess)
3500'*	1075	12.8	1.79	343	Lead: 35:65 Poz C + .02 gal/sk Anti Foam + 1% Extender + .13 lb/sk Lost Circulation (TOC @ Surface)
	200	14.8	1.33	47	Tail: Class C + 0.13% Anti Foam
9048'	175	11.9	2.47	77	Lead: Class 50/50 PozC + 5%PF44(BWOW)(Salt) + 10% PF20(Bentonite Gel) +.2%PF153(Anti Settling Agent(+ 3#/sk OF42(Kolseal) + 0.125#/sk PF29 (celloflake) + 0.4#/sk PF45 (Defoamer) (TOC @ 500' into previous casing string) 35% Excess
	915	13	1.48	241	Tail: Class PVL + 1.3% PF44(BWOW)(Salt) + 5% PF174 (Expanding Cement) + 0.5% PF606 (Fluid Loss) + 0.1% PF153 (Anti Settling Agent) + 0.4#/sk PF45 (Defoamer) 35% Excess

*Cement will be done in 2 stages if water flow is encountered. DV Tool placement will be placed above water flow depth. Cement volumes will be adjusted accordingly.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

A variance is requested to use a co-flex line between the BOP and choke manifold, dependent on rig selection (instead of using a steel line). Certification and specs are attached.

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double rams with blind rams & pipe rams preventer (3,000 psi WP) and an annular preventer (3,000-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 & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 3,000/ 250 psig and the annular preventer to 1,500/ 250 psig. The surface casing will be tested to 1200 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 surface 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.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 400'	Fresh Water	8.6-8.8	28-32	N/c
400' – 3,500' Vertical	Brine	9.2-10.2	32-34	N/c
3,500' – 9,048' Vertical/Curve/Lateral	Cut Brine	8.8-9.4	30-34	N/c

The highest mud weight needed to balance formation is expected to be 10.2 ppg. In order to maintain hole stability, mud weights up to 10.2 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.

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_2S 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–Directional surveys will be run in open hole during drilling phase of operations.

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

The estimated bottom-hole temperature (BHT) at TD is 110 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 2554 psig (based on 10.2 ppg MW). Hydrogen sulfide has been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from spud to surface 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. After WOC 8 hours or 500 psi compressive strength (whichever is greater), the Surface Rig will move off so the wellhead can be installed. A welder will cut the casing to the proper height and weld on the wellhead (both "A" and "B" sections). The weld will be tested to 1000 psi. All valves will be closed and a wellhead cap will be installed (diagram attached). 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.

11. WELLHEAD:

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 3/8" BOP/BOPE system with a minimum working pressure of 3,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3,000 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 3,000 psi.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Stream Flo HES 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.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

eog resources

EOG Resources - Artesia

Eddy County (NAD83)
Data
Data Federal #3H

Lateral

Plan: Plan #1

Standard Planning Report

04 January, 2019

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well Data Federal #3H
Company:	EOG Resources - Artesia	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site:	Data	**North Reference:**	Grid
Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Project	Eddy County (NAD83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Data				
Site Position:		**Northing:**	674,190.00 usft	**Latitude:**	32° 51' 9.869 N
From:	Map	**Easting:**	663,320.00 usft	**Longitude:**	103° 56' 9.986 W
Position Uncertainty:	0.000 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.22 °

Well	Data Federal #3H					
Well Position	**+N/-S**	80.000 usft	**Northing:**	674,270.00 usft	**Latitude:**	32° 51' 10.661 N
	+E/-W	-3.000 usft	**Easting:**	663,317.00 usft	**Longitude:**	103° 56' 10.018 W
Position Uncertainty		0.000 usft	**Wellhead Elevation:**	3,761.000 usft	**Ground Level:**	3,743.000 usft

Wellbore	Lateral			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	11/26/2018	7.02	60.56	48,120.06765272

Design	Plan #1			
Audit Notes:				
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.000
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.000	0.000	0.000	278.297

Plan Survey Tool Program **Date** 1/4/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.000	9,047.995	Plan #1 (Lateral)	MWD OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.000	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	
400.000	0.00	0.000	400.000	0.000	0.000	0.00	0.00	0.00	0.00	
2,901.000	0.00	0.000	2,901.000	0.000	0.000	0.00	0.00	0.00	0.00	
4,392.485	40.00	342.400	4,274.248	476.425	-151.131	2.68	2.68	0.00	342.40	
5,007.091	60.00	269.720	4,698.536	680.340	-506.493	9.23	3.25	-11.83	-98.52	
5,082.091	60.00	269.720	4,736.036	680.022	-571.444	0.00	0.00	0.00	0.00	
5,330.165	89.77	269.710	4,800.000	678.842	-808.247	12.00	12.00	0.00	-0.02	
9,047.995	89.77	269.710	4,815.000	660.000	-4,526.000	0.00	0.00	0.00	0.00	[DF#3H]BHL

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well Data Federal #3H
Company:	EOG Resources - Artesia	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site:	Data	**North Reference:**	Grid
Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00
100.000	0.00	0.000	100.000	0.000	0.000	0.000	0.00	0.00	0.00
200.000	0.00	0.000	200.000	0.000	0.000	0.000	0.00	0.00	0.00
300.000	0.00	0.000	300.000	0.000	0.000	0.000	0.00	0.00	0.00
400.000	0.00	0.000	400.000	0.000	0.000	0.000	0.00	0.00	0.00
500.000	0.00	0.000	500.000	0.000	0.000	0.000	0.00	0.00	0.00
600.000	0.00	0.000	600.000	0.000	0.000	0.000	0.00	0.00	0.00
700.000	0.00	0.000	700.000	0.000	0.000	0.000	0.00	0.00	0.00
800.000	0.00	0.000	800.000	0.000	0.000	0.000	0.00	0.00	0.00
900.000	0.00	0.000	900.000	0.000	0.000	0.000	0.00	0.00	0.00
1,000.000	0.00	0.000	1,000.000	0.000	0.000	0.000	0.00	0.00	0.00
1,100.000	0.00	0.000	1,100.000	0.000	0.000	0.000	0.00	0.00	0.00
1,200.000	0.00	0.000	1,200.000	0.000	0.000	0.000	0.00	0.00	0.00
1,300.000	0.00	0.000	1,300.000	0.000	0.000	0.000	0.00	0.00	0.00
1,400.000	0.00	0.000	1,400.000	0.000	0.000	0.000	0.00	0.00	0.00
1,500.000	0.00	0.000	1,500.000	0.000	0.000	0.000	0.00	0.00	0.00
1,600.000	0.00	0.000	1,600.000	0.000	0.000	0.000	0.00	0.00	0.00
1,700.000	0.00	0.000	1,700.000	0.000	0.000	0.000	0.00	0.00	0.00
1,800.000	0.00	0.000	1,800.000	0.000	0.000	0.000	0.00	0.00	0.00
1,900.000	0.00	0.000	1,900.000	0.000	0.000	0.000	0.00	0.00	0.00
2,000.000	0.00	0.000	2,000.000	0.000	0.000	0.000	0.00	0.00	0.00
2,100.000	0.00	0.000	2,100.000	0.000	0.000	0.000	0.00	0.00	0.00
2,200.000	0.00	0.000	2,200.000	0.000	0.000	0.000	0.00	0.00	0.00
2,300.000	0.00	0.000	2,300.000	0.000	0.000	0.000	0.00	0.00	0.00
2,400.000	0.00	0.000	2,400.000	0.000	0.000	0.000	0.00	0.00	0.00
2,500.000	0.00	0.000	2,500.000	0.000	0.000	0.000	0.00	0.00	0.00
2,600.000	0.00	0.000	2,600.000	0.000	0.000	0.000	0.00	0.00	0.00
2,700.000	0.00	0.000	2,700.000	0.000	0.000	0.000	0.00	0.00	0.00
2,800.000	0.00	0.000	2,800.000	0.000	0.000	0.000	0.00	0.00	0.00
2,901.000	0.00	0.000	2,901.000	0.000	0.000	0.000	0.00	0.00	0.00
KOP 2.68°/100' BR									
3,000.000	2.66	342.400	2,999.964	2.186	-0.693	1.002	2.68	2.68	0.00
3,100.000	5.34	342.400	3,099.712	8.828	-2.800	4.045	2.68	2.68	0.00
3,200.000	8.02	342.400	3,199.025	19.911	-6.316	9.123	2.68	2.68	0.00
3,300.000	10.70	342.400	3,297.684	35.412	-11.233	16.226	2.68	2.68	0.00
3,400.000	13.38	342.400	3,395.475	55.296	-17.541	25.336	2.68	2.68	0.00
3,500.000	16.06	342.400	3,492.182	79.520	-25.225	36.436	2.68	2.68	0.00
3,600.000	18.75	342.400	3,587.595	108.030	-34.269	49.499	2.68	2.68	0.00
3,700.000	21.43	342.400	3,681.503	140.765	-44.653	64.498	2.68	2.68	0.00
3,800.000	24.11	342.400	3,773.702	177.652	-56.354	81.399	2.68	2.68	0.00
3,900.000	26.79	342.400	3,863.989	218.611	-69.347	100.167	2.68	2.68	0.00
4,000.000	29.47	342.400	3,952.166	263.551	-83.603	120.758	2.68	2.68	0.00
4,100.000	32.16	342.400	4,038.041	312.376	-99.091	143.130	2.68	2.68	0.00
4,200.000	34.84	342.400	4,121.425	364.977	-115.777	167.231	2.68	2.68	0.00
4,300.000	37.52	342.400	4,202.136	421.239	-133.625	193.010	2.68	2.68	0.00
4,392.485	40.00	342.400	4,274.248	476.425	-151.131	218.296	2.68	2.68	0.00
BEGIN 9°/100 BR									
4,400.000	39.90	341.331	4,280.009	481.011	-152.633	220.444	9.23	-1.30	-14.23
4,450.000	39.50	334.132	4,318.498	510.530	-164.712	236.656	9.23	-0.79	-14.40
4,500.000	39.56	326.880	4,357.083	538.189	-180.358	256.130	9.23	0.10	-14.50
4,550.000	40.05	319.711	4,395.514	563.809	-199.471	278.740	9.23	1.00	-14.34
4,600.000	40.98	312.752	4,433.543	587.223	-221.926	304.338	9.23	1.86	-13.92
4,650.000	42.31	306.100	4,470.923	608.280	-247.577	332.760	9.23	2.66	-13.30

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well Data Federal #3H
Company:	EOG Resources - Artesia	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site:	Data	**North Reference:**	Grid
Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.000	44.01	299.822	4,507.411	626.844	-276.259	363.820	9.23	3.39	-12.56
4,750.000	46.02	293.951	4,542.771	642.793	-307.786	397.318	9.23	4.03	-11.74
4,800.000	48.32	288.491	4,576.774	656.026	-341.952	433.037	9.23	4.59	-10.92
4,850.000	50.85	283.426	4,609.199	666.455	-378.538	470.744	9.23	5.07	-10.13
4,900.000	53.59	278.726	4,639.837	674.013	-417.305	510.196	9.23	5.48	-9.40
4,950.000	56.50	274.356	4,668.488	678.651	-458.002	551.137	9.23	5.82	-8.74
5,000.000	59.56	270.277	4,694.966	680.340	-500.365	593.300	9.23	6.11	-8.16
5,007.091	60.00	269.720	4,698.536	680.340	-506.493	599.364	9.23	6.25	-7.86
START 75' TANGENT									
5,082.091	60.00	269.720	4,736.036	680.022	-571.444	663.589	0.00	0.00	0.00
END 60° TANGENT/BEGIN 12°/100' BR									
5,100.000	62.15	269.719	4,744.697	679.946	-587.118	679.088	12.00	12.00	0.00
5,125.000	65.15	269.718	4,755.793	679.836	-609.517	701.237	12.00	12.00	0.00
5,150.000	68.15	269.717	4,765.700	679.722	-632.466	723.930	12.00	12.00	0.00
5,175.000	71.15	269.716	4,774.394	679.606	-655.903	747.104	12.00	12.00	0.00
5,200.000	74.15	269.715	4,781.849	679.488	-679.762	770.697	12.00	12.00	0.00
5,225.000	77.15	269.714	4,788.044	679.367	-703.979	794.643	12.00	12.00	0.00
5,250.000	80.15	269.713	4,792.964	679.244	-728.487	818.876	12.00	12.00	0.00
5,275.000	83.15	269.712	4,796.595	679.120	-753.219	843.332	12.00	12.00	0.00
5,289.041	84.83	269.711	4,798.064	679.050	-767.182	857.138	12.00	12.00	0.00
[DF#6H]JUMP 5289' MD (4798' TVD)									
5,300.000	86.15	269.711	4,798.926	678.995	-778.107	867.941	12.00	12.00	0.00
5,325.000	89.15	269.710	4,799.951	678.868	-803.083	892.637	12.00	12.00	0.00
5,330.165	89.77	269.710	4,800.000	678.842	-808.247	897.744	12.00	12.00	0.00
[DF#6H]EOC 5330' MD (4800' TVD)									
5,400.000	89.77	269.710	4,800.282	678.488	-878.081	966.795	0.00	0.00	0.00
5,500.000	89.77	269.710	4,800.685	677.981	-978.079	1,065.674	0.00	0.00	0.00
5,600.000	89.77	269.710	4,801.089	677.475	-1,078.077	1,164.552	0.00	0.00	0.00
5,700.000	89.77	269.710	4,801.492	676.968	-1,178.074	1,263.430	0.00	0.00	0.00
5,800.000	89.77	269.710	4,801.896	676.461	-1,278.072	1,362.308	0.00	0.00	0.00
5,900.000	89.77	269.710	4,802.299	675.954	-1,378.070	1,461.187	0.00	0.00	0.00
6,000.000	89.77	269.710	4,802.703	675.447	-1,478.068	1,560.065	0.00	0.00	0.00
6,100.000	89.77	269.710	4,803.106	674.941	-1,578.066	1,658.943	0.00	0.00	0.00
6,200.000	89.77	269.710	4,803.509	674.434	-1,678.064	1,757.821	0.00	0.00	0.00
6,300.000	89.77	269.710	4,803.913	673.927	-1,778.062	1,856.699	0.00	0.00	0.00
6,400.000	89.77	269.710	4,804.316	673.420	-1,878.060	1,955.578	0.00	0.00	0.00
6,500.000	89.77	269.710	4,804.720	672.913	-1,978.058	2,054.456	0.00	0.00	0.00
6,600.000	89.77	269.710	4,805.123	672.407	-2,078.055	2,153.334	0.00	0.00	0.00
6,700.000	89.77	269.710	4,805.527	671.900	-2,178.053	2,252.212	0.00	0.00	0.00
6,800.000	89.77	269.710	4,805.930	671.393	-2,278.051	2,351.090	0.00	0.00	0.00
6,900.000	89.77	269.710	4,806.334	670.886	-2,378.049	2,449.969	0.00	0.00	0.00
7,000.000	89.77	269.710	4,806.737	670.379	-2,478.047	2,548.847	0.00	0.00	0.00
7,100.000	89.77	269.710	4,807.141	669.873	-2,578.045	2,647.725	0.00	0.00	0.00
7,200.000	89.77	269.710	4,807.544	669.366	-2,678.043	2,746.603	0.00	0.00	0.00
7,300.000	89.77	269.710	4,807.947	668.859	-2,778.041	2,845.482	0.00	0.00	0.00
7,400.000	89.77	269.710	4,808.351	668.352	-2,878.039	2,944.360	0.00	0.00	0.00
7,500.000	89.77	269.710	4,808.754	667.845	-2,978.037	3,043.238	0.00	0.00	0.00
7,600.000	89.77	269.710	4,809.158	667.339	-3,078.034	3,142.116	0.00	0.00	0.00
7,700.000	89.77	269.710	4,809.561	666.832	-3,178.032	3,240.994	0.00	0.00	0.00
7,800.000	89.77	269.710	4,809.965	666.325	-3,278.030	3,339.873	0.00	0.00	0.00
7,900.000	89.77	269.710	4,810.368	665.818	-3,378.028	3,438.751	0.00	0.00	0.00
8,000.000	89.77	269.710	4,810.772	665.311	-3,478.026	3,537.629	0.00	0.00	0.00
8,100.000	89.77	269.710	4,811.175	664.804	-3,578.024	3,636.507	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well Data Federal #3H
Company:	EOG Resources - Artesia	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site:	Data	**North Reference:**	Grid
Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.000	89.77	269.710	4,811.579	664.298	-3,678.022	3,735.386	0.00	0.00	0.00
8,300.000	89.77	269.710	4,811.982	663.791	-3,778.020	3,834.264	0.00	0.00	0.00
8,400.000	89.77	269.710	4,812.385	663.284	-3,878.018	3,933.142	0.00	0.00	0.00
8,500.000	89.77	269.710	4,812.789	662.777	-3,978.016	4,032.020	0.00	0.00	0.00
8,600.000	89.77	269.710	4,813.192	662.270	-4,078.013	4,130.898	0.00	0.00	0.00
8,700.000	89.77	269.710	4,813.596	661.764	-4,178.011	4,229.777	0.00	0.00	0.00
8,800.000	89.77	269.710	4,813.999	661.257	-4,278.009	4,328.655	0.00	0.00	0.00
8,900.000	89.77	269.710	4,814.403	660.750	-4,378.007	4,427.533	0.00	0.00	0.00
9,000.000	89.77	269.710	4,814.806	660.243	-4,478.005	4,526.411	0.00	0.00	0.00
9,047.995	89.77	269.710	4,815.000	660.000	-4,526.000	4,573.869	0.00	0.00	0.00
[DF#6H]BHL 9048' MD (4815' TVD)									

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
[DF#3H]UMP1	0.00	0.000	4,800.000	679.000	-767.000	674,949.00	662,550.00	32° 51' 17.408 N	103° 56' 18.980 W
- plan misses target center by 1.945usft at 5289.041usft MD (4798.065 TVD, 679.050 N, -767.182 E)									
- Point									
[DF#3H]BHL	0.00	0.000	4,815.000	660.000	-4,526.000	674,930.00	658,791.00	32° 51' 17.357 N	103° 57' 3.048 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,901.000	2,901.000	0.000	0.000	KOP 2.68°/100' BR
4,392.485	4,274.248	476.425	-151.131	BEGIN 9°/100 BR
5,007.091	4,698.536	680.340	-506.493	START 75' TANGENT
5,082.091	4,736.036	680.022	-571.444	END 60° TANGENT/BEGIN 12°/100' BR
5,289.041	4,798.064	679.050	-767.182	[DF#6H]UMP 5289' MD (4798' TVD)
5,330.165	4,800.000	678.842	-808.247	[DF#6H]EOC 5330' MD (4800' TVD)
9,047.995	4,815.000	660.000	-4,526.000	[DF#6H]BHL 9048' MD (4815' TVD)

Project: Eddy County (NAD83)
Site: Data
Well: Data Federal #3H
Wellbore: Lateral
Design: Plan #1
Ground Elevation 3743.000
Northing 674270.00
Easting 663317.00
KB @ 3761.000usft (Planning Rig)

PROJECT DETAILS: Eddy County (NAD83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

eog resources

Azimuths to Grid North
True North: -0.22°
Magnetic North: 6.80°

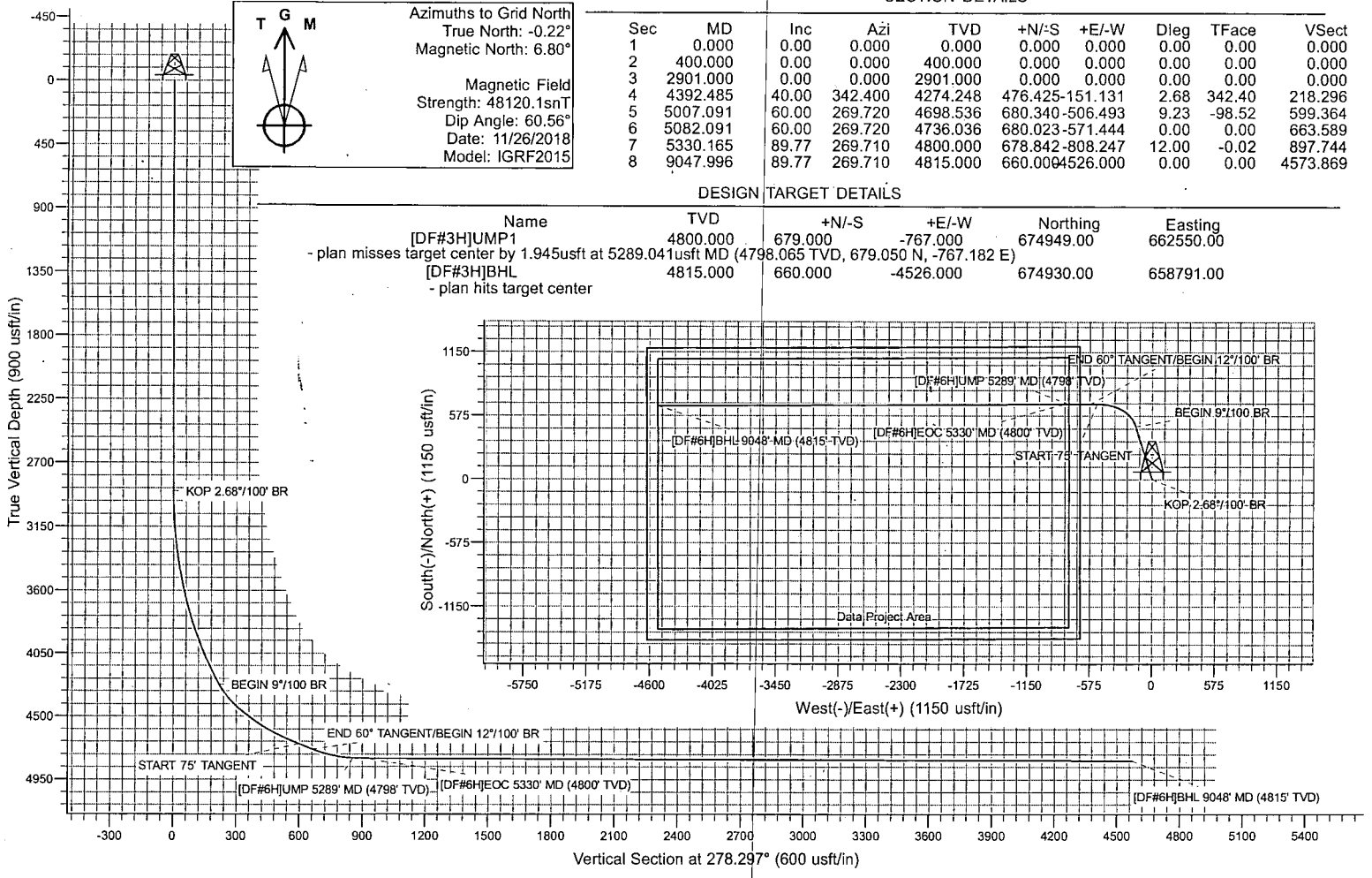
Magnetic Field
Strength: 48120.1snT
Dip Angle: 60.56°
Date: 11/26/2018
Model: IGRF2015

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.000	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.000
2	400.000	0.00	0.000	400.000	0.000	0.000	0.00	0.00	0.000
3	2901.000	0.00	0.000	2901.000	0.000	0.000	0.00	0.00	0.000
4	4392.485	40.00	342.400	4274.248	476.425	-151.131	2.68	342.40	218.296
5	5007.091	60.00	269.720	4698.536	680.340	-506.493	9.23	-98.52	599.364
6	5082.091	60.00	269.720	4736.036	680.023	-571.444	0.00	0.00	663.589
7	5330.165	89.77	269.710	4800.000	678.842	-808.247	12.00	-0.02	897.744
8	9047.996	89.77	269.710	4815.000	660.000	-4526.000	0.00	0.00	4573.869

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
[DF#3H]UMP1	4800.000	679.000	-767.000	674949.00	662550.00
- plan misses target center by 1.945usft at 5289.041usft MD (4798.065 TVD, 679.050 N, -767.182 E)					
[DF#3H]BHL	4815.000	660.000	-4526.000	674930.00	658791.00
- plan hits target center					



eog resources

EOG Resources - Artesia

Eddy County (NAD83)
Data
Data Federal #3H

Lateral
Plan #1

Anticollision Report

04 January, 2019

Company:	EOG Resources - Artesia	**Local Co-ordinate Reference:**	Well Data Federal #3H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Reference Site:	Data	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site Error:	0.000 usft	**North Reference:**	Grid
Reference Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.000 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000.14
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.980 usft	**Error Surface:**	Combined Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 1/4/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.000	9,047.995	Plan #1 (Lateral)	MWD	OWSG MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Bones						
Bones Federal #6H - Lateral - Plan #1	2,901.000	2,907.000	150.120	135.697	10.408	CC, ES
Bones Federal #6H - Lateral - Plan #1	9,047.995	9,606.710	373.995	321.791	7.164	SF

Offset Design Bones - Bones Federal #6H - Lateral - Plan #1 — Offset Site Error: 0.000 usft

Survey Program: 0-MWD — Offset Well Error: 0.000 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.000	0.000	6.000	6.000	0.000	0.009	87.71	6.000	150.000	150.120				
100.000	100.000	106.000	106.000	0.147	0.168	87.71	6.000	150.000	150.120	149.896	0.22	671.442	
200.000	200.000	206.000	206.000	0.505	0.527	87.71	6.000	150.000	150.120	149.390	0.73	205.595	
300.000	300.000	306.000	306.000	0.864	0.885	87.71	6.000	150.000	150.120	148.883	1.24	121.352	
400.000	400.000	406.000	406.000	1.222	1.244	87.71	6.000	150.000	150.120	148.376	1.74	86.078	
500.000	500.000	506.000	506.000	1.581	1.602	87.71	6.000	150.000	150.120	147.869	2.25	66.692	
600.000	600.000	606.000	606.000	1.939	1.961	87.71	6.000	150.000	150.120	147.362	2.76	54.433	
700.000	700.000	706.000	706.000	2.298	2.319	87.71	6.000	150.000	150.120	146.855	3.26	45.981	
800.000	800.000	806.000	806.000	2.656	2.678	87.71	6.000	150.000	150.120	146.348	3.77	39.801	
900.000	900.000	906.000	906.000	3.015	3.036	87.71	6.000	150.000	150.120	145.841	4.28	35.085	
1,000.000	1,000.000	1,006.000	1,006.000	3.373	3.395	87.71	6.000	150.000	150.120	145.334	4.79	31.369	
1,100.000	1,100.000	1,106.000	1,106.000	3.732	3.753	87.71	6.000	150.000	150.120	144.827	5.29	28.364	
1,200.000	1,200.000	1,206.000	1,206.000	4.090	4.112	87.71	6.000	150.000	150.120	144.320	5.80	25.885	
1,300.000	1,300.000	1,306.000	1,306.000	4.449	4.470	87.71	6.000	150.000	150.120	143.813	6.31	23.804	
1,400.000	1,400.000	1,406.000	1,406.000	4.807	4.829	87.71	6.000	150.000	150.120	143.306	6.81	22.033	
1,500.000	1,500.000	1,506.000	1,506.000	5.166	5.187	87.71	6.000	150.000	150.120	142.799	7.32	20.507	
1,600.000	1,600.000	1,606.000	1,606.000	5.524	5.546	87.71	6.000	150.000	150.120	142.293	7.83	19.179	
1,700.000	1,700.000	1,706.000	1,706.000	5.883	5.904	87.71	6.000	150.000	150.120	141.786	8.33	18.012	
1,800.000	1,800.000	1,806.000	1,806.000	6.241	6.262	87.71	6.000	150.000	150.120	141.279	8.84	16.979	
1,900.000	1,900.000	1,906.000	1,906.000	6.599	6.621	87.71	6.000	150.000	150.120	140.772	9.35	16.059	
2,000.000	2,000.000	2,006.000	2,006.000	6.958	6.979	87.71	6.000	150.000	150.120	140.265	9.86	15.233	
2,100.000	2,100.000	2,106.000	2,106.000	7.316	7.338	87.71	6.000	150.000	150.120	139.758	10.36	14.487	
2,200.000	2,200.000	2,206.000	2,206.000	7.675	7.696	87.71	6.000	150.000	150.120	139.251	10.87	13.812	
2,300.000	2,300.000	2,306.000	2,306.000	8.033	8.055	87.71	6.000	150.000	150.120	138.744	11.38	13.196	
2,400.000	2,400.000	2,406.000	2,406.000	8.392	8.413	87.71	6.000	150.000	150.120	138.237	11.88	12.633	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EOG Resources - Artesia	**Local Co-ordinate Reference:**	Well Data Federal #3H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Reference Site:	Data	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site Error:	0.000 usft	**North Reference:**	Grid
Reference Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.000 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000.14
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Bones - Bones Federal #6H - Lateral - Plan #1 — Offset Site Error: 0.000 usft

Survey Program: 0-MWD — Offset Well Error: 0.000 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,500.000	2,500.000	2,506.000	2,506.000	8.750	8.772	87.71	6.000	150.000	150.120	137.730	12.39	12.116	
2,600.000	2,600.000	2,606.000	2,606.000	9.109	9.130	87.71	6.000	150.000	150.120	137.223	12.90	11.640	
2,700.000	2,700.000	2,706.000	2,706.000	9.467	9.489	87.71	6.000	150.000	150.120	136.716	13.40	11.200	
2,800.000	2,800.000	2,806.000	2,806.000	9.826	9.847	87.71	6.000	150.000	150.120	136.209	13.91	10.792	
2,901.000	2,901.000	2,907.000	2,907.000	10.188	10.209	87.71	6.000	150.000	150.120	135.697	14.42	10.408	CC, ES
3,000.000	2,999.964	3,005.964	3,005.964	10.542	10.564	106.13	6.000	150.000	150.742	135.818	14.92	10.101	
3,100.000	3,099.712	3,105.712	3,105.712	10.900	10.922	108.58	6.000	150.000	152.827	137.398	15.43	9.906	
3,200.000	3,199.025	3,205.025	3,205.025	11.257	11.278	112.49	6.000	150.000	156.934	141.003	15.93	9.851	
3,300.000	3,297.684	3,303.684	3,303.684	11.616	11.631	117.52	6.000	150.000	163.894	147.460	16.43	9.973	
3,400.000	3,395.475	3,401.475	3,401.475	11.981	11.982	123.27	6.000	150.000	174.643	157.707	16.94	10.312	
3,500.000	3,492.182	3,504.021	3,503.989	12.358	12.349	129.17	7.934	149.323	188.747	171.302	17.44	10.820	
3,600.000	3,587.595	3,608.901	3,608.571	12.752	12.724	134.18	15.230	146.768	203.987	186.050	17.94	11.373	
3,700.000	3,681.503	3,715.329	3,714.100	13.169	13.103	138.39	28.160	142.240	219.809	201.408	18.40	11.946	
3,800.000	3,773.702	3,823.302	3,820.211	13.614	13.490	141.94	46.926	135.668	235.803	216.973	18.83	12.523	
3,900.000	3,863.989	3,932.804	3,926.504	14.095	13.892	144.95	71.706	126.990	251.641	232.421	19.22	13.093	
4,000.000	3,952.166	4,043.812	4,032.542	14.617	14.316	147.52	102.653	116.153	267.063	247.494	19.57	13.647	
4,100.000	4,038.041	4,156.287	4,137.855	15.188	14.771	149.73	139.884	103.114	281.854	261.978	19.88	14.181	
4,200.000	4,121.425	4,270.180	4,241.942	15.812	15.267	151.64	183.480	87.847	295.835	275.693	20.14	14.688	
4,300.000	4,202.136	4,385.426	4,344.273	16.496	15.815	153.31	233.473	70.340	308.854	288.486	20.37	15.164	
4,392.485	4,274.248	4,493.146	4,436.873	17.186	16.381	154.66	285.390	52.159	319.926	299.382	20.54	15.573	
4,400.000	4,280.009	4,501.949	4,444.300	17.245	16.428	155.66	289.849	50.597	320.783	300.225	20.56	15.604	
4,450.000	4,318.498	4,560.755	4,493.350	17.644	16.773	161.83	320.460	39.878	326.335	305.669	20.67	15.791	
4,500.000	4,357.083	4,619.584	4,541.398	18.058	17.129	167.11	352.495	28.659	331.612	310.800	20.81	15.934	
4,550.000	4,395.514	4,677.885	4,587.960	18.485	17.506	171.43	385.605	17.064	336.758	315.741	21.02	16.023	
4,600.000	4,433.543	4,735.112	4,632.602	18.923	17.900	174.77	419.394	5.231	342.109	320.807	21.30	16.060	
4,650.000	4,470.923	4,790.739	4,674.949	19.369	18.297	177.21	453.435	-6.690	348.164	326.478	21.69	16.055	
4,700.000	4,507.411	4,847.295	4,717.156	19.825	18.727	178.75	488.688	-19.864	355.440	333.322	22.12	16.070	
4,750.000	4,542.771	4,908.143	4,762.740	20.289	19.219	179.83	524.353	-38.566	363.718	341.271	22.45	16.203	
4,800.000	4,576.774	4,972.186	4,810.660	20.764	19.761	-179.36	558.623	-63.609	372.685	350.028	22.66	16.449	
4,850.000	4,609.199	5,039.698	4,860.587	21.250	20.355	-178.78	590.749	-95.684	382.037	359.322	22.71	16.819	
4,900.000	4,639.837	5,110.910	4,911.986	21.750	21.005	-178.39	619.795	-135.438	391.438	368.860	22.58	17.337	
4,950.000	4,668.488	5,185.969	4,964.062	22.266	21.713	-178.10	644.638	-183.378	400.535	378.323	22.21	18.032	
5,000.000	4,694.966	5,264.889	5,015.714	22.800	22.484	-177.86	664.001	-239.748	408.967	387.382	21.59	18.946	
5,007.091	4,698.536	5,276.387	5,022.927	22.881	22.599	-177.82	666.225	-248.422	410.089	388.613	21.48	19.095	
5,082.091	4,736.036	5,403.024	5,096.145	23.743	23.918	-179.90	680.401	-350.511	417.379	397.411	19.97	20.902	
5,100.000	4,744.697	5,434.046	5,112.147	23.968	24.257	-180.00	680.952	-377.078	418.047	398.505	19.54	21.393	
5,125.000	4,755.793	5,460.169	5,125.211	24.300	24.549	-180.00	680.846	-399.699	419.640	400.006	19.63	21.373	
5,150.000	4,765.700	5,484.998	5,137.626	24.653	24.836	-180.00	680.741	-421.202	422.534	402.759	19.78	21.367	
5,175.000	4,774.394	5,509.642	5,149.948	25.027	25.130	-180.00	680.636	-442.543	426.724	406.808	19.92	21.426	
5,200.000	4,781.849	5,729.611	5,213.920	25.421	28.554	-180.00	679.601	-650.975	427.043	413.311	13.73	31.098	
5,225.000	4,788.044	5,784.832	5,214.893	25.834	29.600	-180.00	679.322	-706.171	420.854	407.367	13.49	31.203	
5,250.000	4,792.964	5,809.314	5,214.765	26.265	30.081	-180.00	679.199	-730.652	415.807	402.140	13.67	30.426	
5,275.000	4,796.595	5,834.027	5,214.637	26.713	30.582	-179.99	679.074	-755.364	412.047	398.196	13.85	29.749	
5,300.000	4,798.926	5,858.903	5,214.507	27.174	31.091	-179.99	678.948	-780.240	409.587	395.548	14.04	29.176	
5,325.000	4,799.951	5,883.873	5,214.377	27.648	31.606	-179.99	678.821	-805.209	408.431	394.203	14.23	28.706	
5,330.165	4,800.000	5,889.038	5,214.350	27.747	31.714	-179.99	678.795	-810.374	408.356	394.088	14.27	28.621	
5,400.000	4,800.282	5,958.870	5,213.986	29.136	33.225	-180.00	678.442	-880.204	407.710	392.892	14.82	27.514	
5,500.000	4,800.685	6,058.866	5,213.466	31.267	35.489	-180.00	677.936	-980.197	406.786	391.147	15.64	26.011	
5,600.000	4,801.089	6,158.861	5,212.945	33.536	37.858	-180.00	677.430	-1,080.190	405.862	389.369	16.49	24.608	
5,700.000	4,801.492	6,258.857	5,212.424	35.916	40.313	-180.00	676.925	-1,180.183	404.938	387.562	17.38	23.304	
5,800.000	4,801.896	6,358.853	5,211.903	38.386	42.840	-180.00	676.419	-1,280.176	404.013	385.729	18.28	22.097	
5,900.000	4,802.299	6,458.849	5,211.383	40.928	45.425	-180.00	675.913	-1,380.169	403.089	383.876	19.21	20.980	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EOG Resources - Artesia	**Local Co-ordinate Reference:**	Well Data Federal #3H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Reference Site:	Data	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site Error:	0.000 usft	**North Reference:**	Grid
Reference Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.000 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000.14
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Bones - Bones Federal #6H - Lateral - Plan #1 — Offset Site Error: 0.000 usft

Survey Program: 0-MWD — Offset Well Error: 0.000 usft

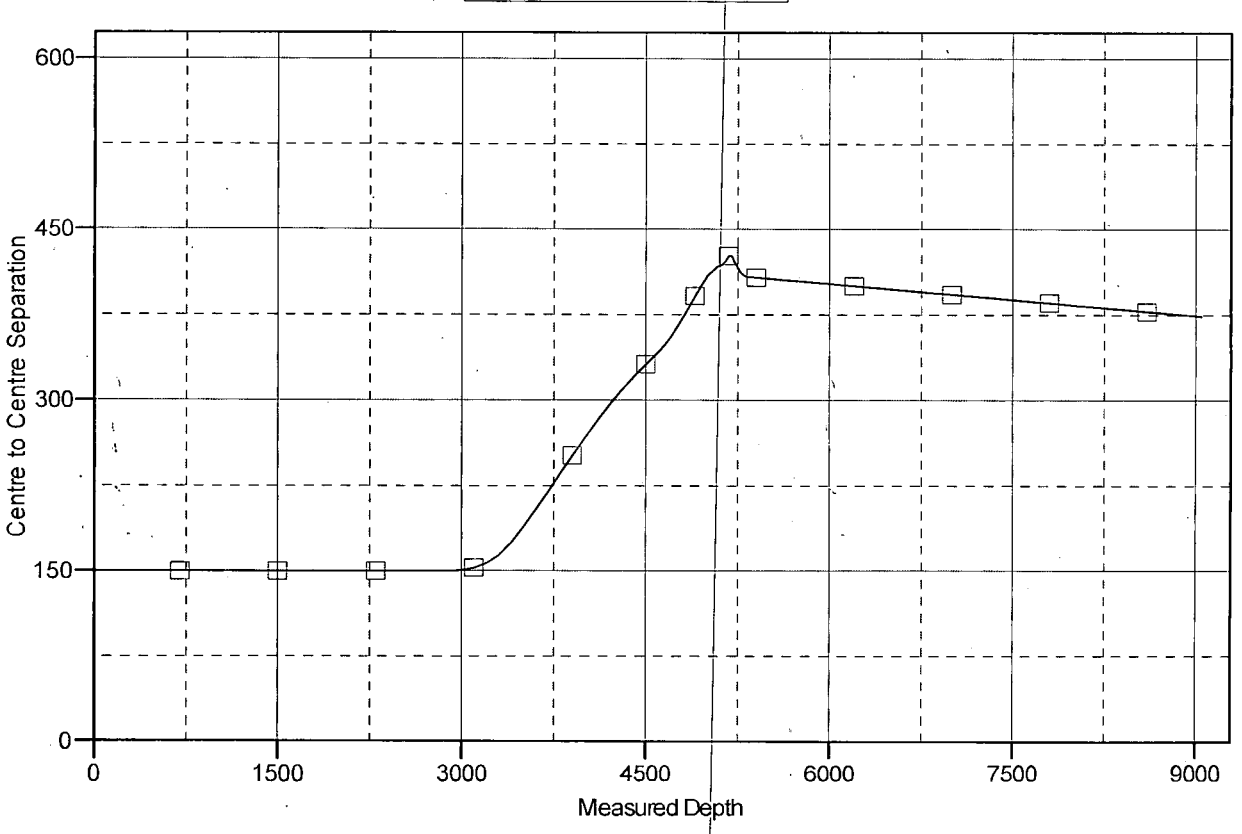
Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,000.000	4,802.703	6,558.844	5,210.862	43.530	48.058	-180.00	675.407	-1,480.162	402.165	382.005	20.16	19.948	
6,100.000	4,803.106	6,658.840	5,210.341	46.181	50.733	-180.00	674.901	-1,580.155	401.241	380.117	21.12	18.995	
6,200.000	4,803.509	6,758.836	5,209.820	48.872	53.443	-180.00	674.396	-1,680.148	400.316	378.216	22.10	18.113	
6,300.000	4,803.913	6,858.831	5,209.300	51.598	56.182	-180.00	673.890	-1,780.142	399.392	376.303	23.09	17.298	
6,400.000	4,804.316	6,958.827	5,208.779	54.353	58.946	-180.00	673.384	-1,880.135	398.468	374.379	24.09	16.542	
6,500.000	4,804.720	7,058.823	5,208.258	57.132	61.733	-180.00	672.878	-1,980.128	397.544	372.446	25.10	15.840	
6,600.000	4,805.123	7,158.819	5,207.737	59.933	64.538	-180.00	672.372	-2,080.121	396.620	370.505	26.11	15.188	
6,700.000	4,805.527	7,258.814	5,207.217	62.751	67.360	-180.00	671.866	-2,180.114	395.695	368.556	27.14	14.580	
6,800.000	4,805.930	7,358.810	5,206.696	65.586	70.196	-180.00	671.361	-2,280.107	394.771	366.601	28.17	14.014	
6,900.000	4,806.334	7,458.806	5,206.175	68.434	73.045	-180.00	670.855	-2,380.100	393.847	364.641	29.21	13.485	
7,000.000	4,806.737	7,558.801	5,205.654	71.294	75.905	-180.00	670.349	-2,480.093	392.923	362.675	30.25	12.990	
7,100.000	4,807.141	7,658.797	5,205.134	74.165	78.776	-180.00	669.843	-2,580.086	391.999	360.704	31.29	12.526	
7,200.000	4,807.544	7,758.793	5,204.613	77.045	81.655	-180.00	669.337	-2,680.079	391.074	358.729	32.35	12.091	
7,300.000	4,807.947	7,858.789	5,204.092	79.934	84.543	-180.00	668.832	-2,780.072	390.150	356.751	33.40	11.681	
7,400.000	4,808.351	7,958.784	5,203.572	82.830	87.437	-180.00	668.326	-2,880.066	389.226	354.768	34.46	11.296	
7,500.000	4,808.754	8,058.780	5,203.051	85.734	90.339	-180.00	667.820	-2,980.059	388.302	352.783	35.52	10.932	
7,600.000	4,809.158	8,158.776	5,202.530	88.643	93.246	-180.00	667.314	-3,080.052	387.377	350.795	36.58	10.589	
7,700.000	4,809.561	8,258.772	5,202.009	91.557	96.158	-180.00	666.808	-3,180.045	386.453	348.804	37.65	10.265	
7,800.000	4,809.965	8,358.767	5,201.489	94.477	99.076	-180.00	666.303	-3,280.038	385.529	346.811	38.72	9.957	
7,900.000	4,810.368	8,458.763	5,200.968	97.401	101.998	-180.00	665.797	-3,380.031	384.605	344.815	39.79	9.666	
8,000.000	4,810.772	8,558.759	5,200.447	100.329	104.923	-180.00	665.291	-3,480.024	383.681	342.818	40.86	9.389	
8,100.000	4,811.175	8,658.754	5,199.926	103.261	107.853	-180.00	664.785	-3,580.017	382.756	340.818	41.94	9.127	
8,200.000	4,811.579	8,758.750	5,199.406	106.197	110.786	-180.00	664.279	-3,680.010	381.832	338.817	43.02	8.877	
8,300.000	4,811.982	8,858.746	5,198.885	109.135	113.723	-180.00	663.774	-3,780.003	380.908	336.814	44.09	8.639	
8,400.000	4,812.385	8,958.742	5,198.364	112.077	116.662	-180.00	663.268	-3,879.996	379.984	334.810	45.17	8.412	
8,500.000	4,812.789	9,058.737	5,197.843	115.021	119.604	-180.00	662.762	-3,979.989	379.060	332.804	46.26	8.195	
8,600.000	4,813.192	9,158.733	5,197.323	117.967	122.548	-180.00	662.256	-4,079.983	378.135	330.797	47.34	7.988	
8,700.000	4,813.596	9,258.729	5,196.802	120.916	125.495	-180.00	661.750	-4,179.976	377.211	328.789	48.42	7.790	
8,800.000	4,813.999	9,358.725	5,196.281	123.867	128.444	-180.00	661.245	-4,279.969	376.287	326.779	49.51	7.601	
8,900.000	4,814.403	9,458.720	5,195.760	126.821	131.395	-180.00	660.739	-4,379.962	375.363	324.769	50.59	7.419	
9,000.000	4,814.806	9,558.716	5,195.240	129.775	134.348	-180.00	660.233	-4,479.955	374.438	322.757	51.68	7.245	
9,047.995	4,815.000	9,606.710	5,194.990	131.194	135.766	180.00	659.990	-4,527.947	373.995	321.791	52.20	7.164 SF	

Company:	EOG Resources - Artesia	**Local Co-ordinate Reference:**	Well Data Federal #3H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Reference Site:	Data	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site Error:	0.000 usft	**North Reference:**	Grid
Reference Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.000 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000.14
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 3761.000usft (Planning Rig)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Data Federal #3H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.22°

Ladder Plot



LEGEND

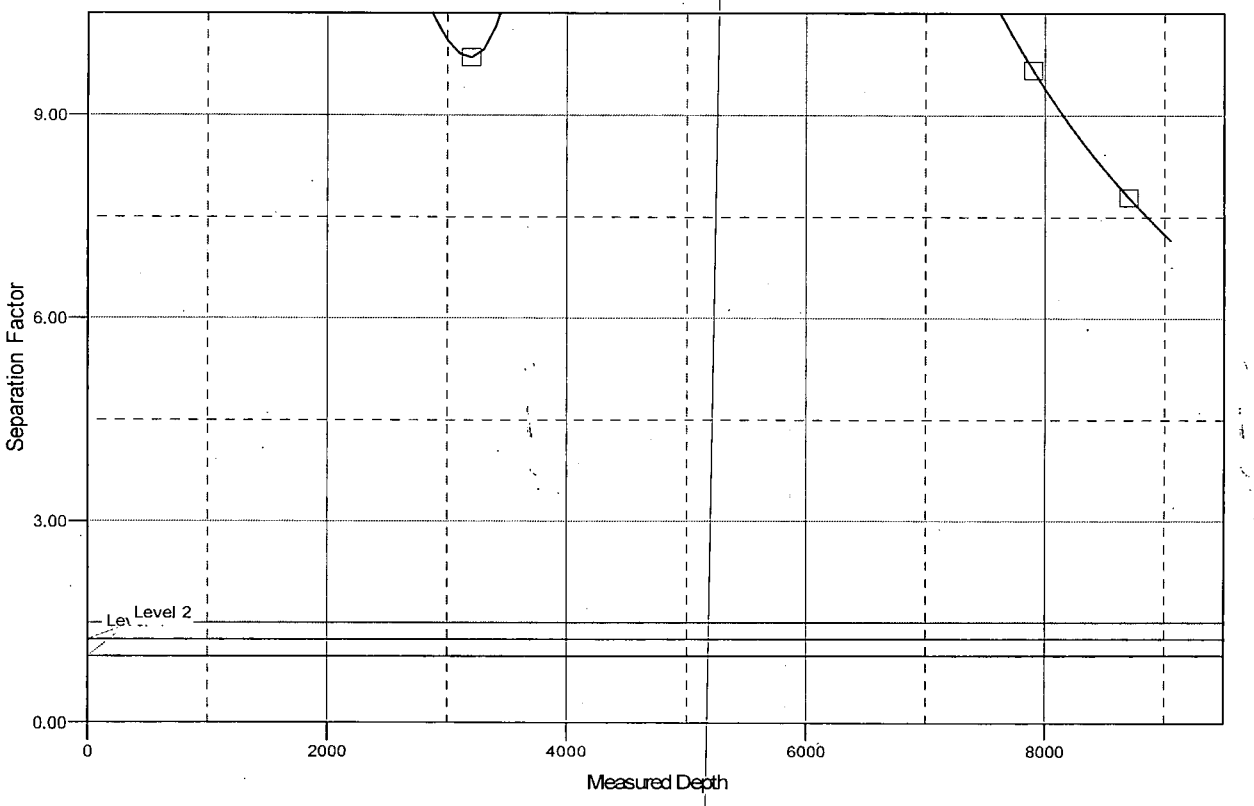
Bones Federal #6H, Lateral, Plan#1 V0

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EOG Resources - Artesia	**Local Co-ordinate Reference:**	Well Data Federal #3H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB @ 3761.000usft (Planning Rig)
Reference Site:	Data	**MD Reference:**	KB @ 3761.000usft (Planning Rig)
Site Error:	0.000 usft	**North Reference:**	Grid
Reference Well:	Data Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.000 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000.14
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 3761.000usft (Planning Rig)	Coordinates are relative to: Data Federal #3H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W	Grid Convergence at Surface is: 0.22°

Separation Factor Plot



LEGEND

Bones Federal #6H, Lateral, Plan#1 V0