NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 28 2018

RECEIVED

Form 3160-3
(March 2012)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC062300

6. If Indian, Allotee or [illegible] Name

7. If Unit [illegible] Name and No.

8. [illegible]ease Name [illegible] Well No. Com 317584
BIG [illegible]KS DR[illegible]W 25-24 FED 531H

9. API [illegible] No.
30-015-44820

10. [illegible] Field and Pool, or Exploratory
JE[illegible]NGS / BONE SPRING

11. Sec., [illegible] R. M. or Blk. and Survey or Area
SEC 25 / T25S / R31E / NMP

1a. Type of work: ☑ DRILL ☐ REENTER

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

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP 6137

3a. Address
333 West Sheridan Avenue Oklahoma City OK

3b. Phone No. *(include area code)*
(405)552-6571

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWNW / 2334 FNL / 955 FWL / LAT 32.1021148 / LONG -103.7371096
At proposed prod. zone NWNW / 330 FNL / 770 FWL / LAT 32.1221415 / LON[illegible]

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

12. County or Parish
EDDY

13. State
NM

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

16. No. [illegible]cres in le[illegible]
2479.82

17. Spacing Unit dedicated to this well
240

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

19. Prop[illegible] Depth
9088 feet / [illegible]30 feet

20. BLM/BIA Bond No. on file
FED: CO1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3338 feet

22. Approxima[illegible] date work will start*
0[illegible]/20[illegible]

23. Estimated duration
30 days

24. A[illegible]chments

The following, completed in accordance with the re[illegible]rements of Onshore O[illegible]d Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on N[illegible]al Fore[illegible]ystem Lands, the SUPO must be filed with the appropriate Forest [illegible]ice Offi[illegible]).
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 required by the BLM.

25. Signature (Electronic Submissio[illegible])	Name *(Printed/Typed)* Erin Workman / Ph: (405)552-7970	Date 11/30/2017
Title Regulatory C[illegible]mpliance Pro[illegible]sional		
Approved by *(Signat[illegible])* (Elect[illegible]ic Submissi[illegible])	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 03/22/2018
Title Sup[illegible]isor Multiple Resources	Office CARLSBAD	

Appli[illegible]ion approval doe[illegible]ot warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to condu[illegible]perations there[illegible]
Conditi[illegible] of approval, [illegible]ny, are attached.

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

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Approval Date: 03/22/2018

RMP 3-30-18,

INSTRUCTIONS

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

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

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

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

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

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

NOTICES

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

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

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

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SWNW / 2334 FNL / 955 FWL / TWSP: 25S / RANGE: 31E / SECTION: 25 / LAT: 32.1021148 / LONG: -103.7371096 (TVD: [illegible] feet, MD: [illegible] feet)
   PPP: SWSW / 0 FSL / 760 FWL / TWSP: 25S / RANGE: 31E / SECTION: 24 / LAT: 32.1157869 / LONG: -103.7376[illegible] (TVD: 9088 feet, MD: 13818 feet)
   PPP: SWNW / 1762 FNL / 750 FWL / TWSP: 25S / RANGE: 31E / SECTION: 25 / LAT: 32.1021148 / LONG: -103.73[illegible]096 (TVD: [illegible] feet, MD: 9418 feet)
   BHL: NWNW / 330 FNL / 770 FWL / TWSP: 25S / RANGE: 31E / SECTION: 24 / LAT: 32.1221415 / LONG: -103.7376[illegible] TVD: 9088 feet, MD: 16130 feet)

BLM Point of Contact

Name: Judith Yeager
Title: Legal Instruments Examiner
Phone: 5752345936
Email: jyeager@blm.gov

Review and Appeal Rights

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

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Prod Co**
LEASE NO.:	**LC062300**
WELL NAME & NO.:	**531H – Big Sinks Draw 25-24 Fed**
SURFACE HOLE FOOTAGE:	**2334'/N & 955'/W**
BOTTOM HOLE FOOTAGE	**330'/N & 770'/W, sec. 24**
LOCATION:	**Sec. 25, T. 25 S, R. 31 E**
COUNTY:	**Eddy County, New Mexico**

[redacted]

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

A. Hydrogen Sulfide

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **958** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

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

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

Operator shall fill 1/3rd casing with fluid while running intermediate casing to maintain collapse safety factor.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.**Additional cement maybe required. Excess calculates to 23%.**

3. The minimum required fill of cement behind the **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. **Additional cement maybe required. Excess calculates to 21%.**

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. 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.

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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

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

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

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

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

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

B. PRESSURE CONTROL

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

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

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

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

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

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

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

    c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

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

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

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

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

C. DRILLING MUD

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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 022818

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Prod Co
LEASE NO.:	LC062300
WELL NAME & NO.:	531H – Big Sinks Draw 25-24 Fed
SURFACE HOLE FOOTAGE:	2334'/N & 955/W
BOTTOM HOLE FOOTAGE	330'/N & 770'/W, sec.24
LOCATION:	Section 25, T. 25 S., R.319 E.
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker
- Range
- Watershed

☐ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
- Roads

☐ **Road Section Diagram**
☒ **Production (Post Drilling)**
- Well Structures & Facilities
- Pipelines
- Electric Lines

☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

In May 2008, the Pecos District Special Status Species Resource Management Plan Amendment (RMPA) was approved and is being implemented. In addition to the standard practices that minimize impacts, as listed above, the following COA will apply:

- Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken, to minimize noise associated impacts which could disrupt breeding and nesting activities.
- Upon abandonment, a low profile abandoned well marker will be installed to prevent raptor perching.

Wildlife Escape Ramps
Devon would need to construct and maintain escape ramps according to the following criteria:

- Earthen escape ramps would be required to be constructed to sufficiently support livestock at no more than a 30-degree slope and spaced no more than 500 feet apart.
- If trench is left open under an 8-hour time period, it would not be required to have an escape ramp; however, before the trench is backfilled, Devon would inspect the trench for wildlife and remove any species that are trapped at a distance of at least 100 yards away from the trench.

Raptor Nest Mitigation

- A BLM Wildlife Biologist must be contacted by the operator prior to construction activities to determine if the raptor nest is active.
- Determination to deconstruct inactive nest prior to pad construction will be made by BLM Wildlife Biologist.
- Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.
- Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Temporary Fencing Requirement
For the proposed Big Sinks 25 CTB 3 location, the BLM would require temporary fencing be installed before construction begins. This fencing would stay in place and be maintained throughout construction activities to protect nearby dune land habitat from harm.

Power Lines
Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

Watershed/Water Quality:

For all the proposed actions; the entire perimeter of the well pad and CTB sites will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery:

- Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Temporary Fence Crossing Requirement

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

Cattle Guard Requirement

Where entry is granted across a fence line for an access road, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access 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. Once the road is abandoned, the fence would be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Livestock Watering Requirement

Devon, in an agreement with the grazing allotment holder, would relocate a water pipeline affected by several proposed actions. Devon would also encase the water pipeline along its length where it would travel under access roads. See **Error! Reference source not found.** above.

Devon must contact the allotment holder prior to construction to identify the location of the pipelines. Devon must take measures to protect the pipelines from compression or other damages. If the pipelines are damaged or compromised in any way near the proposed project as a result of oil and gas activity, Devon is responsible for repairing the pipelines immediately. Devon must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, Devon shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. Devon 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 grazing permittee/allottee prior to disturbing any range improvement projects. 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.

Temporary Fencing Requirement

For the proposed Big Sinks 25 CTB 3 location, the BLM would require temporary fencing be installed before construction begins. This fencing would stay in place and be maintained throughout construction activities to protect nearby dune land habitat from harm.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

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

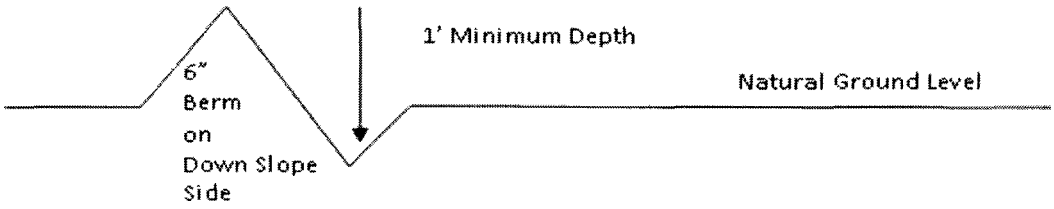
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

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

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

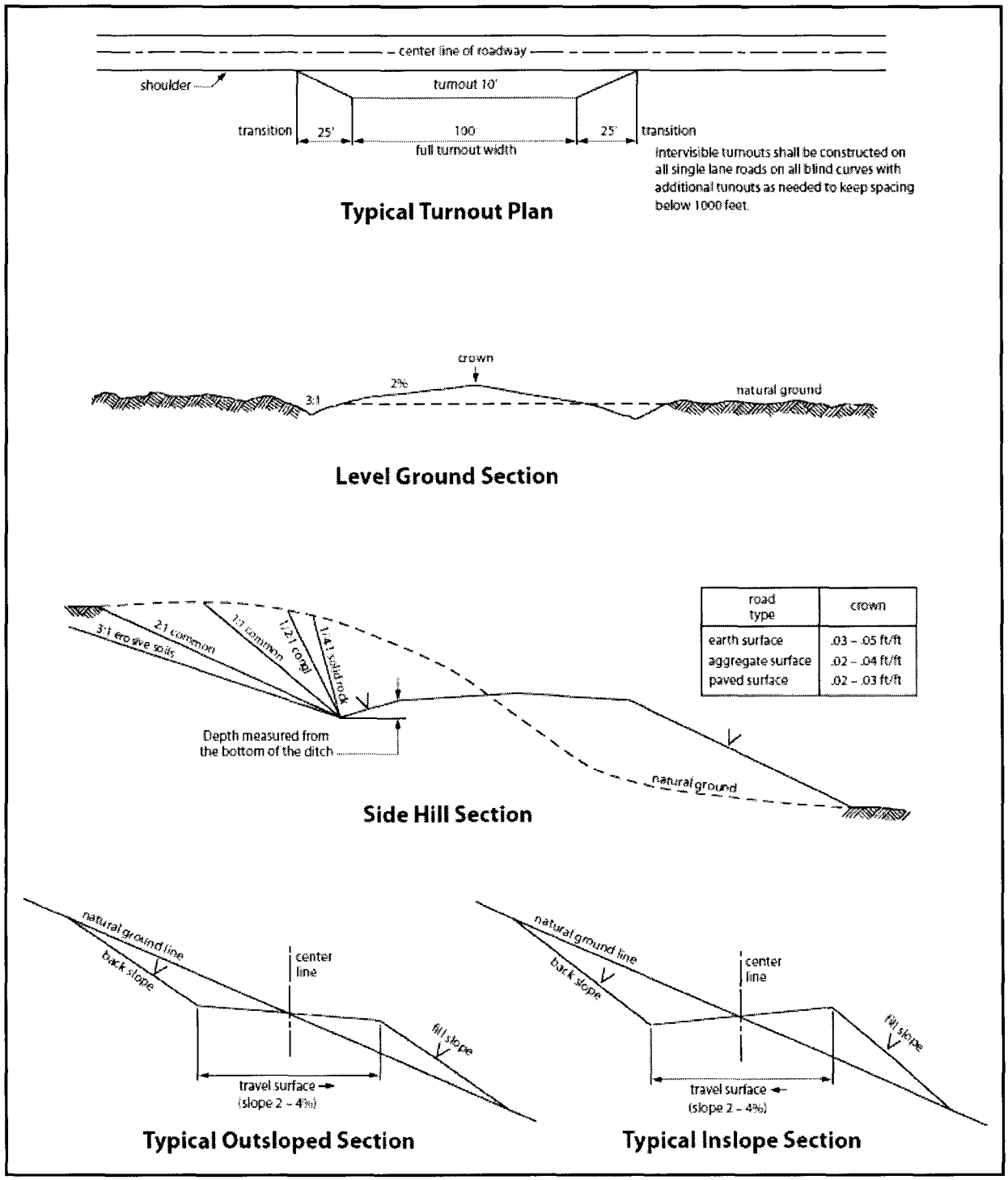


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures

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

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

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

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.

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.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The

holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

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

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

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

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

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

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.

- Fill in any holes from the poles removed.

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, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. 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 ft. from the source of the noise.

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.

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

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

*Pounds of pure live seed:

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Prod Co
LEASE NO.:	LC062300
WELL NAME & NO.:	531H – Big Sinks Draw 25-24 Fed
SURFACE HOLE FOOTAGE:	2334'/N & 955/W
BOTTOM HOLE FOOTAGE	330'/N & 770'/W, sec.24
LOCATION:	Section 25, T. 25 S., R.319 E.
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker
- Range
- Watershed

☐ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
- Roads

☐ **Road Section Diagram**
☒ **Production (Post Drilling)**
- Well Structures & Facilities
- Pipelines
- Electric Lines

☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

In May 2008, the Pecos District Special Status Species Resource Management Plan Amendment (RMPA) was approved and is being implemented. In addition to the standard practices that minimize impacts, as listed above, the following COA will apply:

- Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken, to minimize noise associated impacts which could disrupt breeding and nesting activities.
- Upon abandonment, a low profile abandoned well marker will be installed to prevent raptor perching.

Wildlife Escape Ramps
Devon would need to construct and maintain escape ramps according to the following criteria:

- Earthen escape ramps would be required to be constructed to sufficiently support livestock at no more than a 30-degree slope and spaced no more than 500 feet apart.
- If trench is left open under an 8-hour time period, it would not be required to have an escape ramp; however, before the trench is backfilled, Devon would inspect the trench for wildlife and remove any species that are trapped at a distance of at least 100 yards away from the trench.

Raptor Nest Mitigation

- A BLM Wildlife Biologist must be contacted by the operator prior to construction activities to determine if the raptor nest is active.
- Determination to deconstruct inactive nest prior to pad construction will be made by BLM Wildlife Biologist.
- Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.
- Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Temporary Fencing Requirement
For the proposed Big Sinks 25 CTB 3 location, the BLM would require temporary fencing be installed before construction begins. This fencing would stay in place and be maintained throughout construction activities to protect nearby dune land habitat from harm.

Power Lines
Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

Watershed/Water Quality:

For all the proposed actions; the entire perimeter of the well pad and CTB sites will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery:

- Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Temporary Fence Crossing Requirement

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

Cattle Guard Requirement

Where entry is granted across a fence line for an access road, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access 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. Once the road is abandoned, the fence would be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Livestock Watering Requirement

Devon, in an agreement with the grazing allotment holder, would relocate a water pipeline affected by several proposed actions. Devon would also encase the water pipeline along its length where it would travel under access roads. See **Error! Reference source not found.** above.

Devon must contact the allotment holder prior to construction to identify the location of the pipelines. Devon must take measures to protect the pipelines from compression or other damages. If the pipelines are damaged or compromised in any way near the proposed project as a result of oil and gas activity, Devon is responsible for repairing the pipelines immediately. Devon must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, Devon shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. Devon 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 grazing permittee/allottee prior to disturbing any range improvement projects. 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.

Temporary Fencing Requirement

For the proposed Big Sinks 25 CTB 3 location, the BLM would require temporary fencing be installed before construction begins. This fencing would stay in place and be maintained throughout construction activities to protect nearby dune land habitat from harm.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

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

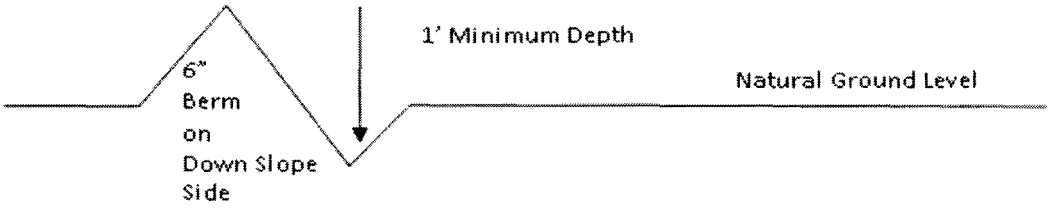
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

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

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

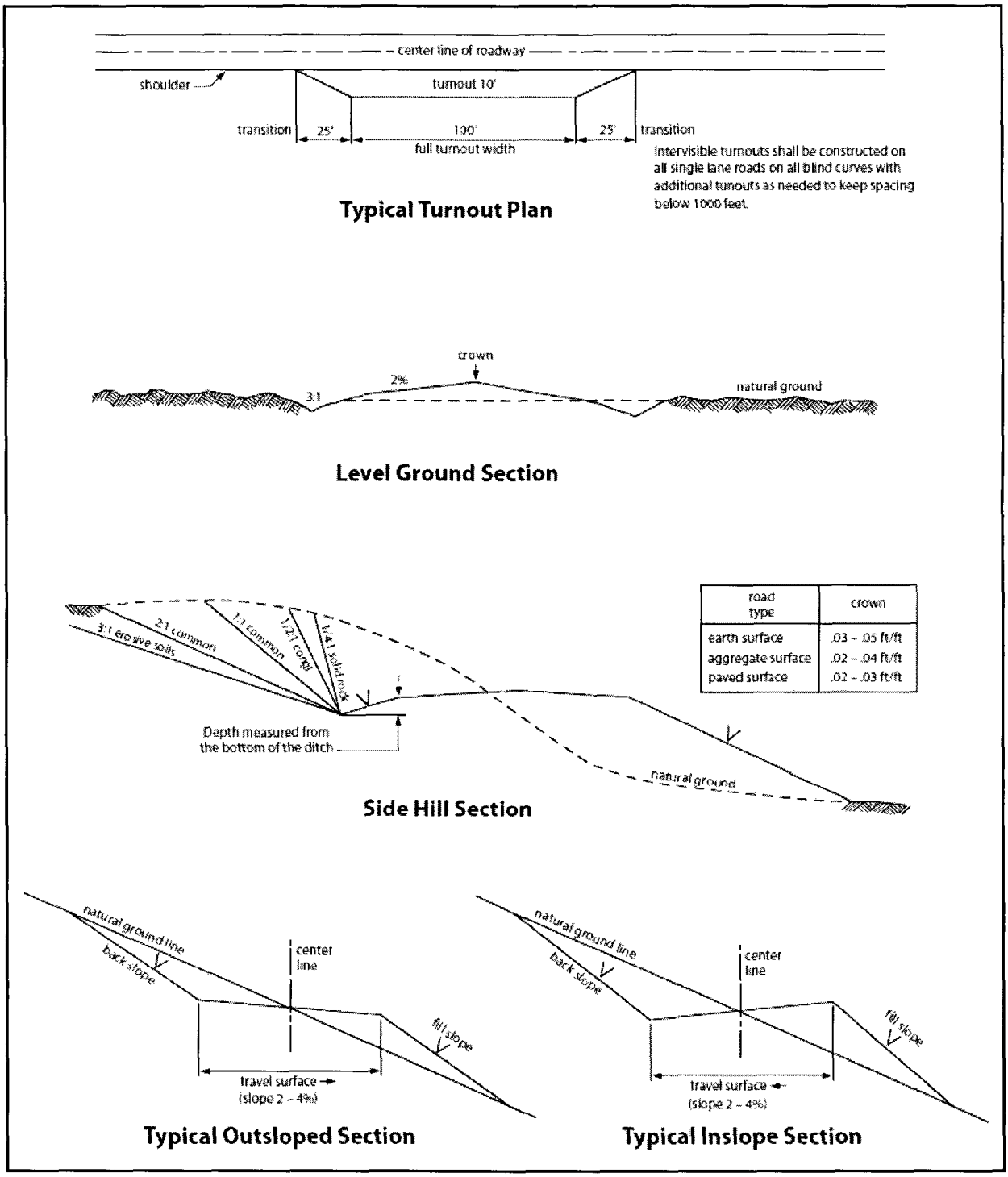


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures

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

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

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

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.

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.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The

holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

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

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

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

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

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

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.

- Fill in any holes from the poles removed.

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, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. 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 ft. from the source of the noise.

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.

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

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

*Pounds of pure live seed:

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

APD ID: 10400024256
Operator Name: DEVON ENERGY PRODUCTION COMPANY LP
Well Name: BIG SINKS DRAW 25-24 FED COM
Well Type: OIL WELL

Submission Date: 11/30/2017
Federal/Indian APD: FED
Well Number: 531H
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Application

Section 1 - General

APD ID: 10400024256
Tie to previous NOS?
Submission Date: 11/30/2017
BLM Office: CARLSBAD
User: Erin Workman
Title: Regulatory Compliance Professional
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMLC062300
Lease Acres: 2479.82
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? YES
Permitting Agent? NO
APD Operator: DEVON ENERGY PRODUCTION COMPANY LP
Operator letter of designation:

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP
Operator Address: 333 West Sheridan Avenue
Zip: 73102
Operator PO Box:
Operator City: Oklahoma City
State: OK
Operator Phone: (405)552-6571
Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? EXISTING
Mater Development Plan name: Cotton Draw 2 MDP
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** JENNINGS **Pool Name:** BONE SPRING

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

Describe other minerals:

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

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** BIG SINKS DRAW CTB **Number:** 1

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: **Distance to nearest well:** 455 FT **Distance to lease line:** 330 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: BSD_25_24_Fed_Com_531H_C_102_signed_20171109125348.pdf

Well work start Date: 07/01/2018 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 5658

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	2334	FNL	955	FWL	25S	31E	25	Aliquot SWNW	32.1021148	-103.7371096	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC062300	3338	0	0
KOP Leg #1	2334	FNL	750	FWL	25S	31E	25	Aliquot SWNW	32.1021148	-103.7371096	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC062300	-5177	8518	8515
PPP Leg #1	1762	FNL	750	FWL	25S	31E	25	Aliquot SWNW	32.1021148	-103.7371096	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC062300	-5750	9418	9088

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	0	FSL	760	FWL	25S	31E	24	Aliquot SWSW	32.1157869	-103.737686	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 125634	-5750	13818	9088
EXIT Leg #1	330	FNL	770	FWL	25S	31E	24	Aliquot NWNW	32.1221415	-103.737447	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0 61869	-5750	16130	9088
BHL Leg #1	330	FNL	770	FWL	25S	31E	24	Aliquot NWNW	32.1221415	-103.737447	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0 61869	-5750	16130	9088

Drilling Plan

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3337	0	0	ALLUVIUM	NONE	No
2	RUSTLER	2404	933	933	SALT	NONE	No
3	BASE OF SALT	-966	4303	4303	SALT	NONE	No
4	DELAWARE	-1001	4338	4338	SANDSTONE	NATURAL GAS,OIL	No
5	BELL CANYON	-1033	4370	4370	SANDSTONE	NONE	No
6	CHERRY CANYON	-1993	5330	5330	SANDSTONE	NONE	No
7	BRUSHY CANYON	-3383	6720	6720	SANDSTONE	NONE	No
8	BONE SPRING	-5011	8348	8348	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M **Rating Depth:** 10475

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.
Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.
Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082311.pdf

BOP Diagram Attachment:

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082324.pdf

Pressure Rating (PSI): 3M **Rating Depth:** 4350

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.
Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.
Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Choke Diagram Attachment:

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082338.pdf

BOP Diagram Attachment:

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082349.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	958	0	958			958	H-40	48	STC	1.74	2.45	BUOY	4.13	BUOY	4.
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4403	0	4403			4403	J-55	40	LTC	1.19	1.42	BUOY	3.98	BUOY	3.
3	PRODUCTION	8.75	5.5	NEW	API	N	0	16129	0	9088			16129	P-110	17	BUTT	2.18	2.7	BUOY	3.21	BUOY	3.

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BSD_25_24_Fed_Com_531H_SurfCsg_Ass_20171106052245.pdf

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BSD_25_24_Fed_Com_531H_Int_Csg_Ass_20171106052321.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BSD_25_24_Fed_Com_531H_ProdCasing_Ass_20171106052601.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	958	745	1.34	14.8	1000	50	C	1% Calcium Chloride
INTERMEDIATE	Lead		0	3522	775	1.85	12.9	1432	30	C	Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sks Poly-E-Flake

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail		3527	4403	270	1.33	14.8	359	30	C	0.125 lbs/sks Poly-R-Flake
PRODUCTION	Lead		3903	8518	446	3.27	9	1459	25	TUNED	N/A
PRODUCTION	Tail		8518	16129	18.38	1.2	14.5	2206	25	H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	958	WATER-BASED MUD	8.5	9							
958	4403	SALT SATURATED	10	11							
4403	16129	WATER-BASED MUD	8.5	9.3							

Section 6 - Test, Logging, Coring

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

Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

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

CBL

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4395 **Anticipated Surface Pressure:** 2395.64

Anticipated Bottom Hole Temperature(F): 164

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

BSD_25_24_Fed_Com_531H_H2S_Plan_20171106053105.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

BSD_25_24_Fed_Com_531H_Prelim_36x48WM_20171106053254.PDF
BSD_25_24_Fed_Com_531H_Prelim_Dir_Plan_20171106053306.pdf
BSD_25_24_Fed_Com_531H_Prelim_WP_Rpt_20171106053319.pdf
BSD_25_24_Fed_Com_531H_Prelim_AC_Rpt_20171106053333.pdf

Other proposed operations facets description:

MULTI-BOWL VERBAGE 3M
MULTI-BOWL WELLHEAD
CLOSED LOOP DESIGN
DRILLING PLAN

Other proposed operations facets attachment:

BSD_25_24_Fed_Com_531H_MB_Verb_3M_20171106053607.pdf
BSD_25_24_Fed_Com_531H_MB_Wellhd_20171106053619.pdf
BSD_25_24_Fed_Com_531H_Clsd_Loop_20171106053705.pdf
BSD_25_24_Fed_Com_531H_Drlg_Plan_20171128054815.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

Other Variance attachment:

BSD_25_24_Fed_Com_531H_Co_flex_20171106053416.pdf

BSD_25_24_Fed_Com_531H_Spudder_Rig_20171106053425.pdf

SUPO

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

BSD_25_24_Fed_Com_531H_Ex_Access_Rd_20171106054336.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: Improve road to accommodate Drilling and Completion operations.

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

BSD_25_24_Fed_Com_531H_Access_Rd_20171106054603.pdf

New road type: COLLECTOR,RESOURCE

Length: 486 Feet **Width (ft.):** 30

Max slope (%): 6 **Max grade (%):** 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 30

New road access erosion control: WATER DRAINAGE DITCH

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: SEE INTERIM RECLAMATION DIAGRAM

Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: N/A

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

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

BSD_25_24_Fed_Com_531H_1mile_map_20171106055007.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: ALL FLOWLINES WILL BE BURIED GOING TO THE BIG SINKS DRAW 25 CTB 1. Part of Cotton Draw MDP 2

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: STIMULATION **Water source type:** RECYCLED

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: OTHER,OTHER

Source land ownership: FEDERAL

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 202500 **Source volume (acre-feet):** 26.100851

Source volume (gal): 8505000

Water source and transportation map:

BSD_25_24_Fed_Com_531H_Wtr_Xfr_Map_20171106062039.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.
New water well? NO

New Water Well Info

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

Well target aquifer:

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

Aquifer comments:

Aquifer documentation:

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

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

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

Drilling method: **Drill material:**

Grout material: **Grout depth:**

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

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Dirt fill and caliche will be used to construct well pad.

Construction Materials source location attachment:

BSD_25_24_Fed_Com_531H_Caliche_Pit_20171106062136.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1810 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

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

Disposal type description:

Disposal location description: All cuttings will disposed of at R360, Sundance, or equivalent.

Waste type: COMPLETIONS/STIMULATION

Waste content description: FLOW BACK WATER DURING COMPLETION OPERATIONS

Amount of waste: 3000 barrels

Waste disposal frequency : One Time Only

Safe containment description: N/A

Safe containmant attachment:

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

Disposal type description:

Disposal location description: VARIOUS DISPOSAL LOCATIONS IN LEA AND EDDY COUNTIES.

Waste type: FLOWBACK

Waste content description: Produced water during flowback operations. This amount is a daily average during flowback (BWPD). Any sand production is taken to R360 for solids disposal

Amount of waste: 2500 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: ON-LEASE INJECTION **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Devon owned disposal Cotton Draw 32-2 SWD

Waste type: PRODUCED WATER

Waste content description: Average daily water production over the first year of production (BWPD).

Amount of waste: 1800 barrels

Waste disposal frequency : Daily

Safe containment description: N.A

Safe containmant attachment:

Waste disposal type: ON-LEASE INJECTION **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Devon owned disposal Cotton Draw 32-2 SWD

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

BSD_25_24_Fed_Com_531H_Rig_Layout_20171106062232.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: BIG SINKS DRAW CTB

Multiple Well Pad Number: 1

Recontouring attachment:

BSD_25_24_Fed_Com_531H_Reclamation_20171106062326.pdf

Drainage/Erosion control construction: All areas disturbed shall be reclaimed as early and as nearly as practicable to their original condition or their final land use and shall be maintained to control dust and minimize erosion to the extent practicable.

Drainage/Erosion control reclamation: Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area then shall be reseeded in the first favorable growing season.

Well pad proposed disturbance (acres): 5.109

Well pad interim reclamation (acres): 1.912

Well pad long term disturbance (acres): 3.197

Road proposed disturbance (acres): 0.335

Road interim reclamation (acres): 0

Road long term disturbance (acres): 0.335

Powerline proposed disturbance (acres): 0.277

Powerline interim reclamation (acres): 0

Powerline long term disturbance (acres): 0

Pipeline proposed disturbance (acres): 0.291

Pipeline interim reclamation (acres): 0.10330579

Pipeline long term disturbance (acres): 0.0291

Other proposed disturbance (acres): 0

Other interim reclamation (acres): 0

Other long term disturbance (acres): 0

Total proposed disturbance: 6.012

Total interim reclamation: 2.0153058

Total long term disturbance: 3.5611

Reconstruction method: Operator will use Best Management Practices"BMP" to mechanically recontour to obtain the desired outcome.

Topsoil redistribution: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.

Soil treatment: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary	
Seed Type	**Pounds/Acre**

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: JACOB **Last Name:** OCHOA

Phone: (575)748-9934 **Email:** jacob.ochoa@dvn.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Maintain weeds on an as need basis.

Weed treatment plan attachment:

Monitoring plan description: Monitor as needed.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other Information

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

ROW Type(s):

ROW Applications

SUPO Additional Information: GAS CAPTURE PLAN GRADING PLAN & X-SECTION MISC PLATS

Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

BSD_25_24_Fed_Com_531H_GasCapturePlan_20171106062628.pdf
BSD_25_24_Fed_Com_531H_Grading_Plan_X_Sec_20171106062638.pdf
BSD_25_24_Fed_Com_531H_Misc_Plats_20171106062659.pdf
BSD_25_24_Fed_Com_531H_Electric_20180207151949.pdf
BSD_25_24_Fed_Com_531H_Flowline_20180207152020.pdf
AA000121157_CD_MDP2_BIG_SINKS_CTB_25_1_PAD_P_20180207153610.pdf

PWD

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

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

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

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

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

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

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

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

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

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

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

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

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

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Bond Info

Bond Information

Federal/Indian APD: FED

BLM Bond number: CO1104

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Operator Certification

Operator Certification

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

NAME: Erin Workman **Signed on:** 11/30/2017

Title: Regulatory Compliance Professional

Street Address: 333 West Sheridan Avenue

City: Oklahoma City **State:** OK **Zip:** 73102

Phone: (405)552-7970

Email address: Erin.Workman@dvn.com

Field Representative

Representative Name: Ray Vaz

Street Address: 6488 Seven Rivers Hwy

City: Artesia **State:** NM **Zip:** 88210

Phone: (575)748-1871

Email address: ray.vaz@dvn.com

Payment Info

Payment

APD Fee Payment Method: PAY.GOV

pay.gov Tracking ID: 266A457T

APD ID: 10400024256 **Submission Date:** 11/30/2017

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

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

Application

Operator letter of designation:

Well plat:

BSD_25_24_Fed_Com_531H_C_102_signed_20171109125348.pdf

Drilling Plan

Blowout Prevention

Diagram:

Choke Diagram Attachment :

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082311.pdf

BOP Diagram Attachment :

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082324.pdf

Diagram:

Choke Diagram Attachment :

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082338.pdf

BOP Diagram Attachment :

BSD_25_24_Fed_Com_531H_3M_BOPE_Ck_20171103082349.pdf

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BSD_25_24_Fed_Com_531H_SurfCsg_Ass_20171106052245.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BSD_25_24_Fed_Com_531H_Int_Csg_Ass_20171106052321.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BSD_25_24_Fed_Com_531H_ProdCasing_Ass_20171106052601.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

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

Contingency Plans geohazards attachment:

Hydrogen sulfide drilling operations plan:

BSD_25_24_Fed_Com_531H_H2S_Plan_20171106053105.pdf

Proposed horizontal/directional/multi-lateral plan submission:

BSD_25_24_Fed_Com_531H_Prelim_36x48WM_20171106053254.PDF
BSD_25_24_Fed_Com_531H_Prelim_Dir_Plan_20171106053306.pdf
BSD_25_24_Fed_Com_531H_Prelim_WP_Rpt_20171106053319.pdf
BSD_25_24_Fed_Com_531H_Prelim_AC_Rpt_20171106053333.pdf

Other Facets:

BSD_25_24_Fed_Com_531H_MB_Verb_3M_20171106053607.pdf

BSD_25_24_Fed_Com_531H_MB_Wellhd_20171106053619.pdf

BSD_25_24_Fed_Com_531H_Clsd_Loop_20171106053705.pdf

BSD_25_24_Fed_Com_531H_Drlg_Plan_20171128054815.pdf

Other Variances:

BSD_25_24_Fed_Com_531H_Co_flex_20171106053416.pdf

BSD_25_24_Fed_Com_531H_Spudder_Rig_20171106053425.pdf

Surface Use Plan of Operations

Existing Road Map:

BSD_25_24_Fed_Com_531H_Ex_Access_Rd_20171106054336.pdf

New Road Map:

BSD_25_24_Fed_Com_531H_Access_Rd_20171106054603.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-24 FED COM **Well Number:** 531H

Attach Well map:

BSD_25_24_Fed_Com_531H_1mile_map_20171106055007.pdf

Water source and transportation map:

BSD_25_24_Fed_Com_531H_Wtr_Xfr_Map_20171106062039.pdf

Construction Materials source location attachment:

BSD_25_24_Fed_Com_531H_Caliche_Pit_20171106062136.pdf

Methods for Handling Waste

Waste type: DRILLING

Safe containment attachment:

Waste type: COMPLETIONS/STIMULATION

Safe containment attachment:

Waste type: FLOWBACK

Safe containment attachment:

Waste type: PRODUCED WATER

Safe containment attachment:

Well Site Layout Diagram:

BSD_25_24_Fed_Com_531H_Rig_Layout_20171106062232.pdf

Recontouring attachment:

SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

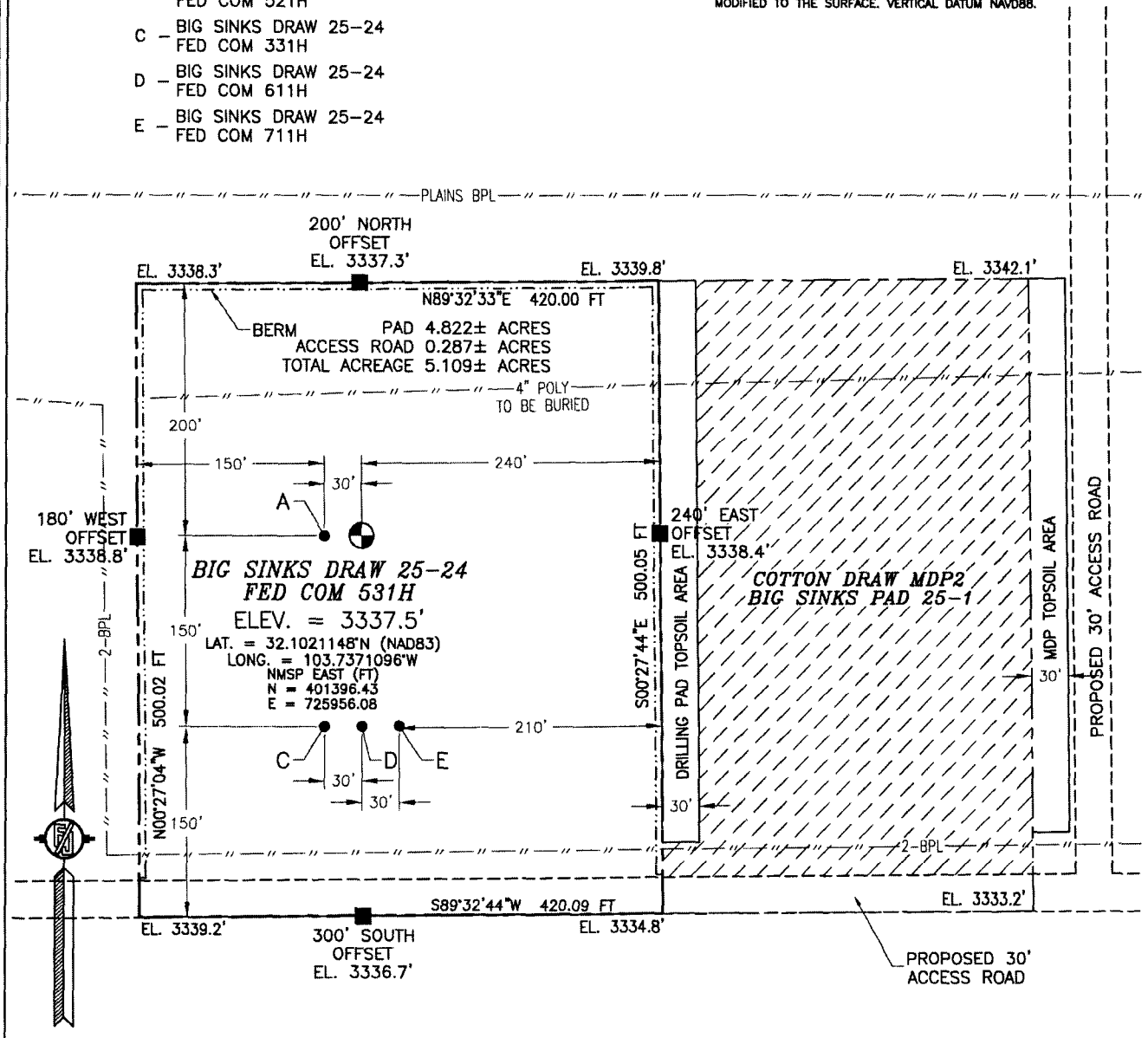
A – BIG SINKS DRAW 25-24 FED COM 521H

C – BIG SINKS DRAW 25-24 FED COM 331H

D – BIG SINKS DRAW 25-24 FED COM 611H

E – BIG SINKS DRAW 25-24 FED COM 711H

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 1 (ORLA ROAD) GO SOUTH ON CR 1 6.2 MILES, TURN RIGHT ON CALICHE ROAD (MONSANTO ROAD) AND GO WEST 2.1 MILES, TURN RIGHT AND GO NORTH 0.4 OF A MILE, CROSS A CATTLE GUARD, CONTINUE NORTH 0.4 OF A MILE, ROAD BENDS LEFT (WEST) CONTINUE WEST 2.0 MILES TO AN INTERSECTION, CONTINUE SOUTHWEST THROUGH INTERSECTION, ROAD BENDS SOUTH, CROSS A CATTLE GUARD, 3.45 MILES FROM INTERSECTION TURN LEFT ON CALICHE ROAD AND GO EAST 1.0 MILE TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS NORTH 3500' THEN EAST 310' TO THE SOUTHWEST CORNER OF BIG SINKS DRAW 25 FED COM 1H, CONTINUE EAST 487' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

BIG SINKS DRAW 25-24 FED COM 531H

LOCATED 2334 FT. FROM THE NORTH LINE AND 955 FT. FROM THE WEST LINE OF SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

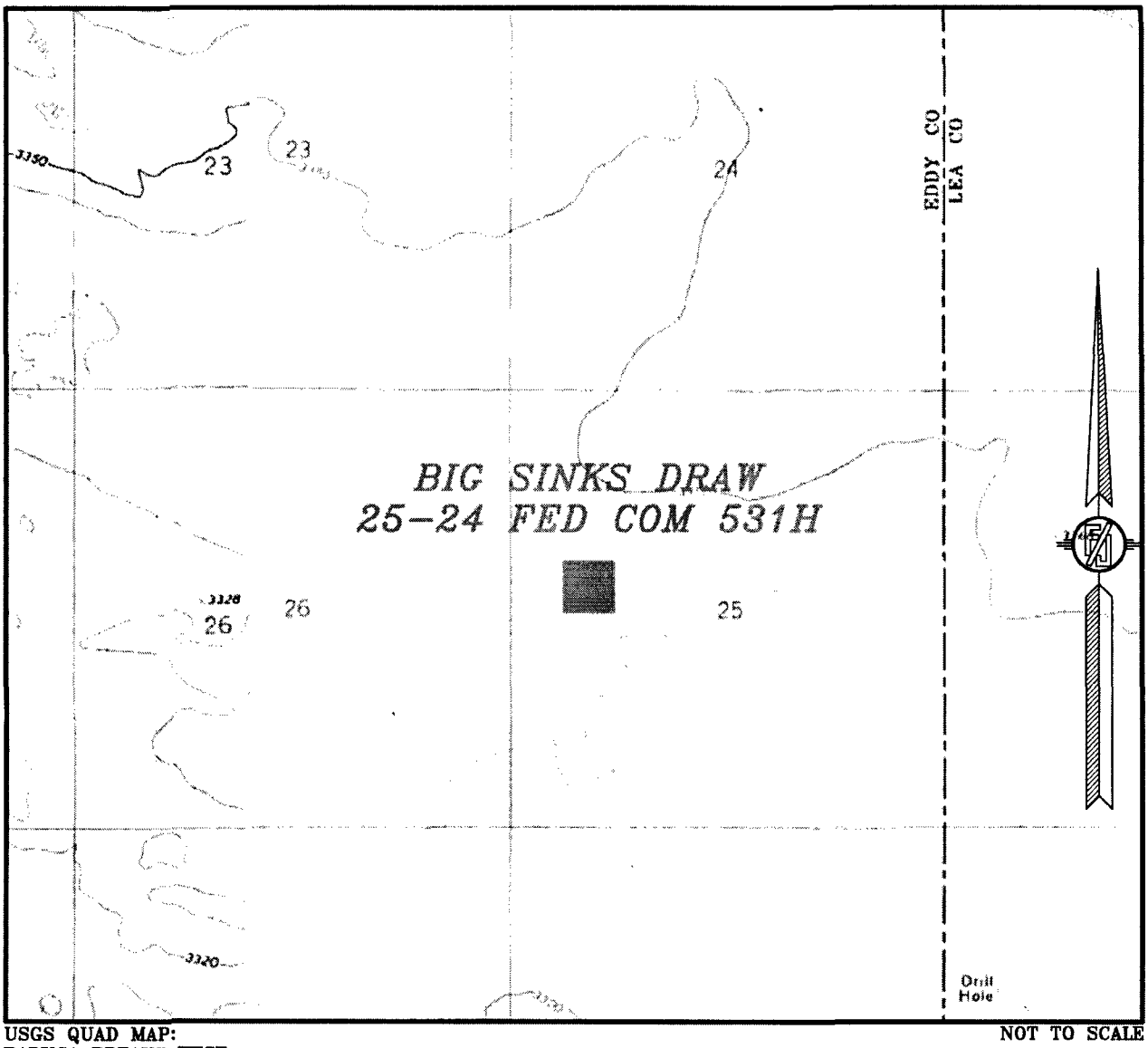
OCTOBER 11, 2017

SURVEY NO. 5658

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

SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS WEST

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
BIG SINKS DRAW 25-24 FED COM 531H
LOCATED 2334 FT. FROM THE NORTH LINE
AND 955 FT. FROM THE WEST LINE OF
SECTION 25, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

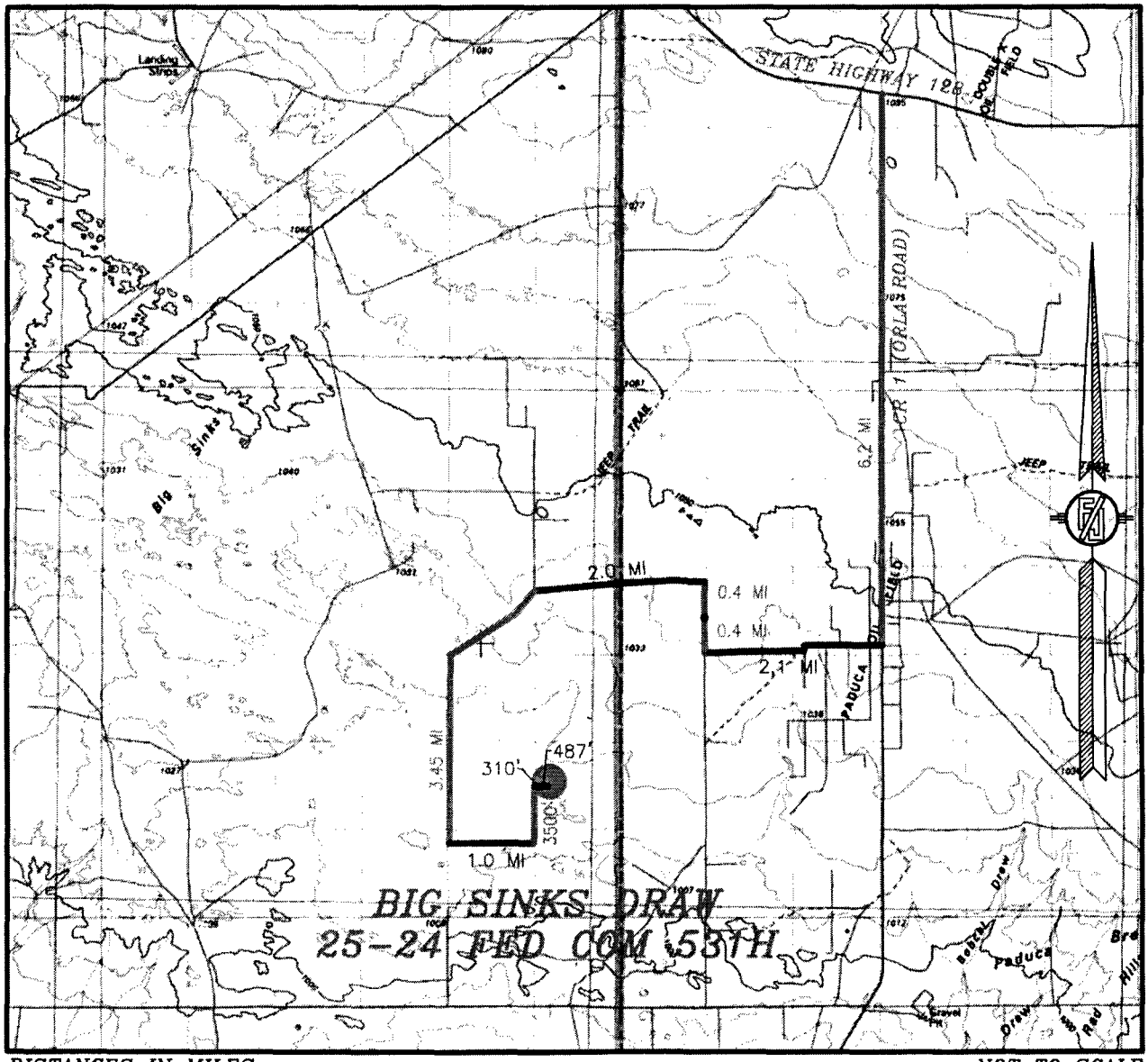
OCTOBER 11, 2017

SURVEY NO. 5658

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

SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

VICINITY MAP



DISTANCES IN MILES *NOT TO SCALE*

DEVON ENERGY PRODUCTION COMPANY, L.P.
BIG SINKS DRAW 25-24 FED COM 531H
LOCATED 2334 FT. FROM THE NORTH LINE
AND 955 FT. FROM THE WEST LINE OF
SECTION 25, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 11, 2017

DIRECTIONS TO LOCATION
FROM STATE HIGHWAY 128 AND CR 1 (ORLA ROAD) GO SOUTH ON CR 1 6.2 MILES, TURN RIGHT ON CALICHE ROAD (MONSANTO ROAD) AND GO WEST 2.1 MILES, TURN RIGHT AND GO NORTH 0.4 OF A MILE, CROSS A CATTLE GUARD, CONTINUE NORTH 0.4 OF A MILE, ROAD BENDS LEFT (WEST) CONTINUE WEST 2.0 MILES TO AN INTERSECTION, CONTINUE SOUTHWEST THROUGH INTERSECTION, ROAD BENDS SOUTH, CROSS A CATTLE GUARD, 3.45 MILES FROM INTERSECTION TURN LEFT ON CALICHE ROAD AND GO EAST 1.0 MILE TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS NORTH 3500' THEN EAST 310' TO THE SOUTHWEST CORNER OF BIG SINKS DRAW 25 FED COM 1H, CONTINUE EAST 487' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

SURVEY NO. 5658

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

SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2015

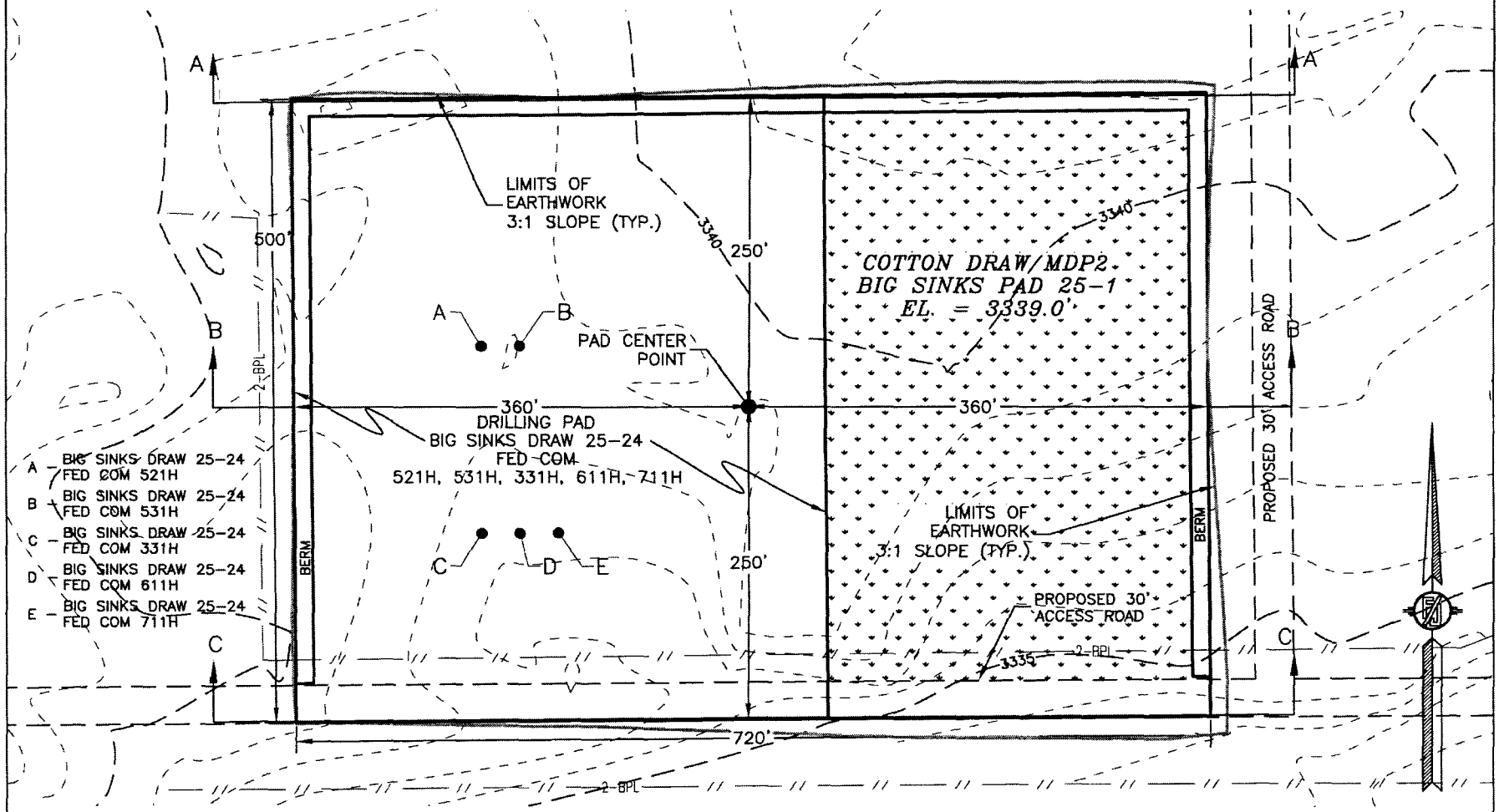
DEVON ENERGY PRODUCTION COMPANY, L.P.
BIG SINKS DRAW 25-24 FED COM 531H
LOCATED 2334 FT. FROM THE NORTH LINE
AND 955 FT. FROM THE WEST LINE OF
SECTION 25, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 11, 2017

SURVEY NO. 5658

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

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
BIG SINKS DRAW 25-24 FED COM 531H
SECTION 25, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 11, 2017

012 60 120 240
SCALE 1" = 120'

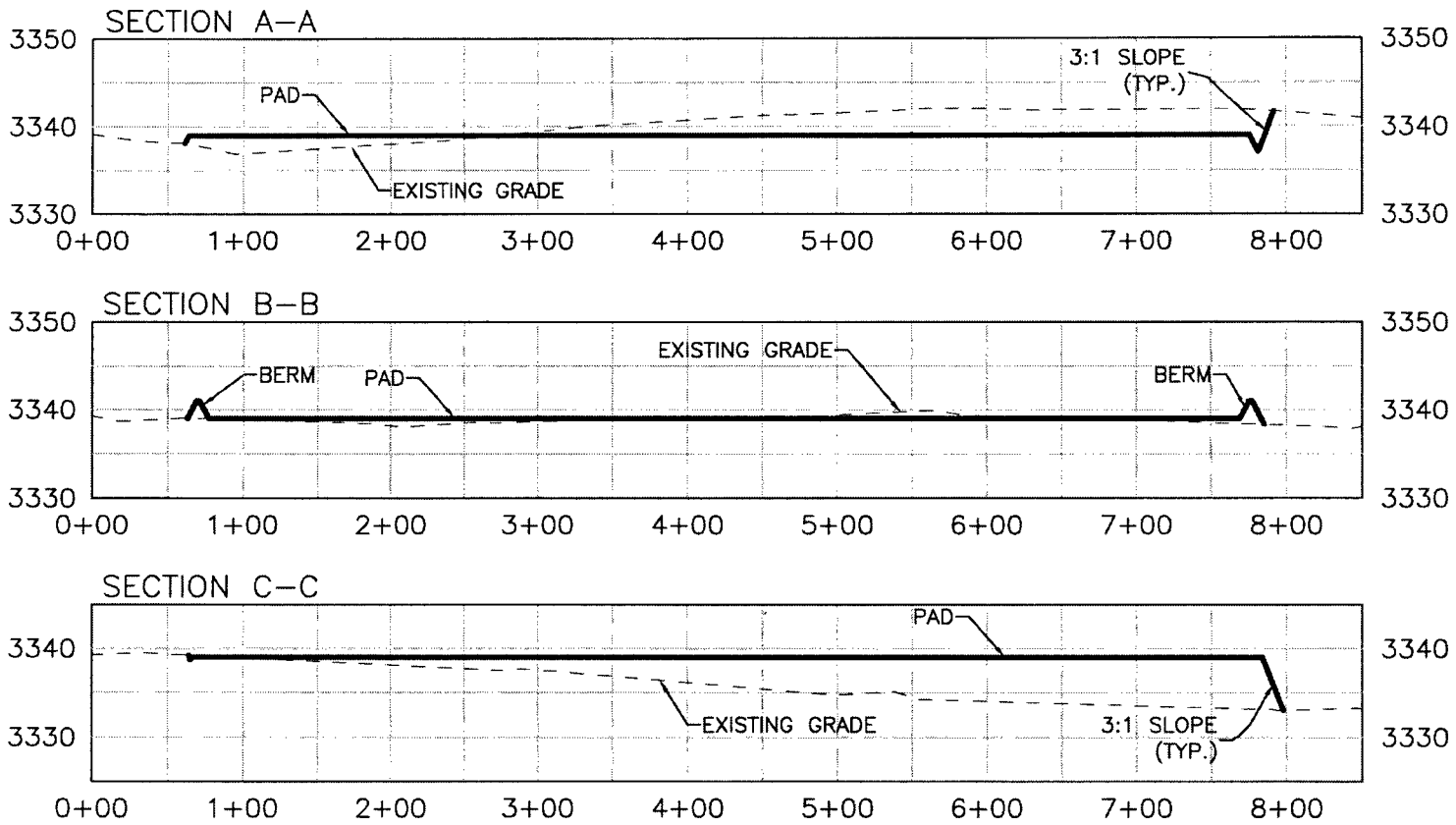
CUT	FILL	NET
5422 CU. YD	11752 CU. YD	6330 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

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

SHEET 1-2
SURVEY NO. 5658

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
BIG SINKS DRAW 25–24 FED COM 531H
SECTION 25, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 11, 2017

012 60 120 240
SCALE 1" = 120' – 1" = 20' VER

CUT	FILL	NET
5422 CU. YD	11752 CU. YD	6330 CU. YD (FILL)

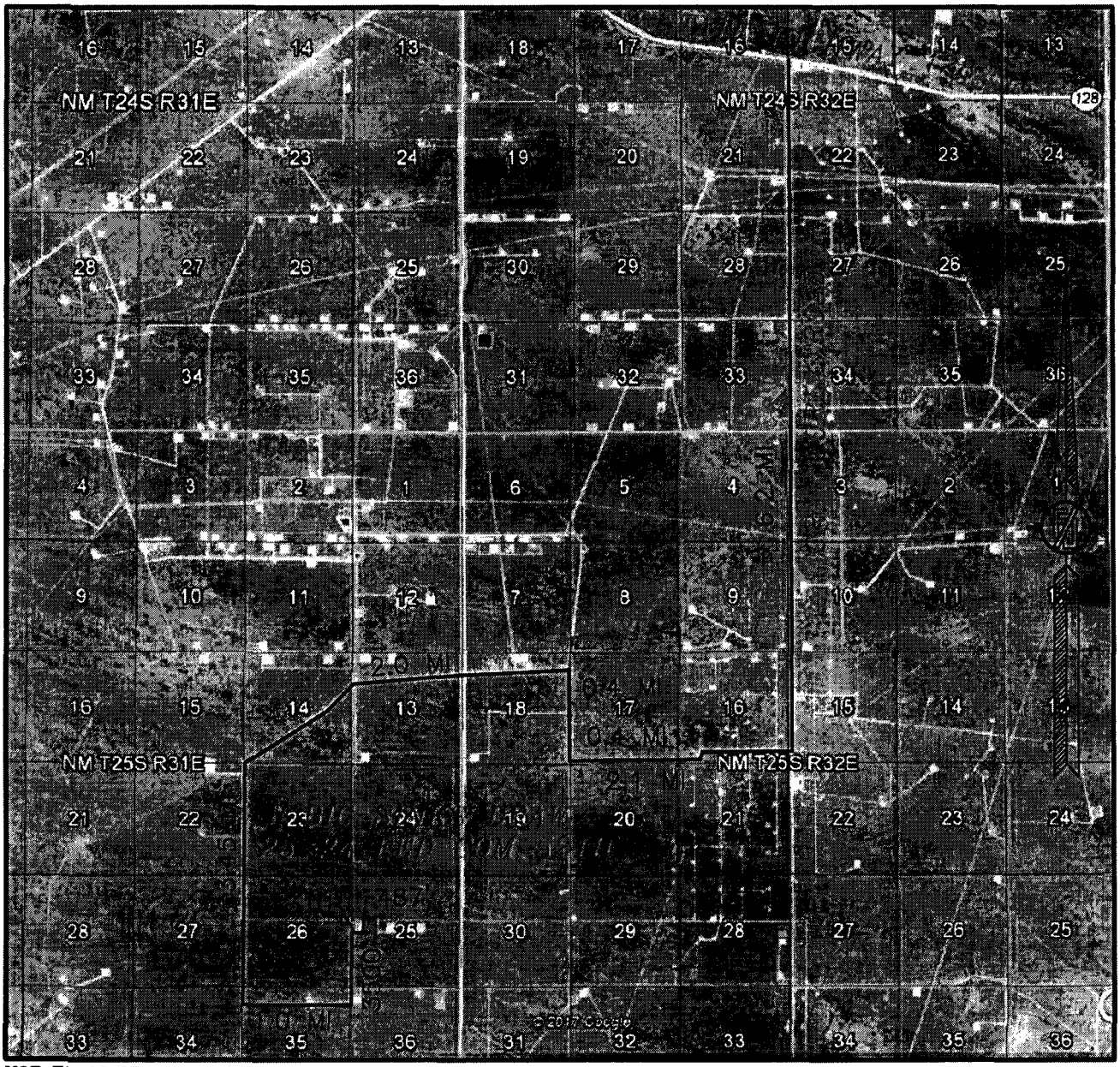
EARTHWORK QUANTITIES ARE ESTIMATED

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

SHEET 2–2
SURVEY NO. 5658

SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2015

DEVON ENERGY PRODUCTION COMPANY, L.P.

BIG SINKS DRAW 25–24 FED COM 521H

LOCATED 2334 FT. FROM THE NORTH LINE
AND 925 FT. FROM THE WEST LINE OF
SECTION 25, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 11, 2017

SURVEY NO. 5657

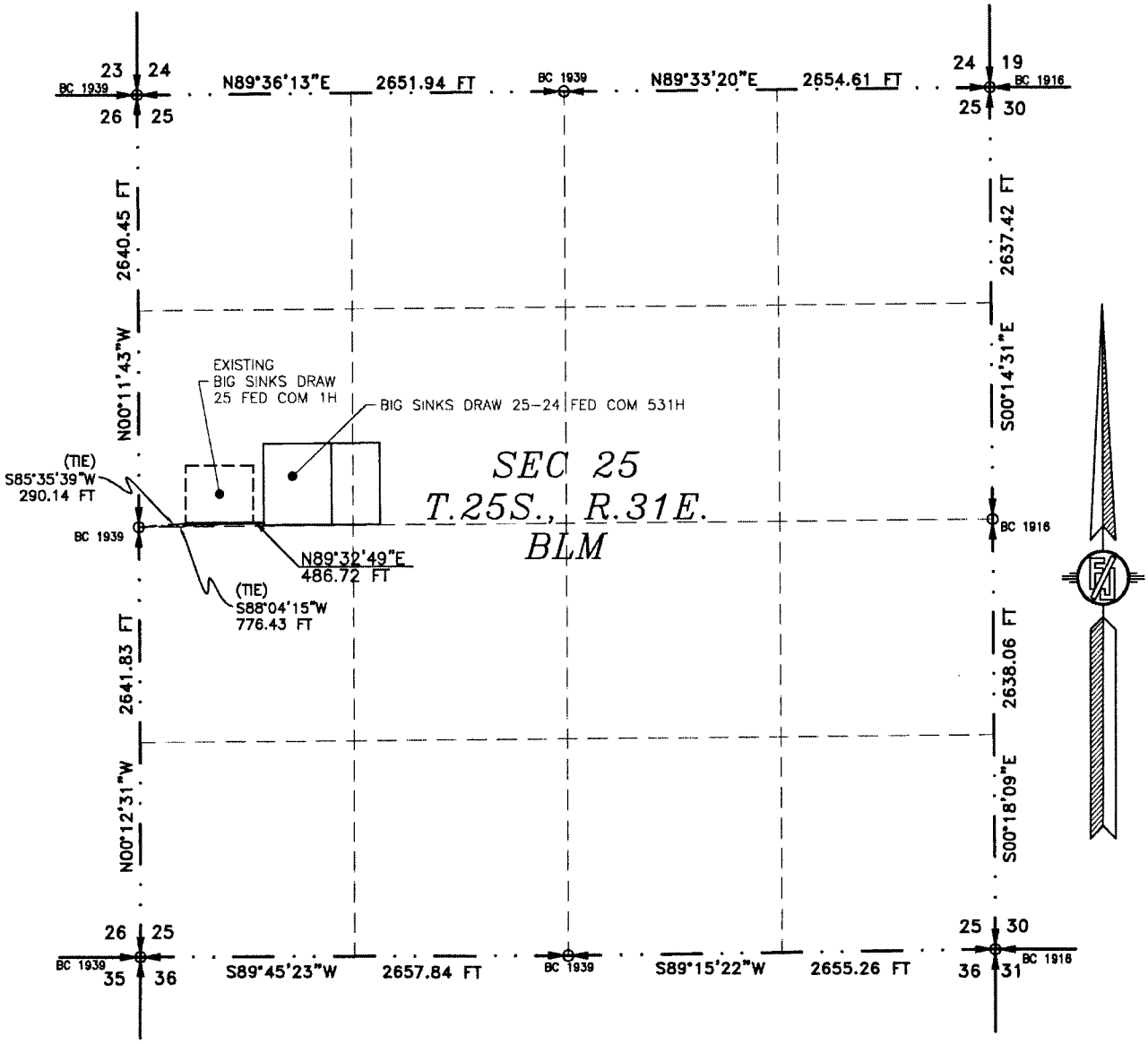
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE BIG SINKS DRAW 25-24 FED COM 531H

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
OCTOBER 11, 2017



SEE NEXT SHEET (2-2) FOR DESCRIPTION

1000 0 1000

Scale: 1" = 1000'

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 20 DAY OF OCTOBER 2017

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO PLS 12797

SHEET: 1-2

SURVEY NO. 5658

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE BIG SINKS DRAW 25-24 FED COM 531H

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
OCTOBER 11, 2017

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 NW/4 OF SAID SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S85°35'39"W, A DISTANCE OF 290.14 FEET;
THENCE N89°32'49"E A DISTANCE OF 486.72 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S88°04'15"W, A DISTANCE OF 776.43 FEET;

SAID STRIP OF LAND BEING 486.72 FEET OR 29.50 RODS IN LENGTH, CONTAINING 0.335 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	486.72 L.F.	29.50 RODS	0.335 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 20 DAY OF OCTOBER 2017

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO, PLS, 12797

SHEET: 2-2

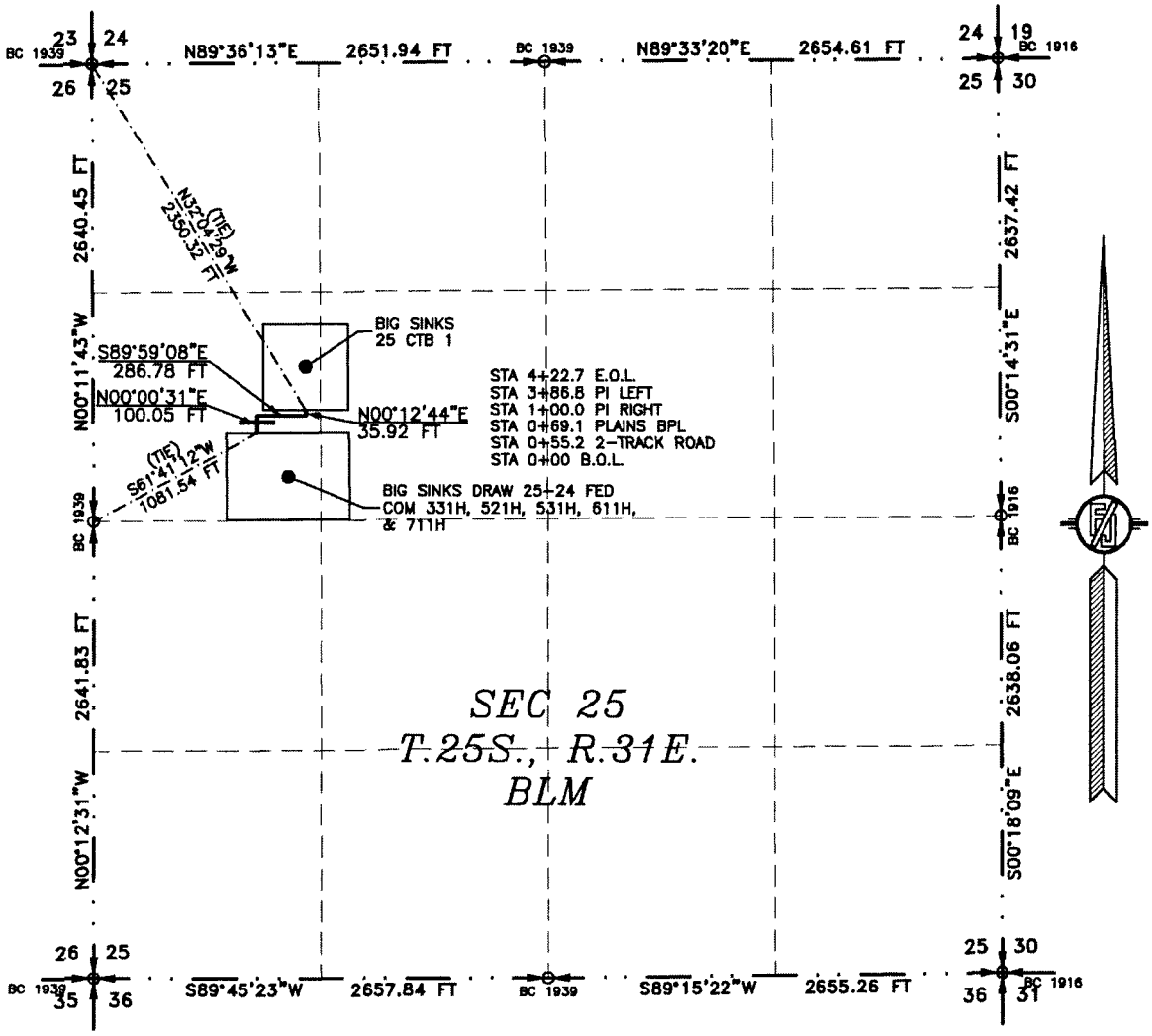
SURVEY NO. 5658

FLOWLINE PLAT

FIVE-4" POLY FLEX FLOWLINES AND ONE-6" GAS LIFT LINE BURIED IN THE SAME DITCH FROM BIG SINKS DRAW 25-24 FED COM 331H, 521H, 531H, 611H, & 711H TO COTTON DRAW MDP2 BIG SINKS 25 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
OCTOBER 26, 2017



SEE NEXT SHEET (2-4) FOR DESCRIPTION

1000 0 1000
Scale: 1" = 1000'

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 31 DAY OF OCTOBER 2017.

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO PLS. 12797

SHEET: 1-4

SURVEY NO. 5690

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

FIVE-4" POLY FLEX FLOWLINES AND ONE-6" GAS LIFT LINE BURIED IN THE SAME DITCH FROM BIG SINKS DRAW 25-24 FED COM 331H, 521H, 531H, 611H, & 711H TO COTTON DRAW MDP2 BIG SINKS 25 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
OCTOBER 26, 2017

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 NW/4 OF SAID SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S61°41'12"W, A DISTANCE OF 1081.54 FEET;
THENCE N00°00'31"E A DISTANCE OF 100.05 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°59'08"E A DISTANCE OF 286.78 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N00°12'44"E A DISTANCE OF 35.92 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N32°04'29"W, A DISTANCE OF 2350.32 FEET;

SAID STRIP OF LAND BEING 422.75 FEET OR 25.62 RODS IN LENGTH, CONTAINING 0.291 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	422.75 L.F.	25.62 RODS	0.291 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 31 DAY OF OCTOBER 2017

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO P.L.S. 12797
301 SOUTH CANAL
(575) 234-3341

SHEET: 2-4

SURVEY NO. 5690

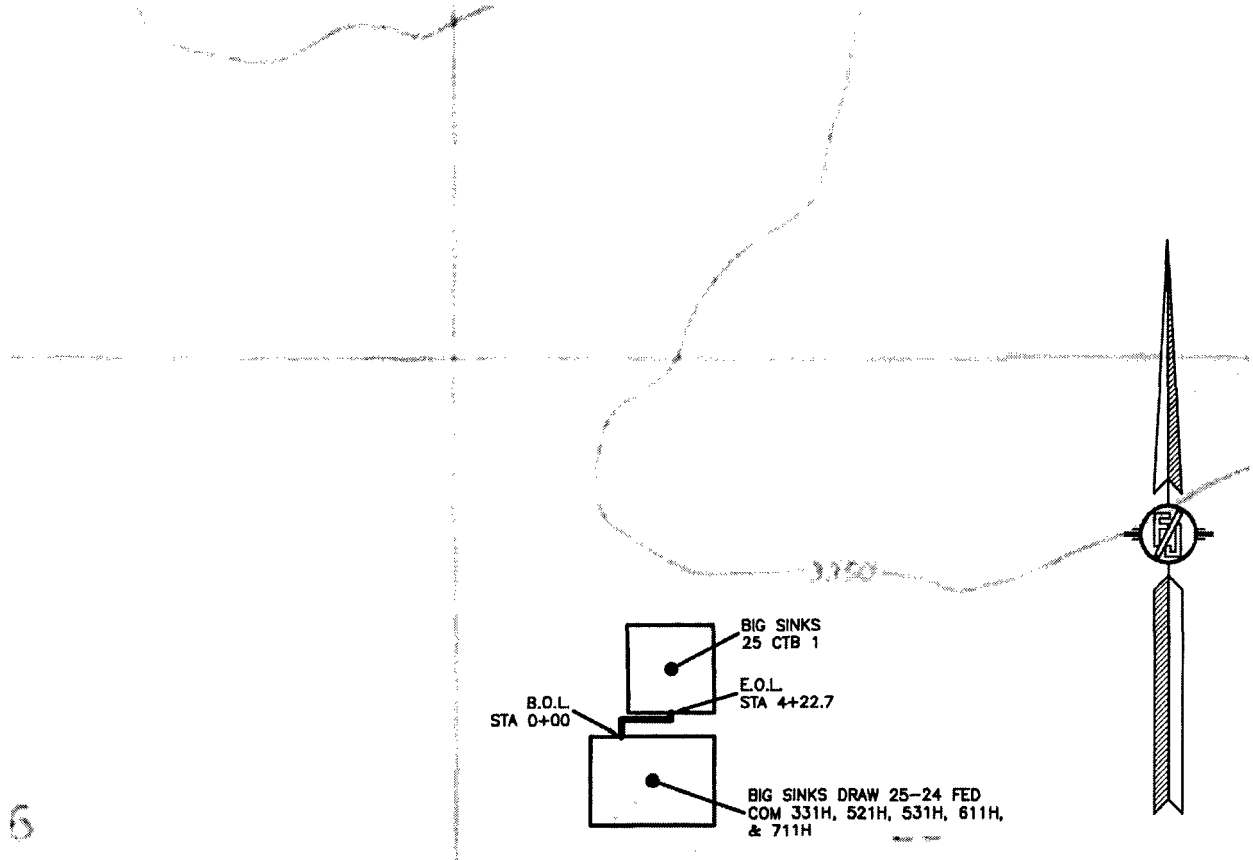
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

FIVE-4" POLY FLEX FLOWLINES AND ONE-6" GAS LIFT LINE BURIED IN THE SAME DITCH FROM BIG SINKS DRAW 25-24 FED COM 331H, 521H, 531H, 611H, & 711H TO COTTON DRAW MDP2 BIG SINKS 25 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
OCTOBER 26, 2017



SHEET: 3-4 *SURVEY NO. 5690*

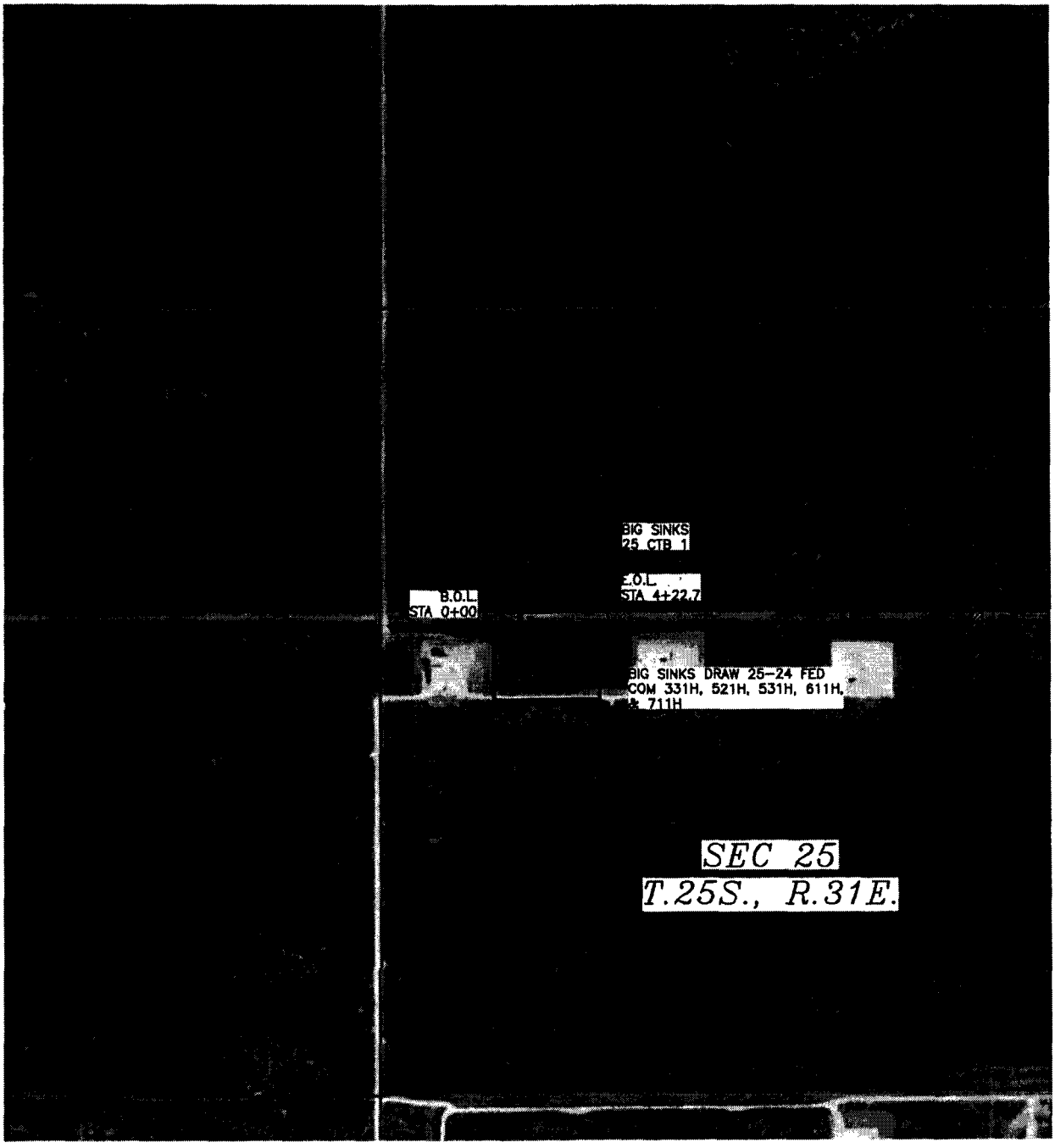
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

FLOWLINE PLAT

FIVE-4" POLY FLEX FLOWLINES AND ONE-6" GAS LIFT LINE BURIED IN THE SAME DITCH FROM BIG SINKS DRAW 25-24 FED COM 331H, 521H, 531H, 611H, & 711H TO COTTON DRAW MDP2 BIG SINKS 25 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

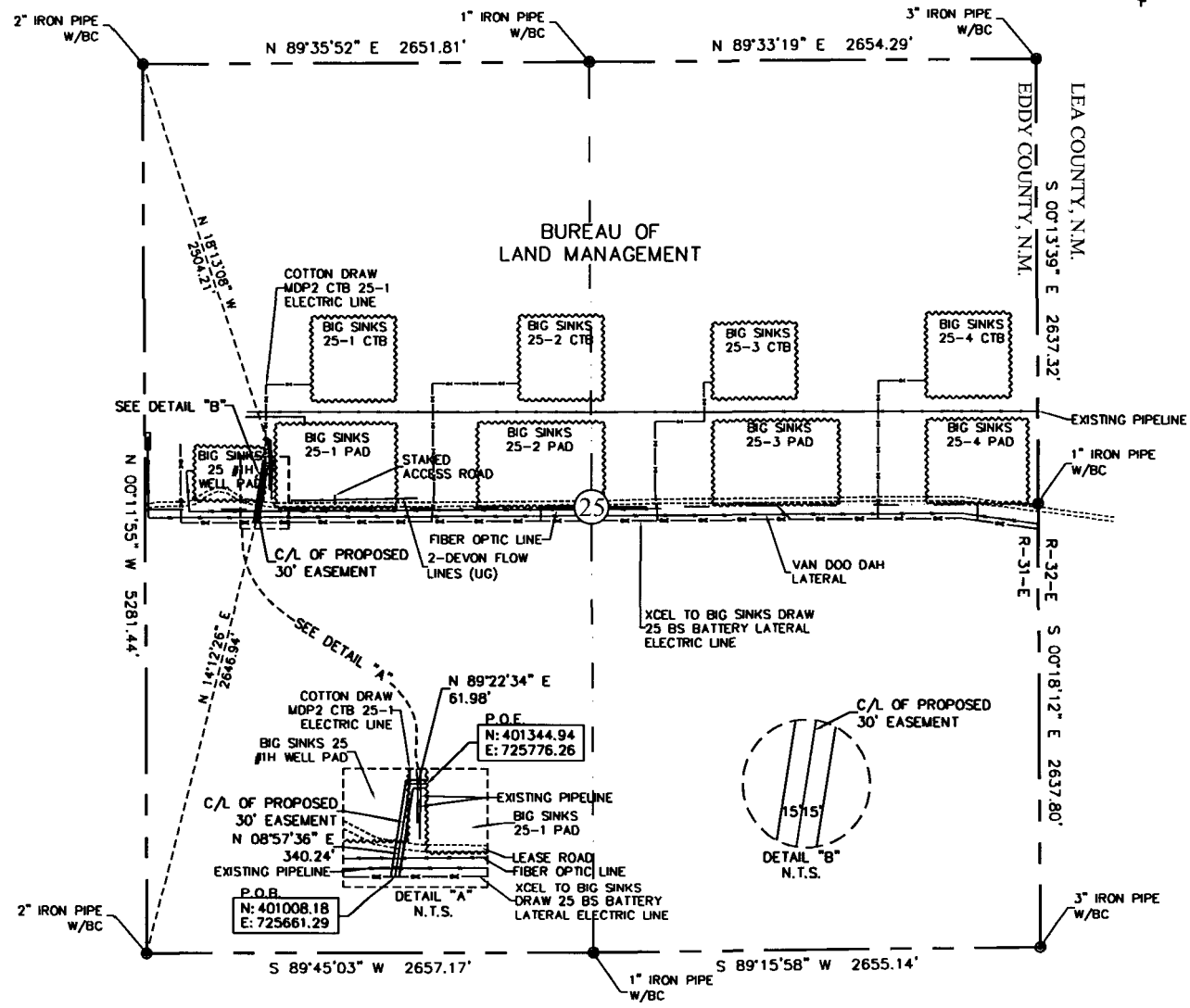
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
OCTOBER 26, 2017



SHEET: 4-4 *SURVEY NO. 5690*

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

EXHIBIT "A"
PAGE 1 of 4
ELECTRIC LINE PLAT
SECTION 25, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



0+00.0	P.O.B./XCEL TO BIG SINKS DRAW 25 BS BATTERY LATERAL ELECTRIC LINE
0+29.8	VAN DOO DAH LATERAL
0+36.4	EXISTING PIPELINE
0+67.5	FIBER OPTIC LINE
1+02.4	EDGE OF ROAD
1+13.6	C/L ACCESS ROAD
1+25.2	EDGE OF ROAD
1+69.4	STAKED POWER POLE
3+40.2	STAKED POWER POLE
3+70.2	EXISTING PIPELINE
3+81.0	EXISTING PIPELINE
4+02.2	P.O.E./BIG SINKS 25-1 PAD

0 1000 2000

30' EASEMENT AREA = 0.277 ACRE(S)
402.22 FEET OR 24.38 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Lomon, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

NEW MEXICO 22404 PROFESSIONAL SURVEYOR

B.L. Lomon PLS #22404
Date Signed: 07-05-2017
Horizonrow, LLC
924 Richardson Dr., Jasper, TX.
(903) 388-3045 75951
Employee of Horizonrow, LLC

HORIZON ROW LLC
Drawn for: devon
Drawn by: CHRIS MAAS
Date: 06/21/2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW MDP2 WELLPAD
25-1 ELECTRIC LINE
PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 25, T25S-R31E, N.M.P.M.

LINE NUMBER: EL7961
WBS NUMBER: XX-124757.AL
SCALE: 1" = 1000'
REVISIONS:
SHEET: 1 OF 4

SECTION 25, T25S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

ELECTRIC LINE PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 25, Township 25 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 25, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 14°12'26" E a distance of 2646.94' to the **Point of Beginning** of this easement having coordinates of Northing=401008.18 feet, Easting=725661.29 feet and continuing the following courses;

Thence N 08°57'36" E a distance of 340.24' to an angle point;

Thence N 89°22'34" E a distance of 61.98' to the **Point of Ending** having coordinates of Northing=401344.94 feet, Easting=725776.26 feet, from said point a 2" iron pipe w/BC for the northwest corner of Section 25, T25S-R31E bears N 18°13'08" W a distance of 2504.21', covering **402.22' or 24.38 rods** and having an area of **0.277 acres**.

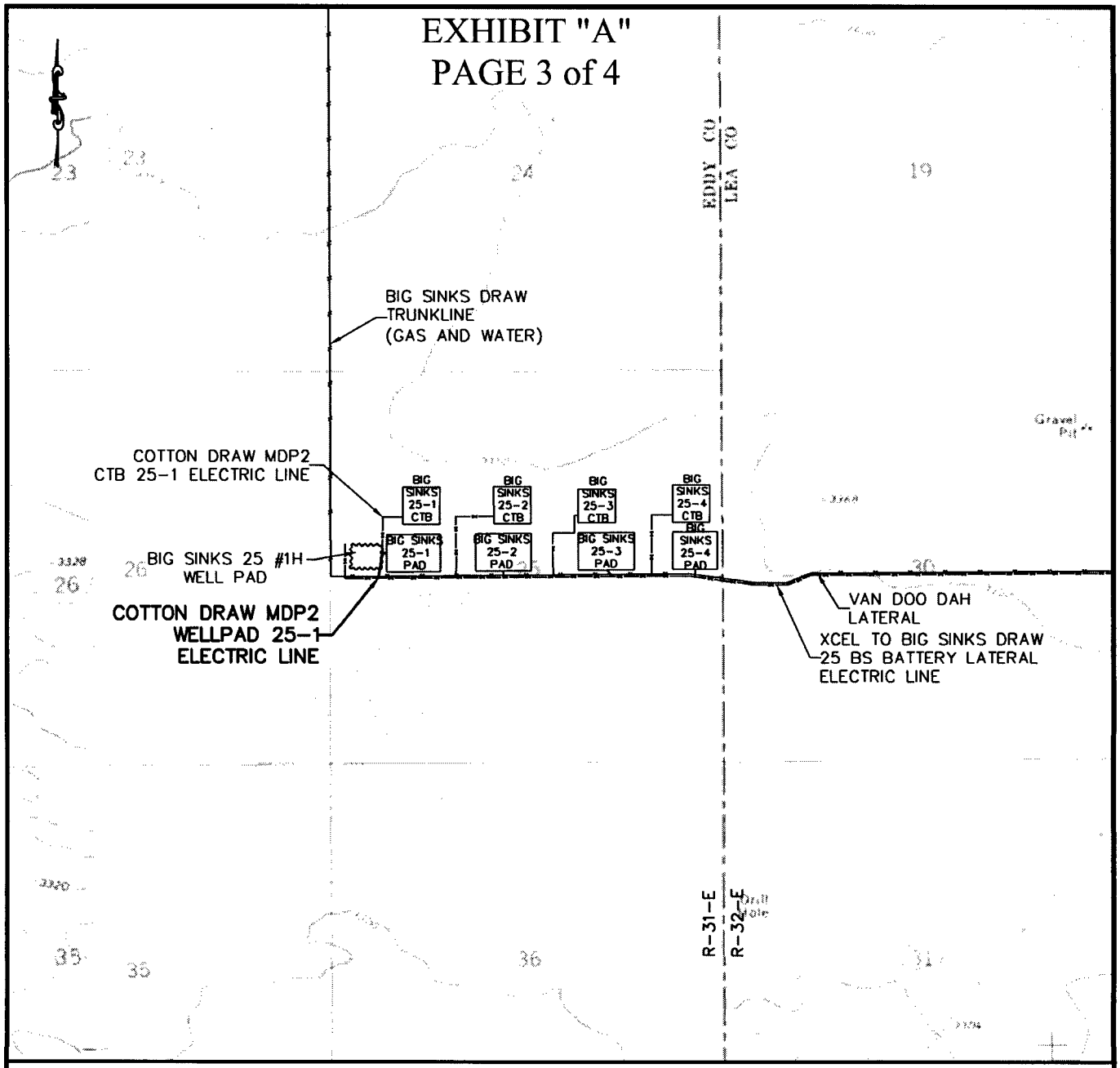
NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404
Date Signed: 07/05/2017
Horizon Row, LLC
924 Richardson Dr., Jasper, TX
(903) 388-3045 75951
Employee of Horizon Row, LLC

EXHIBIT "A"
PAGE 3 of 4

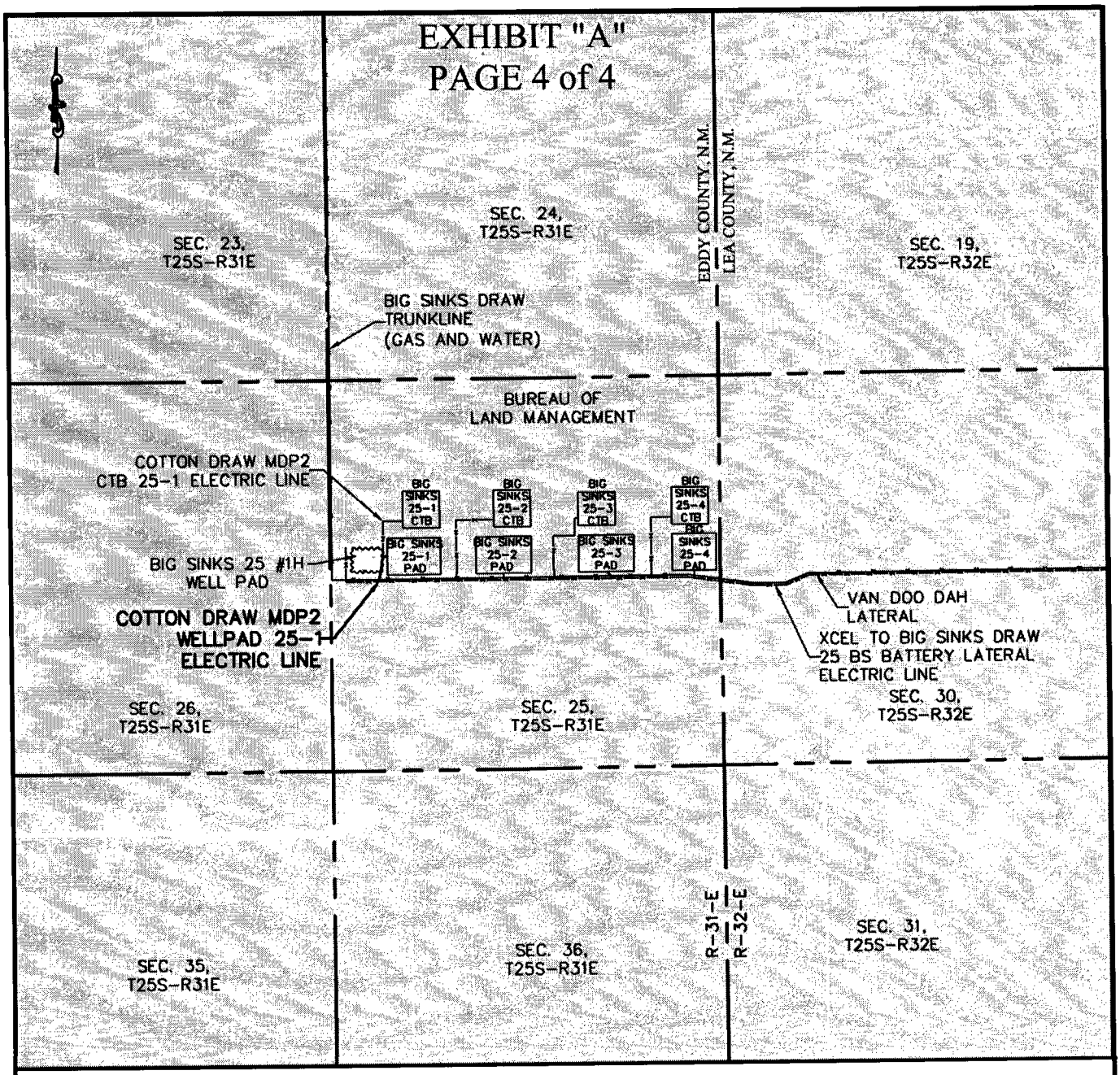


QUAD MAP

SECTION 25, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for: devon		LINE NUMBER: EL7961
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-124757.AL
PROPOSED 30' EASEMENT			SCALE: 1" = 2000'
Drawn by: CHRIS MAAS	Date: 06/21/2017		REVISIONS:
			SHEET: 3 OF 4

EXHIBIT "A"
PAGE 4 of 4



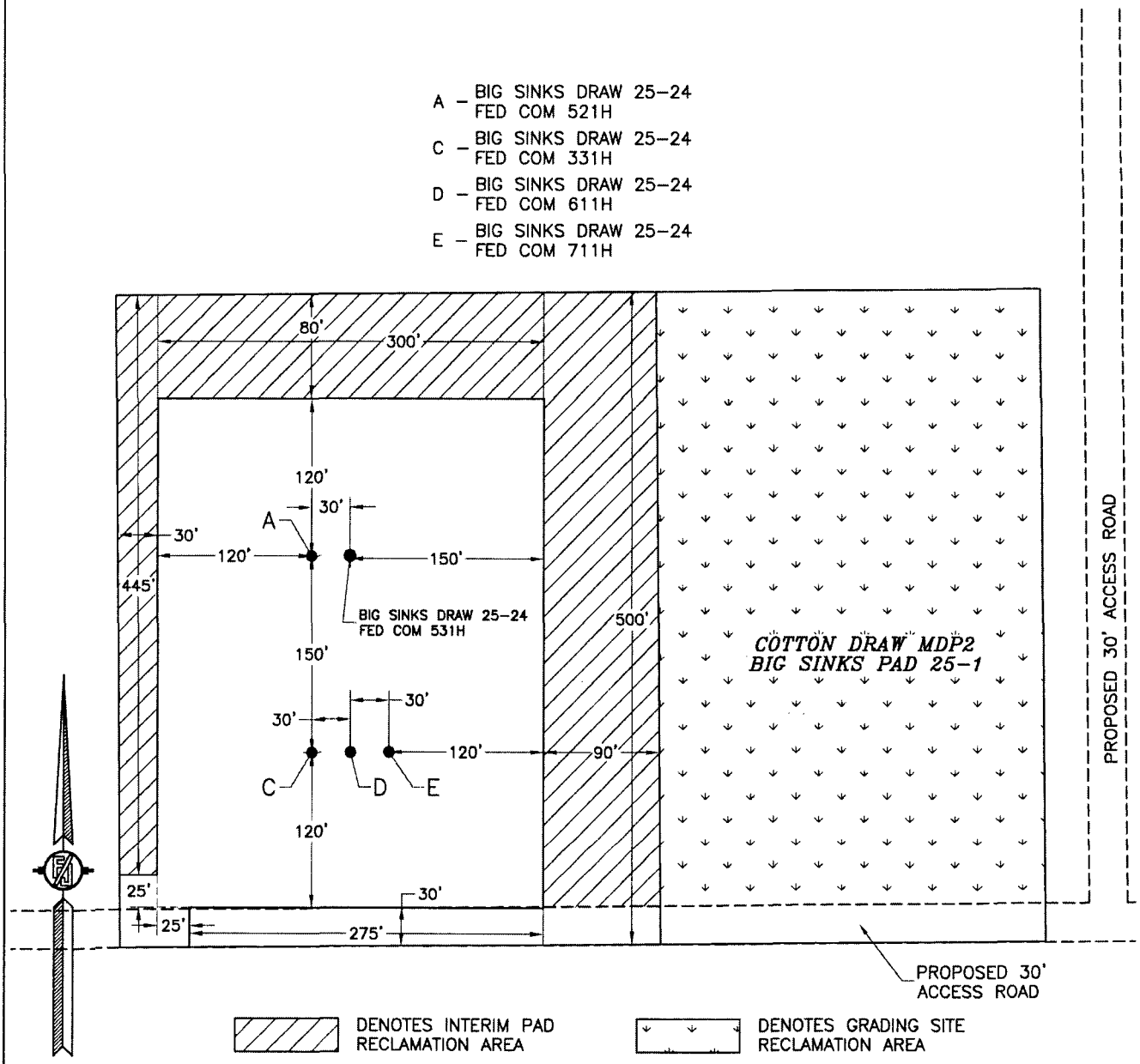
AERIAL MAP

SECTION 25, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC	Drawn for: devon		LINE NUMBER: EL7961
DEVON ENERGY PRODUCTION CO., L.P.			WBS NUMBER: XX-124757.AL
PROPOSED 30' EASEMENT			SCALE: 1" = 2000'
Drawn by: CHRIS MAAS	Date: 06/21/2017		REVISIONS:
			SHEET: 4 OF 4

SECTION 25, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN

A – BIG SINKS DRAW 25–24 FED COM 521H
C – BIG SINKS DRAW 25–24 FED COM 331H
D – BIG SINKS DRAW 25–24 FED COM 611H
E – BIG SINKS DRAW 25–24 FED COM 711H



012 60 120 240
SCALE 1" = 120'

1.829± ACRES INTERIM PAD RECLAMATION AREA
3.239± ACRES GRADING SITE RECLAMATION AREA
3.197± ACRES NON–RECLAIMED AREA
8.265± ACRES COTTON DRAW MDP2 BIG SINKS PAD 25–1

DEVON ENERGY PRODUCTION COMPANY, L.P.
BIG SINKS DRAW 25–24 FED COM 531H
LOCATED 2334 FT. FROM THE NORTH LINE
AND 955 FT. FROM THE WEST LINE OF
SECTION 25, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

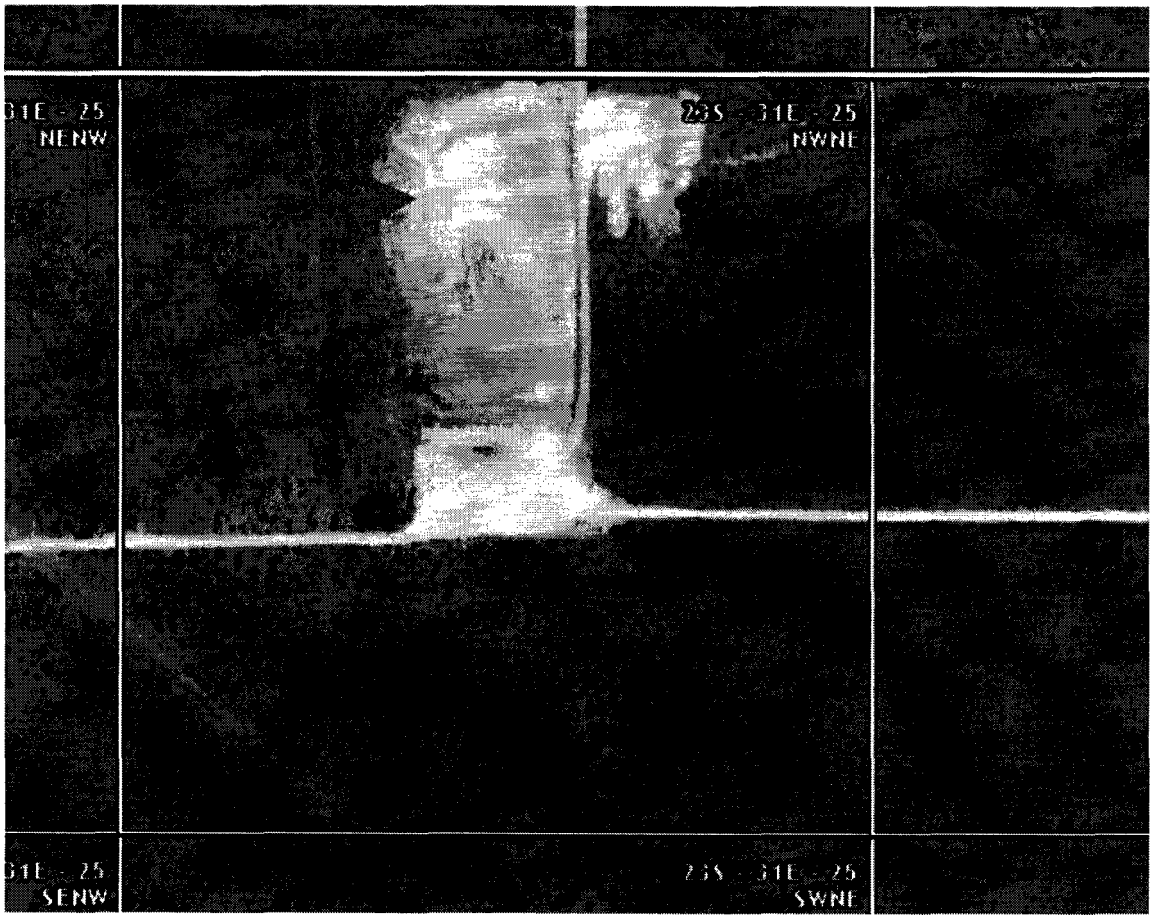
OCTOBER 11, 2017

SURVEY NO. 5658

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

- State pit 616 and 617 32- 23S- 32E

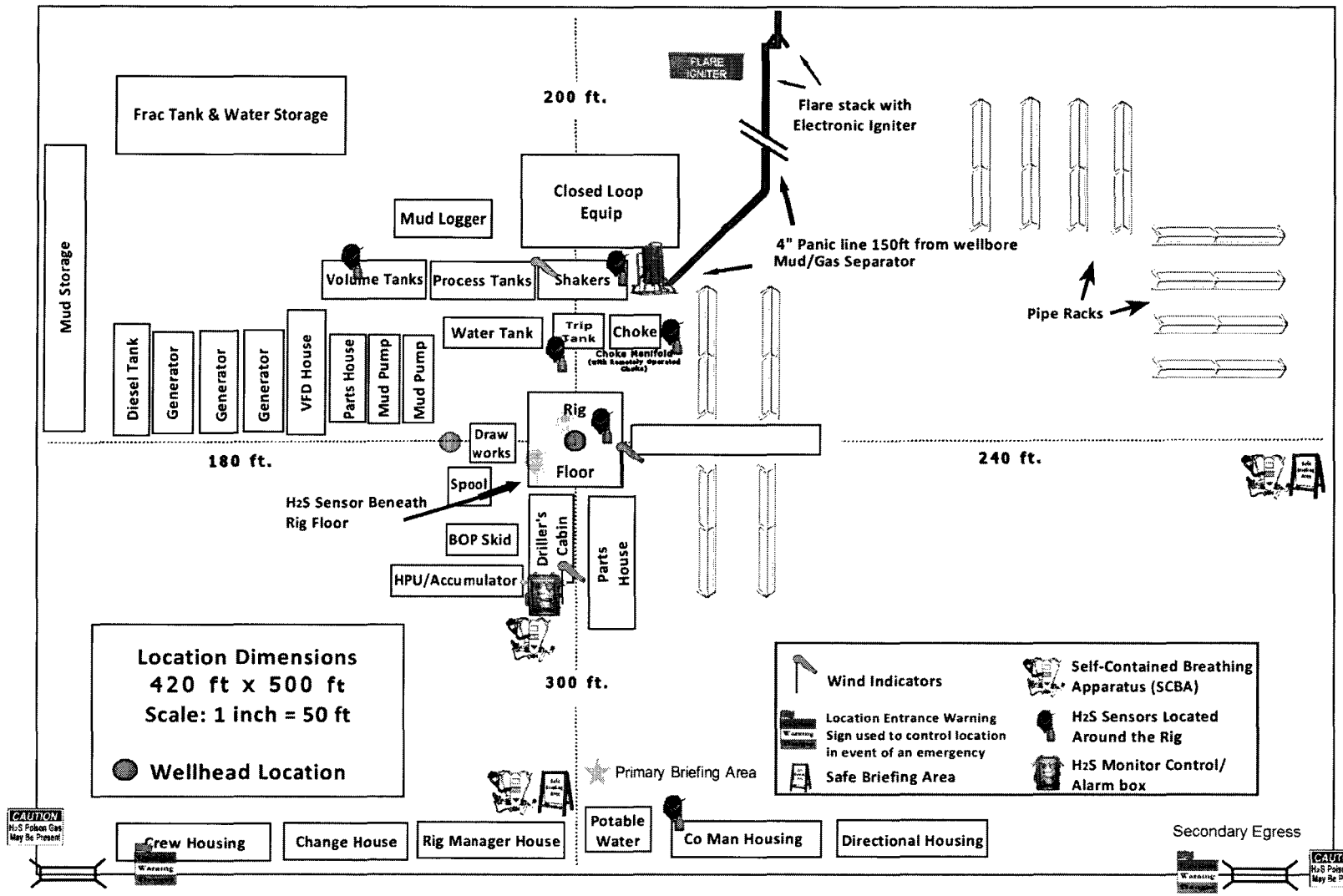
- Fed pit 25- 23S- 31E



- Private pit 26- 23S- 31E


27
23S 31E 26
34
23S 31E 35

Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location



Devon Energy
APD VARIANCE DATA

OPERATOR NAME: Devon Energy

1. SUMMARY OF Variance:

Devon Energy respectfully requests approval for the following additions to the drilling plan:

1. Potential utilization of a spudder rig to pre-set surface casing.

2. Description of Operations

1. A spudder rig contractor may move in their rig to drill the surface hole section and pre-set surface casing on this well.
    a. After drilling the surface hole section, the rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. Rig will utilize fresh water based mud to drill surface hole to TD.
2. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
3. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
5. Drilling operation will be performed with the big rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The BLM will be contacted / notified 24 hours before the big rig moves back on to the pad with the pre-set surface casing.
6. Devon Energy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
7. Once the rig is removed, Devon Energy will secure the wellhead area by placing a guard rail around the cellar area.

PLAT

One Mile Radius Map

devon

This map is for illustrative purposes only and is neither a legally recorded map nor a survey and is not intended to be used as one. Devon makes no warranty,representation, or guarantee of any kind regarding this map.

GCS North American 1983
Datum: North American 1983; Units: Degree
Created by: lemois
Map is current as of 10/26/2017.

N

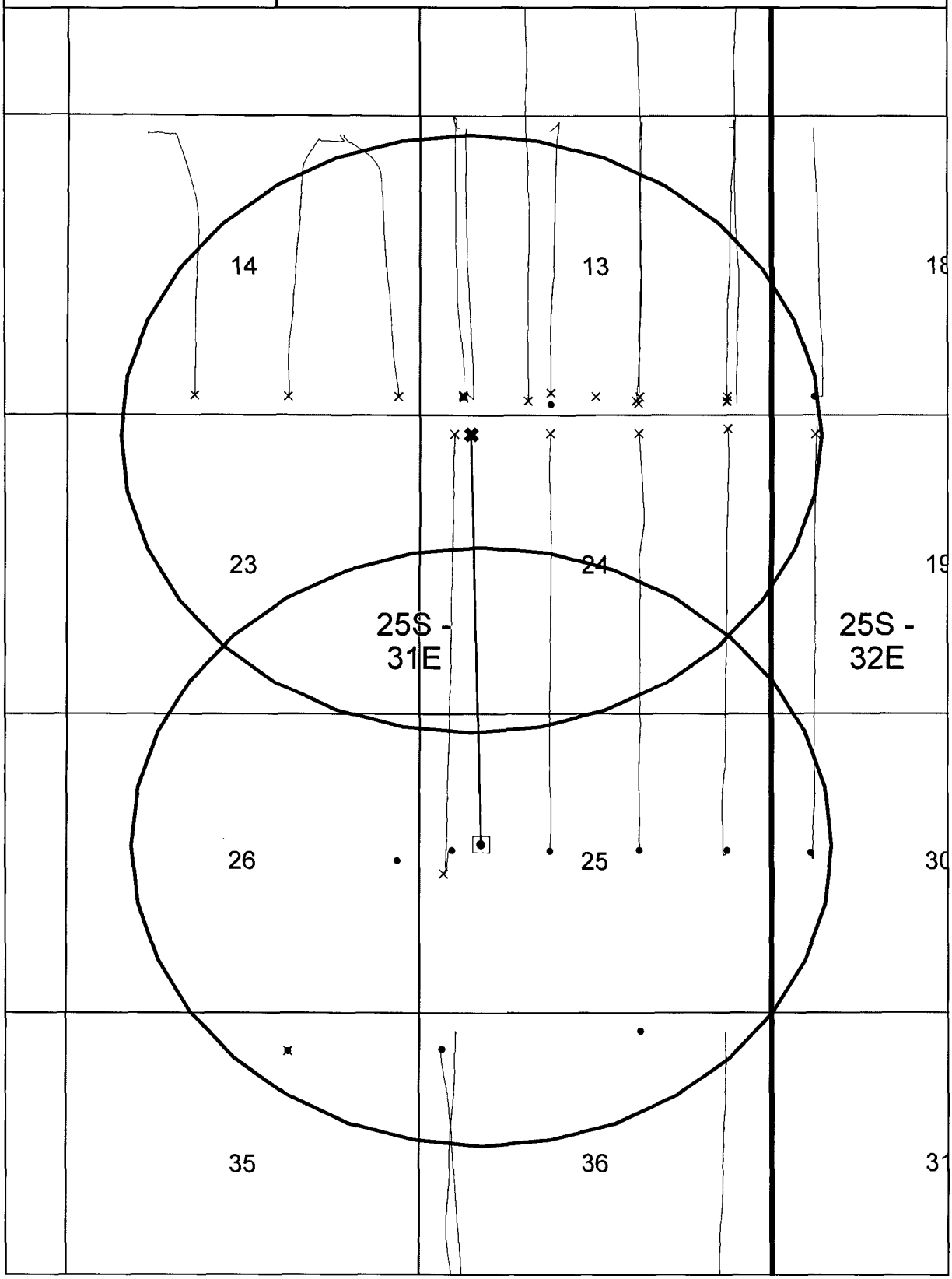
Miles
0 0.3 1 inch = 0 miles

BIG SINKS DRAW 25-24 FED COM 531H
WA017086304

BIG SINKS DRAW 25 FED COM 1H
Nearest wellbore to SHL: 450 ft.

BIG SINKS DRAW 25 FED COM 1H
Nearest wellbore to BHL: 246 ft.

• SHL
× BHL



Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Surf.	745	14.8	1.33	6.32	6	Lead: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Inter.	776	12.9	1.85	9.81	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sks Poly-E-Flake
	270	14.8	1.33	6.32	6	Tail: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Prod.	446	9	3.27	13.5	21	Lead: Tuned Light Cement
	1838	14.5	1.2	5.31	25	Tail: (50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	30%
5-1/2" Production	3903'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Y Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using 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. o Wellhead will be installed by wellhead representatives. o If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. o Wellhead representative will install the test plug for the initial BOP test. o Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the packoff, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. o If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. o Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. o Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi. Low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a Kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

	Devon's proposed wellhead manufactures will be EMC Technologies, Cactus Wellhead, or Cameron. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

5. Mud Program

0	958	FW Gel	8.5-9.0	28-34	N/C
958	4403	Saturated Brine	10.0-11.0	28-34	N/C
4403	16129	Cut Brine	8.5-9.3	28-34	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP

X	CBL	Production casing
X	Mud log	KOP to TD
	PEX	

7. Drilling Conditions

BH Pressure at deepest TVD	4395 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

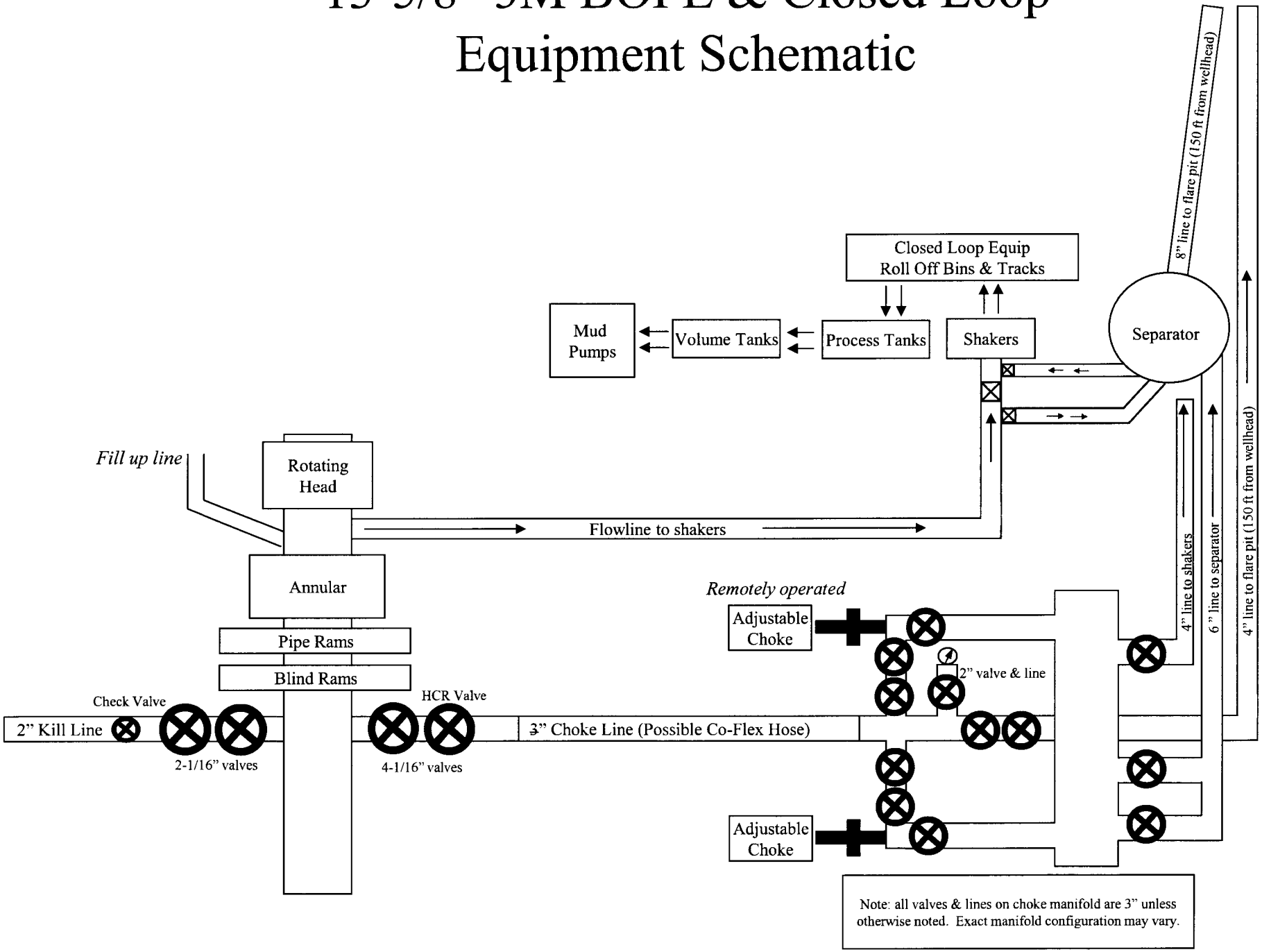
Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No.

Attachments
_x_ Directional Plan
___ Other, describe

13-5/8" 3M BOPE & Closed Loop Equipment Schematic



devon

Commitment Runs Deep

Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

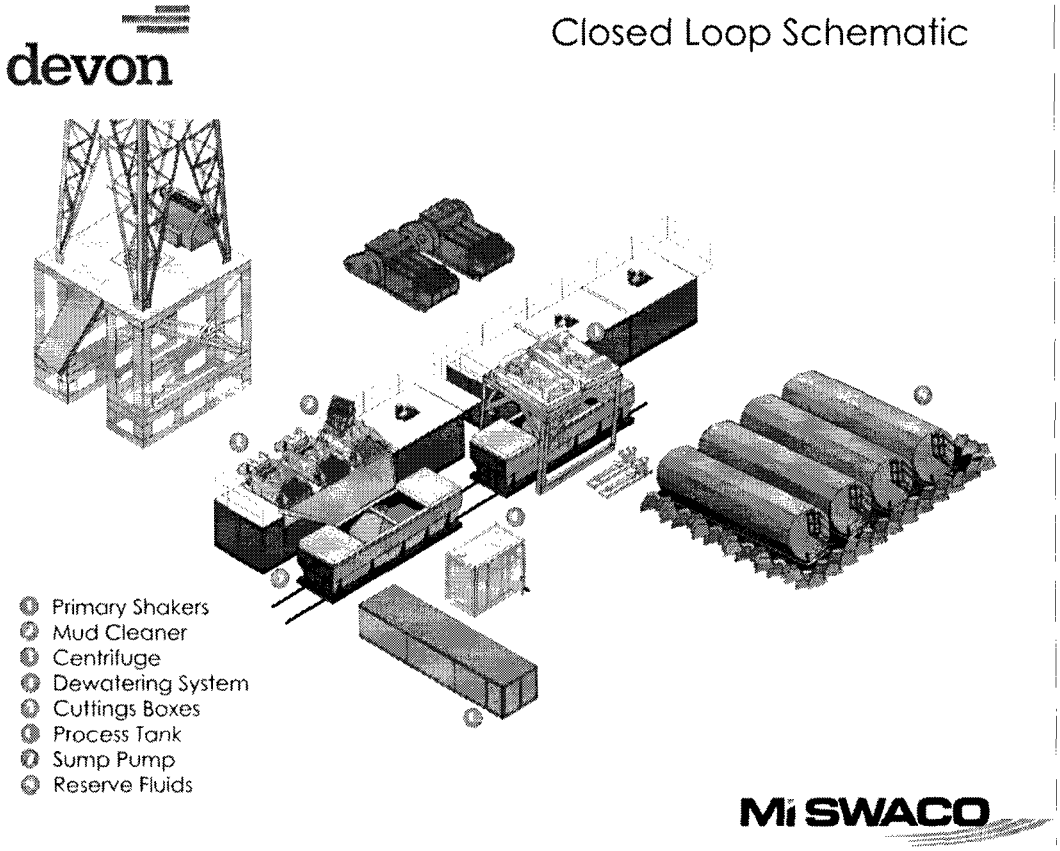
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

Continental CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly It is good practice to use lifting & safety equipment but not mandatory

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com

RIG 212

PHOENIX

QUALITY DOCUMENT

PHOENIX RUBBER INDUSTRIAL LTD.

6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152
Phone: (3662) 566-737 • Fax: (3662) 566-738

SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 · Fax: (361) 217-2972, 456-4273 · www.taurusemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID		Choke and Kill Hose
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH:		11,43 m
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration: 60 min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with 4 1/16" Flange end	720 719	AISI 4130 AISI 4130	C7626 47357

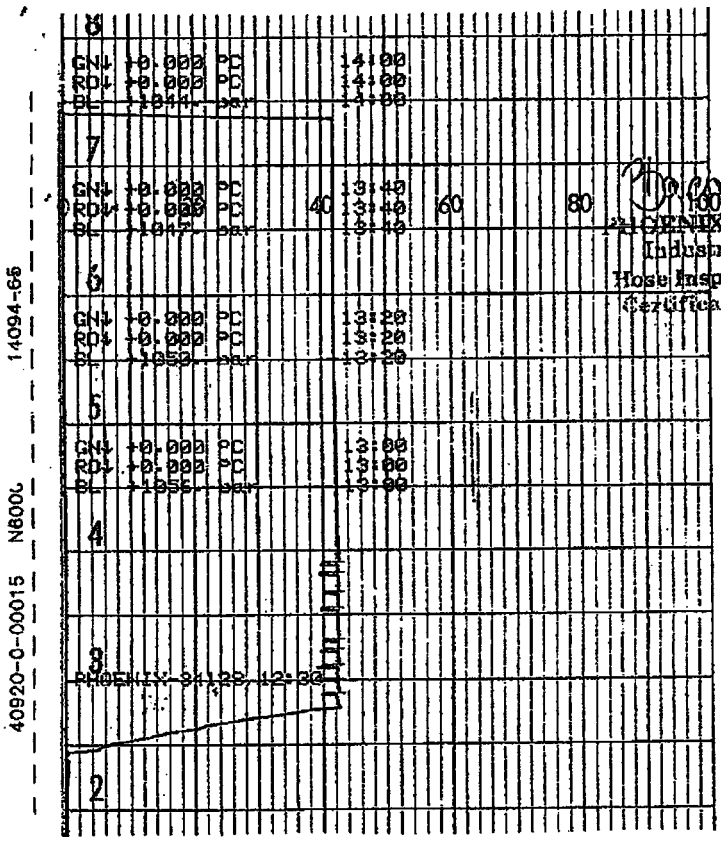
API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Verification Dept.

CERTIFIED TRUE COPY
PHOENIX RUBBER a.s.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO.
PHOENIX RUBBER C.C.

devon

Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

Hydrogen Sulfide (H_2S) Contingency Plan

For

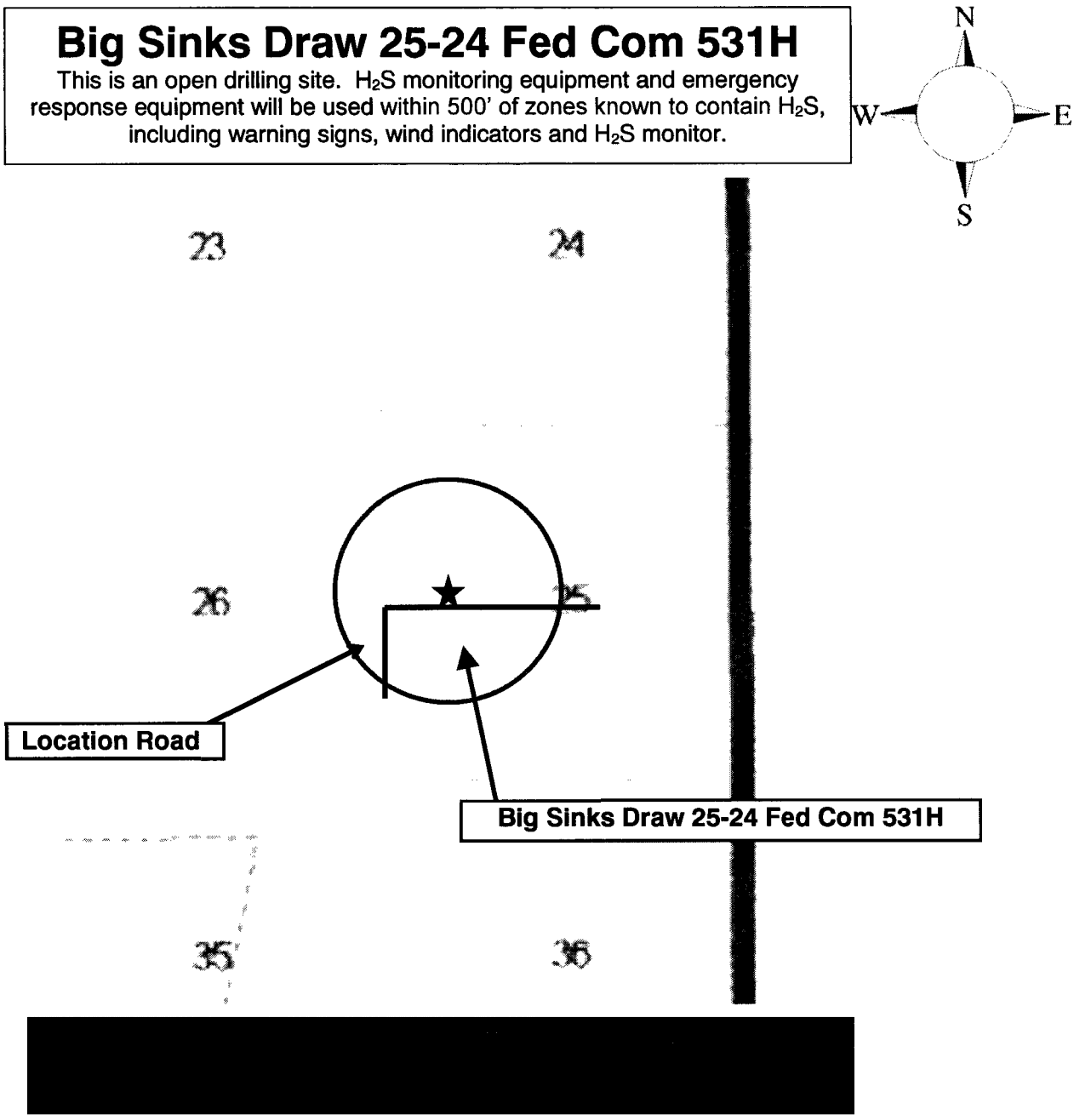
Big Sinks Draw 25-24 Fed Com 531H

Sec-25 T-25S R-31E
2334' FNL & 955' FWL
LAT. = 32.1021148' N (NAD83)
LONG = 103.7371096' W

Eddy County NM

Big Sinks Draw 25-24 Fed Com 531H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.



Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

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

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - Bell nipple
   - Shale shaker
   - Trip tank
   - Suction pit
   - Rig floor
   - Cellar
   - Choke manifold
   - Living Quarters (usually the company man's trailer stairs.)

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
Jerry Matthews – Day: 575-748-0161 Cell: 575-748-5234		
EHS Professional – Jason Robison		405-541-2841

Agency Call List

Lea County (575)	**Hobbs**		
	Lea County Communication Authority		393-3981
	State Police		392-5588
	City Police		397-9265
	Sheriff's Office		393-2515
	Ambulance		**911**
	Fire Department		397-9308
	LEPC (Local Emergency Planning Committee)		393-2870
	NMOCD		393-6161
	US Bureau of Land Management		393-3612
Eddy County (575)	**Carlsbad**		
	State Police		885-3137
	City Police		885-2111
	Sheriff's Office		887-7551
	Ambulance		**911**
	Fire Department		885-3125
	LEPC (Local Emergency Planning Committee)		887-3798
	US Bureau of Land Management		887-6544
	NM Emergency Response Commission (Santa Fe)		(505) 476-9600
	24 HR		(505) 827-9126
	National Emergency Response Center		(800) 424-8802
	National Pollution Control Center: Direct		(703) 872-6000
	For Oil Spills		(800) 280-7118
	Emergency Services		
	Wild Well Control		(281) 784-4700
	Cudd Pressure Control	(915) 699-0139	(915) 563-3356
	Halliburton		(575) 746-2757
	B. J. Services		(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs		(575) 392-6429
	Flight For Life - Lubbock, TX		(806) 743-9911
	Aerocare - Lubbock, TX		(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM		(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM		(800) 222-1222
	Poison Control (24/7)		(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service		(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov		

Prepared in conjunction with
Dave Small SHARP COMMUNICATIONS & CONSULTING, LLC

Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

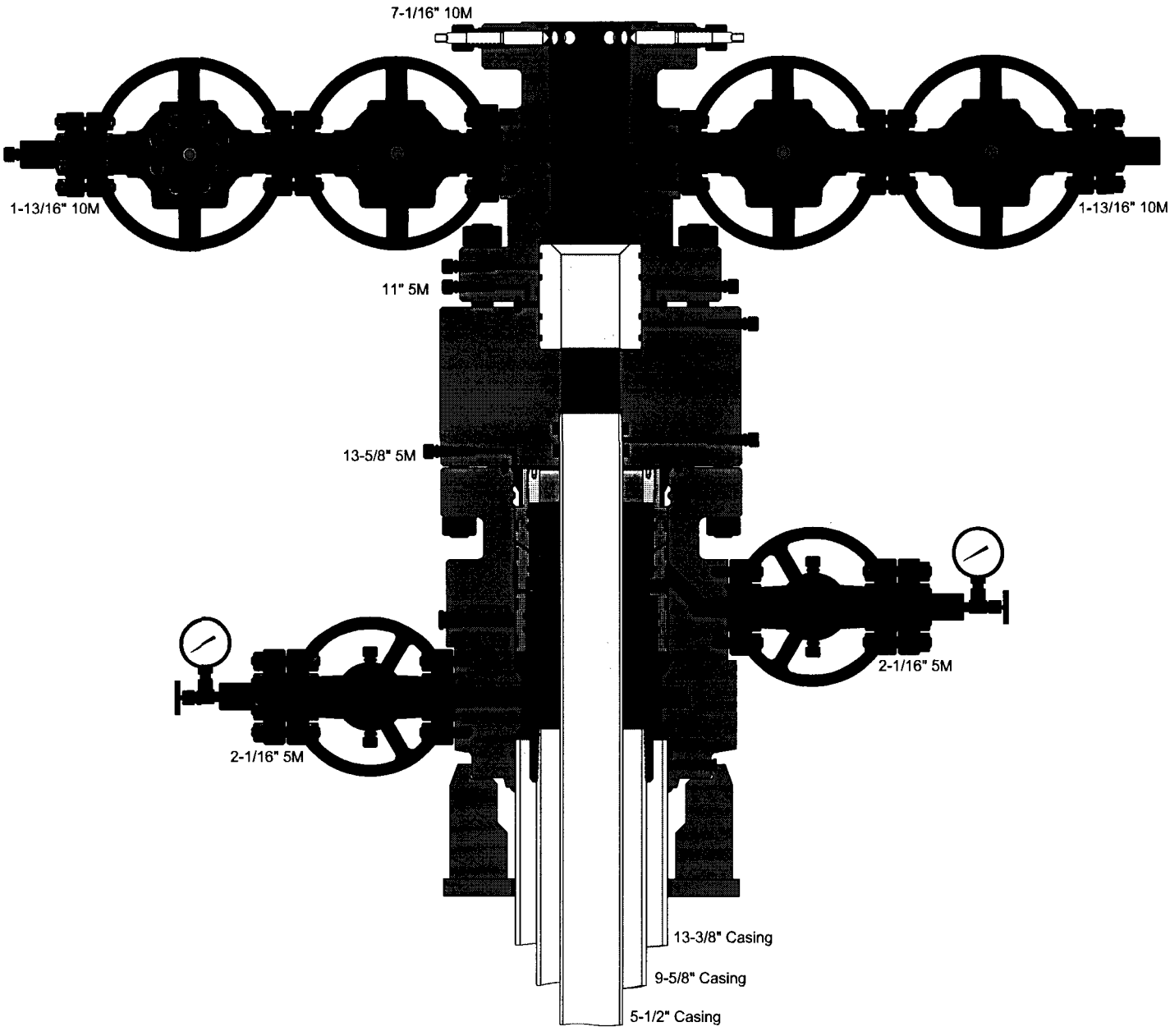
Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi.

- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial BOP test.
- Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.
- If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.
- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.
After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.


7-1/16" 10M
1-13/16" 10M
1-13/16" 10M
11" 5M
13-5/8" 5M
2-1/16" 5M
2-1/16" 5M
13-3/8" Casing
9-5/8" Casing
5-1/2" Casing

devon

Devon Energy Corp.
Eddy County, NM (NAD83)
Big Sinks Draw 25-24
531H
Prelm Plan
Rig TBD

PRODIRECTIONAL

RKB Elevation: GL 3332'+KB 26' @ 3358.00usft (Rig TBD)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	401396.43	725956.08	32.1021148	-103.7371096	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
BHL - BSD 531H	9088.00	7284.47	-205.98	408680.90	725750.10

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	
3	1866.38	1.83	270.00	1866.31	0.00	-5.86	0.50	0.00	
4	8035.10	1.83	270.00	8031.88	0.00	-203.05	0.00	0.00	
5	8218.29	0.00	0.00	8215.04	0.00	-205.98	1.00	0.00	
6	8518.29	0.00	0.00	8515.04	0.00	-205.98	0.00	0.00	
7	9418.29	90.00	0.00	9088.00	572.96	-205.98	10.00	572.96	
8	16129.80	90.00	0.00	9088.00	7284.47	-205.98	0.00	7284.47	BHL - BSD 531H

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle
933.00	933.00	Rustler	0.00
1253.00	1253.00	Salado	0.00
4303.00	4304.31	Base of Salt	0.00
4338.00	4339.33	Delaware	0.00
8348.00	8351.25	1st BSPG Lime	0.00
9088.00	9418.29	Leonard C	0.00

CASING DETAILS

No casing data is available

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

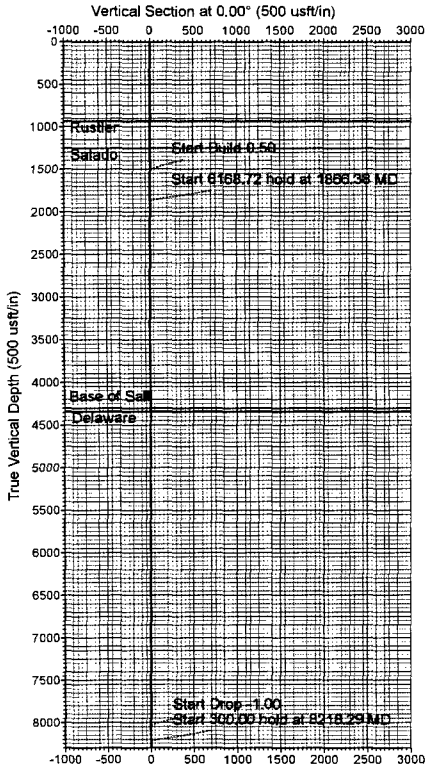
Local Origin: Well 531H, Grid North

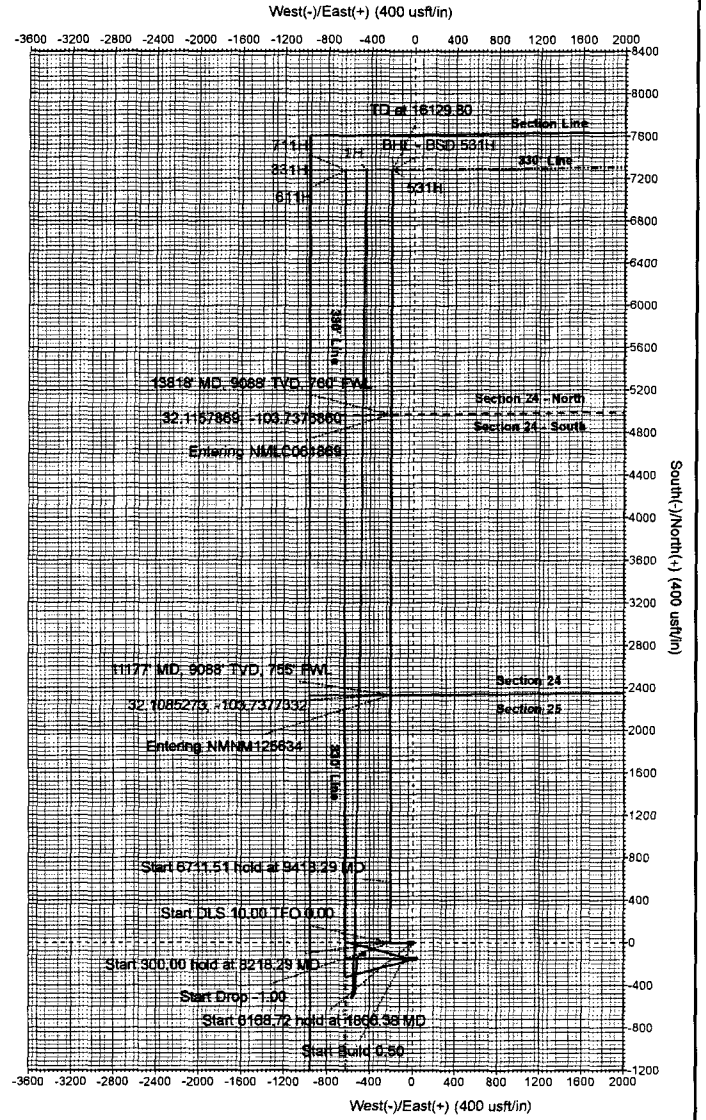
Latitude: 32.1021148
Longitude: -103.7371096

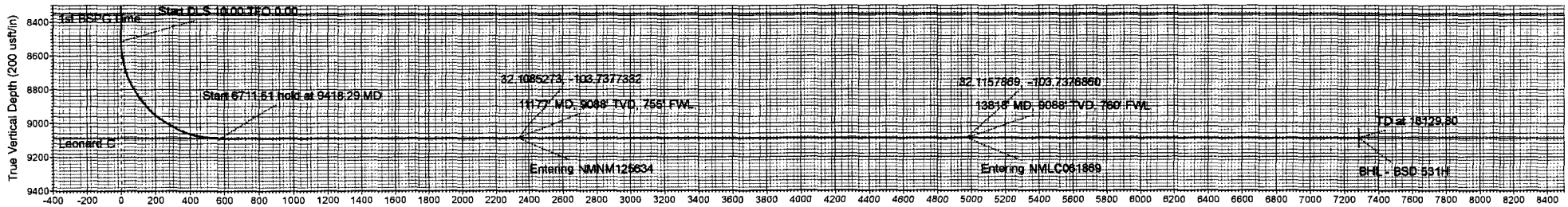
Grid East: 725956.08
Grid North: 401396.43
Scale Factor: 1.000

Geomagnetic Model: HDGM
Sample Date: 01-Nov-17
Magnetic Declination: 6.82°
Dip Angle from Horizontal: 59.82°
Magnetic Field Strength: 47969.30nT

To convert a Magnetic Direction to a Grid Direction, Add 6.50°
To convert a Magnetic Direction to a True Direction, Add 6.82° East
To convert a True Direction to a Grid Direction, Subtract 0.32°







36" x 48"

devon

Pro Directional
Anticollision Report

PRODIRECTIONAL

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Reference	Prelm Plan		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 2,485.72 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program — Date 11/2/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	16,129.80	Prelm Plan (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Minimum Separation Ellipses (usft)	Separation Factor	Warning
Big Sinks Draw 25-24						
1H - OH - Surveys	688.23	699.05	463.31	459.49	121.130	CC
1H - OH - Surveys	3,800.00	3,793.94	474.47	453.50	22.623	ES
1H - OH - Surveys	16,129.80	18,027.00	1,287.39	1,163.83	10.419	SF
331H - OH - Prelim Plan	2,247.58	2,246.87	151.28	135.74	9.734	CC
331H - OH - Prelim Plan	2,900.00	2,901.23	153.51	133.30	7.594	ES
331H - OH - Prelim Plan	8,000.00	8,005.31	275.23	218.45	4.847	SF
521H - OH - Prelim Plan	1,000.00	1,000.00	29.98	23.26	4.463	CC
521H - OH - Prelim Plan	1,100.00	1,099.74	30.42	22.99	4.097	ES
521H - OH - Prelim Plan	16,129.80	15,884.74	516.15	317.45	2.598	SF
611H - OH - Prelim Plan	1,972.30	1,972.32	149.98	136.41	11.050	CC
611H - OH - Prelim Plan	2,700.00	2,700.62	152.09	133.37	8.125	ES
611H - OH - Prelim Plan	7,700.00	7,705.56	289.41	234.82	5.302	SF
711H - OH - Prelim Plan	1,500.00	1,500.00	152.89	142.58	14.840	CC
711H - OH - Prelim Plan	1,900.00	1,900.08	154.42	141.30	11.770	ES
711H - OH - Prelim Plan	6,300.00	6,301.90	193.99	149.57	4.367	SF

Offset Design — Big Sinks Draw 25-24 - 1H - OH - Surveys — Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Reference Offset (usft)	Offset Well Error: (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Minimum Separation Ellipses (usft)	Separation Factor (usft)	Warning
0.00	0.00	11.08	0.28	0.00	0.01	-103.50	-109.15	-454.56	467.48			
100.00	100.00	113.32	102.52	0.13	0.13	-103.47	-108.81	-454.28	467.14	466.88	0.26	1,777.617
200.00	200.00	213.46	202.65	0.49	0.39	-103.45	-108.53	-453.83	466.63	465.76	0.88	532.014
300.00	300.00	315.88	305.07	0.85	0.65	-103.41	-108.03	-452.98	465.71	464.21	1.50	309.818
400.00	400.00	413.42	402.61	1.21	0.91	-103.37	-107.51	-452.33	464.93	462.82	2.12	219.684
500.00	500.00	514.20	503.39	1.57	1.16	-103.38	-107.40	-451.67	464.27	461.55	2.72	170.424
600.00	600.00	613.56	602.74	1.92	1.40	-103.36	-107.15	-451.01	463.57	460.25	3.33	139.359
688.23	688.23	699.05	688.23	2.24	1.58	-103.33	-106.81	-450.83	463.31	459.49	3.82	121.130 CC
700.00	700.00	710.62	699.80	2.28	1.60	-103.32	-106.78	-450.84	463.32	459.44	3.88	119.412
800.00	800.00	809.20	798.39	2.64	1.70	-103.30	-106.63	-451.09	463.53	459.19	4.34	106.810
900.00	900.00	909.51	898.69	3.00	1.81	-103.24	-106.22	-451.52	463.84	459.04	4.81	96.470
1,000.00	1,000.00	1,003.62	992.79	3.36	1.93	-103.20	-106.11	-452.52	464.85	459.56	5.29	87.952
1,100.00	1,100.00	1,103.85	1,093.01	3.72	2.02	-103.19	-106.42	-454.01	466.37	460.63	5.74	81.281

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 1H - OH - Surveys — Offset Site Error: 0.00 usft

Survey Program: 0-MWD — Offset Well Error: 0.00 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 +E/-W (usft)	Offset Wellbore Centre +N/-S (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,200.00	1,200.00	1,200.53	1,189.67	4.08	2.14	-103.18	-106.74	-455.80	468.24	462.02	6.22	75.312	
1,300.00	1,300.00	1,302.21	1,291.33	4.43	2.30	-103.15	-106.98	-457.85	470.27	463.54	6.73	69.858	
1,400.00	1,400.00	1,398.89	1,387.99	4.79	2.47	-103.11	-107.15	-460.00	472.47	465.21	7.26	65.090	
1,500.00	1,500.00	1,500.76	1,489.83	5.15	2.66	-103.06	-107.25	-462.44	474.82	467.00	7.81	60.770	
1,600.00	1,600.00	1,599.57	1,588.62	5.50	2.86	-13.03	-107.48	-464.68	476.66	468.30	8.36	57.013	
1,700.00	1,699.99	1,701.03	1,690.05	5.84	3.06	-13.09	-108.17	-466.85	477.62	468.72	8.90	53.641	
1,800.00	1,799.97	1,802.29	1,791.28	6.19	3.26	-13.21	-109.10	-468.66	477.45	468.00	9.45	50.528	
1,900.00	1,899.92	1,901.21	1,890.19	6.53	3.46	-13.38	-110.28	-470.35	476.46	466.47	9.99	47.684	
2,000.00	1,999.87	2,002.02	1,990.97	6.88	3.67	-13.59	-111.72	-472.04	475.31	464.77	10.54	45.084	
2,100.00	2,099.82	2,098.98	2,087.90	7.23	3.87	-13.82	-113.34	-473.84	474.40	463.31	11.09	42.772	
2,200.00	2,199.77	2,198.94	2,187.82	7.58	4.09	-14.04	-114.98	-476.02	473.82	462.16	11.66	40.637	
2,291.82	2,291.54	2,288.02	2,276.87	7.91	4.29	-14.23	-116.44	-478.23	473.55	461.37	12.18	38.870	
2,300.00	2,299.72	2,295.95	2,284.80	7.93	4.31	-14.25	-116.60	-478.45	473.55	461.32	12.23	38.723	
2,400.00	2,399.66	2,394.94	2,383.72	8.29	4.54	-14.46	-118.30	-481.35	473.73	460.91	12.81	36.978	
2,500.00	2,499.61	2,493.23	2,481.96	8.64	4.78	-14.60	-119.52	-484.63	474.17	460.77	13.40	35.387	
2,600.00	2,599.56	2,592.77	2,581.42	8.99	5.03	-14.74	-120.84	-488.18	474.86	460.87	13.99	33.932	
2,700.00	2,699.51	2,692.77	2,681.35	9.35	5.27	-14.92	-122.48	-491.70	475.60	461.00	14.59	32.592	
2,800.00	2,799.46	2,793.00	2,781.50	9.70	5.52	-15.06	-123.78	-495.29	476.31	461.11	15.19	31.347	
2,900.00	2,899.41	2,892.62	2,881.05	10.06	5.77	-15.18	-124.88	-498.92	477.03	461.23	15.80	30.195	
3,000.00	2,999.36	2,992.84	2,981.19	10.41	6.03	-15.31	-126.19	-502.54	477.77	461.37	16.40	29.125	
3,100.00	3,099.31	3,094.17	3,082.45	10.77	6.28	-15.49	-127.72	-505.98	478.36	461.35	17.01	28.117	
3,200.00	3,199.26	3,197.06	3,185.28	11.13	6.54	-15.72	-129.68	-508.88	478.51	460.89	17.62	27.153	
3,300.00	3,299.20	3,303.99	3,292.17	11.48	6.78	-16.04	-131.99	-510.68	477.65	459.42	18.22	26.215	
3,400.00	3,399.15	3,403.73	3,391.87	11.84	6.98	-16.44	-134.72	-511.47	476.10	457.33	18.78	25.354	
3,500.00	3,499.10	3,500.30	3,488.36	12.20	7.18	-16.95	-138.50	-512.26	474.95	455.62	19.33	24.574	
3,600.00	3,599.05	3,599.40	3,587.31	12.55	7.37	-17.67	-143.99	-513.00	474.26	454.38	19.88	23.856	
3,681.68	3,680.69	3,678.61	3,666.31	12.85	7.53	-18.41	-149.70	-513.42	474.02	453.70	20.33	23.321	
3,700.00	3,699.00	3,696.35	3,683.98	12.91	7.57	-18.60	-151.17	-513.51	474.03	453.61	20.43	23.208	
3,800.00	3,798.95	3,793.94	3,781.11	13.27	7.76	-19.79	-160.64	-513.76	474.47	453.50	20.97	22.623 ES	
3,900.00	3,898.90	3,894.45	3,880.88	13.63	7.96	-21.32	-172.82	-513.22	475.26	453.73	21.53	22.079	
4,000.00	3,998.85	3,995.33	3,970.83	13.99	8.14	-22.93	-185.77	-512.58	477.07	455.01	22.05	21.632	
4,100.00	4,098.80	4,073.78	4,058.06	14.34	8.33	-24.65	-200.41	-512.92	481.28	458.71	22.57	21.322	
4,200.00	4,198.75	4,166.07	4,148.59	14.70	8.54	-26.65	-218.28	-513.93	487.92	464.81	23.10	21.118	
4,300.00	4,298.69	4,256.42	4,236.90	15.06	8.75	-28.71	-237.33	-515.18	496.34	472.72	23.62	21.011	
4,400.00	4,398.64	4,348.49	4,326.70	15.42	8.97	-30.74	-257.47	-517.76	507.10	482.95	24.15	20.997	
4,500.00	4,498.59	4,451.47	4,427.10	15.78	9.22	-32.92	-280.16	-520.76	518.76	494.01	24.76	20.954	
4,600.00	4,598.54	4,562.72	4,536.10	16.14	9.50	-35.03	-302.31	-522.72	528.90	503.48	25.42	20.809	
4,700.00	4,698.49	4,671.75	4,643.48	16.50	9.76	-36.84	-321.17	-523.63	537.29	511.23	26.05	20.622	
4,800.00	4,798.44	4,771.60	4,742.17	16.86	10.01	-38.26	-336.36	-524.57	544.86	518.21	26.64	20.449	
4,900.00	4,898.39	4,879.39	4,848.98	17.22	10.28	-39.51	-350.67	-526.64	552.29	525.01	27.28	20.246	
5,000.00	4,998.34	4,980.97	4,949.75	17.58	10.53	-40.69	-363.40	-527.34	558.50	530.62	27.88	20.033	
5,100.00	5,098.29	5,081.86	5,049.93	17.94	10.78	-41.75	-375.38	-528.41	564.77	536.29	28.48	19.831	
5,200.00	5,198.23	5,187.13	5,154.57	18.29	11.04	-42.75	-386.76	-529.64	570.58	541.48	29.10	19.608	
5,300.00	5,298.18	5,297.01	5,263.95	18.65	11.31	-43.72	-397.17	-530.13	575.10	545.37	29.73	19.343	
5,400.00	5,398.13	5,397.47	5,364.06	19.01	11.55	-44.54	-405.61	-530.18	578.71	548.38	30.33	19.082	
5,500.00	5,498.08	5,495.61	5,461.91	19.37	11.79	-45.22	-413.14	-531.04	582.49	551.57	30.92	18.838	
5,600.00	5,598.03	5,602.41	5,568.44	19.73	12.06	-45.89	-420.56	-532.10	585.92	554.37	31.55	18.573	
5,700.00	5,697.98	5,702.98	5,668.80	20.09	12.31	-46.50	-426.88	-532.79	588.73	556.58	32.15	18.312	
5,800.00	5,797.93	5,805.26	5,770.93	20.45	12.57	-47.03	-432.54	-533.91	591.32	558.56	32.76	18.048	
5,900.00	5,897.88	5,911.95	5,877.48	20.81	12.83	-47.59	-437.90	-534.38	593.16	559.77	33.38	17.768	
6,000.00	5,997.83	6,009.12	5,974.54	21.17	13.07	-48.07	-442.46	-534.83	594.81	560.83	33.98	17.505	
6,100.00	6,097.77	6,110.52	6,075.85	21.53	13.33	-48.49	-446.59	-535.99	596.48	561.89	34.59	17.243	

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 1H - OH - Surveys

Survey Program: [illegible]

Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	[illegible] (usft)	[illegible] (usft)	[illegible]	[illegible] (usft)	[illegible] (usft)	[illegible] (usft)	[illegible] (usft)	[illegible] (usft)	[illegible]
6,200.00	6,197.72	6,212.13	6,177.38	21.89	13.59	-48.89	-450.48	-537.01	597.91	562.70	35.21	16.982
6,300.00	6,297.67	6,313.90	6,279.08	22.25	13.84	-49.31	-454.24	-537.77	599.10	563.28	35.82	16.725
6,400.00	6,397.62	6,417.68	6,382.80	22.61	14.10	-49.72	-457.53	-538.25	599.74	563.30	36.44	16.460
6,500.00	6,497.57	6,517.02	6,482.10	22.97	14.35	-50.13	-460.68	-538.48	600.26	563.22	37.04	16.206
6,600.00	6,597.52	6,620.28	6,585.30	23.33	14.59	-50.58	-463.90	-538.31	600.51	562.87	37.64	15.953
6,700.00	6,697.47	6,721.72	6,686.69	23.69	14.83	-51.05	-466.86	-537.65	600.34	562.11	38.23	15.702
6,757.90	6,755.34	6,778.39	6,743.34	23.90	14.96	-51.31	-468.51	-537.31	600.28	561.71	38.57	15.563
6,800.00	6,797.42	6,820.43	6,785.36	24.05	15.06	-51.49	-469.73	-537.15	600.30	561.47	38.82	15.463
6,900.00	6,897.37	6,921.86	6,886.77	24.41	15.30	-51.87	-472.10	-537.17	600.16	560.73	39.43	15.221
7,000.00	6,997.31	7,021.05	6,985.94	24.78	15.56	-52.15	-473.77	-537.99	600.02	559.98	40.04	14.985
7,043.74	7,041.03	7,064.41	7,029.29	24.93	15.67	-52.25	-474.44	-538.49	600.01	559.70	40.31	14.885
7,100.00	7,097.26	7,120.53	7,085.39	25.14	15.81	-52.39	-475.33	-539.15	600.03	559.37	40.66	14.759
7,189.24	7,186.46	7,210.50	7,175.35	25.46	16.04	-52.61	-476.73	-540.16	600.00	558.79	41.21	14.561
7,200.00	7,197.21	7,220.27	7,185.12	25.50	16.07	-52.64	-476.90	-540.27	600.01	558.74	41.27	14.538
7,300.00	7,297.16	7,316.48	7,281.30	25.86	16.32	-52.90	-478.89	-541.41	600.43	558.55	41.88	14.336
7,400.00	7,397.11	7,415.15	7,379.93	26.22	16.57	-53.19	-481.35	-542.66	601.27	558.78	42.50	14.148
7,500.00	7,497.06	7,514.94	7,479.68	26.58	16.83	-53.47	-483.94	-544.00	602.25	559.13	43.12	13.968
7,600.00	7,597.01	7,615.95	7,580.64	26.94	17.10	-53.76	-486.50	-545.35	603.19	559.45	43.74	13.791
7,700.00	7,696.96	7,719.28	7,683.94	27.30	17.36	-54.13	-489.18	-545.87	603.69	559.34	44.36	13.610
7,800.00	7,796.91	7,819.59	7,784.23	27.66	17.61	-54.48	-491.59	-546.15	603.95	558.98	44.97	13.431
7,900.00	7,896.85	7,919.80	7,884.41	28.02	17.86	-54.84	-493.96	-546.48	604.22	558.64	45.58	13.256
8,000.00	7,996.80	8,021.89	7,986.47	28.38	18.12	-55.18	-496.04	-546.77	604.22	558.02	46.20	13.079
8,015.04	8,011.83	8,036.82	8,001.40	28.43	18.16	-55.23	-496.32	-546.83	604.21	557.92	46.29	13.052
8,100.00	8,096.76	8,121.22	8,085.78	28.74	18.38	-55.46	-497.86	-547.23	604.37	557.56	46.81	12.910
8,200.00	8,196.75	8,221.45	8,185.99	29.10	18.64	-55.62	-499.69	-547.85	605.56	558.13	47.43	12.767
8,300.00	8,296.75	8,324.24	8,288.77	29.44	18.90	-145.68	-501.29	-548.21	607.02	558.99	48.03	12.637
8,400.00	8,396.75	8,424.12	8,388.64	29.79	19.13	-145.63	-502.14	-549.36	608.37	559.76	48.61	12.514
8,500.00	8,496.75	8,527.33	8,491.84	30.13	19.33	-145.52	-502.42	-551.09	609.55	560.39	49.16	12.399
8,600.00	8,596.48	8,629.60	8,594.10	30.48	19.49	-145.43	-502.07	-552.11	614.63	564.96	49.66	12.376
8,700.00	8,693.72	8,719.60	8,684.09	30.81	19.66	-145.30	-502.48	-553.29	634.62	584.43	50.18	12.646
8,800.00	8,785.54	8,812.74	8,777.22	31.12	19.90	-145.14	-503.50	-554.08	669.11	618.38	50.73	13.189
8,900.00	8,869.14	8,897.73	8,862.21	31.38	20.12	-144.50	-504.37	-554.45	717.27	666.03	51.24	13.999
9,000.00	8,941.98	8,963.95	8,928.42	31.65	20.29	-142.46	-505.16	-554.85	778.67	727.01	51.66	15.074
9,100.00	9,001.84	9,017.76	8,982.22	31.96	20.43	-138.36	-506.12	-555.40	852.10	800.11	51.99	16.390
9,200.00	9,046.92	9,058.53	9,022.97	32.29	20.53	-130.60	-506.93	-556.04	935.16	882.93	52.24	17.903
9,300.00	9,075.83	9,083.88	9,048.32	32.62	20.60	-115.93	-507.44	-556.56	1,025.15	972.76	52.40	19.566
9,400.00	9,087.71	9,093.11	9,057.54	32.97	20.62	-90.61	-507.63	-556.77	1,119.13	1,066.66	52.48	21.326
9,500.00	9,088.00	9,091.46	9,055.89	33.33	20.62	-84.77	-507.60	-556.74	1,214.47	1,161.96	52.51	23.128
9,600.00	9,088.00	9,089.53	9,053.96	33.76	20.61	-84.46	-507.56	-556.69	1,310.49	1,257.95	52.54	24.941
9,700.00	9,088.00	11,656.49	10,389.50	34.24	33.72	-166.14	911.56	-527.02	1,341.72	1,304.27	37.45	35.828
9,800.00	9,088.00	11,774.70	10,384.40	34.77	35.27	-166.20	1,029.64	-524.42	1,337.04	1,298.68	38.36	34.856
9,900.00	9,088.00	11,863.79	10,380.13	35.35	36.44	-166.28	1,118.57	-521.48	1,331.62	1,292.55	39.07	34.083
10,000.00	9,088.00	11,957.20	10,376.50	35.99	37.67	-166.35	1,211.87	-518.88	1,327.18	1,287.32	39.87	33.290
10,100.00	9,088.00	12,040.20	10,373.62	36.67	38.80	-166.39	1,294.81	-517.22	1,323.37	1,282.73	40.64	32.564
10,200.00	9,088.00	12,124.37	10,371.83	37.39	39.95	-166.41	1,378.96	-516.36	1,321.04	1,279.57	41.47	31.854
10,300.00	9,088.00	12,226.24	10,370.40	38.15	41.36	-166.45	1,480.80	-515.02	1,319.37	1,276.90	42.48	31.060
10,400.00	9,088.00	12,332.11	10,368.52	38.95	42.88	-166.55	1,586.62	-512.32	1,317.04	1,273.51	43.54	30.251
10,500.00	9,088.00	12,423.01	10,366.84	39.79	44.20	-166.60	1,677.49	-510.74	1,314.85	1,270.33	44.53	29.530
10,600.00	9,088.00	12,513.36	10,365.98	40.66	45.52	-166.65	1,767.83	-509.25	1,313.54	1,268.00	45.54	28.845
10,700.00	9,088.00	12,614.13	10,365.63	41.57	47.00	-166.75	1,868.57	-506.78	1,312.63	1,265.99	46.64	28.141
10,800.00	9,088.00	12,704.54	10,365.25	42.50	48.36	-166.83	1,958.96	-504.87	1,311.76	1,264.06	47.70	27.498
10,826.60	9,088.00	12,726.86	10,365.30	42.76	48.70	-166.84	1,981.27	-504.51	1,311.72	1,263.74	47.98	27.339

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Big Sinks Draw 25-24 - 1H - OH - Surveys

Measured Depth (usft)	Offset Measured Depth (usft)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Offset Wellbore Centre Northing (usft)	Offset Wellbore Centre Easting (usft)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Minimum Separation Factor	Separation Factor	Warning
10,900.00	9,088.00	12,786.20	10,365.77	43.47	49.60	-166.88	2,040.61	-503.81	1,312.10	1,263.37	48.73	26.927	
11,000.00	9,088.00	12,875.46	10,367.41	44.45	50.98	-166.91	2,129.85	-503.54	1,313.80	1,263.95	49.85	26.354	
11,100.00	9,088.00	12,978.58	10,369.31	45.47	52.57	-166.93	2,232.95	-503.38	1,315.55	1,264.44	51.12	25.737	
11,200.00	9,088.00	13,077.27	10,371.37	46.50	54.10	-167.03	2,331.61	-501.67	1,317.19	1,264.87	52.33	25.173	
11,300.00	9,088.00	13,179.60	10,373.64	47.56	55.69	-167.12	2,433.90	-499.88	1,318.97	1,265.39	53.58	24.616	
11,400.00	9,088.00	13,279.86	10,375.79	48.64	57.26	-167.26	2,534.10	-497.09	1,320.44	1,265.63	54.81	24.089	
11,500.00	9,088.00	13,382.17	10,377.91	49.74	58.89	-167.38	2,636.36	-494.82	1,321.98	1,265.89	56.09	23.568	
11,600.00	9,088.00	13,513.16	10,378.91	50.85	60.99	-167.48	2,767.32	-492.65	1,322.42	1,264.77	57.65	22.938	
11,700.00	9,088.00	13,632.41	10,377.27	51.98	62.91	-167.64	2,886.48	-488.48	1,320.25	1,261.16	59.08	22.346	
11,800.00	9,088.00	13,726.68	10,375.81	53.13	64.43	-167.73	2,980.71	-486.18	1,318.19	1,257.85	60.34	21.845	
11,900.00	9,088.00	13,836.58	10,373.35	54.29	66.22	-167.72	3,090.58	-485.79	1,315.95	1,254.13	61.81	21.289	
12,000.00	9,088.00	13,945.81	10,369.96	55.46	68.01	-167.72	3,199.75	-485.04	1,312.75	1,249.47	63.29	20.744	
12,100.00	9,088.00	14,068.27	10,364.97	56.65	70.02	-167.71	3,322.11	-484.14	1,308.66	1,243.77	64.89	20.167	
12,200.00	9,088.00	14,145.02	10,361.73	57.84	71.27	-167.70	3,398.78	-483.60	1,304.38	1,238.28	66.10	19.734	
12,300.00	9,088.00	14,226.20	10,359.63	59.05	72.58	-167.70	3,479.94	-483.26	1,301.76	1,234.41	67.35	19.329	
12,400.00	9,088.00	14,312.09	10,358.64	60.27	73.95	-167.73	3,565.82	-482.41	1,300.41	1,231.79	68.62	18.950	
12,492.39	9,088.00	14,393.34	10,358.47	61.41	75.25	-167.76	3,647.06	-481.56	1,300.01	1,230.19	69.82	18.620	
12,500.00	9,088.00	14,400.03	10,358.49	61.50	75.36	-167.76	3,653.75	-481.49	1,300.02	1,230.10	69.92	18.593	
12,600.00	9,088.00	14,501.00	10,358.96	62.74	77.00	-167.81	3,754.71	-480.43	1,300.26	1,228.93	71.33	18.228	
12,700.00	9,088.00	14,633.56	10,357.92	63.99	79.20	-167.89	3,887.25	-478.46	1,299.24	1,226.20	73.04	17.788	
12,800.00	9,088.00	14,708.08	10,357.20	65.24	80.43	-167.94	3,961.75	-477.16	1,297.86	1,223.64	74.22	17.486	
12,833.75	9,088.00	14,734.74	10,357.21	65.67	80.87	-167.96	3,988.42	-476.78	1,297.77	1,223.14	74.64	17.388	
12,900.00	9,088.00	14,787.46	10,357.64	66.51	81.73	-167.99	4,041.13	-476.04	1,298.12	1,222.67	75.45	17.206	
13,000.00	9,088.00	14,867.10	10,359.32	67.78	83.04	-168.05	4,120.74	-475.16	1,299.95	1,223.28	76.67	16.956	
13,100.00	9,088.00	14,971.30	10,362.42	69.06	84.77	-168.07	4,224.89	-475.26	1,302.90	1,224.73	78.17	16.668	
13,200.00	9,088.00	15,117.74	10,363.21	70.34	87.23	-168.05	4,371.32	-475.77	1,303.54	1,223.41	80.12	16.269	
13,300.00	9,088.00	15,205.81	10,362.88	71.63	88.68	-168.05	4,459.39	-475.72	1,303.11	1,221.61	81.50	15.989	
13,400.00	9,088.00	15,317.41	10,361.69	72.93	90.53	-168.05	4,570.98	-475.53	1,302.00	1,218.90	83.10	15.667	
13,500.00	9,088.00	15,404.20	10,361.06	74.23	91.97	-168.05	4,657.78	-475.38	1,301.26	1,216.78	84.48	15.404	
13,523.54	9,088.00	15,424.63	10,361.04	74.54	92.31	-168.05	4,678.21	-475.34	1,301.23	1,216.43	84.80	15.345	
13,600.00	9,088.00	15,496.72	10,361.34	75.54	93.52	-168.06	4,750.29	-475.19	1,301.50	1,215.60	85.89	15.152	
13,700.00	9,088.00	15,615.71	10,360.93	76.85	95.50	-168.13	4,869.27	-473.45	1,300.81	1,213.29	87.52	14.863	
13,800.00	9,088.00	15,764.74	10,357.78	78.17	98.01	-168.18	5,018.24	-471.60	1,298.82	1,209.41	89.41	14.526	
13,900.00	9,088.00	15,850.70	10,354.28	79.49	99.46	-168.22	5,104.11	-469.99	1,294.46	1,203.68	90.77	14.260	
14,000.00	9,088.00	15,940.81	10,351.37	80.82	100.97	-168.25	5,194.17	-468.85	1,291.03	1,198.85	92.18	14.005	
14,100.00	9,088.00	16,027.25	10,349.39	82.15	102.41	-168.29	5,280.57	-467.51	1,288.47	1,194.93	93.54	13.774	
14,200.00	9,088.00	16,102.98	10,348.80	83.48	103.67	-168.35	5,356.28	-465.89	1,287.31	1,192.54	94.77	13.584	
14,205.83	9,088.00	16,107.20	10,348.80	83.56	103.74	-168.35	5,360.50	-465.83	1,287.30	1,192.47	94.84	13.574	
14,300.00	9,088.00	16,184.66	10,349.61	84.82	105.04	-168.38	5,437.96	-465.33	1,288.10	1,192.03	96.07	13.408	
14,400.00	9,088.00	16,275.03	10,351.07	86.16	106.57	-168.40	5,528.31	-465.33	1,289.69	1,192.21	97.48	13.230	
14,500.00	9,088.00	16,367.64	10,353.53	87.50	108.12	-168.43	5,620.88	-464.97	1,292.21	1,193.31	98.89	13.067	
14,600.00	9,088.00	16,475.87	10,356.19	88.85	109.94	-168.48	5,729.08	-464.45	1,294.52	1,194.05	100.47	12.885	
14,700.00	9,088.00	16,569.64	10,358.10	90.20	111.52	-168.51	5,822.84	-464.25	1,296.48	1,194.57	101.91	12.722	
14,800.00	9,088.00	16,658.75	10,360.89	91.55	113.02	-168.54	5,911.91	-464.09	1,299.50	1,196.21	103.29	12.582	
14,900.00	9,088.00	16,773.84	10,364.53	92.91	114.95	-168.59	6,026.94	-463.65	1,302.57	1,197.63	104.94	12.412	
15,000.00	9,088.00	16,903.70	10,366.06	94.27	117.15	-168.66	6,156.77	-462.27	1,303.51	1,196.79	106.72	12.214	
15,100.00	9,088.00	17,023.45	10,364.96	95.63	119.18	-168.72	6,276.51	-460.78	1,302.31	1,193.92	108.39	12.015	
15,200.00	9,088.00	17,114.62	10,363.67	97.00	120.72	-168.74	6,367.66	-460.00	1,300.78	1,190.95	109.83	11.844	
15,300.00	9,088.00	17,202.77	10,363.56	98.36	122.22	-168.76	6,455.81	-459.48	1,300.50	1,189.27	111.23	11.692	
15,400.00	9,088.00	17,304.35	10,363.22	99.73	123.94	-168.80	6,557.39	-458.46	1,299.97	1,187.23	112.75	11.530	
15,412.09	9,088.00	17,313.81	10,363.22	99.90	124.10	-168.80	6,566.85	-458.37	1,299.96	1,187.06	112.90	11.514	
15,500.00	9,088.00	17,392.56	10,363.85	101.10	125.44	-168.83	6,645.59	-457.96	1,300.52	1,186.38	114.14	11.394	

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

devon

Pro Directional

Anticollision Report

PRODIRECTIONAL

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 1H - OH - Surveys — Offset Site Error: 0.00 usft

Survey Program: 100-NS-GYRO-MS, 3007-MWD — Offset Well Error: 0.00 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
15,600.00	9,088.00	17,532.17	10,363.12	102.48	127.82	-168.87	6,785.19	-456.89	1,299.93	1,183.91	116.02	11.204	
15,700.00	9,088.00	17,619.85	10,361.26	103.85	129.31	-168.90	6,872.84	-455.73	1,297.65	1,180.23	117.42	11.051	
15,800.00	9,088.00	17,709.96	10,360.82	105.23	130.82	-168.95	6,962.95	-454.52	1,296.88	1,178.06	118.82	10.915	
15,900.00	9,088.00	17,859.15	10,358.19	106.61	133.34	-169.05	7,112.07	-451.72	1,295.02	1,174.36	120.66	10.732	
16,000.00	9,088.00	17,951.19	10,355.04	107.99	134.91	-169.11	7,204.03	-449.80	1,291.23	1,169.14	122.09	10.576	
16,100.00	9,088.00	18,027.00	10,352.39	109.37	136.20	-169.15	7,279.78	-448.22	1,287.63	1,164.25	123.39	10.436	
16,125.11	9,088.00	18,027.00	10,352.39	109.72	136.20	-169.15	7,279.78	-448.22	1,287.39	1,163.85	123.54	10.421	
16,129.80	9,088.00	18,027.00	10,352.39	109.78	136.20	-169.15	7,279.78	-448.22	1,287.39	1,163.83	123.56	10.419	SF

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

Company:	Devon Energy Corp.	Local Coordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelim Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 331H - OH - Prelim Plan — Offset Site Error: 0.00 usft; Offset Well Error: 0.00 usft

Survey Program:		Offset		Semi Major Axis		Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-168.86	-150.14	-29.57	153.02				
100.00	100.00	100.00	100.00	0.13	0.13	-168.86	-150.14	-29.57	153.02	152.76	0.27	576.864	
200.00	200.00	200.00	200.00	0.49	0.49	-168.86	-150.14	-29.57	153.02	152.04	0.98	155.795	
300.00	300.00	300.00	300.00	0.85	0.85	-168.86	-150.14	-29.57	153.02	151.33	1.70	90.059	
400.00	400.00	400.00	400.00	1.21	1.21	-168.86	-150.14	-29.57	153.02	150.61	2.42	63.335	
500.00	500.00	500.00	500.00	1.57	1.57	-168.86	-150.14	-29.57	153.02	149.89	3.13	48.842	
600.00	600.00	600.00	600.00	1.92	1.92	-168.86	-150.14	-29.57	153.02	149.17	3.85	39.747	
700.00	700.00	700.00	700.00	2.28	2.28	-168.86	-150.14	-29.57	153.02	148.46	4.57	33.507	
800.00	800.00	800.00	800.00	2.64	2.64	-168.86	-150.14	-29.57	153.02	147.74	5.28	28.961	
900.00	900.00	900.00	900.00	3.00	3.00	-168.86	-150.14	-29.57	153.02	147.02	6.00	25.501	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	-168.86	-150.14	-29.57	153.02	146.31	6.72	22.779	
1,100.00	1,100.00	1,100.09	1,100.09	3.72	3.71	-168.69	-150.03	-29.99	153.00	145.57	7.43	20.595	
1,200.00	1,200.00	1,200.16	1,200.15	4.08	4.06	-168.20	-149.69	-31.26	152.92	144.78	8.13	18.798	
1,300.00	1,300.00	1,300.20	1,300.17	4.43	4.41	-167.39	-149.12	-33.37	152.81	143.96	8.84	17.280	
1,400.00	1,400.00	1,400.20	1,400.12	4.79	4.76	-166.24	-148.33	-36.32	152.71	143.16	9.55	15.986	
1,500.00	1,500.00	1,500.14	1,499.98	5.15	5.11	-164.77	-147.31	-40.11	152.67	142.41	10.26	14.874	
1,538.73	1,538.73	1,538.83	1,538.63	5.29	5.25	-74.13	-146.85	-41.80	152.67	142.13	10.54	14.489	
1,600.00	1,600.00	1,600.02	1,599.74	5.50	5.47	-73.13	-146.06	-44.74	152.63	141.67	10.97	13.916	
1,700.00	1,699.99	1,699.86	1,699.42	5.84	5.82	-71.47	-144.59	-50.20	152.50	140.83	11.67	13.072	
1,800.00	1,799.97	1,804.36	1,799.01	6.19	6.20	-69.80	-142.90	-56.50	152.27	139.88	12.38	12.295	
1,900.00	1,899.92	1,900.43	1,898.67	6.53	6.54	-68.23	-141.09	-63.25	151.92	138.84	13.08	11.618	
2,000.00	1,999.87	2,000.51	1,998.35	6.88	6.91	-66.73	-139.27	-70.00	151.61	137.82	13.78	10.998	
2,100.00	2,099.82	2,100.59	2,098.03	7.23	7.27	-65.22	-137.46	-76.75	151.40	136.90	14.50	10.445	
2,200.00	2,199.77	2,199.33	2,197.70	7.58	7.63	-63.71	-135.65	-83.50	151.29	136.09	15.20	9.952	
2,247.58	2,247.32	2,246.87	2,245.12	7.75	7.80	-62.99	-134.78	-86.71	151.28	135.74	15.54	9.734 CC	
2,300.00	2,299.72	2,300.75	2,297.38	7.93	8.00	-62.20	-133.83	-90.24	151.30	135.38	15.92	9.503	
2,400.00	2,399.66	2,400.83	2,397.05	8.29	8.36	-60.69	-132.02	-96.99	151.40	134.77	16.63	9.102	
2,500.00	2,499.61	2,500.91	2,496.73	8.64	8.73	-59.18	-130.21	-103.74	151.62	134.27	17.35	8.739	
2,600.00	2,599.56	2,600.99	2,596.40	8.99	9.09	-57.68	-128.39	-110.49	151.94	133.87	18.06	8.411	
2,700.00	2,699.51	2,701.07	2,696.08	9.35	9.46	-56.18	-126.58	-117.24	152.36	133.58	18.78	8.112	
2,800.00	2,799.46	2,801.15	2,795.75	9.70	9.82	-54.69	-124.76	-123.98	152.88	133.39	19.50	7.841	
2,900.00	2,899.41	2,901.23	2,895.43	10.06	10.19	-53.22	-122.95	-130.73	153.51	133.30	20.21	7.594 ES	
3,000.00	2,999.36	3,001.31	2,995.10	10.41	10.56	-51.76	-121.14	-137.48	154.24	133.31	20.93	7.369	
3,100.00	3,099.31	3,101.39	3,094.78	10.77	10.92	-50.31	-119.32	-144.23	155.07	133.42	21.65	7.163	
3,200.00	3,199.26	3,201.47	3,194.46	11.13	11.29	-48.88	-117.51	-150.98	156.00	133.63	22.37	6.975	
3,300.00	3,299.20	3,301.55	3,294.13	11.48	11.66	-47.46	-115.70	-157.72	157.02	133.94	23.08	6.803	
3,400.00	3,399.15	3,401.63	3,393.81	11.84	12.03	-46.07	-113.88	-164.47	158.14	134.34	23.80	6.645	
3,500.00	3,499.10	3,501.71	3,493.48	12.20	12.40	-44.70	-112.07	-171.22	159.35	134.83	24.52	6.500	
3,600.00	3,599.05	3,601.79	3,593.16	12.55	12.76	-43.34	-110.26	-177.97	160.65	135.42	25.23	6.367	
3,700.00	3,699.00	3,701.87	3,692.83	12.91	13.13	-42.01	-108.44	-184.72	162.04	136.09	25.95	6.244	
3,800.00	3,798.95	3,801.95	3,792.51	13.27	13.50	-40.71	-106.63	-191.46	163.51	136.85	26.67	6.132	
3,900.00	3,898.90	3,902.03	3,892.18	13.63	13.87	-39.42	-104.81	-198.21	165.07	137.69	27.38	6.028	
4,000.00	3,998.85	4,002.11	3,991.86	13.99	14.24	-38.16	-103.00	-204.96	166.71	138.61	28.10	5.933	
4,100.00	4,098.80	4,102.19	4,091.53	14.34	14.61	-36.93	-101.19	-211.71	168.43	139.61	28.82	5.845	
4,200.00	4,198.75	4,202.27	4,191.21	14.70	14.98	-35.72	-99.37	-218.46	170.22	140.69	29.53	5.764	
4,300.00	4,298.69	4,302.35	4,290.89	15.06	15.35	-34.54	-97.56	-225.21	172.09	141.84	30.25	5.689	
4,400.00	4,398.64	4,402.43	4,390.56	15.42	15.72	-33.39	-95.75	-231.95	174.03	143.07	30.97	5.620	
4,500.00	4,498.59	4,497.49	4,490.24	15.78	16.07	-32.25	-93.93	-238.70	176.04	144.38	31.66	5.560	
4,600.00	4,598.54	4,602.59	4,589.91	16.14	16.46	-31.15	-92.12	-245.45	178.12	145.72	32.40	5.498	
4,700.00	4,698.49	4,702.67	4,689.59	16.50	16.82	-30.07	-90.30	-252.20	180.26	147.15	33.12	5.444	
4,800.00	4,798.44	4,802.75	4,789.26	16.86	17.19	-29.02	-88.49	-258.95	182.47	148.64	33.83	5.393	
4,900.00	4,898.39	4,902.83	4,888.94	17.22	17.56	-27.99	-86.68	-265.69	184.73	150.19	34.55	5.347	

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 331H - OH - Prelm Plan — Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.00 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
5,000.00	4,998.34	5,002.91	4,988.61	17.58	17.93	-26.99	-84.86	-272.44	187.06	151.79	35.26	5.304	
5,100.00	5,098.29	5,102.99	5,088.29	17.94	18.30	-26.01	-83.05	-279.19	189.43	153.45	35.98	5.265	
5,200.00	5,198.23	5,203.07	5,187.97	18.29	18.67	-25.06	-81.24	-285.94	191.87	155.17	36.70	5.228	
5,300.00	5,298.18	5,303.15	5,287.64	18.65	19.04	-24.13	-79.42	-292.69	194.35	156.94	37.41	5.195	
5,400.00	5,398.13	5,403.23	5,387.32	19.01	19.41	-23.22	-77.61	-299.43	196.88	158.75	38.13	5.164	
5,500.00	5,498.08	5,503.31	5,486.99	19.37	19.78	-22.34	-75.80	-306.18	199.47	160.62	38.85	5.135	
5,600.00	5,598.03	5,603.39	5,586.67	19.73	20.15	-21.48	-73.98	-312.93	202.09	162.53	39.56	5.108	
5,700.00	5,697.98	5,703.47	5,686.34	20.09	20.52	-20.64	-72.17	-319.68	204.77	164.49	40.28	5.084	
5,800.00	5,797.93	5,803.55	5,786.02	20.45	20.89	-19.83	-70.35	-326.43	207.48	166.49	40.99	5.061	
5,900.00	5,897.88	5,896.37	5,885.69	20.81	21.24	-19.03	-68.54	-333.17	210.24	168.55	41.68	5.043	
6,000.00	5,997.83	5,996.29	5,985.37	21.17	21.61	-18.26	-66.73	-339.92	213.03	170.63	42.40	5.024	
6,100.00	6,097.77	6,103.79	6,085.04	21.53	22.00	-17.51	-64.91	-346.67	215.86	172.72	43.14	5.003	
6,200.00	6,197.72	6,203.87	6,184.72	21.89	22.37	-16.77	-63.10	-353.42	218.73	174.87	43.86	4.987	
6,300.00	6,297.67	6,303.95	6,284.40	22.25	22.74	-16.06	-61.29	-360.17	221.64	177.06	44.58	4.972	
6,400.00	6,397.62	6,404.03	6,384.07	22.61	23.11	-15.36	-59.47	-366.91	224.57	179.28	45.30	4.958	
6,500.00	6,497.57	6,495.89	6,483.75	22.97	23.45	-14.69	-57.66	-373.66	227.54	181.56	45.98	4.948	
6,600.00	6,597.52	6,604.19	6,583.42	23.33	23.85	-14.02	-55.85	-380.41	230.55	183.82	46.73	4.934	
6,700.00	6,697.47	6,704.27	6,683.10	23.69	24.22	-13.38	-54.03	-387.16	233.58	186.13	47.45	4.923	
6,800.00	6,797.42	6,804.35	6,782.77	24.05	24.60	-12.75	-52.22	-393.91	236.64	188.47	48.16	4.913	
6,900.00	6,897.37	6,904.43	6,882.45	24.41	24.97	-12.14	-50.40	-400.66	239.72	190.84	48.88	4.904	
7,000.00	6,997.31	7,004.51	6,982.12	24.78	25.34	-11.55	-48.59	-407.40	242.84	193.24	49.60	4.896	
7,100.00	7,097.26	7,104.59	7,081.80	25.14	25.71	-10.97	-46.78	-414.15	245.98	195.66	50.32	4.888	
7,200.00	7,197.21	7,204.67	7,181.47	25.50	26.08	-10.40	-44.96	-420.90	249.14	198.10	51.04	4.882	
7,300.00	7,297.16	7,304.75	7,281.15	25.86	26.45	-9.85	-43.15	-427.65	252.33	200.57	51.75	4.876	
7,400.00	7,397.11	7,404.83	7,380.83	26.22	26.82	-9.31	-41.34	-434.40	255.54	203.07	52.47	4.870	
7,500.00	7,497.06	7,495.09	7,480.50	26.58	27.15	-8.79	-39.52	-441.14	258.77	205.62	53.15	4.868	
7,600.00	7,597.01	7,604.99	7,580.18	26.94	27.56	-8.28	-37.71	-447.89	262.02	208.12	53.91	4.861	
7,700.00	7,696.96	7,694.93	7,679.85	27.30	27.89	-7.78	-35.89	-454.64	265.30	210.71	54.59	4.860	
7,800.00	7,796.91	7,805.15	7,779.53	27.66	28.30	-7.29	-34.08	-461.39	268.59	213.25	55.34	4.853	
7,900.00	7,896.85	7,905.23	7,879.20	28.02	28.67	-6.82	-32.27	-468.14	271.90	215.84	56.06	4.850	
8,000.00	7,996.80	8,005.31	7,978.88	28.38	29.04	-6.36	-30.45	-474.88	275.23	218.45	56.78	4.847	SF
8,100.00	8,096.76	8,105.40	8,078.54	28.74	29.41	-5.90	-28.64	-481.63	278.95	221.45	57.50	4.851	
8,200.00	8,196.75	8,205.57	8,178.12	29.10	29.78	-5.43	-26.83	-488.37	284.30	226.09	58.22	4.883	
8,300.00	8,296.75	8,294.18	8,277.63	29.44	30.11	-94.95	-25.02	-495.11	290.84	231.96	58.88	4.939	
8,400.00	8,396.75	8,406.06	8,377.15	29.79	30.52	-94.48	-23.21	-501.85	297.42	237.79	59.63	4.988	
8,500.00	8,496.75	8,506.31	8,476.66	30.13	30.90	-94.04	-21.40	-508.58	304.02	243.69	60.34	5.039	
8,600.00	8,596.48	8,606.72	8,576.00	30.48	31.27	-94.11	-19.59	-515.31	311.05	250.00	61.05	5.095	
8,700.00	8,693.72	8,709.30	8,673.18	30.81	31.65	-96.80	-17.82	-521.89	319.96	258.18	61.78	5.179	
8,800.00	8,785.54	8,783.00	8,765.26	31.12	31.92	-101.32	-16.15	-528.12	333.54	271.12	62.42	5.344	
8,900.00	8,869.14	8,867.39	8,849.44	31.38	32.23	-106.26	-14.61	-533.82	355.91	292.80	63.12	5.639	
9,000.00	8,941.98	8,941.29	8,923.16	31.65	32.51	-110.15	-13.27	-538.81	390.89	327.11	63.78	6.129	
9,100.00	9,001.84	9,002.46	8,984.18	31.96	32.73	-111.72	-12.16	-542.94	440.36	376.00	64.36	6.842	
9,200.00	9,046.92	9,049.04	9,030.65	32.29	32.91	-109.87	-11.32	-546.09	503.74	438.92	64.82	7.772	
9,300.00	9,075.83	9,079.62	9,061.15	32.62	33.02	-103.35	-10.76	-548.15	578.54	513.41	65.13	8.883	
9,400.00	9,087.71	9,106.73	9,074.76	32.97	33.12	-90.85	-10.51	-549.08	661.30	595.95	65.36	10.119	
9,500.00	9,088.00	9,104.63	9,076.86	33.33	33.11	-88.14	-10.48	-549.22	748.57	683.14	65.43	11.441	
9,600.00	9,088.00	9,102.81	9,078.67	33.76	33.10	-88.44	-10.44	-549.34	838.68	773.20	65.48	12.808	
9,700.00	9,088.00	9,101.00	9,080.48	34.24	33.10	-88.75	-10.41	-549.46	930.81	865.29	65.52	14.206	
9,800.00	9,088.00	9,100.82	9,082.30	34.77	33.10	-89.05	-10.38	-549.59	1,024.41	958.85	65.56	15.626	
9,900.00	9,088.00	9,102.63	9,084.11	35.35	33.10	-89.35	-10.34	-549.71	1,119.12	1,053.52	65.60	17.060	
10,000.00	9,088.00	9,104.45	9,085.92	35.99	33.11	-89.65	-10.31	-549.83	1,214.67	1,149.03	65.64	18.506	
10,100.00	9,088.00	9,106.26	9,087.73	36.67	33.12	-89.96	-10.28	-549.95	1,310.88	1,245.21	65.67	19.961	

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 331H - OH - Prelim Plan — Offset Site Error: 0.00 usft; Offset Well Error: 0.00 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
10,200.00	9,088.00	9,108.08	9,089.54	37.39	33.12	-90.26	-10.24	-550.08	1,407.62	1,341.92	65.70	21.423	
10,300.00	9,088.00	9,109.89	9,091.35	38.15	33.13	-90.56	-10.21	-550.20	1,504.79	1,439.05	65.74	22.891	
10,400.00	9,088.00	9,111.71	9,093.16	38.95	33.14	-90.86	-10.18	-550.32	1,602.30	1,536.53	65.77	24.363	
10,500.00	9,088.00	9,113.53	9,094.97	39.79	33.14	-91.16	-10.15	-550.44	1,700.09	1,634.30	65.80	25.838	
10,600.00	9,088.00	9,115.34	9,096.78	40.66	33.15	-91.46	-10.11	-550.57	1,798.13	1,732.30	65.83	27.315	
10,700.00	9,088.00	9,117.16	9,098.59	41.57	33.16	-91.76	-10.08	-550.69	1,896.37	1,830.51	65.86	28.794	
10,800.00	9,088.00	9,118.97	9,100.40	42.50	33.16	-92.06	-10.05	-550.81	1,994.79	1,928.90	65.89	30.274	
10,900.00	9,088.00	9,120.79	9,102.21	43.47	33.17	-92.36	-10.01	-550.93	2,093.35	2,027.43	65.92	31.755	
11,000.00	9,088.00	9,122.60	9,104.02	44.45	33.18	-92.66	-9.98	-551.06	2,192.04	2,126.09	65.95	33.236	
11,100.00	9,088.00	13,286.76	11,268.00	45.47	52.86	-168.96	2,253.44	-631.36	2,221.11	2,168.02	53.10	41.832	
11,200.00	9,088.00	13,386.76	11,268.00	46.50	53.80	-168.95	2,353.44	-631.65	2,221.17	2,166.99	54.18	40.995	
11,300.00	9,088.00	13,486.76	11,268.00	47.56	54.76	-168.94	2,453.44	-631.93	2,221.22	2,165.93	55.29	40.171	
11,400.00	9,088.00	13,586.76	11,268.00	48.64	55.75	-168.94	2,553.44	-632.22	2,221.28	2,164.85	56.43	39.362	
11,500.00	9,088.00	13,686.76	11,268.00	49.74	56.75	-168.93	2,653.44	-632.51	2,221.34	2,163.74	57.59	38.568	
11,600.00	9,088.00	13,786.76	11,268.00	50.85	57.77	-168.92	2,753.44	-632.80	2,221.39	2,162.61	58.78	37.792	
11,700.00	9,088.00	13,886.76	11,268.00	51.98	58.81	-168.91	2,853.44	-633.09	2,221.45	2,161.46	59.99	37.033	
11,800.00	9,088.00	13,986.76	11,268.00	53.13	59.87	-168.91	2,953.44	-633.38	2,221.50	2,160.29	61.21	36.292	
11,900.00	9,088.00	14,086.76	11,268.00	54.29	60.94	-168.90	3,053.44	-633.67	2,221.56	2,159.10	62.46	35.570	
12,000.00	9,088.00	14,186.76	11,268.00	55.46	62.03	-168.89	3,153.44	-633.96	2,221.61	2,157.89	63.72	34.866	
12,100.00	9,088.00	14,286.76	11,268.00	56.65	63.13	-168.89	3,253.43	-634.24	2,221.67	2,156.67	65.00	34.181	
12,200.00	9,088.00	14,386.76	11,268.00	57.84	64.24	-168.88	3,353.43	-634.53	2,221.72	2,155.43	66.29	33.514	
12,300.00	9,088.00	14,486.76	11,268.00	59.05	65.37	-168.87	3,453.43	-634.82	2,221.78	2,154.18	67.60	32.865	
12,400.00	9,088.00	14,586.76	11,268.00	60.27	66.51	-168.86	3,553.43	-635.11	2,221.84	2,152.91	68.93	32.235	
12,500.00	9,088.00	14,686.76	11,268.00	61.50	67.67	-168.86	3,653.43	-635.40	2,221.89	2,151.63	70.26	31.622	
12,600.00	9,088.00	14,786.76	11,268.00	62.74	68.83	-168.85	3,753.43	-635.69	2,221.95	2,150.33	71.61	31.026	
12,700.00	9,088.00	14,886.76	11,268.00	63.99	70.01	-168.84	3,853.43	-635.98	2,222.00	2,149.03	72.98	30.448	
12,800.00	9,088.00	14,986.76	11,268.00	65.24	71.19	-168.83	3,953.43	-636.27	2,222.06	2,147.71	74.35	29.886	
12,900.00	9,088.00	15,086.76	11,268.00	66.51	72.39	-168.83	4,053.43	-636.55	2,222.12	2,146.38	75.73	29.341	
13,000.00	9,088.00	15,186.76	11,268.00	67.78	73.59	-168.82	4,153.43	-636.84	2,222.17	2,145.04	77.13	28.811	
13,100.00	9,088.00	15,286.76	11,268.00	69.06	74.80	-168.81	4,253.43	-637.13	2,222.23	2,143.69	78.53	28.297	
13,200.00	9,088.00	15,386.76	11,268.00	70.34	76.02	-168.81	4,353.43	-637.42	2,222.28	2,142.34	79.95	27.797	
13,300.00	9,088.00	15,486.75	11,268.00	71.63	77.25	-168.80	4,453.42	-637.71	2,222.34	2,140.97	81.37	27.312	
13,400.00	9,088.00	15,586.75	11,268.00	72.93	78.49	-168.79	4,553.42	-638.00	2,222.40	2,139.60	82.80	26.841	
13,500.00	9,088.00	15,686.75	11,268.00	74.23	79.73	-168.78	4,653.42	-638.29	2,222.45	2,138.22	84.24	26.384	
13,600.00	9,088.00	15,786.75	11,268.00	75.54	80.98	-168.78	4,753.42	-638.58	2,222.51	2,136.83	85.68	25.940	
13,700.00	9,088.00	15,886.75	11,268.00	76.85	82.23	-168.77	4,853.42	-638.86	2,222.56	2,135.43	87.13	25.508	
13,800.00	9,088.00	15,986.75	11,268.00	78.17	83.50	-168.76	4,953.42	-639.15	2,222.62	2,134.03	88.59	25.088	
13,900.00	9,088.00	16,086.75	11,268.00	79.49	84.77	-168.75	5,053.42	-639.44	2,222.68	2,132.62	90.06	24.681	
14,000.00	9,088.00	16,186.75	11,268.00	80.82	86.04	-168.75	5,153.42	-639.73	2,222.73	2,131.20	91.53	24.284	
14,100.00	9,088.00	16,286.75	11,268.00	82.15	87.32	-168.74	5,253.42	-640.02	2,222.79	2,129.78	93.01	23.899	
14,200.00	9,088.00	16,386.75	11,268.00	83.48	88.60	-168.73	5,353.42	-640.31	2,222.85	2,128.36	94.49	23.525	
14,300.00	9,088.00	16,486.75	11,268.00	84.82	89.89	-168.73	5,453.42	-640.60	2,222.90	2,126.92	95.98	23.160	
14,400.00	9,088.00	16,586.75	11,268.00	86.16	91.19	-168.72	5,553.42	-640.88	2,222.96	2,125.49	97.47	22.806	
14,500.00	9,088.00	16,686.75	11,268.00	87.50	92.49	-168.71	5,653.41	-641.17	2,223.01	2,124.04	98.97	22.461	
14,600.00	9,088.00	16,786.75	11,268.00	88.85	93.79	-168.70	5,753.41	-641.46	2,223.07	2,122.60	100.47	22.126	
14,700.00	9,088.00	16,886.75	11,268.00	90.20	95.10	-168.70	5,853.41	-641.75	2,223.13	2,121.15	101.98	21.799	
14,800.00	9,088.00	16,986.75	11,268.00	91.55	96.41	-168.69	5,953.41	-642.04	2,223.18	2,119.69	103.49	21.481	
14,900.00	9,088.00	17,086.75	11,268.00	92.91	97.73	-168.68	6,053.41	-642.33	2,223.24	2,118.23	105.01	21.171	
15,000.00	9,088.00	17,186.75	11,268.00	94.27	99.04	-168.67	6,153.41	-642.62	2,223.30	2,116.77	106.53	20.870	
15,100.00	9,088.00	17,286.75	11,268.00	95.63	100.37	-168.67	6,253.41	-642.91	2,223.35	2,115.30	108.06	20.576	
15,200.00	9,088.00	17,386.75	11,268.00	97.00	101.69	-168.66	6,353.41	-643.19	2,223.41	2,113.83	109.58	20.290	
15,300.00	9,088.00	17,486.75	11,268.00	98.36	103.02	-168.65	6,453.41	-643.48	2,223.47	2,112.35	111.11	20.011	

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design	Big Sinks Draw 25-24 - 331H - OH - Prelim Plan	Offset Site Error:	0.00 usft
Survey Program:	0-MWD+HDGM	Offset Well Error:	0.00 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 Factor (usft)	Separation Factor
15,400.00	9,088.00	17,586.75	11,268.00	99.73	104.36	-168.64	6,553.41	-643.77	2,223.52	2,110.88	112.65	19.738
15,500.00	9,088.00	17,686.75	11,268.00	101.10	105.69	-168.64	6,653.41	-644.06	2,223.58	2,109.39	114.19	19.473
15,600.00	9,088.00	17,786.75	11,268.00	102.48	107.03	-168.63	6,753.41	-644.35	2,223.64	2,107.91	115.73	19.214
15,700.00	9,088.00	17,886.74	11,268.00	103.85	108.37	-168.62	6,853.40	-644.64	2,223.70	2,106.42	117.27	18.962
15,800.00	9,088.00	17,986.74	11,268.00	105.23	109.72	-168.62	6,953.40	-644.93	2,223.75	2,104.93	118.82	18.715
15,900.00	9,088.00	18,086.74	11,268.00	106.61	111.06	-168.61	7,053.40	-645.22	2,223.81	2,103.44	120.37	18.475
16,000.00	9,088.00	18,186.74	11,268.00	107.99	112.41	-168.60	7,153.40	-645.50	2,223.87	2,101.94	121.92	18.240
16,100.00	9,088.00	18,286.74	11,268.00	109.37	113.76	-168.59	7,253.40	-645.79	2,223.92	2,100.45	123.48	18.011
16,129.80	9,088.00	18,313.53	11,268.00	109.78	114.13	-168.59	7,280.19	-645.87	2,223.94	2,100.02	123.92	17.947

Company:	Devon Energy Corp.	Local Coordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design	Big Sinks Draw 25-24 - 521H - OH - Prelim Plan											Offset Site Error:	0.00 usft
Survey Program:	0-MWD+IFR1+SAG											Offset Well Error:	0.00 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
0.00	0.00	0.00	0.00	0.00	0.00	-90.34	-0.18	-29.98	29.98				
100.00	100.00	100.00	100.00	0.13	0.13	-90.34	-0.18	-29.98	29.98	29.72	0.27	113.019	
200.00	200.00	200.00	200.00	0.49	0.49	-90.34	-0.18	-29.98	29.98	29.00	0.98	30.523	
300.00	300.00	300.00	300.00	0.85	0.85	-90.34	-0.18	-29.98	29.98	28.28	1.70	17.644	
400.00	400.00	400.00	400.00	1.21	1.21	-90.34	-0.18	-29.98	29.98	27.56	2.42	12.409	
500.00	500.00	500.00	500.00	1.57	1.57	-90.34	-0.18	-29.98	29.98	26.85	3.13	9.569	
600.00	600.00	600.00	600.00	1.92	1.92	-90.34	-0.18	-29.98	29.98	26.13	3.85	7.787	
700.00	700.00	700.00	700.00	2.28	2.28	-90.34	-0.18	-29.98	29.98	25.41	4.57	6.565	
800.00	800.00	800.00	800.00	2.64	2.64	-90.34	-0.18	-29.98	29.98	24.70	5.28	5.674	
900.00	900.00	900.00	900.00	3.00	3.00	-90.34	-0.18	-29.98	29.98	23.98	6.00	4.996	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	-90.34	-0.18	-29.98	29.98	23.26	6.72	4.463 CC	
1,100.00	1,100.00	1,099.74	1,099.74	3.72	3.71	-90.34	-0.18	-30.41	30.42	22.99	7.42	4.097 ES	
1,200.00	1,200.00	1,199.46	1,199.45	4.08	4.05	-90.33	-0.18	-31.72	31.72	23.60	8.12	3.904	
1,300.00	1,300.00	1,299.15	1,299.12	4.43	4.40	-90.30	-0.18	-33.88	33.90	25.07	8.83	3.840	
1,400.00	1,400.00	1,398.80	1,398.71	4.79	4.74	-90.28	-0.18	-36.92	36.94	27.41	9.53	3.877	
1,500.00	1,500.00	1,498.38	1,498.22	5.15	5.09	-90.25	-0.18	-40.82	40.86	30.62	10.23	3.993	
1,600.00	1,600.00	1,597.91	1,597.64	5.50	5.44	-0.23	-0.18	-45.58	45.20	34.27	10.93	4.136	
1,700.00	1,699.99	1,697.41	1,696.98	5.84	5.80	-0.21	-0.18	-51.20	49.54	37.93	11.61	4.266	
1,800.00	1,799.97	1,803.15	1,796.21	6.19	6.17	-0.19	-0.18	-57.67	53.88	41.55	12.33	4.371	
1,900.00	1,899.92	1,903.23	1,895.88	6.53	6.53	-0.18	-0.18	-64.64	57.85	44.83	13.02	4.442	
2,000.00	1,999.87	2,003.30	1,995.57	6.88	6.89	-0.17	-0.18	-71.61	61.64	47.91	13.73	4.490	
2,100.00	2,099.82	2,103.37	2,095.25	7.23	7.26	-0.16	-0.18	-78.59	65.42	50.99	14.43	4.534	
2,200.00	2,199.77	2,203.44	2,194.94	7.58	7.62	-0.15	-0.18	-85.56	69.20	54.07	15.13	4.572	
2,300.00	2,299.72	2,303.52	2,294.62	7.93	7.98	-0.14	-0.18	-92.53	72.99	57.15	15.84	4.607	
2,400.00	2,399.66	2,396.41	2,394.31	8.29	8.32	-0.13	-0.18	-99.50	76.77	60.25	16.52	4.646	
2,500.00	2,499.61	2,503.66	2,493.99	8.64	8.71	-0.13	-0.18	-106.47	80.55	63.29	17.26	4.668	
2,600.00	2,599.56	2,603.73	2,593.68	8.99	9.08	-0.12	-0.18	-113.44	84.34	66.37	17.97	4.694	
2,700.00	2,699.51	2,703.80	2,693.36	9.35	9.44	-0.12	-0.18	-120.41	88.12	69.44	18.68	4.718	
2,800.00	2,799.46	2,803.87	2,793.05	9.70	9.81	-0.11	-0.18	-127.38	91.90	72.51	19.39	4.740	
2,900.00	2,899.41	2,903.95	2,892.73	10.06	10.18	-0.11	-0.18	-134.35	95.69	75.58	20.10	4.760	
3,000.00	2,999.36	3,004.02	2,992.42	10.41	10.54	-0.10	-0.18	-141.32	99.47	78.65	20.82	4.779	
3,100.00	3,099.31	3,104.09	3,092.10	10.77	10.91	-0.10	-0.18	-148.29	103.25	81.72	21.53	4.796	
3,200.00	3,199.26	3,204.16	3,191.79	11.13	11.28	-0.10	-0.18	-155.26	107.04	84.79	22.24	4.812	
3,300.00	3,299.20	3,295.77	3,291.47	11.48	11.61	-0.09	-0.18	-162.23	110.82	87.89	22.93	4.834	
3,400.00	3,399.15	3,404.30	3,391.16	11.84	12.01	-0.09	-0.18	-169.20	114.60	90.93	23.67	4.841	
3,500.00	3,499.10	3,504.38	3,490.84	12.20	12.38	-0.09	-0.18	-176.17	118.38	94.00	24.39	4.854	
3,600.00	3,599.05	3,604.45	3,590.53	12.55	12.75	-0.08	-0.18	-183.15	122.17	97.07	25.10	4.867	
3,700.00	3,699.00	3,704.52	3,690.21	12.91	13.12	-0.08	-0.18	-190.12	125.95	100.13	25.82	4.878	
3,800.00	3,798.95	3,804.59	3,789.90	13.27	13.49	-0.08	-0.18	-197.09	129.73	103.20	26.53	4.889	
3,900.00	3,898.90	3,904.66	3,889.58	13.63	13.86	-0.08	-0.18	-204.06	133.52	106.27	27.25	4.900	
4,000.00	3,998.85	4,004.73	3,989.27	13.99	14.22	-0.08	-0.18	-211.03	137.30	109.33	27.97	4.909	
4,100.00	4,098.80	4,104.80	4,088.95	14.34	14.59	-0.07	-0.18	-218.00	141.08	112.40	28.68	4.919	
4,200.00	4,198.75	4,204.88	4,188.64	14.70	14.96	-0.07	-0.18	-224.97	144.87	115.47	29.40	4.927	
4,300.00	4,298.69	4,295.05	4,288.32	15.06	15.30	-0.07	-0.18	-231.94	148.65	118.57	30.08	4.941	
4,400.00	4,398.64	4,392.51	4,385.49	15.42	15.66	-0.07	-0.18	-239.48	153.20	122.43	30.77	4.979	
4,500.00	4,498.59	4,489.67	4,482.21	15.78	16.02	-0.06	-0.18	-248.64	159.44	127.99	31.45	5.069	
4,600.00	4,598.54	4,586.59	4,578.53	16.14	16.39	-0.06	-0.18	-259.42	167.37	135.25	32.13	5.210	
4,700.00	4,698.49	4,686.11	4,677.33	16.50	16.77	-0.06	-0.18	-271.37	176.20	143.36	32.84	5.365	
4,800.00	4,798.44	4,785.72	4,776.22	16.86	17.15	-0.06	-0.18	-283.33	185.03	151.47	33.56	5.513	
4,900.00	4,898.39	4,885.32	4,875.11	17.22	17.54	-0.05	-0.18	-295.29	193.86	159.58	34.28	5.655	
5,000.00	4,998.34	4,984.93	4,973.99	17.58	17.92	-0.05	-0.18	-307.25	202.69	167.69	35.00	5.791	
5,100.00	5,098.29	5,084.54	5,072.88	17.94	18.30	-0.05	-0.18	-319.22	211.52	175.80	35.72	5.922	

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design Big Sinks Draw 25-24 - 521H - OH - Prelim Plan — Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1

Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)									
5,200.00	5,198.23	5,184.15	5,171.77	18.29	18.69	-0.05	-0.18	-331.18	220.35	183.91	36.44	6.047
5,300.00	5,298.18	5,283.76	5,270.66	18.65	19.07	-0.05	-0.18	-343.14	229.18	192.02	37.16	6.168
5,400.00	5,398.13	5,383.37	5,369.55	19.01	19.46	-0.04	-0.18	-355.10	238.01	200.13	37.88	6.284
5,500.00	5,498.08	5,482.98	5,468.44	19.37	19.84	-0.04	-0.18	-367.06	246.84	208.24	38.60	6.395
5,600.00	5,598.03	5,582.59	5,567.33	19.73	20.23	-0.04	-0.18	-379.03	255.67	216.35	39.32	6.503
5,700.00	5,697.98	5,682.20	5,666.22	20.09	20.62	-0.04	-0.18	-390.99	264.50	224.46	40.04	6.606
5,800.00	5,797.93	5,781.81	5,765.10	20.45	21.00	-0.04	-0.18	-402.95	273.33	232.57	40.76	6.706
5,900.00	5,897.88	5,881.42	5,863.99	20.81	21.39	-0.04	-0.18	-414.91	282.16	240.67	41.48	6.802
6,000.00	5,997.83	5,981.03	5,962.88	21.17	21.78	-0.04	-0.18	-426.87	290.98	248.78	42.20	6.895
6,100.00	6,097.77	6,080.64	6,061.77	21.53	22.16	-0.03	-0.18	-438.84	299.81	256.89	42.92	6.985
6,200.00	6,197.72	6,180.25	6,160.66	21.89	22.55	-0.03	-0.18	-450.80	308.64	265.00	43.64	7.072
6,300.00	6,297.67	6,279.86	6,259.55	22.25	22.94	-0.03	-0.18	-462.76	317.47	273.11	44.37	7.156
6,400.00	6,397.62	6,379.47	6,358.44	22.61	23.33	-0.03	-0.18	-474.72	326.30	281.21	45.09	7.237
6,500.00	6,497.57	6,479.08	6,457.32	22.97	23.71	-0.03	-0.18	-486.68	335.13	289.32	45.81	7.316
6,600.00	6,597.52	6,578.69	6,556.21	23.33	24.10	-0.03	-0.18	-498.65	343.96	297.43	46.53	7.392
6,700.00	6,697.47	6,678.30	6,655.10	23.69	24.49	-0.03	-0.18	-510.61	352.79	305.54	47.25	7.466
6,800.00	6,797.42	6,777.90	6,753.99	24.05	24.88	-0.03	-0.18	-522.57	361.62	313.64	47.97	7.538
6,900.00	6,897.37	6,877.51	6,852.88	24.41	25.27	-0.03	-0.18	-534.53	370.45	321.75	48.70	7.607
7,000.00	6,997.31	6,977.12	6,951.77	24.78	25.66	-0.03	-0.18	-546.50	379.28	329.86	49.42	7.675
7,100.00	7,097.26	7,076.73	7,050.66	25.14	26.05	-0.03	-0.18	-558.46	388.11	337.97	50.14	7.740
7,200.00	7,197.21	7,176.34	7,149.54	25.50	26.43	-0.03	-0.18	-570.42	396.94	346.07	50.86	7.804
7,300.00	7,297.16	7,275.95	7,248.43	25.86	26.82	-0.03	-0.18	-582.38	405.77	354.18	51.59	7.866
7,400.00	7,397.11	7,382.65	7,354.45	26.22	27.24	-0.02	-0.18	-594.36	413.82	361.44	52.38	7.901
7,500.00	7,497.06	7,490.29	7,461.62	26.58	27.65	-0.02	-0.18	-604.45	420.00	366.84	53.16	7.900
7,600.00	7,597.01	7,598.15	7,569.17	26.94	28.05	-0.02	-0.18	-612.54	424.31	370.38	53.93	7.868
7,700.00	7,696.96	7,706.14	7,676.99	27.30	28.44	-0.02	-0.18	-618.61	426.73	372.05	54.68	7.804
7,800.00	7,796.91	7,814.19	7,784.97	27.66	28.83	-0.02	-0.18	-622.64	427.27	371.86	55.42	7.710
7,900.00	7,896.85	7,922.23	7,892.98	28.02	29.21	-0.02	-0.18	-624.64	425.93	369.80	56.13	7.588
8,000.00	7,996.80	8,026.05	7,996.80	28.38	29.56	-0.02	-0.18	-624.88	422.95	366.12	56.83	7.443
8,100.00	8,096.76	8,126.01	8,096.76	28.74	29.89	-0.02	-0.18	-624.88	420.12	362.60	57.53	7.303
8,200.00	8,196.75	8,226.00	8,196.75	29.10	30.22	-0.02	-0.18	-624.88	418.93	360.71	58.22	7.195
8,291.26	8,288.01	8,317.10	8,287.81	29.41	30.52	0.19	1.42	-624.88	418.78	359.93	58.85	7.116
8,300.00	8,296.75	8,325.77	8,296.45	29.44	30.55	-89.71	2.13	-624.89	418.91	360.00	58.91	7.111
8,400.00	8,396.75	8,422.34	8,391.45	29.79	30.87	-87.42	18.84	-624.93	419.41	359.80	59.61	7.036
8,500.00	8,496.75	8,511.08	8,475.15	30.13	31.14	-83.46	48.06	-625.02	422.34	362.04	60.29	7.005
8,600.00	8,596.48	8,591.67	8,546.44	30.48	31.36	-78.41	85.50	-625.13	429.58	368.77	60.80	7.065
8,700.00	8,693.72	8,668.71	8,609.04	30.81	31.55	-73.64	130.30	-625.26	439.67	378.67	61.00	7.207
8,800.00	8,785.54	8,743.10	8,663.27	31.12	31.72	-69.41	181.16	-625.40	451.33	390.47	60.86	7.416
8,900.00	8,869.14	8,815.47	8,709.27	31.38	31.86	-65.78	236.96	-625.56	463.36	402.94	60.43	7.668
9,000.00	8,941.98	8,886.29	8,747.13	31.65	32.00	-62.79	296.76	-625.74	474.74	414.89	59.85	7.932
9,100.00	9,001.84	8,955.96	8,776.90	31.96	32.14	-60.46	359.70	-625.92	484.61	425.33	59.28	8.175
9,200.00	9,046.92	9,024.81	8,798.61	32.29	32.31	-58.77	424.99	-626.11	492.34	433.46	58.88	8.362
9,300.00	9,075.83	9,093.13	8,812.26	32.62	32.51	-57.73	491.89	-626.30	497.45	438.67	58.78	8.462
9,400.00	9,087.71	9,161.16	8,817.85	32.97	32.74	-57.31	559.65	-626.49	499.68	440.59	59.09	8.456
9,500.00	9,088.00	9,254.97	8,818.00	33.33	33.09	-57.31	653.46	-626.76	499.96	440.16	59.80	8.361
9,600.00	9,088.00	9,354.97	8,818.00	33.76	33.53	-57.33	753.46	-627.05	500.20	439.58	60.62	8.251
9,700.00	9,088.00	9,454.97	8,818.00	34.24	34.02	-57.35	853.46	-627.34	500.45	438.91	61.54	8.132
9,800.00	9,088.00	9,554.97	8,818.00	34.77	34.56	-57.37	953.46	-627.63	500.69	438.14	62.55	8.004
9,900.00	9,088.00	9,654.97	8,818.00	35.35	35.16	-57.38	1,053.46	-627.92	500.93	437.28	63.65	7.870
10,000.00	9,088.00	9,754.97	8,818.00	35.99	35.80	-57.40	1,153.45	-628.21	501.17	436.34	64.84	7.729
10,100.00	9,088.00	9,854.97	8,818.00	36.67	36.49	-57.42	1,253.45	-628.49	501.42	435.31	66.11	7.585
10,200.00	9,088.00	9,954.97	8,818.00	37.39	37.23	-57.44	1,353.45	-628.78	501.66	434.21	67.45	7.438

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design	Big Sinks Draw 25-24 - 521H - OH - Prelim Plan	Offset Site Error:	0.00 usft
		Offset Well Error:	0.00 usft

Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Offset Well Centre +N/-S (usft)	Offset Well Centre +E/-W (usft)	Distance Between Centres (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	9,088.00	10,054.97	8,818.00	38.15	38.00	-57.46	1,453.45	-629.07	501.90	433.04	68.86	7.289	
10,400.00	9,088.00	10,154.97	8,818.00	38.95	38.81	-57.47	1,553.45	-629.36	502.15	431.81	70.34	7.139	
10,500.00	9,088.00	10,254.97	8,818.00	39.79	39.66	-57.49	1,653.45	-629.65	502.39	430.51	71.88	6.989	
10,600.00	9,088.00	10,354.97	8,818.00	40.66	40.54	-57.51	1,753.45	-629.94	502.63	429.15	73.49	6.840	
10,700.00	9,088.00	10,454.97	8,818.00	41.57	41.45	-57.53	1,853.45	-630.22	502.88	427.73	75.14	6.692	
10,800.00	9,088.00	10,554.96	8,818.00	42.50	42.39	-57.54	1,953.45	-630.51	503.12	426.27	76.85	6.547	
10,900.00	9,088.00	10,654.96	8,818.00	43.47	43.36	-57.56	2,053.45	-630.80	503.36	424.75	78.61	6.403	
11,000.00	9,088.00	10,754.96	8,818.00	44.45	44.36	-57.58	2,153.45	-631.09	503.61	423.19	80.41	6.263	
11,100.00	9,088.00	10,854.96	8,818.00	45.47	45.38	-57.60	2,253.45	-631.38	503.85	421.59	82.26	6.125	
11,200.00	9,088.00	10,954.96	8,818.00	46.50	46.42	-57.61	2,353.44	-631.67	504.09	419.95	84.14	5.991	
11,300.00	9,088.00	11,054.96	8,818.00	47.56	47.49	-57.63	2,453.44	-631.95	504.34	418.27	86.07	5.860	
11,400.00	9,088.00	11,154.96	8,818.00	48.64	48.57	-57.65	2,553.44	-632.24	504.58	416.56	88.02	5.732	
11,500.00	9,088.00	11,254.96	8,818.00	49.74	49.67	-57.67	2,653.44	-632.53	504.82	414.81	90.01	5.608	
11,600.00	9,088.00	11,354.96	8,818.00	50.85	50.79	-57.68	2,753.44	-632.82	505.07	413.03	92.04	5.488	
11,700.00	9,088.00	11,454.96	8,818.00	51.98	51.93	-57.70	2,853.44	-633.11	505.31	411.23	94.08	5.371	
11,800.00	9,088.00	11,554.96	8,818.00	53.13	53.08	-57.72	2,953.44	-633.40	505.55	409.39	96.16	5.257	
11,900.00	9,088.00	11,654.96	8,818.00	54.29	54.24	-57.74	3,053.44	-633.68	505.80	407.54	98.26	5.147	
12,000.00	9,088.00	11,754.96	8,818.00	55.46	55.42	-57.75	3,153.44	-633.97	506.04	405.66	100.39	5.041	
12,100.00	9,088.00	11,854.96	8,818.00	56.65	56.61	-57.77	3,253.44	-634.26	506.29	403.75	102.53	4.938	
12,200.00	9,088.00	11,954.96	8,818.00	57.84	57.82	-57.79	3,353.44	-634.55	506.53	401.83	104.70	4.838	
12,300.00	9,088.00	12,054.96	8,818.00	59.05	59.03	-57.81	3,453.44	-634.84	506.77	399.88	106.89	4.741	
12,400.00	9,088.00	12,154.96	8,818.00	60.27	60.25	-57.82	3,553.43	-635.13	507.02	397.92	109.10	4.647	
12,500.00	9,088.00	12,254.96	8,818.00	61.50	61.49	-57.84	3,653.43	-635.41	507.26	395.94	111.32	4.557	
12,600.00	9,088.00	12,354.96	8,818.00	62.74	62.73	-57.86	3,753.43	-635.70	507.51	393.95	113.56	4.469	
12,700.00	9,088.00	12,454.96	8,818.00	63.99	63.98	-57.88	3,853.43	-635.99	507.75	391.94	115.81	4.384	
12,800.00	9,088.00	12,554.96	8,818.00	65.24	65.24	-57.89	3,953.43	-636.28	507.99	389.91	118.09	4.302	
12,900.00	9,088.00	12,654.96	8,818.00	66.51	66.51	-57.91	4,053.43	-636.57	508.24	387.87	120.37	4.222	
13,000.00	9,088.00	12,754.96	8,818.00	67.78	67.78	-57.93	4,153.43	-636.86	508.48	385.82	122.67	4.145	
13,100.00	9,088.00	12,854.96	8,818.00	69.06	69.06	-57.94	4,253.43	-637.14	508.73	383.75	124.98	4.071	
13,200.00	9,088.00	12,954.95	8,818.00	70.34	70.35	-57.96	4,353.43	-637.43	508.97	381.67	127.30	3.998	
13,300.00	9,088.00	13,054.95	8,818.00	71.63	71.65	-57.98	4,453.43	-637.72	509.22	379.58	129.63	3.928	
13,400.00	9,088.00	13,154.95	8,818.00	72.93	72.95	-58.00	4,553.43	-638.01	509.46	377.49	131.98	3.860	
13,500.00	9,088.00	13,254.95	8,818.00	74.23	74.25	-58.01	4,653.43	-638.30	509.71	375.38	134.33	3.794	
13,600.00	9,088.00	13,354.95	8,818.00	75.54	75.56	-58.03	4,753.42	-638.59	509.95	373.26	136.69	3.731	
13,700.00	9,088.00	13,454.95	8,818.00	76.85	76.88	-58.05	4,853.42	-638.87	510.19	371.13	139.07	3.669	
13,800.00	9,088.00	13,554.95	8,818.00	78.17	78.20	-58.06	4,953.42	-639.16	510.44	368.99	141.45	3.609	
13,900.00	9,088.00	13,654.95	8,818.00	79.49	79.52	-58.08	5,053.42	-639.45	510.68	366.85	143.84	3.550	
14,000.00	9,088.00	13,754.95	8,818.00	80.82	80.85	-58.10	5,153.42	-639.74	510.93	364.69	146.23	3.494	
14,100.00	9,088.00	13,854.95	8,818.00	82.15	82.18	-58.12	5,253.42	-640.03	511.17	362.53	148.64	3.439	
14,200.00	9,088.00	13,954.95	8,818.00	83.48	83.52	-58.13	5,353.42	-640.31	511.42	360.37	151.05	3.386	
14,300.00	9,088.00	14,054.95	8,818.00	84.82	84.86	-58.15	5,453.42	-640.60	511.66	358.19	153.47	3.334	
14,400.00	9,088.00	14,154.95	8,818.00	86.16	86.20	-58.17	5,553.42	-640.89	511.91	356.01	155.90	3.284	
14,500.00	9,088.00	14,254.95	8,818.00	87.50	87.55	-58.18	5,653.42	-641.18	512.15	353.82	158.33	3.235	
14,600.00	9,088.00	14,354.95	8,818.00	88.85	88.90	-58.20	5,753.42	-641.47	512.40	351.63	160.77	3.187	
14,700.00	9,088.00	14,454.95	8,818.00	90.20	90.25	-58.22	5,853.42	-641.76	512.64	349.43	163.22	3.141	
14,800.00	9,088.00	14,554.95	8,818.00	91.55	91.61	-58.24	5,953.41	-642.04	512.89	347.22	165.67	3.096	
14,900.00	9,088.00	14,654.95	8,818.00	92.91	92.97	-58.25	6,053.41	-642.33	513.13	345.01	168.12	3.052	
15,000.00	9,088.00	14,754.95	8,818.00	94.27	94.33	-58.27	6,153.41	-642.62	513.38	342.79	170.58	3.010	
15,100.00	9,088.00	14,854.95	8,818.00	95.63	95.70	-58.29	6,253.41	-642.91	513.62	340.57	173.05	2.968	
15,200.00	9,088.00	14,954.95	8,818.00	97.00	97.06	-58.30	6,353.41	-643.20	513.87	338.35	175.52	2.928	
15,300.00	9,088.00	15,054.95	8,818.00	98.36	98.43	-58.32	6,453.41	-643.49	514.11	336.12	178.00	2.888	
15,400.00	9,088.00	15,154.95	8,818.00	99.73	99.80	-58.34	6,553.41	-643.77	514.36	333.88	180.48	2.850	

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

Company:	Devon Energy Corp.	Local Coordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design Big Sinks Draw 25-24 - 521H - OH - Prelim Plan

Survey Program: 0-MWD+HDGM

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
15,500.00	9,088.00	15,254.95	8,818.00	101.10	101.18	-58.35	6,653.41	-644.06	514.60	331.64	182.96	2.813
15,600.00	9,088.00	15,354.94	8,818.00	102.48	102.55	-58.37	6,753.41	-644.35	514.85	329.40	185.45	2.776
15,700.00	9,088.00	15,454.94	8,818.00	103.85	103.93	-58.39	6,853.41	-644.64	515.10	327.15	187.94	2.741
15,800.00	9,088.00	15,554.94	8,818.00	105.23	105.31	-58.40	6,953.41	-644.93	515.34	324.90	190.44	2.706
15,900.00	9,088.00	15,654.94	8,818.00	106.61	106.69	-58.42	7,053.41	-645.22	515.59	322.65	192.94	2.672
16,000.00	9,088.00	15,754.94	8,818.00	107.99	108.07	-58.44	7,153.40	-645.50	515.83	320.39	195.44	2.639
16,100.00	9,088.00	15,854.94	8,818.00	109.37	109.46	-58.45	7,253.40	-645.79	516.08	318.13	197.95	2.607
16,129.80	9,088.00	15,884.74	8,818.00	109.78	109.87	-58.46	7,283.20	-645.88	516.15	317.45	198.70	2.598 SF

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design	Big Sinks Draw 25-24 - 611H - OH - Prelim Plan	Offset Site Error:	0.00 usft
Survey Program:		Offset Well Error:	0.00 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
0.00	0.00	0.00	0.00	0.00	0.00	179.81	-149.98	0.49	149.98				
100.00	100.00	100.00	100.00	0.13	0.13	179.81	-149.98	0.49	149.98	149.72	0.27	565.391	
200.00	200.00	200.00	200.00	0.49	0.49	179.81	-149.98	0.49	149.98	149.00	0.98	152.697	
300.00	300.00	300.00	300.00	0.85	0.85	179.81	-149.98	0.49	149.98	148.28	1.70	88.268	
400.00	400.00	400.00	400.00	1.21	1.21	179.81	-149.98	0.49	149.98	147.56	2.42	62.076	
500.00	500.00	500.00	500.00	1.57	1.57	179.81	-149.98	0.49	149.98	146.85	3.13	47.871	
600.00	600.00	600.00	600.00	1.92	1.92	179.81	-149.98	0.49	149.98	146.13	3.85	38.956	
700.00	700.00	700.00	700.00	2.28	2.28	179.81	-149.98	0.49	149.98	145.41	4.57	32.841	
800.00	800.00	800.00	800.00	2.64	2.64	179.81	-149.98	0.49	149.98	144.70	5.28	28.385	
900.00	900.00	900.00	900.00	3.00	3.00	179.81	-149.98	0.49	149.98	143.98	6.00	24.993	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	179.81	-149.98	0.49	149.98	143.26	6.72	22.326	
1,100.00	1,100.00	1,100.00	1,100.00	3.72	3.72	179.81	-149.98	0.49	149.98	142.55	7.43	20.173	
1,200.00	1,200.00	1,200.00	1,200.00	4.08	4.08	179.81	-149.98	0.49	149.98	141.83	8.15	18.399	
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	179.81	-149.98	0.49	149.98	141.11	8.87	16.911	
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	179.81	-149.98	0.49	149.98	140.40	9.59	15.647	
1,500.00	1,500.00	1,500.00	1,500.00	5.15	5.15	179.81	-149.98	0.49	149.98	139.68	10.30	14.558	
1,600.00	1,600.00	1,600.00	1,600.00	5.50	5.50	-90.19	-149.98	0.05	149.98	138.98	11.00	13.632	
1,700.00	1,699.99	1,700.01	1,700.00	5.84	5.84	-90.19	-149.98	-1.26	149.98	138.29	11.69	12.833	
1,800.00	1,799.97	1,800.01	1,799.98	6.19	6.19	-90.19	-149.98	-3.44	149.98	137.60	12.38	12.119	
1,900.00	1,899.92	1,900.02	1,899.94	6.53	6.53	-90.17	-149.98	-6.49	149.98	136.91	13.07	11.476	
1,972.30	1,972.19	1,972.32	1,972.19	6.79	6.79	-90.00	-149.98	-9.24	149.98	136.41	13.57	11.050 CC	
2,000.00	1,999.87	2,000.02	1,999.86	6.88	6.88	-89.89	-149.98	-10.42	149.98	136.21	13.77	10.895	
2,100.00	2,099.82	2,099.99	2,099.72	7.23	7.23	-89.28	-149.98	-15.21	149.99	135.53	14.47	10.369	
2,200.00	2,199.77	2,199.94	2,199.50	7.58	7.59	-88.33	-149.98	-20.88	150.04	134.88	15.17	9.892	
2,300.00	2,299.72	2,299.83	2,299.18	7.93	7.94	-87.06	-149.98	-27.41	150.18	134.31	15.87	9.461	
2,400.00	2,399.66	2,400.32	2,398.76	8.29	8.30	-85.47	-149.98	-34.79	150.45	133.87	16.58	9.073	
2,500.00	2,499.61	2,500.42	2,498.37	8.64	8.66	-83.78	-149.98	-42.41	150.87	133.58	17.29	8.724	
2,600.00	2,599.56	2,600.52	2,597.97	8.99	9.01	-82.11	-149.98	-50.04	151.41	133.41	18.00	8.410	
2,700.00	2,699.51	2,700.62	2,697.58	9.35	9.38	-80.46	-149.98	-57.67	152.09	133.37	18.72	8.125 ES	
2,800.00	2,799.46	2,800.72	2,797.19	9.70	9.74	-78.81	-149.98	-65.30	152.89	133.46	19.43	7.868	
2,900.00	2,899.41	2,900.82	2,896.80	10.06	10.10	-77.19	-149.98	-72.93	153.81	133.67	20.15	7.634	
3,000.00	2,999.36	3,000.92	2,996.41	10.41	10.46	-75.59	-149.98	-80.56	154.86	134.00	20.86	7.422	
3,100.00	3,099.31	3,101.01	3,096.02	10.77	10.83	-74.01	-149.98	-88.19	156.03	134.45	21.58	7.230	
3,200.00	3,199.26	3,201.11	3,195.63	11.13	11.19	-72.45	-149.98	-95.82	157.31	135.01	22.30	7.055	
3,300.00	3,299.20	3,301.21	3,295.24	11.48	11.56	-70.92	-149.98	-103.45	158.71	135.69	23.02	6.896	
3,400.00	3,399.15	3,401.31	3,394.85	11.84	11.92	-69.42	-149.98	-111.08	160.22	136.49	23.73	6.751	
3,500.00	3,499.10	3,501.41	3,494.46	12.20	12.29	-67.95	-149.98	-118.71	161.84	137.39	24.45	6.619	
3,600.00	3,599.05	3,601.51	3,594.07	12.55	12.66	-66.51	-149.98	-126.34	163.56	138.39	25.17	6.498	
3,700.00	3,699.00	3,701.61	3,693.68	12.91	13.02	-65.10	-149.98	-133.96	165.38	139.50	25.89	6.389	
3,800.00	3,798.95	3,801.71	3,793.29	13.27	13.39	-63.72	-149.98	-141.59	167.30	140.70	26.61	6.288	
3,900.00	3,898.90	3,901.81	3,892.90	13.63	13.76	-62.37	-149.98	-149.22	169.32	142.00	27.32	6.197	
4,000.00	3,998.85	4,001.90	3,992.51	13.99	14.13	-61.05	-149.98	-156.85	171.43	143.39	28.04	6.113	
4,100.00	4,098.80	4,098.00	4,092.12	14.34	14.48	-59.77	-149.98	-164.48	173.63	144.88	28.75	6.040	
4,200.00	4,198.75	4,202.10	4,191.73	14.70	14.86	-58.52	-149.98	-172.11	175.91	146.43	29.48	5.967	
4,300.00	4,298.69	4,302.20	4,291.33	15.06	15.23	-57.30	-149.98	-179.74	178.27	148.08	30.20	5.904	
4,400.00	4,398.64	4,402.30	4,390.94	15.42	15.60	-56.12	-149.98	-187.37	180.71	149.80	30.91	5.846	
4,500.00	4,498.59	4,502.40	4,490.55	15.78	15.97	-54.96	-149.98	-195.00	183.23	151.60	31.63	5.793	
4,600.00	4,598.54	4,597.50	4,590.16	16.14	16.32	-53.84	-149.98	-202.63	185.82	153.49	32.33	5.747	
4,700.00	4,698.49	4,702.60	4,689.77	16.50	16.71	-52.75	-149.98	-210.26	188.48	155.41	33.07	5.700	
4,800.00	4,798.44	4,802.69	4,789.38	16.86	17.08	-51.69	-149.98	-217.89	191.20	157.42	33.78	5.660	
4,900.00	4,898.39	4,902.79	4,888.99	17.22	17.45	-50.66	-149.98	-225.51	193.99	159.49	34.50	5.623	
5,000.00	4,998.34	5,002.89	4,988.60	17.58	17.82	-49.66	-149.98	-233.14	196.84	161.62	35.22	5.589	

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design Big Sinks Draw 25-24 - 611H - OH - Prelim Plan

Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)									
5,100.00	5,098.29	5,102.99	5,088.21	17.94	18.19	-48.69	-149.98	-240.77	199.75	163.81	35.94	5.558
5,200.00	5,198.23	5,203.09	5,187.82	18.29	18.57	-47.75	-149.98	-248.40	202.71	166.06	36.65	5.531
5,300.00	5,298.18	5,303.19	5,287.43	18.65	18.94	-46.83	-149.98	-256.03	205.73	168.36	37.37	5.505
5,400.00	5,398.13	5,403.29	5,387.04	19.01	19.31	-45.94	-149.98	-263.66	208.80	170.71	38.09	5.482
5,500.00	5,498.08	5,503.39	5,486.65	19.37	19.68	-45.08	-149.98	-271.29	211.92	173.11	38.81	5.461
5,600.00	5,598.03	5,603.49	5,586.26	19.73	20.05	-44.24	-149.98	-278.92	215.08	175.56	39.52	5.442
5,700.00	5,697.98	5,696.42	5,685.87	20.09	20.39	-43.43	-149.98	-286.55	218.29	178.07	40.21	5.428
5,800.00	5,797.93	5,796.32	5,785.48	20.45	20.77	-42.64	-149.98	-294.18	221.54	180.61	40.93	5.413
5,900.00	5,897.88	5,903.78	5,885.08	20.81	21.16	-41.87	-149.98	-301.81	224.83	183.16	41.67	5.395
6,000.00	5,997.83	6,003.88	5,984.69	21.17	21.54	-41.13	-149.98	-309.44	228.16	185.77	42.39	5.382
6,100.00	6,097.77	6,103.98	6,084.30	21.53	21.91	-40.40	-149.98	-317.06	231.53	188.42	43.11	5.371
6,200.00	6,197.72	6,204.08	6,183.91	21.89	22.28	-39.70	-149.98	-324.69	234.93	191.11	43.83	5.361
6,300.00	6,297.67	6,304.18	6,283.52	22.25	22.65	-39.02	-149.98	-332.32	238.37	193.83	44.54	5.352
6,400.00	6,397.62	6,404.28	6,383.13	22.61	23.02	-38.35	-149.98	-339.95	241.85	196.59	45.26	5.343
6,500.00	6,497.57	6,504.38	6,482.74	22.97	23.40	-37.71	-149.98	-347.58	245.35	199.37	45.98	5.336
6,600.00	6,597.52	6,604.47	6,582.35	23.33	23.77	-37.08	-149.98	-355.21	248.88	202.19	46.69	5.330
6,700.00	6,697.47	6,704.57	6,681.96	23.69	24.14	-36.48	-149.98	-362.84	252.44	205.03	47.41	5.324
6,800.00	6,797.42	6,804.67	6,781.57	24.05	24.51	-35.89	-149.98	-370.47	256.03	207.90	48.13	5.320
6,900.00	6,897.37	6,904.77	6,881.18	24.41	24.88	-35.31	-149.98	-378.10	259.65	210.80	48.85	5.316
7,000.00	6,997.31	6,995.13	6,980.79	24.78	25.22	-34.75	-149.98	-385.73	263.29	213.76	49.53	5.316
7,100.00	7,097.26	7,104.97	7,080.40	25.14	25.63	-34.21	-149.98	-393.36	266.96	216.67	50.28	5.309
7,200.00	7,197.21	7,205.07	7,180.01	25.50	26.00	-33.68	-149.98	-400.99	270.64	219.64	51.00	5.307
7,300.00	7,297.16	7,305.17	7,279.62	25.86	26.37	-33.16	-149.98	-408.61	274.36	222.64	51.72	5.305
7,400.00	7,397.11	7,405.27	7,379.23	26.22	26.75	-32.66	-149.98	-416.24	278.09	225.65	52.44	5.303
7,500.00	7,497.06	7,505.36	7,478.84	26.58	27.12	-32.18	-149.98	-423.87	281.84	228.69	53.15	5.302
7,600.00	7,597.01	7,594.54	7,578.44	26.94	27.45	-31.70	-149.98	-431.50	285.62	231.78	53.83	5.306
7,700.00	7,696.96	7,705.56	7,678.05	27.30	27.86	-31.24	-149.98	-439.13	289.41	234.82	54.59	5.302 SF
7,800.00	7,796.91	7,794.34	7,777.66	27.66	28.19	-30.79	-149.98	-446.76	293.22	237.95	55.27	5.306
7,900.00	7,896.85	7,905.76	7,877.27	28.02	28.61	-30.35	-149.98	-454.39	297.05	241.02	56.03	5.302
8,000.00	7,996.80	8,005.86	7,976.88	28.38	28.98	-29.92	-149.98	-462.02	300.89	244.15	56.74	5.303
8,100.00	8,096.76	8,105.98	8,076.47	28.74	29.35	-29.49	-149.98	-469.65	305.08	247.61	57.46	5.309
8,200.00	8,196.75	8,193.82	8,175.97	29.10	29.68	-28.93	-149.98	-477.27	310.71	252.57	58.13	5.345
8,300.00	8,296.75	8,306.47	8,275.39	29.44	30.10	-118.27	-149.98	-484.88	317.39	258.51	58.88	5.390
8,400.00	8,396.75	8,406.77	8,374.81	29.79	30.48	-117.63	-149.98	-492.50	324.14	264.56	59.59	5.440
8,500.00	8,496.75	8,507.06	8,474.23	30.13	30.85	-117.02	-149.98	-500.11	330.93	270.64	60.29	5.489
8,600.00	8,596.48	8,592.37	8,573.37	30.48	31.17	-116.58	-149.98	-507.70	340.36	279.41	60.95	5.584
8,700.00	8,693.72	8,689.34	8,670.05	30.81	31.53	-117.70	-149.98	-515.11	357.78	296.11	61.67	5.802
8,800.00	8,785.54	8,780.88	8,761.33	31.12	31.87	-119.74	-149.98	-522.10	384.68	322.30	62.38	6.167
8,900.00	8,869.14	8,864.24	8,844.44	31.38	32.18	-121.67	-149.98	-528.47	422.92	359.87	63.06	6.707
9,000.00	8,941.98	8,936.86	8,916.85	31.65	32.45	-122.45	-149.98	-534.01	473.71	410.04	63.67	7.440
9,100.00	9,001.84	9,003.45	8,976.37	31.96	32.70	-121.05	-149.98	-538.57	536.95	472.73	64.22	8.361
9,200.00	9,046.92	9,041.50	9,021.18	32.29	32.84	-116.25	-149.98	-542.00	611.20	546.61	64.59	9.462
9,300.00	9,075.83	9,070.33	9,049.93	32.62	32.95	-106.28	-149.98	-544.20	694.04	629.16	64.87	10.699
9,400.00	9,087.71	9,082.17	9,061.73	32.97	32.99	-89.41	-149.98	-545.11	782.45	717.42	65.03	12.033
9,500.00	9,088.00	9,082.46	9,062.02	33.33	32.99	-85.62	-149.98	-545.13	873.59	808.49	65.11	13.418
9,600.00	9,088.00	9,082.46	9,062.02	33.76	32.99	-85.62	-149.98	-545.13	966.48	901.31	65.17	14.830
9,700.00	9,088.00	9,082.46	9,062.02	34.24	32.99	-85.62	-149.98	-545.13	1,060.67	995.45	65.22	16.262
9,800.00	9,088.00	9,082.46	9,062.02	34.77	32.99	-85.62	-149.98	-545.13	1,155.83	1,090.56	65.27	17.708
9,900.00	9,088.00	9,082.46	9,062.02	35.35	32.99	-85.62	-149.98	-545.13	1,251.75	1,186.44	65.31	19.165
10,000.00	9,088.00	9,082.46	9,062.02	35.99	32.99	-85.62	-149.98	-545.13	1,348.26	1,282.91	65.35	20.631
10,100.00	9,088.00	9,082.46	9,062.02	36.67	32.99	-85.62	-149.98	-545.13	1,445.25	1,379.86	65.39	22.103
10,200.00	9,088.00	9,082.46	9,062.02	37.39	32.99	-85.62	-149.98	-545.13	1,542.62	1,477.20	65.42	23.580

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

Company:	Devon Energy Corp.	Local Coordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design	Big Sinks Draw 25-24 - 611H - OH - Prelm Plan											
Offset Site Error:	0.00 usft											
Survey Program:												
Measured Depth (usft)	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 Factor	Warning
10,300.00	9,088.00	9,082.46	9,062.02	38.15	32.99	-85.62	-149.98	-545.13	1,640.31	1,574.85	65.45	25.061
10,400.00	9,088.00	9,082.46	9,062.02	38.95	32.99	-85.62	-149.98	-545.13	1,738.26	1,672.77	65.48	26.545
10,500.00	9,088.00	9,082.46	9,062.02	39.79	32.99	-85.62	-149.98	-545.13	1,836.43	1,770.91	65.51	28.031
10,600.00	9,088.00	9,082.46	9,062.02	40.66	32.99	-85.62	-149.98	-545.13	1,934.79	1,869.24	65.54	29.519
10,700.00	9,088.00	9,082.46	9,062.02	41.57	32.99	-85.62	-149.98	-545.13	2,033.30	1,967.73	65.57	31.008
10,800.00	9,088.00	9,082.46	9,062.02	42.50	32.99	-85.62	-149.98	-545.13	2,131.96	2,066.36	65.60	32.498
10,900.00	9,088.00	9,082.46	9,062.02	43.47	32.99	-85.62	-149.98	-545.13	2,230.74	2,165.11	65.63	33.989
11,000.00	9,088.00	9,082.46	9,062.02	44.45	32.99	-85.62	-149.98	-545.13	2,329.62	2,263.96	65.66	35.480
11,100.00	9,088.00	9,082.46	9,062.02	45.47	32.99	-85.62	-149.98	-545.13	2,428.59	2,362.90	65.69	36.970

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 711H - OH - Prelim Plan

Survey Program: 0-MWD

Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)									
0.00	0.00	0.00	0.00	0.00	0.00	168.51	-149.82	30.46	152.89			
100.00	100.00	100.00	100.00	0.13	0.13	168.51	-149.82	30.46	152.89	152.62	0.27	576.339
200.00	200.00	200.00	200.00	0.49	0.49	168.51	-149.82	30.46	152.89	151.90	0.98	155.654
300.00	300.00	300.00	300.00	0.85	0.85	168.51	-149.82	30.46	152.89	151.19	1.70	89.977
400.00	400.00	400.00	400.00	1.21	1.21	168.51	-149.82	30.46	152.89	150.47	2.42	63.278
500.00	500.00	500.00	500.00	1.57	1.57	168.51	-149.82	30.46	152.89	149.75	3.13	48.798
600.00	600.00	600.00	600.00	1.92	1.92	168.51	-149.82	30.46	152.89	149.04	3.85	39.711
700.00	700.00	700.00	700.00	2.28	2.28	168.51	-149.82	30.46	152.89	148.32	4.57	33.477
800.00	800.00	800.00	800.00	2.64	2.64	168.51	-149.82	30.46	152.89	147.60	5.28	28.934
900.00	900.00	900.00	900.00	3.00	3.00	168.51	-149.82	30.46	152.89	146.88	6.00	25.477
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	168.51	-149.82	30.46	152.89	146.17	6.72	22.758
1,100.00	1,100.00	1,100.00	1,100.00	3.72	3.72	168.51	-149.82	30.46	152.89	145.45	7.43	20.564
1,200.00	1,200.00	1,200.00	1,200.00	4.08	4.08	168.51	-149.82	30.46	152.89	144.73	8.15	18.755
1,300.00	1,300.00	1,300.00	1,300.00	4.43	4.43	168.51	-149.82	30.46	152.89	144.02	8.87	17.239
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	168.51	-149.82	30.46	152.89	143.30	9.59	15.950
1,500.00	1,500.00	1,500.00	1,500.00	5.15	5.15	168.51	-149.82	30.46	152.89	142.58	10.30	14.840 CC
1,600.00	1,600.00	1,600.00	1,600.00	5.50	5.51	-101.65	-149.82	30.46	152.97	141.96	11.01	13.893
1,700.00	1,699.99	1,700.01	1,699.99	5.84	5.87	-102.13	-149.82	30.46	153.24	141.53	11.71	13.085
1,800.00	1,799.97	1,800.03	1,799.97	6.19	6.23	-102.92	-149.82	30.46	153.72	141.30	12.41	12.382
1,900.00	1,899.92	1,900.08	1,899.92	6.53	6.59	-104.01	-149.82	30.46	154.42	141.30	13.12	11.770 ES
2,000.00	1,999.87	2,000.13	1,999.87	6.88	6.94	-105.15	-149.82	30.46	155.22	141.39	13.83	11.226
2,100.00	2,099.82	2,100.18	2,099.82	7.23	7.30	-106.28	-149.82	30.46	156.09	141.55	14.53	10.739
2,200.00	2,199.77	2,200.23	2,199.77	7.58	7.66	-107.40	-149.82	30.46	157.01	141.77	15.24	10.300
2,300.00	2,299.72	2,300.28	2,299.72	7.93	8.02	-108.51	-149.82	30.46	158.00	142.05	15.95	9.904
2,400.00	2,399.66	2,400.34	2,399.66	8.29	8.38	-109.60	-149.82	30.46	159.04	142.38	16.66	9.544
2,500.00	2,499.61	2,500.39	2,499.61	8.64	8.74	-110.68	-149.82	30.46	160.14	142.77	17.38	9.216
2,600.00	2,599.56	2,600.44	2,599.56	8.99	9.10	-111.74	-149.82	30.46	161.30	143.21	18.09	8.917
2,700.00	2,699.51	2,700.49	2,699.51	9.35	9.45	-112.79	-149.82	30.46	162.51	143.71	18.80	8.644
2,800.00	2,799.46	2,800.54	2,799.46	9.70	9.81	-113.82	-149.82	30.46	163.78	144.26	19.51	8.393
2,900.00	2,899.41	2,900.59	2,899.41	10.06	10.17	-114.83	-149.82	30.46	165.10	144.87	20.23	8.162
3,000.00	2,999.36	3,000.64	2,999.36	10.41	10.53	-115.83	-149.82	30.46	166.46	145.52	20.94	7.949
3,100.00	3,099.31	3,100.69	3,099.31	10.77	10.89	-116.81	-149.82	30.46	167.88	146.23	21.66	7.752
3,200.00	3,199.26	3,200.74	3,199.26	11.13	11.25	-117.78	-149.82	30.46	169.35	146.98	22.37	7.570
3,300.00	3,299.20	3,300.80	3,299.20	11.48	11.61	-118.72	-149.82	30.46	170.86	147.78	23.09	7.401
3,400.00	3,399.15	3,400.85	3,399.15	11.84	11.97	-119.65	-149.82	30.46	172.42	148.62	23.80	7.244
3,500.00	3,499.10	3,500.90	3,499.10	12.20	12.32	-120.57	-149.82	30.46	174.03	149.51	24.52	7.098
3,600.00	3,599.05	3,600.95	3,599.05	12.55	12.68	-121.47	-149.82	30.46	175.67	150.44	25.23	6.962
3,700.00	3,699.00	3,701.00	3,699.00	12.91	13.04	-122.35	-149.82	30.46	177.36	151.42	25.95	6.835
3,800.00	3,798.95	3,801.05	3,798.95	13.27	13.40	-123.21	-149.82	30.46	179.10	152.43	26.66	6.717
3,900.00	3,898.90	3,901.10	3,898.90	13.63	13.76	-124.06	-149.82	30.46	180.87	153.49	27.38	6.606
4,000.00	3,998.85	4,001.15	3,998.85	13.99	14.12	-124.89	-149.82	30.46	182.68	154.58	28.10	6.502
4,100.00	4,098.80	4,101.20	4,098.80	14.34	14.48	-125.70	-149.82	30.46	184.52	155.71	28.81	6.404
4,200.00	4,198.75	4,201.26	4,198.75	14.70	14.83	-126.50	-149.82	30.46	186.41	156.88	29.53	6.313
4,300.00	4,298.69	4,298.69	4,298.69	15.06	15.18	-127.28	-149.82	30.46	188.33	158.09	30.24	6.229
4,400.00	4,398.64	4,399.29	4,399.29	15.42	15.53	-127.93	-149.93	30.04	190.12	159.17	30.94	6.144
4,500.00	4,498.59	4,499.93	4,499.92	15.78	15.87	-128.33	-150.27	28.78	191.58	159.94	31.64	6.055
4,600.00	4,598.54	4,600.59	4,600.56	16.14	16.21	-128.48	-150.84	26.65	192.69	160.36	32.34	5.959
4,700.00	4,698.49	4,701.26	4,701.18	16.50	16.55	-128.39	-151.64	23.67	193.46	160.43	33.04	5.856
4,800.00	4,798.44	4,801.93	4,801.77	16.86	16.89	-128.06	-152.66	19.84	193.88	160.15	33.74	5.747
4,900.00	4,898.39	4,902.57	4,902.29	17.22	17.24	-127.49	-153.91	15.16	193.98	159.54	34.44	5.633
5,000.00	4,998.34	5,003.17	5,002.73	17.58	17.58	-126.68	-155.39	9.62	193.76	158.62	35.14	5.514
5,100.00	5,098.29	5,103.72	5,103.07	17.94	17.93	-125.62	-157.10	3.24	193.27	157.42	35.84	5.392

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

Company:	Devon Energy Corp.	Local Coordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Big Sinks Draw 25-24 - 711H - OH - Prelm Plan

5,200.00	5,198.23	5,204.21	5,203.27	18.29	18.27	-124.31	-159.03	-3.98	192.55	156.00	36.55	5.268
5,300.00	5,298.18	5,304.60	5,303.32	18.65	18.62	-122.75	-161.19	-12.05	191.66	154.41	37.26	5.144
5,400.00	5,398.13	5,404.90	5,403.19	19.01	18.97	-120.92	-163.57	-20.96	190.68	152.71	37.97	5.022
5,500.00	5,498.08	5,505.08	5,502.86	19.37	19.32	-118.82	-166.18	-30.70	189.68	151.00	38.68	4.904
5,600.00	5,598.03	5,605.13	5,602.31	19.73	19.67	-116.44	-169.01	-41.26	188.75	149.36	39.40	4.791
5,700.00	5,697.98	5,705.04	5,701.52	20.09	20.03	-113.79	-172.05	-52.65	188.03	147.91	40.11	4.687
5,800.00	5,797.93	5,804.78	5,800.46	20.45	20.38	-110.86	-175.31	-64.85	187.61	146.78	40.83	4.595
5,844.13	5,842.04	5,848.75	5,844.03	20.61	20.54	-109.48	-176.82	-70.49	187.56	146.41	41.15	4.558
5,900.00	5,897.88	5,904.35	5,899.12	20.81	20.74	-107.67	-178.79	-77.88	187.65	146.10	41.55	4.516
6,000.00	5,997.83	6,003.75	5,997.52	21.17	21.10	-104.32	-182.42	-91.41	188.27	146.00	42.27	4.454
6,100.00	6,097.77	6,103.13	6,095.91	21.53	21.46	-100.99	-186.05	-104.98	189.55	146.56	42.99	4.409
6,200.00	6,197.72	6,202.52	6,194.29	21.89	21.82	-97.72	-189.68	-118.54	191.46	147.76	43.71	4.381
6,300.00	6,297.67	6,301.90	6,292.68	22.25	22.18	-94.53	-193.31	-132.11	193.99	149.57	44.42	4.367 SF
6,400.00	6,397.62	6,401.28	6,391.06	22.61	22.55	-91.42	-196.94	-145.67	197.11	151.98	45.13	4.367
6,500.00	6,497.57	6,500.66	6,489.45	22.97	22.91	-88.42	-200.56	-159.24	200.80	154.95	45.84	4.380
6,600.00	6,597.52	6,600.05	6,587.83	23.33	23.28	-85.54	-204.19	-172.81	205.02	158.47	46.55	4.404
6,700.00	6,697.47	6,700.57	6,686.22	23.69	23.66	-82.78	-207.82	-186.37	209.74	162.48	47.27	4.438
6,800.00	6,797.42	6,801.19	6,784.60	24.05	24.03	-80.14	-211.45	-199.94	214.94	166.96	47.98	4.480
6,900.00	6,897.37	6,901.81	6,882.99	24.41	24.41	-77.63	-215.08	-213.50	220.57	171.88	48.69	4.530
7,000.00	6,997.31	7,002.42	6,981.37	24.78	24.78	-75.25	-218.71	-227.07	226.60	177.21	49.40	4.587
7,100.00	7,097.26	7,103.04	7,079.76	25.14	25.16	-72.99	-222.34	-240.64	233.01	182.91	50.10	4.650
7,200.00	7,197.21	7,196.34	7,178.14	25.50	25.52	-70.86	-225.97	-254.20	239.76	188.97	50.79	4.721
7,300.00	7,297.16	7,295.72	7,276.53	25.86	25.89	-68.85	-229.60	-267.77	246.82	195.33	51.49	4.794
7,400.00	7,397.11	7,404.90	7,374.91	26.22	26.31	-66.95	-233.22	-281.34	254.18	201.95	52.23	4.867
7,500.00	7,497.06	7,505.51	7,473.30	26.58	26.69	-65.16	-236.85	-294.90	261.79	208.86	52.94	4.945
7,600.00	7,597.01	7,606.13	7,571.68	26.94	27.07	-63.47	-240.48	-308.47	269.65	216.01	53.64	5.027
7,700.00	7,696.96	7,706.75	7,670.07	27.30	27.46	-61.87	-244.11	-322.03	277.73	223.38	54.35	5.110
7,800.00	7,796.91	7,807.37	7,768.45	27.66	27.84	-60.37	-247.74	-335.60	286.01	230.95	55.06	5.194
7,900.00	7,896.85	7,907.98	7,866.84	28.02	28.23	-58.95	-251.37	-349.17	294.48	238.71	55.77	5.280
8,000.00	7,996.80	8,008.60	7,965.22	28.38	28.61	-57.62	-255.00	-362.73	303.11	246.64	56.48	5.367
8,100.00	8,096.76	8,109.26	8,063.57	28.74	29.00	-56.35	-258.63	-376.29	312.11	254.92	57.19	5.458
8,200.00	8,196.75	8,189.89	8,161.73	29.10	29.31	-54.95	-262.25	-389.83	322.20	264.38	57.82	5.573
8,300.00	8,296.75	8,288.89	8,259.73	29.44	29.70	-143.41	-265.86	-403.34	333.17	274.67	58.50	5.695
8,400.00	8,396.75	8,387.89	8,357.74	29.79	30.08	-141.96	-269.48	-416.85	344.39	285.21	59.19	5.819
8,500.00	8,496.75	8,486.89	8,455.74	30.13	30.46	-140.59	-273.09	-430.37	355.82	295.95	59.87	5.943
8,600.00	8,596.48	8,585.40	8,553.26	30.48	30.84	-138.99	-276.69	-443.82	371.81	311.24	60.57	6.138
8,700.00	8,693.72	8,680.84	8,647.74	30.81	31.22	-138.04	-280.17	-456.84	400.46	339.19	61.28	6.535
8,800.00	8,785.54	8,770.30	8,736.31	31.12	31.56	-137.44	-283.44	-469.06	441.65	379.68	61.97	7.127
8,900.00	8,869.14	8,851.06	8,816.26	31.38	31.88	-136.49	-286.39	-480.08	495.11	432.50	62.61	7.908
9,000.00	8,941.98	8,920.67	8,885.17	31.65	32.15	-134.39	-288.93	-489.58	560.22	497.04	63.18	8.867
9,100.00	9,001.84	8,977.02	8,940.95	31.96	32.37	-130.01	-290.99	-497.27	635.73	572.08	63.65	9.988
9,200.00	9,046.92	9,018.39	8,981.91	32.29	32.53	-121.54	-292.50	-502.92	719.75	655.74	64.01	11.244
9,300.00	9,075.83	9,043.52	9,006.79	32.62	32.63	-105.97	-293.42	-506.35	809.86	745.61	64.25	12.605
9,400.00	9,087.71	9,051.66	9,014.84	32.97	32.66	-81.37	-293.71	-507.46	903.31	838.92	64.38	14.030
9,500.00	9,088.00	9,048.29	9,011.51	33.33	32.65	-75.74	-293.59	-507.00	997.83	933.38	64.45	15.483
9,600.00	9,088.00	9,044.64	9,007.90	33.76	32.63	-75.08	-293.46	-506.50	1,093.30	1,028.80	64.50	16.951
9,700.00	9,088.00	9,040.99	9,004.28	34.24	32.62	-74.41	-293.32	-506.01	1,189.50	1,124.96	64.54	18.430
9,800.00	9,088.00	9,037.34	9,000.67	34.77	32.61	-73.75	-293.19	-505.51	1,286.27	1,221.70	64.58	19.918
9,900.00	9,088.00	9,033.69	8,997.05	35.35	32.59	-73.08	-293.06	-505.01	1,383.50	1,318.89	64.61	21.413
10,000.00	9,088.00	9,030.04	8,993.44	35.99	32.58	-72.42	-292.92	-504.51	1,481.08	1,416.44	64.64	22.913
10,100.00	9,088.00	9,026.38	8,989.83	36.67	32.56	-71.77	-292.79	-504.01	1,578.96	1,514.29	64.66	24.418
10,200.00	9,088.00	9,022.73	8,986.21	37.39	32.55	-71.11	-292.66	-503.51	1,677.07	1,612.39	64.69	25.926

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Offset Design: Big Sinks Draw 25-24 - 711H - OH - Prelim Plan

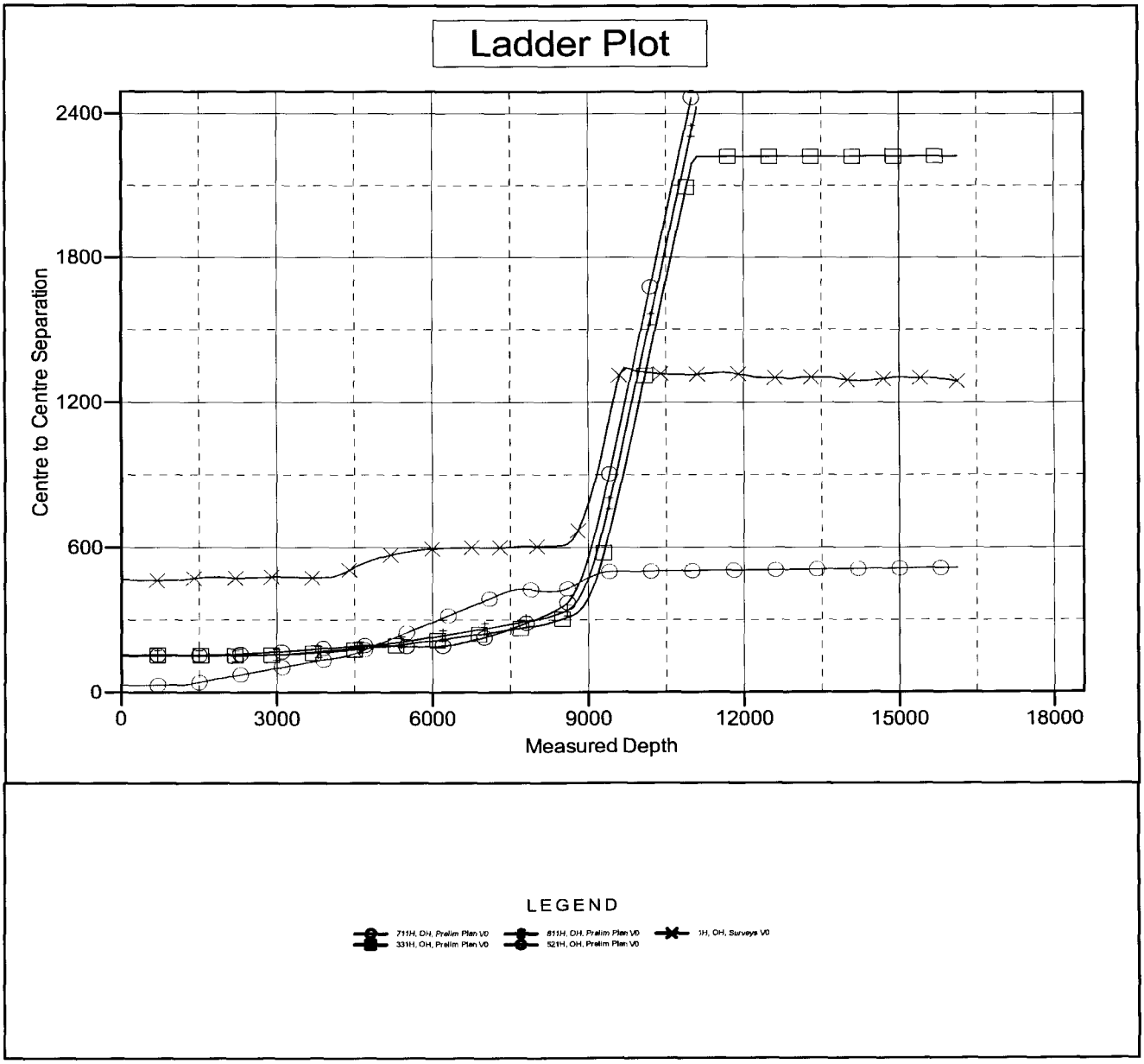
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)										
10,300.00	9,088.00	9,019.08	8,982.60	38.15	32.53	-70.46	-292.52	-503.02	1,775.40	1,710.69	64.71	27.437	
10,400.00	9,088.00	9,015.43	8,978.98	38.95	32.52	-69.81	-292.39	-502.52	1,873.89	1,809.16	64.73	28.949	
10,500.00	9,088.00	9,011.78	8,975.37	39.79	32.51	-69.17	-292.26	-502.02	1,972.53	1,907.78	64.75	30.464	
10,600.00	9,088.00	9,008.13	8,971.75	40.66	32.49	-68.53	-292.12	-501.52	2,071.29	2,006.52	64.77	31.980	
10,700.00	9,088.00	9,004.48	8,968.14	41.57	32.48	-67.89	-291.99	-501.02	2,170.16	2,105.37	64.79	33.496	
10,800.00	9,088.00	9,000.82	8,964.52	42.50	32.46	-67.26	-291.86	-500.52	2,269.12	2,204.31	64.81	35.014	
10,900.00	9,088.00	8,997.17	8,960.91	43.47	32.45	-66.63	-291.72	-500.02	2,368.16	2,303.34	64.83	36.532	
11,000.00	9,088.00	9,006.48	8,957.29	44.45	32.49	-66.00	-291.59	-499.53	2,467.28	2,402.38	64.89	38.020	

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

Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL 3332'+KB 26' @ 3358.00usft (Rig
Offset Depths are relative to Offset Datum
Central Meridian is -104.3333333

Coordinates are relative to: 531H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

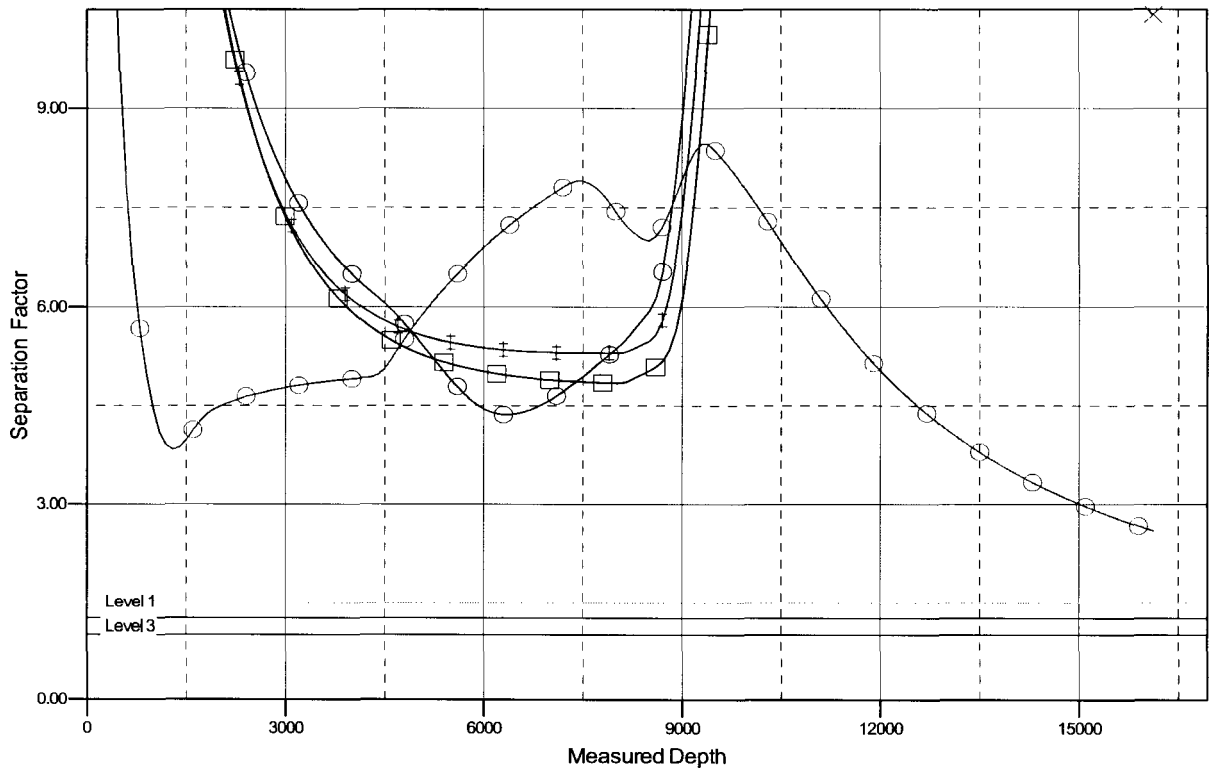


Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 531H
Project:	Eddy County, NM (NAD83)	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Reference Site:	Big Sinks Draw 25-24	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	531H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	WellPlanner1
Reference Design:	Prelm Plan	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL 3332'+KB 26' @ 3358.00usft (Rig
Offset Depths are relative to Offset Datum
Central Meridian is -104.3333333

Coordinates are relative to: 531H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Separation Factor Plot



LEGEND

711H, OH, Prelim Plan V0
331H, OH, Prelim Plan V0
611H, OH, Prelim Plan V0
521H, OH, Prelim Plan V0
1H, OH, Surveys V0

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

Database:	WellPlanner1	Local Coordinate Reference:	Well 531H
Company:	Devon Energy Corp.	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site:	Big Sinks Draw 25-24	North Reference:	Grid
Well:	531H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelm Plan		

Project Eddy County, NM (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 Big Sinks Draw 25-24

Site Position:		**Northing:**	401,246.29 usft	**Latitude:**	32.1017026
From:	Map	**Easting:**	725,926.51 usft	**Longitude:**	-103.7372077
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.32 °

Well 531H

Well Position	**+N/-S**	150.14 usft	**Northing:**	401,396.43 usft	**Latitude:**	32.1021148
	+E/-W	29.57 usft	**Easting:**	725,956.08 usft	**Longitude:**	-103.7371096
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,332.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/1/2017	6.82	59.82	47,969.30

Design Prelm Plan

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.00

Plan Survey Tool Program Date 11/2/2017

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,129.80	Prelm Plan (OH)	MWD+HDGM	
				OWSG MWD + HDGM	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,866.38	1.83	270.00	1,866.31	0.00	-5.86	0.50	0.50	0.00	270.00	
8,035.10	1.83	270.00	8,031.88	0.00	-203.05	0.00	0.00	0.00	0.00	
8,218.29	0.00	0.00	8,215.04	0.00	-205.98	1.00	-1.00	0.00	180.00	
8,518.29	0.00	0.00	8,515.04	0.00	-205.98	0.00	0.00	0.00	0.00	
9,418.29	90.00	0.00	9,088.00	572.96	-205.98	10.00	10.00	0.00	0.00	
16,129.80	90.00	0.00	9,088.00	7,284.47	-205.98	0.00	0.00	0.00	0.00	BHL - BSD 531H

Database:	WellPlanner1	Local Co-ordinate Reference:	Well 531H
Company:	Devon Energy Corp.	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site:	Big Sinks Draw 25-24	North Reference:	Grid
Well:	531H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelm Plan		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
933.00	0.00	0.00	933.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,253.00	0.00	0.00	1,253.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 0.50									
1,600.00	0.50	270.00	1,600.00	0.00	-0.44	0.00	0.50	0.50	0.00
1,700.00	1.00	270.00	1,699.99	0.00	-1.75	0.00	0.50	0.50	0.00
1,800.00	1.50	270.00	1,799.97	0.00	-3.93	0.00	0.50	0.50	0.00
1,866.38	1.83	270.00	1,866.32	0.00	-5.86	0.00	0.50	0.50	0.00
Start 6168.72 hold at 1866.38 MD									
1,900.00	1.83	270.00	1,899.92	0.00	-6.93	0.00	0.00	0.00	0.00
2,000.00	1.83	270.00	1,999.87	0.00	-10.13	0.00	0.00	0.00	0.00
2,100.00	1.83	270.00	2,099.82	0.00	-13.32	0.00	0.00	0.00	0.00
2,200.00	1.83	270.00	2,199.77	0.00	-16.52	0.00	0.00	0.00	0.00
2,300.00	1.83	270.00	2,299.72	0.00	-19.72	0.00	0.00	0.00	0.00
2,400.00	1.83	270.00	2,399.66	0.00	-22.91	0.00	0.00	0.00	0.00
2,500.00	1.83	270.00	2,499.61	0.00	-26.11	0.00	0.00	0.00	0.00
2,600.00	1.83	270.00	2,599.56	0.00	-29.31	0.00	0.00	0.00	0.00
2,700.00	1.83	270.00	2,699.51	0.00	-32.50	0.00	0.00	0.00	0.00
2,800.00	1.83	270.00	2,799.46	0.00	-35.70	0.00	0.00	0.00	0.00
2,900.00	1.83	270.00	2,899.41	0.00	-38.90	0.00	0.00	0.00	0.00
3,000.00	1.83	270.00	2,999.36	0.00	-42.09	0.00	0.00	0.00	0.00
3,100.00	1.83	270.00	3,099.31	0.00	-45.29	0.00	0.00	0.00	0.00
3,200.00	1.83	270.00	3,199.26	0.00	-48.49	0.00	0.00	0.00	0.00
3,300.00	1.83	270.00	3,299.20	0.00	-51.69	0.00	0.00	0.00	0.00
3,400.00	1.83	270.00	3,399.15	0.00	-54.88	0.00	0.00	0.00	0.00
3,500.00	1.83	270.00	3,499.10	0.00	-58.08	0.00	0.00	0.00	0.00
3,600.00	1.83	270.00	3,599.05	0.00	-61.28	0.00	0.00	0.00	0.00
3,700.00	1.83	270.00	3,699.00	0.00	-64.47	0.00	0.00	0.00	0.00
3,800.00	1.83	270.00	3,798.95	0.00	-67.67	0.00	0.00	0.00	0.00
3,900.00	1.83	270.00	3,898.90	0.00	-70.87	0.00	0.00	0.00	0.00
4,000.00	1.83	270.00	3,998.85	0.00	-74.06	0.00	0.00	0.00	0.00
4,100.00	1.83	270.00	4,098.80	0.00	-77.26	0.00	0.00	0.00	0.00
4,200.00	1.83	270.00	4,198.75	0.00	-80.46	0.00	0.00	0.00	0.00
4,300.00	1.83	270.00	4,298.69	0.00	-83.65	0.00	0.00	0.00	0.00
4,304.31	1.83	270.00	4,303.00	0.00	-83.79	0.00	0.00	0.00	0.00
Base of Salt									

	WellPlanner1		Well 531H
	Devon Energy Corp.		GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
	Eddy County, NM (NAD83)		GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
	Big Sinks Draw 25-24		Grid
	531H		Minimum Curvature
	OH		
	Prelm Plan		

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)
4,339.33	1.83	270.00	4,338.00	0.00	-84.91	0.00	0.00	0.00	0.00
Delaware									
4,400.00	1.83	270.00	4,398.64	0.00	-86.85	0.00	0.00	0.00	0.00
4,500.00	1.83	270.00	4,498.59	0.00	-90.05	0.00	0.00	0.00	0.00
4,600.00	1.83	270.00	4,598.54	0.00	-93.24	0.00	0.00	0.00	0.00
4,700.00	1.83	270.00	4,698.49	0.00	-96.44	0.00	0.00	0.00	0.00
4,800.00	1.83	270.00	4,798.44	0.00	-99.64	0.00	0.00	0.00	0.00
4,900.00	1.83	270.00	4,898.39	0.00	-102.83	0.00	0.00	0.00	0.00
5,000.00	1.83	270.00	4,998.34	0.00	-106.03	0.00	0.00	0.00	0.00
5,100.00	1.83	270.00	5,098.29	0.00	-109.23	0.00	0.00	0.00	0.00
5,200.00	1.83	270.00	5,198.23	0.00	-112.42	0.00	0.00	0.00	0.00
5,300.00	1.83	270.00	5,298.18	0.00	-115.62	0.00	0.00	0.00	0.00
5,400.00	1.83	270.00	5,398.13	0.00	-118.82	0.00	0.00	0.00	0.00
5,500.00	1.83	270.00	5,498.08	0.00	-122.01	0.00	0.00	0.00	0.00
5,600.00	1.83	270.00	5,598.03	0.00	-125.21	0.00	0.00	0.00	0.00
5,700.00	1.83	270.00	5,697.98	0.00	-128.41	0.00	0.00	0.00	0.00
5,800.00	1.83	270.00	5,797.93	0.00	-131.60	0.00	0.00	0.00	0.00
5,900.00	1.83	270.00	5,897.88	0.00	-134.80	0.00	0.00	0.00	0.00
6,000.00	1.83	270.00	5,997.83	0.00	-138.00	0.00	0.00	0.00	0.00
6,100.00	1.83	270.00	6,097.77	0.00	-141.19	0.00	0.00	0.00	0.00
6,200.00	1.83	270.00	6,197.72	0.00	-144.39	0.00	0.00	0.00	0.00
6,300.00	1.83	270.00	6,297.67	0.00	-147.59	0.00	0.00	0.00	0.00
6,400.00	1.83	270.00	6,397.62	0.00	-150.78	0.00	0.00	0.00	0.00
6,500.00	1.83	270.00	6,497.57	0.00	-153.98	0.00	0.00	0.00	0.00
6,600.00	1.83	270.00	6,597.52	0.00	-157.18	0.00	0.00	0.00	0.00
6,700.00	1.83	270.00	6,697.47	0.00	-160.37	0.00	0.00	0.00	0.00
6,800.00	1.83	270.00	6,797.42	0.00	-163.57	0.00	0.00	0.00	0.00
6,900.00	1.83	270.00	6,897.37	0.00	-166.77	0.00	0.00	0.00	0.00
7,000.00	1.83	270.00	6,997.31	0.00	-169.96	0.00	0.00	0.00	0.00
7,100.00	1.83	270.00	7,097.26	0.00	-173.16	0.00	0.00	0.00	0.00
7,200.00	1.83	270.00	7,197.21	0.00	-176.36	0.00	0.00	0.00	0.00
7,300.00	1.83	270.00	7,297.16	0.00	-179.55	0.00	0.00	0.00	0.00
7,400.00	1.83	270.00	7,397.11	0.00	-182.75	0.00	0.00	0.00	0.00
7,500.00	1.83	270.00	7,497.06	0.00	-185.95	0.00	0.00	0.00	0.00
7,600.00	1.83	270.00	7,597.01	0.00	-189.14	0.00	0.00	0.00	0.00
7,700.00	1.83	270.00	7,696.96	0.00	-192.34	0.00	0.00	0.00	0.00
7,800.00	1.83	270.00	7,796.91	0.00	-195.54	0.00	0.00	0.00	0.00
7,900.00	1.83	270.00	7,896.85	0.00	-198.73	0.00	0.00	0.00	0.00
8,000.00	1.83	270.00	7,996.80	0.00	-201.93	0.00	0.00	0.00	0.00
8,035.10	1.83	270.00	8,031.89	0.00	-203.05	0.00	0.00	0.00	0.00
Start Drop -1.00									
8,100.00	1.18	270.00	8,096.76	0.00	-204.76	0.00	1.00	-1.00	0.00
8,200.00	0.18	270.00	8,196.75	0.00	-205.95	0.00	1.00	-1.00	0.00
8,218.29	0.00	0.00	8,215.04	0.00	-205.98	0.00	1.00	-1.00	0.00
Start 300.00 hold at 8218.29 MD									
8,300.00	0.00	0.00	8,296.75	0.00	-205.98	0.00	0.00	0.00	0.00
8,351.25	0.00	0.00	8,348.00	0.00	-205.98	0.00	0.00	0.00	0.00
1st BSPG Lime									
8,400.00	0.00	0.00	8,396.75	0.00	-205.98	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,496.75	0.00	-205.98	0.00	0.00	0.00	0.00
8,518.29	0.00	0.00	8,515.04	0.00	-205.98	0.00	0.00	0.00	0.00
Start DLS 10.00 TFO 0.00									
8,550.00	3.17	0.00	8,546.74	0.88	-205.98	0.88	10.00	10.00	0.00

Database:	WellPlanner1		Well 531H
Company:	Devon Energy Corp.		GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Project:	Eddy County, NM (NAD83)		GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site:	Big Sinks Draw 25-24		Grid
Well:	531H		Minimum Curvature
Wellbore:	OH		
Design:	Prelm Plan		

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)
8,600.00	8.17	0.00	8,596.48	5.82	-205.98	5.82	10.00	10.00	0.00
8,650.00	13.17	0.00	8,645.60	15.07	-205.98	15.07	10.00	10.00	0.00
8,700.00	18.17	0.00	8,693.72	28.57	-205.98	28.57	10.00	10.00	0.00
8,750.00	23.17	0.00	8,740.49	46.22	-205.98	46.22	10.00	10.00	0.00
8,800.00	28.17	0.00	8,785.54	67.87	-205.98	67.87	10.00	10.00	0.00
8,850.00	33.17	0.00	8,828.53	93.37	-205.98	93.37	10.00	10.00	0.00
8,900.00	38.17	0.00	8,869.14	122.52	-205.98	122.52	10.00	10.00	0.00
8,950.00	43.17	0.00	8,907.05	155.09	-205.98	155.09	10.00	10.00	0.00
9,000.00	48.17	0.00	8,941.98	190.85	-205.98	190.85	10.00	10.00	0.00
9,050.00	53.17	0.00	8,973.65	229.51	-205.98	229.51	10.00	10.00	0.00
9,100.00	58.17	0.00	9,001.84	270.79	-205.98	270.79	10.00	10.00	0.00
9,150.00	63.17	0.00	9,026.33	314.37	-205.98	314.37	10.00	10.00	0.00
9,200.00	68.17	0.00	9,046.92	359.91	-205.98	359.91	10.00	10.00	0.00
9,250.00	73.17	0.00	9,063.46	407.08	-205.98	407.08	10.00	10.00	0.00
9,300.00	78.17	0.00	9,075.83	455.51	-205.98	455.51	10.00	10.00	0.00
9,350.00	83.17	0.00	9,083.93	504.83	-205.98	504.83	10.00	10.00	0.00
9,400.00	88.17	0.00	9,087.71	554.67	-205.98	554.67	10.00	10.00	0.00
9,418.29	90.00	0.00	9,088.00	572.96	-205.98	572.96	10.00	10.00	0.00
Start 6711.51 hold at 9418.29 MD - Leonard C									
9,500.00	90.00	0.00	9,088.00	654.67	-205.98	654.67	0.00	0.00	0.00
9,600.00	90.00	0.00	9,088.00	754.67	-205.98	754.67	0.00	0.00	0.00
9,700.00	90.00	0.00	9,088.00	854.67	-205.98	854.67	0.00	0.00	0.00
9,800.00	90.00	0.00	9,088.00	954.67	-205.98	954.67	0.00	0.00	0.00
9,900.00	90.00	0.00	9,088.00	1,054.67	-205.98	1,054.67	0.00	0.00	0.00
10,000.00	90.00	0.00	9,088.00	1,154.67	-205.98	1,154.67	0.00	0.00	0.00
10,100.00	90.00	0.00	9,088.00	1,254.67	-205.98	1,254.67	0.00	0.00	0.00
10,200.00	90.00	0.00	9,088.00	1,354.67	-205.98	1,354.67	0.00	0.00	0.00
10,300.00	90.00	0.00	9,088.00	1,454.67	-205.98	1,454.67	0.00	0.00	0.00
10,400.00	90.00	0.00	9,088.00	1,554.67	-205.98	1,554.67	0.00	0.00	0.00
10,500.00	90.00	0.00	9,088.00	1,654.67	-205.98	1,654.67	0.00	0.00	0.00
10,600.00	90.00	0.00	9,088.00	1,754.67	-205.98	1,754.67	0.00	0.00	0.00
10,700.00	90.00	0.00	9,088.00	1,854.67	-205.98	1,854.67	0.00	0.00	0.00
10,800.00	90.00	0.00	9,088.00	1,954.67	-205.98	1,954.67	0.00	0.00	0.00
10,900.00	90.00	0.00	9,088.00	2,054.67	-205.98	2,054.67	0.00	0.00	0.00
11,000.00	90.00	0.00	9,088.00	2,154.67	-205.98	2,154.67	0.00	0.00	0.00
11,100.00	90.00	0.00	9,088.00	2,254.67	-205.98	2,254.67	0.00	0.00	0.00
11,177.00	90.00	0.00	9,088.00	2,331.67	-205.98	2,331.67	0.00	0.00	0.00
32.1085273, -103.7377332 - 11177' MD, 9088' TVD, 755' FWL - Entering NMNM125634									
11,200.00	90.00	0.00	9,088.00	2,354.67	-205.98	2,354.67	0.00	0.00	0.00
11,300.00	90.00	0.00	9,088.00	2,454.67	-205.98	2,454.67	0.00	0.00	0.00
11,400.00	90.00	0.00	9,088.00	2,554.67	-205.98	2,554.67	0.00	0.00	0.00
11,500.00	90.00	0.00	9,088.00	2,654.67	-205.98	2,654.67	0.00	0.00	0.00
11,600.00	90.00	0.00	9,088.00	2,754.67	-205.98	2,754.67	0.00	0.00	0.00
11,700.00	90.00	0.00	9,088.00	2,854.67	-205.98	2,854.67	0.00	0.00	0.00
11,800.00	90.00	0.00	9,088.00	2,954.67	-205.98	2,954.67	0.00	0.00	0.00
11,900.00	90.00	0.00	9,088.00	3,054.67	-205.98	3,054.67	0.00	0.00	0.00
12,000.00	90.00	0.00	9,088.00	3,154.67	-205.98	3,154.67	0.00	0.00	0.00
12,100.00	90.00	0.00	9,088.00	3,254.67	-205.98	3,254.67	0.00	0.00	0.00
12,200.00	90.00	0.00	9,088.00	3,354.67	-205.98	3,354.67	0.00	0.00	0.00
12,300.00	90.00	0.00	9,088.00	3,454.67	-205.98	3,454.67	0.00	0.00	0.00
12,400.00	90.00	0.00	9,088.00	3,554.67	-205.98	3,554.67	0.00	0.00	0.00
12,500.00	90.00	0.00	9,088.00	3,654.67	-205.98	3,654.67	0.00	0.00	0.00
12,600.00	90.00	0.00	9,088.00	3,754.67	-205.98	3,754.67	0.00	0.00	0.00
12,700.00	90.00	0.00	9,088.00	3,854.67	-205.98	3,854.67	0.00	0.00	0.00

Database:	WellPlanner1	Local Coordinate Reference:	Well 531H
Company:	Devon Energy Corp.	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site:	Big Sinks Draw 25-24	North Reference:	Grid
Well:	531H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Prelm Plan		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,800.00	90.00	0.00	9,088.00	3,954.67	-205.98	3,954.67	0.00	0.00	0.00
12,900.00	90.00	0.00	9,088.00	4,054.67	-205.98	4,054.67	0.00	0.00	0.00
13,000.00	90.00	0.00	9,088.00	4,154.67	-205.98	4,154.67	0.00	0.00	0.00
13,100.00	90.00	0.00	9,088.00	4,254.67	-205.98	4,254.67	0.00	0.00	0.00
13,200.00	90.00	0.00	9,088.00	4,354.67	-205.98	4,354.67	0.00	0.00	0.00
13,300.00	90.00	0.00	9,088.00	4,454.67	-205.98	4,454.67	0.00	0.00	0.00
13,400.00	90.00	0.00	9,088.00	4,554.67	-205.98	4,554.67	0.00	0.00	0.00
13,500.00	90.00	0.00	9,088.00	4,654.67	-205.98	4,654.67	0.00	0.00	0.00
13,600.00	90.00	0.00	9,088.00	4,754.67	-205.98	4,754.67	0.00	0.00	0.00
13,700.00	90.00	0.00	9,088.00	4,854.67	-205.98	4,854.67	0.00	0.00	0.00
13,800.00	90.00	0.00	9,088.00	4,954.67	-205.98	4,954.67	0.00	0.00	0.00
13,818.00	90.00	0.00	9,088.00	4,972.67	-205.98	4,972.67	0.00	0.00	0.00
32.1157869, -103.7376860 - 13818' MD, 9088' TVD, 760' FWL - Entering NMLC061869									
13,900.00	90.00	0.00	9,088.00	5,054.67	-205.98	5,054.67	0.00	0.00	0.00
14,000.00	90.00	0.00	9,088.00	5,154.67	-205.98	5,154.67	0.00	0.00	0.00
14,100.00	90.00	0.00	9,088.00	5,254.67	-205.98	5,254.67	0.00	0.00	0.00
14,200.00	90.00	0.00	9,088.00	5,354.67	-205.98	5,354.67	0.00	0.00	0.00
14,300.00	90.00	0.00	9,088.00	5,454.67	-205.98	5,454.67	0.00	0.00	0.00
14,400.00	90.00	0.00	9,088.00	5,554.67	-205.98	5,554.67	0.00	0.00	0.00
14,500.00	90.00	0.00	9,088.00	5,654.67	-205.98	5,654.67	0.00	0.00	0.00
14,600.00	90.00	0.00	9,088.00	5,754.67	-205.98	5,754.67	0.00	0.00	0.00
14,700.00	90.00	0.00	9,088.00	5,854.67	-205.98	5,854.67	0.00	0.00	0.00
14,800.00	90.00	0.00	9,088.00	5,954.67	-205.98	5,954.67	0.00	0.00	0.00
14,900.00	90.00	0.00	9,088.00	6,054.67	-205.98	6,054.67	0.00	0.00	0.00
15,000.00	90.00	0.00	9,088.00	6,154.67	-205.98	6,154.67	0.00	0.00	0.00
15,100.00	90.00	0.00	9,088.00	6,254.67	-205.98	6,254.67	0.00	0.00	0.00
15,200.00	90.00	0.00	9,088.00	6,354.67	-205.98	6,354.67	0.00	0.00	0.00
15,300.00	90.00	0.00	9,088.00	6,454.67	-205.98	6,454.67	0.00	0.00	0.00
15,400.00	90.00	0.00	9,088.00	6,554.67	-205.98	6,554.67	0.00	0.00	0.00
15,500.00	90.00	0.00	9,088.00	6,654.67	-205.98	6,654.67	0.00	0.00	0.00
15,600.00	90.00	0.00	9,088.00	6,754.67	-205.98	6,754.67	0.00	0.00	0.00
15,700.00	90.00	0.00	9,088.00	6,854.67	-205.98	6,854.67	0.00	0.00	0.00
15,800.00	90.00	0.00	9,088.00	6,954.67	-205.98	6,954.67	0.00	0.00	0.00
15,900.00	90.00	0.00	9,088.00	7,054.67	-205.98	7,054.67	0.00	0.00	0.00
16,000.00	90.00	0.00	9,088.00	7,154.67	-205.98	7,154.67	0.00	0.00	0.00
16,100.00	90.00	0.00	9,088.00	7,254.67	-205.98	7,254.67	0.00	0.00	0.00
16,129.80	90.00	0.00	9,088.00	7,284.47	-205.98	7,284.47	0.00	0.00	0.00
TD at 16129.80									

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
933.00	933.00	Rustler		0.00	
1,253.00	1,253.00	Salado		0.00	
4,304.31	4,303.00	Base of Salt		0.00	
4,339.33	4,338.00	Delaware		0.00	
8,351.25	8,348.00	1st BSPG Lime		0.00	
9,418.29	9,088.00	Leonard C		0.00	

Database:	WellPlanner1	Local Coordinate Reference:	Well 531H
Company:	Devon Energy Corp.	TVD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3332'+KB 26' @ 3358.00usft (Rig TBD)
Site:	Big Sinks Draw 25-24	North Reference:	Grid
Well:	531H	Survey Calculation Method:	*Minimum Curvature*
Wellbore:	OH		
Design:	Prelm Plan		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,500.00	1,500.00	0.00	0.00	Start Build 0.50
1,866.38	1,866.31	0.00	0.00	Start 6168.72 hold at 1866.38 MD
8,035.10	8,031.88	0.00	-5.86	Start Drop -1.00
8,218.29	8,215.04	0.00	-203.05	Start 300.00 hold at 8218.29 MD
8,518.29	8,515.04	0.00	-205.98	Start DLS 10.00 TFO 0.00
9,418.29	9,088.00	0.00	-205.98	Start 6711.51 hold at 9418.29 MD
11,177.00	9,088.00	572.96	-205.98	32.1085273, -103.7377332
11,177.00	9,088.00	2,331.67	-205.98	11177' MD, 9088' TVD, 755' FWL
11,177.00	9,088.00	2,331.67	-205.98	Entering NMNM125634
13,818.00	9,088.00	2,331.67	-205.98	32.1157869, -103.7376860
13,818.00	9,088.00	4,972.67	-205.98	13818' MD, 9088' TVD, 760' FWL
13,818.00	9,088.00	4,972.67	-205.98	Entering NMLC061869
16,129.80	9,088.00	4,972.67	-205.98	TD at 16129.80

Plan Report 02-Nov-2017 10:10:37

Client.....: Devon Energy Corp.
Location.....: Eddy County, NM (NAD83)
Site.....: Big Sinks Draw 25-24
Well.....: 531H

---- Depth reference ----------
Permanent datum.....: Mean Sea Level
Depth reference.....: GL 3332'+KB 26'
GL above permanent.....: 3332.00 usft
KB above permanent.....: 3358.00 usft

---- Surface Location ----------
Northing (+N/S-).....: 401396.43 usft
Easting (+E/W-).....: 725956.08 usft

MD	Inc	Azimuth	TVD	Subsea	N/S	E/W	VS	DLS	X	Y	Latitude	Longitude	Comments
0	0	0	0	3358	0	0	0	0	725956.1	401396.4	32.102	-103.737	
100	0	0	100	3258	0	0	0	0	725956.1	401396.4	32.102	-103.737	
200	0	0	200	3158	0	0	0	0	725956.1	401396.4	32.102	-103.737	
300	0	0	300	3058	0	0	0	0	725956.1	401396.4	32.102	-103.737	
400	0	0	400	2958	0	0	0	0	725956.1	401396.4	32.102	-103.737	
500	0	0	500	2858	0	0	0	0	725956.1	401396.4	32.102	-103.737	
600	0	0	600	2758	0	0	0	0	725956.1	401396.4	32.102	-103.737	
700	0	0	700	2658	0	0	0	0	725956.1	401396.4	32.102	-103.737	
800	0	0	800	2558	0	0	0	0	725956.1	401396.4	32.102	-103.737	
900	0	0	900	2458	0	0	0	0	725956.1	401396.4	32.102	-103.737	
1000	0	0	1000	2358	0	0	0	0	725956.1	401396.4	32.102	-103.737	
1100	0	0	1100	2258	0	0	0	0	725956.1	401396.4	32.102	-103.737	
1200	0	0	1200	2158	0	0	0	0	725956.1	401396.4	32.102	-103.737	
1300	0	0	1300	2058	0	0	0	0	725956.1	401396.4	32.102	-103.737	
1400	0	0	1400	1958	0	0	0	0	725956.1	401396.4	32.102	-103.737	
1500	0	0	1500	1858	0	0	0	0	725956.1	401396.4	32.102	-103.737	Start Build 0.50
1600	0.5	270	1600	1758	0	-0.44	0	0.5	725955.6	401396.4	32.102	-103.737	
1700	1	270	1699.99	1658.01	0	-1.75	0	0.5	725954.3	401396.4	32.102	-103.737	
1800	1.5	270	1799.97	1558.03	0	-3.93	0	0.5	725952.2	401396.4	32.102	-103.737	
1866.38	1.83	270	1866.32	1491.68	0	-5.86	0	0.5	725950.2	401396.4	32.102	-103.737	Start 6168.72 hold at 1866.38 MD
1900	1.83	270	1899.92	1458.08	0	-6.93	0	0	725949.2	401396.4	32.102	-103.737	
2000	1.83	270	1999.87	1358.13	0	-10.13	0	0	725946	401396.4	32.102	-103.737	
2100	1.83	270	2099.82	1258.18	0	-13.32	0	0	725942.8	401396.4	32.102	-103.737	
2200	1.83	270	2199.77	1158.23	0	-16.52	0	0	725939.6	401396.4	32.102	-103.737	
2300	1.83	270	2299.72	1058.28	0	-19.72	0	0	725936.4	401396.4	32.102	-103.737	
2400	1.83	270	2399.66	958.34	0	-22.91	0	0	725933.2	401396.4	32.102	-103.737	
2500	1.83	270	2499.61	858.39	0	-26.11	0	0	725930	401396.4	32.102	-103.737	
2600	1.83	270	2599.56	758.44	0	-29.31	0	0	725926.8	401396.4	32.102	-103.737	
2700	1.83	270	2699.51	658.49	0	-32.5	0	0	725923.6	401396.4	32.102	-103.737	
2800	1.83	270	2799.46	558.54	0	-35.7	0	0	725920.4	401396.4	32.102	-103.737	
2900	1.83	270	2899.41	458.59	0	-38.9	0	0	725917.2	401396.4	32.102	-103.737	
3000	1.83	270	2999.36	358.64	0	-42.09	0	0	725914	401396.4	32.102	-103.737	
3100	1.83	270	3099.31	258.69	0	-45.29	0	0	725910.8	401396.4	32.102	-103.737	
3200	1.83	270	3199.26	158.74	0	-48.49	0	0	725907.6	401396.4	32.102	-103.737	
3300	1.83	270	3299.2	58.8	0	-51.69	0	0	725904.4	401396.4	32.102	-103.737	
3400	1.83	270	3399.15	-41.15	0	-54.88	0	0	725901.2	401396.4	32.102	-103.737	
3500	1.83	270	3499.1	-141.1	0	-58.08	0	0	725898	401396.4	32.102	-103.737	
3600	1.83	270	3599.05	-241.05	0	-61.28	0	0	725894.8	401396.4	32.102	-103.737	
3700	1.83	270	3699	-341	0	-64.47	0	0	725891.6	401396.4	32.102	-103.737	
3800	1.83	270	3798.95	-440.95	0	-67.67	0	0	725888.4	401396.4	32.102	-103.737	
3900	1.83	270	3898.9	-540.9	0	-70.87	0	0	725885.2	401396.4	32.102	-103.737	
4000	1.83	270	3998.85	-640.85	0	-74.06	0	0	725882	401396.4	32.102	-103.737	
4100	1.83	270	4098.8	-740.8	0	-77.26	0	0	725878.8	401396.4	32.102	-103.737	
4200	1.83	270	4198.74	-840.74	0	-80.46	0	0	725875.6	401396.4	32.102	-103.737	
4300	1.83	270	4298.69	-940.69	0	-83.65	0	0	725872.4	401396.4	32.102	-103.737	
4400	1.83	270	4398.64	-1040.64	0	-86.85	0	0	725869.2	401396.4	32.102	-103.737	
4500	1.83	270	4498.59	-1140.59	0	-90.05	0	0	725866	401396.4	32.102	-103.737	
4600	1.83	270	4598.54	-1240.54	0	-93.24	0	0	725862.8	401396.4	32.102	-103.737	
4700	1.83	270	4698.49	-1340.49	0	-96.44	0	0	725859.6	401396.4	32.102	-103.737	
4800	1.83	270	4798.44	-1440.44	0	-99.64	0	0	725856.4	401396.4	32.102	-103.737	
4900	1.83	270	4898.39	-1540.39	0	-102.83	0	0	725853.3	401396.4	32.102	-103.737	
5000	1.83	270	4998.34	-1640.34	0	-106.03	0	0	725850.1	401396.4	32.102	-103.737	
5100	1.83	270	5098.28	-1740.28	0	-109.23	0	0	725846.9	401396.4	32.102	-103.737	
5200	1.83	270	5198.23	-1840.23	0	-112.42	0	0	725843.7	401396.4	32.102	-103.737	
5300	1.83	270	5298.18	-1940.18	0	-115.62	0	0	725840.5	401396.4	32.102	-103.737	
5400	1.83	270	5398.13	-2040.13	0	-118.82	0	0	725837.3	401396.4	32.102	-103.737	
5500	1.83	270	5498.08	-2140.08	0	-122.01	0	0	725834.1	401396.4	32.102	-103.738	
5600	1.83	270	5598.03	-2240.03	0	-125.21	0	0	725830.9	401396.4	32.102	-103.738	
5700	1.83	270	5697.98	-2339.98	0	-128.41	0	0	725827.7	401396.4	32.102	-103.738	
5800	1.83	270	5797.93	-2439.93	0	-131.6	0	0	725824.5	401396.4	32.102	-103.738	
5900	1.83	270	5897.88	-2539.88	0	-134.8	0	0	725821.3	401396.4	32.102	-103.738	
6000	1.83	270	5997.82	-2639.82	0	-138	0	0	725818.1	401396.4	32.102	-103.738	
6100	1.83	270	6097.77	-2739.77	0	-141.19	0	0	725814.9	401396.4	32.102	-103.738	
6200	1.83	270	6197.72	-2839.72	0	-144.39	0	0	725811.7	401396.4	32.102	-103.738	
6300	1.83	270	6297.67	-2939.67	0	-147.59	0	0	725808.5	401396.4	32.102	-103.738	
6400	1.83	270	6397.62	-3039.62	0	-150.78	0	0	725805.3	401396.4	32.102	-103.738	
6500	1.83	270	6497.57	-3139.57	0	-153.98	0	0	725802.1	401396.4	32.102	-103.738	
6600	1.83	270	6597.52	-3239.52	0	-157.18	0	0	725798.9	401396.4	32.102	-103.738	
6700	1.83	270	6697.47	-3339.47	0	-160.37	0	0	725795.7	401396.4	32.102	-103.738	
6800	1.83	270	6797.42	-3439.42	0	-163.57	0	0	725792.5	401396.4	32.102	-103.738	
6900	1.83	270	6897.37	-3539.37	0	-166.77	0	0	725789.3	401396.4	32.102	-103.738	
7000	1.83	270	6997.31	-3639.31	0	-169.96	0	0	725786.1	401396.4	32.102	-103.738	
7100	1.83	270	7097.26	-3739.26	0	-173.16	0	0	725782.9	401396.4	32.102	-103.738	
7200	1.83	270	7197.21	-3839.21	0	-176.36	0	0	725779.7	401396.4	32.102	-103.738	
7300	1.83	270	7297.16	-3939.16	0	-179.55	0	0	725776.5	401396.4	32.102	-103.738	
7400	1.83	270	7397.11	-4039.11	0	-182.75	0	0	725773.3	401396.4	32.102	-103.738	
7500	1.83	270	7497.06	-4139.06	0	-185.95	0	0	725770.1	401396.4	32.102	-103.738	
7600	1.83	270	7597.01	-4239.01	0	-189.14	0	0	725766.9	401396.4	32.102	-103.738	

7700	1.83	270	7696.96	-4338.96	0	-192.34	0	0	725763.7	401396.4	32.102	-103.738	
7800	1.83	270	7796.91	-4438.91	0	-195.54	0	0	725760.5	401396.4	32.102	-103.738	
7900	1.83	270	7896.85	-4538.85	0	-198.73	0	0	725757.4	401396.4	32.102	-103.738	
8000	1.83	270	7996.8	-4638.8	0	-201.93	0	0	725754.2	401396.4	32.102	-103.738	
8035.1	1.83	270	8031.88	-4673.88	0	-203.05	0	0	725753	401396.4	32.102	-103.738	Start Drop -1.00
8100	1.18	270	8096.76	-4738.76	0	-204.76	0	1	725751.3	401396.4	32.102	-103.738	
8200	0.18	270	8196.75	-4838.75	0	-205.95	0	1	725750.1	401396.4	32.102	-103.738	
8218.29	0	0	8215.04	-4857.04	0	-205.98	0	1	725750.1	401396.4	32.102	-103.738	Start 300.00 hold at 8218.29 MD
8300	0	0	8296.75	-4938.75	0	-205.98	0	0	725750.1	401396.4	32.102	-103.738	
8400	0	0	8396.75	-5038.75	0	-205.98	0	0	725750.1	401396.4	32.102	-103.738	
8500	0	0	8496.75	-5138.75	0	-205.98	0	0	725750.1	401396.4	32.102	-103.738	
8518.29	0	0	8515.04	-5157.04	0	-205.98	0	0	725750.1	401396.4	32.102	-103.738	Start DLS 10.00 TFO 0.00
8550	3.17	0	8546.74	-5188.74	0.88	-205.98	0.88	10	725750.1	401397.3	32.102	-103.738	
8600	8.17	0	8596.48	-5238.48	5.82	-205.98	5.82	10	725750.1	401402.3	32.102	-103.738	
8650	13.17	0	8645.6	-5287.6	15.07	-205.98	15.07	10	725750.1	401411.5	32.102	-103.738	
8700	18.17	0	8693.72	-5335.72	28.57	-205.98	28.57	10	725750.1	401425	32.102	-103.738	
8750	23.17	0	8740.49	-5382.49	46.22	-205.98	46.22	10	725750.1	401442.7	32.102	-103.738	
8800	28.17	0	8785.54	-5427.54	67.87	-205.98	67.87	10	725750.1	401464.3	32.102	-103.738	
8850	33.17	0	8828.53	-5470.53	93.37	-205.98	93.37	10	725750.1	401489.8	32.102	-103.738	
8900	38.17	0	8869.14	-5511.14	122.52	-205.98	122.52	10	725750.1	401519	32.102	-103.738	
8950	43.17	0	8907.05	-5549.05	155.09	-205.98	155.09	10	725750.1	401551.5	32.103	-103.738	
9000	48.17	0	8941.98	-5583.98	190.85	-205.98	190.85	10	725750.1	401587.3	32.103	-103.738	
9050	53.17	0	8973.65	-5615.65	229.51	-205.98	229.51	10	725750.1	401625.9	32.103	-103.738	
9100	58.17	0	9001.84	-5643.84	270.79	-205.98	270.79	10	725750.1	401667.2	32.103	-103.738	
9150	63.17	0	9026.32	-5668.32	314.37	-205.98	314.37	10	725750.1	401710.8	32.103	-103.738	
9200	68.17	0	9046.92	-5688.92	359.91	-205.98	359.91	10	725750.1	401756.3	32.103	-103.738	
9250	73.17	0	9063.46	-5705.46	407.08	-205.98	407.08	10	725750.1	401803.5	32.103	-103.738	
9300	78.17	0	9075.83	-5717.83	455.51	-205.98	455.51	10	725750.1	401851.9	32.103	-103.738	
9350	83.17	0	9083.93	-5725.93	504.83	-205.98	504.83	10	725750.1	401901.3	32.104	-103.738	
9400	88.17	0	9087.71	-5729.71	554.67	-205.98	554.67	10	725750.1	401951.1	32.104	-103.738	
9418.29	90	0	9088	-5730	572.96	-205.98	572.96	10	725750.1	401969.4	32.104	-103.738	Start 6711.51 hold at 9418.29 MD
9500	90	0	9088	-5730	654.67	-205.98	654.67	0	725750.1	402051.1	32.104	-103.738	
9600	90	0	9088	-5730	754.67	-205.98	754.67	0	725750.1	402151.1	32.104	-103.738	
9700	90	0	9088	-5730	854.67	-205.98	854.67	0	725750.1	402251.1	32.104	-103.738	
9800	90	0	9088	-5730	954.67	-205.98	954.67	0	725750.1	402351.1	32.105	-103.738	
9900	90	0	9088	-5730	1054.67	-205.98	1054.67	0	725750.1	402451.1	32.105	-103.738	
10000	90	0	9088	-5730	1154.67	-205.98	1154.67	0	725750.1	402551.1	32.105	-103.738	
10100	90	0	9088	-5730	1254.67	-205.98	1254.67	0	725750.1	402651.1	32.106	-103.738	
10200	90	0	9088	-5730	1354.67	-205.98	1354.67	0	725750.1	402751.1	32.106	-103.738	
10300	90	0	9088	-5730	1454.67	-205.98	1454.67	0	725750.1	402851.1	32.106	-103.738	
10400	90	0	9088	-5730	1554.67	-205.98	1554.67	0	725750.1	402951.1	32.106	-103.738	
10500	90	0	9088	-5730	1654.67	-205.98	1654.67	0	725750.1	403051.1	32.107	-103.738	
10600	90	0	9088	-5730	1754.67	-205.98	1754.67	0	725750.1	403151.1	32.107	-103.738	
10700	90	0	9088	-5730	1854.67	-205.98	1854.67	0	725750.1	403251.1	32.107	-103.738	
10800	90	0	9088	-5730	1954.67	-205.98	1954.67	0	725750.1	403351.1	32.107	-103.738	
10900	90	0	9088	-5730	2054.67	-205.98	2054.67	0	725750.1	403451.1	32.108	-103.738	
11000	90	0	9088	-5730	2154.67	-205.98	2154.67	0	725750.1	403551.1	32.108	-103.738	
11100	90	0	9088	-5730	2254.67	-205.98	2254.67	0	725750.1	403651.1	32.108	-103.738	
11177	90	0	9088	-5730	2331.67	-205.98	2331.67	0	725750.1	403728.1	32.109	-103.738	32.1085273, -103.7377332 - 11177' MD, 9088' TVD, 755' FWL - Entering NMNM125634
11200	90	0	9088	-5730	2354.67	-205.98	2354.67	0	725750.1	403751.1	32.109	-103.738	
11300	90	0	9088	-5730	2454.67	-205.98	2454.67	0	725750.1	403851.1	32.109	-103.738	
11400	90	0	9088	-5730	2554.67	-205.98	2554.67	0	725750.1	403951.1	32.109	-103.738	
11500	90	0	9088	-5730	2654.67	-205.98	2654.67	0	725750.1	404051.1	32.109	-103.738	
11600	90	0	9088	-5730	2754.67	-205.98	2754.67	0	725750.1	404151.1	32.11	-103.738	
11700	90	0	9088	-5730	2854.67	-205.98	2854.67	0	725750.1	404251.1	32.11	-103.738	
11800	90	0	9088	-5730	2954.67	-205.98	2954.67	0	725750.1	404351.1	32.11	-103.738	
11900	90	0	9088	-5730	3054.67	-205.98	3054.67	0	725750.1	404451.1	32.111	-103.738	
12000	90	0	9088	-5730	3154.67	-205.98	3154.67	0	725750.1	404551.1	32.111	-103.738	
12100	90	0	9088	-5730	3254.67	-205.98	3254.67	0	725750.1	404651.1	32.111	-103.738	
12200	90	0	9088	-5730	3354.67	-205.98	3354.67	0	725750.1	404751.1	32.111	-103.738	
12300	90	0	9088	-5730	3454.67	-205.98	3454.67	0	725750.1	404851.1	32.112	-103.738	
12400	90	0	9088	-5730	3554.67	-205.98	3554.67	0	725750.1	404951.1	32.112	-103.738	
12500	90	0	9088	-5730	3654.67	-205.98	3654.67	0	725750.1	405051.1	32.112	-103.738	
12600	90	0	9088	-5730	3754.67	-205.98	3754.67	0	725750.1	405151.1	32.112	-103.738	
12700	90	0	9088	-5730	3854.67	-205.98	3854.67	0	725750.1	405251.1	32.113	-103.738	
12800	90	0	9088	-5730	3954.67	-205.98	3954.67	0	725750.1	405351.1	32.113	-103.738	
12900	90	0	9088	-5730	4054.67	-205.98	4054.67	0	725750.1	405451.1	32.113	-103.738	
13000	90	0	9088	-5730	4154.67	-205.98	4154.67	0	725750.1	405551.1	32.114	-103.738	
13100	90	0	9088	-5730	4254.67	-205.98	4254.67	0	725750.1	405651.1	32.114	-103.738	
13200	90	0	9088	-5730	4354.67	-205.98	4354.67	0	725750.1	405751.1	32.114	-103.738	
13300	90	0	9088	-5730	4454.67	-205.98	4454.67	0	725750.1	405851.1	32.114	-103.738	
13400	90	0	9088	-5730	4554.67	-205.98	4554.67	0	725750.1	405951.1	32.115	-103.738	
13500	90	0	9088	-5730	4654.67	-205.98	4654.67	0	725750.1	406051.1	32.115	-103.738	
13600	90	0	9088	-5730	4754.67	-205.98	4754.67	0	725750.1	406151.1	32.115	-103.738	
13700	90	0	9088	-5730	4854.67	-205.98	4854.67	0	725750.1	406251.1	32.115	-103.738	
13800	90	0	9088	-5730	4954.67	-205.98	4954.67	0	725750.1	406351.1	32.116	-103.738	
13818	90	0	9088	-5730	4972.67	-205.98	4972.67	0	725750.1	406369.1	32.116	-103.738	32.1157869, -103.7376860 - 13818' MD, 9088' TVD, 760' FWL - Entering NMLC061869
13900	90	0	9088	-5730	5054.67	-205.98	5054.67	0	725750.1	406451.1	32.116	-103.738	
14000	90	0	9088	-5730	5154.67	-205.98	5154.67	0	725750.1	406551.1	32.116	-103.738	
14100	90	0	9088	-5730	5254.67	-205.98	5254.67	0	725750.1	406651.1	32.117	-103.738	
14200	90	0	9088	-5730	5354.67	-205.98	5354.67	0	725750.1	406751.1	32.117	-103.738	
14300	90	0	9088	-5730	5454.67	-205.98	5454.67	0	725750.1	406851.1	32.117	-103.738	
14400	90	0	9088	-5730	5554.67	-205.98	5554.67	0	725750.1	406951.1	32.117	-103.738	
14500	90	0	9088	-5730	5654.67	-205.98	5654.67	0	725750.1	407051.1	32.118	-103.738	
14600	90	0	9088	-5730	5754.67	-205.98	5754.67	0	725750.1	407151.1	32.118	-103.738	
14700	90	0	9088	-5730	5854.67	-205.98	5854.67	0	725750.1	407251.1	32.118	-103.738	
14800	90	0	9088	-5730	5954.67	-205.98	5954.67	0	725750.1	407351.1	32.118	-103.738	
14900	90	0	9088	-5730	6054.67	-205.98	6054.67	0	725750.1	407451.1	32.119	-103.738	
15000	90	0	9088	-5730	6154.67	-205.98	6154.67	0	725750.1	407551.1	32.119	-103.738	
15100	90	0	9088	-5730	6254.67	-205.98	6254.67	0	725750.1	407651.1	32.119	-103.738	
15200	90	0	9088	-5730	6354.67	-205.98	6354.67	0	725750.1	407751.1	32.12	-103.738	
15300	90	0	9088	-5730	6454.67	-205.98	6454.67	0	725750.1	407851.1	32.12	-103.738	
15400	90	0	9088	-5730	6554.67	-205.98	6554.67	0	725750.1	407951.1	32.12	-103.738	
15500	90	0	9088	-5730	6654.67	-205.98	6654.67	0	725750.1	408051.1	32.12	-103.738	
15600	90	0	9088	-5730	6754.67	-205.98	6754.67	0	725750.1	408151.1	32.121	-103.738	
15700	90	0	9088	-5730	6854.67	-205.98	6854.67	0	725750.1	408251.1	32.121	-103.738	
15800	90	0	9088	-5730	6954.67	-205.98	6954.67	0	725750.1	408351.1	32.121	-103.738	
15900	90	0	9088	-5730	7054.67	-205.98	7054.67	0	725750.1	408451.1	32.122	-103.738	
16000	90	0	9088	-5730	7154.67	-205.98	7154.67	0	725750.1	408551.1	32.122	-103.738	

16100	90	0	9088	-5730	7254.67	-205.98	7254.67	0	725750.1	408651.1	32.122	-103.738	
16129.8	90	0	9088	-5730	7284.47	-205.98	7284.47	0	725750.1	408680.9	32.122	-103.738	TD at 16129.80

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to GL 3332'+KB 26'. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Slot and calculated along an Azimuth of 0.000° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
Grid Convergence at Surface is 0.317°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 16129.80ft.,
the Bottom Hole Displacement is 7287.38ft., in the Direction of 0.000° (Grid).

BIG SINKS DRAW 25-24 FED COM 531H

devon

This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: _User
Map is current as of: 25-Oct-2017

N

Miles
0 0.28 0.56 1.12 1:56,913