Form 3160-3
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD
OCT 15 2019
RECEIVED

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

5. Lease Serial No.
NMLC0061873B

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.
MUSTANG 8-17 FED COM 235H (326466)

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP (6137)

9. API Well No.
30-025-46431

3a. Address
333 West Sheridan Avenue Oklahoma City OK 73102

3b. Phone No. *(include area code)*
(800)583-3866

10. Field and Pool, or Exploratory
FED WC-025 G-06 S253206M / BONE SP (97899)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SENW / 2468 FNL / 1375 FWL / LAT 32.1453177 / LONG -103.701363
At proposed prod. zone SWSW / 20 FSL / 900 FWL / LAT 32.1231418 / LONG -103.702996

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 8 / T25S / R32E / NMP

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

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1375 feet	16. No of acres in lease 1759.31	17. Spacing Unit dedicated to this well 480
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1707 feet	19. Proposed Depth 10200 feet / 17968 feet	20. BLM/BIA Bond No. in file FED: NMB000801
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3438 feet	22. Approximate date work will start* 12/01/2019	23. Estimated duration 45 days

24. Attachments

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

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

25. Signature (Electronic Submission)	Name *(Printed/Typed)* Jenny Harms / Ph: (405)524-4902	Date 04/10/2019
Title Regulatory Compliance Professional		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 10/11/2019
Title Assistant Field Manager Lands & Minerals	Office CARLSBAD	

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

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

GCP Rec 10/15/19

10/16/19

APPROVED WITH CONDITIONS

Approval Date: 10/11/2019

Double Sided

(Continued on page 2)

*(Instructions on page 2)

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

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

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

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

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Additional Operator Remarks

Location of Well

1. SHL: SENW / 2468 FNL / 1375 FWL / TWSP: 25S / RANGE: 32E / SECTION: 8 / LAT: 32.1453177 / LONG: -103.701363 (TVD: 0 feet, MD: 0 feet)
   PPP: NWSW / 2529 FSL / 900 FWL / TWSP: 25S / RANGE: 32E / SECTION: 8 / LAT: 32.1445403 / LONG: -103.702900 (TVD: 10069 feet, MD: 10150 feet)
   BHL: SWSW / 20 FSL / 900 FWL / TWSP: 25S / RANGE: 32E / SECTION: 17 / LAT: 32.1231418 / LONG: -103.702996 (TVD: 10200 feet, MD: 17968 feet)

BLM Point of Contact

Name: Candy Vigil
Title: Admin Support Assistant
Phone: 5752345982
Email: cvigil@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.

AFMSS

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

Application for Permit to Drill

APD Package Report

Date Printed: 10/13/2019 07:09 PM

APD ID: 10400040667
APD Received Date: 04/10/2019 03:01 PM
Operator: DEVON ENERGY PRODUCTION COMPANY LP

Well Status: AAPD
Well Name: MUSTANG 8-17 FED
Well Number: 235H

APD Package Report Contents

- Form 3160-3

- Operator Certification Report

- Application Report
- Application Attachments
  -- Well Plat: 1 file(s)

- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 4 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 4 file(s)
  -- Casing Design Assumptions and Worksheet(s): 6 file(s)
  -- Hydrogen sulfide drilling operations plan: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 4 file(s)
  -- Other Facets: 5 file(s)
  -- Other Variances: 1 file(s)

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- New Road Map: 1 file(s)
  -- Attach Well map: 1 file(s)
  -- Water source and transportation map: 1 file(s)
  -- Construction Materials source location attachment: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Recontouring attachment: 1 file(s)
  -- Other SUPO Attachment: 5 file(s)

- PWD Report
- PWD Attachments
  -- None

- Bond Report
- Bond Attachments
  -- None

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMLC0061873B**
WELL NAME & NO.:	Mustang 8-17 Fed 235H
SURFACE HOLE FOOTAGE:	2468'/N & 1375'/W
BOTTOM HOLE FOOTAGE	20'/S & 900'/W
LOCATION:	Section 8, T.25 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **830 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

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

include the lead cement)

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

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

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **4635 feet** is:

Option 1 (Single Stage):

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

Option 2:

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

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

b. Second stage above DV tool:

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

Operator has proposed to pump down 13-3/8" X 9-5/8" annulus. Operator must run a CBL from TD of the 9-5/8" casing to surface. Submit results to BLM.

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.
  Cement excess is less than 25%, more cement might be required.

C. PRESSURE CONTROL

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

2.

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.

Option 2:

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

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

GENERAL REQUIREMENTS

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

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

☒ 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

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

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

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.

Hydrological Features Stipulations / Condition of Approval

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.

Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

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 values, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Range Stipulations / Conditions of Approval

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

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

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

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.

equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

18. 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.

19. Special Stipulations:

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

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 permanent engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

13. 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

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - 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

16. 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.

17. 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

Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.

8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The 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 the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

10. 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.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site 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 the abandonment of the site. All pads and 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. 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).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

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). 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 site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil of 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 to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup 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 liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. 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 a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain

activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

D. OIL AND GAS RELATED SITES

STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES

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

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

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 and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statues.

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 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic

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

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.

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

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Range Stipulations / Conditions of Approval

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

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

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

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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:

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

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.

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

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

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

Construction Steps

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

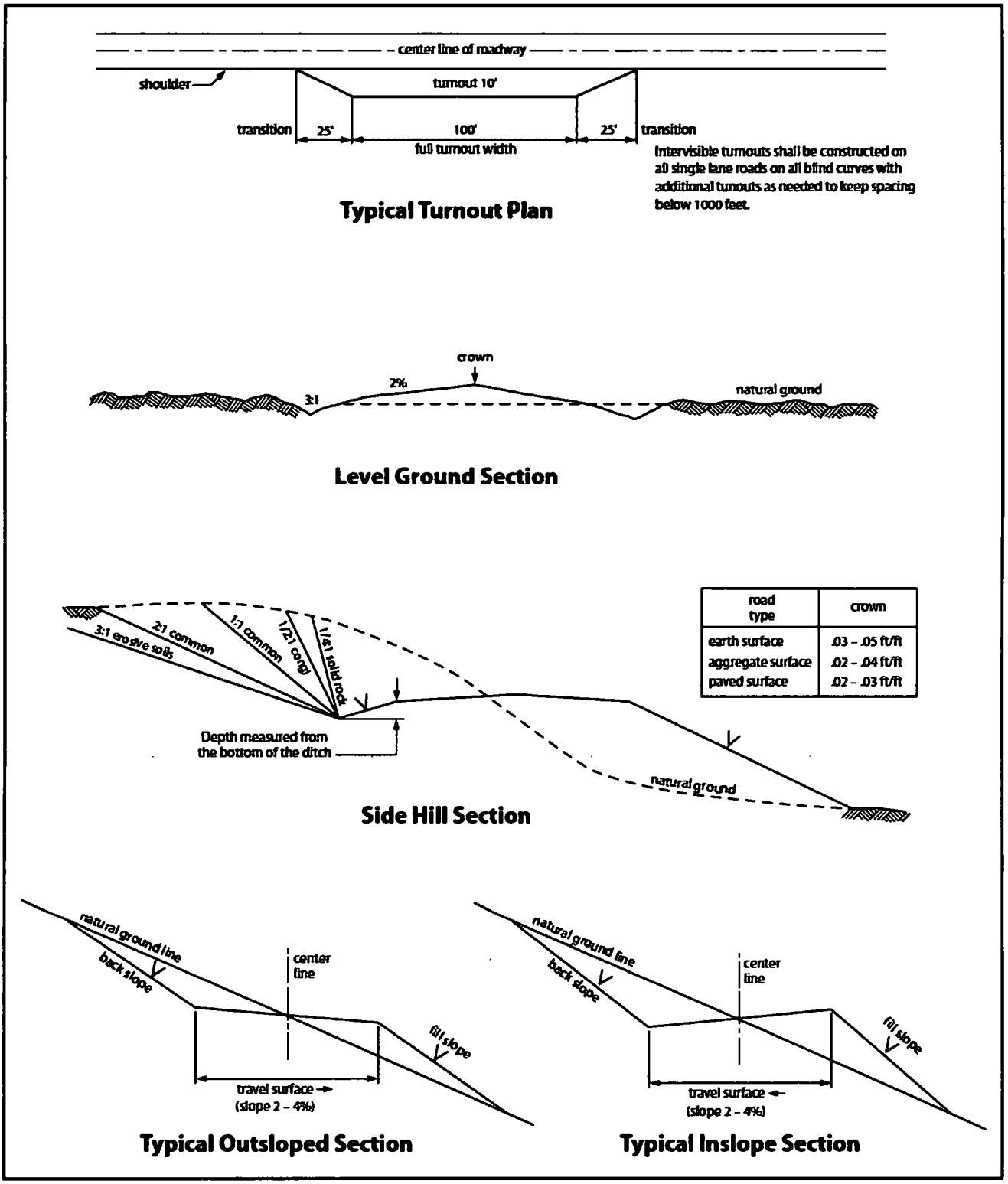
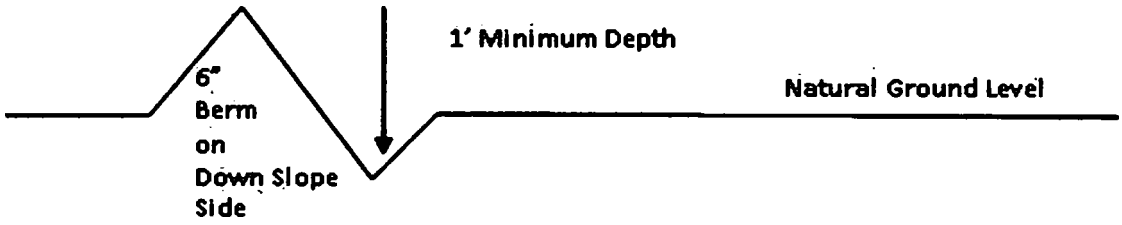


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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.

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

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)

Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

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 values, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Range Stipulations / Conditions of Approval

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

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

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

V. SPECIAL REQUIREMENT(S)

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

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

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

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.

Hydrological Features Stipulations / Condition of Approval

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.

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.

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
WELL NAME & NO.:	Mustang 8-17 Fed 235H
SURFACE HOLE FOOTAGE:	2468'/N & 1375'/W
BOTTOM HOLE FOOTAGE	20'/S & 900'/W
LOCATION:	Section 8, T.25 S., R.32 E., NMPM
COUNTY:	Lea 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.

Approval Date: 10/11/2019

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.

lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

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

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

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

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

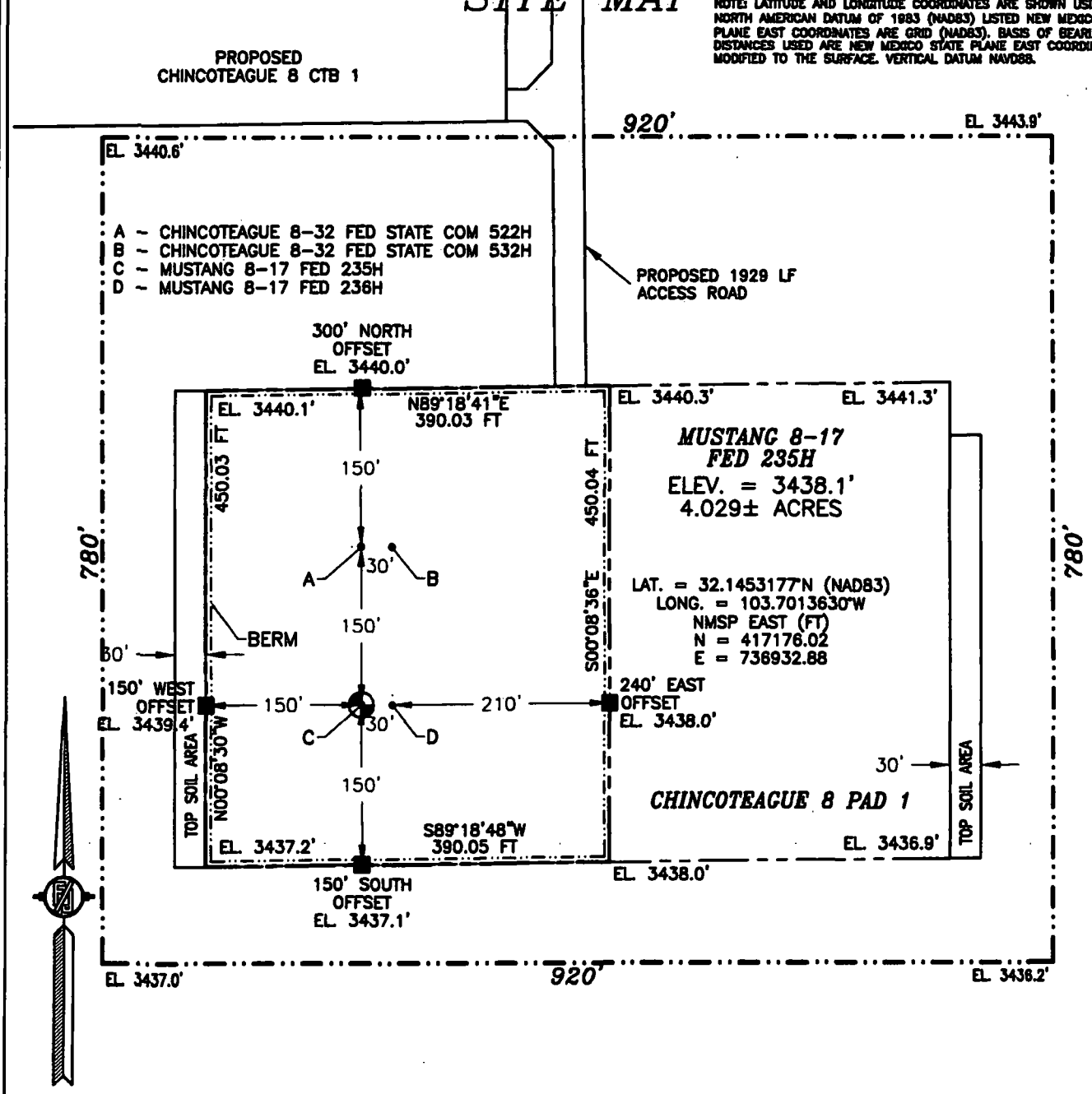
g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

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

C. DRILLING MUD

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP

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.



015 75 150 300

SCALE 1" = 150'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HIGHWAY 128 & CR 1 (ORLA) GO SOUTH ON CR 1 6.1 MILES TO MONSANTO ROAD, TURN RIGHT (WEST) GO 2.1 MILES, TURN RIGHT (NORTH) GO 1.0 MILE, NORTH ROAD TURNS LEFT (WEST) GO 200' TO A LEASE ROAD ON RIGHT (NORTH) TURN NORTH GO 0.7 OF A MILE TO ROAD LATHS ON RIGHT (EAST) GO 1128', TURN RIGHT GO SOUTH 801' (TOTAL OF 1929') TO NORTH EDGE OF PAD FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

MUSTANG 8-17 FED 235H

LOCATED 2468 FT. FROM THE NORTH LINE AND 1375 FT. FROM THE WEST LINE OF SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

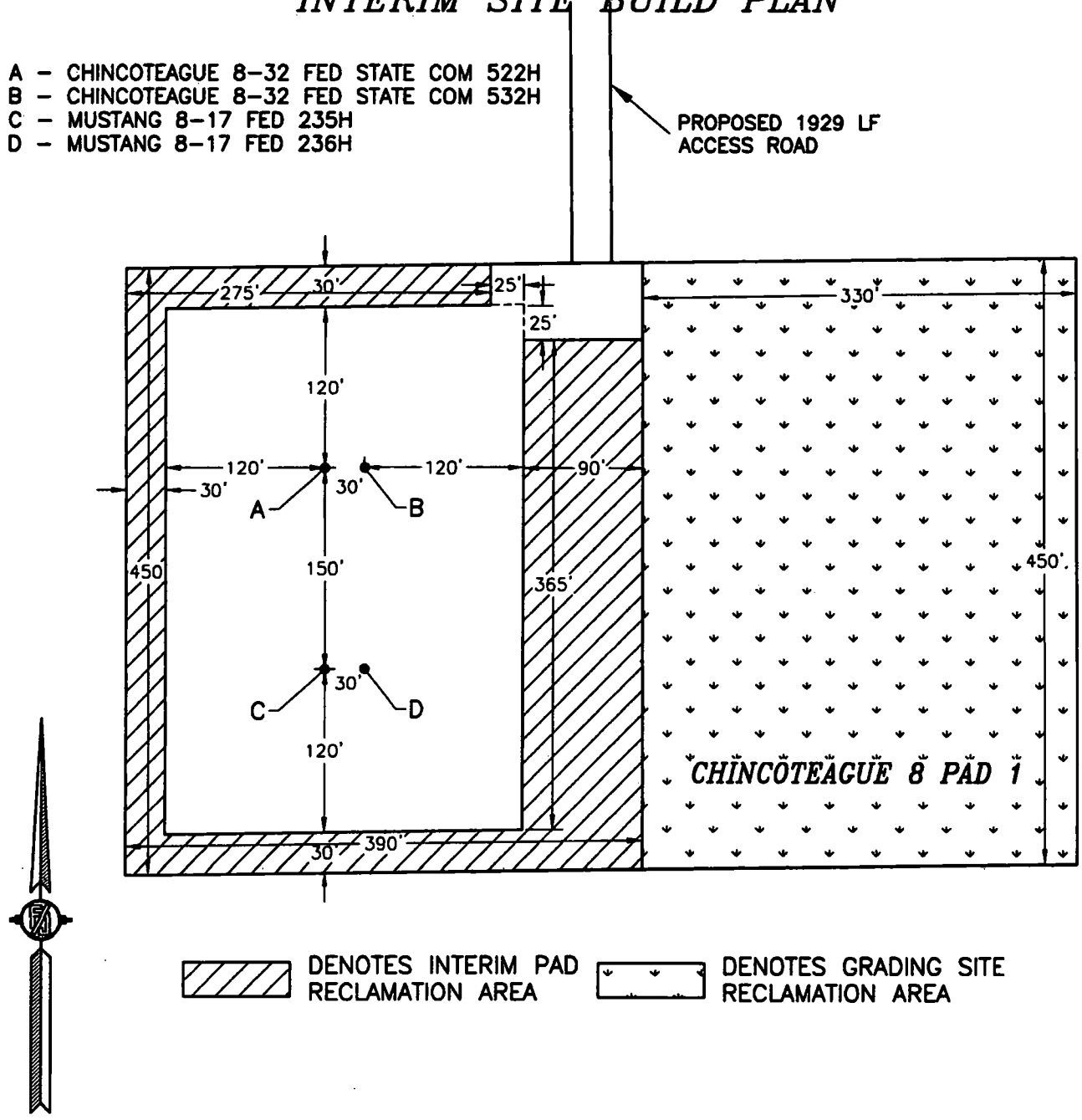
LAND STATUS: BLM

MARCH 20, 2019
SURVEY NO. 7005A

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN

A – CHINCOTEAGUE 8–32 FED STATE COM 522H
B – CHINCOTEAGUE 8–32 FED STATE COM 532H
C – MUSTANG 8–17 FED 235H
D – MUSTANG 8–17 FED 236H



DENOTES INTERIM PAD RECLAMATION AREA

DENOTES GRADING SITE RECLAMATION AREA

012 60 120 240
SCALE 1" = 120'

1.477± ACRES INTERIM PAD RECLAMATION AREA
3.409± ACRES GRADING SITE RECLAMATION AREA
2.553± ACRES NON–RECLAIMED AREA
7.439± ACRES CHINCOTEAGUE 8 PAD 1

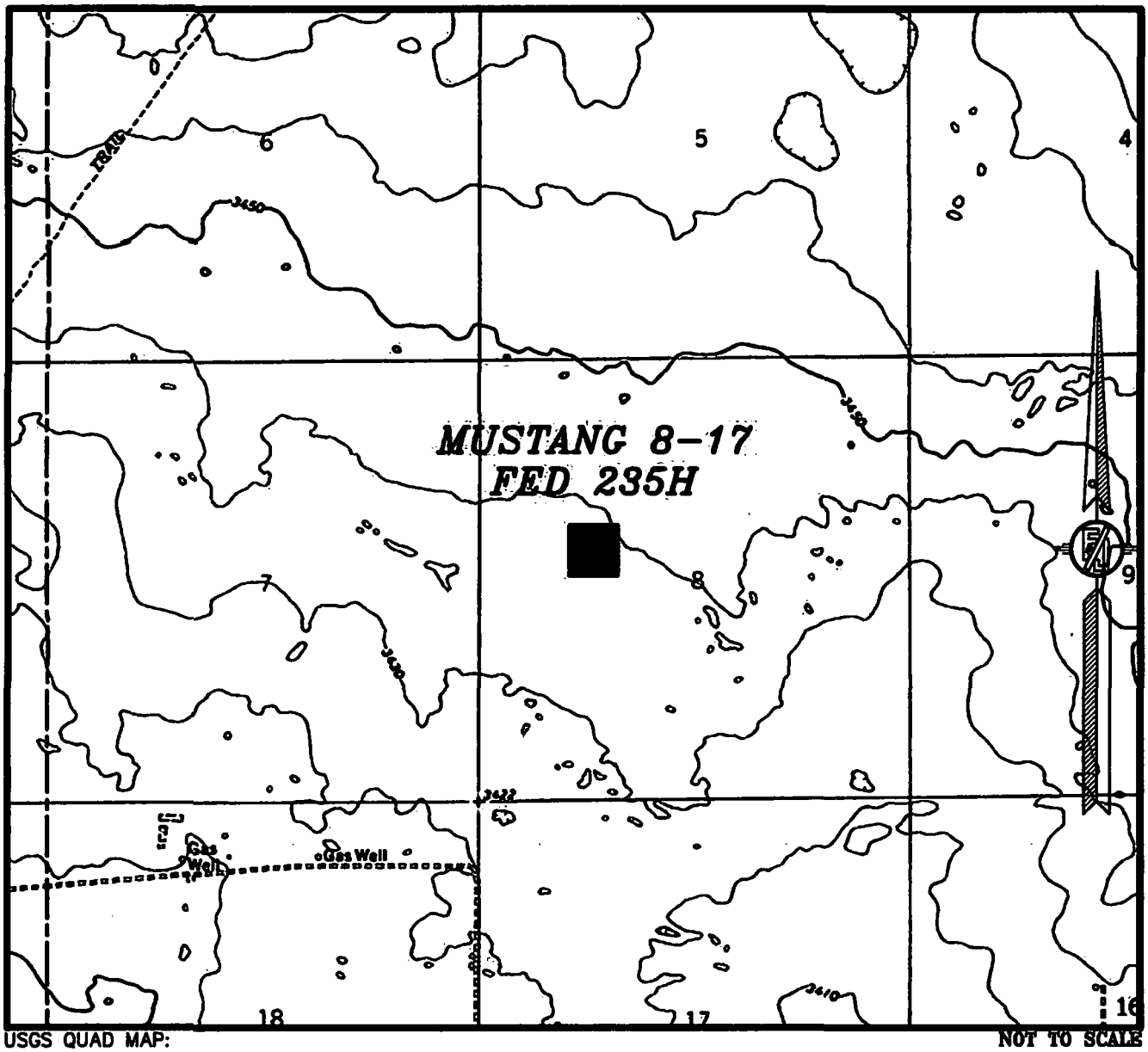
DEVON ENERGY PRODUCTION COMPANY, L.P.
MUSTANG 8–17 FED 235H
LOCATED 2468 FT. FROM THE NORTH LINE AND 1375 FT. FROM THE WEST LINE OF SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MARCH 20, 2019
SURVEY NO. 7005A

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS NW

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

MUSTANG 8-17 FED 235H

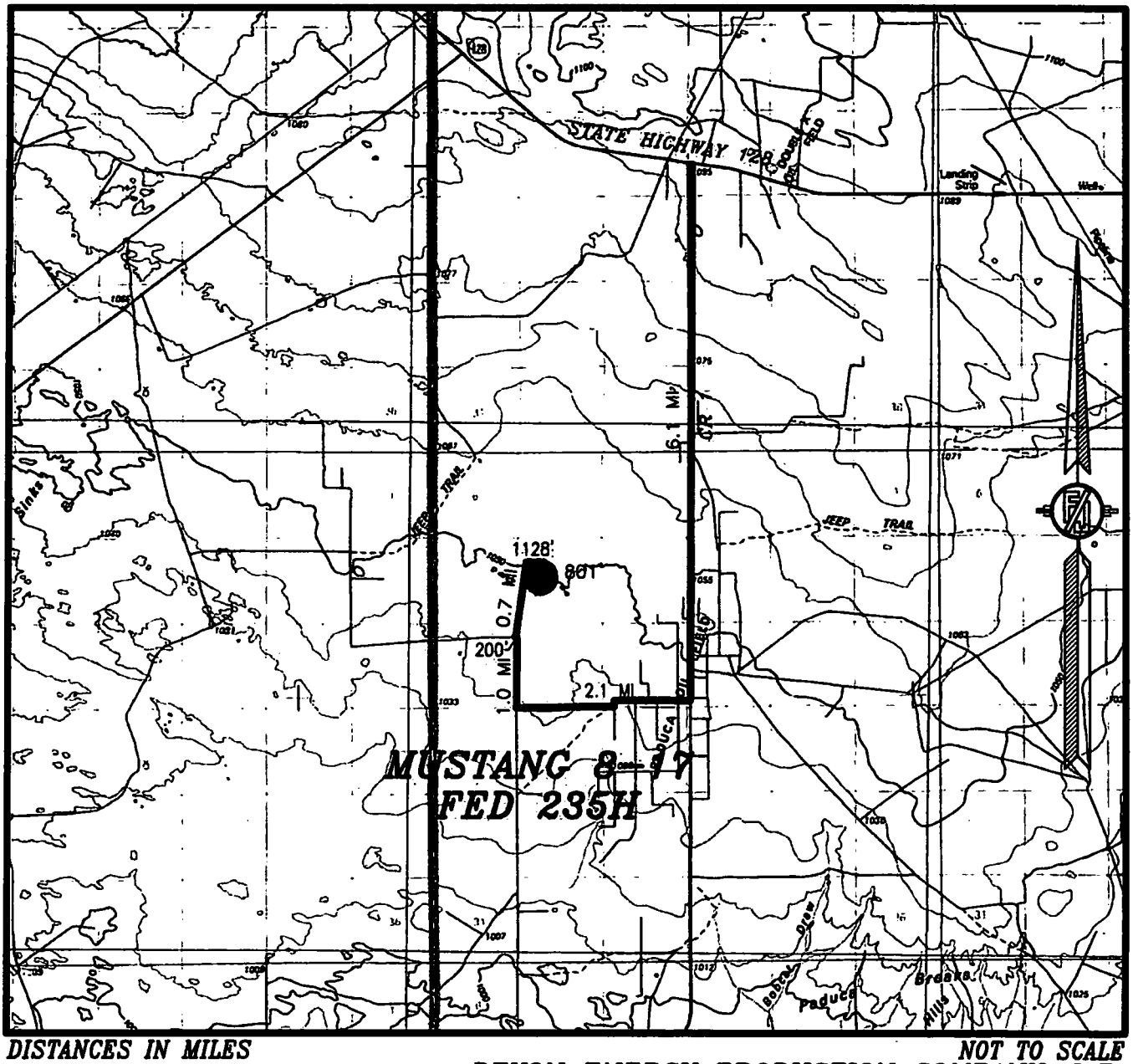
LOCATED 2468 FT. FROM THE NORTH LINE
AND 1375 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MARCH 20, 2019

SURVEY NO. 7005A

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

MUSTANG 8-17 FED 235H

LOCATED 2468 FT. FROM THE NORTH LINE
AND 1375 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MARCH 20, 2019

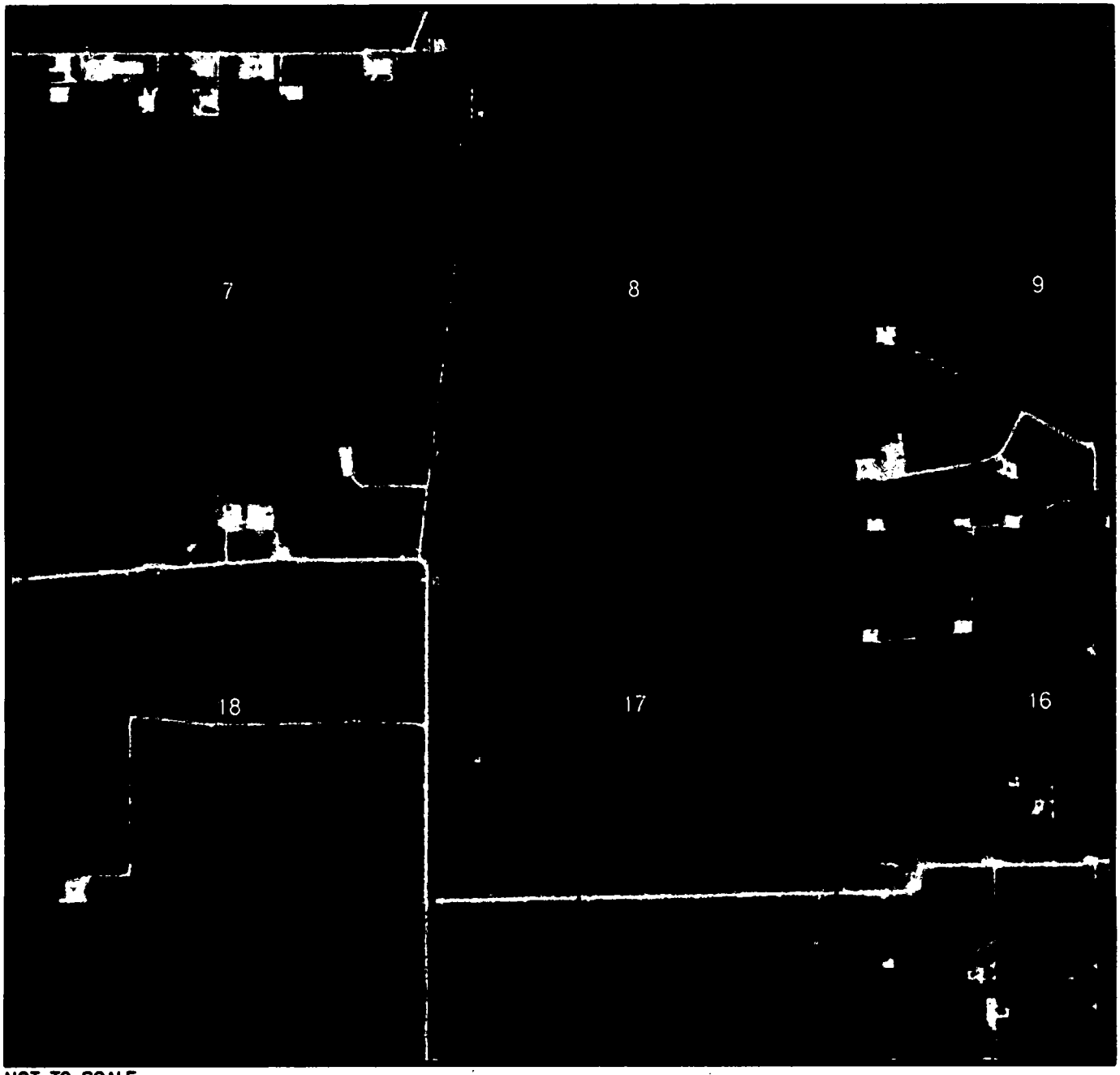
DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF STATE HIGHWAY 128 & CR 1 (CRLA) GO SOUTH ON CR 1 6.1 MILES TO MONSANTO ROAD, TURN RIGHT (WEST) GO 2.1 MILES, TURN RIGHT (NORTH) GO 1.0 MILE, NORTH ROAD TURNS LEFT (WEST) GO 200' TO A LEASE ROAD ON RIGHT (NORTH) TURN NORTH GO 0.7 OF A MILE TO ROAD LATHS ON RIGHT (EAST) GO 1128', TURN RIGHT GO SOUTH 801' (TOTAL OF 1929') TO NORTH EDGE OF PAD FOR THIS LOCATION.

SURVEY NO. 7005A

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

MUSTANG 8-17 FED 235H

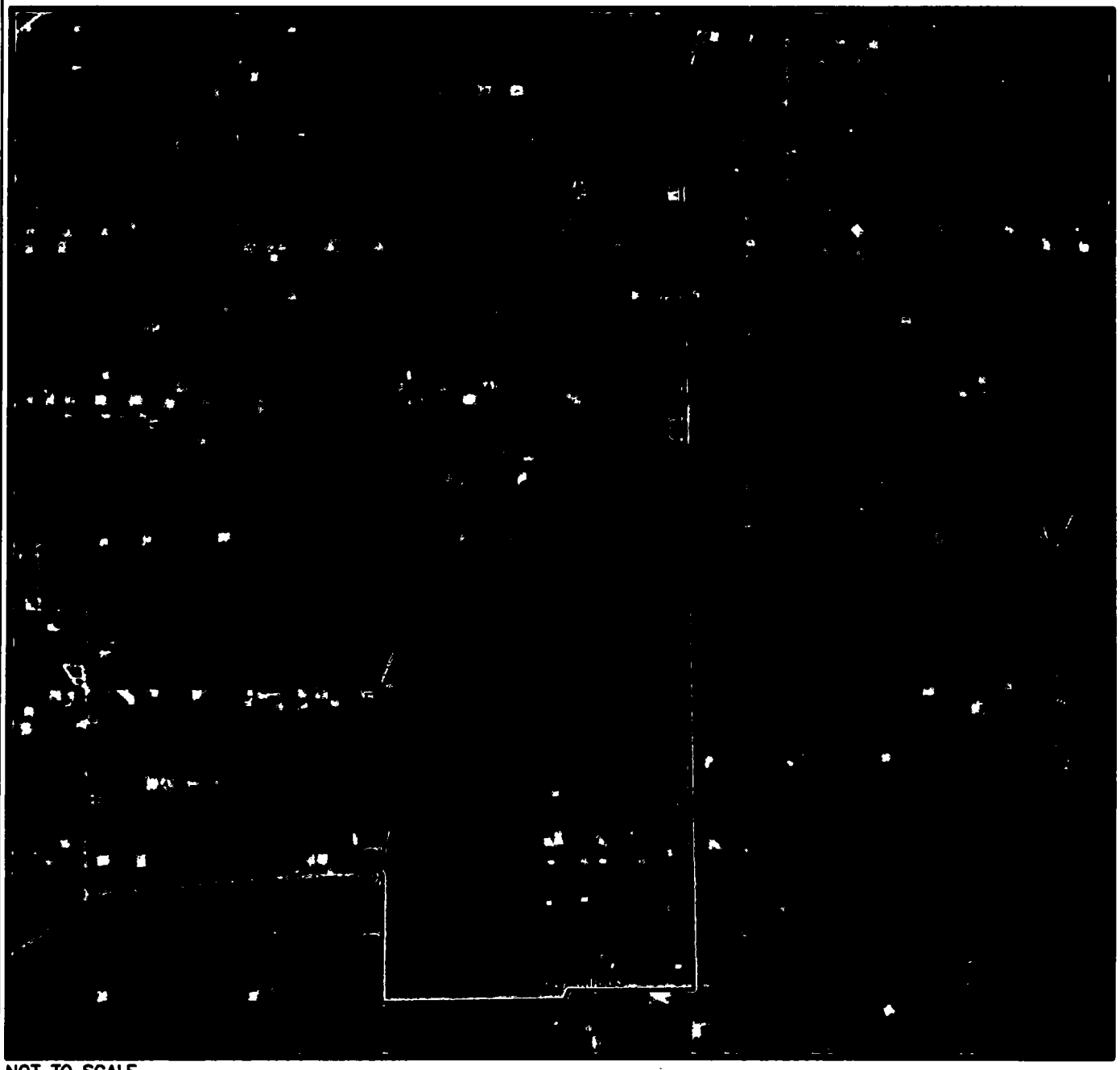
LOCATED 2468 FT. FROM THE NORTH LINE
AND 1375 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MARCH 20, 2019

SURVEY NO. 7005A

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

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
MUSTANG 8-17 FED 235H

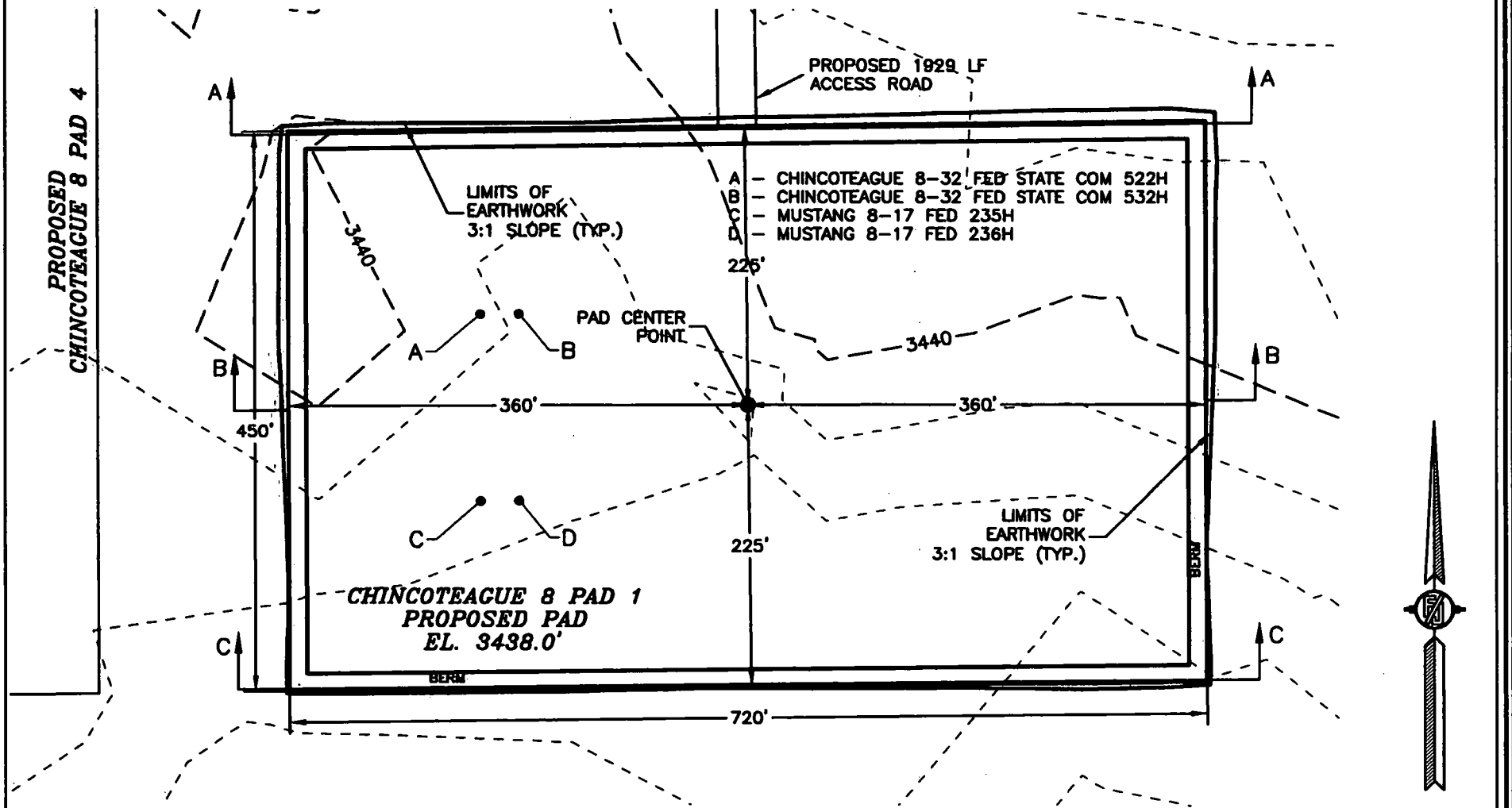
LOCATED 2468 FT. FROM THE NORTH LINE
AND 1375 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MARCH 20, 2019

SURVEY NO. 7005A

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
FOR MUSTANG 8-17 FED 235H
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

012 60 120 240
SCALE 1" = 120'

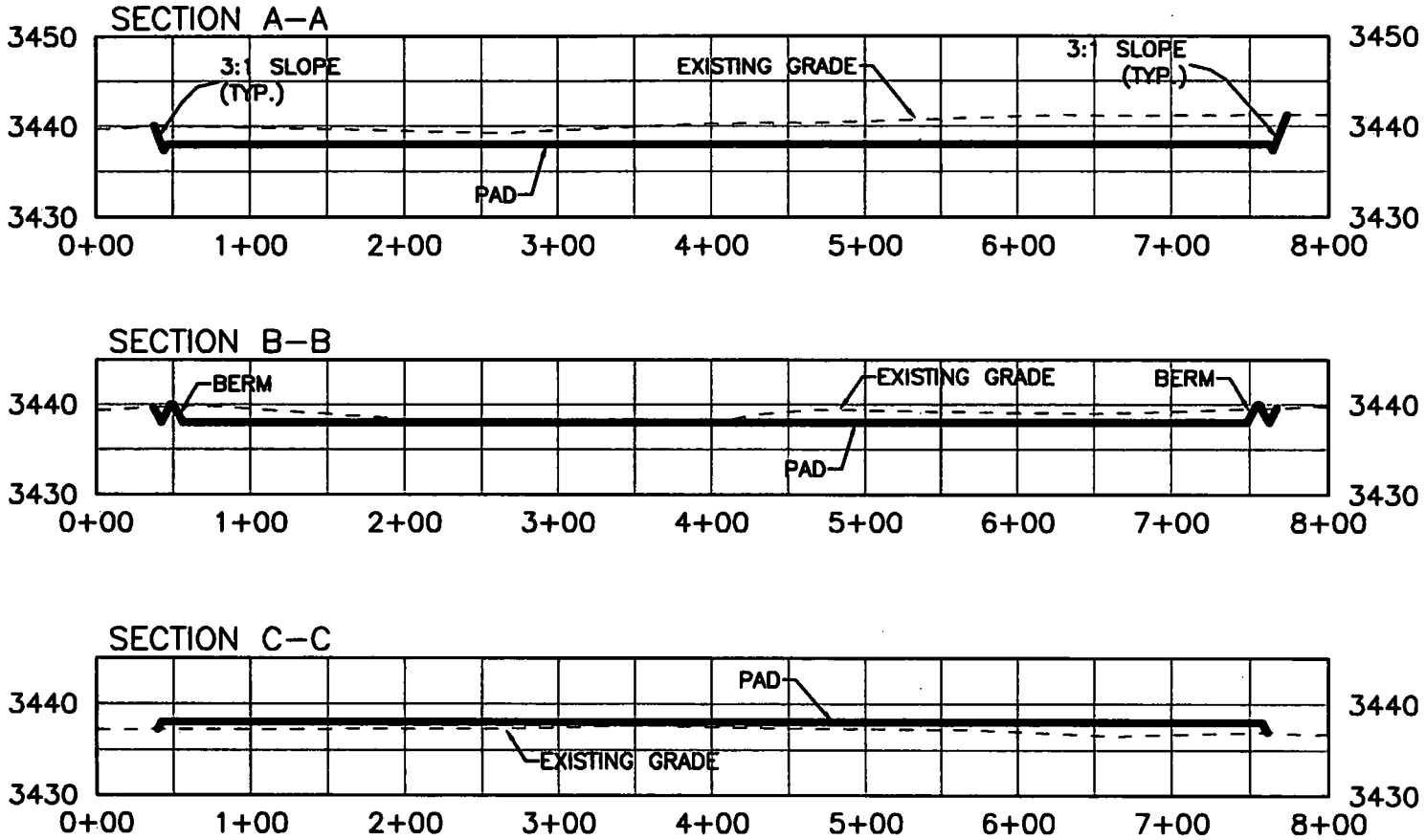
CUT	FILL	NET
11831 CU. YD	2400 CU. YD	9431 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

MARCH 20, 2019

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

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR MUSTANG 8–17 FED 236H
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MARCH 20, 2019

SCALE 1" = 120' – 1" = 20' VER

CUT	FILL	NET
11831 CU. YD	2400 CU. YD	9431 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

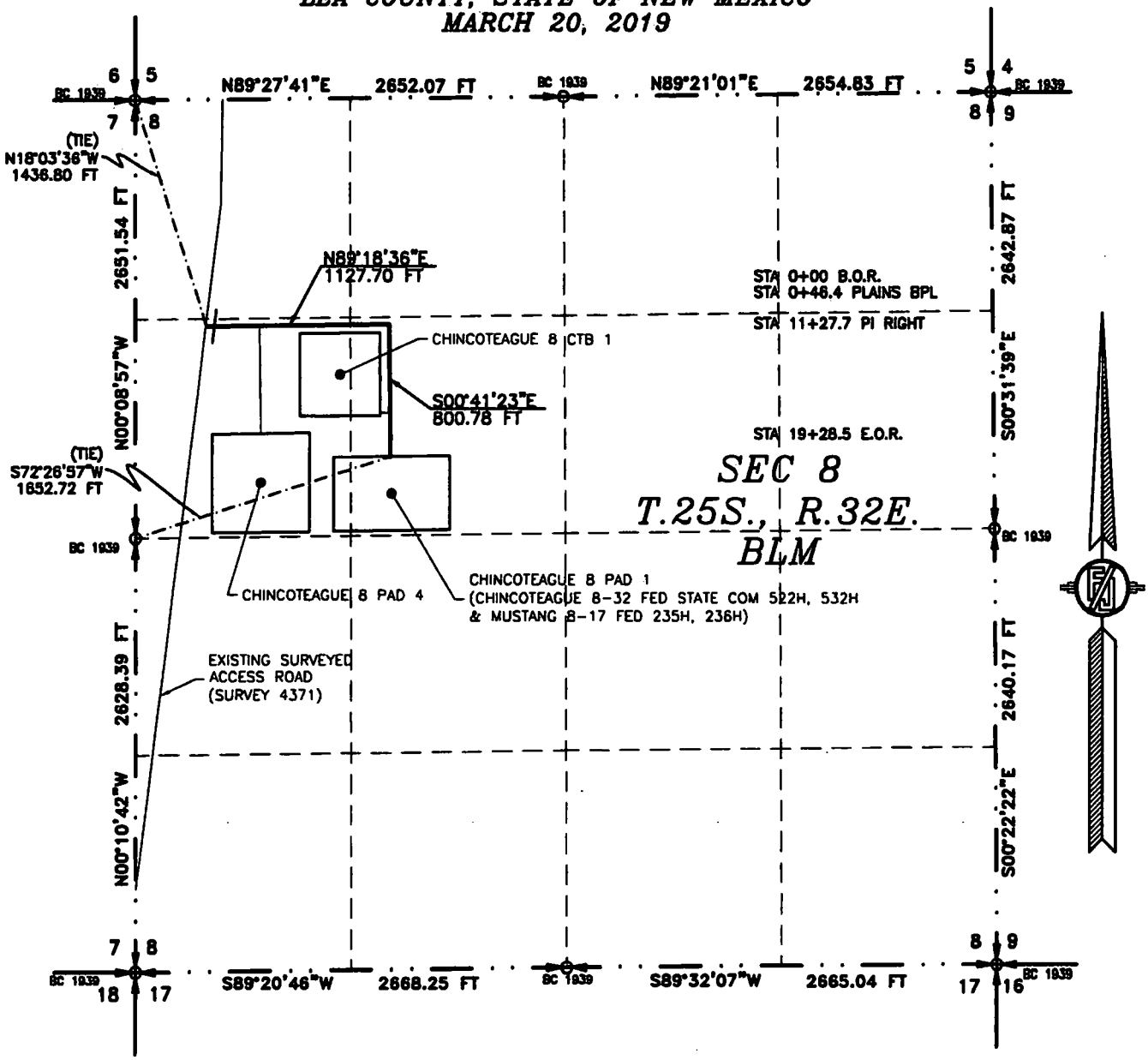
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE CHINCOTEAGUE 8 PAD 1 (CHINCOTEAGUE 8-32 FED STATE COM 522H, 532H & MUSTANG 8-17 FED 235H, 236H)

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MARCH 20, 2019



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 MARCH 2019

FILIMON F. JARAMILLO NM. 12797

301 SOUTH CANAL

(575) 234-3341

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

SHEET: 1-2

SURVEY NO. 7005A

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE CHINCOTEAGUE 8 PAD 1 (CHINCOTEAGUE 8-32 FED STATE COM 522H, 532H & MUSTANG 8-17 FED 235H, 236H)

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MARCH 20, 2019

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA 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 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N18°03'36"W, A DISTANCE OF 1436.80 FEET;
THENCE N89°18'36"E A DISTANCE OF 1127.70 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S00°41'23"E A DISTANCE OF 800.78 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S72°26'57"W, A DISTANCE OF 1652.72 FEET;

SAID STRIP OF LAND BEING 1928.48 FEET OR 116.87 RODS IN LENGTH, CONTAINING 1.328 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	886.44 L.F.	53.72 RODS	0.610 ACRES
SE/4 NW/4	1042.04 L.F.	63.15 RODS	0.718 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

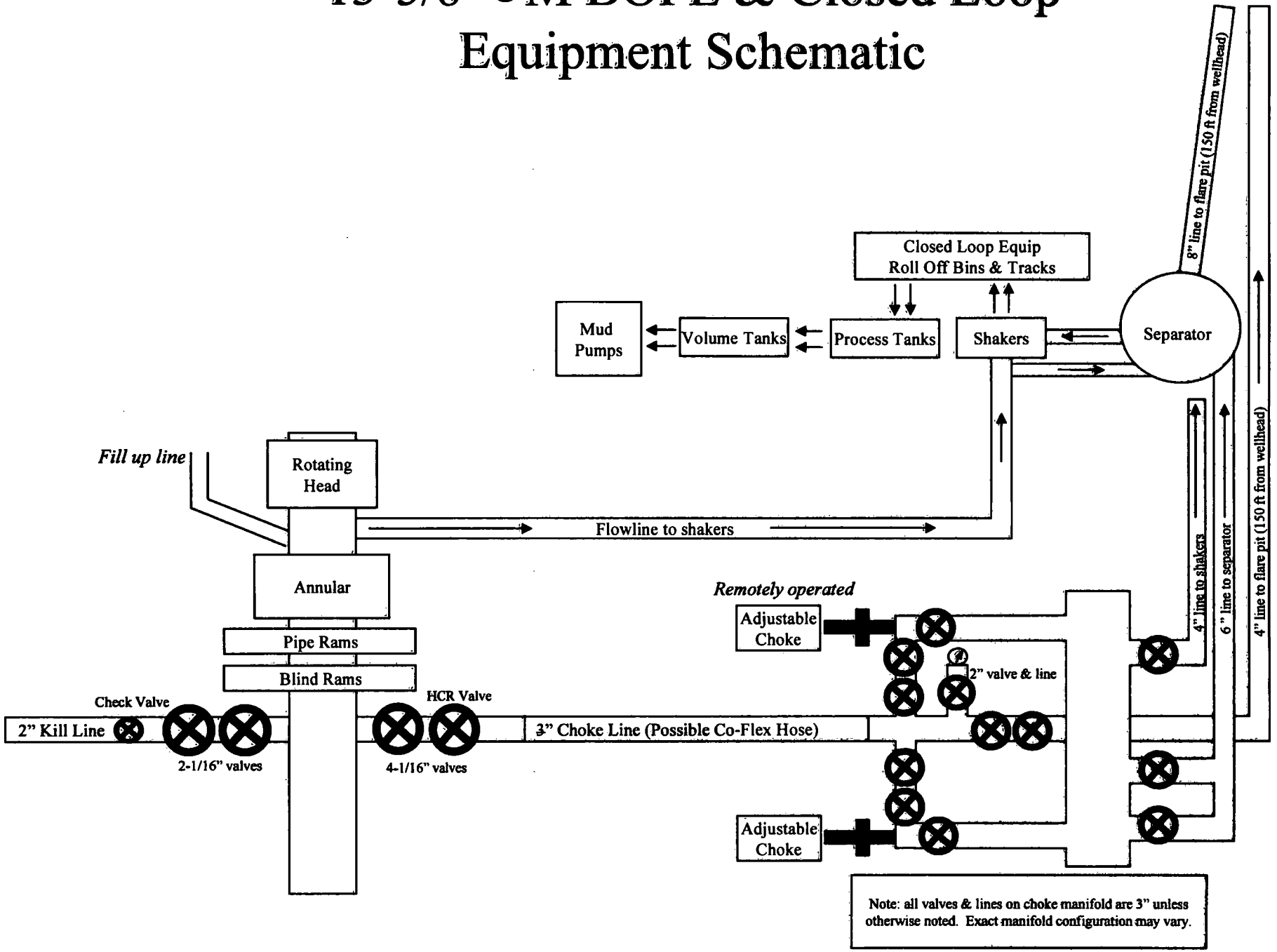
I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 20TH DAY OF MARCH 2019

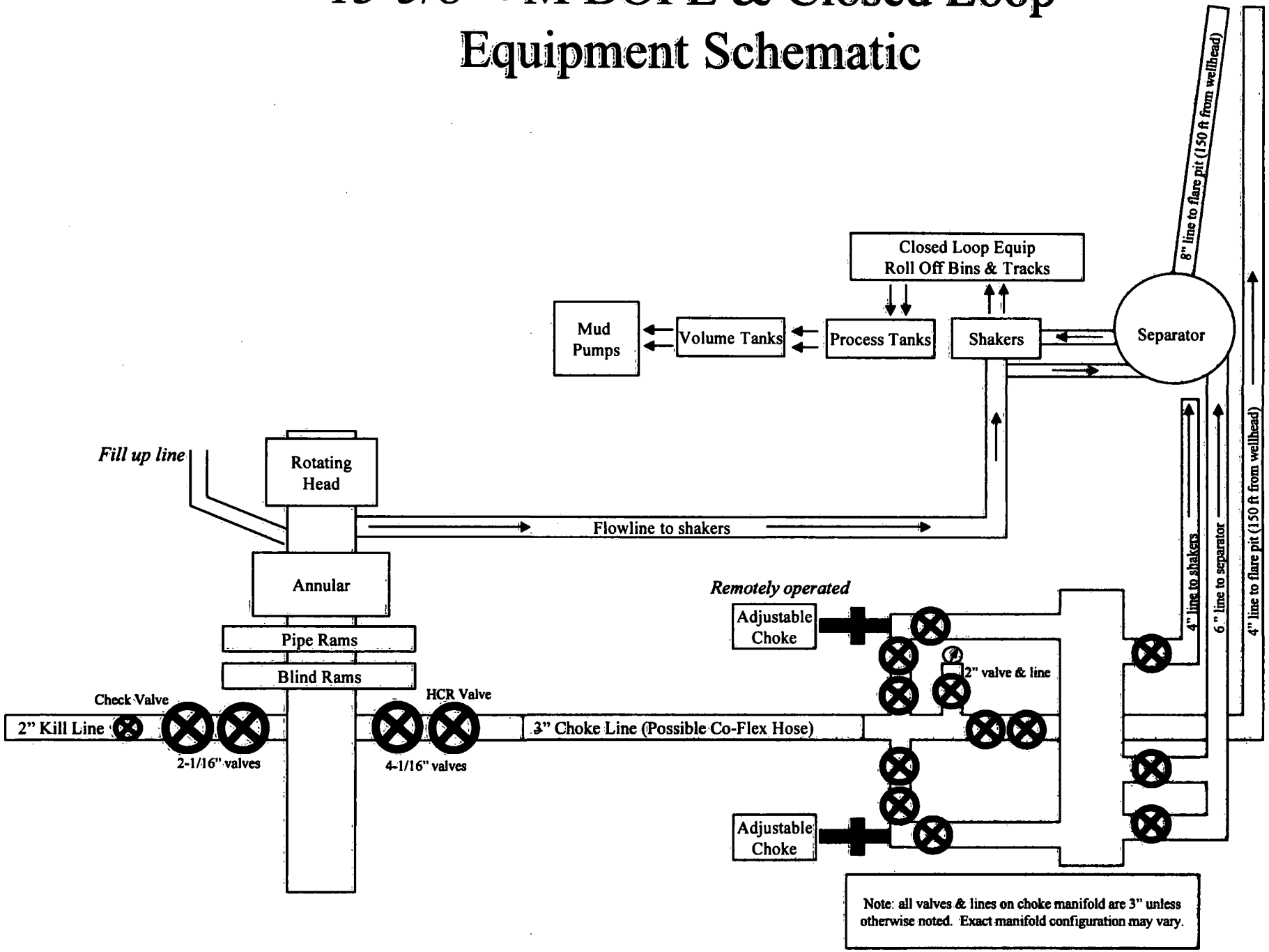
FILIMON F. JARAMILLO PLS. 12797

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

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



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



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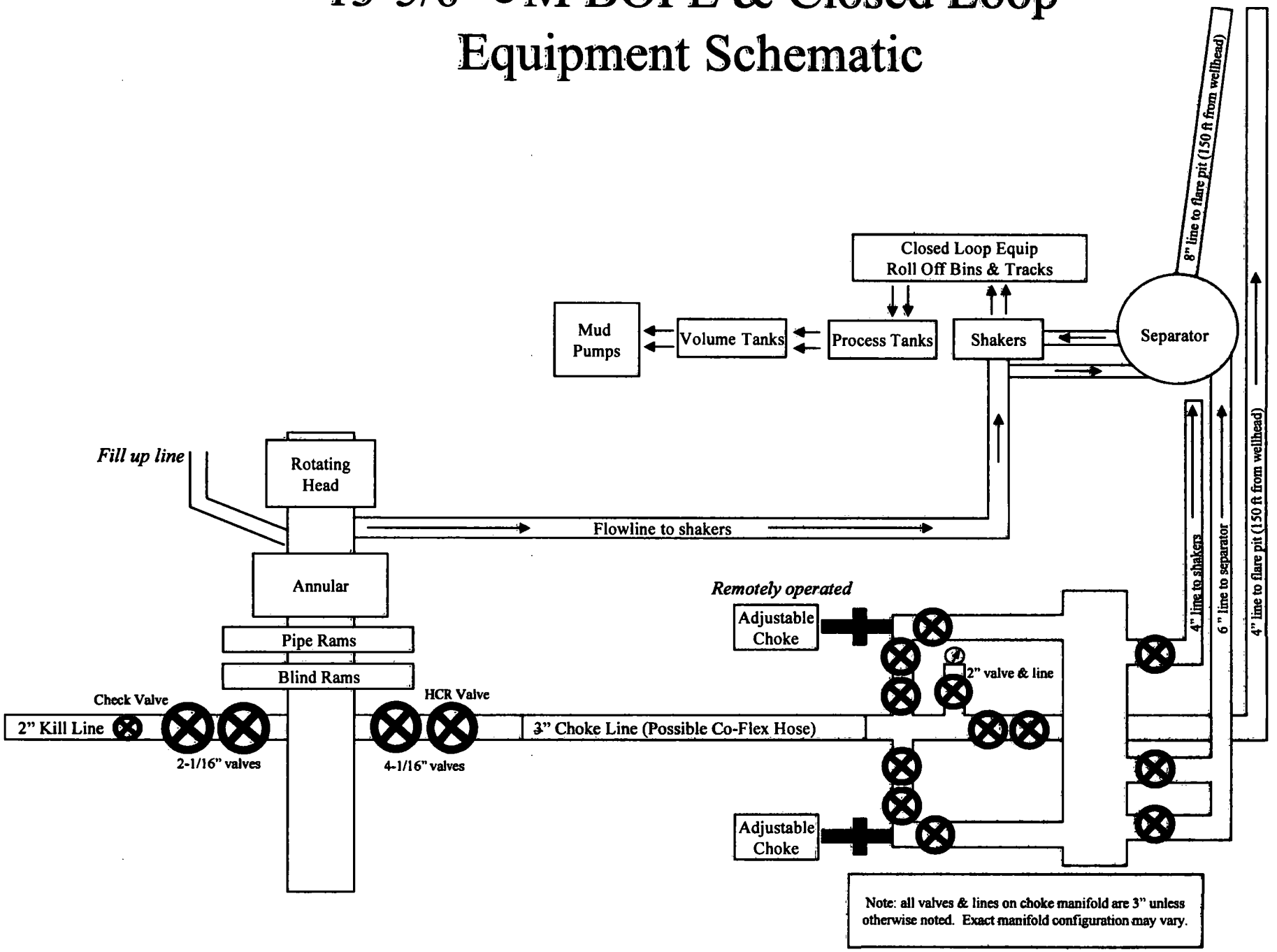

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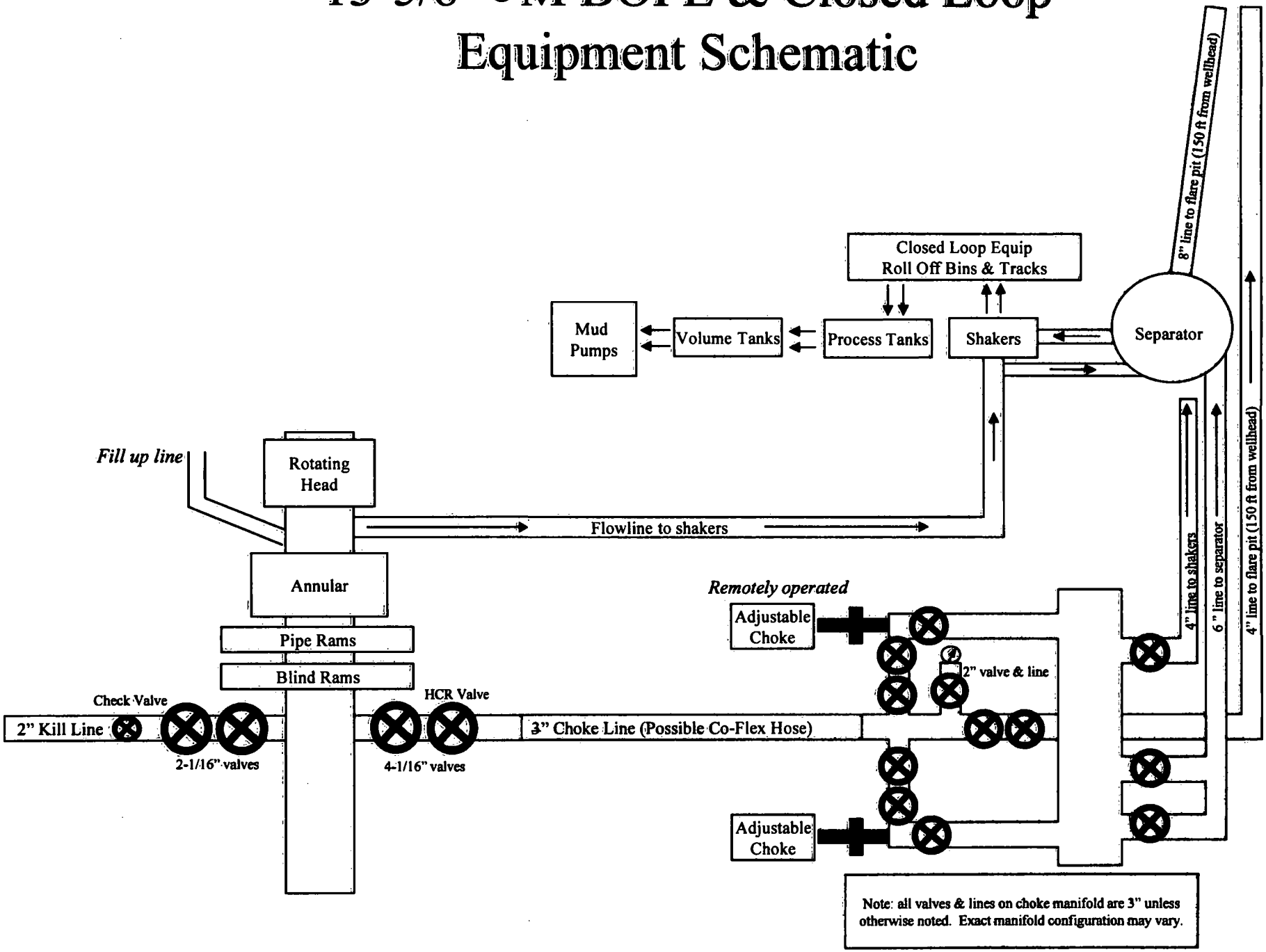

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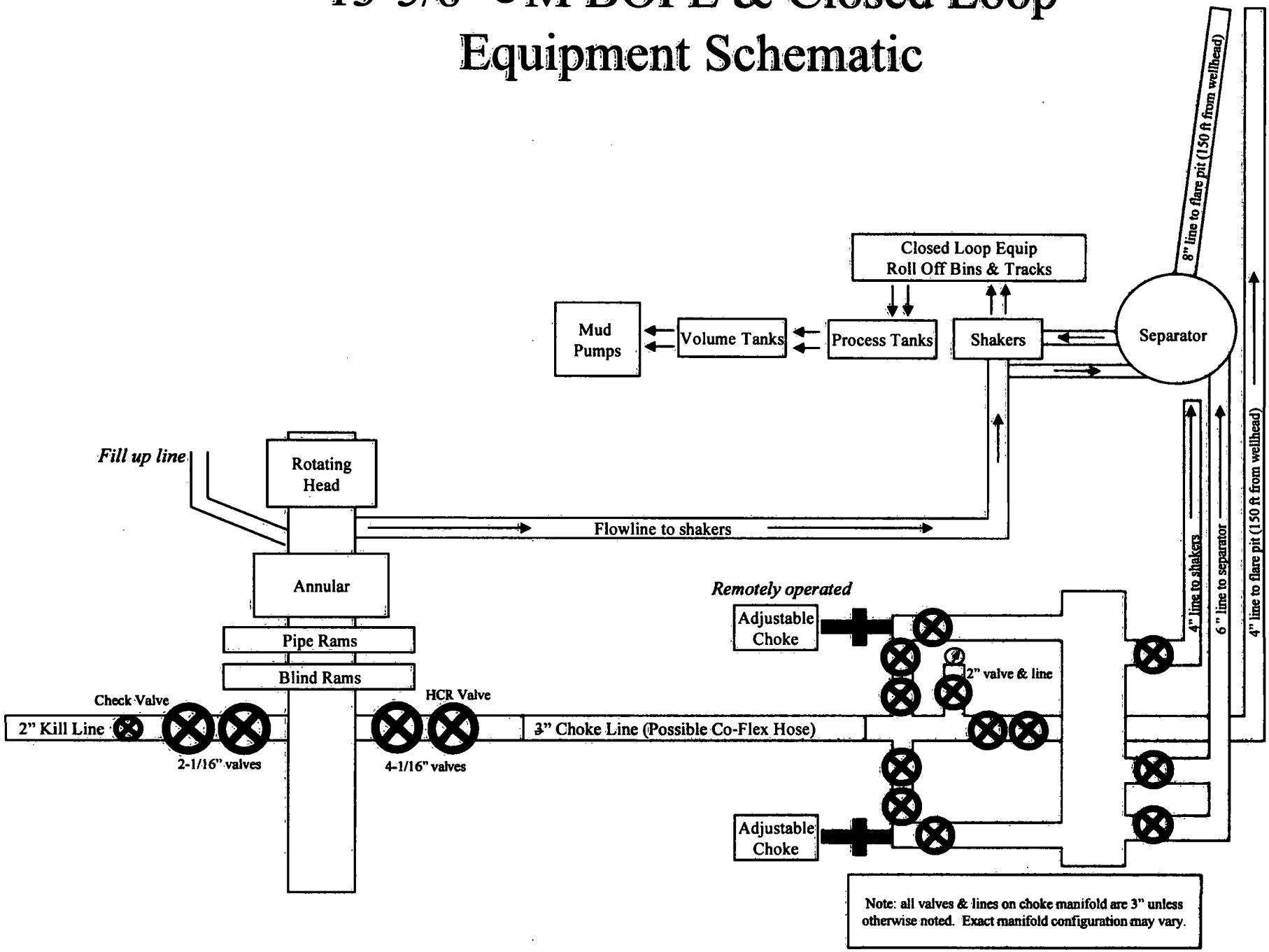

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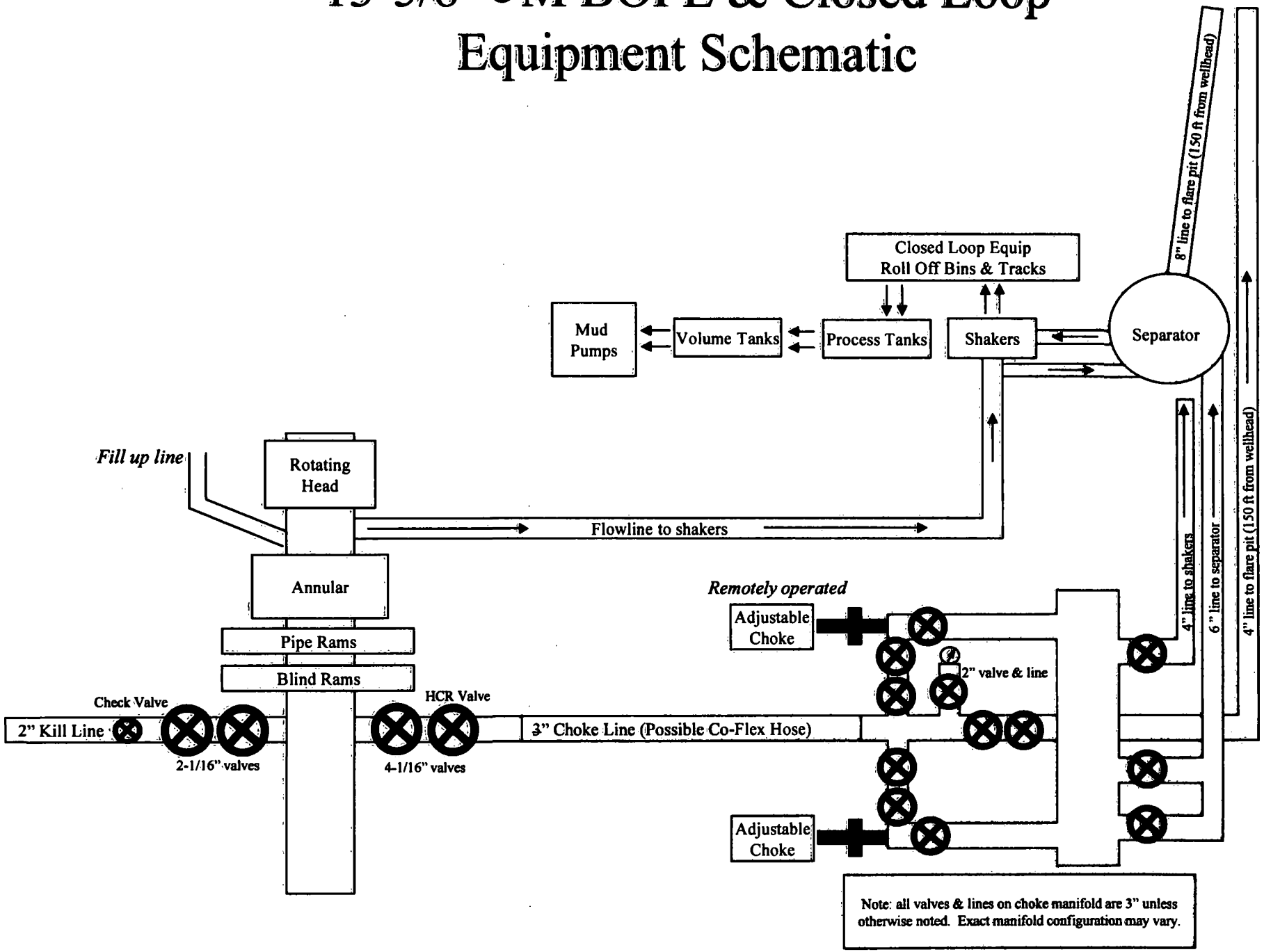

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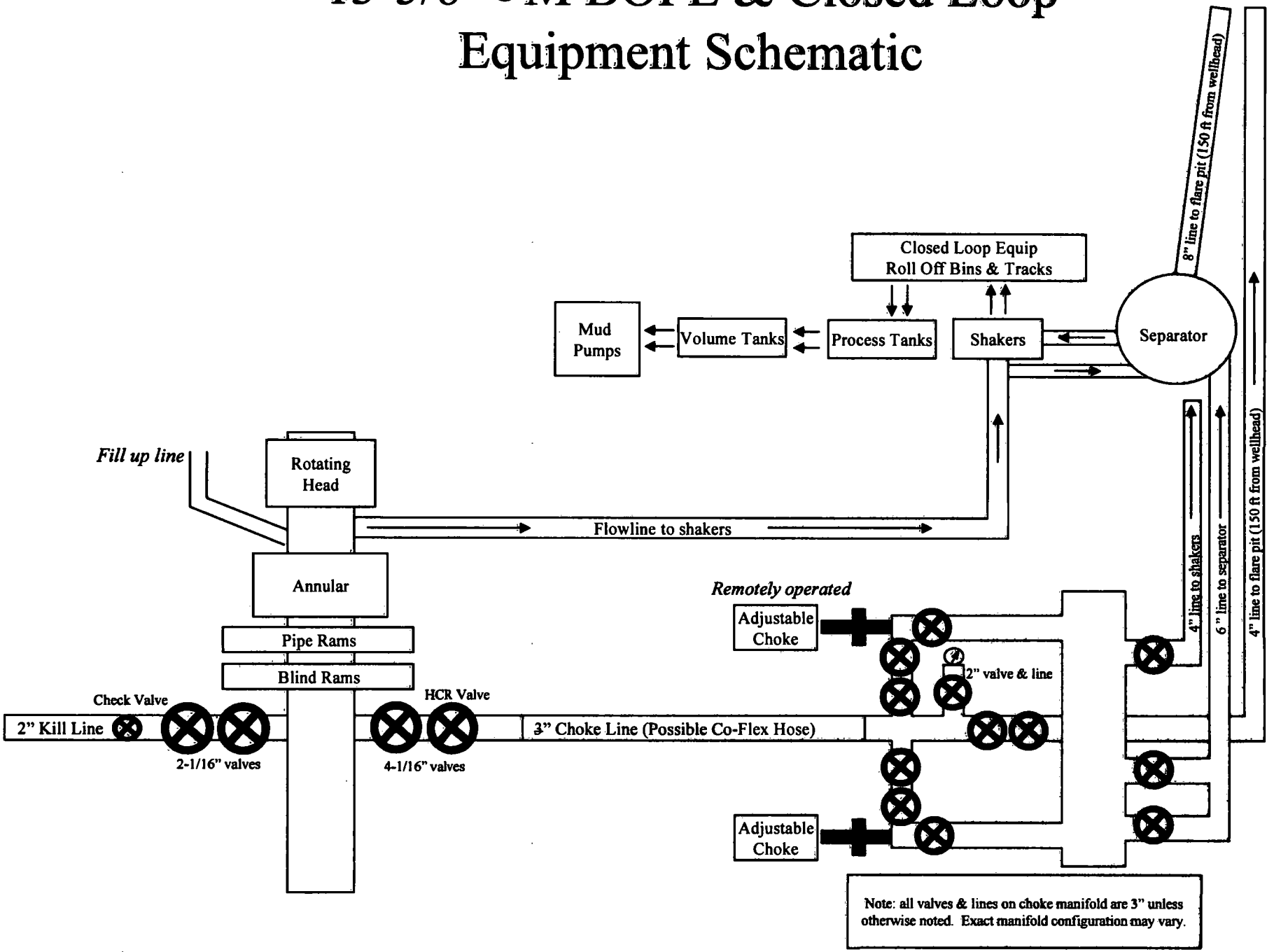

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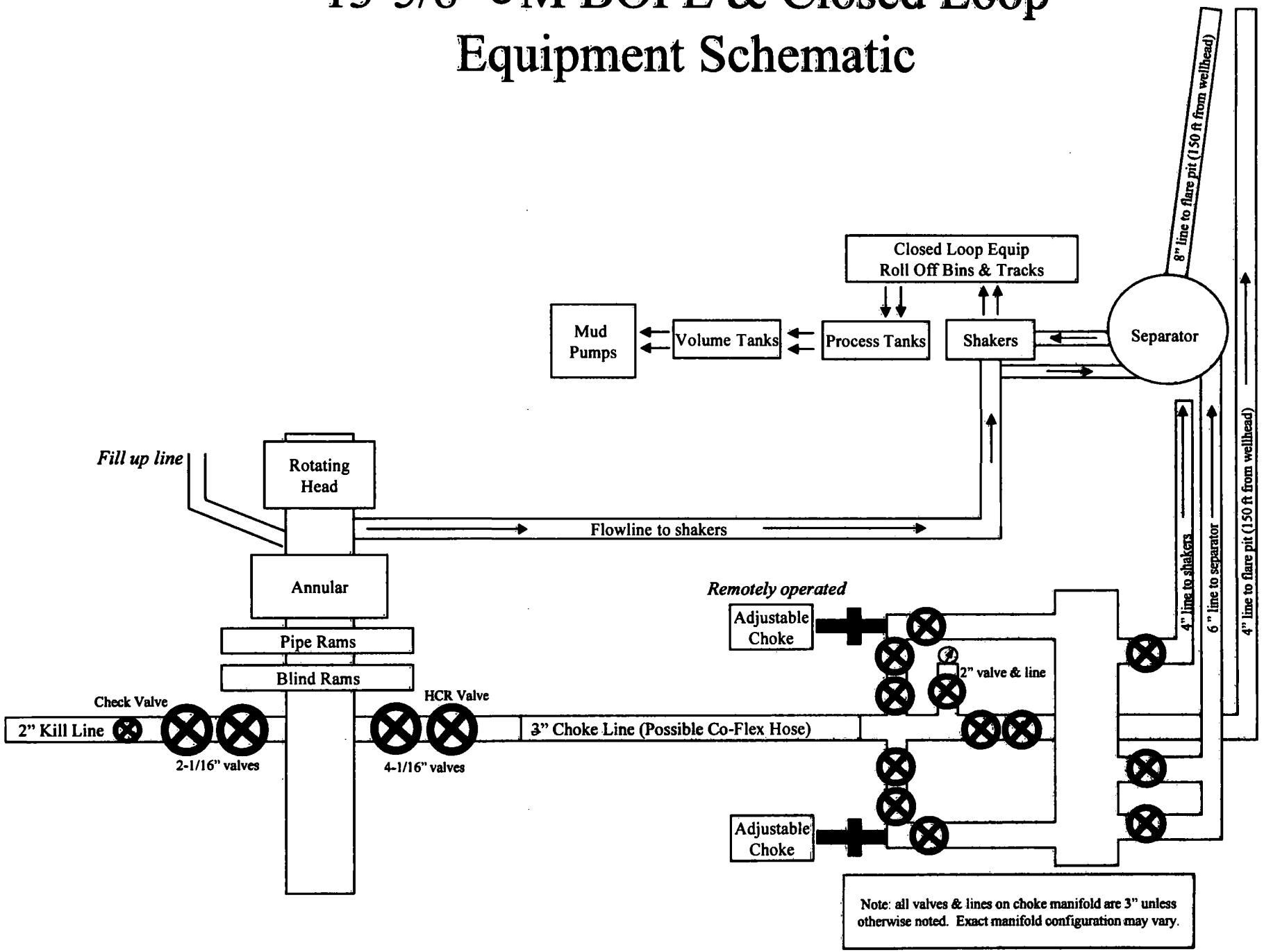

Casing Assumptions and Load Cases

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**
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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)

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

devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

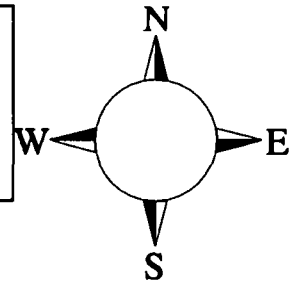
Mustang 8-17 Fed 235H

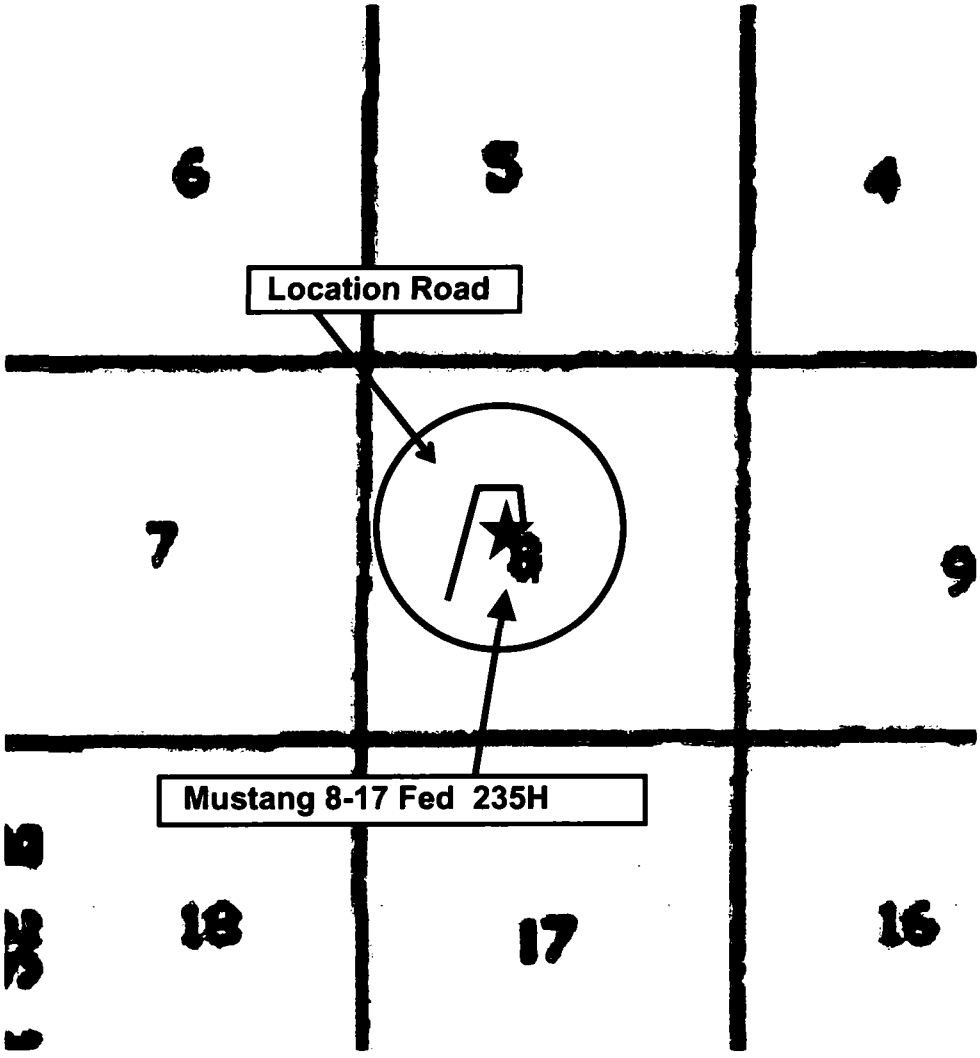
Sec-8 T-25S R-32E
2468' FNL & 1375' FWL
LAT. = 32.1453177' N (NAD83)
LONG = 103.7013630' W

Lea County NM

Mustang 8-17 Fed 235H

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.*





Assumed 100 ppm ROE = **3000'** (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

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**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   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
EHS Professional – Laura Wright		405-439-8129
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 (TX & NM)	(800) 642-7828
	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 and consulting

WCDSC Permian NM

Lea County (NAD83 New Mexico East)
Sec 08-T25S-R32E
Mustang 8-17 Fed 235H

Wellbore #1
Permit Plan 1

Anticollision Report

04 April, 2019

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference	Permit Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.00 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 3/28/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,967.73	Permit Plan 1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Sec 08-T25S-R32E						
Chincoteague 8-32 Fed State Com 522H - Wellbore #1 -	2,750.00	2,751.10	149.97	130.67	7.771	CC
Chincoteague 8-32 Fed State Com 522H - Wellbore #1 -	2,950.00	2,951.06	150.55	129.85	7.274	ES
Chincoteague 8-32 Fed State Com 522H - Wellbore #1 -	4,050.00	4,051.20	176.64	148.32	6.238	SF
Chincoteague 8-32 Fed State Com 523H - Wellbore #1 -						Out of range
Chincoteague 8-32 Fed State Com 531H - Wellbore #1 -	8,130.34	8,127.82	130.54	73.23	2.278	Minor Risk, CC
Chincoteague 8-32 Fed State Com 531H - Wellbore #1 -	8,200.00	8,202.88	130.72	72.91	2.261	Minor Risk, ES
Chincoteague 8-32 Fed State Com 531H - Wellbore #1 -	8,300.00	8,303.38	131.64	73.13	2.250	Minor Risk, SF
Chincoteague 8-32 Fed State Com 532H - Wellbore #1 -	2,804.71	2,806.13	152.44	132.81	7.766	CC
Chincoteague 8-32 Fed State Com 532H - Wellbore #1 -	2,850.00	2,851.38	152.53	132.59	7.651	ES
Chincoteague 8-32 Fed State Com 532H - Wellbore #1 -	3,100.00	3,099.30	158.35	136.71	7.320	SF
Chincoteague 8-32 Fed State Com 533H - Wellbore #1 -						Out of range
Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - P	7,424.54	7,400.74	495.26	442.90	9.458	CC
Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - P	9,750.00	9,763.81	500.76	431.73	7.255	ES
Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - P	9,850.00	9,845.29	504.21	434.45	7.228	SF
Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1	2,750.00	2,750.00	29.99	10.70	1.554	Minor Risk, CC
Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1	2,800.00	2,800.00	30.21	10.56	1.538	Minor Risk, ES, SF
Mustang 8-17 Fed Com 237H - Wellbore #1 - Permit Pla						Out of range
Mustang 8-29 Fed Com 238H - Wellbore #1 - Permit Pla						Out of range
Spence 5 Fed #001 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Sec 20-T25S-R32E						
Cotton Draw Unit 42 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Cotton Draw Unit 43 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Sec 29-T25S-R32E						
Cotton Draw Unit 55 (P&A) - Wellbore #1 - Wellbore #1						Out of range
GE Jordan NCT-1 #019 (P&A) - Wellbore #1 - Wellbore #						Out of range
Morab 29-20 Fed Com 1H - Original Hole - Original Hole	17,967.73	17,692.00	391.91	250.80	2.777	Alert, CC, ES, SF
Morab 29-20 Fed Com 2H - Wellbore #1 - Wellbore #1	17,967.73	17,807.00	1,094.79	856.62	4.597	Alert, CC, ES, SF
Morab 29-20 Fed Com 3H - Wellbore #1 - Wellbore #1						Out of range

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

Anticollision Report

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Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 522H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	1.10	1.10	0.50	0.50	-0.15	149.97	-0.38	149.97				
50.00	50.00	51.10	51.10	0.50	0.50	-0.15	149.97	-0.38	149.97	148.96	1.01	148.973	
100.00	100.00	101.10	101.10	0.52	0.52	-0.15	149.97	-0.38	149.97	148.93	1.04	144.683	
150.00	150.00	151.10	151.10	0.59	0.59	-0.15	149.97	-0.38	149.97	148.79	1.18	126.816	
200.00	200.00	201.10	201.10	0.70	0.70	-0.15	149.97	-0.38	149.97	148.56	1.41	106.591	
250.00	250.00	251.10	251.10	0.84	0.84	-0.15	149.97	-0.38	149.97	148.29	1.68	89.343	
300.00	300.00	301.10	301.10	0.99	0.99	-0.15	149.97	-0.38	149.97	147.99	1.98	75.817	
350.00	350.00	351.10	351.10	1.15	1.15	-0.15	149.97	-0.38	149.97	147.68	2.29	65.360	
400.00	400.00	401.10	401.10	1.31	1.31	-0.15	149.97	-0.38	149.97	147.35	2.62	57.201	
450.00	450.00	451.10	451.10	1.48	1.48	-0.15	149.97	-0.38	149.97	147.01	2.96	50.728	
500.00	500.00	501.10	501.10	1.65	1.65	-0.15	149.97	-0.38	149.97	146.67	3.30	45.502	
550.00	550.00	551.10	551.10	1.82	1.82	-0.15	149.97	-0.38	149.97	146.33	3.64	41.211	
600.00	600.00	601.10	601.10	1.99	1.99	-0.15	149.97	-0.38	149.97	145.99	3.99	37.634	
650.00	650.00	651.10	651.10	2.16	2.17	-0.15	149.97	-0.38	149.97	145.64	4.33	34.612	
700.00	700.00	701.10	701.10	2.34	2.34	-0.15	149.97	-0.38	149.97	145.29	4.68	32.028	
750.00	750.00	751.10	751.10	2.51	2.52	-0.15	149.97	-0.38	149.97	144.94	5.03	29.796	
800.00	800.00	801.10	801.10	2.69	2.69	-0.15	149.97	-0.38	149.97	144.59	5.39	27.849	
850.00	850.00	851.10	851.10	2.87	2.87	-0.15	149.97	-0.38	149.97	144.23	5.74	26.138	
900.00	900.00	901.10	901.10	3.04	3.05	-0.15	149.97	-0.38	149.97	143.88	6.09	24.622	
950.00	950.00	951.10	951.10	3.22	3.22	-0.15	149.97	-0.38	149.97	143.53	6.44	23.270	
1,000.00	1,000.00	1,001.10	1,001.10	3.40	3.40	-0.15	149.97	-0.38	149.97	143.17	6.80	22.057	
1,050.00	1,050.00	1,051.10	1,051.10	3.58	3.58	-0.15	149.97	-0.38	149.97	142.82	7.15	20.963	
1,100.00	1,100.00	1,101.10	1,101.10	3.75	3.76	-0.15	149.97	-0.38	149.97	142.46	7.51	19.972	
1,150.00	1,150.00	1,151.10	1,151.10	3.93	3.93	-0.15	149.97	-0.38	149.97	142.11	7.86	19.069	
1,200.00	1,200.00	1,201.10	1,201.10	4.11	4.11	-0.15	149.97	-0.38	149.97	141.75	8.22	18.244	
1,250.00	1,250.00	1,251.10	1,251.10	4.29	4.29	-0.15	149.97	-0.38	149.97	141.39	8.58	17.487	
1,300.00	1,300.00	1,301.10	1,301.10	4.46	4.47	-0.15	149.97	-0.38	149.97	141.04	8.93	16.790	
1,350.00	1,350.00	1,351.10	1,351.10	4.64	4.65	-0.15	149.97	-0.38	149.97	140.68	9.29	16.146	
1,400.00	1,400.00	1,401.10	1,401.10	4.82	4.82	-0.15	149.97	-0.38	149.97	140.33	9.65	15.549	
1,450.00	1,450.00	1,451.10	1,451.10	5.00	5.00	-0.15	149.97	-0.38	149.97	139.97	10.00	14.995	
1,500.00	1,500.00	1,501.10	1,501.10	5.18	5.18	-0.15	149.97	-0.38	149.97	139.61	10.36	14.478	
1,550.00	1,550.00	1,551.10	1,551.10	5.36	5.36	-0.15	149.97	-0.38	149.97	139.26	10.72	13.996	
1,600.00	1,600.00	1,601.10	1,601.10	5.53	5.54	-0.15	149.97	-0.38	149.97	138.90	11.07	13.545	
1,650.00	1,650.00	1,651.10	1,651.10	5.71	5.72	-0.15	149.97	-0.38	149.97	138.54	11.43	13.122	
1,700.00	1,700.00	1,701.10	1,701.10	5.89	5.90	-0.15	149.97	-0.38	149.97	138.18	11.79	12.724	
1,750.00	1,750.00	1,751.10	1,751.10	6.07	6.07	-0.15	149.97	-0.38	149.97	137.83	12.14	12.350	
1,800.00	1,800.00	1,801.10	1,801.10	6.25	6.25	-0.15	149.97	-0.38	149.97	137.47	12.50	11.997	
1,850.00	1,850.00	1,851.10	1,851.10	6.43	6.43	-0.15	149.97	-0.38	149.97	137.11	12.86	11.663	
1,900.00	1,900.00	1,901.10	1,901.10	6.61	6.61	-0.15	149.97	-0.38	149.97	136.76	13.22	11.348	
1,950.00	1,950.00	1,951.10	1,951.10	6.78	6.79	-0.15	149.97	-0.38	149.97	136.40	13.57	11.049	
2,000.00	2,000.00	2,001.10	2,001.10	6.96	6.97	-0.15	149.97	-0.38	149.97	136.04	13.93	10.766	
2,050.00	2,050.00	2,051.10	2,051.10	7.14	7.15	-0.15	149.97	-0.38	149.97	135.68	14.29	10.496	
2,100.00	2,100.00	2,101.10	2,101.10	7.32	7.32	-0.15	149.97	-0.38	149.97	135.32	14.65	10.240	
2,150.00	2,150.00	2,151.10	2,151.10	7.50	7.50	-0.15	149.97	-0.38	149.97	134.97	15.00	9.996	
2,200.00	2,200.00	2,201.10	2,201.10	7.68	7.68	-0.15	149.97	-0.38	149.97	134.61	15.36	9.763	
2,250.00	2,250.00	2,251.10	2,251.10	7.86	7.86	-0.15	149.97	-0.38	149.97	134.25	15.72	9.541	
2,300.00	2,300.00	2,301.10	2,301.10	8.04	8.04	-0.15	149.97	-0.38	149.97	133.89	16.08	9.328	
2,350.00	2,350.00	2,351.10	2,351.10	8.22	8.22	-0.15	149.97	-0.38	149.97	133.54	16.43	9.125	
2,400.00	2,400.00	2,401.10	2,401.10	8.39	8.40	-0.15	149.97	-0.38	149.97	133.18	16.79	8.931	
2,450.00	2,450.00	2,451.10	2,451.10	8.57	8.58	-0.15	149.97	-0.38	149.97	132.82	17.15	8.745	
2,500.00	2,500.00	2,501.10	2,501.10	8.75	8.76	-0.15	149.97	-0.38	149.97	132.46	17.51	8.566	
2,550.00	2,550.00	2,551.10	2,551.10	8.93	8.93	-0.15	149.97	-0.38	149.97	132.10	17.87	8.394	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 522H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,601.10	2,601.10	9.11	9.11	-0.15	149.97	-0.38	149.97	131.75	18.22	8.229	
2,650.00	2,650.00	2,651.10	2,651.10	9.29	9.29	-0.15	149.97	-0.38	149.97	131.39	18.58	8.071	
2,700.00	2,700.00	2,701.10	2,701.10	9.47	9.47	-0.15	149.97	-0.38	149.97	131.03	18.94	7.918	
2,750.00	2,750.00	2,751.10	2,751.10	9.65	9.65	-0.15	149.97	-0.38	149.97	130.67	19.30	7.771	CC
2,800.00	2,800.00	2,801.10	2,801.10	9.82	9.83	98.91	149.97	-0.38	150.00	130.35	19.65	7.634	
2,850.00	2,849.99	2,851.09	2,851.09	9.99	10.01	99.16	149.97	-0.38	150.11	130.11	20.00	7.506	
2,900.00	2,899.98	2,901.08	2,901.08	10.16	10.19	99.56	149.97	-0.38	150.28	129.94	20.35	7.386	
2,950.00	2,949.96	2,951.06	2,951.06	10.33	10.37	100.13	149.97	-0.38	150.55	129.85	20.70	7.274	ES
3,000.00	2,999.92	3,001.02	3,001.02	10.50	10.55	100.86	149.97	-0.38	150.90	129.86	21.04	7.171	
3,050.00	3,049.86	3,050.96	3,050.96	10.67	10.72	101.75	149.97	-0.38	151.37	129.98	21.39	7.075	
3,100.00	3,099.78	3,100.88	3,100.88	10.84	10.90	102.79	149.97	-0.38	151.98	130.23	21.74	6.989	
3,150.00	3,149.68	3,150.78	3,150.78	11.01	11.08	103.98	149.97	-0.38	152.74	130.64	22.09	6.913	
3,200.00	3,199.54	3,200.64	3,200.64	11.19	11.26	105.30	149.97	-0.38	153.68	131.23	22.45	6.847	
3,250.00	3,249.39	3,250.49	3,250.49	11.36	11.44	106.69	149.97	-0.38	154.75	131.96	22.80	6.788	
3,300.00	3,299.23	3,300.33	3,300.33	11.53	11.62	108.06	149.97	-0.38	155.92	132.77	23.15	6.736	
3,350.00	3,349.08	3,350.18	3,350.18	11.71	11.80	109.40	149.97	-0.38	157.17	133.67	23.50	6.688	
3,400.00	3,398.93	3,400.03	3,400.03	11.88	11.97	110.73	149.97	-0.38	158.51	134.66	23.85	6.646	
3,450.00	3,448.78	3,449.88	3,449.88	12.05	12.15	112.03	149.97	-0.38	159.94	135.73	24.20	6.608	
3,500.00	3,498.63	3,499.73	3,499.73	12.23	12.33	113.31	149.97	-0.38	161.44	136.88	24.56	6.574	
3,550.00	3,548.47	3,550.26	3,550.26	12.40	12.50	114.65	149.82	-0.22	162.92	138.02	24.91	6.542	
3,600.00	3,598.32	3,600.76	3,600.75	12.58	12.68	116.10	149.35	0.25	164.28	139.03	25.25	6.506	
3,650.00	3,648.17	3,651.19	3,651.17	12.76	12.84	117.66	148.57	1.04	165.56	139.96	25.59	6.469	
3,700.00	3,698.02	3,701.56	3,701.52	12.93	13.01	119.33	147.48	2.15	166.77	140.84	25.93	6.431	
3,750.00	3,747.87	3,751.86	3,751.78	13.11	13.18	121.12	146.09	3.57	167.95	141.68	26.27	6.393	
3,800.00	3,797.71	3,802.08	3,801.94	13.29	13.34	123.01	144.39	5.30	169.14	142.52	26.61	6.356	
3,850.00	3,847.56	3,852.21	3,851.99	13.46	13.51	125.01	142.38	7.34	170.37	143.41	26.95	6.321	
3,900.00	3,897.41	3,902.24	3,901.91	13.64	13.67	127.11	140.07	9.68	171.67	144.38	27.29	6.290	
3,950.00	3,947.26	3,952.18	3,951.71	13.82	13.84	129.32	137.46	12.33	173.10	145.47	27.63	6.264	
4,000.00	3,997.11	4,001.69	4,001.07	14.00	14.01	131.54	134.72	15.12	174.74	146.76	27.98	6.246	
4,050.00	4,046.95	4,051.20	4,050.42	14.17	14.17	133.71	131.98	17.91	176.64	148.32	28.32	6.238	SF
4,100.00	4,096.80	4,100.71	4,099.78	14.35	14.34	135.84	129.24	20.70	178.79	150.13	28.66	6.239	
4,150.00	4,146.65	4,150.22	4,149.13	14.53	14.51	137.91	126.50	23.49	181.18	152.18	29.00	6.248	
4,200.00	4,196.50	4,200.27	4,198.49	14.71	14.68	139.93	123.75	26.27	183.81	154.47	29.34	6.264	
4,250.00	4,246.35	4,249.24	4,247.84	14.89	14.84	141.89	121.01	29.06	186.66	156.98	29.68	6.289	
4,300.00	4,296.20	4,298.75	4,297.20	15.07	15.01	143.79	118.27	31.85	189.73	159.71	30.02	6.320	
4,350.00	4,346.04	4,348.26	4,346.55	15.25	15.18	145.63	115.53	34.64	193.01	162.64	30.36	6.356	
4,400.00	4,395.89	4,402.23	4,395.91	15.43	15.36	147.41	112.78	37.43	196.47	165.75	30.72	6.395	
4,450.00	4,445.74	4,447.28	4,445.26	15.61	15.52	149.12	110.04	40.21	200.12	169.07	31.05	6.445	
4,500.00	4,495.59	4,503.21	4,494.61	15.79	15.71	150.77	107.30	43.00	203.95	172.53	31.41	6.492	
4,550.00	4,545.44	4,546.29	4,543.97	15.97	15.86	152.36	104.56	45.79	207.94	176.20	31.73	6.553	
4,600.00	4,595.28	4,604.20	4,593.32	16.15	16.06	153.89	101.81	48.58	212.08	179.98	32.11	6.606	
4,650.00	4,645.13	4,645.31	4,642.68	16.33	16.20	155.36	99.07	51.37	216.37	183.95	32.42	6.674	
4,700.00	4,694.98	4,705.18	4,692.03	16.51	16.41	156.78	96.33	54.15	220.80	188.00	32.80	6.732	
4,750.00	4,744.83	4,744.33	4,741.39	16.69	16.54	158.14	93.59	56.94	225.36	192.25	33.11	6.807	
4,800.00	4,794.68	4,793.84	4,790.74	16.87	16.72	159.44	90.85	59.73	230.04	196.59	33.45	6.877	
4,850.00	4,844.52	4,843.35	4,840.10	17.05	16.89	160.69	88.10	62.52	234.83	201.04	33.80	6.949	
4,900.00	4,894.37	4,907.14	4,889.45	17.23	17.11	161.90	85.36	65.31	239.74	205.55	34.19	7.012	
4,950.00	4,944.22	4,942.37	4,938.81	17.41	17.23	163.05	82.62	68.09	244.74	210.26	34.48	7.097	
5,000.00	4,994.07	5,008.12	4,988.16	17.60	17.46	164.16	79.88	70.88	249.84	214.95	34.89	7.161	
5,050.00	5,043.92	5,041.39	5,037.52	17.78	17.58	165.22	77.13	73.67	255.03	219.85	35.18	7.250	
5,100.00	5,093.76	5,109.10	5,086.87	17.96	17.82	166.24	74.39	76.46	260.30	224.72	35.59	7.315	
5,150.00	5,143.61	5,140.41	5,136.22	18.14	17.93	167.22	71.65	79.25	265.65	229.79	35.87	7.406	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 522H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.00	5,193.46	5,189.92	5,185.58	18.32	18.10	168.16	68.91	82.03	271.08	234.87	36.22	7.485	
5,250.00	5,243.31	5,239.43	5,234.93	18.51	18.28	169.07	66.16	84.82	276.58	240.02	36.56	7.565	
5,300.00	5,293.16	5,288.93	5,284.29	18.69	18.45	169.94	63.42	87.61	282.14	245.23	36.91	7.644	
5,350.00	5,343.00	5,338.44	5,333.64	18.87	18.63	170.77	60.68	90.40	287.77	250.51	37.26	7.724	
5,400.00	5,392.85	5,387.95	5,383.00	19.05	18.80	171.58	57.94	93.19	293.45	255.84	37.61	7.803	
5,450.00	5,442.70	5,437.46	5,432.35	19.24	18.98	172.35	55.20	95.97	299.19	261.23	37.95	7.883	
5,500.00	5,492.55	5,486.97	5,481.71	19.42	19.15	173.10	52.45	98.76	304.98	266.68	38.30	7.962	
5,550.00	5,542.40	5,536.48	5,531.06	19.60	19.33	173.81	49.71	101.55	310.82	272.17	38.65	8.042	
5,600.00	5,592.24	5,585.99	5,580.42	19.78	19.50	174.50	46.97	104.34	316.70	277.70	39.00	8.121	
5,650.00	5,642.09	5,635.50	5,629.77	19.97	19.68	175.17	44.23	107.13	322.63	283.28	39.35	8.199	
5,700.00	5,691.94	5,685.01	5,679.13	20.15	19.86	175.81	41.48	109.91	328.61	288.91	39.70	8.277	
5,750.00	5,741.79	5,734.52	5,728.48	20.33	20.03	176.43	38.74	112.70	334.62	294.57	40.05	8.355	
5,800.00	5,791.64	5,784.03	5,777.84	20.52	20.21	177.03	36.00	115.49	340.67	300.27	40.40	8.432	
5,850.00	5,841.49	5,833.54	5,827.19	20.70	20.39	177.60	33.26	118.28	346.75	306.00	40.75	8.509	
5,900.00	5,891.33	5,883.05	5,876.54	20.88	20.56	178.16	30.51	121.07	352.87	311.77	41.10	8.585	
5,950.00	5,941.18	5,932.56	5,925.90	21.06	20.74	178.69	27.77	123.85	359.02	317.56	41.45	8.661	
6,000.00	5,991.03	5,982.07	5,975.25	21.25	20.92	179.21	25.03	126.64	365.20	323.39	41.80	8.736	
6,050.00	6,040.88	6,031.57	6,024.61	21.43	21.09	179.72	22.29	129.43	371.40	329.25	42.15	8.810	
6,100.00	6,090.73	6,081.08	6,073.96	21.62	21.27	-179.80	19.55	132.22	377.64	335.13	42.51	8.884	
6,150.00	6,140.57	6,130.59	6,123.32	21.80	21.45	-179.33	16.80	135.01	383.90	341.04	42.86	8.957	
6,200.00	6,190.42	6,180.10	6,172.67	21.98	21.63	-178.87	14.06	137.79	390.19	346.98	43.21	9.030	
6,250.00	6,240.27	6,229.61	6,222.03	22.17	21.81	-178.43	11.32	140.58	396.50	352.93	43.56	9.102	
6,300.00	6,290.12	6,279.12	6,271.38	22.35	21.98	-178.01	8.58	143.37	402.83	358.91	43.92	9.173	
6,350.00	6,339.97	6,328.63	6,320.74	22.53	22.16	-177.59	5.83	146.16	409.18	364.91	44.27	9.243	
6,400.00	6,389.81	6,378.14	6,370.09	22.72	22.34	-177.19	3.09	148.95	415.55	370.93	44.62	9.313	
6,450.00	6,439.66	6,427.65	6,419.45	22.90	22.52	-176.81	0.35	151.73	421.95	376.97	44.97	9.382	
6,500.00	6,489.51	6,477.16	6,468.80	23.09	22.70	-176.43	-2.39	154.52	428.38	383.03	45.33	9.450	
6,550.00	6,539.36	6,526.67	6,518.15	23.27	22.88	-176.06	-5.13	157.31	434.79	389.11	45.68	9.518	
6,600.00	6,589.21	6,576.18	6,567.51	23.45	23.05	-175.71	-7.88	160.10	441.23	395.20	46.03	9.585	
6,650.00	6,639.05	6,625.69	6,616.86	23.64	23.23	-175.36	-10.62	162.89	447.70	401.31	46.39	9.651	
6,700.00	6,688.90	6,675.20	6,666.22	23.82	23.41	-175.03	-13.36	165.67	454.17	407.43	46.74	9.717	
6,750.00	6,738.75	6,724.70	6,715.57	24.01	23.59	-174.70	-16.10	168.46	460.67	413.57	47.10	9.781	
6,800.00	6,788.60	6,774.21	6,764.93	24.19	23.77	-174.38	-18.85	171.25	467.17	419.72	47.45	9.846	
6,850.00	6,838.45	6,823.72	6,814.28	24.38	23.95	-174.08	-21.59	174.04	473.69	425.89	47.80	9.909	
6,900.00	6,888.29	6,873.23	6,863.64	24.56	24.13	-173.78	-24.33	176.83	480.23	432.07	48.16	9.972	
6,950.00	6,938.14	6,922.74	6,912.99	24.74	24.31	-173.48	-27.07	179.61	486.78	438.26	48.51	10.034	
7,000.00	6,987.99	6,972.25	6,962.35	24.93	24.49	-173.20	-29.82	182.40	493.33	444.47	48.87	10.095	
7,050.00	7,037.84	7,021.76	7,011.70	25.11	24.67	-172.92	-32.56	185.19	499.90	450.68	49.22	10.156	
7,100.00	7,087.69	7,071.27	7,061.06	25.30	24.85	-172.66	-35.30	187.98	506.49	456.91	49.58	10.216	
7,150.00	7,137.53	7,120.78	7,110.41	25.48	25.03	-172.39	-38.04	190.77	513.08	463.14	49.93	10.275	
7,200.00	7,187.38	7,170.29	7,159.76	25.67	25.21	-172.14	-40.78	193.55	519.68	469.39	50.29	10.334	
7,250.00	7,237.23	7,219.80	7,209.12	25.85	25.39	-171.89	-43.53	196.34	526.29	475.65	50.65	10.392	
7,300.00	7,287.08	7,269.31	7,258.47	26.04	25.57	-171.64	-46.27	199.13	532.92	481.91	51.00	10.449	
7,350.00	7,336.93	7,318.82	7,307.83	26.22	25.75	-171.41	-49.01	201.92	539.55	488.19	51.36	10.506	
7,400.00	7,386.78	7,368.33	7,357.18	26.41	25.93	-171.18	-51.75	204.71	546.19	494.47	51.71	10.562	
7,450.00	7,436.62	7,417.84	7,406.54	26.59	26.11	-170.95	-54.50	207.49	552.84	500.77	52.07	10.617	
7,500.00	7,486.47	7,467.34	7,455.89	26.78	26.29	-170.73	-57.24	210.28	559.49	507.07	52.42	10.672	
7,550.00	7,536.32	7,516.85	7,505.25	26.96	26.47	-170.51	-59.98	213.07	566.16	513.38	52.78	10.727	
7,600.00	7,586.17	7,566.36	7,554.60	27.15	26.65	-170.30	-62.72	215.86	572.83	519.69	53.14	10.780	
7,650.00	7,636.02	7,615.87	7,603.96	27.33	26.83	-170.10	-65.47	218.65	579.51	526.02	53.49	10.833	
7,700.00	7,685.86	7,665.38	7,653.31	27.52	27.01	-169.90	-68.21	221.43	586.20	532.35	53.85	10.886	
7,750.00	7,735.71	7,714.89	7,702.67	27.70	27.20	-169.70	-70.95	224.22	592.89	538.68	54.21	10.938	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 522H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.00	7,785.56	7,764.40	7,752.02	27.89	27.38	-169.51	-73.69	227.01	599.59	545.03	54.56	10.989	
7,850.00	7,835.41	7,813.91	7,801.37	28.07	27.56	-169.32	-76.43	229.80	606.30	551.38	54.92	11.040	
7,900.00	7,885.26	7,863.42	7,850.73	28.26	27.74	-169.14	-79.18	232.59	613.01	557.74	55.28	11.090	
7,950.00	7,935.10	7,912.93	7,900.08	28.44	27.92	-168.96	-81.92	235.37	619.73	564.10	55.63	11.139	
8,000.00	7,984.95	7,962.44	7,949.44	28.63	28.10	-168.78	-84.66	238.16	626.46	570.47	55.99	11.188	
8,050.00	8,034.80	8,011.95	7,998.79	28.81	28.28	-168.61	-87.40	240.95	633.19	576.84	56.35	11.237	
8,100.00	8,084.65	8,061.46	8,048.15	29.00	28.46	-168.44	-90.15	243.74	639.93	583.22	56.71	11.285	
8,150.00	8,134.50	8,110.97	8,097.50	29.18	28.65	-168.28	-92.89	246.53	646.67	589.61	57.06	11.332	
8,200.00	8,184.34	8,160.48	8,146.86	29.37	28.83	-168.11	-95.63	249.31	653.42	595.99	57.42	11.379	
8,250.00	8,234.19	8,209.98	8,196.21	29.55	29.01	-167.96	-98.37	252.10	660.17	602.39	57.78	11.426	
8,300.00	8,284.04	8,259.49	8,245.57	29.74	29.19	-167.80	-101.12	254.89	666.93	608.79	58.14	11.472	
8,350.00	8,333.89	8,309.00	8,294.92	29.92	29.37	-167.65	-103.86	257.68	673.69	615.19	58.49	11.517	
8,400.00	8,383.74	8,358.51	8,344.28	30.11	29.55	-167.50	-106.60	260.47	680.45	621.60	58.85	11.562	
8,450.00	8,433.58	8,408.02	8,393.63	30.29	29.74	-167.35	-109.34	263.25	687.22	628.01	59.21	11.607	
8,500.00	8,483.43	8,457.53	8,442.99	30.48	29.92	-167.21	-112.08	266.04	694.00	634.43	59.57	11.651	
8,550.00	8,533.28	8,507.04	8,492.34	30.67	30.10	-167.07	-114.83	268.83	700.78	640.85	59.93	11.694	
8,600.00	8,583.13	8,556.55	8,541.69	30.85	30.28	-166.93	-117.57	271.62	707.56	647.28	60.28	11.737	
8,650.00	8,632.98	8,606.06	8,591.05	31.04	30.46	-166.80	-120.31	274.41	714.35	653.71	60.64	11.780	
8,700.00	8,682.83	8,655.57	8,640.40	31.22	30.65	-166.67	-123.05	277.19	721.14	660.14	61.00	11.822	
8,750.00	8,732.67	8,705.08	8,689.76	31.41	30.83	-166.54	-125.80	279.98	727.93	666.58	61.36	11.864	
8,800.00	8,782.52	8,754.59	8,739.11	31.59	31.01	-166.41	-128.54	282.77	734.73	673.02	61.72	11.905	
8,850.00	8,832.37	8,804.10	8,788.47	31.78	31.19	-166.28	-131.28	285.56	741.53	679.46	62.08	11.946	
8,900.00	8,882.22	8,853.61	8,837.82	31.96	31.37	-166.16	-134.02	288.35	748.34	685.91	62.43	11.986	
8,950.00	8,932.07	8,903.11	8,887.18	32.15	31.56	-166.04	-136.77	291.13	755.15	692.36	62.79	12.026	
9,000.00	8,981.91	8,952.62	8,936.53	32.34	31.74	-165.92	-139.51	293.92	761.96	698.81	63.15	12.066	
9,050.00	9,031.79	9,004.14	8,987.89	32.52	31.93	-165.82	-142.35	296.81	768.42	704.89	63.53	12.096	
9,100.00	9,081.70	9,053.03	9,046.64	32.70	32.14	-165.71	-145.15	299.66	773.84	709.89	63.95	12.101	
9,150.00	9,131.65	9,122.16	9,105.69	32.88	32.36	-165.63	-147.33	301.88	778.03	713.66	64.37	12.087	
9,200.00	9,181.63	9,181.45	9,164.94	33.06	32.57	-165.57	-148.88	303.45	780.99	716.22	64.78	12.056	
9,250.00	9,231.62	9,240.87	9,224.34	33.24	32.78	-165.54	-149.78	304.36	782.72	717.55	65.18	12.009	
9,300.00	9,281.62	9,300.75	9,282.72	33.41	32.99	95.50	-150.03	304.62	783.22	717.66	65.57	11.946	
9,350.00	9,331.62	9,349.25	9,332.72	33.58	33.15	95.50	-150.03	304.62	783.22	717.32	65.90	11.884	
9,400.00	9,381.62	9,400.75	9,382.72	33.75	33.33	95.50	-150.03	304.62	783.22	716.97	66.25	11.822	
9,450.00	9,431.62	9,449.25	9,432.72	33.92	33.49	95.50	-150.03	304.62	783.22	716.63	66.59	11.762	
9,500.00	9,481.62	9,500.75	9,482.72	34.09	33.67	95.50	-150.03	304.62	783.22	716.28	66.94	11.700	
9,550.00	9,531.62	9,549.25	9,532.72	34.27	33.83	95.50	-150.03	304.62	783.22	715.94	67.28	11.641	
9,600.00	9,581.62	9,600.75	9,582.72	34.44	34.01	95.50	-150.03	304.62	783.22	715.59	67.63	11.581	
9,650.00	9,631.62	9,650.02	9,633.49	34.61	34.17	-84.39	-149.99	304.62	783.22	715.25	67.97	11.523	
9,700.00	9,681.54	9,706.19	9,689.53	34.77	34.36	-84.89	-146.61	304.65	782.72	714.39	68.33	11.455	
9,750.00	9,731.04	9,759.22	9,741.90	34.94	34.53	-86.12	-138.40	304.71	781.81	712.94	68.87	11.382	
9,800.00	9,779.75	9,806.92	9,788.18	35.11	34.68	-87.82	-126.90	304.80	780.42	711.42	68.99	11.312	
9,850.00	9,827.30	9,847.99	9,827.15	35.27	34.80	-89.66	-113.95	304.91	779.84	710.55	69.28	11.256	
9,850.91	9,828.15	9,848.67	9,827.79	35.27	34.80	-89.69	-113.71	304.91	779.83	710.55	69.29	11.255	
9,900.00	9,873.32	9,882.01	9,858.66	35.43	34.89	-91.35	-101.13	305.01	780.61	711.07	69.53	11.227	
9,950.00	9,917.48	9,909.19	9,883.25	35.58	34.96	-92.66	-89.56	305.10	783.39	713.67	69.72	11.236	
10,000.00	9,959.42	9,930.08	9,901.76	35.73	35.01	-93.46	-79.88	305.17	788.70	718.87	69.84	11.294	
10,050.00	9,998.83	9,945.41	9,915.11	35.87	35.05	-93.67	-72.35	305.23	796.88	727.01	69.87	11.406	
10,100.00	10,035.41	9,955.93	9,924.16	36.01	35.08	-93.26	-66.97	305.28	808.06	738.25	69.82	11.574	
10,150.00	10,068.88	9,962.33	9,929.61	36.15	35.09	-92.24	-63.62	305.30	822.25	752.56	69.70	11.797	
10,200.00	10,098.99	9,965.24	9,932.07	36.29	35.10	-90.64	-62.08	305.31	839.30	769.78	69.53	12.072	
10,250.00	10,125.51	9,965.17	9,932.02	36.43	35.10	-88.49	-62.12	305.31	858.96	789.64	69.32	12.391	
10,300.00	10,148.24	9,962.59	9,929.83	36.58	35.09	-85.86	-63.49	305.30	880.91	811.80	69.11	12.747	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 522H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,350.00	10,166.99	9,950.00	9,919.07	36.73	35.06	-82.26	-70.02	305.25	904.86	836.08	68.78	13.156	
10,400.00	10,181.64	9,950.00	9,919.07	36.90	35.06	-79.36	-70.02	305.25	930.23	861.52	68.71	13.539	
10,450.00	10,192.07	9,950.00	9,919.07	37.07	35.06	-76.28	-70.02	305.25	956.87	888.17	68.70	13.928	
10,500.00	10,198.20	9,933.74	9,904.97	37.24	35.02	-72.10	-78.11	305.19	984.21	915.72	68.49	14.371	
10,550.00	10,200.00	9,923.14	9,895.65	37.42	35.00	-68.62	-83.17	305.15	1,012.04	943.60	68.43	14.788	
10,600.00	10,200.00	9,912.56	9,886.26	37.61	34.97	-68.02	-88.04	305.11	1,040.79	972.38	68.41	15.213	
10,650.00	10,200.00	9,900.00	9,875.00	37.81	34.94	-67.31	-93.60	305.07	1,070.90	1,002.53	68.37	15.663	
10,700.00	10,200.00	9,900.00	9,875.00	38.02	34.94	-67.31	-93.60	305.07	1,102.29	1,033.77	68.53	16.086	
10,750.00	10,200.00	9,884.86	9,881.26	38.25	34.90	-66.46	-99.97	305.02	1,134.78	1,066.33	68.45	16.578	
10,800.00	10,200.00	9,876.78	9,853.87	38.48	34.88	-66.00	-103.22	304.99	1,168.40	1,099.92	68.48	17.062	
10,850.00	10,200.00	9,869.20	9,846.89	38.73	34.85	-65.57	-106.17	304.97	1,203.02	1,134.50	68.53	17.556	
10,900.00	10,200.00	9,850.00	9,829.03	38.99	34.80	-64.49	-113.24	304.91	1,238.75	1,170.36	68.39	18.113	
10,950.00	10,200.00	9,850.00	9,829.03	39.26	34.80	-64.49	-113.24	304.91	1,275.05	1,206.50	68.55	18.600	
11,000.00	10,200.00	9,850.00	9,829.03	39.54	34.80	-64.49	-113.24	304.91	1,312.26	1,243.56	68.70	19.102	
11,050.00	10,200.00	9,850.00	9,829.03	39.84	34.80	-64.49	-113.24	304.91	1,350.29	1,281.45	68.84	19.615	
11,100.00	10,200.00	9,850.00	9,829.03	40.14	34.80	-64.49	-113.24	304.91	1,389.09	1,320.12	68.97	20.141	
11,150.00	10,200.00	9,832.06	9,812.15	40.46	34.75	-63.49	-119.30	304.86	1,428.22	1,359.35	68.87	20.737	
11,200.00	10,200.00	9,826.99	9,807.34	40.78	34.74	-63.21	-120.92	304.85	1,468.13	1,399.19	68.93	21.298	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 531H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	2.20	2.20	0.50	0.50	-56.91	293.64	-450.60	537.83				
50.00	50.00	52.20	52.20	0.50	0.50	-56.91	293.64	-450.60	537.83	536.83	1.01	534.147	
100.00	100.00	102.20	102.20	0.52	0.52	-56.91	293.64	-450.60	537.83	536.80	1.04	518.338	
150.00	150.00	152.20	152.20	0.59	0.59	-56.91	293.64	-450.60	537.83	536.65	1.18	453.980	
200.00	200.00	202.20	202.20	0.70	0.71	-56.91	293.64	-450.60	537.83	536.42	1.41	381.506	
250.00	250.00	252.20	252.20	0.84	0.84	-56.91	293.64	-450.60	537.83	536.15	1.68	319.803	
300.00	300.00	302.20	302.20	0.99	0.99	-56.91	293.64	-450.60	537.83	535.85	1.98	271.431	
350.00	350.00	352.20	352.20	1.15	1.15	-56.91	293.64	-450.60	537.83	535.54	2.30	234.036	
400.00	400.00	402.20	402.20	1.31	1.32	-56.91	293.64	-450.60	537.83	535.21	2.63	204.853	
450.00	450.00	452.20	452.20	1.48	1.48	-56.91	293.64	-450.60	537.83	534.87	2.96	181.696	
500.00	500.00	502.20	502.20	1.65	1.65	-56.91	293.64	-450.60	537.83	534.53	3.30	162.995	
550.00	550.00	552.20	552.20	1.82	1.83	-56.91	293.64	-450.60	537.83	534.19	3.64	147.638	
600.00	600.00	602.20	602.20	1.99	2.00	-56.91	293.64	-450.60	537.83	533.85	3.99	134.835	
650.00	650.00	652.20	652.20	2.16	2.17	-56.91	293.64	-450.60	537.83	533.50	4.34	124.017	
700.00	700.00	702.20	702.20	2.34	2.35	-56.91	293.64	-450.60	537.83	533.15	4.69	114.767	
750.00	750.00	752.20	752.20	2.51	2.52	-56.91	293.64	-450.60	537.83	532.80	5.04	106.774	
800.00	800.00	802.20	802.20	2.69	2.70	-56.91	293.64	-450.60	537.83	532.45	5.39	99.803	
850.00	850.00	852.20	852.20	2.87	2.87	-56.91	293.64	-450.60	537.83	532.09	5.74	93.674	
900.00	900.00	902.20	902.20	3.04	3.05	-56.91	293.64	-450.60	537.83	531.74	6.09	88.244	
950.00	950.00	952.20	952.20	3.22	3.23	-56.91	293.64	-450.60	537.83	531.39	6.45	83.401	
1,000.00	1,000.00	1,002.20	1,002.20	3.40	3.41	-56.91	293.64	-450.60	537.83	531.03	6.80	79.057	
1,050.00	1,050.00	1,052.20	1,052.20	3.58	3.58	-56.91	293.64	-450.60	537.83	530.68	7.16	75.139	
1,100.00	1,100.00	1,102.20	1,102.20	3.75	3.76	-56.91	293.64	-450.60	537.83	530.32	7.51	71.587	
1,150.00	1,150.00	1,152.20	1,152.20	3.93	3.94	-56.91	293.64	-450.60	537.83	529.97	7.87	68.353	
1,200.00	1,200.00	1,202.20	1,202.20	4.11	4.12	-56.91	293.64	-450.60	537.83	529.61	8.22	65.397	
1,250.00	1,250.00	1,252.20	1,252.20	4.29	4.29	-56.91	293.64	-450.60	537.83	529.25	8.58	62.684	
1,300.00	1,300.00	1,302.20	1,302.20	4.46	4.47	-56.91	293.64	-450.60	537.83	528.90	8.94	60.186	
1,350.00	1,350.00	1,352.20	1,352.20	4.64	4.65	-56.91	293.64	-450.60	537.83	528.54	9.29	57.878	
1,400.00	1,400.00	1,402.20	1,402.20	4.82	4.83	-56.91	293.64	-450.60	537.83	528.19	9.65	55.740	
1,450.00	1,450.00	1,452.20	1,452.20	5.00	5.01	-56.91	293.64	-450.60	537.83	527.83	10.01	53.754	
1,500.00	1,500.00	1,502.20	1,502.20	5.18	5.19	-56.91	293.64	-450.60	537.83	527.47	10.36	51.903	
1,550.00	1,550.00	1,552.20	1,552.20	5.36	5.36	-56.91	293.64	-450.60	537.83	527.12	10.72	50.175	
1,600.00	1,600.00	1,602.20	1,602.20	5.53	5.54	-56.91	293.64	-450.60	537.83	526.76	11.08	48.558	
1,650.00	1,650.00	1,652.20	1,652.20	5.71	5.72	-56.91	293.64	-450.60	537.83	526.40	11.43	47.042	
1,700.00	1,700.00	1,702.20	1,702.20	5.89	5.90	-56.91	293.64	-450.60	537.83	526.04	11.79	45.617	
1,750.00	1,750.00	1,752.20	1,752.20	6.07	6.08	-56.91	293.64	-450.60	537.83	525.69	12.15	44.275	
1,800.00	1,800.00	1,802.20	1,802.20	6.25	6.26	-56.91	293.64	-450.60	537.83	525.33	12.50	43.010	
1,850.00	1,850.00	1,852.20	1,852.20	6.43	6.44	-56.91	293.64	-450.60	537.83	524.97	12.86	41.815	
1,900.00	1,900.00	1,902.20	1,902.20	6.61	6.61	-56.91	293.64	-450.60	537.83	524.61	13.22	40.685	
1,950.00	1,950.00	1,952.20	1,952.20	6.78	6.79	-56.91	293.64	-450.60	537.83	524.26	13.58	39.613	
2,000.00	2,000.00	2,002.20	2,002.20	6.96	6.97	-56.91	293.64	-450.60	537.83	523.90	13.93	38.597	
2,050.00	2,050.00	2,052.20	2,052.20	7.14	7.15	-56.91	293.64	-450.60	537.83	523.54	14.29	37.631	
2,100.00	2,100.00	2,102.20	2,102.20	7.32	7.33	-56.91	293.64	-450.60	537.83	523.18	14.65	36.713	
2,150.00	2,150.00	2,152.20	2,152.20	7.50	7.51	-56.91	293.64	-450.60	537.83	522.83	15.01	35.838	
2,200.00	2,200.00	2,202.20	2,202.20	7.68	7.69	-56.91	293.64	-450.60	537.83	522.47	15.37	35.004	
2,250.00	2,250.00	2,252.20	2,252.20	7.86	7.87	-56.91	293.64	-450.60	537.83	522.11	15.72	34.207	
2,300.00	2,300.00	2,302.20	2,302.20	8.04	8.04	-56.91	293.64	-450.60	537.83	521.75	16.08	33.446	
2,350.00	2,350.00	2,352.20	2,352.20	8.22	8.22	-56.91	293.64	-450.60	537.83	521.40	16.44	32.718	
2,400.00	2,400.00	2,402.20	2,402.20	8.39	8.40	-56.91	293.64	-450.60	537.83	521.04	16.80	32.021	
2,450.00	2,450.00	2,452.20	2,452.20	8.57	8.58	-56.91	293.64	-450.60	537.83	520.68	17.15	31.353	
2,500.00	2,500.00	2,502.20	2,502.20	8.75	8.76	-56.91	293.64	-450.60	537.83	520.32	17.51	30.712	
2,550.00	2,550.00	2,552.20	2,552.20	8.93	8.94	-56.91	293.64	-450.60	537.83	519.96	17.87	30.097	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 531H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,602.20	2,602.20	9.11	9.12	-56.91	293.64	-450.60	537.83	519.61	18.23	29.506	
2,650.00	2,650.00	2,652.20	2,652.20	9.29	9.30	-56.91	293.64	-450.60	537.83	519.25	18.59	28.938	
2,700.00	2,700.00	2,702.20	2,702.20	9.47	9.48	-56.91	293.64	-450.60	537.83	518.89	18.94	28.391	
2,750.00	2,750.00	2,752.38	2,752.38	9.65	9.66	-56.91	293.64	-450.60	537.83	518.53	19.30	27.864	
2,800.00	2,800.00	2,806.57	2,806.57	9.82	9.84	42.07	293.38	-450.49	537.46	517.80	19.66	27.340	
2,850.00	2,849.99	2,860.74	2,860.73	9.99	10.01	42.08	292.65	-450.19	536.37	516.37	20.00	26.817	
2,900.00	2,899.98	2,914.87	2,914.85	10.16	10.19	42.09	291.45	-449.70	534.57	514.23	20.34	26.279	
2,950.00	2,949.96	2,968.95	2,968.90	10.33	10.37	42.12	289.77	-449.01	532.06	511.38	20.68	25.722	
3,000.00	2,999.92	3,022.97	3,022.86	10.50	10.54	42.15	287.63	-448.13	528.84	507.81	21.03	25.152	
3,050.00	3,049.86	3,072.99	3,072.83	10.67	10.71	42.21	285.41	-447.22	525.09	503.73	21.36	24.583	
3,100.00	3,099.78	3,122.82	3,122.60	10.84	10.87	42.29	283.19	-446.31	521.01	499.32	21.69	24.017	
3,150.00	3,149.68	3,172.62	3,172.35	11.01	11.04	42.42	280.98	-445.40	516.81	494.58	22.03	23.452	
3,200.00	3,199.54	3,222.39	3,222.05	11.19	11.20	42.57	278.77	-444.49	511.90	489.53	22.36	22.889	
3,250.00	3,249.39	3,272.13	3,271.74	11.36	11.37	42.72	276.56	-443.59	507.05	484.35	22.70	22.337	
3,300.00	3,299.23	3,321.88	3,321.43	11.53	11.53	42.87	274.35	-442.68	502.20	479.16	23.04	21.800	
3,350.00	3,349.08	3,371.63	3,371.12	11.71	11.70	43.02	272.14	-441.77	497.35	473.98	23.37	21.278	
3,400.00	3,398.93	3,421.38	3,420.81	11.88	11.86	43.17	269.93	-440.86	492.51	468.80	23.71	20.770	
3,450.00	3,448.78	3,471.12	3,470.50	12.05	12.03	43.33	267.72	-439.96	487.67	463.62	24.05	20.276	
3,500.00	3,498.63	3,520.87	3,520.19	12.23	12.20	43.49	265.52	-439.05	482.84	458.45	24.39	19.795	
3,550.00	3,548.47	3,570.62	3,569.88	12.40	12.37	43.65	263.31	-438.14	478.01	453.27	24.73	19.327	
3,600.00	3,598.32	3,620.37	3,619.57	12.58	12.53	43.82	261.10	-437.23	473.18	448.11	25.07	18.872	
3,650.00	3,648.17	3,670.11	3,669.26	12.76	12.70	43.99	258.89	-436.33	468.36	442.94	25.42	18.428	
3,700.00	3,698.02	3,719.86	3,718.95	12.93	12.87	44.16	256.68	-435.42	463.54	437.78	25.76	17.996	
3,750.00	3,747.87	3,769.61	3,768.64	13.11	13.04	44.34	254.47	-434.51	458.72	432.62	26.10	17.575	
3,800.00	3,797.71	3,819.35	3,818.33	13.29	13.21	44.52	252.26	-433.61	453.91	427.47	26.44	17.165	
3,850.00	3,847.56	3,869.10	3,868.02	13.46	13.38	44.71	250.05	-432.70	449.11	422.32	26.79	16.765	
3,900.00	3,897.41	3,918.85	3,917.71	13.64	13.55	44.90	247.84	-431.79	444.31	417.17	27.13	16.375	
3,950.00	3,947.26	3,968.60	3,967.40	13.82	13.72	45.09	245.63	-430.88	439.51	412.03	27.48	15.995	
4,000.00	3,997.11	4,018.34	4,017.09	14.00	13.89	45.29	243.42	-429.98	434.72	406.90	27.82	15.624	
4,050.00	4,046.95	4,068.09	4,066.78	14.17	14.06	45.49	241.21	-429.07	429.94	401.77	28.17	15.262	
4,100.00	4,096.80	4,117.84	4,116.47	14.35	14.23	45.69	239.00	-428.16	425.16	396.64	28.52	14.909	
4,150.00	4,146.65	4,167.59	4,166.16	14.53	14.40	45.90	236.80	-427.25	420.38	391.52	28.86	14.564	
4,200.00	4,196.50	4,217.33	4,215.85	14.71	14.57	46.12	234.59	-426.35	415.61	386.40	29.21	14.227	
4,250.00	4,246.35	4,267.08	4,265.54	14.89	14.74	46.34	232.38	-425.44	410.85	381.29	29.56	13.899	
4,300.00	4,296.20	4,316.83	4,315.23	15.07	14.91	46.57	230.17	-424.53	406.09	376.19	29.91	13.578	
4,350.00	4,346.04	4,366.58	4,364.92	15.25	15.08	46.80	227.96	-423.62	401.34	371.09	30.26	13.264	
4,400.00	4,395.89	4,416.32	4,414.61	15.43	15.25	47.04	225.75	-422.72	396.60	365.99	30.61	12.958	
4,450.00	4,445.74	4,466.07	4,464.30	15.61	15.43	47.28	223.54	-421.81	391.86	360.91	30.96	12.658	
4,500.00	4,495.59	4,515.82	4,513.99	15.79	15.60	47.53	221.33	-420.90	387.13	355.83	31.31	12.366	
4,550.00	4,545.44	4,565.57	4,563.68	15.97	15.77	47.78	219.12	-419.99	382.41	350.76	31.66	12.080	
4,600.00	4,595.28	4,615.31	4,613.37	16.15	15.94	48.04	216.91	-419.09	377.70	345.69	32.01	11.800	
4,650.00	4,645.13	4,665.06	4,663.06	16.33	16.12	48.31	214.70	-418.18	372.99	340.63	32.36	11.527	
4,700.00	4,694.98	4,714.81	4,712.75	16.51	16.29	48.58	212.49	-417.27	368.29	335.58	32.71	11.259	
4,750.00	4,744.83	4,764.56	4,762.44	16.69	16.46	48.86	210.28	-416.37	363.60	330.54	33.06	10.997	
4,800.00	4,794.68	4,814.30	4,812.13	16.87	16.64	49.15	208.07	-415.46	358.92	325.51	33.41	10.741	
4,850.00	4,844.52	4,864.05	4,861.82	17.05	16.81	49.45	205.87	-414.55	354.25	320.49	33.77	10.491	
4,900.00	4,894.37	4,913.80	4,911.51	17.23	16.98	49.75	203.66	-413.64	349.59	315.47	34.12	10.246	
4,950.00	4,944.22	4,963.54	4,961.20	17.41	17.16	50.07	201.45	-412.74	344.94	310.47	34.47	10.006	
5,000.00	4,994.07	5,013.29	5,010.89	17.60	17.33	50.39	199.24	-411.83	340.30	305.47	34.83	9.771	
5,050.00	5,043.92	5,063.04	5,060.58	17.78	17.50	50.72	197.03	-410.92	335.67	300.49	35.18	9.541	
5,100.00	5,093.76	5,112.79	5,110.27	17.96	17.68	51.06	194.82	-410.01	331.05	295.51	35.53	9.316	
5,150.00	5,143.61	5,162.53	5,159.96	18.14	17.85	51.41	192.61	-409.11	326.44	290.55	35.89	9.096	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 531H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.00	5,193.46	5,212.28	5,209.65	18.32	18.03	51.76	190.40	-408.20	321.85	285.60	36.24	8.880	
5,250.00	5,243.31	5,262.03	5,259.34	18.51	18.20	52.13	188.19	-407.29	317.27	280.67	36.60	8.669	
5,300.00	5,293.16	5,311.78	5,309.03	18.69	18.38	52.51	185.98	-406.38	312.70	275.74	36.95	8.462	
5,350.00	5,343.00	5,361.52	5,358.72	18.87	18.55	52.90	183.77	-405.48	308.14	270.83	37.31	8.259	
5,400.00	5,392.85	5,411.27	5,408.41	19.05	18.73	53.31	181.56	-404.57	303.60	265.94	37.67	8.061	
5,450.00	5,442.70	5,461.02	5,458.10	19.24	18.90	53.72	179.35	-403.66	299.08	261.06	38.02	7.866	
5,500.00	5,492.55	5,510.77	5,507.79	19.42	19.07	54.15	177.14	-402.75	294.57	256.19	38.38	7.676	
5,550.00	5,542.40	5,560.51	5,557.48	19.60	19.25	54.59	174.94	-401.85	290.08	251.35	38.73	7.489	
5,600.00	5,592.24	5,610.26	5,607.17	19.78	19.42	55.04	172.73	-400.94	285.61	246.52	39.09	7.306	
5,650.00	5,642.09	5,660.01	5,656.86	19.97	19.60	55.51	170.52	-400.03	281.15	241.70	39.45	7.127	
5,700.00	5,691.94	5,709.76	5,706.55	20.15	19.78	56.00	168.31	-399.12	276.72	236.91	39.81	6.952	
5,750.00	5,741.79	5,759.50	5,756.24	20.33	19.95	56.50	166.10	-398.22	272.30	232.14	40.16	6.780	
5,800.00	5,791.64	5,809.25	5,805.93	20.52	20.13	57.01	163.89	-397.31	267.90	227.38	40.52	6.611	
5,850.00	5,841.49	5,859.00	5,855.62	20.70	20.30	57.55	161.68	-396.40	263.53	222.65	40.88	6.446	
5,900.00	5,891.33	5,908.75	5,905.31	20.88	20.48	58.10	159.47	-395.50	259.18	217.95	41.24	6.285	
5,950.00	5,941.18	5,958.49	5,955.00	21.06	20.65	58.67	157.26	-394.59	254.86	213.26	41.60	6.127	
6,000.00	5,991.03	6,008.24	6,004.69	21.25	20.83	59.26	155.05	-393.68	250.56	208.60	41.96	5.972	
6,050.00	6,040.88	6,057.99	6,054.38	21.43	21.00	59.86	152.84	-392.77	246.29	203.97	42.32	5.820	
6,100.00	6,090.73	6,107.73	6,104.07	21.62	21.18	60.50	150.63	-391.87	242.05	199.37	42.68	5.672	
6,150.00	6,140.57	6,157.48	6,153.76	21.80	21.36	61.15	148.42	-390.96	237.84	194.80	43.04	5.526	
6,200.00	6,190.42	6,207.23	6,203.45	21.98	21.53	61.83	146.21	-390.05	233.66	190.26	43.40	5.384	
6,250.00	6,240.27	6,256.98	6,253.14	22.17	21.71	62.53	144.01	-389.14	229.51	185.75	43.76	5.245	
6,300.00	6,290.12	6,306.72	6,302.83	22.35	21.89	63.25	141.80	-388.24	225.40	181.28	44.12	5.109	
6,350.00	6,339.97	6,356.47	6,352.52	22.53	22.06	64.01	139.59	-387.33	221.33	176.85	44.48	4.976	Alert
6,400.00	6,389.81	6,406.22	6,402.21	22.72	22.24	64.79	137.38	-386.42	217.29	172.45	44.84	4.846	Alert
6,450.00	6,439.66	6,455.97	6,451.90	22.90	22.41	65.60	135.17	-385.51	213.30	168.10	45.20	4.719	Alert
6,500.00	6,489.51	6,505.71	6,501.59	23.09	22.59	66.44	132.96	-384.61	209.36	163.79	45.56	4.595	Alert
6,550.00	6,539.36	6,555.46	6,551.28	23.27	22.77	67.32	130.75	-383.70	205.45	159.53	45.93	4.474	Alert
6,600.00	6,589.21	6,605.21	6,600.97	23.45	22.94	68.22	128.54	-382.79	201.60	155.31	46.29	4.355	Alert
6,650.00	6,639.05	6,654.96	6,650.66	23.64	23.12	69.17	126.33	-381.88	197.80	151.15	46.65	4.240	Alert
6,700.00	6,688.90	6,704.70	6,700.35	23.82	23.30	70.15	124.12	-380.98	194.06	147.05	47.01	4.128	Alert
6,750.00	6,738.75	6,754.45	6,750.04	24.01	23.47	71.16	121.91	-380.07	190.38	143.00	47.38	4.018	Alert
6,800.00	6,788.60	6,804.20	6,799.73	24.19	23.65	72.22	119.70	-379.16	186.75	139.01	47.74	3.912	Alert
6,850.00	6,838.45	6,853.95	6,849.42	24.38	23.83	73.32	117.49	-378.26	183.20	135.09	48.10	3.808	Alert
6,900.00	6,888.29	6,903.69	6,899.11	24.56	24.00	74.46	115.28	-377.35	179.71	131.24	48.47	3.708	Alert
6,950.00	6,938.14	6,953.44	6,948.80	24.74	24.18	75.64	113.08	-376.44	176.30	127.47	48.83	3.610	Alert
7,000.00	6,987.99	7,003.19	6,998.49	24.93	24.36	76.87	110.87	-375.53	172.97	123.77	49.20	3.516	Alert
7,050.00	7,037.84	7,052.94	7,048.18	25.11	24.54	78.15	108.66	-374.63	169.72	120.16	49.56	3.424	Alert
7,100.00	7,087.69	7,102.68	7,097.87	25.30	24.71	79.48	106.45	-373.72	166.55	116.63	49.92	3.336	Alert
7,150.00	7,137.53	7,152.43	7,147.56	25.48	24.89	80.85	104.24	-372.81	163.48	113.19	50.29	3.251	Alert
7,200.00	7,187.38	7,202.18	7,197.25	25.67	25.07	82.28	102.03	-371.90	160.51	109.86	50.65	3.169	Alert
7,250.00	7,237.23	7,251.92	7,246.94	25.85	25.24	83.76	99.82	-371.00	157.64	106.63	51.02	3.090	Alert
7,300.00	7,287.08	7,301.67	7,296.63	26.04	25.42	85.30	97.61	-370.09	154.88	103.50	51.38	3.015	Alert
7,350.00	7,336.93	7,351.42	7,346.33	26.22	25.60	86.89	95.40	-369.18	152.24	100.50	51.74	2.942	Alert
7,400.00	7,386.78	7,401.17	7,396.02	26.41	25.78	88.53	93.19	-368.27	149.72	97.61	52.10	2.873	Alert
7,450.00	7,436.62	7,450.91	7,445.71	26.59	25.95	90.23	90.98	-367.37	147.33	94.86	52.47	2.808	Alert
7,500.00	7,486.47	7,500.66	7,495.40	26.78	26.13	91.98	88.77	-366.46	145.07	92.24	52.83	2.746	Alert
7,550.00	7,536.32	7,550.41	7,545.09	26.96	26.31	93.78	86.56	-365.55	142.95	89.76	53.19	2.688	Alert
7,600.00	7,586.17	7,600.16	7,594.78	27.15	26.49	95.64	84.36	-364.64	140.98	87.43	53.55	2.633	Alert
7,650.00	7,636.02	7,649.90	7,644.47	27.33	26.66	97.55	82.15	-363.74	139.16	85.25	53.91	2.581	Alert
7,700.00	7,685.86	7,700.35	7,694.16	27.52	26.84	99.50	79.94	-362.83	137.50	83.23	54.27	2.534	Alert
7,750.00	7,735.71	7,749.40	7,743.85	27.70	27.02	101.50	77.73	-361.92	136.01	81.38	54.63	2.490	Minor Risk

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 531H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.00	7,785.56	7,799.15	7,793.54	27.89	27.20	103.54	75.52	-361.01	134.68	79.70	54.98	2.450	Minor Risk
7,850.00	7,835.41	7,848.89	7,843.23	28.07	27.37	105.62	73.31	-360.11	133.54	78.20	55.34	2.413	Minor Risk
7,900.00	7,885.26	7,901.36	7,892.92	28.26	27.56	107.73	71.10	-359.20	132.57	76.87	55.70	2.380	Minor Risk
7,950.00	7,935.10	7,948.39	7,942.61	28.44	27.73	109.87	68.89	-358.29	131.79	75.74	56.04	2.351	Minor Risk
8,000.00	7,984.95	8,001.86	7,992.30	28.63	27.92	112.03	66.68	-357.39	131.19	74.78	56.41	2.326	Minor Risk
8,050.00	8,034.80	8,047.88	8,041.99	28.81	28.08	114.21	64.47	-356.48	130.79	74.04	56.75	2.305	Minor Risk
8,100.00	8,084.65	8,102.37	8,091.68	29.00	28.28	116.40	62.26	-355.57	130.57	73.46	57.11	2.286	Minor Risk
8,130.34	8,114.90	8,127.82	8,121.83	29.11	28.37	117.73	60.92	-355.02	130.54	73.23	57.31	2.278	Minor Risk, CC
8,150.00	8,134.50	8,147.38	8,141.37	29.18	28.44	118.59	60.05	-354.66	130.55	73.11	57.44	2.273	Minor Risk
8,200.00	8,184.34	8,202.88	8,191.06	29.37	28.64	120.78	57.84	-353.76	130.72	72.91	57.81	2.261	Minor Risk, ES
8,250.00	8,234.19	8,246.87	8,240.75	29.55	28.80	122.96	55.63	-352.85	131.09	72.95	58.14	2.255	Minor Risk
8,300.00	8,284.04	8,303.38	8,290.44	29.74	29.00	125.13	53.43	-351.94	131.64	73.13	58.51	2.250	Minor Risk, SF
8,350.00	8,333.89	8,346.37	8,340.13	29.92	29.15	127.27	51.22	-351.03	132.39	73.56	58.83	2.250	Minor Risk
8,400.00	8,383.74	8,403.89	8,389.82	30.11	29.36	129.39	49.01	-350.13	133.31	74.11	59.20	2.252	Minor Risk
8,450.00	8,433.58	8,445.88	8,439.51	30.29	29.51	131.47	46.80	-349.22	134.42	74.91	59.52	2.259	Minor Risk
8,500.00	8,483.43	8,504.39	8,489.20	30.48	29.72	133.52	44.59	-348.31	135.71	75.82	59.89	2.268	Minor Risk
8,550.00	8,533.28	8,545.36	8,538.89	30.67	29.86	135.53	42.38	-347.40	137.17	76.96	60.21	2.278	Minor Risk
8,600.00	8,583.13	8,604.90	8,588.58	30.85	30.08	137.50	40.17	-346.50	138.79	78.21	60.58	2.291	Minor Risk
8,650.00	8,632.98	8,644.85	8,638.27	31.04	30.22	139.41	37.96	-345.59	140.58	79.68	60.89	2.309	Minor Risk
8,700.00	8,682.83	8,705.40	8,687.96	31.22	30.44	141.28	35.75	-344.68	142.51	81.24	61.28	2.326	Minor Risk
8,750.00	8,732.67	8,744.35	8,737.65	31.41	30.58	143.10	33.54	-343.77	144.60	83.02	61.58	2.348	Minor Risk
8,800.00	8,782.52	8,805.91	8,787.34	31.59	30.80	144.86	31.33	-342.87	146.83	84.86	61.97	2.369	Minor Risk
8,850.00	8,832.37	8,843.84	8,837.03	31.78	30.93	146.57	29.12	-341.96	149.20	86.92	62.27	2.396	Minor Risk
8,900.00	8,882.22	8,906.41	8,886.72	31.96	31.16	148.22	26.91	-341.05	151.69	89.03	62.66	2.421	Minor Risk
8,950.00	8,932.07	8,943.34	8,936.41	32.15	31.29	149.82	24.70	-340.15	154.31	91.34	62.97	2.451	Minor Risk
9,000.00	8,981.91	9,006.92	8,986.10	32.34	31.52	151.37	22.50	-339.24	157.04	93.68	63.36	2.478	Minor Risk
9,050.00	9,031.79	9,042.86	9,035.82	32.52	31.65	152.82	20.28	-338.33	159.57	95.91	63.66	2.507	Alert
9,100.00	9,081.70	9,092.69	9,085.59	32.70	31.82	154.13	18.07	-337.42	161.60	97.59	64.01	2.525	Alert
9,150.00	9,131.65	9,142.21	9,135.06	32.88	32.00	155.21	16.08	-336.60	163.17	98.81	64.36	2.535	Alert
9,200.00	9,181.63	9,191.74	9,184.57	33.06	32.18	155.97	14.68	-336.03	164.31	99.60	64.70	2.539	Alert
9,250.00	9,231.62	9,241.33	9,234.15	33.24	32.35	156.40	13.86	-335.69	164.99	99.94	65.05	2.536	Alert
9,300.00	9,281.62	9,291.00	9,283.82	33.41	32.52	57.55	13.64	-335.60	165.19	99.80	65.39	2.526	Alert
9,350.00	9,331.62	9,341.00	9,333.82	33.58	32.69	57.55	13.64	-335.60	165.19	99.46	65.73	2.513	Alert
9,400.00	9,381.62	9,409.00	9,383.82	33.75	32.92	57.55	13.64	-335.60	165.19	99.06	66.14	2.498	Minor Risk
9,450.00	9,431.62	9,441.00	9,433.82	33.92	33.03	57.55	13.64	-335.60	165.19	98.78	66.42	2.487	Minor Risk
9,500.00	9,481.62	9,509.00	9,483.82	34.09	33.26	57.55	13.64	-335.60	165.19	98.37	66.82	2.472	Minor Risk
9,550.00	9,531.62	9,541.00	9,533.82	34.27	33.37	57.55	13.64	-335.60	165.19	98.09	67.10	2.462	Minor Risk
9,600.00	9,581.62	9,591.00	9,583.82	34.44	33.54	57.55	13.64	-335.60	165.19	97.75	67.44	2.449	Minor Risk
9,603.36	9,584.98	9,594.36	9,587.18	34.45	33.55	-122.33	13.64	-335.60	165.20	97.73	67.47	2.449	Minor Risk
9,650.00	9,631.62	9,640.08	9,632.90	34.61	33.71	-122.34	13.67	-335.60	165.22	97.45	67.78	2.438	Minor Risk
9,700.00	9,681.54	9,682.93	9,675.69	34.77	33.85	-123.34	15.71	-335.58	167.95	99.96	67.99	2.470	Minor Risk
9,750.00	9,731.04	9,724.00	9,716.45	34.94	33.99	-125.63	20.66	-335.54	175.48	107.37	68.09	2.577	Alert
9,800.00	9,779.75	9,761.93	9,753.70	35.11	34.12	-128.53	27.81	-335.49	188.45	120.44	68.01	2.771	Alert
9,850.00	9,827.30	9,795.79	9,786.47	35.27	34.23	-131.29	36.27	-335.42	207.46	139.74	67.72	3.063	Alert
9,900.00	9,873.32	9,825.03	9,814.34	35.43	34.32	-133.36	45.12	-335.35	232.60	165.33	67.27	3.458	Alert
9,950.00	9,917.48	9,850.00	9,837.75	35.58	34.40	-134.46	53.79	-335.28	263.42	196.67	66.75	3.946	Alert
10,000.00	9,959.42	9,869.36	9,855.63	35.73	34.47	-134.11	61.21	-335.22	299.17	233.01	66.16	4.522	Alert
10,050.00	9,998.83	9,884.85	9,869.76	35.87	34.51	-132.26	67.59	-335.17	338.93	273.28	65.65	5.163	
10,100.00	10,035.41	9,900.00	9,883.39	36.01	34.56	-129.24	74.18	-335.11	381.85	316.41	65.44	5.835	
10,150.00	10,068.88	9,900.00	9,883.39	36.15	34.56	-120.50	74.18	-335.11	427.07	362.39	64.68	6.603	
10,200.00	10,098.99	9,909.24	9,891.61	36.29	34.59	-111.36	78.38	-335.08	473.84	409.14	64.71	7.323	
10,250.00	10,125.51	9,911.34	9,893.48	36.43	34.60	-96.27	79.36	-335.07	521.66	457.06	64.60	8.075	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 531H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,300.00	10,148.24	9,911.05	9,893.22	36.58	34.60	-77.57	79.22	-335.07	569.96	505.37	64.59	8.825	
10,350.00	10,166.99	9,900.00	9,883.39	36.73	34.56	-56.73	74.18	-335.11	618.42	554.12	64.30	9.617	
10,400.00	10,181.64	9,900.00	9,883.39	36.90	34.56	-43.90	74.18	-335.11	666.33	601.71	64.62	10.312	
10,450.00	10,192.07	9,900.00	9,883.39	37.07	34.56	-34.67	74.18	-335.11	713.63	648.81	65.02	10.976	
10,500.00	10,198.20	9,900.00	9,883.39	37.24	34.56	-28.11	74.18	-335.11	760.11	694.63	65.48	11.609	
10,550.00	10,200.00	9,883.02	9,868.09	37.42	34.51	-22.75	66.81	-335.17	805.17	739.68	65.49	12.295	
10,600.00	10,200.00	9,874.49	9,860.33	37.61	34.48	-22.28	63.28	-335.20	850.02	784.25	65.77	12.924	
10,650.00	10,200.00	9,866.49	9,853.00	37.81	34.46	-21.85	60.08	-335.23	895.22	829.19	66.03	13.557	
10,700.00	10,200.00	9,850.00	9,837.75	38.02	34.40	-21.01	53.79	-335.28	940.86	874.80	66.06	14.242	
10,750.00	10,200.00	9,850.00	9,837.75	38.25	34.40	-21.01	53.79	-335.28	986.57	920.11	66.46	14.845	
10,800.00	10,200.00	9,850.00	9,837.75	38.48	34.40	-21.01	53.79	-335.28	1,032.68	965.87	66.80	15.458	
10,850.00	10,200.00	9,850.00	9,837.75	38.73	34.40	-21.01	53.79	-335.28	1,079.13	1,012.02	67.11	16.080	
10,900.00	10,200.00	9,833.07	9,821.92	38.99	34.35	-20.20	47.80	-335.33	1,125.51	1,058.44	67.08	16.780	
10,950.00	10,200.00	9,827.46	9,816.64	39.26	34.33	-19.94	45.92	-335.34	1,172.26	1,105.02	67.24	17.434	
11,000.00	10,200.00	9,822.15	9,811.62	39.54	34.31	-19.71	44.18	-335.36	1,219.19	1,151.79	67.40	18.090	
11,050.00	10,200.00	9,817.12	9,806.84	39.84	34.30	-19.48	42.58	-335.37	1,266.29	1,198.75	67.54	18.749	
11,100.00	10,200.00	9,800.00	9,790.51	40.14	34.24	-18.76	37.46	-335.41	1,313.73	1,246.24	67.49	19.466	
11,150.00	10,200.00	9,800.00	9,790.51	40.46	34.24	-18.76	37.46	-335.41	1,361.01	1,293.32	67.69	20.107	
11,200.00	10,200.00	9,800.00	9,790.51	40.78	34.24	-18.76	37.46	-335.41	1,408.48	1,340.61	67.87	20.752	
11,250.00	10,200.00	9,800.00	9,790.51	41.12	34.24	-18.76	37.46	-335.41	1,456.12	1,388.09	68.04	21.402	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 532H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.70	0.70	0.50	0.50	11.15	150.25	29.62	153.14				
50.00	50.00	50.70	50.70	0.50	0.50	11.15	150.25	29.62	153.14	152.14	1.01	152.134	
100.00	100.00	100.70	100.70	0.52	0.52	11.15	150.25	29.62	153.14	152.11	1.04	147.797	
150.00	150.00	150.70	150.70	0.59	0.59	11.15	150.25	29.62	153.14	151.96	1.18	129.582	
200.00	200.00	200.70	200.70	0.70	0.70	11.15	150.25	29.62	153.14	151.74	1.41	108.923	
250.00	250.00	250.70	250.70	0.84	0.84	11.15	150.25	29.62	153.14	151.48	1.68	91.295	
300.00	300.00	300.70	300.70	0.99	0.99	11.15	150.25	29.62	153.14	151.17	1.98	77.468	
350.00	350.00	350.70	350.70	1.15	1.15	11.15	150.25	29.62	153.14	150.85	2.29	66.780	
400.00	400.00	400.70	400.70	1.31	1.31	11.15	150.25	29.62	153.14	150.52	2.62	58.440	
450.00	450.00	450.70	450.70	1.48	1.48	11.15	150.25	29.62	153.14	150.19	2.96	51.825	
500.00	500.00	500.70	500.70	1.65	1.65	11.15	150.25	29.62	153.14	149.85	3.29	46.483	
550.00	550.00	550.70	550.70	1.82	1.82	11.15	150.25	29.62	153.14	149.50	3.64	42.098	
600.00	600.00	600.70	600.70	1.99	1.99	11.15	150.25	29.62	153.14	149.16	3.98	38.443	
650.00	650.00	650.70	650.70	2.16	2.17	11.15	150.25	29.62	153.14	148.81	4.33	35.355	
700.00	700.00	700.70	700.70	2.34	2.34	11.15	150.25	29.62	153.14	148.46	4.68	32.715	
750.00	750.00	750.70	750.70	2.51	2.52	11.15	150.25	29.62	153.14	148.11	5.03	30.434	
800.00	800.00	800.70	800.70	2.69	2.69	11.15	150.25	29.62	153.14	147.76	5.38	28.446	
850.00	850.00	850.70	850.70	2.87	2.87	11.15	150.25	29.62	153.14	147.41	5.74	26.697	
900.00	900.00	900.70	900.70	3.04	3.05	11.15	150.25	29.62	153.14	147.05	6.09	25.148	
950.00	950.00	950.70	950.70	3.22	3.22	11.15	150.25	29.62	153.14	146.70	6.44	23.767	
1,000.00	1,000.00	1,000.70	1,000.70	3.40	3.40	11.15	150.25	29.62	153.14	146.34	6.80	22.528	
1,050.00	1,050.00	1,050.70	1,050.70	3.58	3.58	11.15	150.25	29.62	153.14	145.99	7.15	21.411	
1,100.00	1,100.00	1,100.70	1,100.70	3.75	3.76	11.15	150.25	29.62	153.14	145.63	7.51	20.398	
1,150.00	1,150.00	1,150.70	1,150.70	3.93	3.93	11.15	150.25	29.62	153.14	145.28	7.86	19.476	
1,200.00	1,200.00	1,200.70	1,200.70	4.11	4.11	11.15	150.25	29.62	153.14	144.92	8.22	18.633	
1,250.00	1,250.00	1,250.70	1,250.70	4.29	4.29	11.15	150.25	29.62	153.14	144.57	8.57	17.860	
1,300.00	1,300.00	1,300.70	1,300.70	4.46	4.47	11.15	150.25	29.62	153.14	144.21	8.93	17.148	
1,350.00	1,350.00	1,350.70	1,350.70	4.64	4.64	11.15	150.25	29.62	153.14	143.85	9.29	16.490	
1,400.00	1,400.00	1,400.70	1,400.70	4.82	4.82	11.15	150.25	29.62	153.14	143.50	9.64	15.880	
1,450.00	1,450.00	1,450.70	1,450.70	5.00	5.00	11.15	150.25	29.62	153.14	143.14	10.00	15.314	
1,500.00	1,500.00	1,500.70	1,500.70	5.18	5.18	11.15	150.25	29.62	153.14	142.79	10.36	14.786	
1,550.00	1,550.00	1,550.70	1,550.70	5.36	5.36	11.15	150.25	29.62	153.14	142.43	10.71	14.294	
1,600.00	1,600.00	1,600.70	1,600.70	5.53	5.54	11.15	150.25	29.62	153.14	142.07	11.07	13.833	
1,650.00	1,650.00	1,650.70	1,650.70	5.71	5.72	11.15	150.25	29.62	153.14	141.71	11.43	13.401	
1,700.00	1,700.00	1,700.70	1,700.70	5.89	5.89	11.15	150.25	29.62	153.14	141.36	11.78	12.995	
1,750.00	1,750.00	1,750.70	1,750.70	6.07	6.07	11.15	150.25	29.62	153.14	141.00	12.14	12.612	
1,800.00	1,800.00	1,800.70	1,800.70	6.25	6.25	11.15	150.25	29.62	153.14	140.64	12.50	12.252	
1,850.00	1,850.00	1,850.70	1,850.70	6.43	6.43	11.15	150.25	29.62	153.14	140.29	12.86	11.911	
1,900.00	1,900.00	1,900.70	1,900.70	6.61	6.61	11.15	150.25	29.62	153.14	139.93	13.21	11.589	
1,950.00	1,950.00	1,950.70	1,950.70	6.78	6.79	11.15	150.25	29.62	153.14	139.57	13.57	11.284	
2,000.00	2,000.00	2,000.70	2,000.70	6.96	6.97	11.15	150.25	29.62	153.14	139.21	13.93	10.994	
2,050.00	2,050.00	2,050.70	2,050.70	7.14	7.14	11.15	150.25	29.62	153.14	138.86	14.29	10.719	
2,100.00	2,100.00	2,100.70	2,100.70	7.32	7.32	11.15	150.25	29.62	153.14	138.50	14.64	10.457	
2,150.00	2,150.00	2,150.70	2,150.70	7.50	7.50	11.15	150.25	29.62	153.14	138.14	15.00	10.208	
2,200.00	2,200.00	2,200.70	2,200.70	7.68	7.68	11.15	150.25	29.62	153.14	137.78	15.36	9.970	
2,250.00	2,250.00	2,250.70	2,250.70	7.86	7.86	11.15	150.25	29.62	153.14	137.42	15.72	9.743	
2,300.00	2,300.00	2,300.70	2,300.70	8.04	8.04	11.15	150.25	29.62	153.14	137.07	16.08	9.527	
2,350.00	2,350.00	2,350.70	2,350.70	8.22	8.22	11.15	150.25	29.62	153.14	136.71	16.43	9.319	
2,400.00	2,400.00	2,400.70	2,400.70	8.39	8.40	11.15	150.25	29.62	153.14	136.35	16.79	9.121	
2,450.00	2,450.00	2,450.70	2,450.70	8.57	8.58	11.15	150.25	29.62	153.14	135.99	17.15	8.930	
2,500.00	2,500.00	2,500.70	2,500.70	8.75	8.75	11.15	150.25	29.62	153.14	135.64	17.51	8.748	
2,550.00	2,550.00	2,550.87	2,550.87	8.93	8.93	11.24	150.18	29.83	153.11	135.25	17.86	8.573	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 532H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,601.03	2,601.02	9.11	9.10	11.48	149.97	30.47	153.03	134.82	18.21	8.403	
2,650.00	2,650.00	2,651.17	2,651.15	9.29	9.27	11.89	149.62	31.51	152.91	134.35	18.56	8.239	
2,700.00	2,700.00	2,701.29	2,701.25	9.47	9.44	12.47	149.14	32.98	152.74	133.83	18.91	8.079	
2,750.00	2,750.00	2,751.38	2,751.30	9.65	9.61	13.21	148.52	34.85	152.55	133.30	19.25	7.923	
2,800.00	2,800.00	2,801.42	2,801.28	9.82	9.78	113.16	147.76	37.14	152.44	132.84	19.60	7.779	
2,804.71	2,804.71	2,806.13	2,805.99	9.84	9.79	113.27	147.68	37.38	152.44	132.81	19.63	7.766 CC	
2,850.00	2,849.99	2,851.38	2,851.16	9.99	9.95	114.45	146.86	39.84	152.53	132.59	19.94	7.651 ES	
2,900.00	2,899.98	2,901.25	2,900.92	10.16	10.12	116.04	145.83	42.95	152.88	132.60	20.28	7.540	
2,950.00	2,949.96	2,950.99	2,950.53	10.33	10.29	117.92	144.67	46.46	153.55	132.93	20.62	7.448	
3,000.00	2,999.92	3,000.60	2,999.96	10.50	10.46	120.07	143.37	50.36	154.63	133.67	20.95	7.379	
3,050.00	3,049.86	3,050.04	3,049.20	10.67	10.63	122.47	141.95	54.66	156.19	134.90	21.29	7.335	
3,100.00	3,099.78	3,099.30	3,098.21	10.84	10.80	125.08	140.40	59.34	158.35	136.71	21.63	7.320 SF	
3,150.00	3,149.68	3,148.36	3,146.98	11.01	10.96	127.87	138.72	64.40	161.17	139.20	21.97	7.336	
3,200.00	3,199.54	3,197.20	3,195.48	11.19	11.13	130.79	136.92	69.83	164.77	142.46	22.31	7.386	
3,250.00	3,249.39	3,245.85	3,243.74	11.36	11.30	133.78	135.00	75.63	169.05	146.41	22.64	7.466	
3,300.00	3,299.23	3,294.32	3,291.78	11.53	11.47	136.73	132.95	81.80	173.93	150.95	22.97	7.571	
3,350.00	3,349.08	3,342.63	3,339.60	11.71	11.64	139.64	130.79	88.33	179.42	156.11	23.30	7.699	
3,400.00	3,398.93	3,407.44	3,387.06	11.88	11.87	142.46	128.51	95.19	185.54	161.85	23.69	7.833	
3,450.00	3,448.78	3,439.34	3,435.16	12.05	11.98	145.22	126.12	102.41	192.23	168.27	23.96	8.023	
3,500.00	3,498.63	3,488.03	3,483.25	12.23	12.15	147.79	123.73	109.64	199.35	175.06	24.29	8.207	
3,550.00	3,548.47	3,536.73	3,531.35	12.40	12.32	150.19	121.33	116.86	206.85	182.22	24.62	8.401	
3,600.00	3,598.32	3,585.42	3,579.45	12.58	12.50	152.42	118.94	124.08	214.68	189.73	24.95	8.603	
3,650.00	3,648.17	3,634.12	3,627.54	12.76	12.67	154.49	116.54	131.30	222.82	197.53	25.29	8.812	
3,700.00	3,698.02	3,682.81	3,675.64	12.93	12.84	156.42	114.15	138.53	231.22	205.60	25.62	9.025	
3,750.00	3,747.87	3,731.51	3,723.74	13.11	13.02	158.21	111.75	145.75	239.88	213.92	25.95	9.242	
3,800.00	3,797.71	3,780.20	3,771.83	13.29	13.19	159.88	109.36	152.97	248.74	222.45	26.29	9.462	
3,850.00	3,847.56	3,828.90	3,819.93	13.46	13.37	161.44	106.97	160.20	257.81	231.18	26.63	9.683	
3,900.00	3,897.41	3,877.59	3,868.03	13.64	13.54	162.89	104.57	167.42	267.04	240.08	26.96	9.904	
3,950.00	3,947.26	3,926.28	3,916.12	13.82	13.72	164.25	102.18	174.64	276.44	249.14	27.30	10.126	
4,000.00	3,997.11	3,974.98	3,964.22	14.00	13.89	165.52	99.78	181.86	285.97	258.34	27.64	10.347	
4,050.00	4,046.95	4,023.67	4,012.32	14.17	14.07	166.70	97.39	189.09	295.64	267.66	27.98	10.567	
4,100.00	4,096.80	4,072.37	4,060.41	14.35	14.25	167.81	94.99	196.31	305.42	277.10	28.32	10.786	
4,150.00	4,146.65	4,121.06	4,108.51	14.53	14.42	168.86	92.60	203.53	315.30	286.65	28.66	11.003	
4,200.00	4,196.50	4,169.76	4,156.61	14.71	14.60	169.84	90.21	210.76	325.28	296.29	29.00	11.218	
4,250.00	4,246.35	4,218.45	4,204.70	14.89	14.78	170.76	87.81	217.98	335.35	306.01	29.34	11.430	
4,300.00	4,296.20	4,267.15	4,252.80	15.07	14.95	171.63	85.42	225.20	345.50	315.82	29.68	11.640	
4,350.00	4,346.04	4,315.84	4,300.90	15.25	15.13	172.45	83.02	232.43	355.72	325.70	30.02	11.848	
4,400.00	4,395.89	4,364.54	4,348.99	15.43	15.31	173.22	80.63	239.65	366.01	335.64	30.37	12.053	
4,450.00	4,445.74	4,413.23	4,397.09	15.61	15.49	173.95	78.23	246.87	376.36	345.64	30.71	12.255	
4,500.00	4,495.59	4,461.93	4,445.19	15.79	15.67	174.65	75.84	254.09	386.76	355.70	31.06	12.454	
4,550.00	4,545.44	4,510.62	4,493.28	15.97	15.84	175.31	73.44	261.32	397.22	365.81	31.40	12.650	
4,600.00	4,595.28	4,559.32	4,541.38	16.15	16.02	175.93	71.05	268.54	407.72	375.97	31.75	12.843	
4,650.00	4,645.13	4,608.01	4,589.48	16.33	16.20	176.52	68.66	275.76	418.27	386.18	32.09	13.033	
4,700.00	4,694.98	4,656.71	4,637.57	16.51	16.38	177.08	66.26	282.99	428.86	396.42	32.44	13.221	
4,750.00	4,744.83	4,705.40	4,685.67	16.69	16.56	177.62	63.87	290.21	439.48	406.70	32.78	13.405	
4,800.00	4,794.68	4,754.10	4,733.77	16.87	16.74	178.13	61.47	297.43	450.14	417.01	33.13	13.587	
4,850.00	4,844.52	4,802.79	4,781.86	17.05	16.92	178.62	59.08	304.66	460.84	427.36	33.48	13.765	
4,900.00	4,894.37	4,851.49	4,829.96	17.23	17.10	179.09	56.68	311.88	471.57	437.74	33.83	13.941	
4,950.00	4,944.22	4,900.18	4,878.06	17.41	17.28	179.53	54.29	319.10	482.32	448.14	34.18	14.113	
5,000.00	4,994.07	4,948.88	4,926.15	17.60	17.46	179.96	51.90	326.32	493.10	458.58	34.52	14.283	
5,050.00	5,043.92	5,002.43	4,974.25	17.78	17.66	-179.64	49.50	333.55	503.91	469.02	34.89	14.443	
5,100.00	5,093.76	5,046.27	5,022.35	17.96	17.82	-179.25	47.11	340.77	514.73	479.51	35.22	14.614	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 532H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,150.00	5,143.61	5,105.04	5,070.44	18.14	18.04	-178.87	44.71	347.99	525.59	489.98	35.61	14.760	
5,200.00	5,193.46	5,143.66	5,118.54	18.32	18.18	-178.51	42.32	355.22	536.46	500.54	35.92	14.935	
5,250.00	5,243.31	5,207.65	5,166.64	18.51	18.42	-178.17	39.92	362.44	547.35	511.02	36.33	15.067	
5,300.00	5,293.16	5,241.05	5,214.73	18.69	18.55	-177.83	37.53	369.66	558.26	521.64	36.62	15.244	
5,350.00	5,343.00	5,289.74	5,262.83	18.87	18.73	-177.52	35.13	376.88	569.18	532.21	36.97	15.395	
5,400.00	5,392.85	5,338.44	5,310.92	19.05	18.91	-177.21	32.74	384.11	580.13	542.81	37.32	15.544	
5,450.00	5,442.70	5,387.13	5,359.02	19.24	19.09	-176.91	30.35	391.33	591.09	553.41	37.67	15.690	
5,500.00	5,492.55	5,435.83	5,407.12	19.42	19.27	-176.63	27.95	398.55	602.06	564.03	38.02	15.833	
5,550.00	5,542.40	5,484.52	5,455.21	19.60	19.45	-176.35	25.56	405.78	613.04	574.67	38.38	15.975	
5,600.00	5,592.24	5,533.22	5,503.31	19.78	19.64	-176.09	23.16	413.00	624.04	585.32	38.73	16.114	
5,650.00	5,642.09	5,581.91	5,551.41	19.97	19.82	-175.83	20.77	420.22	635.06	595.98	39.08	16.250	
5,700.00	5,691.94	5,630.61	5,599.50	20.15	20.00	-175.58	18.37	427.45	646.08	606.65	39.43	16.385	
5,750.00	5,741.79	5,679.30	5,647.60	20.33	20.18	-175.35	15.98	434.67	657.11	617.33	39.78	16.517	
5,800.00	5,791.64	5,727.99	5,695.70	20.52	20.37	-175.11	13.59	441.89	668.16	628.02	40.14	16.647	
5,850.00	5,841.49	5,776.69	5,743.79	20.70	20.55	-174.89	11.19	449.11	679.21	638.72	40.49	16.775	
5,900.00	5,891.33	5,825.38	5,791.89	20.88	20.73	-174.67	8.80	456.34	690.28	649.44	40.84	16.901	
5,950.00	5,941.18	5,874.08	5,839.99	21.06	20.91	-174.46	6.40	463.56	701.35	660.16	41.20	17.025	
6,000.00	5,991.03	5,922.77	5,888.08	21.25	21.10	-174.26	4.01	470.78	712.43	670.88	41.55	17.147	
6,050.00	6,040.88	5,971.47	5,936.18	21.43	21.28	-174.06	1.61	478.01	723.52	681.62	41.90	17.267	
6,100.00	6,090.73	6,020.16	5,984.28	21.62	21.46	-173.87	-0.78	485.23	734.62	692.37	42.26	17.385	
6,150.00	6,140.57	6,068.86	6,032.37	21.80	21.64	-173.69	-3.17	492.45	745.73	703.12	42.61	17.501	
6,200.00	6,190.42	6,117.55	6,080.47	21.98	21.83	-173.51	-5.57	499.68	756.84	713.88	42.96	17.615	
6,250.00	6,240.27	6,166.25	6,128.57	22.17	22.01	-173.33	-7.96	506.90	767.98	724.64	43.32	17.728	
6,300.00	6,290.12	6,214.94	6,176.66	22.35	22.19	-173.16	-10.36	514.12	779.09	735.42	43.67	17.839	
6,350.00	6,339.97	6,263.64	6,224.76	22.53	22.38	-173.00	-12.75	521.34	790.22	746.20	44.03	17.948	
6,400.00	6,389.81	6,312.33	6,272.86	22.72	22.56	-172.84	-15.15	528.57	801.36	756.98	44.38	18.056	
6,450.00	6,439.66	6,361.03	6,320.95	22.90	22.74	-172.68	-17.54	535.79	812.51	767.77	44.74	18.162	
6,500.00	6,489.51	6,409.72	6,369.05	23.09	22.93	-172.53	-19.94	543.01	823.66	778.57	45.09	18.266	
6,550.00	6,539.36	6,458.42	6,417.15	23.27	23.11	-172.38	-22.33	550.24	834.81	789.37	45.45	18.369	
6,600.00	6,589.21	6,507.11	6,465.24	23.45	23.30	-172.24	-24.72	557.46	845.98	800.17	45.80	18.470	
6,650.00	6,639.05	6,555.81	6,513.34	23.64	23.48	-172.10	-27.12	564.68	857.14	810.98	46.16	18.570	
6,700.00	6,688.90	6,604.50	6,561.44	23.82	23.66	-171.96	-29.51	571.90	868.31	821.80	46.51	18.668	
6,750.00	6,738.75	6,653.20	6,609.53	24.01	23.85	-171.83	-31.91	579.13	879.49	832.62	46.87	18.765	
6,800.00	6,788.60	6,701.89	6,657.63	24.19	24.03	-171.70	-34.30	586.35	890.67	843.44	47.23	18.860	
6,850.00	6,838.45	6,750.59	6,705.73	24.38	24.22	-171.57	-36.70	593.57	901.85	854.27	47.58	18.954	
6,900.00	6,888.29	6,799.28	6,753.82	24.56	24.40	-171.45	-39.09	600.80	913.04	865.10	47.94	19.047	
6,950.00	6,938.14	6,847.98	6,801.92	24.74	24.58	-171.33	-41.48	608.02	924.23	875.94	48.29	19.138	
7,000.00	6,987.99	6,903.33	6,850.02	24.93	24.79	-171.21	-43.88	615.24	935.43	886.75	48.67	19.218	
7,050.00	7,037.84	6,945.37	6,898.11	25.11	24.95	-171.10	-46.27	622.47	946.63	897.62	49.01	19.317	
7,100.00	7,087.69	7,005.94	6,946.21	25.30	25.18	-170.98	-48.67	629.69	957.83	908.42	49.41	19.387	
7,150.00	7,137.53	7,042.76	6,994.31	25.48	25.32	-170.87	-51.06	636.91	969.04	919.32	49.72	19.490	
7,200.00	7,187.38	7,091.45	7,042.40	25.67	25.51	-170.77	-53.46	644.13	980.25	930.17	50.08	19.575	
7,250.00	7,237.23	7,140.15	7,090.50	25.85	25.69	-170.66	-55.85	651.36	991.46	941.03	50.43	19.659	
7,300.00	7,287.08	7,188.84	7,138.60	26.04	25.87	-170.56	-58.24	658.58	1,002.68	951.89	50.79	19.742	
7,350.00	7,336.93	7,237.54	7,186.69	26.22	26.06	-170.46	-60.64	665.80	1,013.89	962.75	51.15	19.823	
7,400.00	7,386.78	7,286.23	7,234.79	26.41	26.24	-170.36	-63.03	673.03	1,025.12	973.61	51.50	19.904	
7,450.00	7,436.62	7,334.93	7,282.89	26.59	26.43	-170.27	-65.43	680.25	1,036.34	984.48	51.86	19.983	
7,500.00	7,486.47	7,383.62	7,330.98	26.78	26.61	-170.17	-67.82	687.47	1,047.57	995.35	52.22	20.061	
7,550.00	7,536.32	7,432.32	7,379.08	26.96	26.80	-170.08	-70.22	694.70	1,058.80	1,006.22	52.58	20.139	
7,600.00	7,586.17	7,481.01	7,427.18	27.15	26.98	-169.99	-72.61	701.92	1,070.03	1,017.10	52.93	20.215	
7,650.00	7,636.02	7,529.70	7,475.27	27.33	27.17	-169.90	-75.01	709.14	1,081.27	1,027.98	53.29	20.290	
7,700.00	7,685.86	7,578.40	7,523.37	27.52	27.35	-169.82	-77.40	716.36	1,092.50	1,038.85	53.65	20.364	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 532H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,750.00	7,735.71	7,627.09	7,571.47	27.70	27.54	-169.73	-79.79	723.59	1,103.74	1,049.74	54.01	20.437	
7,800.00	7,785.56	7,675.79	7,619.56	27.89	27.72	-169.65	-82.19	730.81	1,114.98	1,060.62	54.36	20.510	
7,850.00	7,835.41	7,724.48	7,667.66	28.07	27.91	-169.57	-84.58	738.03	1,126.23	1,071.51	54.72	20.581	
7,900.00	7,885.26	7,773.18	7,715.76	28.26	28.09	-169.49	-86.98	745.26	1,137.47	1,082.39	55.08	20.651	
7,950.00	7,935.10	7,821.87	7,763.85	28.44	28.28	-169.41	-89.37	752.48	1,148.72	1,093.28	55.44	20.721	
8,000.00	7,984.95	7,870.57	7,811.95	28.63	28.48	-169.34	-91.77	759.70	1,159.97	1,104.18	55.80	20.790	
8,050.00	8,034.80	7,919.26	7,860.05	28.81	28.65	-169.26	-94.16	766.92	1,171.22	1,115.07	56.15	20.857	
8,100.00	8,084.65	7,967.96	7,908.14	29.00	28.83	-169.19	-96.55	774.15	1,182.48	1,125.97	56.51	20.924	
8,150.00	8,134.50	8,016.65	7,956.24	29.18	29.02	-169.12	-98.95	781.37	1,193.73	1,136.86	56.87	20.990	
8,200.00	8,184.34	8,065.35	8,004.34	29.37	29.20	-169.05	-101.34	788.59	1,204.99	1,147.76	57.23	21.055	
8,250.00	8,234.19	8,114.04	8,052.43	29.55	29.39	-168.98	-103.74	795.82	1,216.25	1,158.66	57.59	21.120	
8,300.00	8,284.04	8,162.74	8,100.53	29.74	29.58	-168.91	-106.13	803.04	1,227.51	1,169.56	57.95	21.183	
8,350.00	8,333.89	8,211.43	8,148.63	29.92	29.76	-168.84	-108.53	810.26	1,238.77	1,180.47	58.31	21.248	
8,400.00	8,383.74	8,260.13	8,196.72	30.11	29.95	-168.78	-110.92	817.49	1,250.04	1,191.37	58.66	21.308	
8,450.00	8,433.58	8,308.82	8,244.82	30.29	30.13	-168.71	-113.31	824.71	1,261.30	1,202.28	59.02	21.370	
8,500.00	8,483.43	8,357.52	8,292.92	30.48	30.32	-168.65	-115.71	831.93	1,272.57	1,213.19	59.38	21.430	
8,550.00	8,533.28	8,406.21	8,341.01	30.67	30.50	-168.59	-118.10	839.15	1,283.84	1,224.10	59.74	21.490	
8,600.00	8,583.13	8,454.91	8,389.11	30.85	30.69	-168.52	-120.50	846.38	1,295.11	1,235.01	60.10	21.549	
8,650.00	8,632.98	8,503.60	8,437.21	31.04	30.87	-168.46	-122.89	853.60	1,306.38	1,245.92	60.46	21.607	
8,700.00	8,682.83	8,552.30	8,485.30	31.22	31.06	-168.41	-125.29	860.82	1,317.65	1,256.83	60.82	21.665	
8,750.00	8,732.67	8,600.99	8,533.40	31.41	31.25	-168.35	-127.68	868.05	1,328.93	1,267.75	61.18	21.722	
8,800.00	8,782.52	8,649.69	8,581.50	31.59	31.43	-168.29	-130.08	875.27	1,340.20	1,278.66	61.54	21.779	
8,850.00	8,832.37	8,701.62	8,629.59	31.78	31.63	-168.23	-132.47	882.49	1,351.48	1,289.57	61.91	21.830	
8,900.00	8,882.22	8,747.08	8,677.69	31.96	31.80	-168.18	-134.86	889.72	1,362.76	1,300.50	62.26	21.889	
8,950.00	8,932.07	8,820.32	8,750.13	32.15	32.08	-168.10	-138.26	899.96	1,373.62	1,310.82	62.80	21.871	
9,000.00	8,981.91	8,895.45	8,824.64	32.34	32.36	-168.05	-141.29	909.11	1,383.56	1,320.22	63.35	21.841	
9,050.00	9,031.79	8,971.25	8,899.99	32.52	32.64	-168.03	-143.88	916.92	1,392.23	1,328.35	63.88	21.796	
9,100.00	9,081.70	9,047.67	8,976.10	32.70	32.92	-168.02	-146.01	923.35	1,399.31	1,334.92	64.39	21.733	
9,150.00	9,131.65	9,124.59	9,052.85	32.88	33.20	-168.01	-147.68	928.37	1,404.80	1,339.92	64.88	21.653	
9,200.00	9,181.63	9,201.90	9,130.06	33.06	33.47	-168.00	-148.86	931.94	1,408.68	1,343.33	65.35	21.555	
9,250.00	9,231.62	9,279.46	9,207.59	33.24	33.74	-167.99	-149.55	934.02	1,410.95	1,345.14	65.80	21.442	
9,300.00	9,281.62	9,357.14	9,285.27	33.41	34.01	93.04	-149.75	934.61	1,411.60	1,345.37	66.23	21.315	
9,301.19	9,282.81	9,358.99	9,287.11	33.42	34.01	93.04	-149.75	934.61	1,411.59	1,345.36	66.24	21.311	
9,350.00	9,331.62	9,404.19	9,332.32	33.58	34.16	93.04	-149.75	934.62	1,411.60	1,345.04	66.56	21.208	
9,400.00	9,381.62	9,454.19	9,382.32	33.75	34.33	93.04	-149.75	934.62	1,411.60	1,344.70	66.90	21.100	
9,450.00	9,431.62	9,504.19	9,432.32	33.92	34.50	93.04	-149.75	934.62	1,411.60	1,344.36	67.24	20.994	
9,500.00	9,481.62	9,554.19	9,482.32	34.09	34.67	93.04	-149.75	934.62	1,411.60	1,344.02	67.58	20.888	
9,550.00	9,531.62	9,604.19	9,532.32	34.27	34.83	93.04	-149.75	934.62	1,411.60	1,343.68	67.92	20.783	
9,600.00	9,581.62	9,654.19	9,582.32	34.44	35.00	93.04	-149.75	934.62	1,411.60	1,343.34	68.26	20.679	
9,650.00	9,631.62	9,704.85	9,632.98	34.61	35.17	-86.85	-149.72	934.62	1,411.60	1,342.99	68.60	20.576	
9,700.00	9,681.54	9,760.45	9,688.46	34.77	35.36	-87.12	-146.45	934.65	1,411.33	1,342.38	68.95	20.468	
9,750.00	9,731.04	9,813.00	9,740.38	34.94	35.53	-87.79	-138.43	934.71	1,410.75	1,341.45	69.30	20.358	
9,800.00	9,779.75	9,860.33	9,786.33	35.11	35.68	-88.72	-127.16	934.80	1,410.12	1,340.49	69.62	20.253	
9,848.76	9,826.14	9,900.24	9,824.24	35.27	35.81	-89.70	-114.74	934.90	1,409.83	1,339.90	69.93	20.162	
9,850.00	9,827.30	9,901.16	9,825.12	35.27	35.81	-89.72	-114.42	934.90	1,409.83	1,339.90	69.93	20.160	
9,900.00	9,873.32	9,935.05	9,856.55	35.43	35.91	-90.64	-101.77	935.00	1,410.29	1,340.07	70.22	20.085	
9,950.00	9,917.48	9,962.18	9,881.14	35.58	35.99	-91.37	-90.33	935.09	1,411.85	1,341.38	70.47	20.034	
10,000.00	9,959.42	9,983.08	9,899.70	35.73	36.05	-91.81	-80.72	935.16	1,414.81	1,344.12	70.69	20.014	
10,050.00	9,998.83	10,000.00	9,914.46	35.87	36.10	-91.98	-72.45	935.23	1,419.38	1,348.50	70.88	20.024	
10,100.00	10,035.41	10,009.07	9,922.27	36.01	36.12	-91.70	-67.83	935.27	1,425.68	1,354.66	71.02	20.074	
10,150.00	10,068.88	10,015.57	9,927.82	36.15	36.14	-91.14	-64.45	935.29	1,433.75	1,362.62	71.13	20.158	
10,200.00	10,098.99	10,018.58	9,930.38	36.29	36.15	-90.26	-62.87	935.30	1,443.56	1,372.36	71.20	20.274	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-32 Fed State Com 532H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,250.00	10,125.51	10,018.62	9,930.41	36.43	36.15	-89.08	-62.85	935.31	1,455.04	1,383.79	71.25	20.422	
10,300.00	10,148.24	10,016.14	9,928.31	36.58	36.14	-87.63	-64.15	935.29	1,468.06	1,396.79	71.27	20.598	
10,350.00	10,166.99	10,011.52	9,924.36	36.73	36.13	-85.95	-66.57	935.28	1,482.47	1,411.19	71.28	20.797	
10,400.00	10,181.64	10,000.00	9,914.46	36.90	36.10	-83.86	-72.45	935.23	1,498.09	1,426.85	71.25	21.027	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	1.50	1.50	0.50	0.50	-58.60	293.37	-480.61	563.07				
50.00	50.00	51.50	51.50	0.50	0.50	-58.60	293.37	-480.61	563.07	562.07	1.01	559.286	
100.00	100.00	101.50	101.50	0.52	0.52	-58.60	293.37	-480.61	563.07	562.04	1.04	543.020	
150.00	150.00	151.50	151.50	0.59	0.59	-58.60	293.37	-480.61	563.07	561.89	1.18	475.828	
200.00	200.00	201.50	201.50	0.70	0.71	-58.60	293.37	-480.61	563.07	561.67	1.41	399.913	
250.00	250.00	251.50	251.50	0.84	0.84	-58.60	293.37	-480.61	563.07	561.40	1.68	335.214	
300.00	300.00	301.50	301.50	0.99	0.99	-58.60	293.37	-480.61	563.07	561.10	1.98	284.480	
350.00	350.00	351.50	351.50	1.15	1.15	-58.60	293.37	-480.61	563.07	560.78	2.30	245.261	
400.00	400.00	401.50	401.50	1.31	1.31	-58.60	293.37	-480.61	563.07	560.45	2.62	214.856	
450.00	450.00	451.50	451.50	1.48	1.48	-58.60	293.37	-480.61	563.07	560.12	2.96	190.375	
500.00	500.00	501.50	501.50	1.65	1.65	-58.60	293.37	-480.61	563.07	559.78	3.30	170.768	
550.00	550.00	551.50	551.50	1.82	1.82	-58.60	293.37	-480.61	563.07	559.43	3.64	154.669	
600.00	600.00	601.50	601.50	1.99	2.00	-58.60	293.37	-480.61	563.07	559.09	3.99	141.249	
650.00	650.00	651.50	651.50	2.16	2.17	-58.60	293.37	-480.61	563.07	558.74	4.33	129.910	
700.00	700.00	701.50	701.50	2.34	2.34	-58.60	293.37	-480.61	563.07	558.39	4.68	120.215	
750.00	750.00	751.50	751.50	2.51	2.52	-58.60	293.37	-480.61	563.07	558.04	5.03	111.839	
800.00	800.00	801.50	801.50	2.69	2.70	-58.60	293.37	-480.61	563.07	557.69	5.39	104.535	
850.00	850.00	851.50	851.50	2.87	2.87	-58.60	293.37	-480.61	563.07	557.34	5.74	98.112	
900.00	900.00	901.50	901.50	3.04	3.05	-58.60	293.37	-480.61	563.07	556.98	6.09	92.422	
950.00	950.00	951.50	951.50	3.22	3.23	-58.60	293.37	-480.61	563.07	556.63	6.45	87.349	
1,000.00	1,000.00	1,001.50	1,001.50	3.40	3.40	-58.60	293.37	-480.61	563.07	556.27	6.80	82.797	
1,050.00	1,050.00	1,051.50	1,051.50	3.58	3.58	-58.60	293.37	-480.61	563.07	555.92	7.16	78.692	
1,100.00	1,100.00	1,101.50	1,101.50	3.75	3.76	-58.60	293.37	-480.61	563.07	555.56	7.51	74.971	
1,150.00	1,150.00	1,151.50	1,151.50	3.93	3.94	-58.60	293.37	-480.61	563.07	555.21	7.87	71.584	
1,200.00	1,200.00	1,201.50	1,201.50	4.11	4.11	-58.60	293.37	-480.61	563.07	554.85	8.22	68.487	
1,250.00	1,250.00	1,251.50	1,251.50	4.29	4.29	-58.60	293.37	-480.61	563.07	554.50	8.58	65.645	
1,300.00	1,300.00	1,301.50	1,301.50	4.46	4.47	-58.60	293.37	-480.61	563.07	554.14	8.93	63.028	
1,350.00	1,350.00	1,351.50	1,351.50	4.64	4.65	-58.60	293.37	-480.61	563.07	553.78	9.29	60.611	
1,400.00	1,400.00	1,401.50	1,401.50	4.82	4.83	-58.60	293.37	-480.61	563.07	553.43	9.65	58.371	
1,450.00	1,450.00	1,451.50	1,451.50	5.00	5.00	-58.60	293.37	-480.61	563.07	553.07	10.00	56.290	
1,500.00	1,500.00	1,501.50	1,501.50	5.18	5.18	-58.60	293.37	-480.61	563.07	552.71	10.36	54.352	
1,550.00	1,550.00	1,551.50	1,551.50	5.36	5.36	-58.60	293.37	-480.61	563.07	552.36	10.72	52.542	
1,600.00	1,600.00	1,601.50	1,601.50	5.53	5.54	-58.60	293.37	-480.61	563.07	552.00	11.07	50.848	
1,650.00	1,650.00	1,651.50	1,651.50	5.71	5.72	-58.60	293.37	-480.61	563.07	551.64	11.43	49.260	
1,700.00	1,700.00	1,701.50	1,701.50	5.89	5.90	-58.60	293.37	-480.61	563.07	551.29	11.79	47.768	
1,750.00	1,750.00	1,751.50	1,751.50	6.07	6.08	-58.60	293.37	-480.61	563.07	550.93	12.15	46.363	
1,800.00	1,800.00	1,801.50	1,801.50	6.25	6.25	-58.60	293.37	-480.61	563.07	550.57	12.50	45.038	
1,850.00	1,850.00	1,851.50	1,851.50	6.43	6.43	-58.60	293.37	-480.61	563.07	550.22	12.86	43.786	
1,900.00	1,900.00	1,901.50	1,901.50	6.61	6.61	-58.60	293.37	-480.61	563.07	549.86	13.22	42.602	
1,950.00	1,950.00	1,951.50	1,951.50	6.78	6.79	-58.60	293.37	-480.61	563.07	549.50	13.57	41.480	
2,000.00	2,000.00	2,001.50	2,001.50	6.96	6.97	-58.60	293.37	-480.61	563.07	549.14	13.93	40.416	
2,050.00	2,050.00	2,051.50	2,051.50	7.14	7.15	-58.60	293.37	-480.61	563.07	548.79	14.29	39.404	
2,100.00	2,100.00	2,101.50	2,101.50	7.32	7.33	-58.60	293.37	-480.61	563.07	548.43	14.65	38.442	
2,150.00	2,150.00	2,151.50	2,151.50	7.50	7.51	-58.60	293.37	-480.61	563.07	548.07	15.00	37.526	
2,200.00	2,200.00	2,201.50	2,201.50	7.68	7.68	-58.60	293.37	-480.61	563.07	547.71	15.36	36.652	
2,250.00	2,250.00	2,251.50	2,251.50	7.86	7.86	-58.60	293.37	-480.61	563.07	547.35	15.72	35.818	
2,300.00	2,300.00	2,301.50	2,301.50	8.04	8.04	-58.60	293.37	-480.61	563.07	547.00	16.08	35.021	
2,350.00	2,350.00	2,351.50	2,351.50	8.22	8.22	-58.60	293.37	-480.61	563.07	546.64	16.44	34.259	
2,400.00	2,400.00	2,401.50	2,401.50	8.39	8.40	-58.60	293.37	-480.61	563.07	546.28	16.79	33.529	
2,450.00	2,450.00	2,451.50	2,451.50	8.57	8.58	-58.60	293.37	-480.61	563.07	545.92	17.15	32.829	
2,500.00	2,500.00	2,501.50	2,501.50	8.75	8.76	-58.60	293.37	-480.61	563.07	545.57	17.51	32.158	
2,550.00	2,550.00	2,551.50	2,551.50	8.93	8.94	-58.60	293.37	-480.61	563.07	545.21	17.87	31.514	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,601.50	2,601.50	9.11	9.12	-58.60	293.37	-480.61	563.07	544.85	18.23	30.895	
2,650.00	2,650.00	2,651.50	2,651.50	9.29	9.29	-58.60	293.37	-480.61	563.07	544.49	18.58	30.300	
2,700.00	2,700.00	2,701.50	2,701.50	9.47	9.47	-58.60	293.37	-480.61	563.07	544.13	18.94	29.728	
2,750.00	2,750.00	2,751.50	2,751.50	9.65	9.65	-58.60	293.37	-480.61	563.07	543.78	19.30	29.176	
2,800.00	2,800.00	2,801.50	2,801.50	9.82	9.83	40.39	293.37	-480.61	562.91	543.26	19.65	28.644	
2,850.00	2,849.99	2,851.49	2,851.49	9.99	10.01	40.43	293.37	-480.61	562.41	542.41	20.00	28.121	
2,900.00	2,899.98	2,901.48	2,901.48	10.16	10.19	40.51	293.37	-480.61	561.58	541.23	20.35	27.599	
2,950.00	2,949.96	2,951.46	2,951.46	10.33	10.37	40.62	293.37	-480.61	560.42	539.72	20.70	27.078	
3,000.00	2,999.92	3,001.42	3,001.42	10.50	10.55	40.76	293.37	-480.61	558.93	537.89	21.04	26.559	
3,050.00	3,049.86	3,049.67	3,049.66	10.67	10.71	40.91	293.24	-480.78	557.19	535.81	21.38	26.061	
3,100.00	3,099.78	3,097.97	3,097.96	10.84	10.88	41.05	292.86	-481.28	555.28	533.56	21.72	25.570	
3,150.00	3,149.68	3,146.28	3,146.27	11.01	11.04	41.17	292.23	-482.09	553.18	531.14	22.05	25.091	
3,200.00	3,199.54	3,194.61	3,194.57	11.19	11.20	41.29	291.36	-483.23	550.91	528.53	22.38	24.620	
3,250.00	3,249.39	3,242.95	3,242.88	11.36	11.36	41.37	290.23	-484.70	548.64	525.93	22.71	24.160	
3,300.00	3,299.23	3,291.31	3,291.19	11.53	11.52	41.41	288.86	-486.48	546.52	523.48	23.04	23.721	
3,350.00	3,349.08	3,339.69	3,339.49	11.71	11.68	41.41	287.24	-488.60	544.54	521.16	23.37	23.298	
3,400.00	3,398.93	3,388.07	3,387.78	11.88	11.84	41.37	285.37	-491.03	542.70	519.00	23.71	22.894	
3,450.00	3,448.78	3,436.46	3,436.04	12.05	12.01	41.29	283.25	-493.79	541.02	516.98	24.04	22.505	
3,500.00	3,498.63	3,484.84	3,484.26	12.23	12.17	41.16	280.89	-496.87	539.48	515.10	24.37	22.134	
3,550.00	3,548.47	3,533.21	3,532.44	12.40	12.33	41.00	278.27	-500.28	538.09	513.38	24.71	21.777	
3,600.00	3,598.32	3,581.55	3,580.55	12.58	12.50	40.79	275.41	-504.00	536.85	511.81	25.04	21.436	
3,650.00	3,648.17	3,630.26	3,628.99	12.76	12.66	40.54	272.29	-508.07	535.77	510.39	25.38	21.108	
3,700.00	3,698.02	3,680.19	3,678.63	12.93	12.83	40.28	269.02	-512.33	534.74	509.02	25.73	20.786	
3,750.00	3,747.87	3,730.12	3,728.27	13.11	13.01	40.01	265.74	-516.60	533.73	507.66	26.07	20.471	
3,800.00	3,797.71	3,780.04	3,777.90	13.29	13.18	39.74	262.47	-520.86	532.73	506.31	26.42	20.165	
3,850.00	3,847.56	3,829.97	3,827.54	13.46	13.35	39.47	259.20	-525.13	531.73	504.97	26.76	19.867	
3,900.00	3,897.41	3,879.90	3,877.18	13.64	13.52	39.20	255.92	-529.39	530.76	503.64	27.11	19.576	
3,950.00	3,947.26	3,929.82	3,926.81	13.82	13.70	38.92	252.65	-533.66	529.79	502.33	27.46	19.292	
4,000.00	3,997.11	3,979.75	3,976.45	14.00	13.87	38.65	249.37	-537.92	528.83	501.02	27.81	19.016	
4,050.00	4,046.95	4,029.68	4,026.08	14.17	14.05	38.37	246.10	-542.19	527.89	499.73	28.16	18.746	
4,100.00	4,096.80	4,079.60	4,075.72	14.35	14.22	38.10	242.83	-546.45	526.96	498.45	28.51	18.483	
4,150.00	4,146.65	4,129.53	4,125.36	14.53	14.40	37.82	239.55	-550.72	526.04	497.18	28.86	18.227	
4,200.00	4,196.50	4,179.46	4,174.99	14.71	14.58	37.54	236.28	-554.98	525.13	495.92	29.21	17.976	
4,250.00	4,246.35	4,229.38	4,224.63	14.89	14.75	37.26	233.00	-559.25	524.24	494.68	29.56	17.732	
4,300.00	4,296.20	4,279.31	4,274.27	15.07	14.93	36.98	229.73	-563.51	523.36	493.44	29.92	17.494	
4,350.00	4,346.04	4,329.24	4,323.90	15.25	15.11	36.70	226.46	-567.77	522.49	492.22	30.27	17.261	
4,400.00	4,395.89	4,379.16	4,373.54	15.43	15.29	36.42	223.18	-572.04	521.63	491.01	30.62	17.034	
4,450.00	4,445.74	4,429.09	4,423.18	15.61	15.46	36.14	219.91	-576.30	520.79	489.81	30.98	16.812	
4,500.00	4,495.59	4,479.02	4,472.81	15.79	15.64	35.86	216.64	-580.57	519.96	488.63	31.33	16.595	
4,550.00	4,545.44	4,528.94	4,522.45	15.97	15.82	35.57	213.36	-584.83	519.14	487.45	31.69	16.384	
4,600.00	4,595.28	4,578.87	4,572.08	16.15	16.00	35.29	210.09	-589.10	518.34	486.29	32.04	16.177	
4,650.00	4,645.13	4,628.80	4,621.72	16.33	16.18	35.00	206.81	-593.36	517.54	485.15	32.40	15.975	
4,700.00	4,694.98	4,678.72	4,671.36	16.51	16.36	34.71	203.54	-597.63	516.76	484.01	32.75	15.777	
4,750.00	4,744.83	4,728.65	4,720.99	16.69	16.54	34.43	200.27	-601.89	516.00	482.89	33.11	15.585	
4,800.00	4,794.68	4,778.58	4,770.63	16.87	16.73	34.14	196.99	-606.16	515.25	481.78	33.47	15.396	
4,850.00	4,844.52	4,828.50	4,820.27	17.05	16.91	33.85	193.72	-610.42	514.51	480.68	33.82	15.212	
4,900.00	4,894.37	4,878.43	4,869.90	17.23	17.09	33.56	190.44	-614.69	513.78	479.60	34.18	15.031	
4,950.00	4,944.22	4,928.36	4,919.54	17.41	17.27	33.27	187.17	-618.95	513.06	478.53	34.54	14.855	
5,000.00	4,994.07	4,978.28	4,969.17	17.60	17.45	32.98	183.90	-623.22	512.36	477.47	34.90	14.683	
5,050.00	5,043.92	5,028.21	5,018.81	17.78	17.64	32.68	180.62	-627.48	511.68	476.42	35.25	14.514	
5,100.00	5,093.76	5,078.14	5,068.45	17.96	17.82	32.39	177.35	-631.74	511.00	475.39	35.61	14.349	
5,150.00	5,143.61	5,128.06	5,118.08	18.14	18.00	32.10	174.08	-636.01	510.34	474.37	35.97	14.188	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.00	5,193.46	5,177.99	5,167.72	18.32	18.18	31.80	170.80	-640.27	509.70	473.37	36.33	14.030	
5,250.00	5,243.31	5,227.92	5,217.36	18.51	18.37	31.50	167.53	-644.54	509.06	472.38	36.69	13.876	
5,300.00	5,293.16	5,277.84	5,266.99	18.69	18.55	31.21	164.25	-648.80	508.45	471.40	37.05	13.725	
5,350.00	5,343.00	5,327.77	5,316.63	18.87	18.74	30.91	160.98	-653.07	507.84	470.43	37.41	13.577	
5,400.00	5,392.85	5,377.70	5,366.27	19.05	18.92	30.61	157.71	-657.33	507.25	469.48	37.76	13.432	
5,450.00	5,442.70	5,427.62	5,415.90	19.24	19.10	30.31	154.43	-661.60	506.67	468.55	38.12	13.290	
5,500.00	5,492.55	5,477.55	5,465.54	19.42	19.29	30.02	151.16	-665.86	506.11	467.62	38.48	13.151	
5,550.00	5,542.40	5,527.48	5,515.17	19.60	19.47	29.72	147.88	-670.13	505.56	466.71	38.84	13.015	
5,600.00	5,592.24	5,577.40	5,564.81	19.78	19.66	29.42	144.61	-674.39	505.02	465.82	39.20	12.882	
5,650.00	5,642.09	5,627.33	5,614.45	19.97	19.84	29.11	141.34	-678.66	504.50	464.93	39.56	12.752	
5,700.00	5,691.94	5,677.26	5,664.08	20.15	20.03	28.81	138.06	-682.92	503.99	464.06	39.92	12.624	
5,750.00	5,741.79	5,727.18	5,713.72	20.33	20.22	28.51	134.79	-687.18	503.49	463.21	40.28	12.499	
5,800.00	5,791.64	5,777.11	5,763.36	20.52	20.40	28.21	131.52	-691.45	503.01	462.37	40.64	12.376	
5,850.00	5,841.49	5,827.04	5,812.99	20.70	20.59	27.90	128.24	-695.71	502.55	461.54	41.00	12.256	
5,900.00	5,891.33	5,876.96	5,862.63	20.88	20.77	27.60	124.97	-699.98	502.09	460.73	41.36	12.139	
5,950.00	5,941.18	5,926.89	5,912.27	21.06	20.96	27.30	121.69	-704.24	501.66	459.93	41.72	12.023	
6,000.00	5,991.03	5,976.82	5,961.90	21.25	21.15	26.99	118.42	-708.51	501.23	459.15	42.08	11.910	
6,050.00	6,040.88	6,026.74	6,011.54	21.43	21.33	26.68	115.15	-712.77	500.82	458.38	42.45	11.799	
6,100.00	6,090.73	6,076.67	6,061.17	21.62	21.52	26.38	111.87	-717.04	500.43	457.62	42.81	11.691	
6,150.00	6,140.57	6,126.60	6,110.81	21.80	21.71	26.07	108.60	-721.30	500.05	456.88	43.17	11.584	
6,200.00	6,190.42	6,176.52	6,160.45	21.98	21.89	25.77	105.32	-725.57	499.68	456.15	43.53	11.480	
6,250.00	6,240.27	6,226.45	6,210.08	22.17	22.08	25.46	102.05	-729.83	499.33	455.44	43.89	11.377	
6,300.00	6,290.12	6,276.38	6,259.72	22.35	22.27	25.15	98.78	-734.10	498.99	454.74	44.25	11.277	
6,350.00	6,339.97	6,326.30	6,309.36	22.53	22.45	24.84	95.50	-738.36	498.67	454.06	44.61	11.179	
6,400.00	6,389.81	6,376.23	6,358.99	22.72	22.64	24.53	92.23	-742.62	498.36	453.39	44.97	11.082	
6,450.00	6,439.66	6,426.16	6,408.63	22.90	22.83	24.22	88.95	-746.89	498.07	452.73	45.33	10.987	
6,500.00	6,489.51	6,476.08	6,458.26	23.09	23.02	23.91	85.68	-751.15	497.79	452.09	45.69	10.894	
6,550.00	6,539.36	6,526.01	6,507.90	23.27	23.20	23.60	82.41	-755.42	497.52	451.47	46.05	10.803	
6,600.00	6,589.21	6,575.94	6,557.54	23.45	23.39	23.29	79.13	-759.68	497.27	450.86	46.41	10.714	
6,650.00	6,639.05	6,625.86	6,607.17	23.64	23.58	22.98	75.86	-763.95	497.03	450.26	46.77	10.626	
6,700.00	6,688.90	6,675.79	6,656.81	23.82	23.77	22.67	72.59	-768.21	496.81	449.68	47.13	10.540	
6,750.00	6,738.75	6,725.72	6,706.45	24.01	23.96	22.36	69.31	-772.48	496.61	449.11	47.50	10.456	
6,800.00	6,788.60	6,775.64	6,756.08	24.19	24.15	22.05	66.04	-776.74	496.42	448.56	47.86	10.373	
6,850.00	6,838.45	6,825.57	6,805.72	24.38	24.33	21.74	62.76	-781.01	496.24	448.02	48.22	10.292	
6,900.00	6,888.29	6,875.50	6,855.36	24.56	24.52	21.43	59.49	-785.27	496.08	447.50	48.58	10.212	
6,950.00	6,938.14	6,925.42	6,904.99	24.74	24.71	21.12	56.22	-789.54	495.93	446.99	48.94	10.134	
7,000.00	6,987.99	6,975.35	6,954.63	24.93	24.90	20.80	52.94	-793.80	495.80	446.50	49.30	10.057	
7,050.00	7,037.84	7,025.28	7,004.26	25.11	25.09	20.49	49.67	-798.06	495.68	446.02	49.66	9.981	
7,100.00	7,087.69	7,075.20	7,053.90	25.30	25.28	20.18	46.39	-802.33	495.57	445.55	50.02	9.907	
7,150.00	7,137.53	7,125.13	7,103.54	25.48	25.47	19.87	43.12	-806.59	495.49	445.10	50.38	9.835	
7,200.00	7,187.38	7,175.06	7,153.17	25.67	25.66	19.56	39.85	-810.86	495.41	444.67	50.74	9.763	
7,250.00	7,237.23	7,224.98	7,202.81	25.85	25.84	19.24	36.57	-815.12	495.35	444.25	51.10	9.693	
7,300.00	7,287.08	7,274.91	7,252.45	26.04	26.03	18.93	33.30	-819.39	495.31	443.85	51.46	9.625	
7,350.00	7,336.93	7,324.84	7,302.08	26.22	26.22	18.62	30.03	-823.65	495.28	443.46	51.82	9.557	
7,400.00	7,386.78	7,374.76	7,351.72	26.41	26.41	18.30	26.75	-827.92	495.26	443.08	52.18	9.491	
7,424.54	7,411.24	7,400.74	7,376.08	26.50	26.51	18.15	25.14	-830.01	495.26	442.90	52.37	9.458 CC	
7,450.00	7,436.62	7,424.69	7,401.36	26.59	26.60	17.99	23.48	-832.18	495.26	442.72	52.54	9.426	
7,500.00	7,486.47	7,474.62	7,450.99	26.78	26.79	17.68	20.20	-836.45	495.28	442.38	52.90	9.362	
7,550.00	7,536.32	7,524.54	7,500.63	26.96	26.98	17.37	16.93	-840.71	495.31	442.05	53.26	9.299	
7,600.00	7,586.17	7,574.47	7,550.26	27.15	27.17	17.05	13.66	-844.98	495.35	441.73	53.62	9.237	
7,650.00	7,636.02	7,624.40	7,599.90	27.33	27.36	16.74	10.38	-849.24	495.41	441.43	53.98	9.177	
7,700.00	7,685.86	7,674.32	7,649.54	27.52	27.55	16.43	7.11	-853.51	495.49	441.14	54.34	9.118	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,750.00	7,735.71	7,724.25	7,699.17	27.70	27.74	16.12	3.83	-857.77	495.58	440.87	54.70	9.059	
7,800.00	7,785.56	7,774.18	7,748.81	27.89	27.93	15.80	0.56	-862.03	495.68	440.62	55.06	9.002	
7,850.00	7,835.41	7,824.10	7,798.45	28.07	28.12	15.49	-2.71	-866.30	495.80	440.37	55.42	8.945	
7,900.00	7,885.26	7,874.03	7,848.08	28.26	28.31	15.18	-5.99	-870.56	495.93	440.15	55.78	8.890	
7,950.00	7,935.10	7,923.96	7,897.72	28.44	28.50	14.87	-9.26	-874.83	496.08	439.93	56.14	8.836	
8,000.00	7,984.95	7,973.88	7,947.36	28.63	28.69	14.56	-12.53	-879.09	496.24	439.74	56.50	8.782	
8,050.00	8,034.80	8,023.81	7,996.99	28.81	28.88	14.25	-15.81	-883.36	496.42	439.56	56.86	8.730	
8,100.00	8,084.65	8,073.74	8,046.63	29.00	29.07	13.93	-19.08	-887.62	496.61	439.39	57.22	8.678	
8,150.00	8,134.50	8,123.66	8,096.26	29.18	29.26	13.62	-22.36	-891.89	496.82	439.23	57.58	8.628	
8,200.00	8,184.34	8,173.59	8,145.90	29.37	29.45	13.31	-25.63	-896.15	497.04	439.10	57.94	8.578	
8,250.00	8,234.19	8,223.52	8,195.54	29.55	29.64	13.00	-28.90	-900.42	497.28	438.97	58.30	8.529	
8,300.00	8,284.04	8,273.44	8,245.17	29.74	29.83	12.69	-32.18	-904.68	497.53	438.86	58.66	8.481	
8,350.00	8,333.89	8,323.37	8,294.81	29.92	30.02	12.38	-35.45	-908.95	497.79	438.77	59.02	8.434	
8,400.00	8,383.74	8,373.30	8,344.45	30.11	30.22	12.07	-38.73	-913.21	498.07	438.69	59.38	8.388	
8,450.00	8,433.58	8,423.22	8,394.08	30.29	30.41	11.76	-42.00	-917.47	498.37	438.63	59.74	8.342	
8,500.00	8,483.43	8,473.15	8,443.72	30.48	30.60	11.46	-45.27	-921.74	498.67	438.57	60.10	8.298	
8,550.00	8,533.28	8,523.08	8,493.35	30.67	30.79	11.15	-48.55	-926.00	499.00	438.54	60.46	8.254	
8,600.00	8,583.13	8,573.00	8,542.99	30.85	30.98	10.84	-51.82	-930.27	499.34	438.52	60.82	8.210	
8,650.00	8,632.98	8,622.93	8,592.63	31.04	31.17	10.53	-55.09	-934.53	499.69	438.51	61.18	8.168	
8,700.00	8,682.83	8,672.86	8,642.26	31.22	31.36	10.22	-58.37	-938.80	500.05	438.52	61.54	8.126	
8,750.00	8,732.67	8,722.78	8,691.90	31.41	31.55	9.92	-61.64	-943.06	500.44	438.54	61.89	8.085	
8,800.00	8,782.52	8,772.71	8,741.54	31.59	31.74	9.61	-64.92	-947.33	500.83	438.58	62.25	8.045	
8,850.00	8,832.37	8,822.64	8,791.17	31.78	31.93	9.31	-68.19	-951.59	501.24	438.63	62.61	8.005	
8,900.00	8,882.22	8,872.56	8,840.81	31.96	32.13	9.00	-71.46	-955.86	501.66	438.69	62.97	7.967	
8,950.00	8,932.07	8,925.41	8,893.36	32.15	32.33	8.69	-74.87	-960.29	502.03	438.68	63.35	7.925	
9,000.00	8,981.91	8,981.21	8,948.92	32.34	32.54	8.40	-78.03	-964.41	501.90	438.16	63.74	7.874	
9,050.00	9,031.79	9,037.06	9,004.59	32.52	32.75	8.17	-80.71	-967.90	501.55	437.42	64.13	7.821	
9,100.00	9,081.70	9,092.92	9,060.34	32.70	32.95	7.97	-82.88	-970.73	501.26	436.76	64.51	7.771	
9,150.00	9,131.65	9,148.81	9,116.16	32.88	33.15	7.82	-84.57	-972.92	501.04	436.17	64.88	7.723	
9,200.00	9,181.63	9,204.71	9,172.03	33.06	33.35	7.72	-85.75	-974.47	500.89	435.65	65.24	7.678	
9,250.00	9,231.62	9,260.62	9,227.93	33.24	33.54	7.66	-86.44	-975.36	500.79	435.20	65.59	7.636	
9,300.00	9,281.62	9,316.54	9,283.84	33.41	33.74	-91.33	-86.63	-975.61	500.74	434.81	65.93	7.595	
9,310.60	9,292.22	9,328.39	9,295.70	33.45	33.78	-91.33	-86.60	-975.57	500.71	434.71	66.00	7.587	
9,350.00	9,331.62	9,365.82	9,333.12	33.58	33.90	-91.33	-86.63	-975.61	500.75	434.48	66.27	7.556	
9,400.00	9,381.62	9,415.82	9,383.12	33.75	34.06	-91.33	-86.63	-975.61	500.75	434.14	66.61	7.518	
9,450.00	9,431.62	9,465.82	9,433.12	33.92	34.23	-91.33	-86.63	-975.61	500.75	433.80	66.95	7.479	
9,500.00	9,481.62	9,515.82	9,483.12	34.09	34.40	-91.33	-86.63	-975.61	500.75	433.45	67.29	7.441	
9,550.00	9,531.62	9,565.82	9,533.12	34.27	34.56	-91.33	-86.63	-975.61	500.75	433.11	67.63	7.404	
9,600.00	9,581.62	9,615.82	9,583.12	34.44	34.73	-91.33	-86.63	-975.61	500.75	432.77	67.97	7.367	
9,650.00	9,631.62	9,665.90	9,633.21	34.61	34.90	88.80	-86.60	-975.61	500.75	432.43	68.32	7.330	
9,700.00	9,681.54	9,716.09	9,683.30	34.77	35.06	89.41	-83.88	-975.63	500.68	432.01	68.66	7.292	
9,717.79	9,699.22	9,733.45	9,700.55	34.83	35.11	89.85	-81.89	-975.64	500.66	431.87	68.79	7.278	
9,750.00	9,731.04	9,763.81	9,730.54	34.94	35.21	90.90	-77.20	-975.68	500.76	431.73	69.02	7.255 ES	
9,800.00	9,779.75	9,807.26	9,772.94	35.11	35.34	92.95	-67.74	-975.75	501.64	432.24	69.40	7.229	
9,850.00	9,827.30	9,845.29	9,809.37	35.27	35.44	95.14	-56.84	-975.82	504.21	434.45	69.76	7.228 SF	
9,900.00	9,873.32	9,877.40	9,839.51	35.43	35.53	97.10	-45.78	-975.90	509.38	439.30	70.08	7.269	
9,950.00	9,917.48	9,903.60	9,863.60	35.58	35.59	98.52	-35.51	-975.98	517.94	447.63	70.32	7.366	
10,000.00	9,959.42	9,924.22	9,882.23	35.73	35.64	99.20	-26.66	-976.04	530.43	460.00	70.43	7.531	
10,050.00	9,998.83	9,939.78	9,896.07	35.87	35.68	99.03	-19.54	-976.09	547.08	476.64	70.43	7.767	
10,100.00	10,035.41	9,950.00	9,905.05	36.01	35.70	97.85	-14.67	-976.13	567.82	497.52	70.31	8.076	
10,150.00	10,068.88	9,958.06	9,912.07	36.15	35.72	95.93	-10.71	-976.16	592.37	522.23	70.14	8.446	
10,200.00	10,098.99	9,961.88	9,915.37	36.29	35.73	93.01	-8.79	-976.17	620.27	550.36	69.92	8.872	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Chincoteague 8-5 Fed State Com 521H - Wellbore #1 - Permit Plan 1

Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,250.00	10,125.51	9,962.80	9,916.17	36.43	35.73	89.22	-8.33	-976.17	650.98	581.28	69.70	9.340	
10,300.00	10,148.24	9,961.24	9,914.82	36.58	35.72	84.67	-9.12	-976.17	683.92	614.41	69.51	9.839	
10,350.00	10,166.99	9,950.00	9,905.05	36.73	35.70	78.69	-14.67	-976.13	718.60	649.40	69.19	10.386	
10,400.00	10,181.64	9,950.00	9,905.05	36.90	35.70	73.75	-14.67	-976.13	754.26	685.01	69.25	10.891	
10,450.00	10,192.07	9,950.00	9,905.05	37.07	35.70	68.72	-14.67	-976.13	790.67	721.26	69.41	11.391	
10,500.00	10,198.20	9,936.36	9,893.04	37.24	35.67	62.61	-21.14	-976.08	827.23	757.89	69.34	11.930	
10,550.00	10,200.00	9,926.68	9,884.43	37.42	35.65	57.67	-25.56	-976.05	863.65	794.20	69.45	12.435	
10,600.00	10,200.00	9,916.96	9,875.71	37.61	35.62	56.96	-29.86	-976.02	900.54	830.95	69.59	12.941	
10,650.00	10,200.00	9,900.00	9,860.32	37.81	35.58	55.74	-36.99	-975.97	938.51	868.94	69.58	13.489	
10,700.00	10,200.00	9,900.00	9,860.32	38.02	35.58	55.74	-36.99	-975.97	977.22	907.33	69.89	13.982	
10,750.00	10,200.00	9,900.00	9,860.32	38.25	35.58	55.74	-36.99	-975.97	1,016.92	946.73	70.18	14.489	
10,800.00	10,200.00	9,883.93	9,845.55	38.48	35.54	54.60	-43.33	-975.92	1,057.17	987.00	70.16	15.067	
10,850.00	10,200.00	9,876.89	9,839.03	38.73	35.53	54.11	-45.97	-975.90	1,098.18	1,027.87	70.30	15.621	
10,900.00	10,200.00	9,870.26	9,832.86	38.99	35.51	53.64	-48.39	-975.89	1,139.80	1,069.36	70.44	16.182	
10,950.00	10,200.00	9,850.00	9,813.83	39.26	35.46	52.26	-55.33	-975.84	1,182.20	1,111.86	70.34	16.808	
11,000.00	10,200.00	9,850.00	9,813.83	39.54	35.46	52.26	-55.33	-975.84	1,224.72	1,154.15	70.57	17.356	
11,050.00	10,200.00	9,850.00	9,813.83	39.84	35.46	52.26	-55.33	-975.84	1,267.78	1,197.01	70.77	17.914	
11,100.00	10,200.00	9,850.00	9,813.83	40.14	35.46	52.26	-55.33	-975.84	1,311.33	1,240.37	70.96	18.481	
11,150.00	10,200.00	9,850.00	9,813.83	40.46	35.46	52.26	-55.33	-975.84	1,355.33	1,284.20	71.13	19.055	
11,200.00	10,200.00	9,850.00	9,813.83	40.78	35.46	52.26	-55.33	-975.84	1,399.73	1,328.44	71.28	19.636	
11,250.00	10,200.00	9,832.91	9,797.59	41.12	35.41	51.11	-60.66	-975.80	1,444.15	1,372.93	71.23	20.276	
11,300.00	10,200.00	9,828.60	9,793.47	41.46	35.40	50.83	-61.93	-975.79	1,489.06	1,417.74	71.32	20.879	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	89.45	0.29	29.99	29.99				
50.00	50.00	50.00	50.00	0.50	0.50	89.45	0.29	29.99	29.99	28.98	1.01	29.798	
100.00	100.00	100.00	100.00	0.52	0.52	89.45	0.29	29.99	29.99	28.96	1.04	28.963	
150.00	150.00	150.00	150.00	0.59	0.59	89.45	0.29	29.99	29.99	28.81	1.18	25.406	
200.00	200.00	200.00	200.00	0.70	0.70	89.45	0.29	29.99	29.99	28.59	1.40	21.358	
250.00	250.00	250.00	250.00	0.84	0.84	89.45	0.29	29.99	29.99	28.32	1.68	17.901	
300.00	300.00	300.00	300.00	0.99	0.99	89.45	0.29	29.99	29.99	28.02	1.97	15.188	
350.00	350.00	350.00	350.00	1.15	1.15	89.45	0.29	29.99	29.99	27.70	2.29	13.091	
400.00	400.00	400.00	400.00	1.31	1.31	89.45	0.29	29.99	29.99	27.37	2.62	11.455	
450.00	450.00	450.00	450.00	1.48	1.48	89.45	0.29	29.99	29.99	27.04	2.95	10.157	
500.00	500.00	500.00	500.00	1.65	1.65	89.45	0.29	29.99	29.99	26.70	3.29	9.110	
550.00	550.00	550.00	550.00	1.82	1.82	89.45	0.29	29.99	29.99	26.36	3.64	8.250	
600.00	600.00	600.00	600.00	1.99	1.99	89.45	0.29	29.99	29.99	26.01	3.98	7.533	
650.00	650.00	650.00	650.00	2.16	2.16	89.45	0.29	29.99	29.99	25.66	4.33	6.928	
700.00	700.00	700.00	700.00	2.34	2.34	89.45	0.29	29.99	29.99	25.31	4.68	6.410	
750.00	750.00	750.00	750.00	2.51	2.51	89.45	0.29	29.99	29.99	24.96	5.03	5.963	
800.00	800.00	800.00	800.00	2.69	2.69	89.45	0.29	29.99	29.99	24.61	5.38	5.573	
850.00	850.00	850.00	850.00	2.87	2.87	89.45	0.29	29.99	29.99	24.26	5.73	5.231	
900.00	900.00	900.00	900.00	3.04	3.04	89.45	0.29	29.99	29.99	23.90	6.09	4.927	Alert
950.00	950.00	950.00	950.00	3.22	3.22	89.45	0.29	29.99	29.99	23.55	6.44	4.656	Alert
1,000.00	1,000.00	1,000.00	1,000.00	3.40	3.40	89.45	0.29	29.99	29.99	23.20	6.80	4.414	Alert
1,050.00	1,050.00	1,050.00	1,050.00	3.58	3.58	89.45	0.29	29.99	29.99	22.84	7.15	4.195	Alert
1,100.00	1,100.00	1,100.00	1,100.00	3.75	3.75	89.45	0.29	29.99	29.99	22.49	7.51	3.996	Alert
1,150.00	1,150.00	1,150.00	1,150.00	3.93	3.93	89.45	0.29	29.99	29.99	22.13	7.86	3.815	Alert
1,200.00	1,200.00	1,200.00	1,200.00	4.11	4.11	89.45	0.29	29.99	29.99	21.78	8.22	3.650	Alert
1,250.00	1,250.00	1,250.00	1,250.00	4.29	4.29	89.45	0.29	29.99	29.99	21.42	8.57	3.499	Alert
1,300.00	1,300.00	1,300.00	1,300.00	4.46	4.46	89.45	0.29	29.99	29.99	21.06	8.93	3.359	Alert
1,350.00	1,350.00	1,350.00	1,350.00	4.64	4.64	89.45	0.29	29.99	29.99	20.71	9.28	3.230	Alert
1,400.00	1,400.00	1,400.00	1,400.00	4.82	4.82	89.45	0.29	29.99	29.99	20.35	9.64	3.111	Alert
1,450.00	1,450.00	1,450.00	1,450.00	5.00	5.00	89.45	0.29	29.99	29.99	19.99	10.00	3.000	Alert
1,500.00	1,500.00	1,500.00	1,500.00	5.18	5.18	89.45	0.29	29.99	29.99	19.64	10.35	2.896	Alert
1,550.00	1,550.00	1,550.00	1,550.00	5.36	5.36	89.45	0.29	29.99	29.99	19.28	10.71	2.800	Alert
1,600.00	1,600.00	1,600.00	1,600.00	5.53	5.53	89.45	0.29	29.99	29.99	18.92	11.07	2.710	Alert
1,650.00	1,650.00	1,650.00	1,650.00	5.71	5.71	89.45	0.29	29.99	29.99	18.57	11.43	2.625	Alert
1,700.00	1,700.00	1,700.00	1,700.00	5.89	5.89	89.45	0.29	29.99	29.99	18.21	11.78	2.545	Alert
1,750.00	1,750.00	1,750.00	1,750.00	6.07	6.07	89.45	0.29	29.99	29.99	17.85	12.14	2.471	Minor Risk
1,800.00	1,800.00	1,800.00	1,800.00	6.25	6.25	89.45	0.29	29.99	29.99	17.49	12.50	2.400	Minor Risk
1,850.00	1,850.00	1,850.00	1,850.00	6.43	6.43	89.45	0.29	29.99	29.99	17.14	12.85	2.333	Minor Risk
1,900.00	1,900.00	1,900.00	1,900.00	6.61	6.61	89.45	0.29	29.99	29.99	16.78	13.21	2.270	Minor Risk
1,950.00	1,950.00	1,950.00	1,950.00	6.78	6.78	89.45	0.29	29.99	29.99	16.42	13.57	2.210	Minor Risk
2,000.00	2,000.00	2,000.00	2,000.00	6.96	6.96	89.45	0.29	29.99	29.99	16.06	13.93	2.154	Minor Risk
2,050.00	2,050.00	2,050.00	2,050.00	7.14	7.14	89.45	0.29	29.99	29.99	15.71	14.28	2.100	Minor Risk
2,100.00	2,100.00	2,100.00	2,100.00	7.32	7.32	89.45	0.29	29.99	29.99	15.35	14.64	2.048	Minor Risk
2,150.00	2,150.00	2,150.00	2,150.00	7.50	7.50	89.45	0.29	29.99	29.99	14.99	15.00	1.999	Minor Risk
2,200.00	2,200.00	2,200.00	2,200.00	7.68	7.68	89.45	0.29	29.99	29.99	14.63	15.36	1.953	Minor Risk
2,250.00	2,250.00	2,250.00	2,250.00	7.86	7.86	89.45	0.29	29.99	29.99	14.28	15.71	1.908	Minor Risk
2,300.00	2,300.00	2,300.00	2,300.00	8.04	8.04	89.45	0.29	29.99	29.99	13.92	16.07	1.866	Minor Risk
2,350.00	2,350.00	2,350.00	2,350.00	8.22	8.22	89.45	0.29	29.99	29.99	13.56	16.43	1.825	Minor Risk
2,400.00	2,400.00	2,400.00	2,400.00	8.39	8.39	89.45	0.29	29.99	29.99	13.20	16.79	1.786	Minor Risk
2,450.00	2,450.00	2,450.00	2,450.00	8.57	8.57	89.45	0.29	29.99	29.99	12.85	17.15	1.749	Minor Risk
2,500.00	2,500.00	2,500.00	2,500.00	8.75	8.75	89.45	0.29	29.99	29.99	12.49	17.50	1.713	Minor Risk
2,550.00	2,550.00	2,550.00	2,550.00	8.93	8.93	89.45	0.29	29.99	29.99	12.13	17.86	1.679	Minor Risk

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,600.00	2,600.00	9.11	9.11	89.45	0.29	29.99	29.99	11.77	18.22	1.646	Minor Risk
2,650.00	2,650.00	2,650.00	2,650.00	9.29	9.29	89.45	0.29	29.99	29.99	11.41	18.58	1.614	Minor Risk
2,700.00	2,700.00	2,700.00	2,700.00	9.47	9.47	89.45	0.29	29.99	29.99	11.06	18.94	1.584	Minor Risk
2,750.00	2,750.00	2,750.00	2,750.00	9.65	9.65	89.45	0.29	29.99	29.99	10.70	19.29	1.554	Minor Risk, CC
2,800.00	2,800.00	2,800.00	2,800.00	9.82	9.83	-171.64	0.29	29.99	30.21	10.56	19.65	1.538	Minor Risk, ES, SF
2,850.00	2,849.99	2,849.99	2,849.99	9.99	10.00	-171.82	0.29	29.99	30.85	10.86	19.99	1.543	Minor Risk
2,900.00	2,899.98	2,900.02	2,899.98	10.16	10.18	-172.09	0.29	29.99	31.93	11.59	20.34	1.570	Minor Risk
2,950.00	2,949.96	2,949.96	2,949.96	10.33	10.36	-172.45	0.29	29.99	33.45	12.76	20.69	1.617	Minor Risk
3,000.00	2,999.92	3,000.08	2,999.92	10.50	10.54	-172.87	0.29	29.99	35.39	14.36	21.04	1.682	Minor Risk
3,050.00	3,049.86	3,049.86	3,049.86	10.67	10.72	-173.32	0.29	29.99	37.78	16.39	21.39	1.766	Minor Risk
3,100.00	3,099.78	3,100.22	3,099.78	10.84	10.90	-173.78	0.29	29.99	40.59	18.86	21.74	1.867	Minor Risk
3,150.00	3,149.68	3,149.68	3,149.68	11.01	11.08	-174.24	0.29	29.99	43.85	21.76	22.09	1.985	Minor Risk
3,200.00	3,199.54	3,200.46	3,199.54	11.19	11.26	-174.68	0.29	29.99	47.53	25.09	22.44	2.118	Minor Risk
3,250.00	3,249.39	3,249.39	3,249.39	11.36	11.44	-175.09	0.29	29.99	51.41	28.63	22.78	2.257	Minor Risk
3,300.00	3,299.23	3,300.77	3,299.23	11.53	11.62	-175.43	0.29	29.99	55.29	32.16	23.14	2.390	Minor Risk
3,350.00	3,349.08	3,349.08	3,349.08	11.71	11.79	-175.73	0.29	29.99	59.18	35.69	23.48	2.520	Alert
3,400.00	3,398.93	3,398.93	3,398.93	11.88	11.97	-176.00	0.29	29.99	63.06	39.23	23.83	2.646	Alert
3,450.00	3,448.78	3,448.22	3,448.22	12.05	12.14	-176.24	0.33	30.19	67.15	42.98	24.18	2.778	Alert
3,500.00	3,498.63	3,497.42	3,497.41	12.23	12.32	-176.49	0.45	30.80	71.67	47.15	24.52	2.923	Alert
3,550.00	3,548.47	3,546.54	3,546.52	12.40	12.49	-176.74	0.64	31.83	76.61	51.76	24.85	3.083	Alert
3,600.00	3,598.32	3,595.57	3,595.53	12.58	12.65	-176.99	0.92	33.27	81.98	56.80	25.19	3.255	Alert
3,650.00	3,648.17	3,644.51	3,644.44	12.76	12.82	-177.22	1.27	35.11	87.78	62.26	25.52	3.439	Alert
3,700.00	3,698.02	3,693.35	3,693.22	12.93	12.99	-177.45	1.70	37.36	94.00	68.15	25.85	3.636	Alert
3,750.00	3,747.87	3,742.08	3,741.88	13.11	13.16	-177.66	2.20	40.02	100.64	74.46	26.18	3.844	Alert
3,800.00	3,797.71	3,790.70	3,790.39	13.29	13.33	-177.87	2.79	43.07	107.70	81.19	26.51	4.063	Alert
3,850.00	3,847.56	3,839.19	3,838.76	13.46	13.50	-178.06	3.44	46.52	115.18	88.35	26.83	4.293	Alert
3,900.00	3,897.41	3,887.56	3,886.97	13.64	13.67	-178.24	4.18	50.35	123.08	95.93	27.15	4.533	Alert
3,950.00	3,947.26	3,935.79	3,935.01	13.82	13.84	-178.41	4.98	54.58	131.40	103.92	27.48	4.782	Alert
4,000.00	3,997.11	3,983.88	3,982.87	14.00	14.00	-178.57	5.86	59.19	140.13	112.33	27.79	5.042	
4,050.00	4,046.95	4,031.83	4,030.55	14.17	14.17	-178.72	6.81	64.18	149.27	121.16	28.11	5.310	
4,100.00	4,096.80	4,079.63	4,078.03	14.35	14.34	-178.86	7.84	69.54	158.82	130.40	28.42	5.588	
4,150.00	4,146.65	4,127.47	4,125.51	14.53	14.51	-178.99	8.93	75.29	168.78	140.04	28.74	5.873	
4,200.00	4,196.50	4,176.43	4,174.09	14.71	14.68	-179.11	10.09	81.32	178.89	149.80	29.08	6.151	
4,250.00	4,246.35	4,225.40	4,222.67	14.89	14.85	-179.22	11.24	87.35	188.99	159.57	29.42	6.423	
4,300.00	4,296.20	4,274.36	4,271.25	15.07	15.02	-179.32	12.39	93.38	199.10	169.34	29.77	6.689	
4,350.00	4,346.04	4,323.33	4,319.83	15.25	15.20	-179.40	13.54	99.41	209.21	179.10	30.11	6.948	
4,400.00	4,395.89	4,372.30	4,368.41	15.43	15.37	-179.48	14.69	105.44	219.32	188.87	30.45	7.202	
4,450.00	4,445.74	4,421.26	4,416.99	15.61	15.54	-179.56	15.84	111.47	229.43	198.63	30.80	7.449	
4,500.00	4,495.59	4,470.23	4,465.57	15.79	15.72	-179.62	16.99	117.51	239.54	208.40	31.14	7.692	
4,550.00	4,545.44	4,519.20	4,514.15	15.97	15.89	-179.68	18.14	123.54	249.65	218.16	31.49	7.928	
4,600.00	4,595.28	4,568.16	4,562.73	16.15	16.06	-179.74	19.29	129.57	259.76	227.93	31.83	8.160	
4,650.00	4,645.13	4,617.13	4,611.31	16.33	16.24	-179.79	20.44	135.60	269.87	237.69	32.18	8.387	
4,700.00	4,694.98	4,666.10	4,659.89	16.51	16.41	-179.84	21.60	141.63	279.98	247.46	32.52	8.608	
4,750.00	4,744.83	4,715.06	4,708.47	16.69	16.59	-179.89	22.75	147.66	290.09	257.22	32.87	8.825	
4,800.00	4,794.68	4,764.03	4,757.05	16.87	16.76	-179.93	23.90	153.69	300.20	266.99	33.22	9.038	
4,850.00	4,844.52	4,813.00	4,805.63	17.05	16.94	-179.97	25.05	159.72	310.32	276.75	33.56	9.246	
4,900.00	4,894.37	4,861.96	4,854.21	17.23	17.11	180.00	26.20	165.76	320.43	286.52	33.91	9.449	
4,950.00	4,944.22	4,910.93	4,902.79	17.41	17.29	179.96	27.35	171.79	330.54	296.28	34.26	9.649	
5,000.00	4,994.07	4,959.90	4,951.37	17.60	17.46	179.93	28.50	177.82	340.65	306.05	34.60	9.844	
5,050.00	5,043.92	5,008.86	4,999.95	17.78	17.64	179.90	29.65	183.85	350.76	315.81	34.95	10.035	
5,100.00	5,093.76	5,057.83	5,048.53	17.96	17.81	179.87	30.80	189.88	360.87	325.57	35.30	10.223	
5,150.00	5,143.61	5,106.80	5,097.11	18.14	17.99	179.84	31.95	195.91	370.99	335.34	35.65	10.407	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.00	5,193.46	5,155.76	5,145.69	18.32	18.18	179.82	33.11	201.94	381.10	345.10	36.00	10.587	
5,250.00	5,243.31	5,204.73	5,194.27	18.51	18.34	179.79	34.26	207.97	391.21	354.87	36.35	10.764	
5,300.00	5,293.16	5,253.69	5,242.85	18.69	18.52	179.77	35.41	214.00	401.32	364.63	36.69	10.937	
5,350.00	5,343.00	5,302.66	5,291.43	18.87	18.69	179.74	36.56	220.04	411.44	374.39	37.04	11.107	
5,400.00	5,392.85	5,351.63	5,340.01	19.05	18.87	179.72	37.71	226.07	421.55	384.16	37.39	11.274	
5,450.00	5,442.70	5,400.59	5,388.59	19.24	19.05	179.70	38.86	232.10	431.66	393.92	37.74	11.437	
5,500.00	5,492.55	5,449.56	5,437.17	19.42	19.22	179.68	40.01	238.13	441.77	403.68	38.09	11.598	
5,550.00	5,542.40	5,501.47	5,485.75	19.60	19.41	179.67	41.16	244.16	451.89	413.43	38.45	11.752	
5,600.00	5,592.24	5,547.49	5,534.33	19.78	19.58	179.65	42.31	250.19	462.00	423.21	38.79	11.910	
5,650.00	5,642.09	5,596.46	5,582.91	19.97	19.75	179.63	43.46	256.22	472.11	432.97	39.14	12.062	
5,700.00	5,691.94	5,645.43	5,631.49	20.15	19.93	179.62	44.62	262.25	482.22	442.73	39.49	12.211	
5,750.00	5,741.79	5,705.61	5,680.07	20.33	20.15	179.60	45.77	268.28	492.34	452.45	39.88	12.345	
5,800.00	5,791.64	5,743.36	5,728.65	20.52	20.29	179.59	46.92	274.32	502.45	462.26	40.19	12.501	
5,850.00	5,841.49	5,807.67	5,777.23	20.70	20.52	179.57	48.07	280.35	512.56	471.96	40.60	12.625	
5,900.00	5,891.33	5,841.29	5,825.81	20.88	20.64	179.56	49.22	286.38	522.67	481.78	40.89	12.781	
5,950.00	5,941.18	5,909.74	5,874.39	21.06	20.89	179.54	50.37	292.41	532.79	491.47	41.32	12.895	
6,000.00	5,991.03	5,939.23	5,922.97	21.25	21.00	179.53	51.52	298.44	542.90	501.30	41.60	13.051	
6,050.00	6,040.88	5,988.19	5,971.55	21.43	21.18	179.52	52.67	304.47	553.01	511.06	41.95	13.183	
6,100.00	6,090.73	6,037.16	6,020.13	21.62	21.35	179.51	53.82	310.50	563.13	520.83	42.30	13.312	
6,150.00	6,140.57	6,086.12	6,068.71	21.80	21.53	179.50	54.97	316.53	573.24	530.59	42.65	13.440	
6,200.00	6,190.42	6,135.09	6,117.29	21.98	21.71	179.49	56.12	322.57	583.35	540.35	43.00	13.565	
6,250.00	6,240.27	6,184.06	6,165.87	22.17	21.89	179.47	57.28	328.60	593.46	550.11	43.36	13.688	
6,300.00	6,290.12	6,233.02	6,214.45	22.35	22.07	179.46	58.43	334.63	603.58	559.87	43.71	13.809	
6,350.00	6,339.97	6,281.99	6,263.03	22.53	22.24	179.45	59.58	340.66	613.69	569.63	44.06	13.928	
6,400.00	6,389.81	6,330.96	6,311.61	22.72	22.42	179.45	60.73	346.69	623.80	579.39	44.41	14.045	
6,450.00	6,439.66	6,379.92	6,360.19	22.90	22.60	179.44	61.88	352.72	633.92	589.15	44.77	14.161	
6,500.00	6,489.51	6,428.89	6,408.77	23.09	22.78	179.43	63.03	358.75	644.03	598.91	45.12	14.274	
6,550.00	6,539.36	6,477.86	6,457.35	23.27	22.96	179.42	64.18	364.78	654.14	608.67	45.47	14.386	
6,600.00	6,589.21	6,526.82	6,505.93	23.45	23.14	179.41	65.33	370.81	664.26	618.43	45.82	14.496	
6,650.00	6,639.05	6,575.79	6,554.51	23.64	23.32	179.40	66.48	376.85	674.37	628.19	46.18	14.604	
6,700.00	6,688.90	6,624.76	6,603.09	23.82	23.50	179.39	67.63	382.88	684.48	637.95	46.53	14.710	
6,750.00	6,738.75	6,673.72	6,651.67	24.01	23.68	179.39	68.79	388.91	694.59	647.71	46.88	14.815	
6,800.00	6,788.60	6,722.69	6,700.25	24.19	23.85	179.38	69.94	394.94	704.71	657.47	47.24	14.918	
6,850.00	6,838.45	6,771.66	6,748.83	24.38	24.03	179.37	71.09	400.97	714.82	667.23	47.59	15.020	
6,900.00	6,888.29	6,820.62	6,797.41	24.56	24.21	179.36	72.24	407.00	724.93	676.99	47.94	15.120	
6,950.00	6,938.14	6,869.59	6,845.99	24.74	24.39	179.36	73.39	413.03	735.05	686.75	48.30	15.219	
7,000.00	6,987.99	6,918.56	6,894.57	24.93	24.57	179.35	74.54	419.06	745.16	696.51	48.65	15.316	
7,050.00	7,037.84	6,967.52	6,943.15	25.11	24.75	179.34	75.69	425.09	755.27	706.27	49.01	15.412	
7,100.00	7,087.69	7,016.49	6,991.73	25.30	24.93	179.34	76.84	431.13	765.39	716.03	49.36	15.506	
7,150.00	7,137.53	7,065.45	7,040.31	25.48	25.11	179.33	77.99	437.16	775.50	725.79	49.71	15.599	
7,200.00	7,187.38	7,114.42	7,088.89	25.67	25.29	179.33	79.14	443.19	785.61	735.54	50.07	15.691	
7,250.00	7,237.23	7,163.39	7,137.47	25.85	25.47	179.32	80.30	449.22	795.73	745.30	50.42	15.781	
7,300.00	7,287.08	7,212.35	7,186.05	26.04	25.65	179.31	81.45	455.25	805.84	755.06	50.78	15.870	
7,350.00	7,336.93	7,261.32	7,234.63	26.22	25.83	179.31	82.60	461.28	815.95	764.82	51.13	15.958	
7,400.00	7,386.78	7,310.29	7,283.21	26.41	26.01	179.30	83.75	467.31	826.07	774.58	51.49	16.044	
7,450.00	7,436.62	7,359.25	7,331.79	26.59	26.19	179.30	84.90	473.34	836.18	784.34	51.84	16.130	
7,500.00	7,486.47	7,408.22	7,380.37	26.78	26.37	179.29	86.05	479.38	846.29	794.10	52.20	16.214	
7,550.00	7,536.32	7,457.19	7,428.95	26.96	26.55	179.29	87.20	485.41	856.41	803.85	52.55	16.297	
7,600.00	7,586.17	7,506.15	7,477.53	27.15	26.73	179.28	88.35	491.44	866.52	813.61	52.91	16.379	
7,650.00	7,636.02	7,555.12	7,526.11	27.33	26.91	179.28	89.50	497.47	876.63	823.37	53.26	16.459	
7,700.00	7,685.86	7,604.09	7,574.69	27.52	27.09	179.27	90.65	503.50	886.75	833.13	53.62	16.539	
7,750.00	7,735.71	7,653.05	7,623.27	27.70	27.27	179.27	91.81	509.53	896.86	842.89	53.97	16.618	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.00	7,785.56	7,702.02	7,671.85	27.89	27.45	179.26	92.96	515.56	906.97	852.65	54.33	16.695	
7,850.00	7,835.41	7,750.99	7,720.43	28.07	27.63	179.26	94.11	521.59	917.08	862.40	54.68	16.772	
7,900.00	7,885.26	7,800.05	7,769.01	28.26	27.81	179.26	95.26	527.62	927.20	872.16	55.04	16.847	
7,950.00	7,935.10	7,848.92	7,817.59	28.44	27.99	179.25	96.41	533.66	937.31	881.92	55.39	16.921	
8,000.00	7,984.95	7,902.12	7,866.17	28.63	28.18	179.25	97.56	539.69	947.42	891.66	55.76	16.990	
8,050.00	8,034.80	7,946.85	7,914.75	28.81	28.35	179.24	98.71	545.72	957.54	901.43	56.10	17.067	
8,100.00	8,084.65	7,995.82	7,963.33	29.00	28.53	179.24	99.86	551.75	967.65	911.19	56.46	17.139	
8,150.00	8,134.50	8,044.78	8,011.91	29.18	28.71	179.24	101.01	557.78	977.76	920.95	56.81	17.210	
8,200.00	8,184.34	8,106.25	8,060.49	29.37	28.94	179.23	102.16	563.81	987.88	930.66	57.22	17.266	
8,250.00	8,234.19	8,142.72	8,109.07	29.55	29.07	179.23	103.32	569.84	997.99	940.46	57.53	17.348	
8,300.00	8,284.04	8,208.32	8,157.65	29.74	29.31	179.22	104.47	575.87	1,008.10	950.16	57.94	17.398	
8,350.00	8,333.89	8,240.65	8,206.23	29.92	29.43	179.22	105.62	581.90	1,018.22	959.98	58.24	17.484	
8,400.00	8,383.74	8,289.62	8,254.81	30.11	29.61	179.22	106.77	587.94	1,028.33	969.74	58.59	17.550	
8,450.00	8,433.58	8,338.58	8,303.39	30.29	29.79	179.21	107.92	593.97	1,038.44	979.49	58.95	17.616	
8,500.00	8,483.43	8,387.55	8,351.97	30.48	29.97	179.21	109.07	600.00	1,048.56	989.25	59.31	17.680	
8,550.00	8,533.28	8,436.52	8,400.55	30.67	30.15	179.21	110.22	606.03	1,058.67	999.01	59.66	17.744	
8,600.00	8,583.13	8,485.48	8,449.13	30.85	30.33	179.20	111.37	612.06	1,068.78	1,008.76	60.02	17.807	
8,650.00	8,632.98	8,534.45	8,497.71	31.04	30.51	179.20	112.52	618.09	1,078.90	1,018.52	60.38	17.870	
8,700.00	8,682.83	8,583.42	8,546.29	31.22	30.70	179.20	113.67	624.12	1,089.01	1,028.28	60.73	17.931	
8,750.00	8,732.67	8,632.38	8,594.87	31.41	30.88	179.19	114.83	630.15	1,099.12	1,038.04	61.09	17.992	
8,800.00	8,782.52	8,681.35	8,643.45	31.59	31.06	179.19	115.98	636.19	1,109.24	1,047.79	61.45	18.052	
8,850.00	8,832.37	8,730.32	8,692.03	31.78	31.24	179.19	117.13	642.22	1,119.35	1,057.55	61.80	18.112	
8,900.00	8,882.22	8,779.28	8,740.61	31.96	31.42	179.19	118.28	648.25	1,129.46	1,067.31	62.16	18.171	
8,950.00	8,932.07	8,828.25	8,789.19	32.15	31.60	179.18	119.43	654.28	1,139.58	1,077.06	62.52	18.229	
9,000.00	8,981.91	8,894.45	8,854.93	32.34	31.84	179.18	120.91	662.01	1,149.39	1,086.38	63.01	18.241	
9,050.00	9,031.79	8,965.03	8,925.14	32.52	32.10	179.18	122.25	669.04	1,157.96	1,094.43	63.53	18.228	
9,100.00	9,081.70	9,036.16	8,996.02	32.70	32.36	179.18	123.35	674.83	1,164.97	1,100.94	64.03	18.195	
9,150.00	9,131.65	9,107.74	9,067.46	32.88	32.62	179.18	124.21	679.34	1,170.40	1,105.89	64.51	18.143	
9,200.00	9,181.63	9,179.67	9,139.31	33.06	32.87	179.18	124.82	682.55	1,174.24	1,109.27	64.98	18.072	
9,250.00	9,231.62	9,251.81	9,211.43	33.24	33.13	179.18	125.18	684.44	1,176.50	1,111.07	65.42	17.983	
9,300.00	9,281.62	9,322.01	9,281.62	33.41	33.38	80.20	125.29	684.99	1,177.15	1,111.31	65.84	17.878	
9,350.00	9,331.62	9,372.01	9,331.62	33.58	33.55	80.20	125.29	684.99	1,177.15	1,110.96	66.19	17.784	
9,400.00	9,381.62	9,422.01	9,381.62	33.75	33.72	80.20	125.29	684.99	1,177.15	1,110.62	66.54	17.692	
9,450.00	9,431.62	9,472.01	9,431.62	33.92	33.90	80.20	125.29	684.99	1,177.15	1,110.27	66.88	17.600	
9,500.00	9,481.62	9,522.01	9,481.62	34.09	34.07	80.20	125.29	684.99	1,177.15	1,109.92	67.23	17.509	
9,550.00	9,531.62	9,572.01	9,531.62	34.27	34.24	80.20	125.29	684.99	1,177.15	1,109.58	67.58	17.419	
9,600.00	9,581.62	9,622.01	9,581.62	34.44	34.42	80.20	125.29	684.99	1,177.15	1,109.23	67.92	17.330	
9,650.00	9,631.62	9,674.42	9,634.04	34.61	34.60	-99.68	125.25	684.99	1,177.15	1,108.87	68.28	17.240	
9,700.00	9,681.54	9,750.68	9,710.00	34.77	34.85	-99.60	119.25	685.00	1,176.93	1,108.25	68.67	17.138	
9,750.00	9,731.04	9,826.26	9,783.85	34.94	35.08	-99.40	103.42	685.03	1,176.33	1,107.29	69.03	17.040	
9,800.00	9,779.75	9,900.61	9,853.83	35.11	35.30	-99.07	78.49	685.08	1,175.39	1,106.02	69.37	16.944	
9,850.00	9,827.30	9,973.24	9,918.54	35.27	35.49	-98.65	45.60	685.15	1,174.17	1,104.48	69.68	16.850	
9,900.00	9,873.32	10,043.80	9,976.92	35.43	35.66	-98.13	6.06	685.23	1,172.72	1,102.73	69.99	16.756	
9,950.00	9,917.48	10,112.04	10,028.36	35.58	35.79	-97.54	-38.74	685.32	1,171.13	1,100.84	70.30	16.660	
10,000.00	9,959.42	10,177.84	10,072.57	35.73	35.90	-96.88	-87.42	685.42	1,169.47	1,098.87	70.60	16.564	
10,050.00	9,998.83	10,241.16	10,109.59	35.87	35.99	-96.19	-138.75	685.52	1,167.81	1,096.89	70.92	16.467	
10,100.00	10,035.41	10,302.04	10,139.63	36.01	36.05	-95.45	-191.67	685.63	1,166.21	1,094.97	71.24	16.370	
10,150.00	10,068.88	10,360.58	10,163.06	36.15	36.11	-94.69	-245.28	685.74	1,164.74	1,093.17	71.56	16.276	
10,200.00	10,098.99	10,416.90	10,180.34	36.29	36.20	-93.91	-298.86	685.85	1,163.43	1,091.55	71.88	16.186	
10,250.00	10,125.51	10,471.15	10,191.93	36.43	36.29	-93.12	-351.84	685.95	1,162.32	1,090.14	72.18	16.102	
10,300.00	10,148.24	10,523.50	10,198.32	36.58	36.37	-92.33	-403.78	686.06	1,161.45	1,088.98	72.48	16.025	
10,350.00	10,166.99	10,573.72	10,200.00	36.73	36.44	-91.53	-453.96	686.16	1,160.83	1,088.08	72.75	15.956	

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

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.00	10,181.64	10,621.51	10,200.00	36.90	36.51	-90.88	-501.75	686.26	1,160.50	1,087.49	73.01	15.894	
10,450.00	10,192.07	10,670.39	10,200.00	37.07	36.59	-90.39	-550.63	686.36	1,160.38	1,087.11	73.27	15.837	
10,500.00	10,198.20	10,720.00	10,200.00	37.24	36.67	-90.09	-600.24	686.46	1,160.35	1,086.82	73.53	15.781	
10,550.00	10,200.00	10,769.95	10,200.00	37.42	36.76	-90.00	-650.19	686.56	1,160.35	1,086.55	73.79	15.724	
10,600.00	10,200.00	10,819.95	10,200.00	37.61	36.85	-90.00	-700.19	686.66	1,160.34	1,086.28	74.07	15.666	
10,650.00	10,200.00	10,869.95	10,200.00	37.81	36.95	-90.00	-750.19	686.76	1,160.34	1,085.97	74.37	15.603	
10,700.00	10,200.00	10,919.95	10,200.00	38.02	37.06	-90.00	-800.19	686.86	1,160.34	1,085.66	74.67	15.539	
10,750.00	10,200.00	10,969.95	10,200.00	38.25	37.17	-90.00	-850.19	686.96	1,160.33	1,085.32	75.01	15.468	
10,800.00	10,200.00	11,019.95	10,200.00	38.48	37.29	-90.00	-900.19	687.06	1,160.33	1,084.97	75.36	15.398	
10,850.00	10,200.00	11,069.95	10,200.00	38.73	37.41	-90.00	-950.19	687.16	1,160.32	1,084.59	75.73	15.321	
10,900.00	10,200.00	11,119.95	10,200.00	38.99	37.54	-90.00	-1,000.19	687.26	1,160.32	1,084.21	76.11	15.245	
10,950.00	10,200.00	11,169.95	10,200.00	39.26	37.68	-90.00	-1,050.19	687.37	1,160.32	1,083.79	76.52	15.163	
11,000.00	10,200.00	11,219.95	10,200.00	39.54	37.82	-90.00	-1,100.19	687.47	1,160.31	1,083.37	76.94	15.081	
11,050.00	10,200.00	11,269.95	10,200.00	39.84	37.96	-90.00	-1,150.19	687.57	1,160.31	1,082.93	77.38	14.994	
11,100.00	10,200.00	11,319.95	10,200.00	40.14	38.11	-90.00	-1,200.19	687.67	1,160.30	1,082.47	77.83	14.908	
11,150.00	10,200.00	11,369.95	10,200.00	40.46	38.27	-90.00	-1,250.19	687.77	1,160.30	1,081.99	78.31	14.817	
11,200.00	10,200.00	11,419.95	10,200.00	40.78	38.43	-90.00	-1,300.19	687.87	1,160.30	1,081.50	78.79	14.726	
11,250.00	10,200.00	11,469.95	10,200.00	41.12	38.60	-90.00	-1,350.19	687.97	1,160.29	1,080.99	79.30	14.632	
11,300.00	10,200.00	11,519.95	10,200.00	41.46	38.77	-90.00	-1,400.19	688.07	1,160.29	1,080.47	79.81	14.537	
11,350.00	10,200.00	11,569.95	10,200.00	41.82	38.95	-90.00	-1,450.19	688.17	1,160.28	1,079.93	80.35	14.440	
11,400.00	10,200.00	11,619.95	10,200.00	42.18	39.13	-90.00	-1,500.19	688.28	1,160.28	1,079.38	80.90	14.343	
11,450.00	10,200.00	11,669.95	10,200.00	42.56	39.32	-90.00	-1,550.19	688.38	1,160.28	1,078.81	81.46	14.243	
11,500.00	10,200.00	11,719.95	10,200.00	42.93	39.51	-90.00	-1,600.19	688.48	1,160.27	1,078.24	82.04	14.143	
11,550.00	10,200.00	11,769.95	10,200.00	43.33	39.71	-90.00	-1,650.19	688.58	1,160.27	1,077.64	82.63	14.041	
11,600.00	10,200.00	11,819.95	10,200.00	43.73	39.91	-90.00	-1,700.19	688.68	1,160.26	1,077.03	83.23	13.940	
11,650.00	10,200.00	11,869.95	10,200.00	44.14	40.12	-90.00	-1,750.19	688.78	1,160.26	1,076.40	83.86	13.836	
11,700.00	10,200.00	11,919.95	10,200.00	44.55	40.33	-90.00	-1,800.19	688.88	1,160.26	1,075.77	84.48	13.734	
11,750.00	10,200.00	11,969.95	10,200.00	44.98	40.55	-90.00	-1,850.19	688.98	1,160.25	1,075.12	85.13	13.629	
11,800.00	10,200.00	12,019.95	10,200.00	45.41	40.77	-90.00	-1,900.19	689.08	1,160.25	1,074.47	85.78	13.526	
11,850.00	10,200.00	12,069.95	10,200.00	45.85	41.00	-90.00	-1,950.19	689.19	1,160.24	1,073.79	86.45	13.421	
11,900.00	10,200.00	12,119.95	10,200.00	46.29	41.23	-90.00	-2,000.19	689.29	1,160.24	1,073.11	87.13	13.316	
11,950.00	10,200.00	12,169.95	10,200.00	46.75	41.46	-90.00	-2,050.19	689.39	1,160.24	1,072.41	87.82	13.211	
12,000.00	10,200.00	12,219.95	10,200.00	47.21	41.70	-90.00	-2,100.19	689.49	1,160.23	1,071.71	88.52	13.107	
12,050.00	10,200.00	12,269.95	10,200.00	47.68	41.95	-90.00	-2,150.19	689.59	1,160.23	1,070.99	89.24	13.002	
12,100.00	10,200.00	12,319.95	10,200.00	48.15	42.19	-90.00	-2,200.19	689.69	1,160.23	1,070.27	89.96	12.898	
12,150.00	10,200.00	12,369.95	10,200.00	48.63	42.45	-90.00	-2,250.19	689.79	1,160.22	1,069.53	90.69	12.793	
12,200.00	10,200.00	12,419.95	10,200.00	49.11	42.70	-90.00	-2,300.19	689.89	1,160.22	1,068.78	91.43	12.689	
12,250.00	10,200.00	12,469.95	10,200.00	49.61	42.96	-90.00	-2,350.19	689.99	1,160.21	1,068.02	92.19	12.585	
12,300.00	10,200.00	12,519.95	10,200.00	50.10	43.22	-90.00	-2,400.19	690.09	1,160.21	1,067.26	92.95	12.482	
12,350.00	10,200.00	12,569.95	10,200.00	50.61	43.49	-90.00	-2,450.19	690.20	1,160.21	1,066.48	93.73	12.379	
12,400.00	10,200.00	12,619.95	10,200.00	51.11	43.76	-90.00	-2,500.19	690.30	1,160.20	1,065.70	94.51	12.277	
12,450.00	10,200.00	12,669.95	10,200.00	51.63	44.04	-90.00	-2,550.19	690.40	1,160.20	1,064.90	95.30	12.174	
12,500.00	10,200.00	12,719.95	10,200.00	52.14	44.31	-90.00	-2,600.19	690.50	1,160.19	1,064.10	96.09	12.073	
12,550.00	10,200.00	12,769.95	10,200.00	52.67	44.59	-90.00	-2,650.19	690.60	1,160.19	1,063.28	96.91	11.972	
12,600.00	10,200.00	12,819.95	10,200.00	53.19	44.88	-90.00	-2,700.19	690.70	1,160.19	1,062.47	97.72	11.873	
12,650.00	10,200.00	12,869.95	10,200.00	53.73	45.17	-90.00	-2,750.19	690.80	1,160.18	1,061.64	98.54	11.773	
12,700.00	10,200.00	12,919.95	10,200.00	54.26	45.46	-90.00	-2,800.19	690.90	1,160.18	1,060.80	99.37	11.675	
12,750.00	10,200.00	12,969.95	10,200.00	54.81	45.75	-90.00	-2,850.19	691.00	1,160.17	1,059.96	100.22	11.577	
12,800.00	10,200.00	13,019.95	10,200.00	55.35	46.05	-90.00	-2,900.19	691.11	1,160.17	1,059.11	101.06	11.480	
12,850.00	10,200.00	13,069.95	10,200.00	55.90	46.35	-90.00	-2,950.18	691.21	1,160.17	1,058.25	101.92	11.384	
12,900.00	10,200.00	13,119.95	10,200.00	56.46	46.66	-90.00	-3,000.18	691.31	1,160.16	1,057.39	102.77	11.288	
12,950.00	10,200.00	13,169.95	10,200.00	57.02	46.96	-90.00	-3,050.18	691.41	1,160.16	1,056.51	103.64	11.194	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,000.00	10,200.00	13,219.95	10,200.00	57.58	47.27	-90.00	-3,100.18	691.51	1,160.15	1,055.64	104.52	11.100	
13,050.00	10,200.00	13,269.95	10,200.00	58.14	47.59	-90.00	-3,150.18	691.61	1,160.15	1,054.75	105.40	11.007	
13,100.00	10,200.00	13,319.95	10,200.00	58.71	47.90	-90.00	-3,200.18	691.71	1,160.15	1,053.86	106.28	10.915	
13,150.00	10,200.00	13,369.95	10,200.00	59.28	48.22	-90.00	-3,250.18	691.81	1,160.14	1,052.96	107.18	10.824	
13,200.00	10,200.00	13,419.95	10,200.00	59.86	48.54	-90.00	-3,300.18	691.91	1,160.14	1,052.06	108.08	10.734	
13,250.00	10,200.00	13,469.95	10,200.00	60.44	48.87	-90.00	-3,350.18	692.01	1,160.13	1,051.15	108.98	10.645	
13,300.00	10,200.00	13,519.95	10,200.00	61.02	49.19	-90.00	-3,400.18	692.12	1,160.13	1,050.24	109.89	10.557	
13,350.00	10,200.00	13,569.95	10,200.00	61.60	49.52	-90.00	-3,450.18	692.22	1,160.13	1,049.31	110.81	10.469	
13,400.00	10,200.00	13,619.95	10,200.00	62.19	49.86	-90.00	-3,500.18	692.32	1,160.12	1,048.39	111.73	10.383	
13,450.00	10,200.00	13,669.95	10,200.00	62.78	50.19	-90.00	-3,550.18	692.42	1,160.12	1,047.46	112.66	10.297	
13,500.00	10,200.00	13,719.95	10,200.00	63.38	50.53	-90.00	-3,600.18	692.52	1,160.12	1,046.52	113.59	10.213	
13,550.00	10,200.00	13,769.95	10,200.00	63.97	50.87	-90.00	-3,650.18	692.62	1,160.11	1,045.58	114.53	10.129	
13,600.00	10,200.00	13,819.95	10,200.00	64.57	51.21	-90.00	-3,700.18	692.72	1,160.11	1,044.63	115.48	10.046	
13,650.00	10,200.00	13,869.95	10,200.00	65.17	51.55	-90.00	-3,750.18	692.82	1,160.10	1,043.68	116.42	9.964	
13,700.00	10,200.00	13,919.95	10,200.00	65.78	51.90	-90.00	-3,800.18	692.92	1,160.10	1,042.72	117.38	9.884	
13,750.00	10,200.00	13,969.95	10,200.00	66.39	52.24	-90.00	-3,850.18	693.03	1,160.10	1,041.76	118.33	9.804	
13,800.00	10,200.00	14,019.95	10,200.00	66.99	52.59	-90.00	-3,900.18	693.13	1,160.09	1,040.80	119.29	9.725	
13,850.00	10,200.00	14,069.95	10,200.00	67.61	52.95	-90.00	-3,950.18	693.23	1,160.09	1,039.83	120.26	9.646	
13,900.00	10,200.00	14,119.95	10,200.00	68.22	53.30	-90.00	-4,000.18	693.33	1,160.08	1,038.85	121.23	9.569	
13,950.00	10,200.00	14,169.95	10,200.00	68.84	53.66	-90.00	-4,050.18	693.43	1,160.08	1,037.87	122.21	9.493	
14,000.00	10,200.00	14,219.95	10,200.00	69.45	54.02	-90.00	-4,100.18	693.53	1,160.08	1,036.89	123.18	9.417	
14,050.00	10,200.00	14,269.95	10,200.00	70.07	54.38	-90.00	-4,150.18	693.63	1,160.07	1,035.90	124.17	9.343	
14,100.00	10,200.00	14,319.95	10,200.00	70.69	54.74	-90.00	-4,200.18	693.73	1,160.07	1,034.91	125.15	9.269	
14,150.00	10,200.00	14,369.95	10,200.00	71.32	55.10	-90.00	-4,250.18	693.83	1,160.06	1,033.92	126.15	9.196	
14,200.00	10,200.00	14,419.95	10,200.00	71.95	55.47	-90.00	-4,300.18	693.94	1,160.06	1,032.92	127.14	9.124	
14,250.00	10,200.00	14,469.95	10,200.00	72.57	55.84	-90.00	-4,350.18	694.04	1,160.06	1,031.92	128.14	9.053	
14,300.00	10,200.00	14,519.95	10,200.00	73.20	56.21	-90.00	-4,400.18	694.14	1,160.05	1,030.91	129.14	8.983	
14,350.00	10,200.00	14,569.95	10,200.00	73.84	56.58	-90.00	-4,450.18	694.24	1,160.05	1,029.90	130.14	8.914	
14,400.00	10,200.00	14,619.95	10,200.00	74.47	56.95	-90.00	-4,500.18	694.34	1,160.04	1,028.89	131.15	8.845	
14,450.00	10,200.00	14,669.95	10,200.00	75.10	57.33	-90.00	-4,550.18	694.44	1,160.04	1,027.88	132.16	8.777	
14,500.00	10,200.00	14,719.95	10,200.00	75.74	57.70	-90.00	-4,600.18	694.54	1,160.04	1,026.86	133.18	8.710	
14,550.00	10,200.00	14,769.95	10,200.00	76.38	58.08	-90.00	-4,650.18	694.64	1,160.03	1,025.84	134.20	8.644	
14,600.00	10,200.00	14,819.95	10,200.00	77.02	58.46	-90.00	-4,700.18	694.74	1,160.03	1,024.81	135.22	8.579	
14,650.00	10,200.00	14,869.95	10,200.00	77.66	58.84	-90.00	-4,750.18	694.84	1,160.02	1,023.78	136.24	8.514	
14,700.00	10,200.00	14,919.95	10,200.00	78.30	59.22	-90.00	-4,800.18	694.95	1,160.02	1,022.75	137.27	8.451	
14,750.00	10,200.00	14,969.95	10,200.00	78.95	59.61	-90.00	-4,850.18	695.05	1,160.02	1,021.72	138.30	8.388	
14,800.00	10,200.00	15,019.95	10,200.00	79.59	59.99	-90.00	-4,900.18	695.15	1,160.01	1,020.68	139.33	8.326	
14,850.00	10,200.00	15,069.95	10,200.00	80.24	60.38	-90.00	-4,950.18	695.25	1,160.01	1,019.64	140.37	8.264	
14,900.00	10,200.00	15,119.95	10,200.00	80.89	60.77	-90.00	-5,000.18	695.35	1,160.01	1,018.60	141.41	8.203	
14,950.00	10,200.00	15,169.95	10,200.00	81.54	61.16	-90.00	-5,050.18	695.45	1,160.00	1,017.55	142.45	8.143	
15,000.00	10,200.00	15,219.95	10,200.00	82.19	61.55	-90.00	-5,100.18	695.55	1,160.00	1,016.51	143.49	8.084	
15,050.00	10,200.00	15,269.95	10,200.00	82.84	61.94	-90.00	-5,150.18	695.65	1,159.99	1,015.46	144.54	8.026	
15,100.00	10,200.00	15,319.95	10,200.00	83.49	62.33	-90.00	-5,200.18	695.75	1,159.99	1,014.40	145.59	7.968	
15,150.00	10,200.00	15,369.95	10,200.00	84.15	62.73	-90.00	-5,250.18	695.86	1,159.99	1,013.35	146.64	7.911	
15,200.00	10,200.00	15,419.95	10,200.00	84.80	63.12	-90.00	-5,300.18	695.96	1,159.98	1,012.29	147.69	7.854	
15,250.00	10,200.00	15,469.95	10,200.00	85.46	63.52	-90.00	-5,350.18	696.06	1,159.98	1,011.23	148.75	7.798	
15,300.00	10,200.00	15,519.95	10,200.00	86.12	63.92	-90.00	-5,400.18	696.16	1,159.97	1,010.17	149.80	7.743	
15,350.00	10,200.00	15,569.95	10,200.00	86.78	64.32	-90.00	-5,450.18	696.26	1,159.97	1,009.10	150.87	7.689	
15,400.00	10,200.00	15,619.95	10,200.00	87.44	64.72	-90.00	-5,500.18	696.36	1,159.97	1,008.04	151.93	7.635	
15,450.00	10,200.00	15,669.95	10,200.00	88.10	65.12	-90.00	-5,550.18	696.46	1,159.96	1,006.97	152.99	7.582	
15,500.00	10,200.00	15,719.95	10,200.00	88.76	65.52	-90.00	-5,600.18	696.56	1,159.96	1,005.90	154.06	7.529	
15,550.00	10,200.00	15,769.95	10,200.00	89.43	65.93	-90.00	-5,650.18	696.66	1,159.95	1,004.82	155.13	7.477	

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

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 08-T25S-R32E - Mustang 8-17 Fed 236H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+IFR1 — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,600.00	10,200.00	15,819.95	10,200.00	90.09	66.33	-90.00	-5,700.18	696.76	1,159.95	1,003.75	156.20	7.426	
15,650.00	10,200.00	15,869.95	10,200.00	90.76	66.74	-90.00	-5,750.18	696.87	1,159.95	1,002.67	157.27	7.375	
15,700.00	10,200.00	15,919.95	10,200.00	91.42	67.15	-90.00	-5,800.18	696.97	1,159.94	1,001.59	158.35	7.325	
15,750.00	10,200.00	15,969.95	10,200.00	92.09	67.56	-90.00	-5,850.18	697.07	1,159.94	1,000.51	159.43	7.276	
15,800.00	10,200.00	16,019.95	10,200.00	92.76	67.96	-90.00	-5,900.18	697.17	1,159.93	999.43	160.50	7.227	
15,850.00	10,200.00	16,069.95	10,200.00	93.43	68.37	-90.00	-5,950.18	697.27	1,159.93	998.35	161.58	7.178	
15,900.00	10,200.00	16,137.41	10,200.00	94.10	68.93	-90.00	-6,017.63	697.08	1,159.73	996.90	162.84	7.122	
15,950.00	10,200.00	16,221.35	10,200.00	94.77	69.61	-90.00	-6,101.54	694.76	1,158.24	994.08	164.17	7.055	
16,000.00	10,200.00	16,305.07	10,200.00	95.44	70.28	-90.00	-6,185.12	689.99	1,155.29	989.92	165.38	6.986	
16,050.00	10,200.00	16,388.43	10,200.00	96.11	70.95	-90.00	-6,268.17	682.83	1,150.89	984.42	166.46	6.914	
16,100.00	10,200.00	16,471.29	10,200.00	96.78	71.59	-90.00	-6,350.48	673.31	1,145.04	977.61	167.43	6.839	
16,150.00	10,200.00	16,553.52	10,200.00	97.46	72.23	-90.00	-6,431.86	661.51	1,137.76	969.50	168.27	6.762	
16,200.00	10,200.00	16,635.00	10,200.00	98.13	72.85	-90.00	-6,512.12	647.53	1,129.08	960.09	168.99	6.682	
16,250.00	10,200.00	16,701.07	10,200.00	98.81	73.34	-90.00	-6,576.92	634.60	1,119.15	949.35	169.80	6.591	
16,300.00	10,200.00	16,750.03	10,200.00	99.48	73.71	-90.00	-6,624.88	624.79	1,109.02	938.18	170.84	6.492	
16,350.00	10,200.00	16,801.00	10,200.00	100.16	74.09	-90.00	-6,672.85	614.97	1,098.89	927.00	171.89	6.393	
16,400.00	10,200.00	16,847.96	10,200.00	100.84	74.44	-90.00	-6,720.82	605.15	1,088.77	915.85	172.92	6.296	
16,450.00	10,200.00	16,896.92	10,200.00	101.52	74.81	-90.00	-6,768.79	595.34	1,078.64	904.68	173.96	6.201	
16,500.00	10,200.00	16,945.89	10,200.00	102.19	75.18	-90.00	-6,816.76	585.52	1,068.51	893.51	175.00	6.106	
16,550.00	10,200.00	16,994.85	10,200.00	102.87	75.56	-90.00	-6,864.73	575.70	1,058.38	882.33	176.05	6.012	
16,600.00	10,200.00	17,043.81	10,200.00	103.55	75.93	-90.00	-6,912.70	565.88	1,048.25	871.16	177.10	5.919	
16,650.00	10,200.00	17,092.78	10,200.00	104.24	76.30	-90.00	-6,960.67	556.07	1,038.13	859.98	178.14	5.827	
16,700.00	10,200.00	17,141.74	10,200.00	104.92	76.68	-90.00	-7,008.64	546.25	1,028.00	848.80	179.20	5.737	
16,750.00	10,200.00	17,190.70	10,200.00	105.60	77.05	-90.00	-7,056.61	536.43	1,017.87	837.62	180.25	5.647	
16,800.00	10,200.00	17,239.67	10,200.00	106.28	77.43	-90.00	-7,104.58	526.61	1,007.74	826.44	181.30	5.558	
16,850.00	10,200.00	17,288.63	10,200.00	106.96	77.81	-90.00	-7,152.55	516.80	997.61	815.26	182.36	5.471	
16,900.00	10,200.00	17,337.60	10,200.00	107.65	78.19	-90.00	-7,200.51	506.98	987.49	804.07	183.41	5.384	
16,950.00	10,200.00	17,386.56	10,200.00	108.33	78.57	-90.00	-7,248.48	497.16	977.36	792.89	184.47	5.298	
17,000.00	10,200.00	17,435.52	10,200.00	109.02	78.95	-90.00	-7,296.45	487.34	967.23	781.70	185.53	5.213	
17,050.00	10,200.00	17,484.49	10,200.00	109.70	79.33	-90.00	-7,344.42	477.53	957.10	770.51	186.59	5.129	
17,100.00	10,200.00	17,533.45	10,200.00	110.39	79.71	-90.00	-7,392.39	467.71	946.97	759.32	187.65	5.046	
17,150.00	10,200.00	17,582.41	10,200.00	111.07	80.10	-90.00	-7,440.36	457.89	936.85	748.13	188.72	4.964	Alert
17,200.00	10,200.00	17,631.38	10,200.00	111.76	80.48	-90.00	-7,488.33	448.08	926.72	736.94	189.78	4.883	Alert
17,250.00	10,200.00	17,680.34	10,200.00	112.45	80.87	-90.00	-7,536.30	438.26	916.59	725.74	190.85	4.803	Alert
17,300.00	10,200.00	17,729.30	10,200.00	113.14	81.25	-90.00	-7,584.27	428.44	906.46	714.55	191.92	4.723	Alert
17,350.00	10,200.00	17,778.27	10,200.00	113.82	81.64	-90.00	-7,632.24	418.62	896.33	703.35	192.99	4.645	Alert
17,400.00	10,200.00	17,827.23	10,200.00	114.51	82.03	-90.00	-7,680.21	408.81	886.21	692.15	194.06	4.567	Alert
17,450.00	10,200.00	17,876.19	10,200.00	115.20	82.42	-90.00	-7,728.18	398.99	876.08	680.95	195.13	4.490	Alert
17,500.00	10,200.00	17,925.16	10,200.00	115.89	82.81	-90.00	-7,776.15	389.17	865.95	669.75	196.20	4.414	Alert
17,550.00	10,200.00	17,974.12	10,200.00	116.58	83.20	-90.00	-7,824.11	379.35	855.82	658.56	197.27	4.338	Alert
17,600.00	10,200.00	18,023.08	10,200.00	117.27	83.59	-90.00	-7,872.08	369.54	845.69	647.35	198.35	4.264	Alert
17,650.00	10,200.00	18,072.05	10,200.00	117.96	83.98	-90.00	-7,920.05	359.72	835.57	636.14	199.42	4.190	Alert
17,700.00	10,200.00	18,121.01	10,200.00	118.66	84.38	-90.00	-7,968.02	349.90	825.44	624.94	200.50	4.117	Alert
17,750.00	10,200.00	18,169.97	10,200.00	119.35	84.77	-90.00	-8,015.99	340.09	815.31	613.73	201.58	4.045	Alert
17,800.00	10,200.00	18,217.18	10,200.00	120.04	85.15	-90.00	-8,062.24	330.62	805.18	602.48	202.71	3.972	Alert
17,850.00	10,200.00	18,217.18	10,200.00	120.73	85.15	-90.00	-8,062.24	330.62	796.67	591.81	204.86	3.889	Alert
17,900.00	10,200.00	18,217.18	10,200.00	121.43	85.15	-90.00	-8,062.24	330.62	791.23	584.86	206.37	3.834	Alert
17,950.00	10,200.00	18,217.18	10,200.00	122.12	85.15	-90.00	-8,062.24	330.62	788.93	581.72	207.21	3.807	Alert
17,961.37	10,200.00	18,217.18	10,200.00	122.28	85.15	-90.00	-8,062.24	330.62	788.85	581.55	207.30	3.805	Alert
17,967.73	10,200.00	18,217.18	10,200.00	122.37	85.15	-90.00	-8,062.24	330.62	788.87	581.54	207.33	3.805	Alert

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 29-T25S-R32E - Morab 29-20 Fed Com 1H - Original Hole - Original Hole — **Offset Site Error:** 0.00 ft

Survey Program: 176-MWD+IGRF — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
16,800.00	10,200.00	17,692.00	10,358.76	106.28	147.62	144.67	-8,342.23	-621.02	1,466.83	1,385.80	81.03	18.103	
16,850.00	10,200.00	17,692.00	10,358.76	106.96	147.62	144.67	-8,342.23	-621.02	1,417.80	1,336.38	81.42	17.414	
16,900.00	10,200.00	17,692.00	10,358.76	107.65	147.62	144.67	-8,342.23	-621.02	1,368.83	1,286.99	81.85	16.725	
16,950.00	10,200.00	17,692.00	10,358.76	108.33	147.62	144.67	-8,342.23	-621.02	1,319.95	1,237.63	82.32	16.034	
17,000.00	10,200.00	17,692.00	10,358.76	109.02	147.62	144.67	-8,342.23	-621.02	1,271.15	1,188.30	82.85	15.342	
17,050.00	10,200.00	17,692.00	10,358.76	109.70	147.62	144.67	-8,342.23	-621.02	1,222.46	1,139.01	83.45	14.649	
17,100.00	10,200.00	17,692.00	10,358.76	110.39	147.62	144.67	-8,342.23	-621.02	1,173.87	1,089.75	84.11	13.956	
17,150.00	10,200.00	17,692.00	10,358.76	111.07	147.62	144.67	-8,342.23	-621.02	1,125.40	1,040.53	84.87	13.261	
17,200.00	10,200.00	17,692.00	10,358.76	111.76	147.62	144.67	-8,342.23	-621.02	1,077.07	991.36	85.71	12.566	
17,250.00	10,200.00	17,692.00	10,358.76	112.45	147.62	144.67	-8,342.23	-621.02	1,028.91	942.23	86.68	11.870	
17,300.00	10,200.00	17,692.00	10,358.76	113.14	147.62	144.67	-8,342.23	-621.02	980.93	893.15	87.78	11.175	
17,350.00	10,200.00	17,692.00	10,358.76	113.82	147.62	144.67	-8,342.23	-621.02	933.15	844.12	89.04	10.480	
17,400.00	10,200.00	17,692.00	10,358.76	114.51	147.62	144.67	-8,342.23	-621.02	885.63	795.14	90.49	9.787	
17,450.00	10,200.00	17,692.00	10,358.76	115.20	147.62	144.67	-8,342.23	-621.02	838.39	746.23	92.17	9.097	
17,500.00	10,200.00	17,692.00	10,358.76	115.89	147.62	144.67	-8,342.23	-621.02	791.50	697.38	94.12	8.410	
17,550.00	10,200.00	17,692.00	10,358.76	116.58	147.62	144.67	-8,342.23	-621.02	745.00	648.61	96.39	7.729	
17,600.00	10,200.00	17,692.00	10,358.76	117.27	147.62	144.67	-8,342.23	-621.02	699.00	599.93	99.07	7.056	
17,650.00	10,200.00	17,692.00	10,358.76	117.96	147.62	144.67	-8,342.23	-621.02	653.57	551.36	102.22	6.394	
17,700.00	10,200.00	17,692.00	10,358.76	118.66	147.62	144.67	-8,342.23	-621.02	608.87	502.93	105.94	5.747	
17,750.00	10,200.00	17,692.00	10,358.76	119.35	147.62	144.67	-8,342.23	-621.02	565.05	454.69	110.36	5.120	
17,800.00	10,200.00	17,692.00	10,358.76	120.04	147.62	144.67	-8,342.23	-621.02	522.35	406.73	115.62	4.518	Alert
17,850.00	10,200.00	17,692.00	10,358.76	120.73	147.62	144.67	-8,342.23	-621.02	481.05	359.20	121.85	3.948	Alert
17,900.00	10,200.00	17,692.00	10,358.76	121.43	147.62	144.67	-8,342.23	-621.02	441.56	312.36	129.20	3.418	Alert
17,950.00	10,200.00	17,692.00	10,358.76	122.12	147.62	144.67	-8,342.23	-621.02	404.40	266.62	137.78	2.935	Alert
17,967.73	10,200.00	17,692.00	10,358.76	122.37	147.62	144.67	-8,342.23	-621.02	391.91	250.80	141.12	2.777	Alert, CC, ES, SF

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

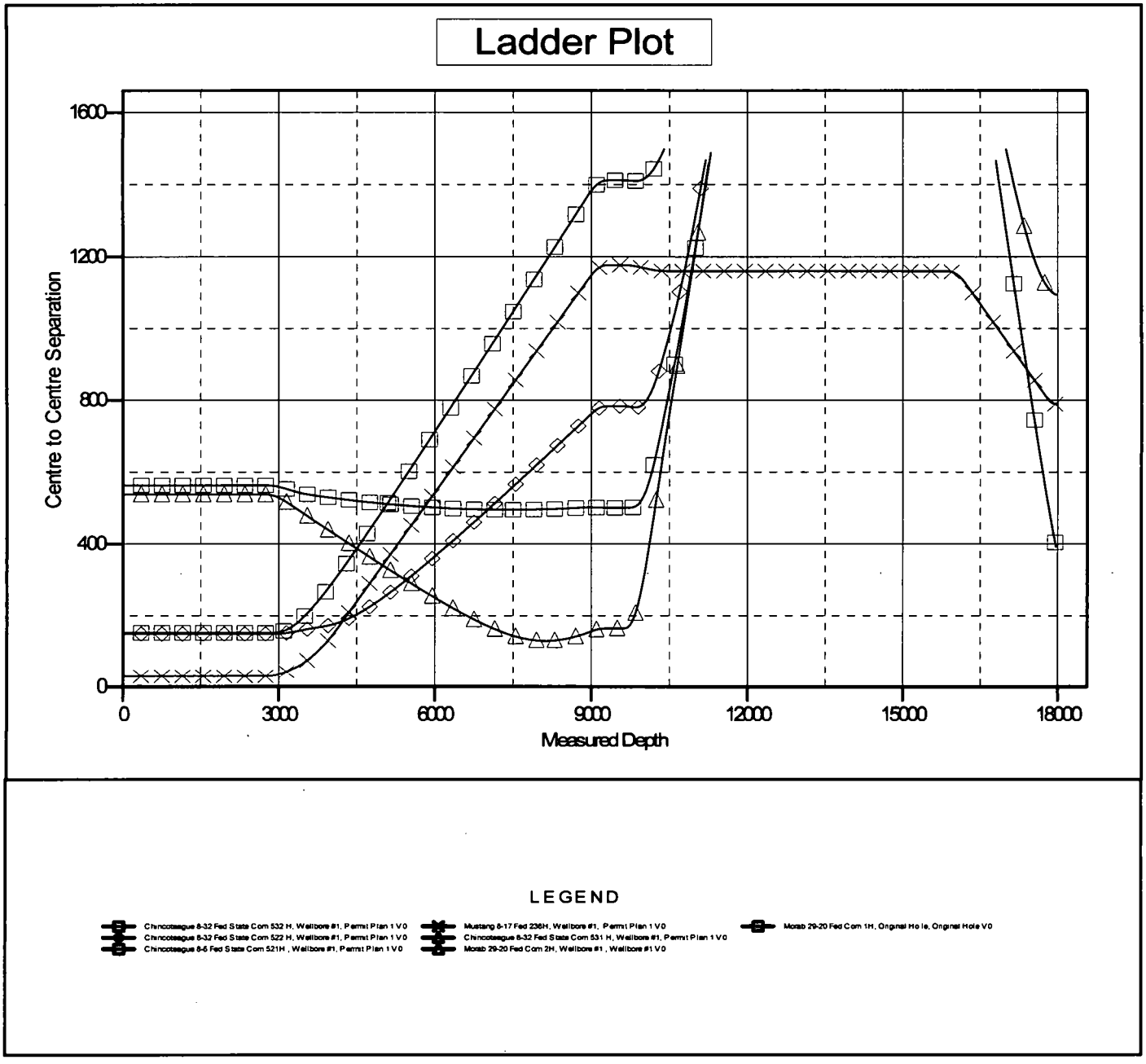
Offset Design Sec 29-T25S-R32E - Morab 29-20 Fed Com 2H - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 166-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
17,000.00	10,200.00	17,807.00	10,226.92	109.02	116.73	-95.48	-8,125.19	630.21	1,498.61	1,326.62	171.99	8.713	
17,050.00	10,200.00	17,807.00	10,226.92	109.70	116.73	-95.48	-8,125.19	630.21	1,464.87	1,289.19	175.68	8.338	
17,100.00	10,200.00	17,807.00	10,226.92	110.39	116.73	-95.48	-8,125.19	630.21	1,432.07	1,252.61	179.46	7.980	
17,150.00	10,200.00	17,807.00	10,226.92	111.07	116.73	-95.48	-8,125.19	630.21	1,400.30	1,216.97	183.33	7.638	
17,200.00	10,200.00	17,807.00	10,226.92	111.76	116.73	-95.48	-8,125.19	630.21	1,369.61	1,182.34	187.28	7.313	
17,250.00	10,200.00	17,807.00	10,226.92	112.45	116.73	-95.48	-8,125.19	630.21	1,340.09	1,148.81	191.28	7.006	
17,300.00	10,200.00	17,807.00	10,226.92	113.14	116.73	-95.48	-8,125.19	630.21	1,311.81	1,116.48	195.33	6.716	
17,350.00	10,200.00	17,807.00	10,226.92	113.82	116.73	-95.48	-8,125.19	630.21	1,284.86	1,085.46	199.40	6.444	
17,400.00	10,200.00	17,807.00	10,226.92	114.51	116.73	-95.48	-8,125.19	630.21	1,259.31	1,055.85	203.46	6.189	
17,450.00	10,200.00	17,807.00	10,226.92	115.20	116.73	-95.48	-8,125.19	630.21	1,235.26	1,027.77	207.49	5.953	
17,500.00	10,200.00	17,807.00	10,226.92	115.89	116.73	-95.48	-8,125.19	630.21	1,212.79	1,001.34	211.45	5.736	
17,550.00	10,200.00	17,807.00	10,226.92	116.58	116.73	-95.48	-8,125.19	630.21	1,192.00	976.69	215.31	5.538	
17,600.00	10,200.00	17,807.00	10,226.92	117.27	116.73	-95.48	-8,125.19	630.21	1,172.98	953.95	219.03	5.355	
17,650.00	10,200.00	17,807.00	10,226.92	117.96	116.73	-95.48	-8,125.19	630.21	1,155.80	933.24	222.57	5.193	
17,700.00	10,200.00	17,807.00	10,226.92	118.66	116.73	-95.48	-8,125.19	630.21	1,140.56	914.68	225.88	5.049	
17,750.00	10,200.00	17,807.00	10,226.92	119.35	116.73	-95.48	-8,125.19	630.21	1,127.34	898.41	228.93	4.924	Alert
17,800.00	10,200.00	17,807.00	10,226.92	120.04	116.73	-95.48	-8,125.19	630.21	1,116.19	884.52	231.67	4.818	Alert
17,850.00	10,200.00	17,807.00	10,226.92	120.73	116.73	-95.48	-8,125.19	630.21	1,107.20	873.13	234.07	4.730	Alert
17,900.00	10,200.00	17,807.00	10,226.92	121.43	116.73	-95.48	-8,125.19	630.21	1,100.41	864.32	236.09	4.661	Alert
17,950.00	10,200.00	17,807.00	10,226.92	122.12	116.73	-95.48	-8,125.19	630.21	1,095.86	858.16	237.70	4.610	Alert
17,967.73	10,200.00	17,807.00	10,226.92	122.37	116.73	-95.48	-8,125.19	630.21	1,094.79	856.62	238.17	4.597	Alert, CC, ES, SF

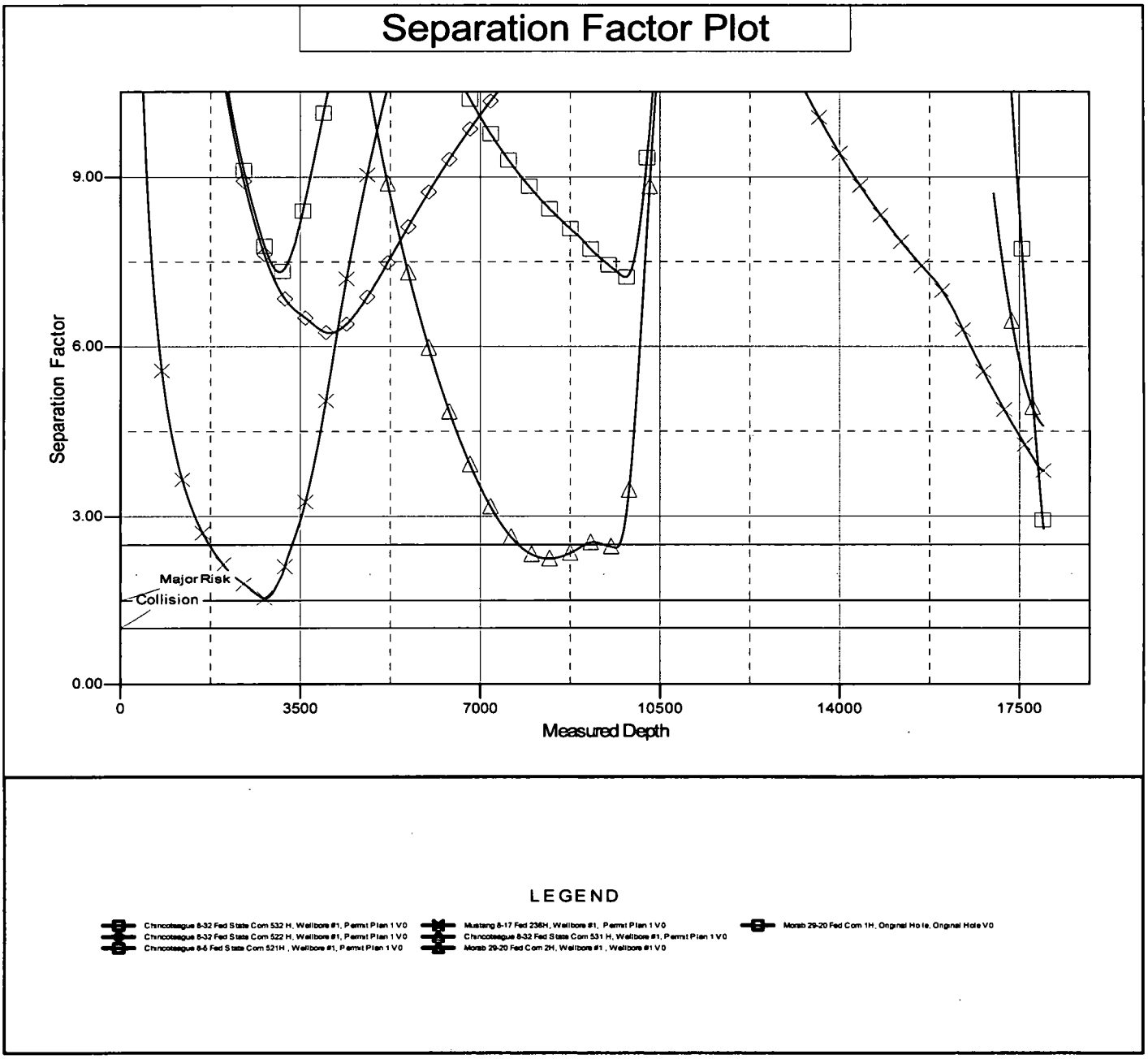
Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3463.10ft	Coordinates are relative to: Mustang 8-17 Fed 235H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.34°



Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3463.10ft
Reference Site:	Sec 08-T25S-R32E	**MD Reference:**	RKB @ 3463.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3463.10ft	Coordinates are relative to: Mustang 8-17 Fed 235H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.34°



WCDSC Permian NM

Lea County (NAD83 New Mexico East)
Sec 08-T25S-R32E
Mustang 8-17 Fed 235H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

04 April, 2019

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3463.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3463.10ft
Site:	Sec 08-T25S-R32E	**North Reference:**	Grid
Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

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

Site	Sec 08-T25S-R32E				
Site Position:		**Northing:**	419,630.47 usft	**Latitude:**	32.152087
From:	Map	**Easting:**	735,551.49 usft	**Longitude:**	-103.705780
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.33 °

Well	Mustang 8-17 Fed 235H					
Well Position	**+N/-S**	0.00 ft	**Northing:**	417,176.02 usft	**Latitude:**	32.145318
	+E/-W	0.00 ft	**Easting:**	736,932.88 usft	**Longitude:**	-103.701363
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,438.10 ft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	3/20/2019	6.82	59.95	47,697.30651643

Design	Permit Plan 1			
Audit Notes:				
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.00	0.00	0.00	183.25

Plan Survey Tool Program **Date** 3/28/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,967.73	Permit Plan 1 (Wellbore #1)	MWD+HDGM OWSG MWD + HDGM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
2,750.00	0.00	0.00	2,750.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,196.78	4.47	261.03	3,196.32	-2.72	-17.20	1.00	1.00	0.00	261.03	
8,997.53	4.47	261.03	8,979.45	-73.19	-463.54	0.00	0.00	0.00	0.00	
9,295.38	0.00	0.00	9,277.00	-75.00	-475.00	1.50	-1.50	0.00	180.00	
9,645.42	0.00	0.00	9,627.04	-75.00	-475.00	0.00	0.00	0.00	0.00	
10,545.42	90.00	179.88	10,200.00	-647.96	-473.80	10.00	10.00	0.00	179.88	PBHL - Mustang 8-17
17,967.73	90.00	179.88	10,200.00	-8,070.25	-458.21	0.00	0.00	0.00	0.00	PBHL - Mustang 8-17

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Site:	Sec 08-T25S-R32E	**North Reference:**	Grid
Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
100.00	0.00	0.00	100.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
200.00	0.00	0.00	200.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
300.00	0.00	0.00	300.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
400.00	0.00	0.00	400.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
500.00	0.00	0.00	500.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
600.00	0.00	0.00	600.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
700.00	0.00	0.00	700.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
800.00	0.00	0.00	800.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
900.00	0.00	0.00	900.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,000.00	0.00	0.00	1,000.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,100.00	0.00	0.00	1,100.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,200.00	0.00	0.00	1,200.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,300.00	0.00	0.00	1,300.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,400.00	0.00	0.00	1,400.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,500.00	0.00	0.00	1,500.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,600.00	0.00	0.00	1,600.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,700.00	0.00	0.00	1,700.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,800.00	0.00	0.00	1,800.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
1,900.00	0.00	0.00	1,900.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,000.00	0.00	0.00	2,000.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,100.00	0.00	0.00	2,100.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,200.00	0.00	0.00	2,200.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,300.00	0.00	0.00	2,300.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,400.00	0.00	0.00	2,400.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,500.00	0.00	0.00	2,500.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,600.00	0.00	0.00	2,600.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,700.00	0.00	0.00	2,700.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,750.00	0.00	0.00	2,750.00	0.00	0.00	417,176.02	736,932.88	32.145318	-103.701363
2,800.00	0.50	261.03	2,800.00	-0.03	-0.22	417,175.99	736,932.66	32.145318	-103.701364
2,900.00	1.50	261.03	2,899.98	-0.31	-1.94	417,175.71	736,930.94	32.145317	-103.701370
3,000.00	2.50	261.03	2,999.92	-0.85	-5.39	417,175.17	736,927.49	32.145315	-103.701381
3,100.00	3.50	261.03	3,099.78	-1.67	-10.56	417,174.35	736,922.32	32.145313	-103.701397
3,196.78	4.47	261.03	3,196.32	-2.72	-17.20	417,173.30	736,915.68	32.145311	-103.701419
3,200.00	4.47	261.03	3,199.54	-2.75	-17.45	417,173.26	736,915.43	32.145310	-103.701420
3,300.00	4.47	261.03	3,299.23	-3.97	-25.14	417,172.05	736,907.74	32.145307	-103.701445
3,400.00	4.47	261.03	3,398.93	-5.18	-32.83	417,170.83	736,900.04	32.145304	-103.701469
3,500.00	4.47	261.03	3,498.63	-6.40	-40.53	417,169.62	736,892.35	32.145301	-103.701494
3,600.00	4.47	261.03	3,598.32	-7.61	-48.22	417,168.41	736,884.65	32.145298	-103.701519
3,700.00	4.47	261.03	3,698.02	-8.83	-55.92	417,167.19	736,876.96	32.145294	-103.701544
3,800.00	4.47	261.03	3,797.71	-10.04	-63.61	417,165.98	736,869.26	32.145291	-103.701569
3,900.00	4.47	261.03	3,897.41	-11.26	-71.31	417,164.76	736,861.57	32.145288	-103.701594
4,000.00	4.47	261.03	3,997.11	-12.47	-79.00	417,163.55	736,853.88	32.145285	-103.701619
4,100.00	4.47	261.03	4,096.80	-13.69	-86.70	417,162.33	736,846.18	32.145282	-103.701644
4,200.00	4.47	261.03	4,196.50	-14.90	-94.39	417,161.12	736,838.49	32.145278	-103.701669
4,300.00	4.47	261.03	4,296.20	-16.12	-102.08	417,159.90	736,830.79	32.145275	-103.701693
4,400.00	4.47	261.03	4,395.89	-17.33	-109.78	417,158.69	736,823.10	32.145272	-103.701718
4,500.00	4.47	261.03	4,495.59	-18.55	-117.47	417,157.47	736,815.40	32.145269	-103.701743
4,600.00	4.47	261.03	4,595.28	-19.76	-125.17	417,156.26	736,807.71	32.145265	-103.701768
4,700.00	4.47	261.03	4,694.98	-20.98	-132.86	417,155.04	736,800.01	32.145262	-103.701793
4,800.00	4.47	261.03	4,794.68	-22.19	-140.56	417,153.83	736,792.32	32.145259	-103.701818
4,900.00	4.47	261.03	4,894.37	-23.41	-148.25	417,152.61	736,784.63	32.145256	-103.701843
5,000.00	4.47	261.03	4,994.07	-24.62	-155.95	417,151.40	736,776.93	32.145253	-103.701868
5,100.00	4.47	261.03	5,093.76	-25.84	-163.64	417,150.18	736,769.24	32.145249	-103.701892
5,200.00	4.47	261.03	5,193.46	-27.05	-171.33	417,148.97	736,761.54	32.145246	-103.701917

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Site:	Sec 08-T25S-R32E	**North Reference:**	Grid
Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.00	4.47	261.03	5,293.16	-28.27	-179.03	417,147.75	736,753.85	32.145243	-103.701942
5,400.00	4.47	261.03	5,392.85	-29.48	-186.72	417,146.54	736,746.15	32.145240	-103.701967
5,500.00	4.47	261.03	5,492.55	-30.70	-194.42	417,145.32	736,738.46	32.145236	-103.701992
5,600.00	4.47	261.03	5,592.24	-31.91	-202.11	417,144.11	736,730.76	32.145233	-103.702017
5,700.00	4.47	261.03	5,691.94	-33.13	-209.81	417,142.89	736,723.07	32.145230	-103.702042
5,800.00	4.47	261.03	5,791.64	-34.34	-217.50	417,141.68	736,715.38	32.145227	-103.702067
5,900.00	4.47	261.03	5,891.33	-35.56	-225.20	417,140.46	736,707.68	32.145224	-103.702092
6,000.00	4.47	261.03	5,991.03	-36.77	-232.89	417,139.25	736,699.99	32.145220	-103.702116
6,100.00	4.47	261.03	6,090.73	-37.99	-240.59	417,138.03	736,692.29	32.145217	-103.702141
6,200.00	4.47	261.03	6,190.42	-39.20	-248.28	417,136.82	736,684.60	32.145214	-103.702166
6,300.00	4.47	261.03	6,290.12	-40.42	-255.97	417,135.60	736,676.90	32.145211	-103.702191
6,400.00	4.47	261.03	6,389.81	-41.63	-263.67	417,134.39	736,669.21	32.145208	-103.702216
6,500.00	4.47	261.03	6,489.51	-42.85	-271.36	417,133.17	736,661.51	32.145204	-103.702241
6,600.00	4.47	261.03	6,589.21	-44.06	-279.06	417,131.96	736,653.82	32.145201	-103.702266
6,700.00	4.47	261.03	6,688.90	-45.28	-286.75	417,130.74	736,646.12	32.145198	-103.702291
6,800.00	4.47	261.03	6,788.60	-46.49	-294.45	417,129.53	736,638.43	32.145195	-103.702315
6,900.00	4.47	261.03	6,888.29	-47.71	-302.14	417,128.31	736,630.74	32.145191	-103.702340
7,000.00	4.47	261.03	6,987.99	-48.92	-309.84	417,127.10	736,623.04	32.145188	-103.702365
7,100.00	4.47	261.03	7,087.69	-50.14	-317.53	417,125.88	736,615.35	32.145185	-103.702390
7,200.00	4.47	261.03	7,187.38	-51.35	-325.22	417,124.67	736,607.65	32.145182	-103.702415
7,300.00	4.47	261.03	7,287.08	-52.57	-332.92	417,123.45	736,599.96	32.145179	-103.702440
7,400.00	4.47	261.03	7,386.78	-53.78	-340.61	417,122.24	736,592.26	32.145175	-103.702465
7,500.00	4.47	261.03	7,486.47	-55.00	-348.31	417,121.02	736,584.57	32.145172	-103.702490
7,600.00	4.47	261.03	7,586.17	-56.21	-356.00	417,119.81	736,576.87	32.145169	-103.702515
7,700.00	4.47	261.03	7,685.86	-57.43	-363.70	417,118.59	736,569.18	32.145166	-103.702539
7,800.00	4.47	261.03	7,785.56	-58.64	-371.39	417,117.38	736,561.49	32.145163	-103.702564
7,900.00	4.47	261.03	7,885.26	-59.86	-379.09	417,116.16	736,553.79	32.145159	-103.702589
8,000.00	4.47	261.03	7,984.95	-61.07	-386.78	417,114.95	736,546.10	32.145156	-103.702614
8,100.00	4.47	261.03	8,084.65	-62.29	-394.47	417,113.73	736,538.40	32.145153	-103.702639
8,200.00	4.47	261.03	8,184.34	-63.50	-402.17	417,112.52	736,530.71	32.145150	-103.702664
8,300.00	4.47	261.03	8,284.04	-64.72	-409.86	417,111.30	736,523.01	32.145146	-103.702689
8,400.00	4.47	261.03	8,383.74	-65.93	-417.56	417,110.09	736,515.32	32.145143	-103.702714
8,500.00	4.47	261.03	8,483.43	-67.15	-425.25	417,108.87	736,507.62	32.145140	-103.702738
8,600.00	4.47	261.03	8,583.13	-68.36	-432.95	417,107.66	736,499.93	32.145137	-103.702763
8,700.00	4.47	261.03	8,682.83	-69.58	-440.64	417,106.44	736,492.24	32.145134	-103.702788
8,800.00	4.47	261.03	8,782.52	-70.79	-448.34	417,105.23	736,484.54	32.145130	-103.702813
8,900.00	4.47	261.03	8,882.22	-72.00	-456.03	417,104.01	736,476.85	32.145127	-103.702838
8,997.53	4.47	261.03	8,979.45	-73.19	-463.54	417,102.83	736,469.34	32.145124	-103.702862
9,000.00	4.43	261.03	8,981.91	-73.22	-463.72	417,102.80	736,469.15	32.145124	-103.702863
9,100.00	2.93	261.03	9,081.70	-74.22	-470.07	417,101.80	736,462.81	32.145121	-103.702883
9,200.00	1.43	261.03	9,181.63	-74.81	-473.82	417,101.21	736,459.05	32.145120	-103.702896
9,295.38	0.00	0.00	9,277.00	-75.00	-475.00	417,101.02	736,457.88	32.145119	-103.702899
9,300.00	0.00	0.00	9,281.62	-75.00	-475.00	417,101.02	736,457.88	32.145119	-103.702899
9,400.00	0.00	0.00	9,381.62	-75.00	-475.00	417,101.02	736,457.88	32.145119	-103.702899
9,500.00	0.00	0.00	9,481.62	-75.00	-475.00	417,101.02	736,457.88	32.145119	-103.702899
9,600.00	0.00	0.00	9,581.62	-75.00	-475.00	417,101.02	736,457.88	32.145119	-103.702899
9,645.42	0.00	0.00	9,627.04	-75.00	-475.00	417,101.02	736,457.88	32.145119	-103.702899
KOP @ 9645' MD, 2543' FNL, 900' FWL									
9,700.00	5.46	179.88	9,681.54	-77.60	-474.99	417,098.42	736,457.88	32.145112	-103.702899
9,800.00	15.46	179.88	9,779.75	-95.73	-474.96	417,080.29	736,457.92	32.145062	-103.702900
9,900.00	25.46	179.88	9,873.32	-130.63	-474.88	417,045.39	736,457.99	32.144966	-103.702900
10,000.00	35.46	179.88	9,959.42	-181.26	-474.78	416,994.76	736,458.10	32.144827	-103.702901
10,100.00	45.46	179.88	10,035.41	-246.07	-474.64	416,929.95	736,458.24	32.144649	-103.702901

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Site:	Sec 08-T25S-R32E	**North Reference:**	Grid
Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,149.76	50.43	179.88	10,068.73	-283.00	-474.56	416,893.02	736,458.31	32.144547	-103.702902
FTP @ 10150' MD, 2529' FSL, 900' FWL									
10,200.00	55.46	179.88	10,098.99	-323.08	-474.48	416,852.94	736,458.40	32.144437	-103.702902
10,300.00	65.46	179.88	10,148.24	-409.97	-474.30	416,766.05	736,458.58	32.144198	-103.702903
10,400.00	75.46	179.88	10,181.64	-504.09	-474.10	416,671.93	736,458.78	32.143940	-103.702905
10,500.00	85.46	179.88	10,198.20	-602.58	-473.89	416,573.44	736,458.99	32.143669	-103.702906
10,545.42	90.00	179.88	10,200.00	-647.96	-473.80	416,528.06	736,459.08	32.143544	-103.702906
10,600.00	90.00	179.88	10,200.00	-702.53	-473.68	416,473.49	736,459.20	32.143394	-103.702907
10,700.00	90.00	179.88	10,200.00	-802.53	-473.47	416,373.49	736,459.41	32.143119	-103.702908
10,800.00	90.00	179.88	10,200.00	-902.53	-473.26	416,273.49	736,459.62	32.142845	-103.702909
10,900.00	90.00	179.88	10,200.00	-1,002.53	-473.05	416,173.49	736,459.83	32.142570	-103.702911
11,000.00	90.00	179.88	10,200.00	-1,102.53	-472.84	416,073.49	736,460.04	32.142295	-103.702912
11,100.00	90.00	179.88	10,200.00	-1,202.53	-472.63	415,973.49	736,460.25	32.142020	-103.702913
11,200.00	90.00	179.88	10,200.00	-1,302.53	-472.42	415,873.49	736,460.46	32.141745	-103.702914
11,300.00	90.00	179.88	10,200.00	-1,402.53	-472.21	415,773.49	736,460.67	32.141470	-103.702915
11,400.00	90.00	179.88	10,200.00	-1,502.53	-472.00	415,673.49	736,460.88	32.141195	-103.702917
11,500.00	90.00	179.88	10,200.00	-1,602.53	-471.79	415,573.49	736,461.09	32.140920	-103.702918
11,600.00	90.00	179.88	10,200.00	-1,702.53	-471.58	415,473.49	736,461.30	32.140645	-103.702919
11,700.00	90.00	179.88	10,200.00	-1,802.53	-471.37	415,373.49	736,461.51	32.140371	-103.702920
11,800.00	90.00	179.88	10,200.00	-1,902.53	-471.16	415,273.49	736,461.72	32.140096	-103.702922
11,900.00	90.00	179.88	10,200.00	-2,002.53	-470.95	415,173.49	736,461.92	32.139821	-103.702923
12,000.00	90.00	179.88	10,200.00	-2,102.53	-470.74	415,073.49	736,462.13	32.139546	-103.702924
12,100.00	90.00	179.88	10,200.00	-2,202.53	-470.53	414,973.49	736,462.34	32.139271	-103.702925
12,200.00	90.00	179.88	10,200.00	-2,302.53	-470.32	414,873.49	736,462.55	32.138996	-103.702926
12,300.00	90.00	179.88	10,200.00	-2,402.53	-470.11	414,773.49	736,462.76	32.138721	-103.702928
12,400.00	90.00	179.88	10,200.00	-2,502.53	-469.90	414,673.49	736,462.97	32.138446	-103.702929
12,500.00	90.00	179.88	10,200.00	-2,602.53	-469.69	414,573.49	736,463.18	32.138172	-103.702930
12,600.00	90.00	179.88	10,200.00	-2,702.53	-469.48	414,473.49	736,463.39	32.137897	-103.702931
12,700.00	90.00	179.88	10,200.00	-2,802.53	-469.27	414,373.49	736,463.60	32.137622	-103.702932
12,709.00	90.00	179.88	10,200.00	-2,811.53	-469.25	414,364.49	736,463.62	32.137597	-103.702933
Cross Section @ 12709' MD, 0' FNL, 900' FWL									
12,800.00	90.00	179.88	10,200.00	-2,902.53	-469.06	414,273.50	736,463.81	32.137347	-103.702934
12,900.00	90.00	179.88	10,200.00	-3,002.53	-468.85	414,173.50	736,464.02	32.137072	-103.702935
13,000.00	90.00	179.88	10,200.00	-3,102.53	-468.64	414,073.50	736,464.23	32.136797	-103.702936
13,100.00	90.00	179.88	10,200.00	-3,202.53	-468.43	413,973.50	736,464.44	32.136522	-103.702937
13,200.00	90.00	179.88	10,200.00	-3,302.53	-468.22	413,873.50	736,464.65	32.136247	-103.702938
13,300.00	90.00	179.88	10,200.00	-3,402.53	-468.01	413,773.50	736,464.86	32.135973	-103.702940
13,400.00	90.00	179.88	10,200.00	-3,502.53	-467.80	413,673.50	736,465.07	32.135698	-103.702941
13,500.00	90.00	179.88	10,200.00	-3,602.53	-467.59	413,573.50	736,465.28	32.135423	-103.702942
13,600.00	90.00	179.88	10,200.00	-3,702.53	-467.38	413,473.50	736,465.49	32.135148	-103.702943
13,700.00	90.00	179.88	10,200.00	-3,802.53	-467.17	413,373.50	736,465.70	32.134873	-103.702945
13,800.00	90.00	179.88	10,200.00	-3,902.53	-466.96	413,273.50	736,465.91	32.134598	-103.702946
13,900.00	90.00	179.88	10,200.00	-4,002.53	-466.75	413,173.50	736,466.12	32.134323	-103.702947
14,000.00	90.00	179.88	10,200.00	-4,102.53	-466.54	413,073.50	736,466.33	32.134048	-103.702948
14,100.00	90.00	179.88	10,200.00	-4,202.53	-466.33	412,973.50	736,466.54	32.133773	-103.702949
14,200.00	90.00	179.88	10,200.00	-4,302.53	-466.12	412,873.50	736,466.75	32.133499	-103.702951
14,300.00	90.00	179.88	10,200.00	-4,402.53	-465.91	412,773.50	736,466.96	32.133224	-103.702952
14,400.00	90.00	179.88	10,200.00	-4,502.53	-465.70	412,673.50	736,467.17	32.132949	-103.702953
14,500.00	90.00	179.88	10,200.00	-4,602.53	-465.49	412,573.50	736,467.38	32.132674	-103.702954
14,600.00	90.00	179.88	10,200.00	-4,702.53	-465.28	412,473.50	736,467.59	32.132399	-103.702955
14,700.00	90.00	179.88	10,200.00	-4,802.53	-465.07	412,373.50	736,467.80	32.132124	-103.702957
14,800.00	90.00	179.88	10,200.00	-4,902.53	-464.86	412,273.50	736,468.01	32.131849	-103.702958
14,900.00	90.00	179.88	10,200.00	-5,002.53	-464.65	412,173.50	736,468.22	32.131574	-103.702959
15,000.00	90.00	179.88	10,200.00	-5,102.53	-464.44	412,073.50	736,468.43	32.131300	-103.702960

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3463.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3463.10ft
Site:	Sec 08-T25S-R32E	**North Reference:**	Grid
Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,100.00	90.00	179.88	10,200.00	-5,202.52	-464.23	411,973.50	736,468.64	32.131025	-103.702962
15,200.00	90.00	179.88	10,200.00	-5,302.52	-464.02	411,873.51	736,468.85	32.130750	-103.702963
15,300.00	90.00	179.88	10,200.00	-5,402.52	-463.81	411,773.51	736,469.06	32.130475	-103.702964
15,400.00	90.00	179.88	10,200.00	-5,502.52	-463.60	411,673.51	736,469.27	32.130200	-103.702965
15,500.00	90.00	179.88	10,200.00	-5,602.52	-463.39	411,573.51	736,469.48	32.129925	-103.702966
15,600.00	90.00	179.88	10,200.00	-5,702.52	-463.18	411,473.51	736,469.69	32.129650	-103.702968
15,700.00	90.00	179.88	10,200.00	-5,802.52	-462.97	411,373.51	736,469.90	32.129375	-103.702969
15,800.00	90.00	179.88	10,200.00	-5,902.52	-462.76	411,273.51	736,470.11	32.129101	-103.702970
15,900.00	90.00	179.88	10,200.00	-6,002.52	-462.55	411,173.51	736,470.32	32.128826	-103.702971
16,000.00	90.00	179.88	10,200.00	-6,102.52	-462.34	411,073.51	736,470.53	32.128551	-103.702972
16,100.00	90.00	179.88	10,200.00	-6,202.52	-462.13	410,973.51	736,470.74	32.128276	-103.702974
16,200.00	90.00	179.88	10,200.00	-6,302.52	-461.92	410,873.51	736,470.95	32.128001	-103.702975
16,300.00	90.00	179.88	10,200.00	-6,402.52	-461.71	410,773.51	736,471.16	32.127726	-103.702976
16,400.00	90.00	179.88	10,200.00	-6,502.52	-461.50	410,673.51	736,471.37	32.127451	-103.702977
16,500.00	90.00	179.88	10,200.00	-6,602.52	-461.29	410,573.51	736,471.58	32.127176	-103.702978
16,600.00	90.00	179.88	10,200.00	-6,702.52	-461.08	410,473.51	736,471.79	32.126901	-103.702980
16,700.00	90.00	179.88	10,200.00	-6,802.52	-460.87	410,373.51	736,472.00	32.126627	-103.702981
16,800.00	90.00	179.88	10,200.00	-6,902.52	-460.66	410,273.51	736,472.21	32.126352	-103.702982
16,900.00	90.00	179.88	10,200.00	-7,002.52	-460.45	410,173.51	736,472.42	32.126077	-103.702983
17,000.00	90.00	179.88	10,200.00	-7,102.52	-460.24	410,073.51	736,472.63	32.125802	-103.702985
17,100.00	90.00	179.88	10,200.00	-7,202.52	-460.03	409,973.51	736,472.84	32.125527	-103.702986
17,200.00	90.00	179.88	10,200.00	-7,302.52	-459.82	409,873.51	736,473.05	32.125252	-103.702987
17,300.00	90.00	179.88	10,200.00	-7,402.52	-459.61	409,773.51	736,473.26	32.124977	-103.702988
17,400.00	90.00	179.88	10,200.00	-7,502.52	-459.40	409,673.51	736,473.47	32.124702	-103.702989
17,500.00	90.00	179.88	10,200.00	-7,602.52	-459.19	409,573.51	736,473.68	32.124428	-103.702991
17,600.00	90.00	179.88	10,200.00	-7,702.52	-458.98	409,473.52	736,473.89	32.124153	-103.702992
17,700.00	90.00	179.88	10,200.00	-7,802.52	-458.77	409,373.52	736,474.10	32.123878	-103.702993
17,800.00	90.00	179.88	10,200.00	-7,902.52	-458.56	409,273.52	736,474.31	32.123603	-103.702994
17,887.73	90.00	179.88	10,200.00	-7,990.25	-458.38	409,185.79	736,474.50	32.123362	-103.702995
LTP @ 17888' MD, 100' FSL, 900' FWL									
17,900.00	90.00	179.88	10,200.00	-8,002.52	-458.35	409,173.52	736,474.52	32.123328	-103.702995
17,967.72	90.00	179.88	10,200.00	-8,070.24	-458.21	409,105.80	736,474.67	32.123142	-103.702996
PBHL; 20' FSL, 900' FWL									
17,967.73	90.00	179.88	10,200.00	-8,070.25	-458.21	409,105.79	736,474.67	32.123142	-103.702996

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Mustang 8-17 Fe	0.00	0.01	0.00	-8,070.25	-458.21	409,105.79	736,474.67	32.123142	-103.702996
- plan misses target center by 8083.24ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Mustang 8-17 Fed 235H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3463.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3463.10ft
Site:	Sec 08-T25S-R32E	**North Reference:**	Grid
Well:	Mustang 8-17 Fed 235H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
9,645.42	9,627.04	-75.00	-475.00	KOP @ 9645' MD, 2543' FNL, 900' FWL
10,149.76	10,068.73	-283.00	-474.56	FTP @ 10150' MD, 2529' FSL, 900' FWL
12,709.00	10,200.00	-2,811.53	-469.25	Cross Section @ 12709' MD, 0' FNL, 900' FWL
17,887.73	10,200.00	-7,990.25	-458.38	LTP @ 17888' MD, 100' FSL, 900' FWL
17,967.72	10,200.00	-8,070.24	-458.21	PBHL; 20' FSL, 900' FWL

1. Geologic Formations

TVD of target	10200	Pilot hole depth	N/A
MD at TD:	17968	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	725		
Salado	1085		
Base of Salt	4400		
Delaware	4535		
Bone Spring 1st	9410		
Bone Spring 2nd	10000		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17 1/2	0	750 TVD	13 3/8	48.0	H40	BTC	1.125	1.25	1.6
12 1/4	0	4635 TVD	9 5/8	40.0	J-55	BTC	1.125	1.25	1.6
8 3/4	0	TD	5 1/2	17.0	P110	BTC	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.

• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.

• Int casing shoe will be selected based on drilling data, gamma, and flows experienced while drilling. Setting depth with be revised accordingly if needed.

• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specficition sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
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 (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	581	Surf	13.2	1.4	Lead: Class C Cement + additives
Int	508	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Int 1 Two Stage w/ DV @ TVD of Delaware	495	Surf	9.0	3.3	1st stage Lead: Class C Cement + additives
	136	500' above shoe	13.2	1.4	1st stage Tail: Class H / C + additives
	480	Surf	9.0	3.3	2nd stage Lead: Class C Cement + additives
	136	500' above DV	13.2	1.4	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9.0	3.3	Squeeze Lead: Class C Cement + additives
	508	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Production	470	500' tieback	9.0	3.3	Lead: Class H /C + additives
	1606	KOP	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	10%

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-58"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
			Annular (5M)		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	Brine	10-10.5
Production	WBM	8.5-9

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

Logging, Coring and Testing	
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 sbumitted 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.

Additional logs planned		Interval
	Resistivity	
	Density	
X	CBL	Production casing
X	Mud log	KOP to TD
	PEX	

7. Drilling Conditions

Condition	Specfiy what type and where?
BH pressure at deepest TVD	4774
Abnormal temperature	No

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

Hydrogren 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? Potentially

1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1 Spudder rig will move in and batch drill surface hole.
    a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pad.
6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7 Drilling operations will be performed with drilling 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 NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
_____ Other, describe

Devon Energy

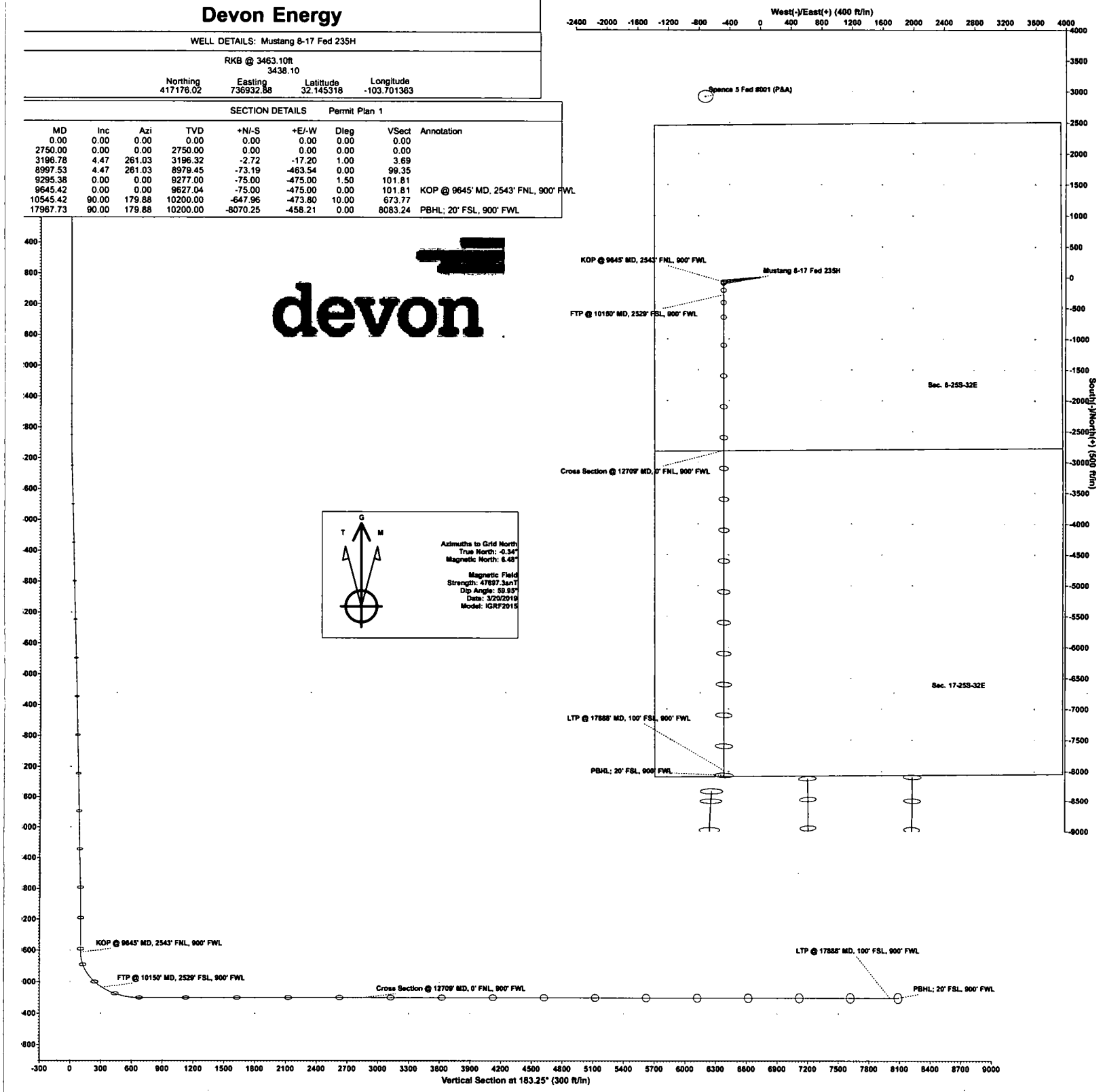
WELL DETAILS: Mustang 8-17 Fed 235H

RKB @ 3463.10ft
3438.10

Northing	Easting	Latitude	Longitude
417176.02	736932.88	32.145318	-103.701363

SECTION DETAILS Permit Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2750.00	0.00	0.00	2750.00	0.00	0.00	0.00	0.00	
3196.78	4.47	261.03	3196.32	-2.72	-17.20	1.00	3.69	
8997.53	4.47	261.03	8979.45	-73.19	-463.54	0.00	99.35	
9295.38	0.00	0.00	9277.00	-75.00	-475.00	1.50	101.81	
9645.42	0.00	0.00	9627.04	-75.00	-475.00	0.00	101.81	KOP @ 9645' MD, 2543' FNL, 900' FWL
10545.42	90.00	179.88	10200.00	-647.96	-473.80	10.00	673.77	
17967.73	90.00	179.88	10200.00	-8070.25	-458.21	0.00	8083.24	PBHL; 20' FSL, 900' FWL



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 5000 (5M) psi.

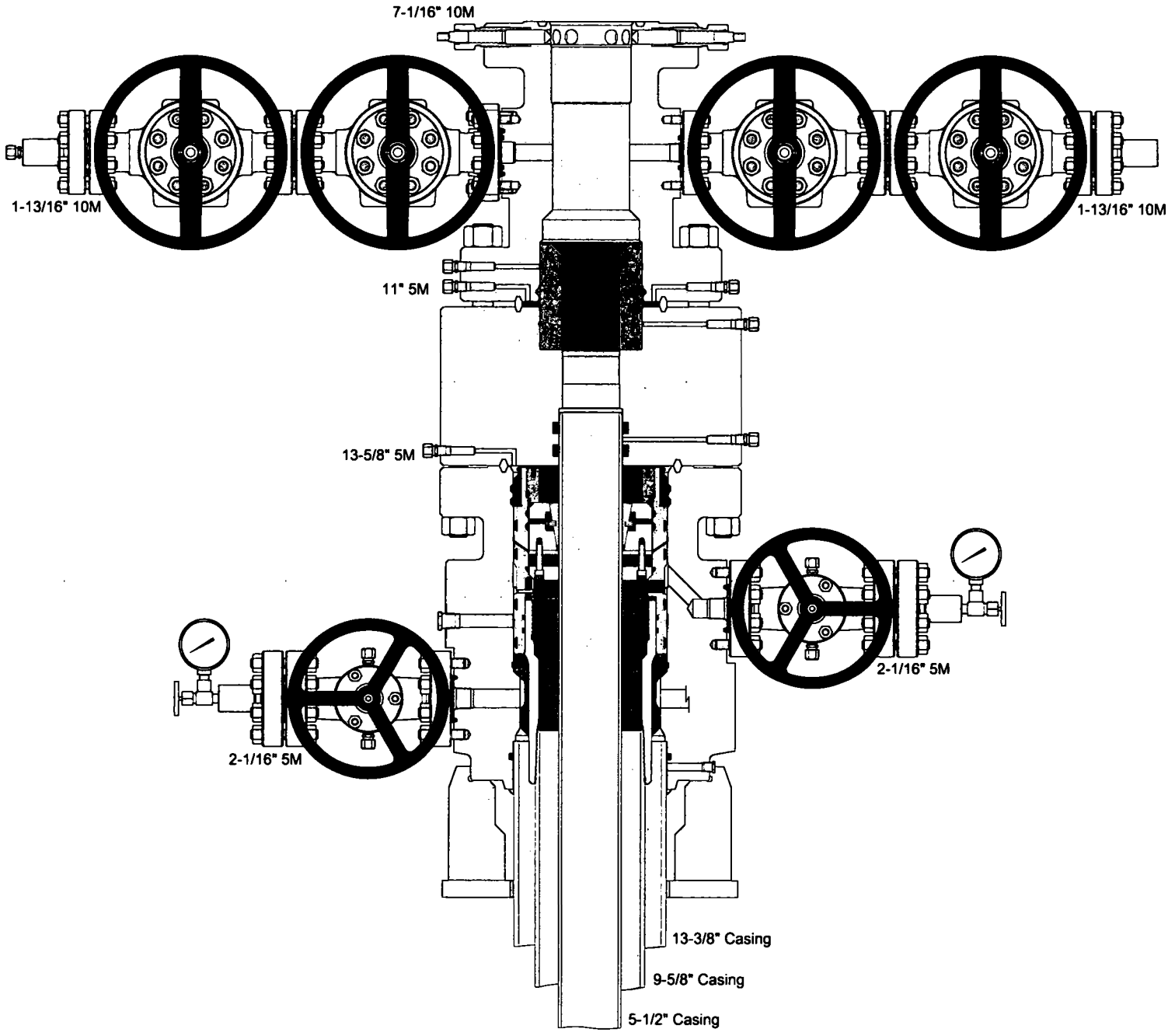
- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial 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 5M, 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 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 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 5M 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 5,000 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 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:

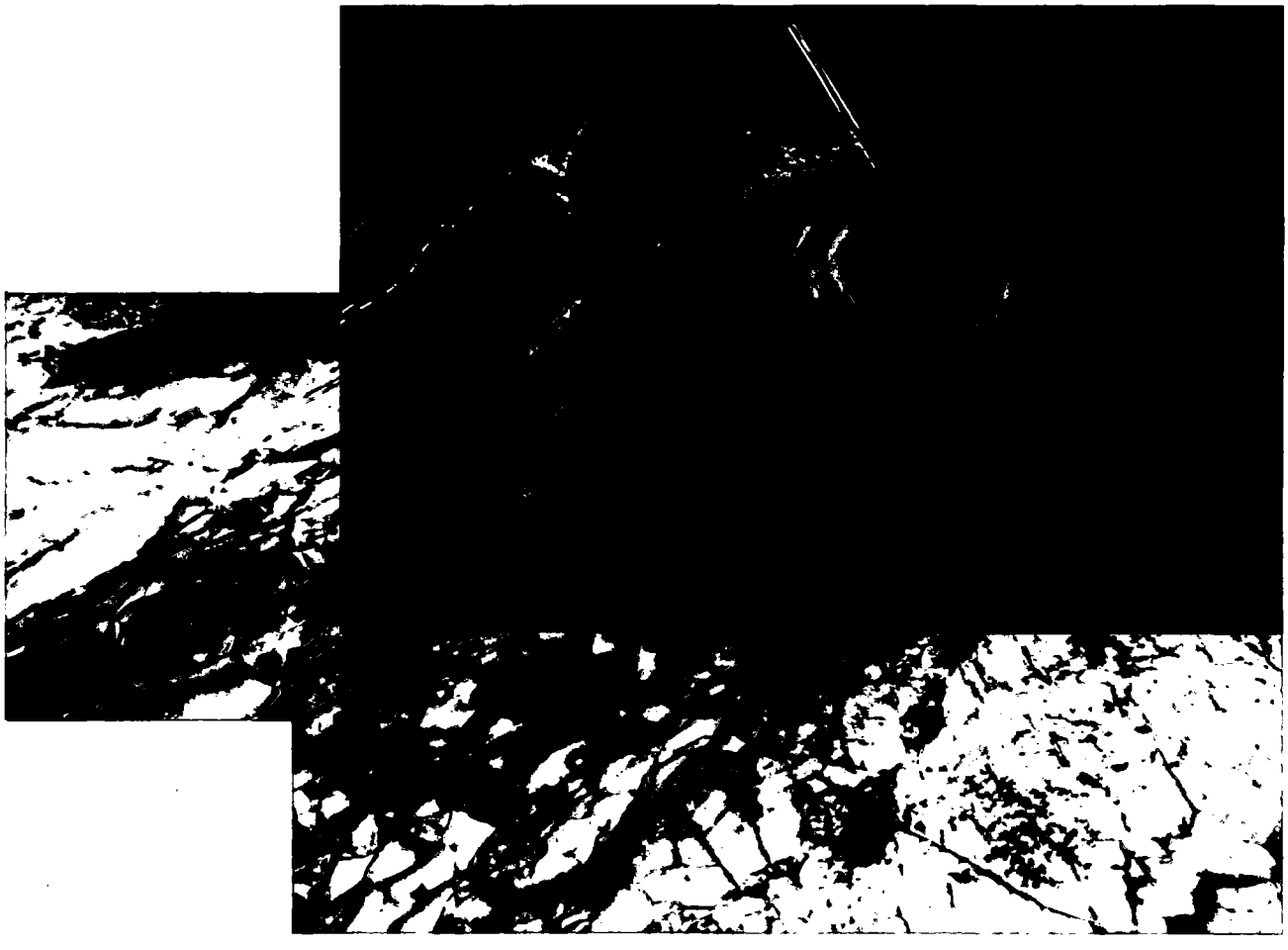
1. Potential utilization of a spudder rig to pre-set surface casing.

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.

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.

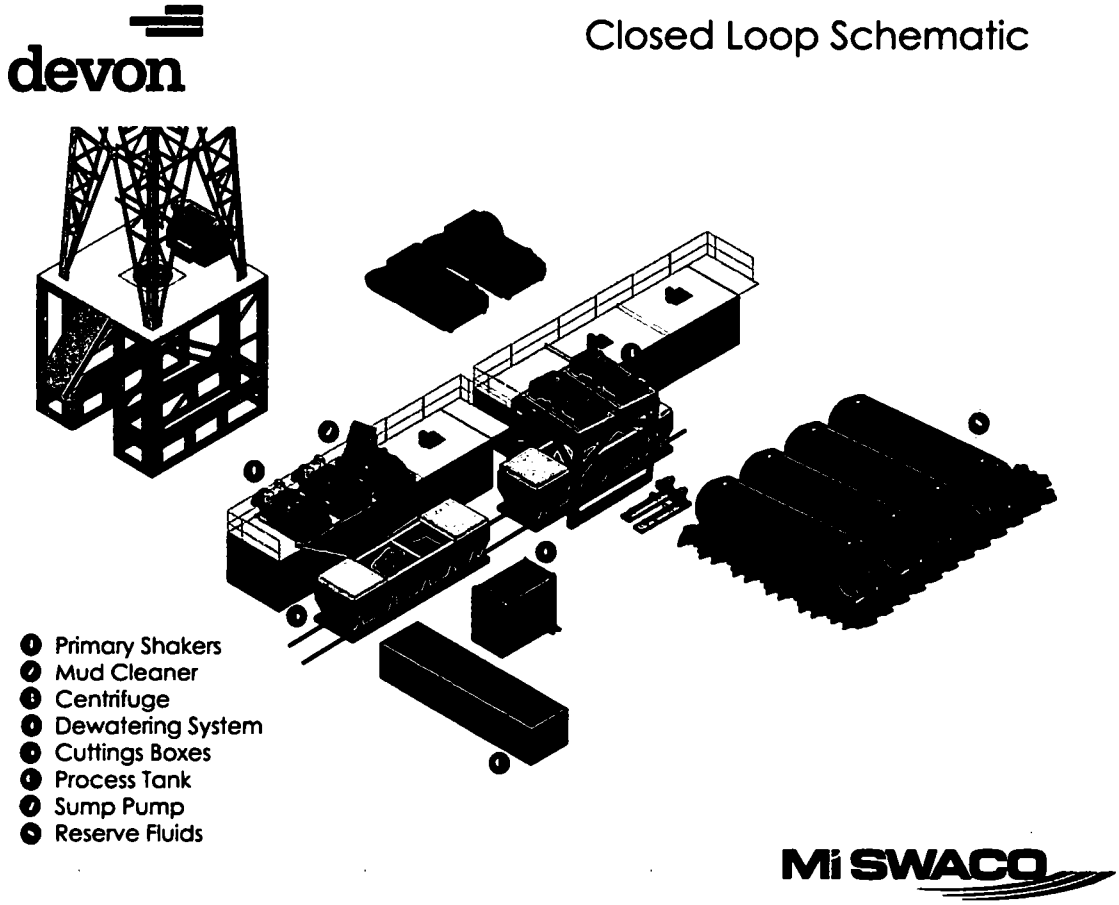
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

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

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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 28
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

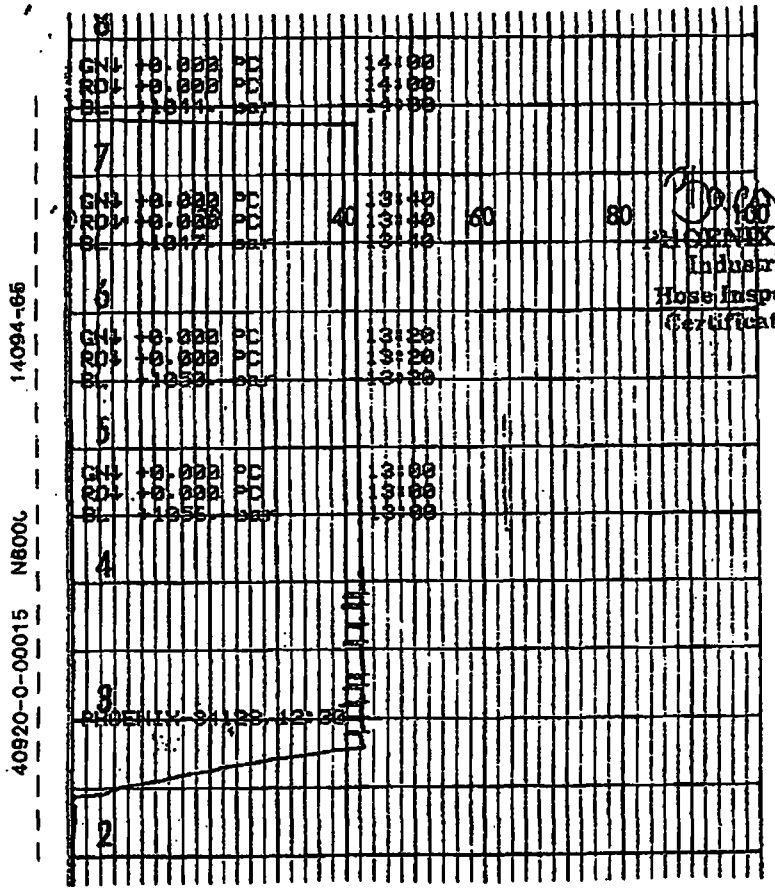
API Spec 16 C
Temperature rate:"B"

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 Certification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER Q.C.

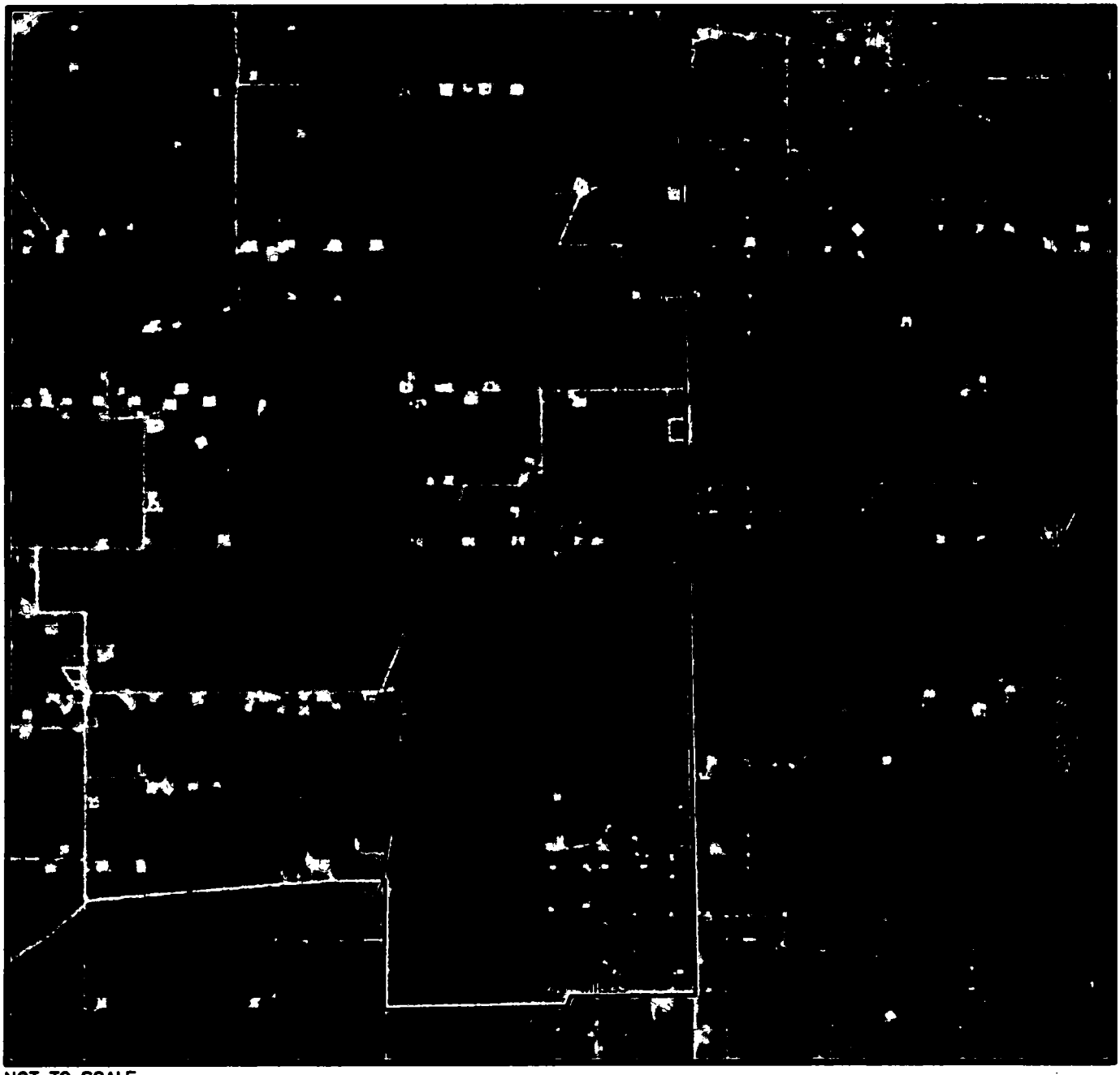


PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER I.C.

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

MUSTANG 8-17 FED 235H

LOCATED 2468 FT. FROM THE NORTH LINE
AND 1375 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MARCH 20, 2019

SURVEY NO. 7005A

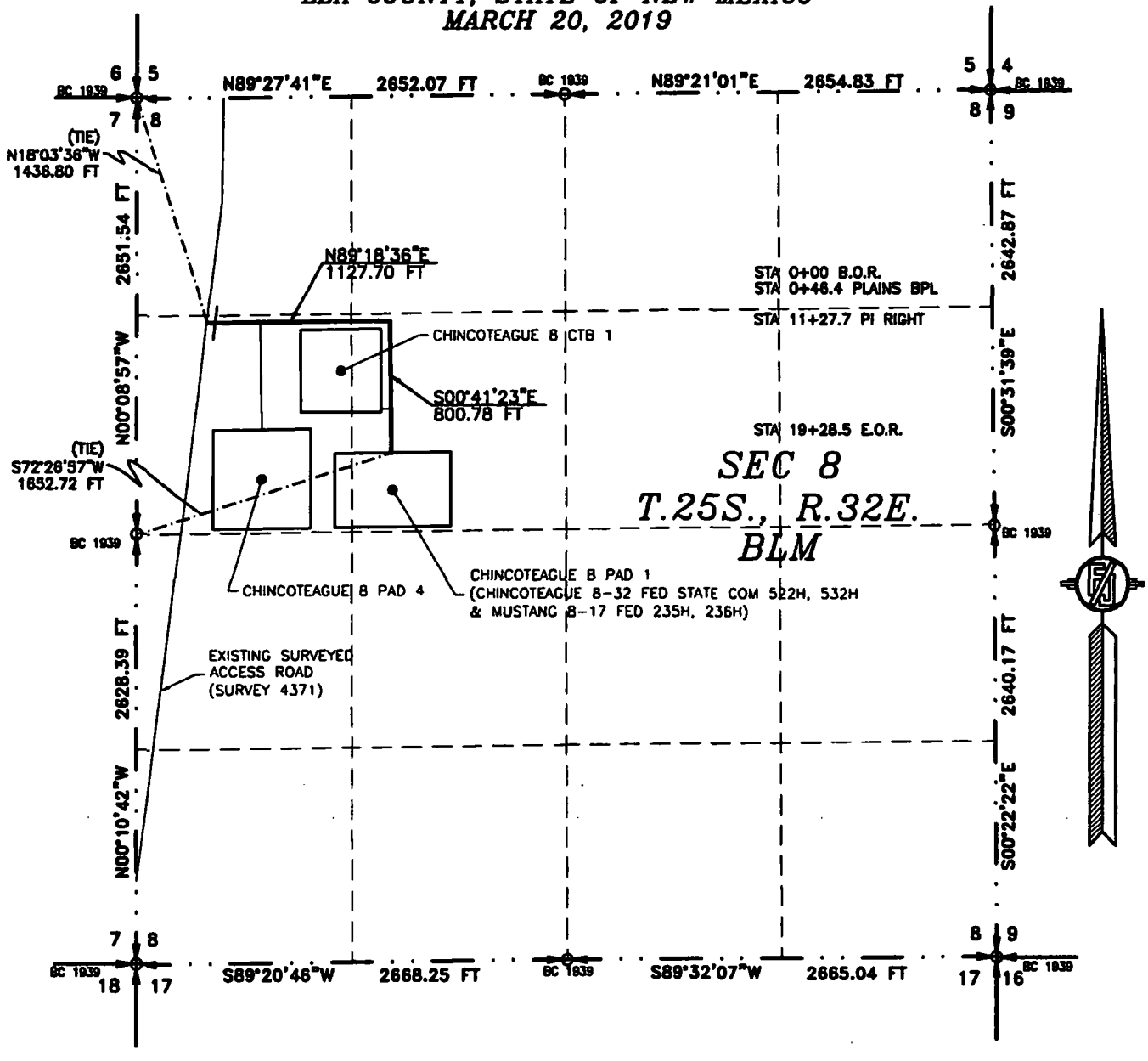
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE CHINCOTEAGUE 8 PAD 1 (CHINCOTEAGUE 8-32 FED STATE COM 522H, 532H & MUSTANG 8-17 FED 235H, 236H)

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MARCH 20, 2019



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 MARCH 2019

FILIMON F. JARAMILLO NM 12797
301 SOUTH CANAL
(575) 234-3341

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

SURVEY NO. 7005A

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE CHINCOTEAGUE 8 PAD 1 (CHINCOTEAGUE 8-32 FED STATE COM 522H, 532H & MUSTANG 8-17 FED 235H, 236H)

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MARCH 20, 2019

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA 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 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N18°03'36"W, A DISTANCE OF 1436.80 FEET;
THENCE N89°18'36"E A DISTANCE OF 1127.70 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S00°41'23"E A DISTANCE OF 800.78 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S72°26'57"W, A DISTANCE OF 1652.72 FEET;

SAID STRIP OF LAND BEING 1928.48 FEET OR 116.87 RODS IN LENGTH, CONTAINING 1.328 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	886.44 L.F.	53.72 RODS	0.610 ACRES
SE/4 NW/4	1042.04 L.F.	63.15 RODS	0.718 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 MARCH 2019

FILIMON F. JARAMILLO PLS 12797
301 SOUTH CANAL
(575) 234-3341

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

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.

USA Contiguous Equidistant Conic
Datum: North American 1983
Created by: FME Server
Map is current as of 4/4/2019

N

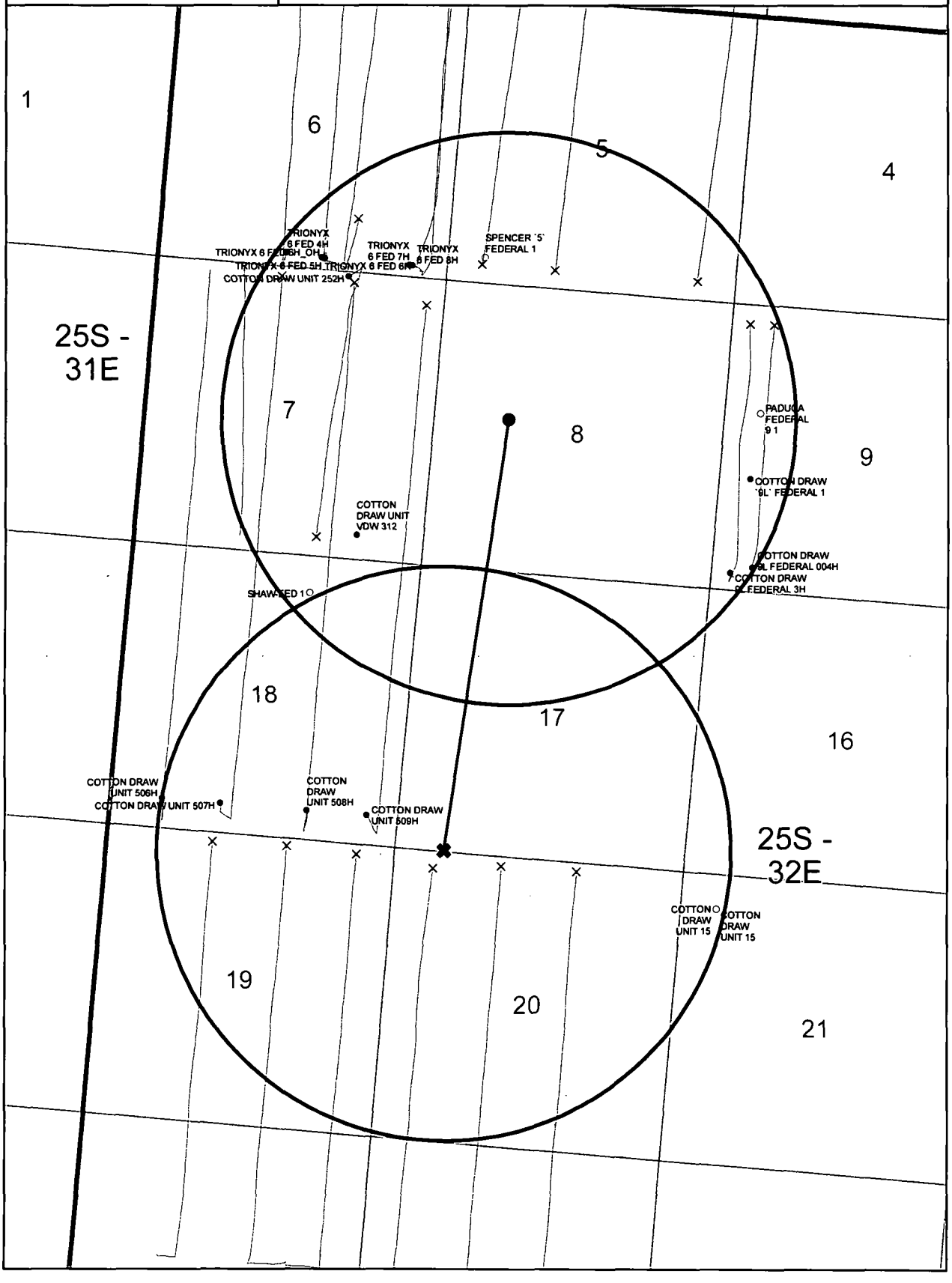
0 0.3 Miles 1 inch = 0.4 miles

MUSTANG 8-17 FED 235H
WA017751235

COTTON DRAW UNIT 509H
Nearest wellbore to SHL: 1707 ft.

MORAB 29-20 FED COM 1H
Nearest wellbore to BHL: 378 ft.

- ○ Unknown SHL
- • Active SHL
- ○ Inactive SHL
- × BHL



MUSTANG 8-17 FED COM

235H/236H/237H

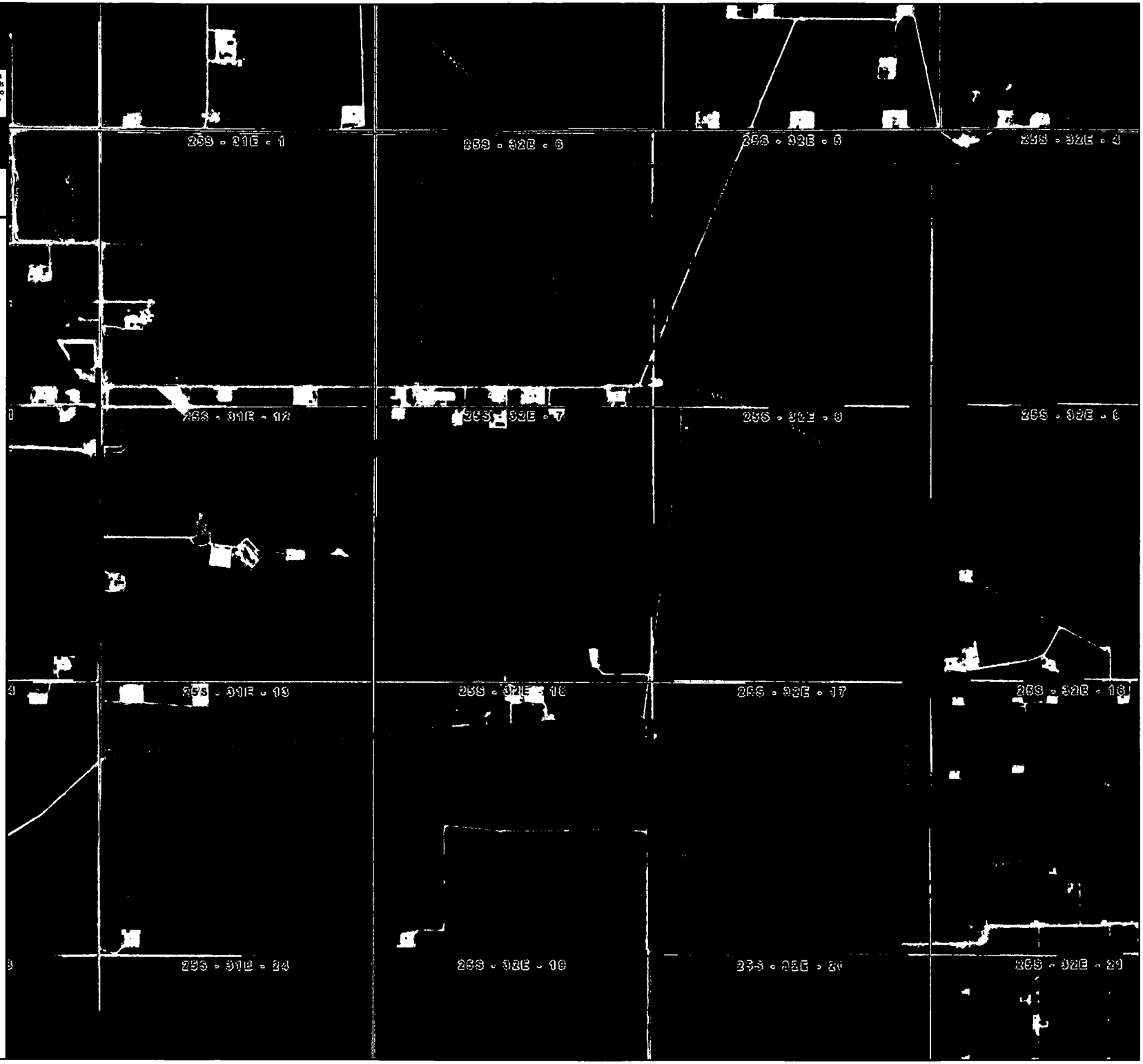
devon

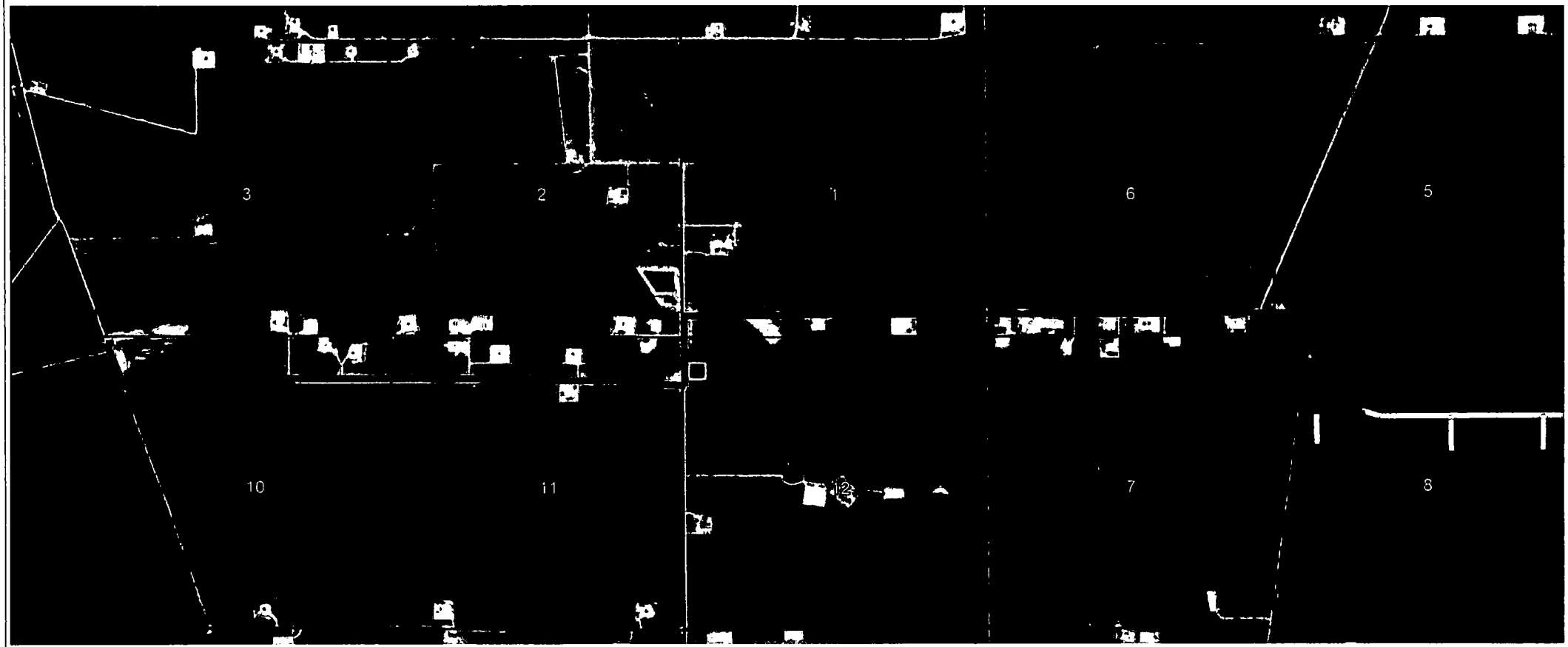
This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: _User
Map is current as of: 21-Mar-2019

N

Miles
0 0.14 0.28 0.56 1:28,457

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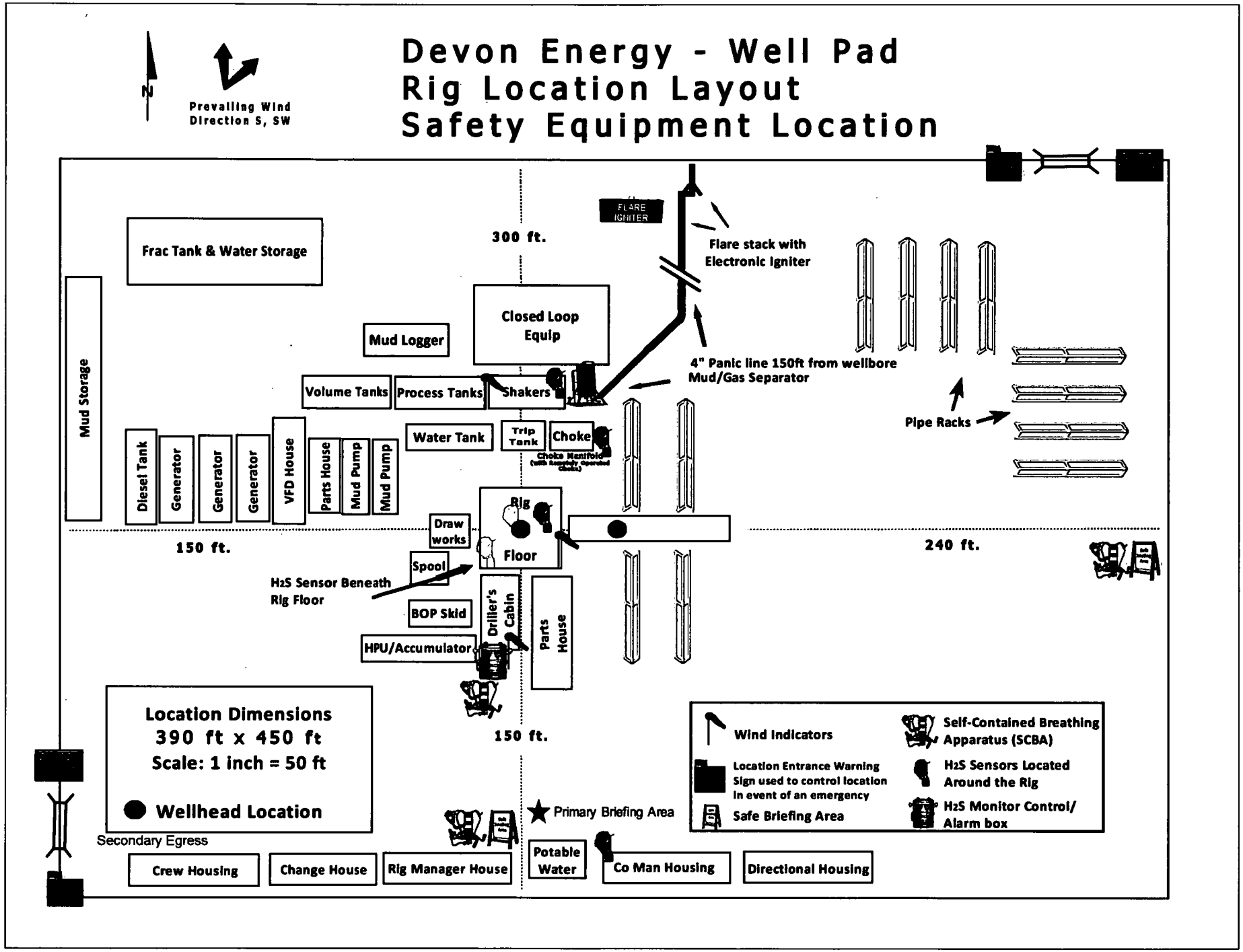
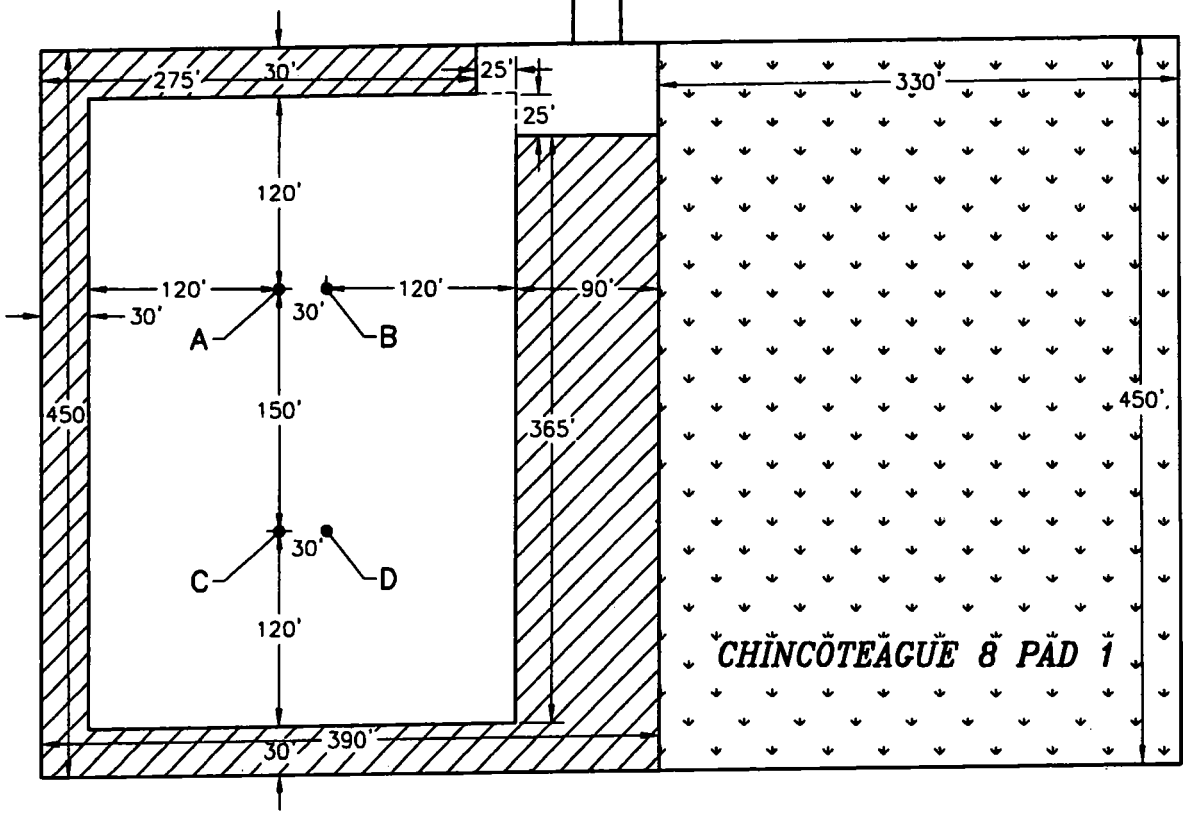

Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location
N
Prevailing Wind
Direction S, SW
FLARE IGNITER
Flare stack with
Electronic Igniter
300 ft.
Frac Tank & Water Storage
Closed Loop
Equip
Mud Logger
Mud Storage
Volume Tanks
Process Tanks
Shakers
4" Panic line 150ft from wellbore
Mud/Gas Separator
Pipe Racks
Diesel Tank
Generator
Generator
Generator
VFD House
Parts House
Mud Pump
Mud Pump
Water Tank
Trip
Tank
Choke
Choke Manifold
Rig
Floor
Draw
works
150 ft.
240 ft.
Spool
H2S Sensor Beneath
Rig Floor
BOP Skid
HPU/Accumulator
Driller's
Cabin
Parts
House
150 ft.
Location Dimensions
390 ft x 450 ft
Scale: 1 inch = 50 ft
Wellhead Location
Secondary Egress
Primary Briefing Area
Potable
Water
Crew Housing
Change House
Rig Manager House
Co Man Housing
Directional Housing
Wind Indicators
Location Entrance Warning
Sign used to control location
In event of an emergency
Safe Briefing Area
Self-Contained Breathing
Apparatus (SCBA)
H2S Sensors Located
Around the Rig
H2S Monitor Control/
Alarm box

SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN

A – CHINCOTEAGUE 8–32 FED STATE COM 522H
B – CHINCOTEAGUE 8–32 FED STATE COM 532H
C – MUSTANG 8–17 FED 235H
D – MUSTANG 8–17 FED 236H



DENOTES INTERIM PAD RECLAMATION AREA

DENOTES GRADING SITE RECLAMATION AREA

012 60 120 240
SCALE 1" = 120'

1.477± ACRES INTERIM PAD RECLAMATION AREA
3.409± ACRES GRADING SITE RECLAMATION AREA
2.553± ACRES NON–RECLAIMED AREA
7.439± ACRES CHINCOTEAGUE 8 PAD 1

DEVON ENERGY PRODUCTION COMPANY, L.P.
MUSTANG 8–17 FED 235H
LOCATED 2468 FT. FROM THE NORTH LINE AND 1375 FT. FROM THE WEST LINE OF SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MARCH 20, 2019
SURVEY NO. 7005A

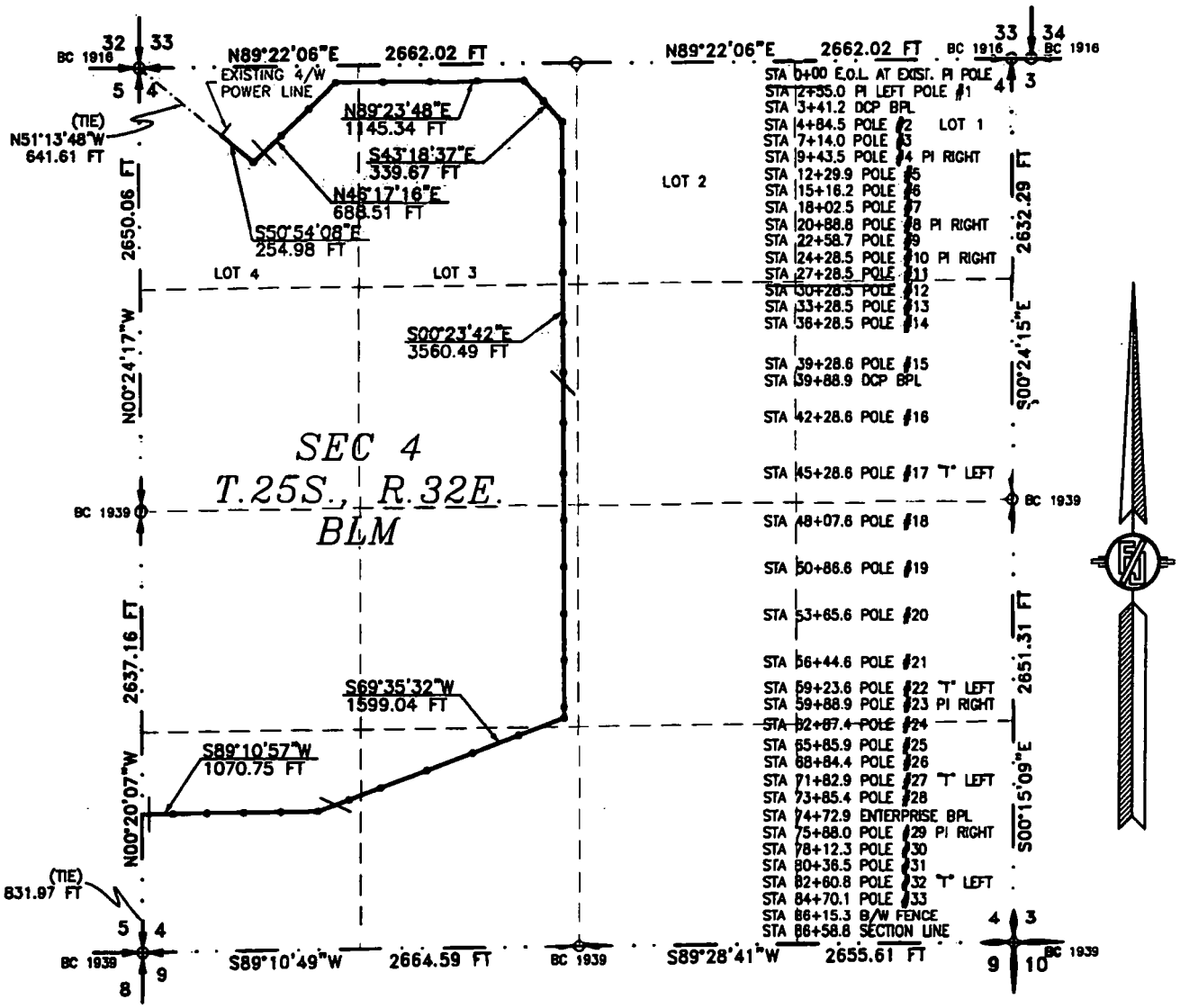
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234–3341 *CARLSBAD, NEW MEXICO*

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 4, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SEE NEXT SHEET (2-8) FOR DESCRIPTION

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 1st DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO, PLS 12797

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

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 4, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 4, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN LOT 4 OF SAID SECTION 4, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 4, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N51°13'48"W, A DISTANCE OF 641.61 FEET;
THENCE S50°54'08"E A DISTANCE OF 254.98 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N46°17'16"E A DISTANCE OF 688.51 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N89°23'48"E A DISTANCE OF 1145.34 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S43°18'37"E A DISTANCE OF 339.67 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S00°23'42"E A DISTANCE OF 3560.49 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S69°35'32"W A DISTANCE OF 1599.04 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°10'57"W A DISTANCE OF 1070.75 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 4, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S00°20'07"E, A DISTANCE OF 831.97 FEET;

SAID STRIP OF LAND BEING 8658.78 FEET OR 524.77 RODS IN LENGTH, CONTAINING 5.964 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 4	1079.30 L.F.	65.41 RODS	0.743 ACRES
LOT 3	2319.67 L.F.	140.59 RODS	1.598 ACRES
SE/4 NW/4	1320.74 L.F.	80.04 RODS	0.910 ACRES
NE/4 SW/4	1425.94 L.F.	86.42 RODS	0.982 ACRES
SE/4 SW/4	1164.77 L.F.	70.59 RODS	0.802 ACRES
SW/4 SW/4	1348.36 L.F.	81.72 RODS	0.929 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 1ST DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO, PLS 12797

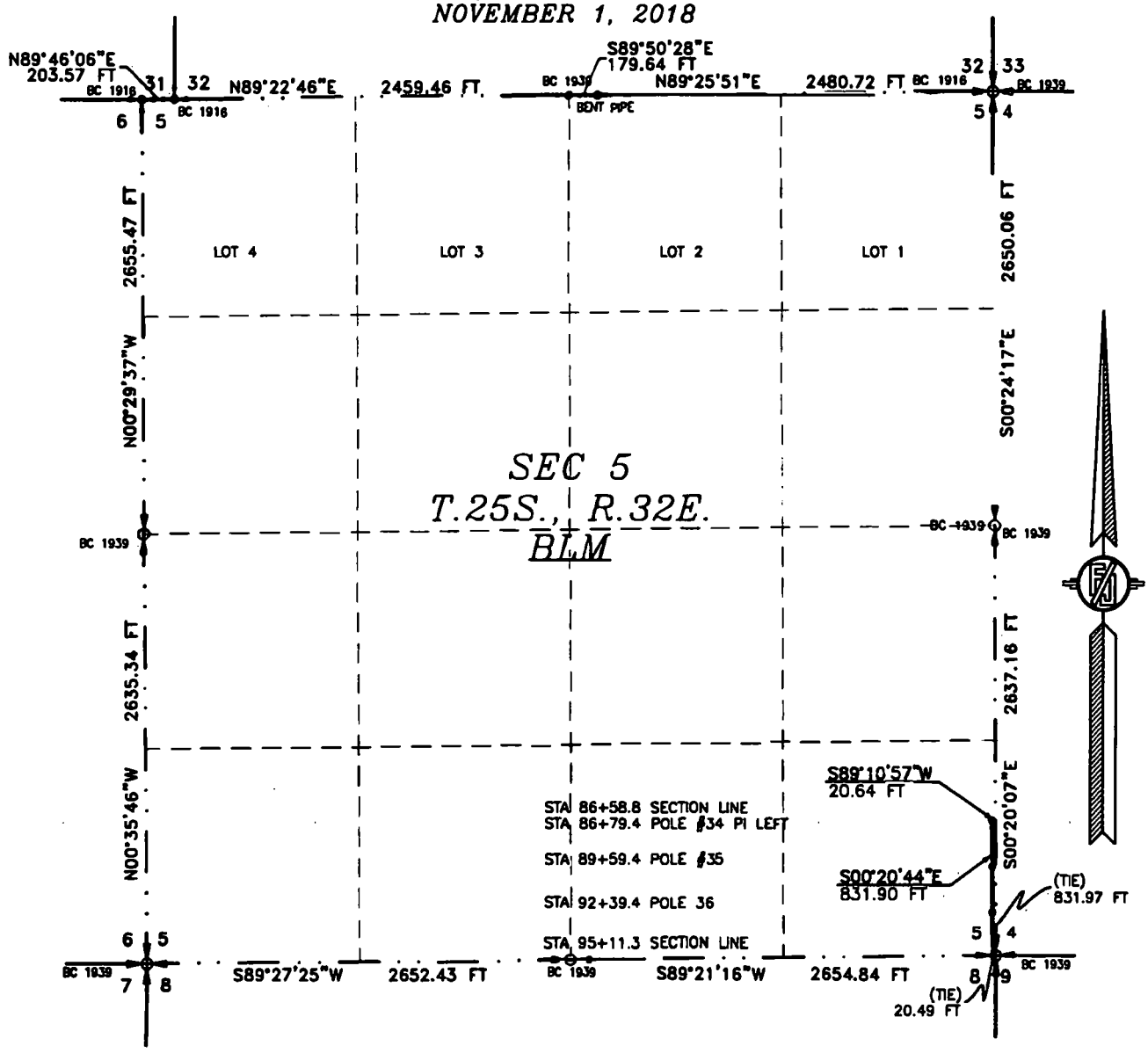
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 5, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SEE NEXT SHEET (4-8) 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 ____ DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO, 12797, REGISTERED PROFESSIONAL SURVEYOR

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

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 5, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 5, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 SE/4 OF SAID SECTION 5, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE SOUTHEAST CORNER OF SAID SECTION 5, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S00°20'07"E, A DISTANCE OF 831.97 FEET;
THENCE S89°10'57"W A DISTANCE OF 20.64 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S00°20'44"E A DISTANCE OF 831.90 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHEAST CORNER OF SAID SECTION 5, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N89°21'16"E, A DISTANCE OF 20.49 FEET;

SAID STRIP OF LAND BEING 852.54 FEET OR 51.67 RODS IN LENGTH, CONTAINING 0.587 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 SE/4	852.54 L.F.	51.67 RODS	0.587 ACRES

GENERAL NOTES

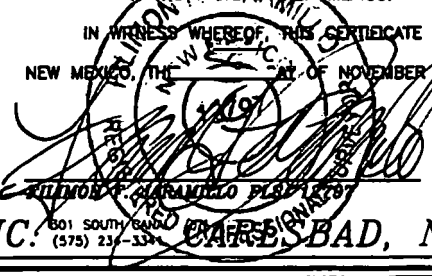
1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

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 5TH DAY OF NOVEMBER 2018



FILIMON F. JARAMILLO PLS 12797

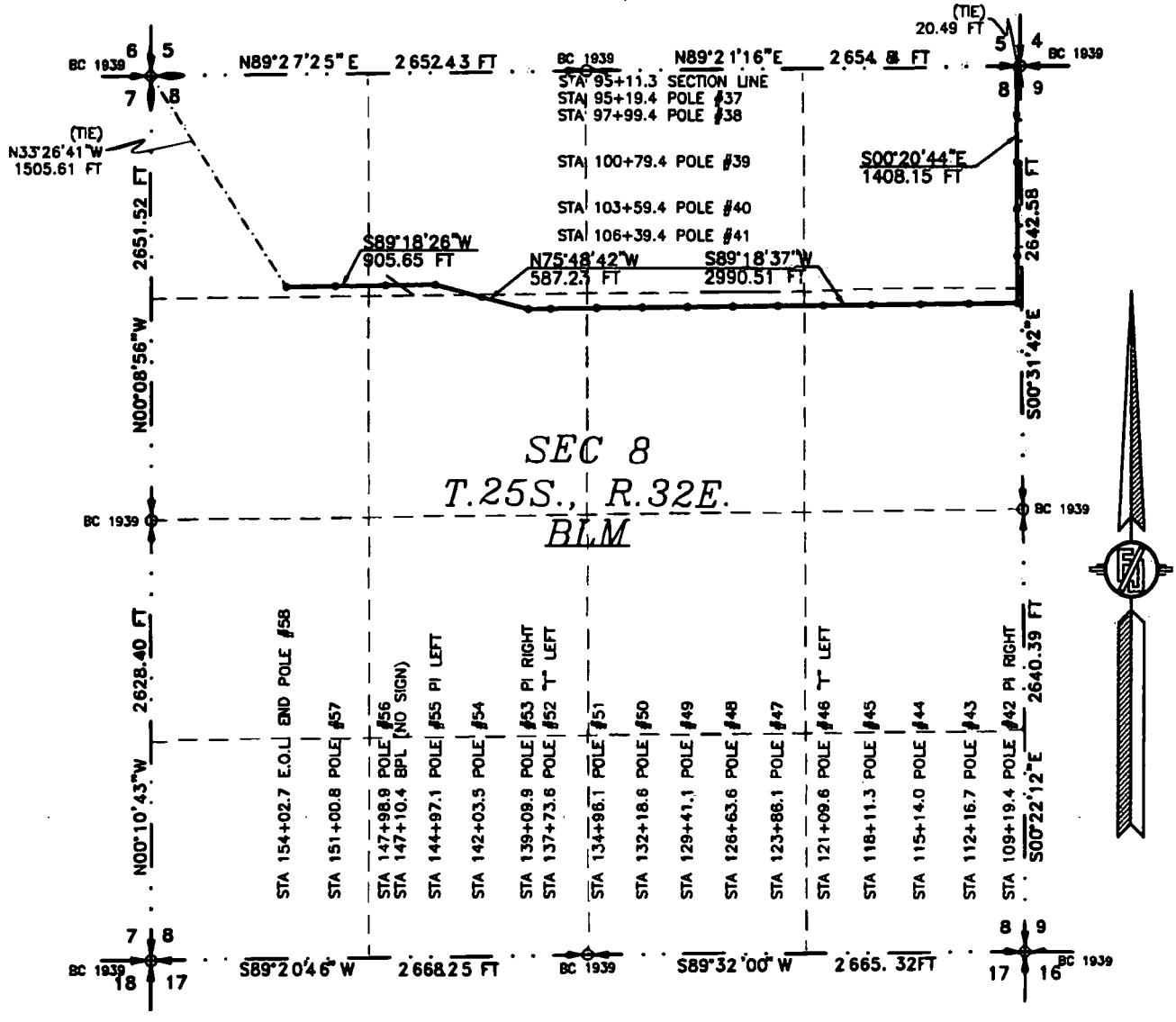
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SEE NEXT SHEET (6-8) 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 1ST DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO, NEW MEXICO 12797, PROFESSIONAL SURVEYOR

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

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NE/4 NE/4 OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N89°21'16"E, A DISTANCE OF 20.49 FEET;
THENCE S00°20'44"E A DISTANCE OF 1408.15 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°18'37"W A DISTANCE OF 2990.51 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N75°48'42"W A DISTANCE OF 587.23 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°18'26"W A DISTANCE OF 905.65 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N33°26'41"W, A DISTANCE OF 1505.61 FEET;

SAID STRIP OF LAND BEING 5891.54 FEET OR 357.07 RODS IN LENGTH, CONTAINING 4.057 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NE/4	1321.30 L.F.	80.08 RODS	0.910 ACRES
SE/4 NE/4	1392.63 L.F.	84.40 RODS	0.959 ACRES
SW/4 NE/4	1328.83 L.F.	80.54 RODS	0.915 ACRES
SE/4 NW/4	704.87 L.F.	42.72 RODS	0.485 ACRES
NE/4 NW/4	642.01 L.F.	38.91 RODS	0.442 ACRES
NW/4 NW/4	501.90 L.F.	30.42 RODS	0.346 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 16TH DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO — NEW MEXICO — 12797 — REGISTERED PROFESSIONAL SURVEYOR

FILIMON F. JARAMILLO, PLS 12797

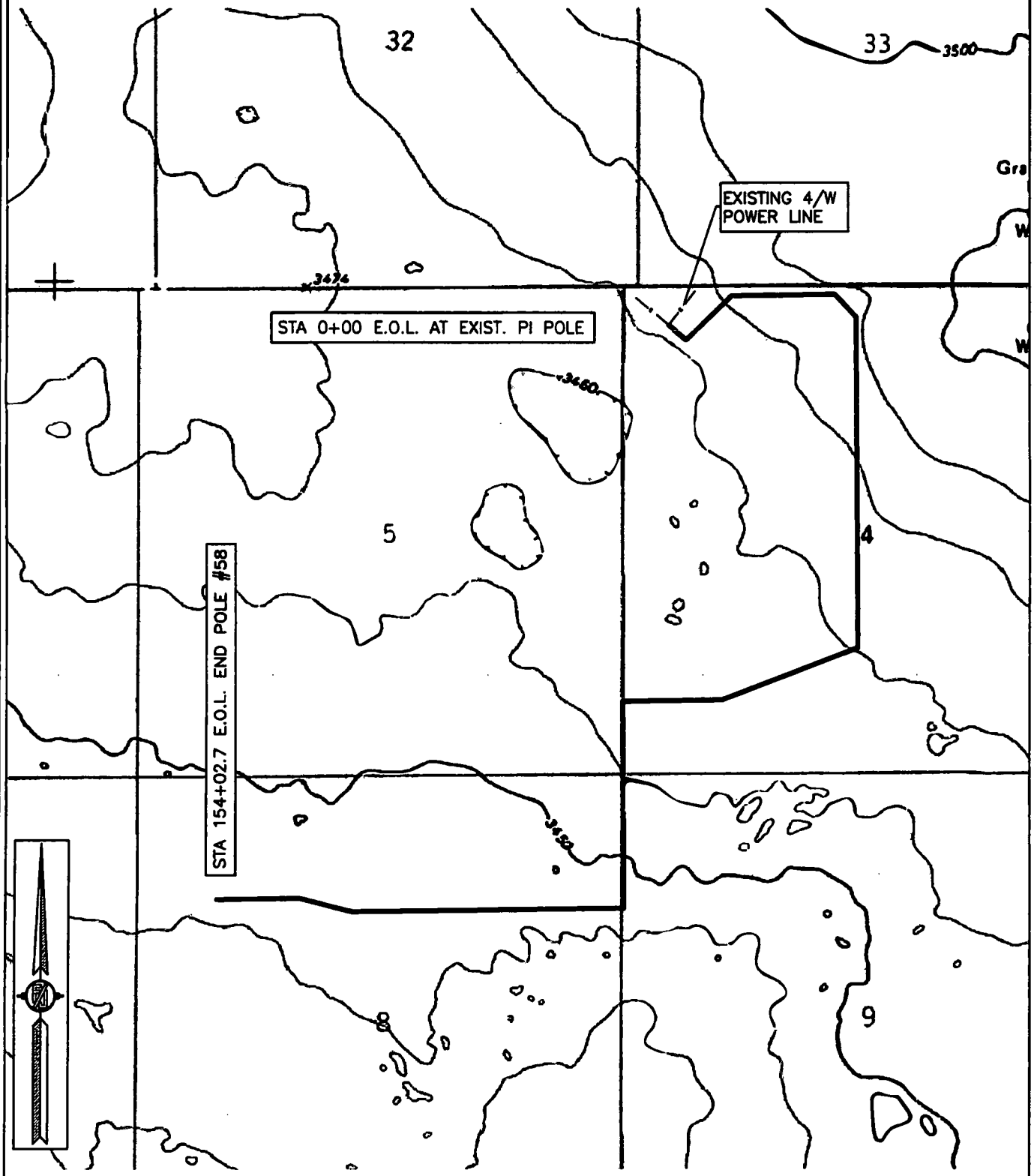
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTIONS 4, 5, 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SHEET: 7-8

SURVEY NO. 6610

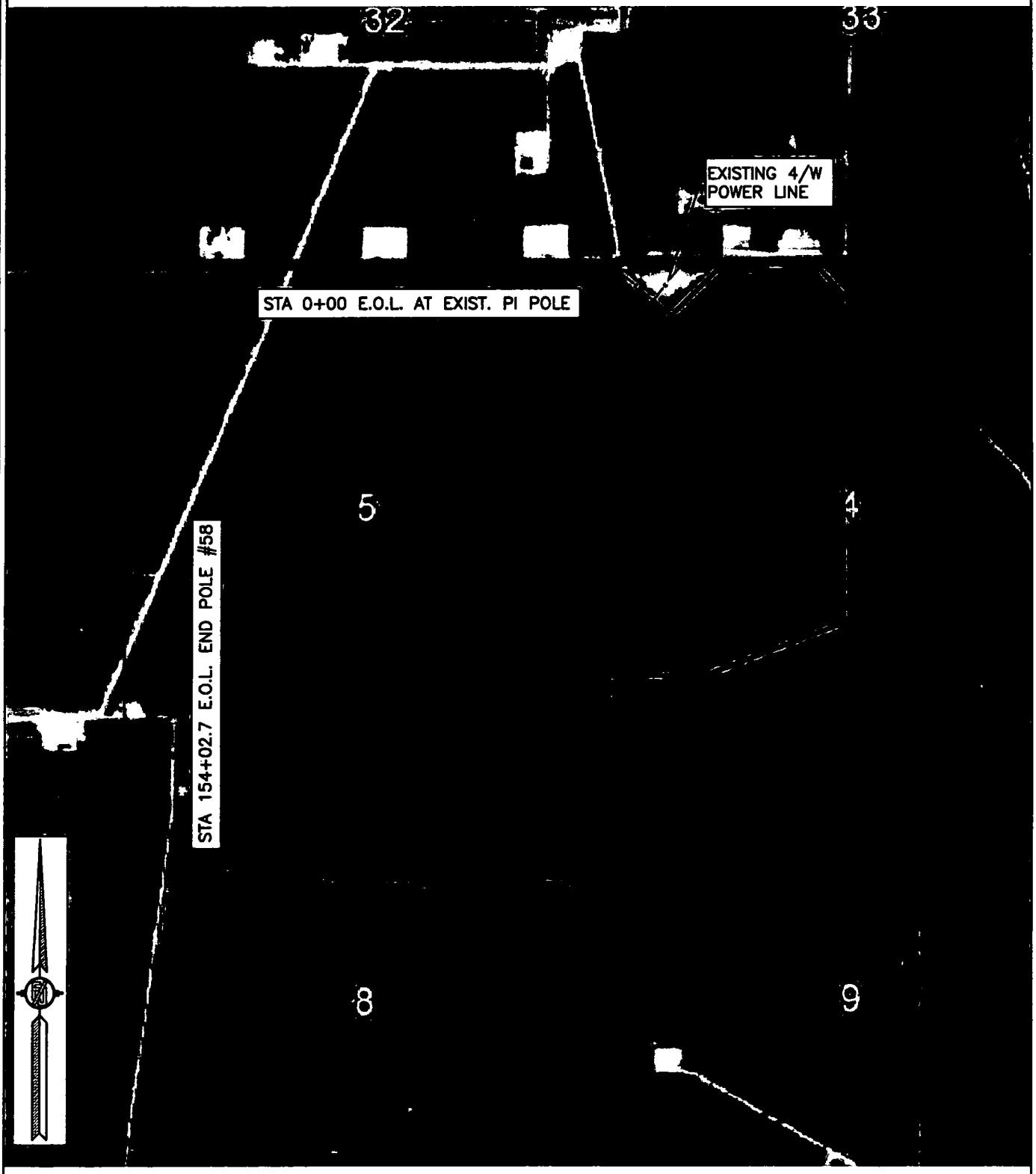
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ELECTRIC LINE PLAT

ELECTRIC MAIN LINE FROM AN EXISTING 4 WIRE POWER LINE TO CONNECT THE NOKOTA 4, LIPPIZZAN 4, & CHINCOTEAGUE 8 PADS AND CTBS

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTIONS 4, 5, 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SHEET: 8-8

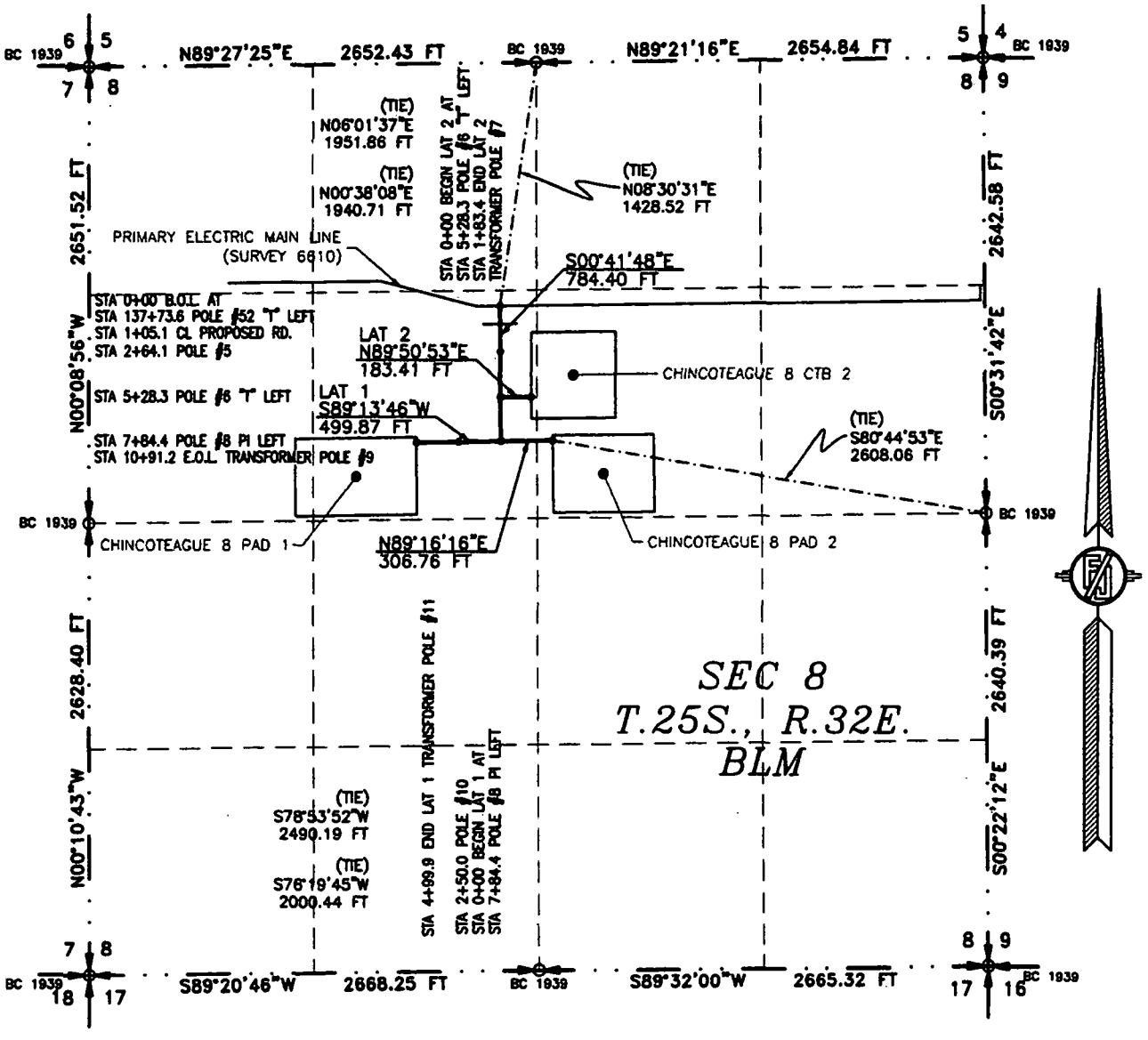
SURVEY NO. 6610

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

ELECTRIC LINE PLAT

ELECTRIC LINE TO CONNECT THE CHINCOTEAGUE 8 PAD 1 & 2 AND CHINCOTEAGUE 8 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SEE NEXT SHEET (2-4) FOR DESCRIPTION

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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 14TH DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO NEW MEXICO 12797 PROFESSIONAL SURVEYOR

FILIMON F. JARAMILLO PLS 12797

301 SOUTH CANAL (575) 234-3341

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

SHEET: 1-4

SURVEY NO. 6612

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ELECTRIC LINE PLAT

ELECTRIC LINE TO CONNECT THE CHINCOTEAGUE 8 PAD 1 & 2 AND CHINCOTEAGUE 8 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

ELECTRIC LINE TO CHINCOTEAGUE 8 PAD 2

BEGINNING AT A POINT WITHIN THE SE/4 NW/4 OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N08°30'31"E, A DISTANCE OF 1428.52 FEET;
THENCE S00°41'48"E A DISTANCE OF 784.40 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N89°16'16"E A DISTANCE OF 306.76 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE EAST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S80°44'53"E, A DISTANCE OF 2608.06 FEET;

SAID STRIP OF LAND BEING 1091.16 FEET OR 66.13 RODS IN LENGTH, CONTAINING 0.751 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NW/4	999.08 L.F.	60.55 RODS	0.688 ACRES
SW/4 NE/4	92.08 L.F.	5.58 RODS	0.063 ACRES

LATERAL 1 ELECTRIC LINE TO CHINCOTEAGUE 8 PAD 1

BEGINNING AT A POINT WITHIN THE SE/4 NW/4 OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S78°53'52"W, A DISTANCE OF 2490.19 FEET;
THENCE S89°13'46"W A DISTANCE OF 499.87 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S76°19'45"W, A DISTANCE OF 2000.44 FEET;

SAID STRIP OF LAND BEING 499.87 FEET OR 30.30 RODS IN LENGTH, CONTAINING 0.344 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NW/4	499.87 L.F.	30.30 RODS	0.344 ACRES

LATERAL 2 ELECTRIC LINE TO CHINCOTEAGUE 8 CTB 2

BEGINNING AT A POINT WITHIN THE SE/4 NW/4 OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N06°01'37"E, A DISTANCE OF 1951.86 FEET;
THENCE N89°50'53"E A DISTANCE OF 183.41 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N00°38'08"E, A DISTANCE OF 1940.71 FEET;

SAID STRIP OF LAND BEING 183.41 FEET OR 11.12 RODS IN LENGTH, CONTAINING 0.126 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NW/4	183.41 L.F.	11.12 RODS	0.126 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 14TH DAY OF NOVEMBER 2018

FILIMON F. JARAMILLO NEW MEXICO 12797 REGISTERED PROFESSIONAL SURVEYOR

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

FILIMON F. JARAMILLO NEW MEXICO 12797

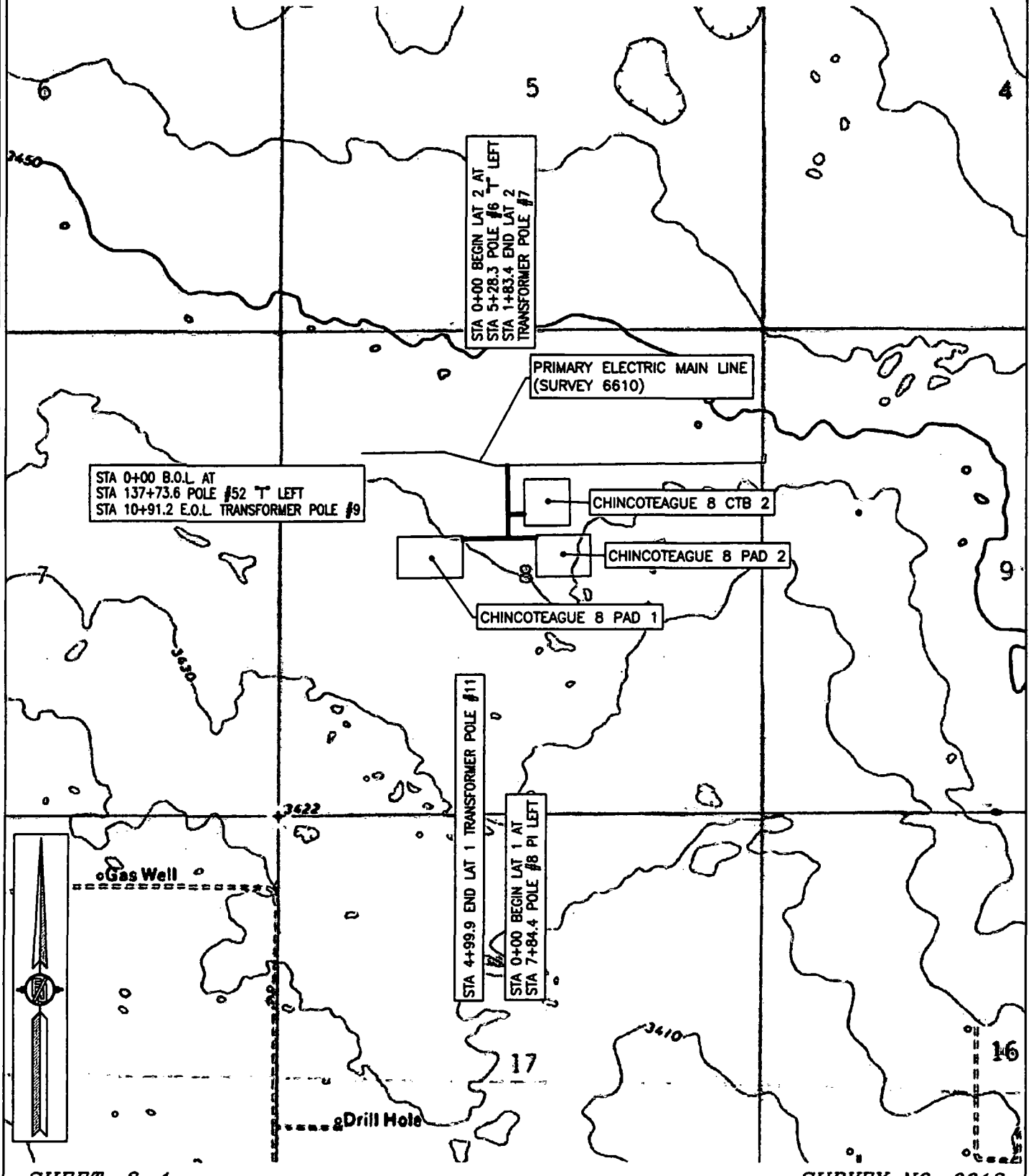
301 SOUTH CANAL
(575) 234-3341

ELECTRIC LINE PLAT

ELECTRIC LINE TO CONNECT THE CHINCOTEAGUE 8 PAD 1 & 2 AND CHINCOTEAGUE 8 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SHEET: 3-4

SURVEY NO. 6612

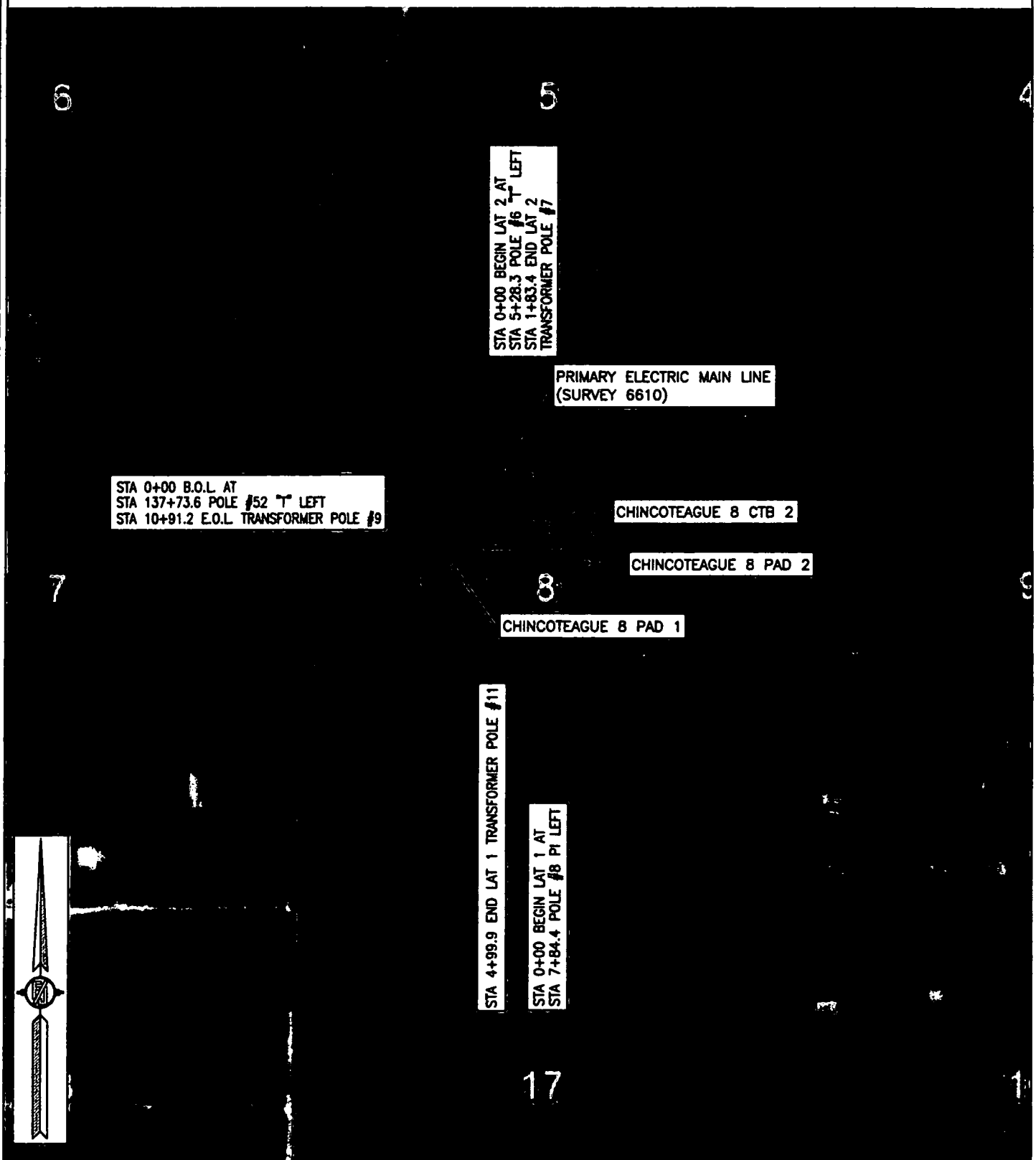
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

ELECTRIC LINE PLAT

ELECTRIC LINE TO CONNECT THE CHINCOTEAGUE 8 PAD 1 & 2 AND CHINCOTEAGUE 8 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 1, 2018



SHEET: 4-4 *SURVEY NO. 6612*

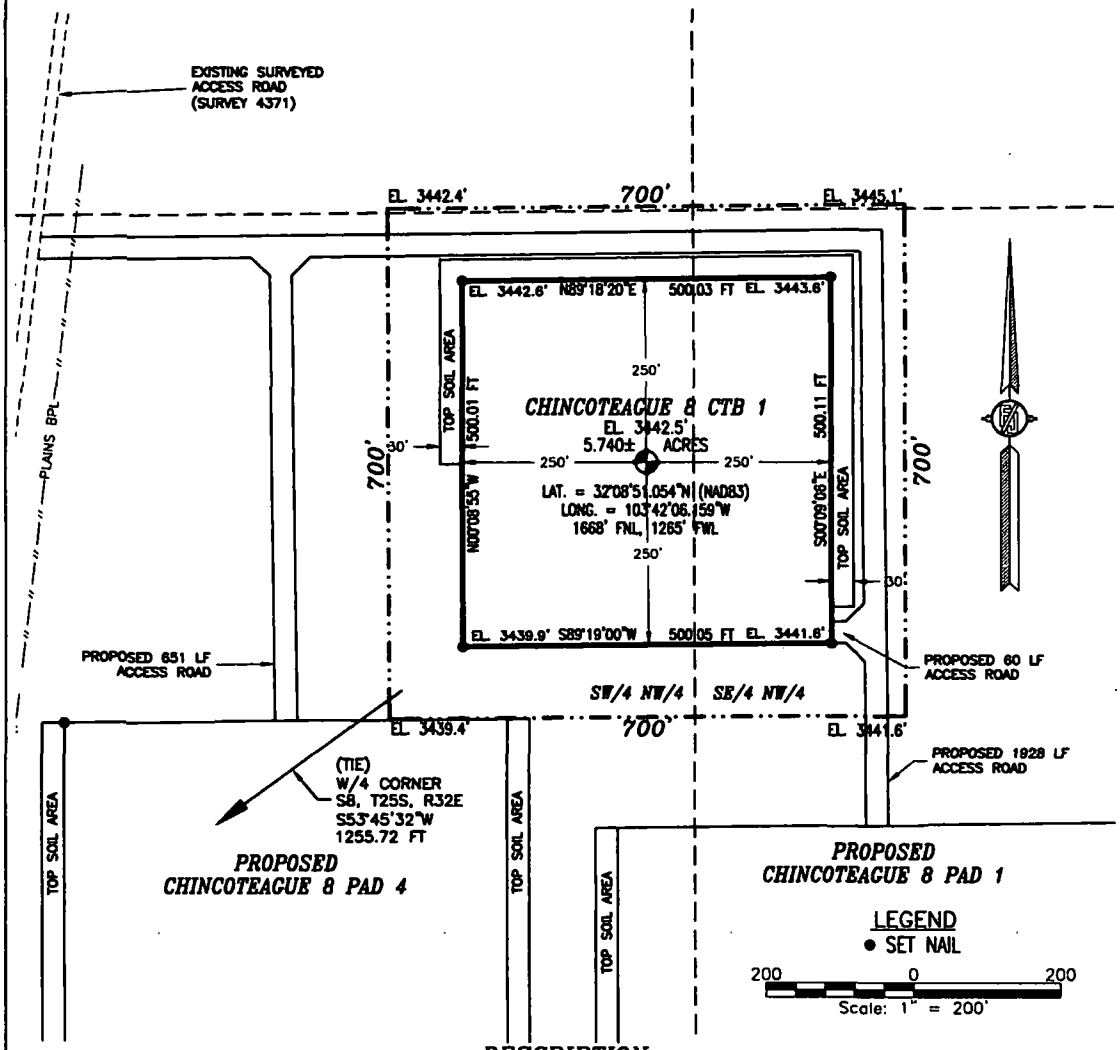
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

IN THE SW/4 NW/4 & SE/4 NW/4 OF SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 12, 2018



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN THE SW/4 NW/4 & SE/4 NW/4 OF SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST N.M.P.M., LEA COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHWEST CORNER OF THE PARCEL, WHENCE THE WEST QUARTER CORNER OF SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S53°45'32"W, A DISTANCE OF 1255.72 FEET;
THENCE N00°08'55"W A DISTANCE OF 500.01 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE N89°18'20"E A DISTANCE OF 500.03 FEET TO THE NORTHEAST CORNER OF THE PARCEL;
THENCE S00°09'06"E A DISTANCE OF 500.11 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE S89°19'00"W A DISTANCE OF 500.05 FEET TO THE SOUTHWEST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;
CONTAINING 3.605 ACRES IN THE SW/4 NW/4 & 2.135 ACRES IN THE SE/4 NW/4 FOR A TOTAL OF 5.740 ACRES MORE OR LESS.

GENERAL NOTES

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL TANK BATTERY

2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83)

DRIVING DIRECTIONS: FROM THE INTERSECTION OF STATE HIGHWAY 128 & CR 1 (ORLA) GO SOUTH ON CR 1 6.1 MILES TO MONSANTO ROAD, TURN RIGHT (WEST) GO 2.1 MILES, TURN RIGHT (NORTH) GO 1.0 MILE, NORTH ROAD TURNS LEFT (WEST) GO 200' TO A LEASE ROAD ON RIGHT (NORTH) TURN NORTH GO 0.7 OF A MILE TO ROAD LATHS ON RIGHT (EAST) GO 1128', TURN RIGHT GO SOUTH 536', TURN RIGHT GO WEST 60' TO SOUTHEAST PAD CORNER FOR THIS LOCATION.

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 12TH DAY OF OCTOBER 2018

FILIMON F. JARAMILLO, P.S. 12797

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

SHEET: 1-3

SURVEY NO. 6548

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

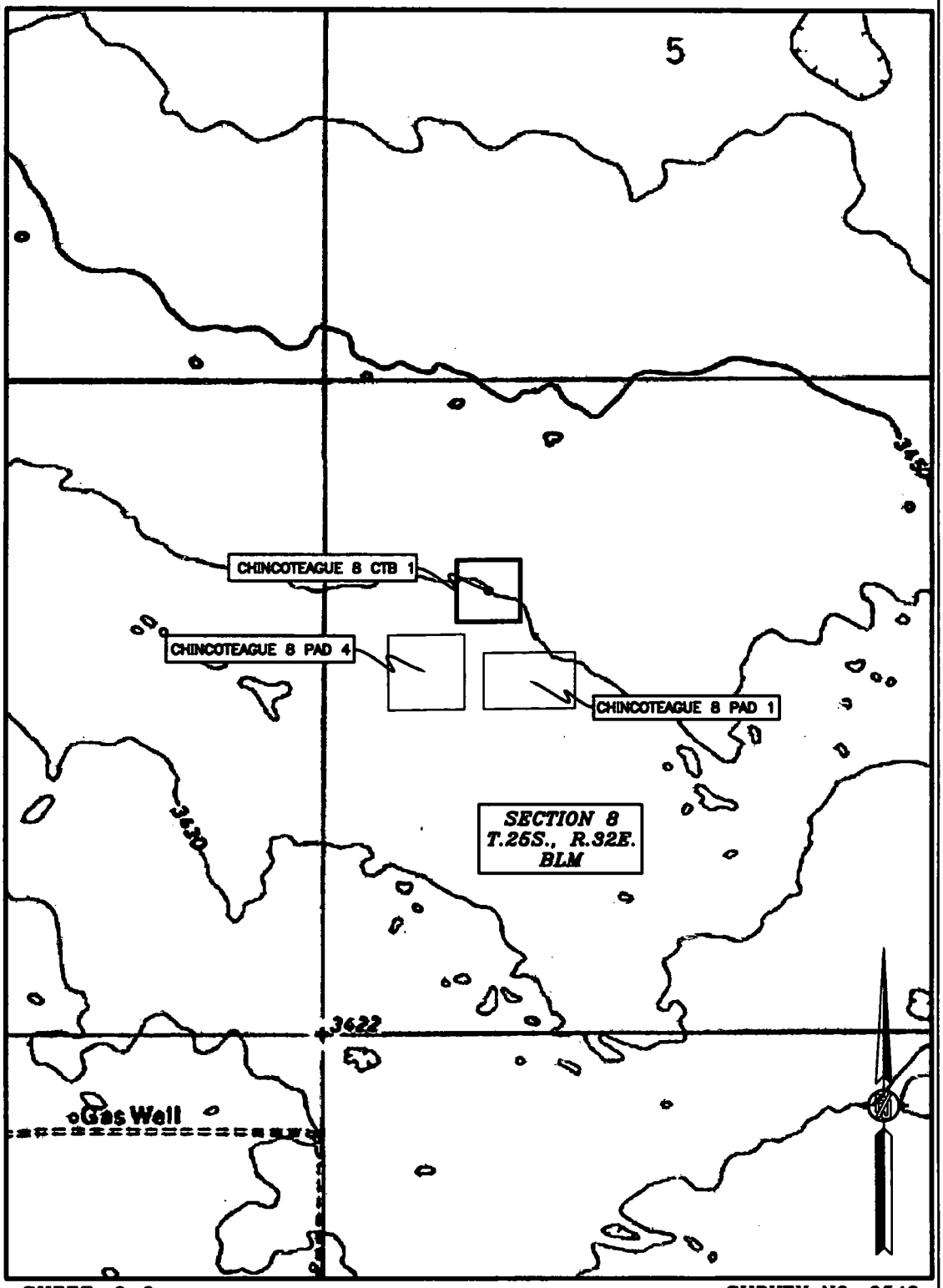
CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

IN THE SW/4 NW/4 & SE/4 NW/4 OF
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 12, 2018

QUAD MAP



SHEET: 2-3 SURVEY NO. 6548

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

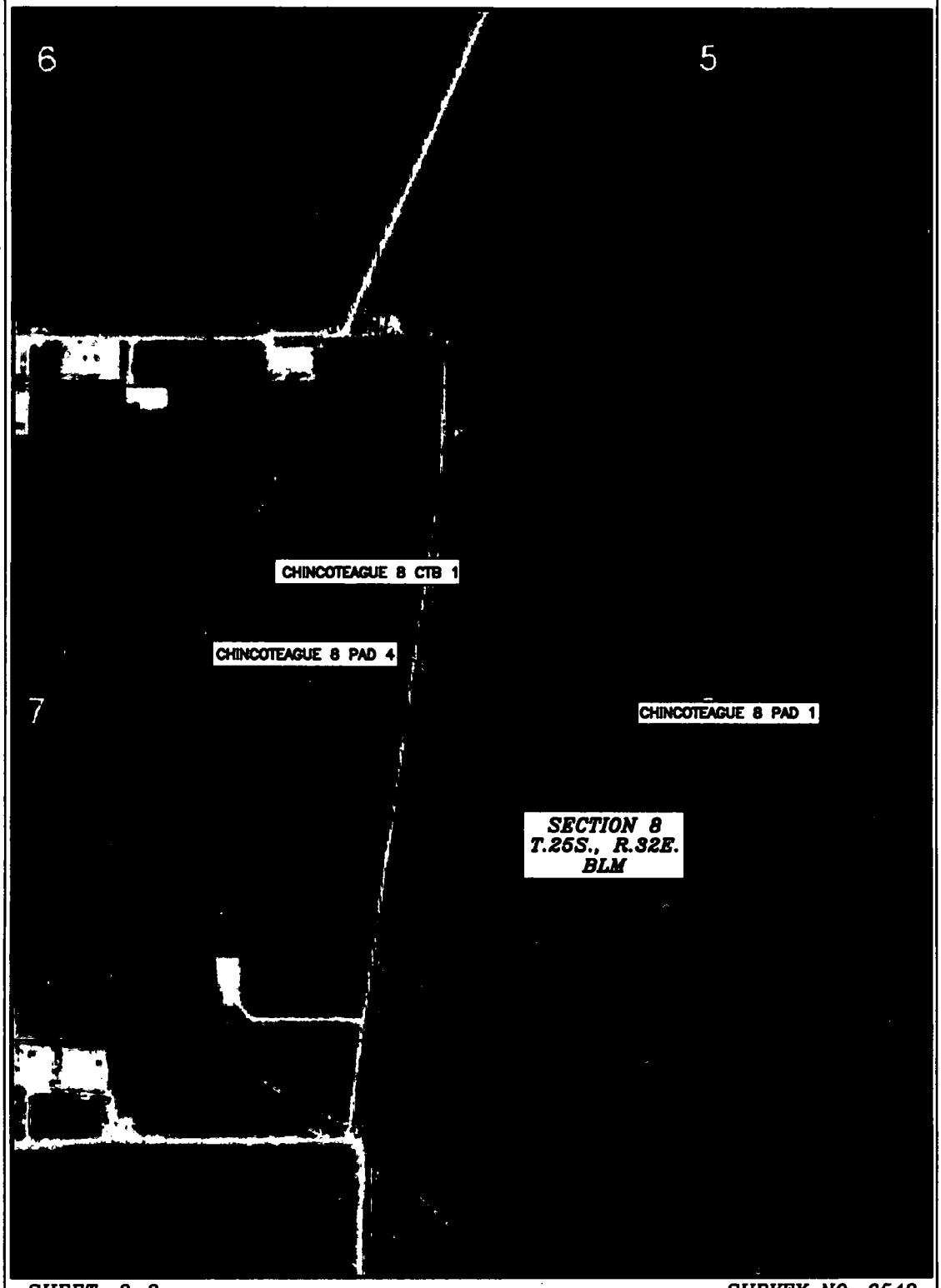
CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

IN THE SW/4 NW/4 & SE/4 NW/4 OF
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 12, 2018

AERIAL PHOTO

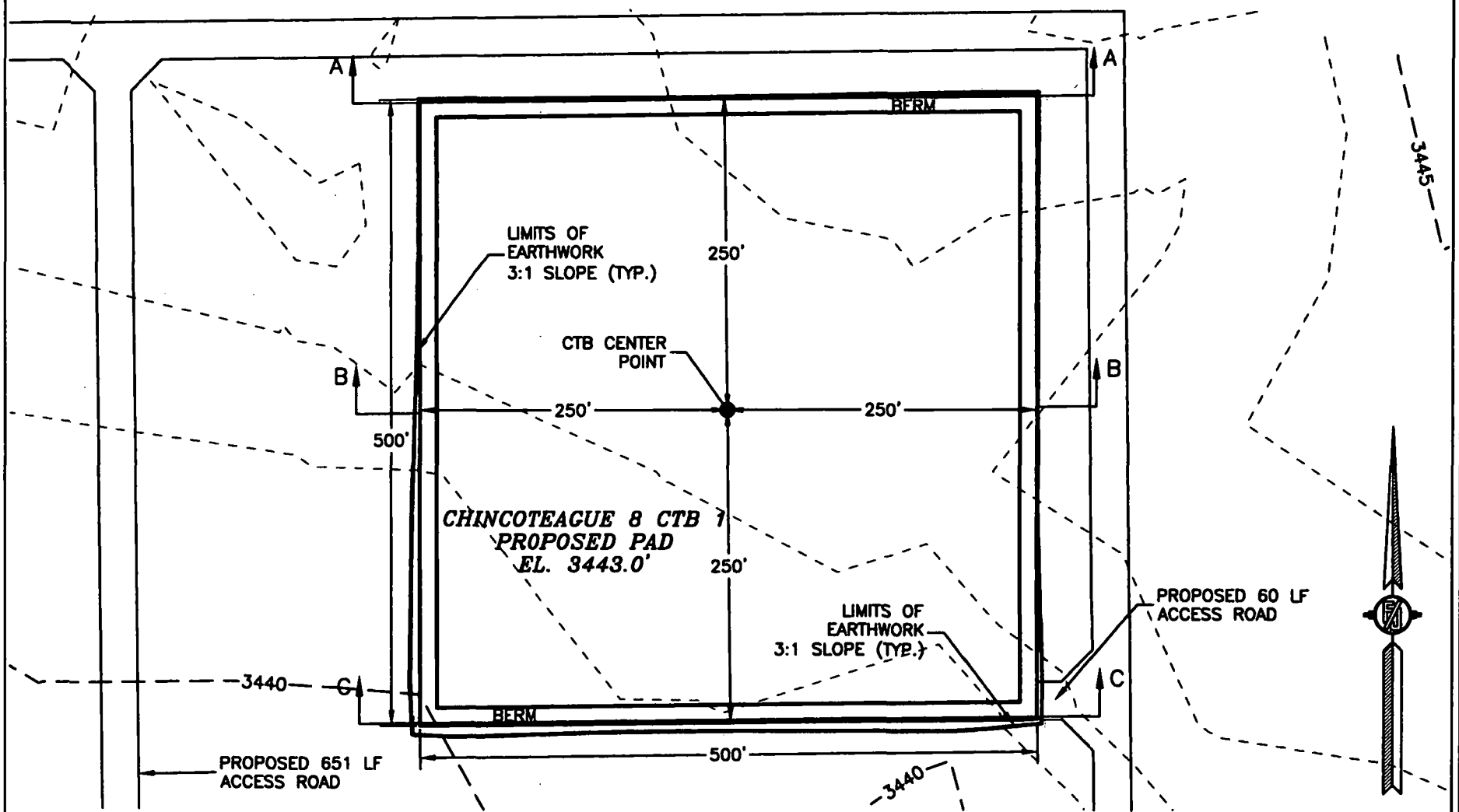


SHEET: 3-3

SURVEY NO. 6548

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
FOR CHINCOTEAGUE 8 CTB 1
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 12, 2018

012 60 120 240
SCALE 1" = 120'

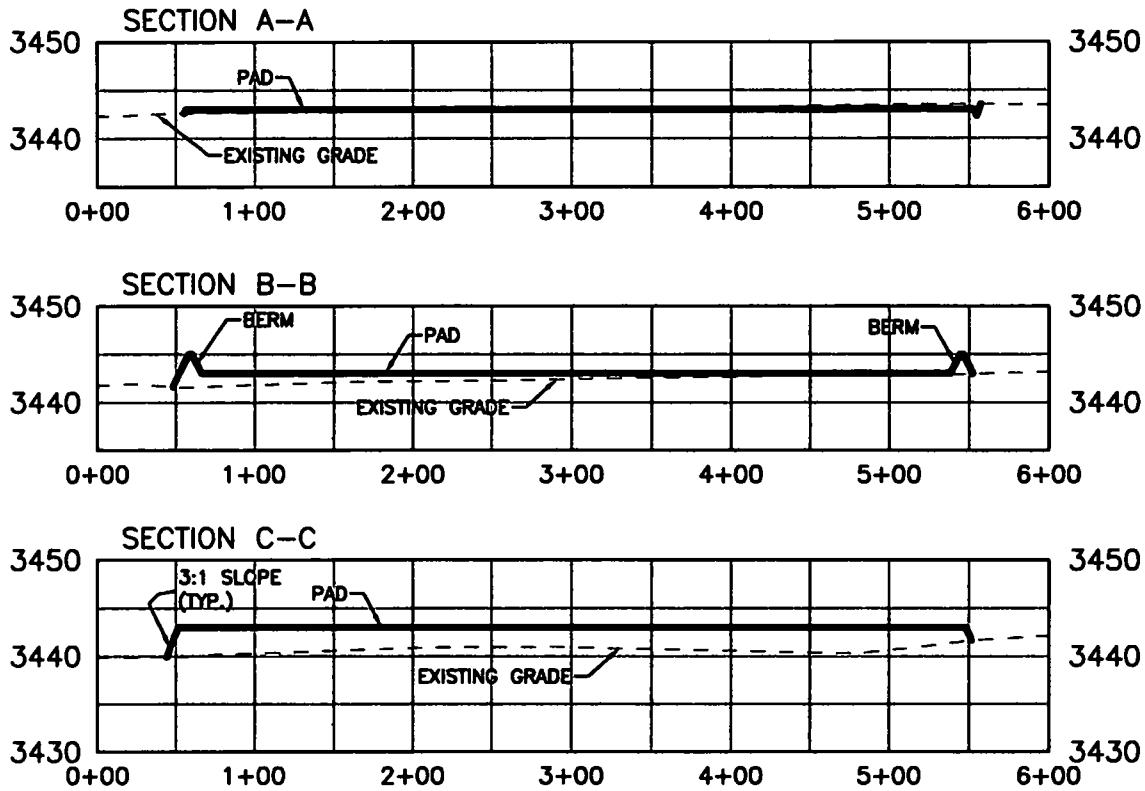
CUT	FILL	NET
111 CU. YD	9004 CU. YD	8892 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

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

SHEET 1-2
SURVEY NO. 6648

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR CHINCOTEAGUE 8 CTB 1
SECTION 8, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 12, 2018

0 12 60 120 240
SCALE 1" = 120' – 1" = 20' VER

CUT	FILL	NET
111 CU. YD	9004 CU. YD	8892 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

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

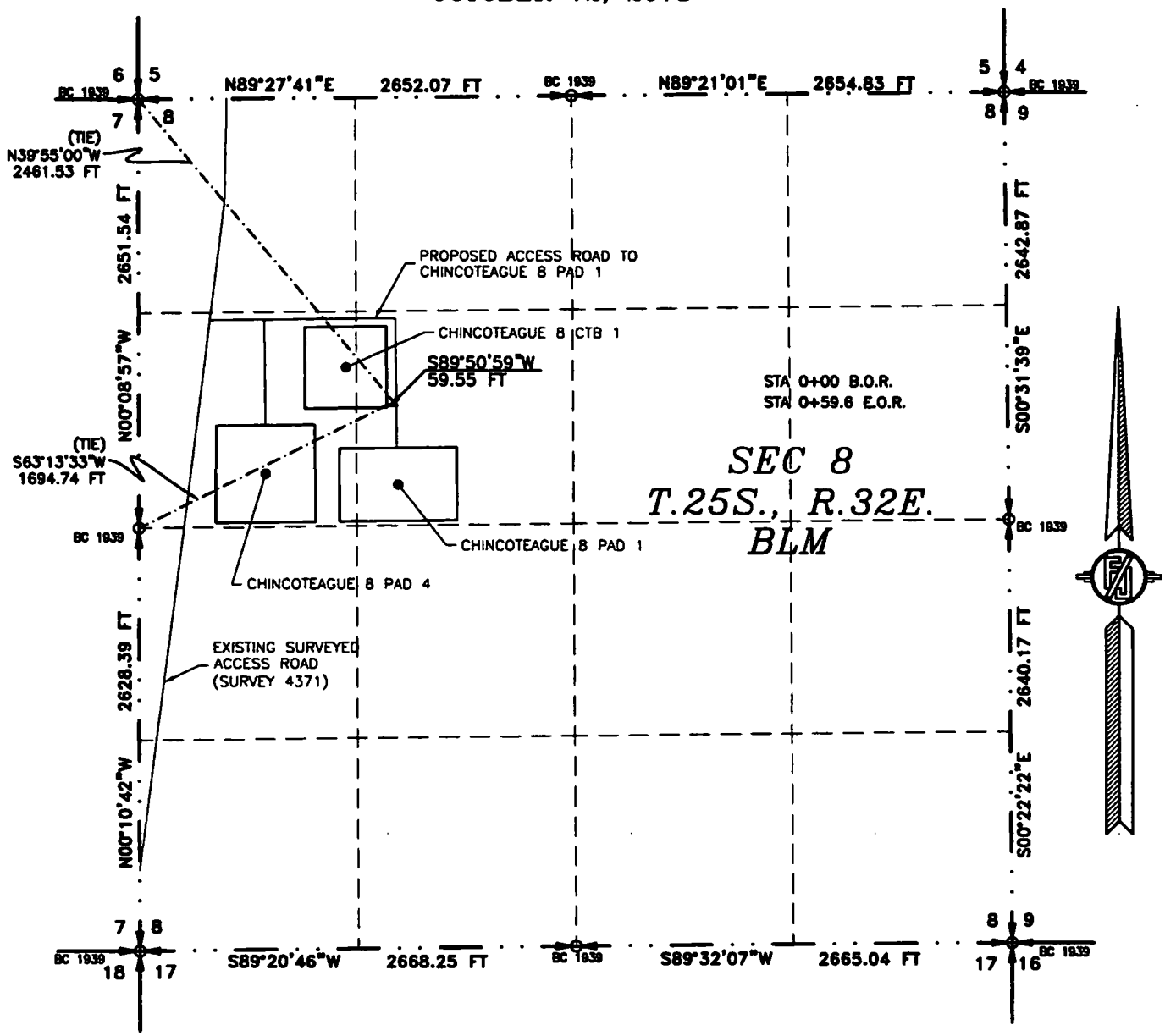
SHEET 2-2
SURVEY NO. 6548

ACCESS ROAD PLAT

ACCESS ROAD TO THE CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
OCTOBER 12, 2018



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 15TH DAY OF OCTOBER 2018

FILIMON F. JARAMILLO, PLS 12797

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

SHEET: 1-2

SURVEY NO. 6548

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
OCTOBER 12, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 NW/4 OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N39°55'00"W, A DISTANCE OF 2461.53 FEET;
THENCE S89°50'59"W A DISTANCE OF 59.55 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S83°13'33"W, A DISTANCE OF 1694.74 FEET;

SAID STRIP OF LAND BEING 59.55 FEET OR 3.61 RODS IN LENGTH, CONTAINING 0.041 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NW/4 59.55 L.F. 3.61 RODS 0.041 ACRES

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 12TH DAY OF OCTOBER, 2018

FILIMON F. JARAMILLO PLS 12797

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

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.

Pay.gov

Receipt

Tracking Information

Pay.gov Tracking ID: 26GKTHG2

Agency Tracking ID: 75720770982

Form Name: Bureau of Land Management (BLM) Application for Permit to Drill (APD) Fee

Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Bank account (ACH)

Payment Amount: $40,200.00

Transaction Date: 04/08/2019 01:57:53 PM EDT

Payment Date: 04/09/2019

Company: Devon Energy Production Company, L.P.

APD IDs: 10400040672, 10400040667, 10400040675, 10400040678

Lease Numbers: NMLC0061873B, NMLC0061873B, NMLC0061873B, NMLC0061873B

Well Numbers: 236H, 235H, 522H, 532H

Note: You will need your Pay.gov Tracking ID to complete your APD transaction in AFMSS II. Please ensure you write this number down upon completion of payment.

Account Information

Account Holder Name: Devon Energy Production Company, L.P.

Routing Number: 061000052

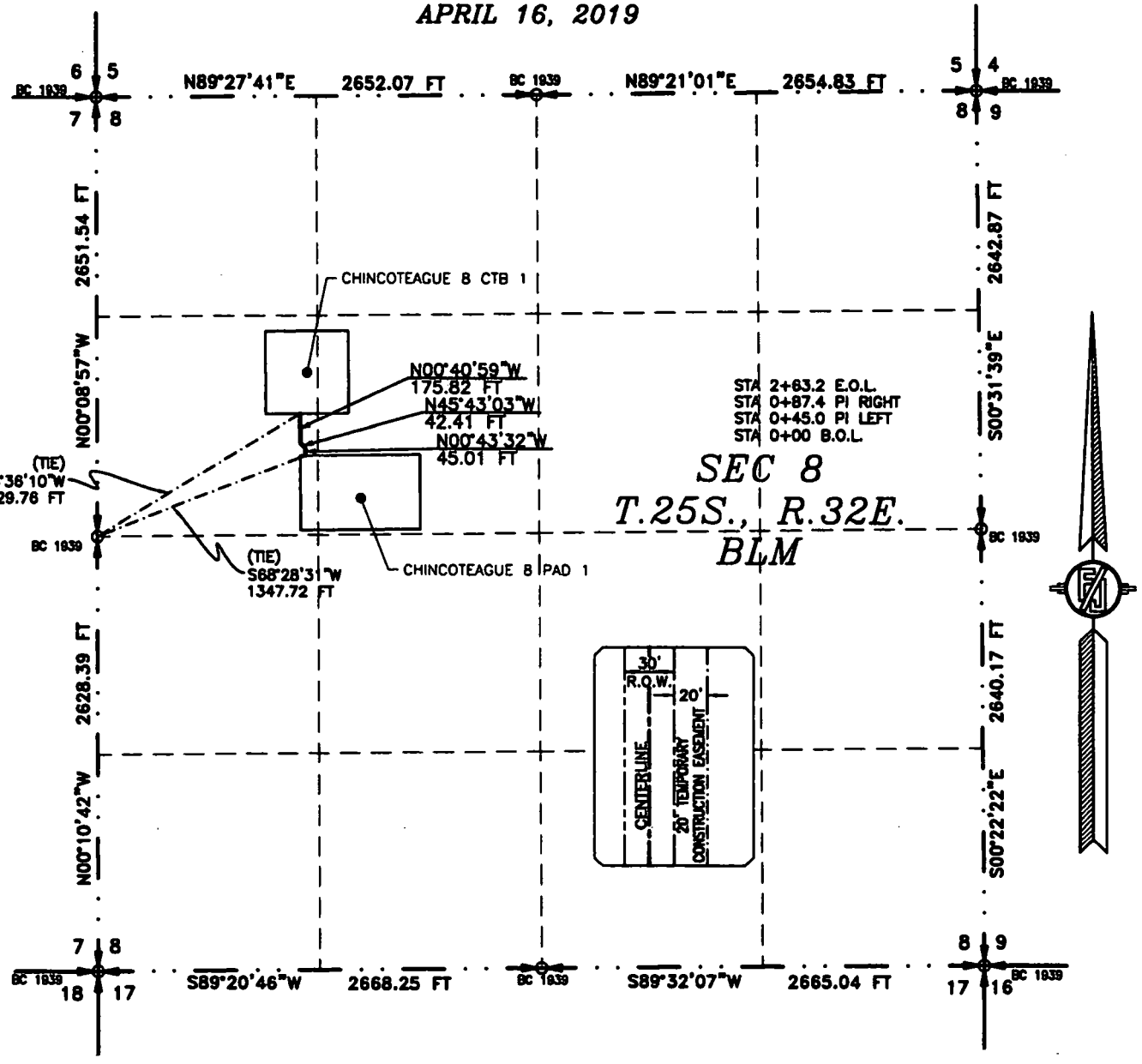
Account Number: **********9892

FLOWLINE PLAT (7600211F)

FLOWLINE & GAS LIFT LINE (BURIED IN SAME TRENCH) FROM THE CHINCOTEAGUE 8 PAD 1 TO THE CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
APRIL 16, 2019



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 17th DAY OF APRIL 2019

FILIMON F. JARAMILLO, NEW MEXICO 12797, REGISTERED PROFESSIONAL SURVEYOR

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

SHEET: 1-4

SURVEY NO. 7157

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT (7600211F)

FLOWLINE & GAS LIFT LINE (BURIED IN SAME TRENCH) FROM THE CHINCOTEAGUE 8 PAD 1 TO THE CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
APRIL 16, 2019

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA 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 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S68°28'31"W, A DISTANCE OF 1347.72 FEET;
THENCE N00°43'32"W A DISTANCE OF 45.01 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N45°43'03"W A DISTANCE OF 42.41 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N00°40'59"W A DISTANCE OF 175.82 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S58°36'10"W, A DISTANCE OF 1429.76 FEET;

SAID STRIP OF LAND BEING 263.24 FEET OR 15.95 RODS IN LENGTH, CONTAINING 0.181 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	263.24 L.F.	15.95 RODS	0.181 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 24 DAY OF APRIL 2019.

FILIMON F. JARAMILLO 12797 REGISTERED PROFESSIONAL SURVEYOR

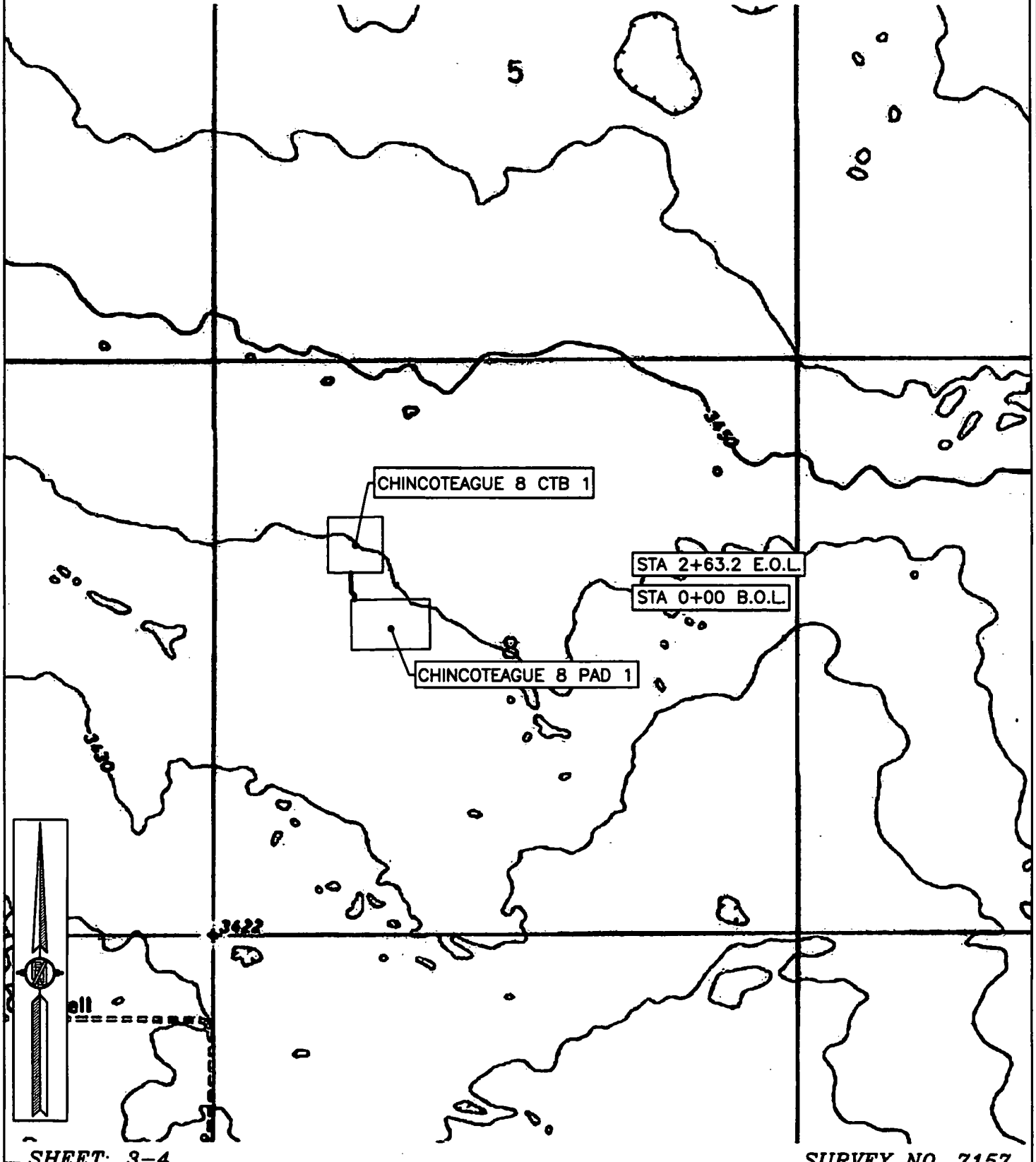
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FLOWLINE PLAT (7600211F)

FLOWLINE & GAS LIFT LINE (BURIED IN SAME TRENCH) FROM THE CHINCOTEAGUE 8 PAD 1 TO THE CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
APRIL 16, 2019



SHEET: 3-4

SURVEY NO. 7157

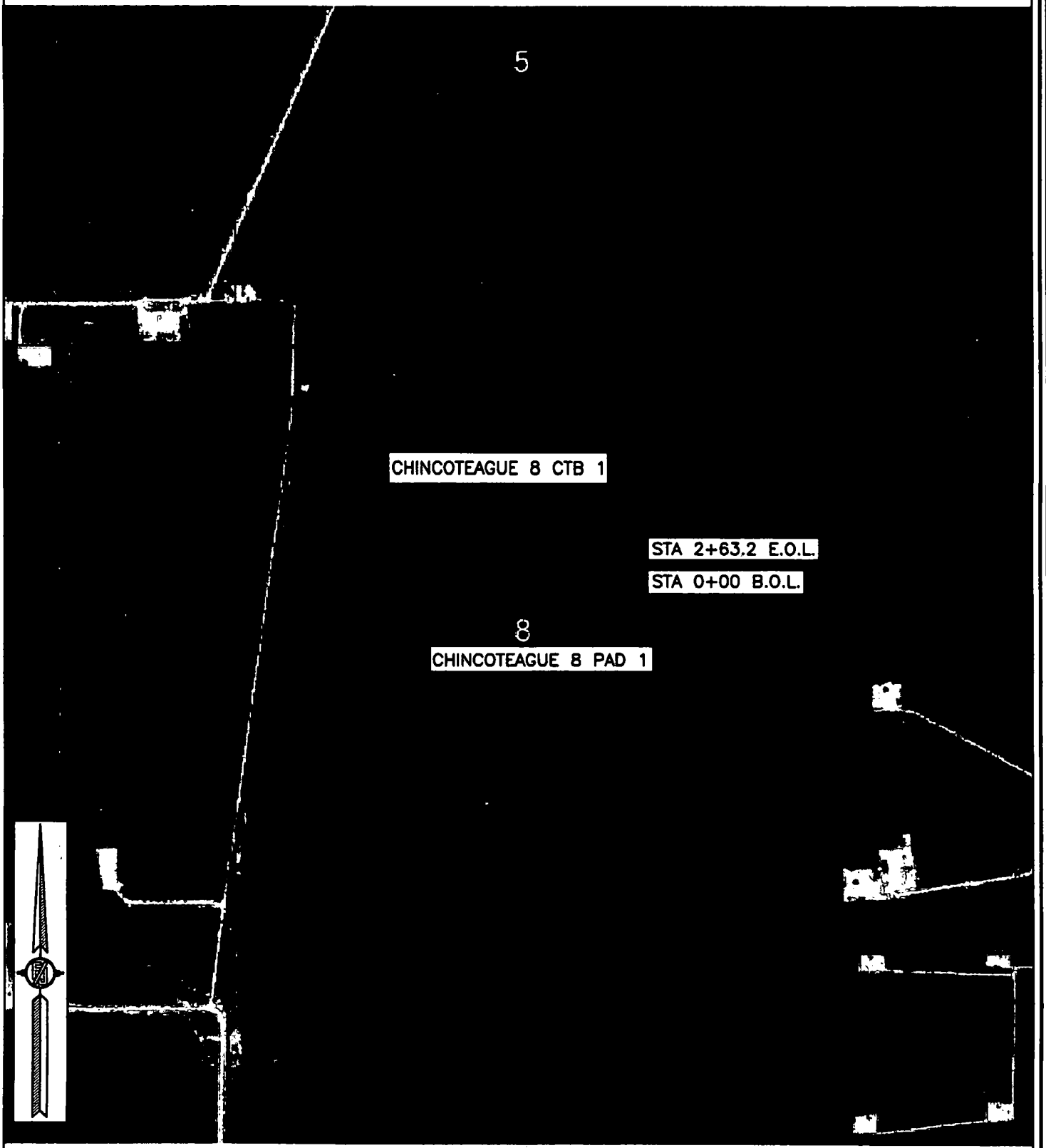
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

FLOWLINE PLAT (7600211F)

FLOWLINE & GAS LIFT LINE (BURIED IN SAME TRENCH) FROM THE CHINCOTEAGUE 8 PAD 1 TO THE CHINCOTEAGUE 8 CTB 1

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 8, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
APRIL 16, 2019



SHEET: 4-4

SURVEY NO. 7157

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

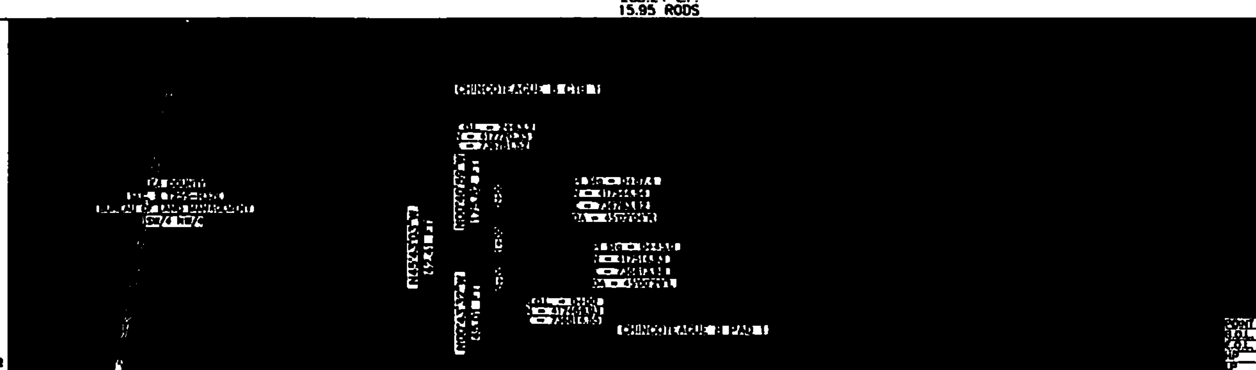
S8, T25S, R32E

LEA COUNTY, STATE OF NEW MEXICO
BUREAU OF LAND MANAGEMENT LAND
263.24 L.F.
15.95 RODS

OWNERSHIP

PLAN ON AERIAL

1" = 100' HOR



POINT	STATION	ELEV.
B.O.L.	0+00	3440.0
E.O.L.	2+63.2	3440.0
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

EASEMENT

N.T.S.

B.O.L.
E.O.L.
CENTERLINE
30' ROW

STATIONING

STA 0+00 B.O.L.
STA 0+43.0 PI LEFT
STA 0+87.4 PI RIGHT
STA 2+63.2 E.O.L.

PROFILE

3440
3430
EXISTING GRADE
0+00 1+00 2+00 3+00

1" = 10' VER

LEGEND

CENTERLINE
EASEMENT
SECTION LINE
QUARTER LINE
EXISTING PIPELINE
EXISTING POWER LINE
EXISTING FENCE LINE
5' CONTOUR LINE

PIPE SPECIFICATIONS AND TEST REQUIREMENTS								
FROM	TO	LIN. FT.	O.D.	W.T.	GRADE	O.P.	TEST PRESS.	TEST DUR.

BILL OF MATERIAL

X-RAY REQUIREMENTS

RECORD

SCALE 1"=100'

APPROVED FOR CONSTRUCTION
APRIL 16, 2019

DEVON ENERGY PRODUCTION COMPANY, L.P.

FLOWLINE & GAS LIFT LINE (BURIED IN SAME TRENCH) FROM THE CHINCOTEAGUE 8 PAD 1 TO THE CHINCOTEAGUE 8 CTB 1

APRIL 16, 2019

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 7157
SHEET: 1-1

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.