

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

|                                                                                                                                                     |                                                       |                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------|
| 1. Type of Well<br><input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other                    |                                                       | 5. Lease Serial No.<br>NMNM100568                   |
| 2. Name of Operator<br>DEVON ENERGY PRODUCTION COMPANY<br>Contact: REBECCA DEAL<br>Email: Rebecca.Deal@dvn.com                                      |                                                       | 6. If Indian, Allottee or Tribe Name                |
| 3a. Address<br>6488 SEVEN RIVERS HIGHWAY<br>ARTESIA, NM 88211                                                                                       | 3b. Phone No. (include area code)<br>Ph: 405-228-8429 | 7. If Unit or CA/Agreement, Name and/or No.         |
| 4. Location of Well (Footage, Sec., T., R., M., or Survey Description)<br>Sec 23 T26S R34E NESE 2449FSL 860FEL<br>32.028336 N Lat, 103.434929 W Lon |                                                       | 8. Well Name and No.<br>MEAN GREEN 23-35 FED COM 2H |
|                                                                                                                                                     |                                                       | 9. API Well No.<br>30-025-44596-00-X1               |
|                                                                                                                                                     |                                                       | 10. Field and Pool or Exploratory Area<br>JABALINA  |
|                                                                                                                                                     |                                                       | 11. County or Parish, State<br>LEA COUNTY, NM       |

## 12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION                                   | TYPE OF ACTION                                                      |
|------------------------------------------------------|---------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize                                    |
| <input type="checkbox"/> Subsequent Report           | <input type="checkbox"/> Alter Casing                               |
| <input type="checkbox"/> Final Abandonment Notice    | <input type="checkbox"/> Casing Repair                              |
|                                                      | <input type="checkbox"/> Change Plans                               |
|                                                      | <input type="checkbox"/> Convert to Injection                       |
|                                                      | <input type="checkbox"/> Production (Start/Resume)                  |
|                                                      | <input type="checkbox"/> Reclamation                                |
|                                                      | <input type="checkbox"/> Recomplete                                 |
|                                                      | <input type="checkbox"/> Temporarily Abandon                        |
|                                                      | <input type="checkbox"/> Water Disposal                             |
|                                                      | <input type="checkbox"/> Water Shut-Off                             |
|                                                      | <input type="checkbox"/> Well Integrity                             |
|                                                      | <input checked="" type="checkbox"/> Other<br>Change to Original APD |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon Energy Production Co. respectfully requests the following changes to the original APD and an update to the annular variance:

TVD/MD from 12,760'/22,611' to 12,805'/22,875'

Casing Design Change - see detailed drilling plan & spec sheets

Please see attached AC Report, Drilling and Directional Plan, Spec Sheets, Annular Variance Summary & Schematic.

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

|                                                                                                                                                                                                                                                                                                    |                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| 14. I hereby certify that the foregoing is true and correct.<br><b>Electronic Submission #419642 verified by the BLM Well Information System<br/>For DEVON ENERGY PRODUCTION COMPANY LP, sent to the Hobbs<br/>Committed to AFMSS for processing by PRISCILLA PEREZ on 05/21/2018 (18PP1045SE)</b> |                                      |
| Name (Printed/Typed) REBECCA DEAL                                                                                                                                                                                                                                                                  | Title REGULATORY COMPLIANCE PROFESSI |
| Signature (Electronic Submission)                                                                                                                                                                                                                                                                  | Date 05/10/2018                      |

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

|                                                                                                                                                                                                                                                           |                                 |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|
| Approved By <u>ZQIA STEVENS</u>                                                                                                                                                                                                                           | Title <u>PETROLEUM ENGINEER</u> | Date <u>05/29/2018</u> |
| Conditions of approval, if any, are attached. Approval of this notice 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. |                                 | Office <u>Hobbs</u>    |

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.

(Instructions on page 2)

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***

## Devon Energy, Mean Green 23-35 Fed Com 2H

### 2. Casing Program

| Hole Size | Casing Interval |         | Csg. Size | Weight (lbs) | Grade  | Conn.   | SF Collapse | SF Burst | SF Tension |
|-----------|-----------------|---------|-----------|--------------|--------|---------|-------------|----------|------------|
|           | From            | To      |           |              |        |         |             |          |            |
| 17.5"     | 0               | 1,050'  | 13.375"   | 54.5-48      | H-40   | STC     | 1.125       | 1.25     | 1.6        |
| 10.625"   | 0               | 5000'   | 8.625"    | 32           | P110EC | BTC     | 1.125       | 1.25     | 1.6        |
| 9.875"    | 5,000'          | 12,800' | 8.625"    | 32           | P110EC | VAM FJL | 1.125       | 1.25     | 1.6        |
| 7.875"    | 0               | 22,875' | 5.5"      | 20           | P110EC | Vam SG  | 1.125       | 1.25     | 1.6        |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

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 to wave the centralizer requirement for the 8-5/8" flush casing in the 9-7/8" hole and the 5-1/2" SF/Flush casing in the 7-7/8" hole.

8-5/8" Intermediate casing will be kept fluid filled.

|                                                                                                                                                  | 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 specification 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 3 <sup>rd</sup> 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 2 <sup>nd</sup> 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?                                                                                             |        |

## Devon Energy, Mean Green 23-35 Fed Com 2H

### 3. Cementing Program

| Casing                            | # Sks | Wt.<br>lb/<br>gal | H <sub>2</sub> O<br>gal/sk | Yld<br>ft <sup>3</sup> /<br>sack | Slurry Description                                                                                                         |
|-----------------------------------|-------|-------------------|----------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 13-3/8"<br>Surface                | 823   | 14.8              | 6.34                       | 1.34                             | Tail: Class C Cement + 1% Calcium Chloride                                                                                 |
| 8-5/8"<br>Int                     | 821   | 9                 | 13.5                       | 3.27                             | Lead: Tuned Light® Cement                                                                                                  |
|                                   | 163   | 13.2              | 5.31                       | 1.6                              | Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite |
| 8-5/8"<br>Intermediate<br>Squeeze | 1048  | 14.8              | 6.32                       | 1.33                             | Class C Cement + 0.125 lbs/sack Poly-E-Flake                                                                               |
|                                   | 417   | 9                 | 13.5                       | 3.27                             | Tuned Light® Cement                                                                                                        |
|                                   | 163   | 13.2              | 5.31                       | 1.6                              | Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite |
| 5-1/2"<br>Production              | 387   | 14.8              | 6.32                       | 1.33                             | Class H Cement + 0.125 lbs/sack Poly-E-Flake                                                                               |

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

| Casing String            | TOC     | % Excess |
|--------------------------|---------|----------|
| 10-3/4" Surface          | 0'      | 50%      |
| 7-5/8" Intermediate      | 0'      | 30%      |
| 5-1/2" Production Casing | 12,600' | 25%      |

### 4. Pressure Control Equipment

**Devon Energy, Mean Green 23-35 Fed Com 2H**

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

| BOP installed and tested before drilling which hole? | Size?   | Min. Required WP | Type         | ✓ | Tested to:                    |
|------------------------------------------------------|---------|------------------|--------------|---|-------------------------------|
| 10-5/8" & 9-7/8"                                     | 13-5/8" | 5M               | Annular      | X | 50% of rated working pressure |
|                                                      |         |                  | Blind Ram    | X | 5M                            |
|                                                      |         |                  | Pipe Ram     | X |                               |
|                                                      |         |                  | VBR Ram      | X |                               |
|                                                      |         |                  | Other*       |   |                               |
| 7-7/8"                                               | 13-5/8" | 10M              | Annular (5M) | X | 50% of rated working pressure |
|                                                      |         |                  | Blind Ram    | X | 10M                           |
|                                                      |         |                  | Pipe Ram     | X |                               |
|                                                      |         |                  | VBR Ram      | X |                               |
|                                                      |         |                  | Other *      |   |                               |
|                                                      |         |                  | Annular      |   |                               |
|                                                      |         |                  | Blind Ram    |   |                               |
|                                                      |         |                  | Pipe Ram     |   |                               |
|                                                      |         |                  | Double Ram   |   |                               |
|                                                      |         |                  | Other *      |   |                               |

\*Specify if additional ram is utilized.

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

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

|   |                                                                                                                                                                                                                                                                                                               |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Y | Formation integrity test will be performed per Onshore Order #2.<br>On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Devon Energy, Mean Green 23-35 Fed Com 2H**

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Y | A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Y | Are anchors required by manufacturer?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Y | <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>• Wellhead will be installed by wellhead representatives.</li> <li>• 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.</li> <li>• Wellhead representative will install the test plug for the initial BOP test.</li> <li>• Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.</li> <li>• 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.</li> <li>• Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.</li> <li>• Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.</li> </ul> <p>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.</p> <p>13-5/8" BOP/BOPE system will have been tested to 10M rating prior to drilling out 8 5/8" casing.</p> <p>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.</p> |

## Devon Energy, Mean Green 23-35 Fed Com 2H

|  |                                                                                                                                                                                                                                                                                                       |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.</p> <p>Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.</p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5. Mud Program

| Depth   |         | Type          | Weight (ppg) | Viscosity | Water Loss |
|---------|---------|---------------|--------------|-----------|------------|
| From    | To      |               |              |           |            |
| 0       | 1050'   | FW Gel        | 8.6-8.8      | 28-34     | N/C        |
| 1050'   | 12,800' | OBM/Cut Brine | 9-10         | 34-65     | N/C - 6    |
| 12,800' | 22,875' | Oil Based Mud | 10-11        | 45-65     | N/C - 6    |

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 submitted to the BLM. |
|                              | No Logs are planned based on well control or offset log information.                                                                                        |
|                              | Drill stem test? If yes, explain                                                                                                                            |
|                              | Coring? If yes, explain                                                                                                                                     |

| Additional logs planned | Interval    |
|-------------------------|-------------|
|                         | Resistivity |
|                         | Density     |
| X                       | CBL         |
| X                       | Mud log     |
|                         | PEX         |

## 7. Drilling Conditions

| Condition                  | Specify what type and where? |
|----------------------------|------------------------------|
| BH Pressure at deepest TVD | 7121 psi                     |
| Abnormal Temperature       | No                           |

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

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

## 8. Other facets of operation

Is this a walking operation? Potentially

1. In the event the spudder rig is unable to drill the surface holes the 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 with either OBM or cut brine 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 drill surface hole.
  - a. Rig will utilize fresh water based mud to drill 14 3/4" 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 10-3/4" 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.

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6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped 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

- ☒ Directional Plan  
☐ Other, describe



# CASING PERFORMANCE Data Sheet



| O.D.  | PE LB/FT | T&C LB/FT | GRADE  |
|-------|----------|-----------|--------|
| 8.625 | 31.13    | 32.00     | P110EC |

## Grade - Material Properties

|                           |     |     |
|---------------------------|-----|-----|
| Minimum Yield Strength:   | 125 | ksi |
| Maximum Yield Strength:   | 140 | ksi |
| Minimum Tensile Strength: | 135 | ksi |

## Pipe Body Data (PE)

### Geometry

|                            |       |      |
|----------------------------|-------|------|
| Nominal ID:                | 7.921 | inch |
| Wall:                      | 0.352 | inch |
| Min. Wall % (API = 87.5%): | 87.5  | %    |
| API Drift:                 | 7.796 | inch |
| Special Drift*:            | 7.875 | inch |

### Performance

|                                           |       |      |
|-------------------------------------------|-------|------|
| Pipe Body Yield Strength:                 | 1,144 | kips |
| Collapse Resistance:                      | 3,470 | psi  |
| Internal Yield Pressure (API Historical): | 8,930 | psi  |

## API Connection Data

|                       |       |      |
|-----------------------|-------|------|
| SC Internal Pressure: | 8,930 | psi  |
| SC Joint Strength:    | 793   | kips |
| LC Internal Pressure: | 8,930 | psi  |
| LC Joint Strength:    | 887   | kips |
| BC Internal Pressure: | 8,930 | psi  |
| BC Joint Strength:    | 1,121 | kips |

## SC Torque (ft-lbs)

|                |                |                |
|----------------|----------------|----------------|
| minimum: 5,950 | optimum: 7,933 | maximum: 9,916 |
|----------------|----------------|----------------|

## LC Torque (ft-lbs)

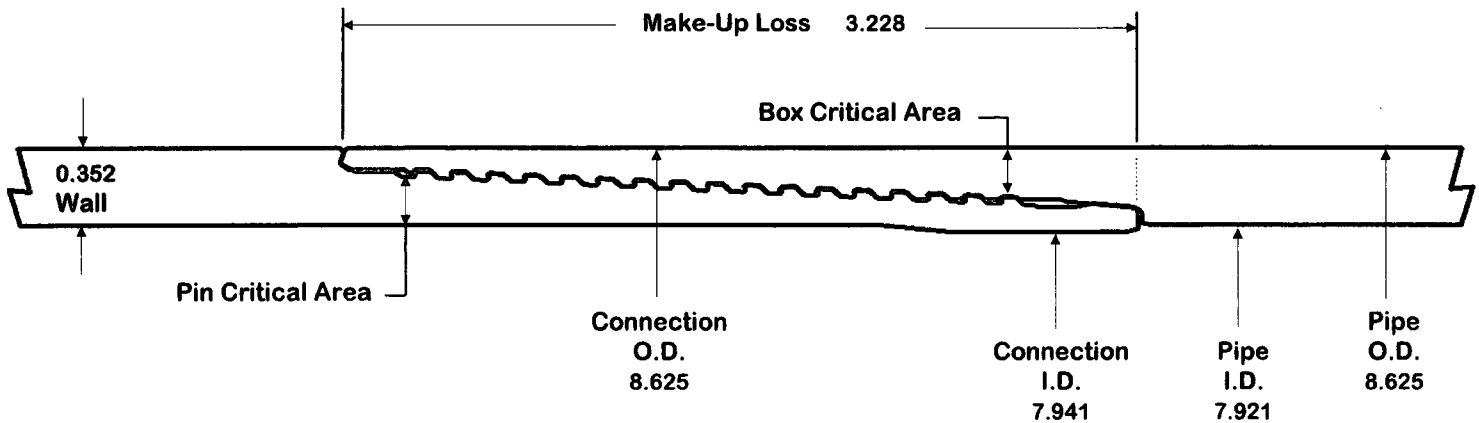
|                |                |                 |
|----------------|----------------|-----------------|
| minimum: 6,651 | optimum: 8,868 | maximum: 11,085 |
|----------------|----------------|-----------------|

\*Special drift must be ordered or API drift will be used for actual drifting of product.

\*\*If above API connections do not suit your needs, VAM® premium connections are available up to 100% of pipe body ratings.

This data sheet is for informational purposes only. While every effort has been made to ensure the accuracy of all data and that the information contained herein is correct, this material is presented as a reference guide only. Vallourec assumes no responsibility for the results obtained through the use of this material.

# VAM® FJL NA



O.D.  
8.625

WEIGHT  
32.00

WALL  
0.352

GRADE  
VST P110EC

\*SP DRIFT\*  
7.875

## PIPE BODY PROPERTIES

|                       |              |
|-----------------------|--------------|
| Material Grade        | VST P110EC   |
| Min. Yield Strength   | 125 ksi      |
| Min. Tensile Strength | 135 ksi      |
| Outside Diameter      | 8.625 in     |
| Inside Diameter       | 7.921 in     |
| Nominal Area          | 9.149 sq.in. |
| Yield Strength        | 1,144 kips   |
| Ultimate Strength     | 1,235 kips   |
| Min Internal Yield    | 8,930 psi    |
| Collapse              | 3,470 psi    |

Contact: [tech.support@vam-usa.com](mailto:tech.support@vam-usa.com)  
 Ref. Drawing: SI-PD 100239 Rev.A  
 Date: 15-Dec-17  
 Time: 4:44 PM

## CONNECTION PROPERTIES

|                    |              |
|--------------------|--------------|
| Connection OD      | 8.625 in     |
| Connection ID      | 7.941 in     |
| Make up Loss       | 3.228 in     |
| Box Critical Area  | 4.945 sq.in. |
| %PB Section Area   | 54.0%        |
| Pin Critical Area  | 5.235 sq.in. |
| %PB Section Area   | 57.2%        |
| Yield Strength     | 618 kips     |
| Parting Load       | 668 kips     |
| Min Internal Yield | 8,930 psi    |
| Ext Pressure       | 3,470 psi    |
| Wk Compression     | 247 kips     |
| Max Pure Bending   | 10 °/100 ft  |

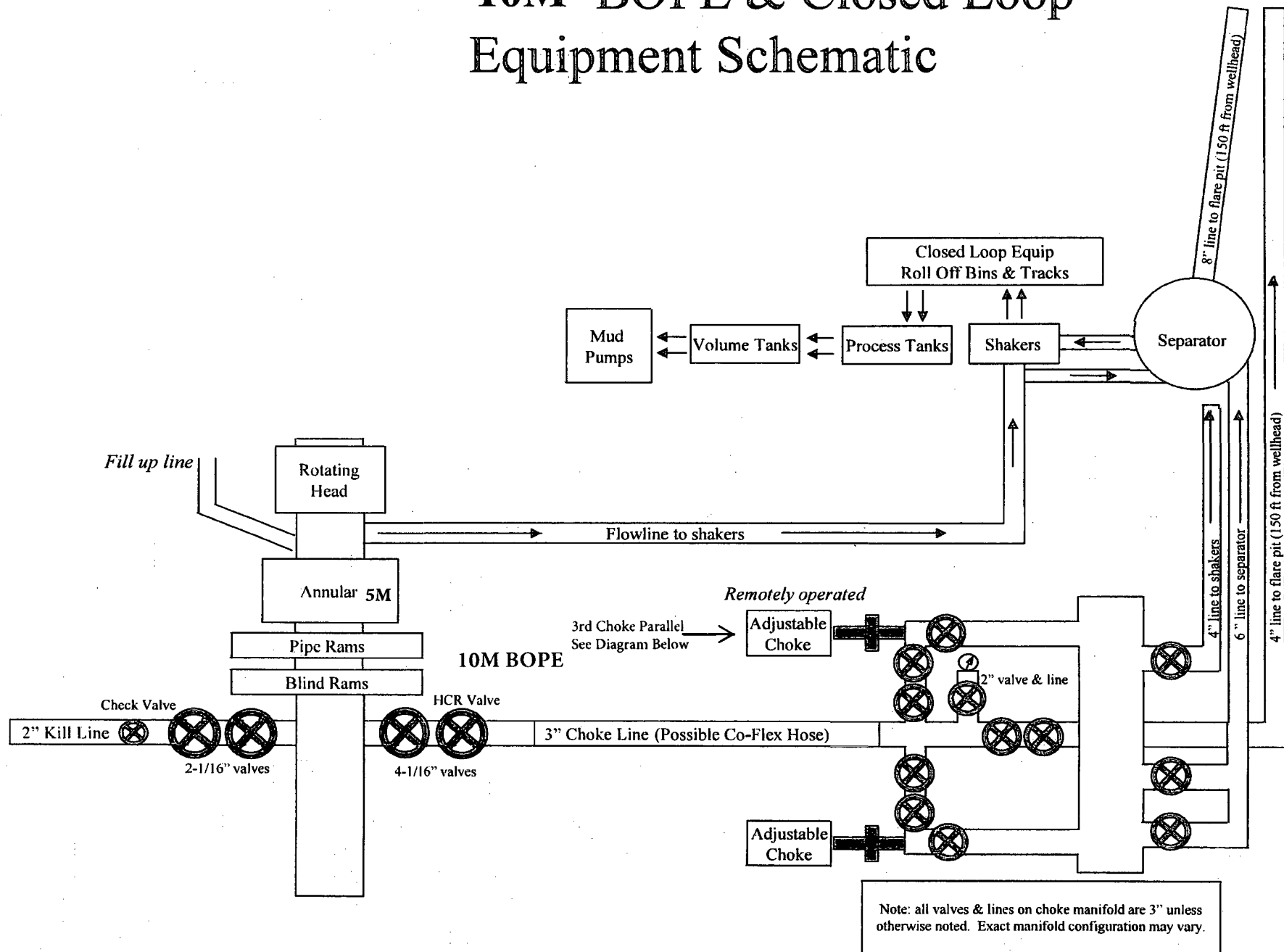
## TORQUE DATA ft-lb

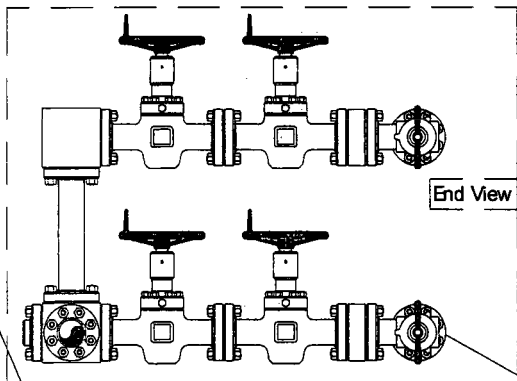
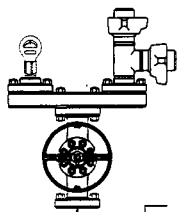
| min    | opt    | max    |
|--------|--------|--------|
| 10,850 | 11,950 | 13,050 |



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# 10M BOPE & Closed Loop Equipment Schematic

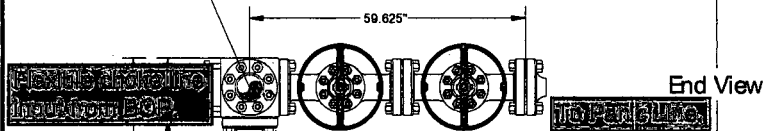




End View

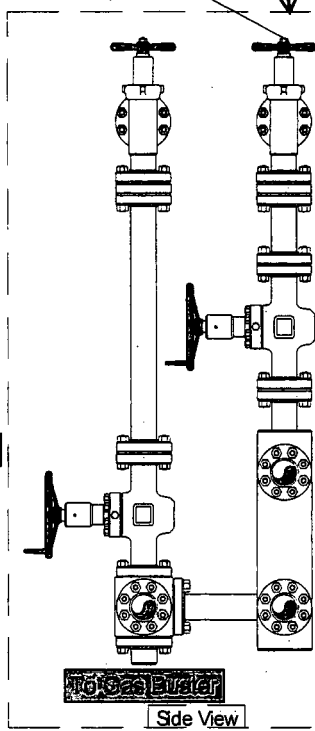
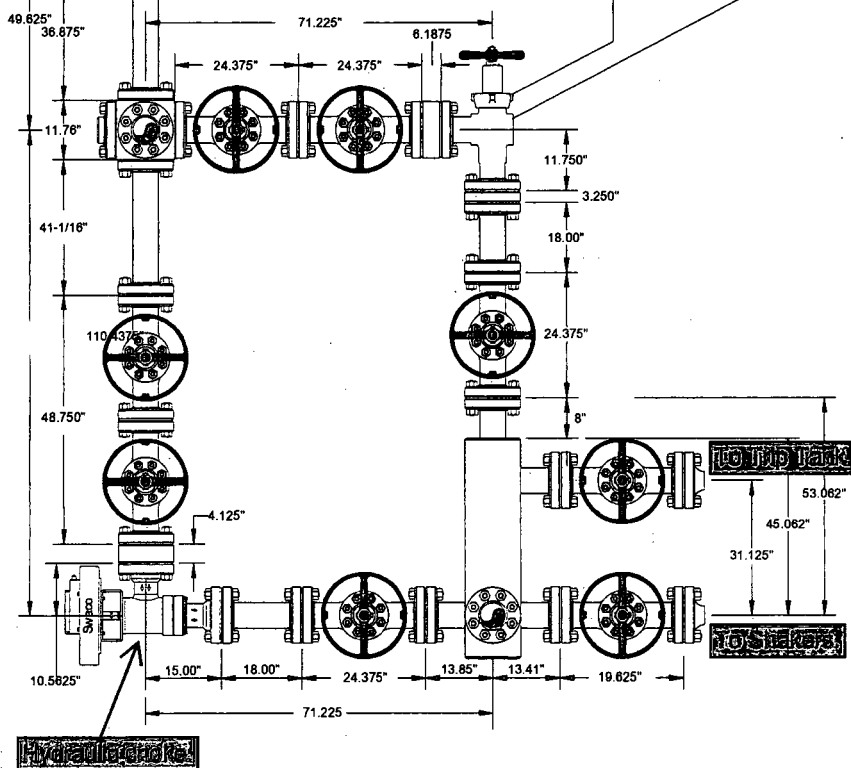
Top Choke will be hydraulic

Bottom Choke will be manual



End View

Side View



Side View

Helmerich & Payne  
Flex 3 Rig w/ 3 Chokes

devon

|                  |                 |                       |          |
|------------------|-----------------|-----------------------|----------|
| Name: Mike Potts | Date: 6-23-2010 | Working Pressure: 10M | J-5132-E |
|------------------|-----------------|-----------------------|----------|

## Devon Energy Annular Preventer Summary

### 1. Component and Preventer Compatibility Table

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

7-7/8" Production hole section, 10M requirement

| Component                   | OD        | Preventer                          | RWP |
|-----------------------------|-----------|------------------------------------|-----|
| Drillpipe                   | 5"        | Fixed lower 5"<br>Upper 4.5-7" VBR | 10M |
| HWDP                        | 5"        | Fixed lower 5"<br>Upper 4.5-7" VBR | 10M |
| Drill collars and MWD tools | 6.5"      | Upper 4.5-7" VBR                   | 10M |
| Mud Motor                   | 6.5"      | Upper 4.5-7" VBR                   | 10M |
| Production casing           | 5.5"      | Upper 4.5-7" VBR                   | 10M |
| ALL                         | 0-13-5/8" | Annular                            | 5M  |
| Open-hole                   | -         | Blind Rams                         | 10M |

VBR = Variable Bore Ram. Compatible range listed in chart.

### 2. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. The pressure at which control is swapped from the annular to another compatible ram is variable, but the operator will document in the submission their operating pressure limit. The operator may chose an operating pressure less than or equal to RWP, but in no case will it exceed the RWP of the annular preventer.

#### General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

## **Devon Energy Annular Preventer Summary**

### **General Procedure While Tripping**

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

### **General Procedure While Running Casing**

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to compatible pipe ram.

### **General Procedure With No Pipe In Hole (Open Hole)**

1. Sound alarm (alert crew)
2. Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
6. Regroup and identify forward plan

## **Devon Energy Annular Preventer Summary**

### **General Procedures While Pulling BHA thru Stack**

1. PRIOR to pulling last joint of drillpipe thru the stack.
  - a. Perform flowcheck, if flowing:
  - b. Sound alarm (alert crew)
  - c. Stab full opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper pipe ram.
  - e. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full opening safety valve and close
  - c. Space out drill string with upset just beneath the compatible pipe ram.
  - d. Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - h. Regroup and identify forward plan
3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
  - c. If impossible to pick up high enough to pull the string clear of the stack:
  - d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
  - e. Space out drill string with tooljoint just beneath the upper pipe ram.
  - f. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
  - g. Confirm shut-in
  - h. Notify toolpusher/company representative
  - i. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - j. Regroup and identify forward plan

# **WCDSC Permian NM**

**Lea County (NAD83 New Mexico East)**

**Sec 23-T26S-R34E**

**Mean Green 23-35 Fed Com 2H**

**Wellbore #1**

**Plan: Permit Plan 2**

## **Standard Planning Report - Geographic**

**30 April, 2018**



# Planning Report - Geographic

|           |                                    |                             |                                  |
|-----------|------------------------------------|-----------------------------|----------------------------------|
| Database: | EDM r5000.141_Prod US              | Local Co-ordinate Reference | Well Mean Green 23-35 Fed Com 2H |
| Company:  | WCDSC Permian NM                   | TVD Reference:              | RKB1 @ 3218.30ft                 |
| Project:  | Lea County (NAD83 New Mexico East) | MD Reference:               | RKB1 @ 3218.30ft                 |
| Site:     | Sec 23-T26S-R34E                   | North Reference:            | Grid                             |
| Well:     | Mean Green 23-35 Fed Com 2H        | Survey Calculation Method:  | Minimum Curvature                |
| Wellbore: | Wellbore #1                        |                             |                                  |
| Design:   | Permit Plan 2                      |                             |                                  |

|             |                                    |               |                |
|-------------|------------------------------------|---------------|----------------|
| 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 23-T26S-R34E |              |                 |                   |             |
| Site Position:        |                  | Northing:    | 372,742.50 usft | Latitude:         | 32.021552   |
| From:                 | Lat/Long         | Easting:     | 820,445.44 usft | Longitude:        | -103.432756 |
| Position Uncertainty: | 0.00 ft          | Slot Radius: | 13-3/16 "       | Grid Convergence: | 0.48 °      |

|                      |                             |         |                     |                 |               |             |
|----------------------|-----------------------------|---------|---------------------|-----------------|---------------|-------------|
| Well                 | Mean Green 23-35 Fed Com 2H |         |                     |                 |               |             |
| Well Position        | +N/-S                       | 0.00 ft | Northing:           | 375,205.47 usft | Latitude:     | 32.028338   |
|                      | +E/-W                       | 0.00 ft | Easting:            | 819,750.55 usft | Longitude:    | -103.434932 |
| Position Uncertainty |                             | 0.50 ft | Wellhead Elevation: | 0.00 ft         | Ground Level: | 3,193.30 ft |

|           |             |             |             |           |                 |  |
|-----------|-------------|-------------|-------------|-----------|-----------------|--|
| Wellbore  | Wellbore #1 |             |             |           |                 |  |
| Magnetics | Model Name  | Sample Date | Declination | Dip Angle | Field Strength  |  |
|           |             |             | (°)         | (°)       | (nT)            |  |
|           | IGRF2015    | 4/18/2018   | 6.79        | 59.89     | 47,751.94759607 |  |

|                   |                  |           |               |           |  |  |
|-------------------|------------------|-----------|---------------|-----------|--|--|
| Design            | Permit Plan 2    |           |               |           |  |  |
| Audit Notes:      |                  |           |               |           |  |  |
| Version:          | Phase:           | PROTOTYPE | Tie On Depth: | 0.00      |  |  |
| Vertical Section: | Depth From (TVD) | +N/-S     | +E/-W         | Direction |  |  |
|                   | (ft)             | (ft)      | (ft)          | (°)       |  |  |
|                   | 0.00             | 0.00      | 0.00          | 176.75    |  |  |

|                          |          |                                       |           |                 |  |  |
|--------------------------|----------|---------------------------------------|-----------|-----------------|--|--|
| Plan Survey Tool Program | Date     | 4/30/2018                             |           |                 |  |  |
| Depth From               | Depth To | Survey (Wellbore)                     | Tool Name | Remarks         |  |  |
| (ft)                     | (ft)     |                                       |           |                 |  |  |
| 1                        | 0.00     | 22,875.37 Permit Plan 2 (Wellbore #1) | MWD+HDGM  | OWSG MWD + HDGM |  |  |

|               |             |         |           |           |        |             |             |             |        |                     |
|---------------|-------------|---------|-----------|-----------|--------|-------------|-------------|-------------|--------|---------------------|
| Plan Sections |             |         |           |           |        |             |             |             |        |                     |
| Measured      | Inclination | Azimuth | Vertical  | +N/-S     | +E/-W  | Dogleg      | Build       | Turn        | TFO    | Target              |
| Depth         | (°)         | (°)     | Depth     | (ft)      | (ft)   | Rate        | Rate        | Rate        | (°)    |                     |
| (ft)          |             |         | (ft)      |           |        | (°/100usft) | (°/100usft) | (°/100usft) |        |                     |
| 0.00          | 0.00        | 0.00    | 0.00      | 0.00      | 0.00   | 0.00        | 0.00        | 0.00        | 0.00   |                     |
| 2,800.00      | 0.00        | 0.00    | 2,800.00  | 0.00      | 0.00   | 0.00        | 0.00        | 0.00        | 0.00   |                     |
| 3,169.11      | 3.69        | 57.99   | 3,168.85  | 6.30      | 10.08  | 1.00        | 1.00        | 0.00        | 57.99  |                     |
| 11,653.95     | 3.69        | 57.99   | 11,636.10 | 295.80    | 473.28 | 0.00        | 0.00        | 0.00        | 0.00   |                     |
| 11,900.03     | 0.00        | 0.00    | 11,882.00 | 300.00    | 480.00 | 1.50        | -1.50       | 0.00        | 180.00 |                     |
| 12,250.07     | 0.00        | 0.00    | 12,232.04 | 300.00    | 480.00 | 0.00        | 0.00        | 0.00        | 0.00   |                     |
| 13,150.07     | 90.00       | 179.51  | 12,805.00 | -272.94   | 484.86 | 10.00       | 10.00       | 0.00        | 179.51 | PBHL - Mean Green 2 |
| 22,875.58     | 90.00       | 179.51  | 12,805.00 | -9,998.10 | 567.36 | 0.00        | 0.00        | 0.00        | 0.00   | PBHL - Mean Green 2 |

# Planning Report - Geographic

Database: EDM r5000.141\_Prod US  
 Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Site: Sec 23-T26S-R34E  
 Well: Mean Green 23-35 Fed Com 2H  
 Wellbore: Wellbore #1  
 Design: Permit Plan 2

Local Co-ordinate Reference Well Mean Green 23-35 Fed Com 2H  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

## Planned Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude  | Longitude   |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|---------------------------|--------------------------|-----------|-------------|
| 0.00                      | 0.00               | 0.00           | 0.00                      | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 100.00                    | 0.00               | 0.00           | 100.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 200.00                    | 0.00               | 0.00           | 200.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 300.00                    | 0.00               | 0.00           | 300.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 400.00                    | 0.00               | 0.00           | 400.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 500.00                    | 0.00               | 0.00           | 500.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 600.00                    | 0.00               | 0.00           | 600.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 700.00                    | 0.00               | 0.00           | 700.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 800.00                    | 0.00               | 0.00           | 800.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 900.00                    | 0.00               | 0.00           | 900.00                    | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,000.00                  | 0.00               | 0.00           | 1,000.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,100.00                  | 0.00               | 0.00           | 1,100.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,200.00                  | 0.00               | 0.00           | 1,200.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,300.00                  | 0.00               | 0.00           | 1,300.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,400.00                  | 0.00               | 0.00           | 1,400.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,500.00                  | 0.00               | 0.00           | 1,500.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,600.00                  | 0.00               | 0.00           | 1,600.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,700.00                  | 0.00               | 0.00           | 1,700.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,800.00                  | 0.00               | 0.00           | 1,800.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 1,900.00                  | 0.00               | 0.00           | 1,900.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,000.00                  | 0.00               | 0.00           | 2,000.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,100.00                  | 0.00               | 0.00           | 2,100.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,200.00                  | 0.00               | 0.00           | 2,200.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,300.00                  | 0.00               | 0.00           | 2,300.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,400.00                  | 0.00               | 0.00           | 2,400.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,500.00                  | 0.00               | 0.00           | 2,500.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,600.00                  | 0.00               | 0.00           | 2,600.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,700.00                  | 0.00               | 0.00           | 2,700.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| 2,800.00                  | 0.00               | 0.00           | 2,800.00                  | 0.00          | 0.00          | 375,205.47                | 819,750.55               | 32.028338 | -103.434932 |
| <b>Begin Nudge</b>        |                    |                |                           |               |               |                           |                          |           |             |
| 2,900.00                  | 1.00               | 57.99          | 2,899.99                  | 0.46          | 0.74          | 375,205.93                | 819,751.29               | 32.028339 | -103.434930 |
| 3,000.00                  | 2.00               | 57.99          | 2,999.96                  | 1.85          | 2.96          | 375,207.32                | 819,753.51               | 32.028343 | -103.434923 |
| 3,100.00                  | 3.00               | 57.99          | 3,099.86                  | 4.16          | 6.66          | 375,209.63                | 819,757.21               | 32.028349 | -103.434911 |
| 3,169.11                  | 3.69               | 57.99          | 3,168.85                  | 6.30          | 10.08         | 375,211.77                | 819,760.63               | 32.028355 | -103.434900 |
| <b>EOB</b>                |                    |                |                           |               |               |                           |                          |           |             |
| 3,200.00                  | 3.69               | 57.99          | 3,199.68                  | 7.35          | 11.77         | 375,212.82                | 819,762.31               | 32.028357 | -103.434894 |
| 3,300.00                  | 3.69               | 57.99          | 3,299.47                  | 10.77         | 17.22         | 375,216.23                | 819,767.77               | 32.028367 | -103.434876 |
| 3,400.00                  | 3.69               | 57.99          | 3,399.27                  | 14.18         | 22.68         | 375,219.65                | 819,773.23               | 32.028376 | -103.434859 |
| 3,500.00                  | 3.69               | 57.99          | 3,499.06                  | 17.59         | 28.14         | 375,223.06                | 819,778.69               | 32.028385 | -103.434841 |
| 3,600.00                  | 3.69               | 57.99          | 3,598.85                  | 21.00         | 33.60         | 375,226.47                | 819,784.15               | 32.028394 | -103.434823 |
| 3,700.00                  | 3.69               | 57.99          | 3,698.64                  | 24.41         | 39.06         | 375,229.88                | 819,789.61               | 32.028404 | -103.434806 |
| 3,800.00                  | 3.69               | 57.99          | 3,798.44                  | 27.83         | 44.52         | 375,233.29                | 819,795.07               | 32.028413 | -103.434788 |
| 3,900.00                  | 3.69               | 57.99          | 3,898.23                  | 31.24         | 49.98         | 375,236.71                | 819,800.53               | 32.028422 | -103.434770 |
| 4,000.00                  | 3.69               | 57.99          | 3,998.02                  | 34.65         | 55.44         | 375,240.12                | 819,805.99               | 32.028431 | -103.434752 |
| 4,100.00                  | 3.69               | 57.99          | 4,097.81                  | 38.06         | 60.90         | 375,243.53                | 819,811.45               | 32.028441 | -103.434735 |
| 4,200.00                  | 3.69               | 57.99          | 4,197.61                  | 41.47         | 66.36         | 375,246.94                | 819,816.90               | 32.028450 | -103.434717 |
| 4,300.00                  | 3.69               | 57.99          | 4,297.40                  | 44.88         | 71.82         | 375,250.35                | 819,822.36               | 32.028459 | -103.434699 |
| 4,400.00                  | 3.69               | 57.99          | 4,397.19                  | 48.30         | 77.28         | 375,253.77                | 819,827.82               | 32.028468 | -103.434682 |
| 4,500.00                  | 3.69               | 57.99          | 4,496.98                  | 51.71         | 82.73         | 375,257.18                | 819,833.28               | 32.028478 | -103.434664 |
| 4,600.00                  | 3.69               | 57.99          | 4,596.78                  | 55.12         | 88.19         | 375,260.59                | 819,838.74               | 32.028487 | -103.434646 |
| 4,700.00                  | 3.69               | 57.99          | 4,696.57                  | 58.53         | 93.65         | 375,264.00                | 819,844.20               | 32.028496 | -103.434628 |
| 4,800.00                  | 3.69               | 57.99          | 4,796.36                  | 61.94         | 99.11         | 375,267.41                | 819,849.66               | 32.028506 | -103.434611 |
| 4,900.00                  | 3.69               | 57.99          | 4,896.15                  | 65.36         | 104.57        | 375,270.83                | 819,855.12               | 32.028515 | -103.434593 |

# Planning Report - Geographic

Database: EDM r5000.141\_Prod US  
 Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Site: Sec 23-T26S-R34E  
 Well: Mean Green 23-35 Fed Com 2H  
 Wellbore: Wellbore #1  
 Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

| Planned Survey            |                    |                |                           |               |               |                           |                          |           |             |  |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|---------------------------|--------------------------|-----------|-------------|--|
| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude  | Longitude   |  |
| 5,000.00                  | 3.69               | 57.99          | 4,995.95                  | 68.77         | 110.03        | 375,274.24                | 819,860.58               | 32.028524 | -103.434575 |  |
| 5,100.00                  | 3.69               | 57.99          | 5,095.74                  | 72.18         | 115.49        | 375,277.65                | 819,866.04               | 32.028533 | -103.434558 |  |
| 5,200.00                  | 3.69               | 57.99          | 5,195.53                  | 75.59         | 120.95        | 375,281.06                | 819,871.50               | 32.028543 | -103.434540 |  |
| 5,300.00                  | 3.69               | 57.99          | 5,295.32                  | 79.00         | 126.41        | 375,284.47                | 819,876.96               | 32.028552 | -103.434522 |  |
| 5,400.00                  | 3.69               | 57.99          | 5,395.12                  | 82.42         | 131.87        | 375,287.88                | 819,882.41               | 32.028561 | -103.434505 |  |
| 5,500.00                  | 3.69               | 57.99          | 5,494.91                  | 85.83         | 137.33        | 375,291.30                | 819,887.87               | 32.028570 | -103.434487 |  |
| 5,600.00                  | 3.69               | 57.99          | 5,594.70                  | 89.24         | 142.79        | 375,294.71                | 819,893.33               | 32.028580 | -103.434469 |  |
| 5,700.00                  | 3.69               | 57.99          | 5,694.49                  | 92.65         | 148.24        | 375,298.12                | 819,898.79               | 32.028589 | -103.434451 |  |
| 5,800.00                  | 3.69               | 57.99          | 5,794.29                  | 96.06         | 153.70        | 375,301.53                | 819,904.25               | 32.028598 | -103.434434 |  |
| 5,900.00                  | 3.69               | 57.99          | 5,894.08                  | 99.48         | 159.16        | 375,304.94                | 819,909.71               | 32.028607 | -103.434416 |  |
| 6,000.00                  | 3.69               | 57.99          | 5,993.87                  | 102.89        | 164.62        | 375,308.36                | 819,915.17               | 32.028617 | -103.434398 |  |
| 6,100.00                  | 3.69               | 57.99          | 6,093.67                  | 106.30        | 170.08        | 375,311.77                | 819,920.63               | 32.028626 | -103.434381 |  |
| 6,200.00                  | 3.69               | 57.99          | 6,193.46                  | 109.71        | 175.54        | 375,315.18                | 819,926.09               | 32.028635 | -103.434363 |  |
| 6,300.00                  | 3.69               | 57.99          | 6,293.25                  | 113.12        | 181.00        | 375,318.59                | 819,931.55               | 32.028644 | -103.434345 |  |
| 6,400.00                  | 3.69               | 57.99          | 6,393.04                  | 116.54        | 186.46        | 375,322.00                | 819,937.01               | 32.028654 | -103.434327 |  |
| 6,500.00                  | 3.69               | 57.99          | 6,492.84                  | 119.95        | 191.92        | 375,325.42                | 819,942.47               | 32.028663 | -103.434310 |  |
| 6,600.00                  | 3.69               | 57.99          | 6,592.63                  | 123.36        | 197.38        | 375,328.83                | 819,947.92               | 32.028672 | -103.434292 |  |
| 6,700.00                  | 3.69               | 57.99          | 6,692.42                  | 126.77        | 202.84        | 375,332.24                | 819,953.38               | 32.028681 | -103.434274 |  |
| 6,800.00                  | 3.69               | 57.99          | 6,792.21                  | 130.18        | 208.30        | 375,335.65                | 819,958.84               | 32.028691 | -103.434257 |  |
| 6,900.00                  | 3.69               | 57.99          | 6,892.01                  | 133.60        | 213.75        | 375,339.06                | 819,964.30               | 32.028700 | -103.434239 |  |
| 7,000.00                  | 3.69               | 57.99          | 6,991.80                  | 137.01        | 219.21        | 375,342.48                | 819,969.76               | 32.028709 | -103.434221 |  |
| 7,100.00                  | 3.69               | 57.99          | 7,091.59                  | 140.42        | 224.67        | 375,345.89                | 819,975.22               | 32.028718 | -103.434204 |  |
| 7,200.00                  | 3.69               | 57.99          | 7,191.38                  | 143.83        | 230.13        | 375,349.30                | 819,980.68               | 32.028728 | -103.434186 |  |
| 7,300.00                  | 3.69               | 57.99          | 7,291.18                  | 147.24        | 235.59        | 375,352.71                | 819,986.14               | 32.028737 | -103.434168 |  |
| 7,400.00                  | 3.69               | 57.99          | 7,390.97                  | 150.66        | 241.05        | 375,356.12                | 819,991.60               | 32.028746 | -103.434150 |  |
| 7,500.00                  | 3.69               | 57.99          | 7,490.76                  | 154.07        | 246.51        | 375,359.54                | 819,997.06               | 32.028755 | -103.434133 |  |
| 7,600.00                  | 3.69               | 57.99          | 7,590.55                  | 157.48        | 251.97        | 375,362.95                | 820,002.52               | 32.028765 | -103.434115 |  |
| 7,700.00                  | 3.69               | 57.99          | 7,690.35                  | 160.89        | 257.43        | 375,366.36                | 820,007.98               | 32.028774 | -103.434097 |  |
| 7,800.00                  | 3.69               | 57.99          | 7,790.14                  | 164.30        | 262.89        | 375,369.77                | 820,013.43               | 32.028783 | -103.434080 |  |
| 7,900.00                  | 3.69               | 57.99          | 7,889.93                  | 167.72        | 268.35        | 375,373.18                | 820,018.89               | 32.028792 | -103.434062 |  |
| 8,000.00                  | 3.69               | 57.99          | 7,989.72                  | 171.13        | 273.81        | 375,376.60                | 820,024.35               | 32.028802 | -103.434044 |  |
| 8,100.00                  | 3.69               | 57.99          | 8,089.52                  | 174.54        | 279.26        | 375,380.01                | 820,029.81               | 32.028811 | -103.434026 |  |
| 8,200.00                  | 3.69               | 57.99          | 8,189.31                  | 177.95        | 284.72        | 375,383.42                | 820,035.27               | 32.028820 | -103.434009 |  |
| 8,300.00                  | 3.69               | 57.99          | 8,289.10                  | 181.36        | 290.18        | 375,386.83                | 820,040.73               | 32.028829 | -103.433991 |  |
| 8,400.00                  | 3.69               | 57.99          | 8,388.89                  | 184.78        | 295.64        | 375,390.24                | 820,046.19               | 32.028839 | -103.433973 |  |
| 8,500.00                  | 3.69               | 57.99          | 8,488.69                  | 188.19        | 301.10        | 375,393.66                | 820,051.65               | 32.028848 | -103.433956 |  |
| 8,600.00                  | 3.69               | 57.99          | 8,588.48                  | 191.60        | 306.56        | 375,397.07                | 820,057.11               | 32.028857 | -103.433938 |  |
| 8,700.00                  | 3.69               | 57.99          | 8,688.27                  | 195.01        | 312.02        | 375,400.48                | 820,062.57               | 32.028866 | -103.433920 |  |
| 8,800.00                  | 3.69               | 57.99          | 8,788.06                  | 198.42        | 317.48        | 375,403.89                | 820,068.03               | 32.028876 | -103.433903 |  |
| 8,900.00                  | 3.69               | 57.99          | 8,887.86                  | 201.84        | 322.94        | 375,407.30                | 820,073.49               | 32.028885 | -103.433885 |  |
| 9,000.00                  | 3.69               | 57.99          | 8,987.65                  | 205.25        | 328.40        | 375,410.72                | 820,078.94               | 32.028894 | -103.433867 |  |
| 9,100.00                  | 3.69               | 57.99          | 9,087.44                  | 208.66        | 333.86        | 375,414.13                | 820,084.40               | 32.028903 | -103.433849 |  |
| 9,200.00                  | 3.69               | 57.99          | 9,187.23                  | 212.07        | 339.32        | 375,417.54                | 820,089.86               | 32.028913 | -103.433832 |  |
| 9,300.00                  | 3.69               | 57.99          | 9,287.03                  | 215.48        | 344.77        | 375,420.95                | 820,095.32               | 32.028922 | -103.433814 |  |
| 9,400.00                  | 3.69               | 57.99          | 9,386.82                  | 218.90        | 350.23        | 375,424.36                | 820,100.78               | 32.028931 | -103.433796 |  |
| 9,500.00                  | 3.69               | 57.99          | 9,486.61                  | 222.31        | 355.69        | 375,427.78                | 820,106.24               | 32.028940 | -103.433779 |  |
| 9,600.00                  | 3.69               | 57.99          | 9,586.40                  | 225.72        | 361.15        | 375,431.19                | 820,111.70               | 32.028950 | -103.433761 |  |
| 9,700.00                  | 3.69               | 57.99          | 9,686.20                  | 229.13        | 366.61        | 375,434.60                | 820,117.16               | 32.028959 | -103.433743 |  |
| 9,800.00                  | 3.69               | 57.99          | 9,785.99                  | 232.54        | 372.07        | 375,438.01                | 820,122.62               | 32.028968 | -103.433725 |  |
| 9,900.00                  | 3.69               | 57.99          | 9,885.78                  | 235.96        | 377.53        | 375,441.42                | 820,128.08               | 32.028977 | -103.433708 |  |
| 10,000.00                 | 3.69               | 57.99          | 9,985.58                  | 239.37        | 382.99        | 375,444.84                | 820,133.54               | 32.028987 | -103.433690 |  |
| 10,100.00                 | 3.69               | 57.99          | 10,085.37                 | 242.78        | 388.45        | 375,448.25                | 820,139.00               | 32.028996 | -103.433672 |  |
| 10,200.00                 | 3.69               | 57.99          | 10,185.16                 | 246.19        | 393.91        | 375,451.66                | 820,144.45               | 32.029005 | -103.433655 |  |
| 10,300.00                 | 3.69               | 57.99          | 10,284.95                 | 249.60        | 399.37        | 375,455.07                | 820,149.91               | 32.029014 | -103.433637 |  |

# Planning Report - Geographic

Database: EDM r5000.141\_Prod US  
 Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Site: Sec 23-T26S-R34E  
 Well: Mean Green 23-35 Fed Com 2H  
 Wellbore: Wellbore #1  
 Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

## Planned Survey

| Measured<br>Depth<br>(ft)                              | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude  | Longitude   |
|--------------------------------------------------------|--------------------|----------------|---------------------------|---------------|---------------|---------------------------|--------------------------|-----------|-------------|
| 10,400.00                                              | 3.69               | 57.99          | 10,384.75                 | 253.02        | 404.83        | 375,458.48                | 820,155.37               | 32.029024 | -103.433619 |
| 10,500.00                                              | 3.69               | 57.99          | 10,484.54                 | 256.43        | 410.28        | 375,461.90                | 820,160.83               | 32.029033 | -103.433602 |
| 10,600.00                                              | 3.69               | 57.99          | 10,584.33                 | 259.84        | 415.74        | 375,465.31                | 820,166.29               | 32.029042 | -103.433584 |
| 10,700.00                                              | 3.69               | 57.99          | 10,684.12                 | 263.25        | 421.20        | 375,468.72                | 820,171.75               | 32.029051 | -103.433566 |
| 10,800.00                                              | 3.69               | 57.99          | 10,783.92                 | 266.66        | 426.66        | 375,472.13                | 820,177.21               | 32.029061 | -103.433548 |
| 10,900.00                                              | 3.69               | 57.99          | 10,883.71                 | 270.08        | 432.12        | 375,475.54                | 820,182.67               | 32.029070 | -103.433531 |
| 11,000.00                                              | 3.69               | 57.99          | 10,983.50                 | 273.49        | 437.58        | 375,478.96                | 820,188.13               | 32.029079 | -103.433513 |
| 11,100.00                                              | 3.69               | 57.99          | 11,083.29                 | 276.90        | 443.04        | 375,482.37                | 820,193.59               | 32.029088 | -103.433495 |
| 11,200.00                                              | 3.69               | 57.99          | 11,183.09                 | 280.31        | 448.50        | 375,485.78                | 820,199.05               | 32.029098 | -103.433478 |
| 11,300.00                                              | 3.69               | 57.99          | 11,282.88                 | 283.72        | 453.96        | 375,489.19                | 820,204.51               | 32.029107 | -103.433460 |
| 11,400.00                                              | 3.69               | 57.99          | 11,382.67                 | 287.14        | 459.42        | 375,492.60                | 820,209.96               | 32.029116 | -103.433442 |
| 11,500.00                                              | 3.69               | 57.99          | 11,482.46                 | 290.55        | 464.88        | 375,496.02                | 820,215.42               | 32.029125 | -103.433424 |
| 11,600.00                                              | 3.69               | 57.99          | 11,582.26                 | 293.96        | 470.34        | 375,499.43                | 820,220.88               | 32.029135 | -103.433407 |
| 11,653.95                                              | 3.69               | 57.99          | 11,636.09                 | 295.80        | 473.28        | 375,501.27                | 820,223.83               | 32.029140 | -103.433397 |
| <b>EOH</b>                                             |                    |                |                           |               |               |                           |                          |           |             |
| 11,700.00                                              | 3.00               | 57.99          | 11,682.07                 | 297.22        | 475.56        | 375,502.69                | 820,226.11               | 32.029144 | -103.433390 |
| 11,800.00                                              | 1.50               | 57.99          | 11,781.99                 | 299.31        | 478.89        | 375,504.77                | 820,229.44               | 32.029149 | -103.433379 |
| 11,900.00                                              | 0.00               | 57.99          | 11,881.97                 | 300.00        | 480.00        | 375,505.47                | 820,230.55               | 32.029151 | -103.433375 |
| 11,900.03                                              | 0.00               | 0.00           | 11,882.00                 | 300.00        | 480.00        | 375,505.47                | 820,230.55               | 32.029151 | -103.433375 |
| <b>Drop to Vertical</b>                                |                    |                |                           |               |               |                           |                          |           |             |
| 12,000.00                                              | 0.00               | 0.00           | 11,981.97                 | 300.00        | 480.00        | 375,505.47                | 820,230.55               | 32.029151 | -103.433375 |
| 12,100.00                                              | 0.00               | 0.00           | 12,081.97                 | 300.00        | 480.00        | 375,505.47                | 820,230.55               | 32.029151 | -103.433375 |
| 12,200.00                                              | 0.00               | 0.00           | 12,181.97                 | 300.00        | 480.00        | 375,505.47                | 820,230.55               | 32.029151 | -103.433375 |
| 12,250.07                                              | 0.00               | 0.00           | 12,232.04                 | 300.00        | 480.00        | 375,505.47                | 820,230.55               | 32.029151 | -103.433375 |
| <b>KOP @ 12250' MD, 2749' FSL, 380' FEL</b>            |                    |                |                           |               |               |                           |                          |           |             |
| 12,300.00                                              | 4.99               | 179.51         | 12,281.91                 | 297.83        | 480.02        | 375,503.29                | 820,230.57               | 32.029145 | -103.433375 |
| 12,400.00                                              | 14.99              | 179.51         | 12,380.27                 | 280.49        | 480.17        | 375,485.96                | 820,230.71               | 32.029098 | -103.433375 |
| 12,500.00                                              | 24.99              | 179.51         | 12,474.12                 | 246.35        | 480.46        | 375,451.82                | 820,231.00               | 32.029004 | -103.433375 |
| 12,565.07                                              | 31.50              | 179.51         | 12,531.41                 | 215.57        | 480.72        | 375,421.04                | 820,231.26               | 32.028919 | -103.433375 |
| <b>1st Take Point @ 12565' MD, 2449' FSL, 380' FEL</b> |                    |                |                           |               |               |                           |                          |           |             |
| 12,600.00                                              | 34.99              | 179.51         | 12,560.62                 | 196.42        | 480.88        | 375,401.89                | 820,231.43               | 32.028866 | -103.433375 |
| 12,700.00                                              | 44.99              | 179.51         | 12,637.14                 | 132.24        | 481.42        | 375,337.71                | 820,231.97               | 32.028690 | -103.433375 |
| 12,800.00                                              | 54.99              | 179.51         | 12,701.34                 | 55.74         | 482.07        | 375,261.21                | 820,232.62               | 32.028480 | -103.433375 |
| 12,900.00                                              | 64.99              | 179.51         | 12,751.29                 | -30.74        | 482.81        | 375,174.73                | 820,233.35               | 32.028242 | -103.433375 |
| 13,000.00                                              | 74.99              | 179.51         | 12,785.46                 | -124.59       | 483.60        | 375,080.88                | 820,234.15               | 32.027984 | -103.433375 |
| 13,100.00                                              | 84.99              | 179.51         | 12,802.81                 | -222.94       | 484.44        | 374,982.53                | 820,234.98               | 32.027714 | -103.433375 |
| 13,150.07                                              | 90.00              | 179.51         | 12,805.00                 | -272.94       | 484.86        | 374,932.53                | 820,235.41               | 32.027576 | -103.433375 |
| <b>Land Point</b>                                      |                    |                |                           |               |               |                           |                          |           |             |
| 13,200.00                                              | 90.00              | 179.51         | 12,805.00                 | -322.87       | 485.28        | 374,882.60                | 820,235.83               | 32.027439 | -103.433375 |
| 13,300.00                                              | 90.00              | 179.51         | 12,805.00                 | -422.87       | 486.13        | 374,782.60                | 820,236.68               | 32.027164 | -103.433375 |
| 13,400.00                                              | 90.00              | 179.51         | 12,805.00                 | -522.86       | 486.98        | 374,682.61                | 820,237.53               | 32.026889 | -103.433375 |
| 13,500.00                                              | 90.00              | 179.51         | 12,805.00                 | -622.86       | 487.83        | 374,582.61                | 820,238.38               | 32.026614 | -103.433375 |
| 13,600.00                                              | 90.00              | 179.51         | 12,805.00                 | -722.85       | 488.68        | 374,482.62                | 820,239.22               | 32.026339 | -103.433375 |
| 13,700.00                                              | 90.00              | 179.51         | 12,805.00                 | -822.85       | 489.53        | 374,382.62                | 820,240.07               | 32.026065 | -103.433375 |
| 13,800.00                                              | 90.00              | 179.51         | 12,805.00                 | -922.85       | 490.37        | 374,282.62                | 820,240.92               | 32.025790 | -103.433375 |
| 13,900.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,022.84     | 491.22        | 374,182.63                | 820,241.77               | 32.025515 | -103.433375 |
| 14,000.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,122.84     | 492.07        | 374,082.63                | 820,242.62               | 32.025240 | -103.433375 |
| 14,100.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,222.84     | 492.92        | 373,982.63                | 820,243.47               | 32.024965 | -103.433375 |
| 14,200.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,322.83     | 493.77        | 373,882.64                | 820,244.31               | 32.024690 | -103.433375 |
| 14,300.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,422.83     | 494.62        | 373,782.64                | 820,245.16               | 32.024415 | -103.433375 |
| 14,400.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,522.83     | 495.46        | 373,682.65                | 820,246.01               | 32.024140 | -103.433375 |
| 14,500.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,622.82     | 496.31        | 373,582.65                | 820,246.86               | 32.023866 | -103.433374 |
| 14,600.00                                              | 90.00              | 179.51         | 12,805.00                 | -1,722.82     | 497.16        | 373,482.65                | 820,247.71               | 32.023591 | -103.433374 |

# Planning Report - Geographic

|           |                                    |                             |                                  |
|-----------|------------------------------------|-----------------------------|----------------------------------|
| Database: | EDM r5000.141_Prod US              | Local Co-ordinate Reference | Well Mean Green 23-35 Fed Com 2H |
| Company:  | WCDSC Permian NM                   | TVD Reference:              | RKB1 @ 3218.30ft                 |
| Project:  | Lea County (NAD83 New Mexico East) | MD Reference:               | RKB1 @ 3218.30ft                 |
| Site:     | Sec 23-T26S-R34E                   | North Reference:            | Grid                             |
| Well:     | Mean Green 23-35 Fed Com 2H        | Survey Calculation Method:  | Minimum Curvature                |
| Wellbore: | Wellbore #1                        |                             |                                  |
| Design:   | Permit Plan 2                      |                             |                                  |

| Planned Survey            |                    |                |                           |               |               |                           |                          |           |             |  |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|---------------------------|--------------------------|-----------|-------------|--|
| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude  | Longitude   |  |
| 14,700.00                 | 90.00              | 179.51         | 12,805.00                 | -1,822.81     | 498.01        | 373,382.66                | 820,248.56               | 32.023316 | -103.433374 |  |
| 14,800.00                 | 90.00              | 179.51         | 12,805.00                 | -1,922.81     | 498.86        | 373,282.66                | 820,249.40               | 32.023041 | -103.433374 |  |
| 14,900.00                 | 90.00              | 179.51         | 12,805.00                 | -2,022.81     | 499.70        | 373,182.66                | 820,250.25               | 32.022766 | -103.433374 |  |
| 15,000.00                 | 90.00              | 179.51         | 12,805.00                 | -2,122.80     | 500.55        | 373,082.67                | 820,251.10               | 32.022491 | -103.433374 |  |
| 15,100.00                 | 90.00              | 179.51         | 12,805.00                 | -2,222.80     | 501.40        | 372,982.67                | 820,251.95               | 32.022216 | -103.433374 |  |
| 15,200.00                 | 90.00              | 179.51         | 12,805.00                 | -2,322.80     | 502.25        | 372,882.68                | 820,252.80               | 32.021941 | -103.433374 |  |
| 15,300.00                 | 90.00              | 179.51         | 12,805.00                 | -2,422.79     | 503.10        | 372,782.68                | 820,253.65               | 32.021667 | -103.433374 |  |
| 15,400.00                 | 90.00              | 179.51         | 12,805.00                 | -2,522.79     | 503.95        | 372,682.68                | 820,254.49               | 32.021392 | -103.433374 |  |
| 15,500.00                 | 90.00              | 179.51         | 12,805.00                 | -2,622.79     | 504.79        | 372,582.69                | 820,255.34               | 32.021117 | -103.433374 |  |
| 15,600.00                 | 90.00              | 179.51         | 12,805.00                 | -2,722.78     | 505.64        | 372,482.69                | 820,256.19               | 32.020842 | -103.433374 |  |
| 15,700.00                 | 90.00              | 179.51         | 12,805.00                 | -2,822.78     | 506.49        | 372,382.70                | 820,257.04               | 32.020567 | -103.433374 |  |
| 15,800.00                 | 90.00              | 179.51         | 12,805.00                 | -2,922.78     | 507.34        | 372,282.70                | 820,257.89               | 32.020292 | -103.433374 |  |
| 15,900.00                 | 90.00              | 179.51         | 12,805.00                 | -3,022.77     | 508.19        | 372,182.70                | 820,258.74               | 32.020017 | -103.433374 |  |
| 16,000.00                 | 90.00              | 179.51         | 12,805.00                 | -3,122.77     | 509.04        | 372,082.71                | 820,259.58               | 32.019742 | -103.433374 |  |
| 16,100.00                 | 90.00              | 179.51         | 12,805.00                 | -3,222.76     | 509.88        | 371,982.71                | 820,260.43               | 32.019468 | -103.433374 |  |
| 16,200.00                 | 90.00              | 179.51         | 12,805.00                 | -3,322.76     | 510.73        | 371,882.71                | 820,261.28               | 32.019193 | -103.433374 |  |
| 16,300.00                 | 90.00              | 179.51         | 12,805.00                 | -3,422.76     | 511.58        | 371,782.72                | 820,262.13               | 32.018918 | -103.433374 |  |
| 16,400.00                 | 90.00              | 179.51         | 12,805.00                 | -3,522.75     | 512.43        | 371,682.72                | 820,262.98               | 32.018643 | -103.433374 |  |
| 16,500.00                 | 90.00              | 179.51         | 12,805.00                 | -3,622.75     | 513.28        | 371,582.73                | 820,263.82               | 32.018368 | -103.433373 |  |
| 16,600.00                 | 90.00              | 179.51         | 12,805.00                 | -3,722.75     | 514.13        | 371,482.73                | 820,264.67               | 32.018093 | -103.433373 |  |
| 16,700.00                 | 90.00              | 179.51         | 12,805.00                 | -3,822.74     | 514.97        | 371,382.73                | 820,265.52               | 32.017818 | -103.433373 |  |
| 16,800.00                 | 90.00              | 179.51         | 12,805.00                 | -3,922.74     | 515.82        | 371,282.74                | 820,266.37               | 32.017543 | -103.433373 |  |
| 16,900.00                 | 90.00              | 179.51         | 12,805.00                 | -4,022.74     | 516.67        | 371,182.74                | 820,267.22               | 32.017269 | -103.433373 |  |
| 17,000.00                 | 90.00              | 179.51         | 12,805.00                 | -4,122.73     | 517.52        | 371,082.74                | 820,268.07               | 32.016994 | -103.433373 |  |
| 17,100.00                 | 90.00              | 179.51         | 12,805.00                 | -4,222.73     | 518.37        | 370,982.75                | 820,268.91               | 32.016719 | -103.433373 |  |
| 17,200.00                 | 90.00              | 179.51         | 12,805.00                 | -4,322.72     | 519.22        | 370,882.75                | 820,269.76               | 32.016444 | -103.433373 |  |
| 17,300.00                 | 90.00              | 179.51         | 12,805.00                 | -4,422.72     | 520.06        | 370,782.76                | 820,270.61               | 32.016169 | -103.433373 |  |
| 17,400.00                 | 90.00              | 179.51         | 12,805.00                 | -4,522.72     | 520.91        | 370,682.76                | 820,271.46               | 32.015894 | -103.433373 |  |
| 17,500.00                 | 90.00              | 179.51         | 12,805.00                 | -4,622.71     | 521.76        | 370,582.76                | 820,272.31               | 32.015619 | -103.433373 |  |
| 17,600.00                 | 90.00              | 179.51         | 12,805.00                 | -4,722.71     | 522.61        | 370,482.77                | 820,273.16               | 32.015344 | -103.433373 |  |
| 17,700.00                 | 90.00              | 179.51         | 12,805.00                 | -4,822.71     | 523.46        | 370,382.77                | 820,274.00               | 32.015070 | -103.433373 |  |
| 17,800.00                 | 90.00              | 179.51         | 12,805.00                 | -4,922.70     | 524.31        | 370,282.77                | 820,274.85               | 32.014795 | -103.433373 |  |
| 17,900.00                 | 90.00              | 179.51         | 12,805.00                 | -5,022.70     | 525.15        | 370,182.78                | 820,275.70               | 32.014520 | -103.433373 |  |
| 18,000.00                 | 90.00              | 179.51         | 12,805.00                 | -5,122.70     | 526.00        | 370,082.78                | 820,276.55               | 32.014245 | -103.433373 |  |
| 18,100.00                 | 90.00              | 179.51         | 12,805.00                 | -5,222.69     | 526.85        | 369,982.79                | 820,277.40               | 32.013970 | -103.433373 |  |
| 18,200.00                 | 90.00              | 179.51         | 12,805.00                 | -5,322.69     | 527.70        | 369,882.79                | 820,278.25               | 32.013695 | -103.433373 |  |
| 18,300.00                 | 90.00              | 179.51         | 12,805.00                 | -5,422.69     | 528.55        | 369,782.79                | 820,279.09               | 32.013420 | -103.433373 |  |
| 18,400.00                 | 90.00              | 179.51         | 12,805.00                 | -5,522.68     | 529.40        | 369,682.80                | 820,279.94               | 32.013145 | -103.433373 |  |
| 18,500.00                 | 90.00              | 179.51         | 12,805.00                 | -5,622.68     | 530.24        | 369,582.80                | 820,280.79               | 32.012871 | -103.433372 |  |
| 18,600.00                 | 90.00              | 179.51         | 12,805.00                 | -5,722.67     | 531.09        | 369,482.81                | 820,281.64               | 32.012596 | -103.433372 |  |
| 18,700.00                 | 90.00              | 179.51         | 12,805.00                 | -5,822.67     | 531.94        | 369,382.81                | 820,282.49               | 32.012321 | -103.433372 |  |
| 18,800.00                 | 90.00              | 179.51         | 12,805.00                 | -5,922.67     | 532.79        | 369,282.81                | 820,283.34               | 32.012046 | -103.433372 |  |
| 18,900.00                 | 90.00              | 179.51         | 12,805.00                 | -6,022.66     | 533.64        | 369,182.82                | 820,284.18               | 32.011771 | -103.433372 |  |
| 19,000.00                 | 90.00              | 179.51         | 12,805.00                 | -6,122.66     | 534.48        | 369,082.82                | 820,285.03               | 32.011496 | -103.433372 |  |
| 19,100.00                 | 90.00              | 179.51         | 12,805.00                 | -6,222.66     | 535.33        | 368,982.82                | 820,285.88               | 32.011221 | -103.433372 |  |
| 19,200.00                 | 90.00              | 179.51         | 12,805.00                 | -6,322.65     | 536.18        | 368,882.83                | 820,286.73               | 32.010946 | -103.433372 |  |
| 19,300.00                 | 90.00              | 179.51         | 12,805.00                 | -6,422.65     | 537.03        | 368,782.83                | 820,287.58               | 32.010672 | -103.433372 |  |
| 19,400.00                 | 90.00              | 179.51         | 12,805.00                 | -6,522.65     | 537.88        | 368,682.84                | 820,288.43               | 32.010397 | -103.433372 |  |
| 19,500.00                 | 90.00              | 179.51         | 12,805.00                 | -6,622.64     | 538.73        | 368,582.84                | 820,289.27               | 32.010122 | -103.433372 |  |
| 19,600.00                 | 90.00              | 179.51         | 12,805.00                 | -6,722.64     | 539.57        | 368,482.84                | 820,290.12               | 32.009847 | -103.433372 |  |
| 19,700.00                 | 90.00              | 179.51         | 12,805.00                 | -6,822.63     | 540.42        | 368,382.85                | 820,290.97               | 32.009572 | -103.433372 |  |
| 19,800.00                 | 90.00              | 179.51         | 12,805.00                 | -6,922.63     | 541.27        | 368,282.85                | 820,291.82               | 32.009297 | -103.433372 |  |
| 19,900.00                 | 90.00              | 179.51         | 12,805.00                 | -7,022.63     | 542.12        | 368,182.85                | 820,292.67               | 32.009022 | -103.433372 |  |
| 20,000.00                 | 90.00              | 179.51         | 12,805.00                 | -7,122.62     | 542.97        | 368,082.86                | 820,293.52               | 32.008747 | -103.433372 |  |

# Planning Report - Geographic

Database: EDM r5000.141\_Prod US  
 Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Site: Sec 23-T26S-R34E  
 Well: Mean Green 23-35 Fed Com 2H  
 Wellbore: Wellbore #1  
 Design: Permit Plan 2

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 2H  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

## Planned Survey

| Measured Depth (ft)                             | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude  | Longitude   |
|-------------------------------------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|-----------|-------------|
| 20,100.00                                       | 90.00           | 179.51      | 12,805.00           | -7,222.62  | 543.82     | 367,982.86          | 820,294.36         | 32.008473 | -103.433372 |
| 20,200.00                                       | 90.00           | 179.51      | 12,805.00           | -7,322.62  | 544.66     | 367,882.87          | 820,295.21         | 32.008198 | -103.433372 |
| 20,300.00                                       | 90.00           | 179.51      | 12,805.00           | -7,422.61  | 545.51     | 367,782.87          | 820,296.06         | 32.007923 | -103.433372 |
| 20,400.00                                       | 90.00           | 179.51      | 12,805.00           | -7,522.61  | 546.36     | 367,682.87          | 820,296.91         | 32.007648 | -103.433372 |
| 20,500.00                                       | 90.00           | 179.51      | 12,805.00           | -7,622.61  | 547.21     | 367,582.88          | 820,297.76         | 32.007373 | -103.433371 |
| 20,600.00                                       | 90.00           | 179.51      | 12,805.00           | -7,722.60  | 548.06     | 367,482.88          | 820,298.60         | 32.007098 | -103.433371 |
| 20,700.00                                       | 90.00           | 179.51      | 12,805.00           | -7,822.60  | 548.91     | 367,382.89          | 820,299.45         | 32.006823 | -103.433371 |
| 20,800.00                                       | 90.00           | 179.51      | 12,805.00           | -7,922.60  | 549.75     | 367,282.89          | 820,300.30         | 32.006548 | -103.433371 |
| 20,900.00                                       | 90.00           | 179.51      | 12,805.00           | -8,022.59  | 550.60     | 367,182.89          | 820,301.15         | 32.006274 | -103.433371 |
| 21,000.00                                       | 90.00           | 179.51      | 12,805.00           | -8,122.59  | 551.45     | 367,082.90          | 820,302.00         | 32.005999 | -103.433371 |
| 21,100.00                                       | 90.00           | 179.51      | 12,805.00           | -8,222.58  | 552.30     | 366,982.90          | 820,302.85         | 32.005724 | -103.433371 |
| 21,200.00                                       | 90.00           | 179.51      | 12,805.00           | -8,322.58  | 553.15     | 366,882.90          | 820,303.69         | 32.005449 | -103.433371 |
| 21,300.00                                       | 90.00           | 179.51      | 12,805.00           | -8,422.58  | 554.00     | 366,782.91          | 820,304.54         | 32.005174 | -103.433371 |
| 21,400.00                                       | 90.00           | 179.51      | 12,805.00           | -8,522.57  | 554.84     | 366,682.91          | 820,305.39         | 32.004899 | -103.433371 |
| 21,500.00                                       | 90.00           | 179.51      | 12,805.00           | -8,622.57  | 555.69     | 366,582.92          | 820,306.24         | 32.004624 | -103.433371 |
| 21,600.00                                       | 90.00           | 179.51      | 12,805.00           | -8,722.57  | 556.54     | 366,482.92          | 820,307.09         | 32.004349 | -103.433371 |
| 21,700.00                                       | 90.00           | 179.51      | 12,805.00           | -8,822.56  | 557.39     | 366,382.92          | 820,307.94         | 32.004075 | -103.433371 |
| 21,800.00                                       | 90.00           | 179.51      | 12,805.00           | -8,922.56  | 558.24     | 366,282.93          | 820,308.78         | 32.003800 | -103.433371 |
| 21,900.00                                       | 90.00           | 179.51      | 12,805.00           | -9,022.56  | 559.09     | 366,182.93          | 820,309.63         | 32.003525 | -103.433371 |
| 22,000.00                                       | 90.00           | 179.51      | 12,805.00           | -9,122.55  | 559.93     | 366,082.93          | 820,310.48         | 32.003250 | -103.433371 |
| 22,100.00                                       | 90.00           | 179.51      | 12,805.00           | -9,222.55  | 560.78     | 365,982.94          | 820,311.33         | 32.002975 | -103.433371 |
| 22,200.00                                       | 90.00           | 179.51      | 12,805.00           | -9,322.55  | 561.63     | 365,882.94          | 820,312.18         | 32.002700 | -103.433371 |
| 22,300.00                                       | 90.00           | 179.51      | 12,805.00           | -9,422.54  | 562.48     | 365,782.95          | 820,313.03         | 32.002425 | -103.433371 |
| 22,400.00                                       | 90.00           | 179.51      | 12,805.00           | -9,522.54  | 563.33     | 365,682.95          | 820,313.87         | 32.002150 | -103.433371 |
| 22,500.00                                       | 90.00           | 179.51      | 12,805.00           | -9,622.53  | 564.18     | 365,582.95          | 820,314.72         | 32.001876 | -103.433370 |
| 22,600.00                                       | 90.00           | 179.51      | 12,805.00           | -9,722.53  | 565.02     | 365,482.96          | 820,315.57         | 32.001601 | -103.433370 |
| 22,700.00                                       | 90.00           | 179.51      | 12,805.00           | -9,822.53  | 565.87     | 365,382.96          | 820,316.42         | 32.001326 | -103.433370 |
| 22,745.58                                       | 90.00           | 179.51      | 12,805.00           | -9,868.11  | 566.26     | 365,337.38          | 820,316.81         | 32.001201 | -103.433370 |
| Last Take Point @ 22746' MD, 330' FSL, 380' FEL |                 |             |                     |            |            |                     |                    |           |             |
| 22,800.00                                       | 90.00           | 179.51      | 12,805.00           | -9,922.52  | 566.72     | 365,282.96          | 820,317.27         | 32.001051 | -103.433370 |
| 22,875.57                                       | 90.00           | 179.51      | 12,805.00           | -9,998.09  | 567.36     | 365,207.40          | 820,317.91         | 32.000843 | -103.433370 |
| PBHL; 200' FSL, 380' FEL                        |                 |             |                     |            |            |                     |                    |           |             |
| 22,875.58                                       | 90.00           | 179.51      | 12,805.00           | -9,998.10  | 567.36     | 365,207.39          | 820,317.91         | 32.000843 | -103.433370 |

## Design Targets

| Target Name                                                                               | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude  | Longitude   |
|-------------------------------------------------------------------------------------------|---------------|--------------|----------|------------|------------|-----------------|----------------|-----------|-------------|
| - hit/miss target                                                                         |               |              |          |            |            |                 |                |           |             |
| - Shape                                                                                   |               |              |          |            |            |                 |                |           |             |
| PBHL - Mean Green 23-                                                                     | 0.00          | 0.00         | 0.00     | -9,998.10  | 567.36     | 365,207.39      | 820,317.91     | 32.000843 | -103.433370 |
| - plan misses target center by 10014.19ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)         |               |              |          |            |            |                 |                |           |             |
| - Point                                                                                   |               |              |          |            |            |                 |                |           |             |
| VP - Mean Green 23-35                                                                     | 0.00          | 0.00         | 8,300.00 | 300.00     | 300.00     | 375,505.47      | 820,050.55     | 32.029155 | -103.433956 |
| - plan misses target center by 118.54ft at 8315.46ft MD (8304.53 TVD, 181.89 N, 291.03 E) |               |              |          |            |            |                 |                |           |             |
| - Point                                                                                   |               |              |          |            |            |                 |                |           |             |

# Planning Report - Geographic

|                  |                                    |                                    |                                  |
|------------------|------------------------------------|------------------------------------|----------------------------------|
| <b>Database:</b> | EDM r5000.141_Prod US              | <b>Local Co-ordinate Reference</b> | Well Mean Green 23-35 Fed Com 2H |
| <b>Company:</b>  | WCDSC Permian NM                   | <b>TVD Reference:</b>              | RKB1 @ 3218.30ft                 |
| <b>Project:</b>  | Lea County (NAD83 New Mexico East) | <b>MD Reference:</b>               | RKB1 @ 3218.30ft                 |
| <b>Site:</b>     | Sec 23-T26S-R34E                   | <b>North Reference:</b>            | Grid                             |
| <b>Well:</b>     | Mean Green 23-35 Fed Com 2H        | <b>Survey Calculation Method:</b>  | Minimum Curvature                |
| <b>Wellbore:</b> | Wellbore #1                        |                                    |                                  |
| <b>Design:</b>   | Permit Plan 2                      |                                    |                                  |

## Plan Annotations

| Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Local Coordinates |               | Comment                                         |
|---------------------------|---------------------------|-------------------|---------------|-------------------------------------------------|
|                           |                           | +N/-S<br>(ft)     | +E/-W<br>(ft) |                                                 |
| 2,800.00                  | 2,800.00                  | 0.00              | 0.00          | Begin Nudge                                     |
| 3,169.11                  | 3,168.85                  | 6.30              | 10.08         | EOB                                             |
| 11,653.95                 | 11,636.09                 | 295.80            | 473.28        | EOH                                             |
| 11,900.03                 | 11,882.00                 | 300.00            | 480.00        | Drop to Vertical                                |
| 12,250.07                 | 12,232.04                 | 300.00            | 480.00        | KOP @ 12250' MD, 2749' FSL, 380' FEL            |
| 12,565.07                 | 12,531.41                 | 215.57            | 480.72        | 1st Take Point @ 12565' MD, 2449' FSL, 380' FEL |
| 13,150.07                 | 12,805.00                 | -272.94           | 484.86        | Land Point                                      |
| 22,745.58                 | 12,805.00                 | -9,868.11         | 566.26        | Last Take Point @ 22746' MD, 330' FSL, 380' FEL |
| 22,875.57                 | 12,805.00                 | -9,998.09         | 567.36        | PBHL; 200' FSL, 380' FEL                        |

# WCDSC Permian NM

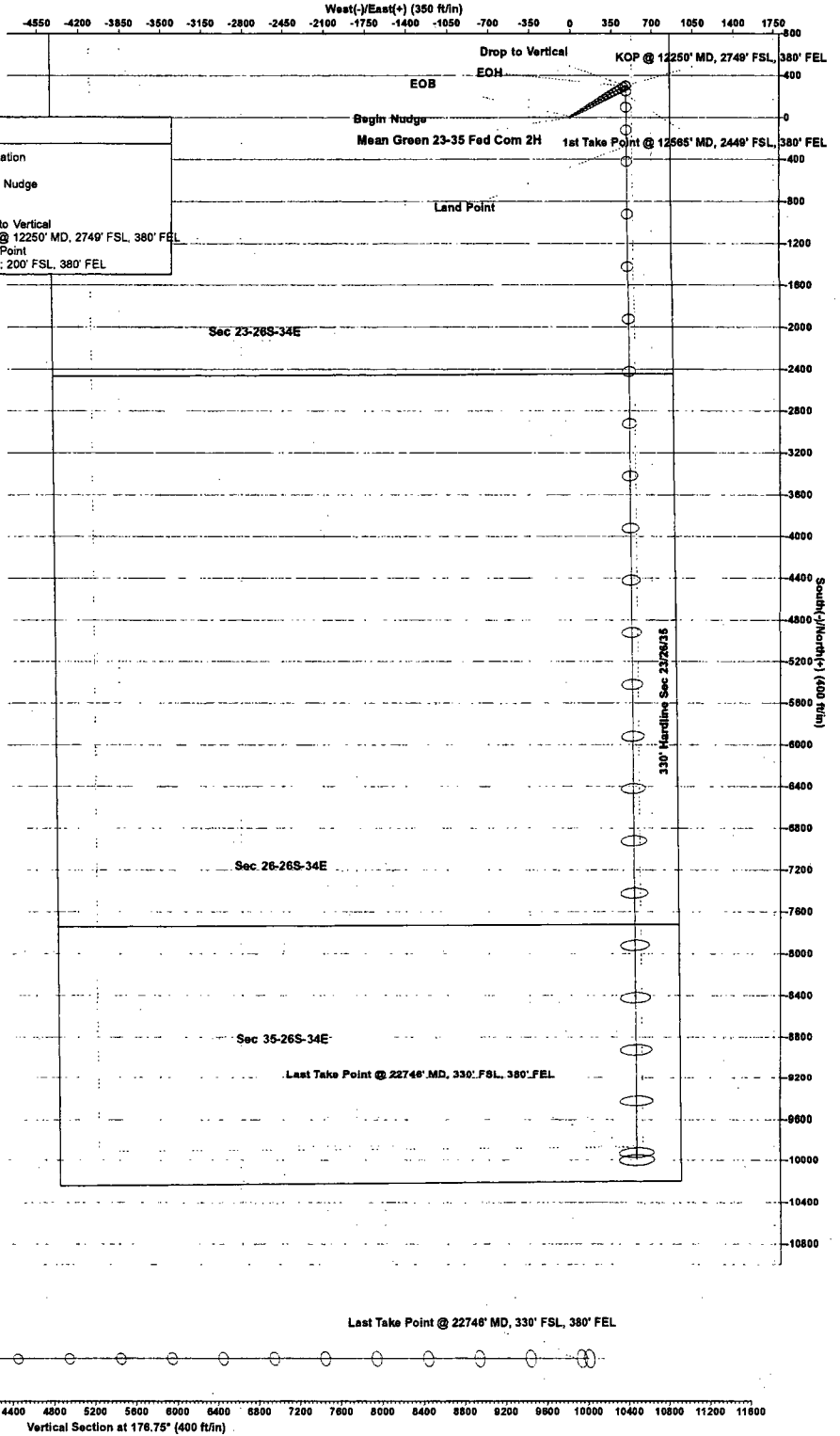
WELL DETAILS: Mean Green 23-35 Fed Com 2H

RKB1 @ 3218.30ft  
3193.30  
Northing 375205.47 Easting 819750.55 Latitude 32.028337 Longitude -103.434632

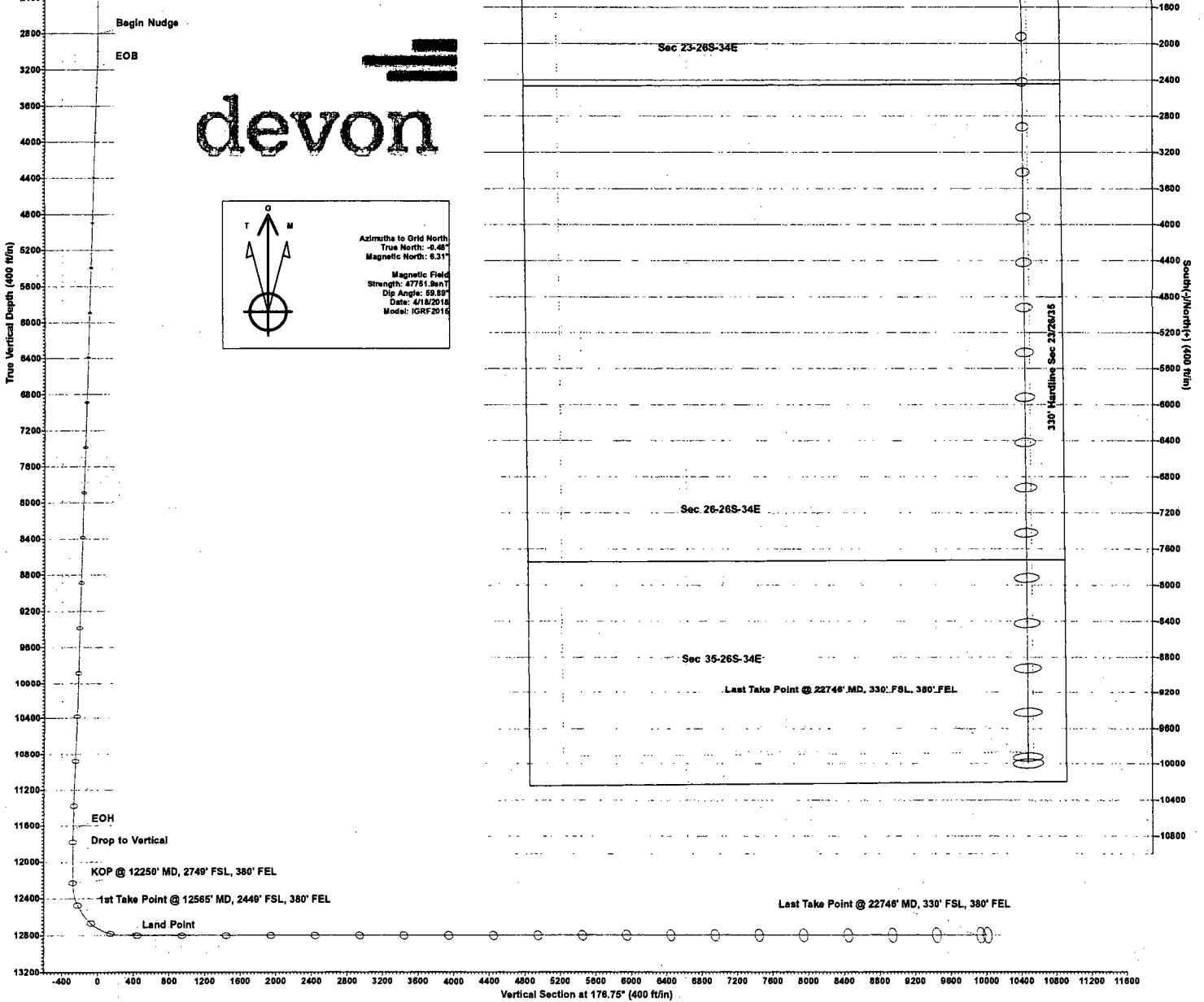
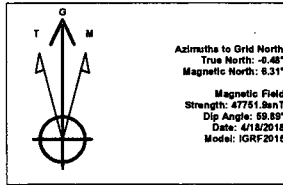
## SECTION DETAILS

Permit Plan 2

| 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     |                                      |
| 2800.00    | 0.00  | 0.00   | 2800.00  | 0.00     | 0.00   | 0.00  | 0.00     | Begin Nudge                          |
| 3169.11    | 3.69  | 57.99  | 3168.85  | 6.30     | 10.08  | 1.00  | -5.72    | EOB                                  |
| 11653.95   | 3.69  | 57.99  | 11638.10 | 295.80   | 473.28 | 0.00  | -268.51  | EOH                                  |
| 5 11900.03 | 0.00  | 0.00   | 11882.00 | 300.00   | 480.00 | 1.50  | -272.32  | Drop to Vertical                     |
| 6 12250.07 | 0.00  | 0.00   | 12232.04 | 300.00   | 480.00 | 0.00  | -272.32  | KOP @ 12250' MD, 2749' FSL, 380' FEL |
| 7 13150.07 | 90.00 | 179.51 | 12805.00 | -272.94  | 484.88 | 10.00 | 299.97   | Land Point                           |
| 8 22875.58 | 90.00 | 179.51 | 12805.00 | -9998.10 | 567.38 | 0.00  | 10014.19 | PBHL: 200' FSL, 380' FEL             |



devon





# **WCDSC Permian NM**

**Lea County (NAD83 New Mexico East)**

**Sec 23-T26S-R34E**

**Mean Green 23-35 Fed Com 2H**

**Wellbore #1**

**Permit Plan 2**

## **Anticollision Report**

**30 April, 2018**

# Anticollision Report

|                           |                                    |                                    |                                  |
|---------------------------|------------------------------------|------------------------------------|----------------------------------|
| <b>Company:</b>           | WCDSC Permian NM                   | <b>Local Co-ordinate Reference</b> | Well Mean Green 23-35 Fed Com 2H |
| <b>Project:</b>           | Lea County (NAD83 New Mexico East) | <b>TVD Reference:</b>              | RKB1 @ 3218.30ft                 |
| <b>Reference Site:</b>    | Sec 23-T26S-R34E                   | <b>MD Reference:</b>               | RKB1 @ 3218.30ft                 |
| <b>Site Error:</b>        | 0.00 ft                            | <b>North Reference:</b>            | Grid                             |
| <b>Reference Well:</b>    | Mean Green 23-35 Fed Com 2H        | <b>Survey Calculation Method:</b>  | Minimum Curvature                |
| <b>Well Error:</b>        | 0.50 ft                            | <b>Output errors are at</b>        | 2.00 sigma                       |
| <b>Reference Wellbore</b> | Wellbore #1                        | <b>Database:</b>                   | EDM r5000.141_Prod US            |
| <b>Reference Design:</b>  | Permit Plan 2                      | <b>Offset TVD Reference:</b>       | Offset Datum                     |

|                                     |                                                                     |                       |                     |
|-------------------------------------|---------------------------------------------------------------------|-----------------------|---------------------|
| <b>Reference</b>                    | Permit Plan 2                                                       |                       |                     |
| <b>Filter type:</b>                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                       |                     |
| <b>Interpolation Method</b>         | MD Interval 100.00ft                                                | <b>Error Model:</b>   | ISCWSA              |
| <b>Depth Range:</b>                 | Unlimited                                                           | <b>Scan Method:</b>   | Closest Approach 3D |
| <b>Results Limited by:</b>          | Maximum center-center distance of 1,500.00 ft                       | <b>Error Surface:</b> | Pedal Curve         |
| <b>Warning Levels Evaluated at:</b> | 2.00 Sigma                                                          | <b>Casing Method:</b> | Not applied         |

|                            |                |                             |
|----------------------------|----------------|-----------------------------|
| <b>Survey Tool Program</b> | Date           | 4/30/2018                   |
| <b>From (ft)</b>           | <b>To (ft)</b> | <b>Survey (Wellbore)</b>    |
| 0.00                       | 22,875.37      | Permit Plan 2 (Wellbore #1) |
|                            |                | <b>Tool Name</b>            |
|                            |                | MWD+HDGM                    |
|                            |                | <b>Description</b>          |
|                            |                | OWSG MWD + HDGM             |

| Summary                                                |                   |                |                               |                                |                 |                        |
|--------------------------------------------------------|-------------------|----------------|-------------------------------|--------------------------------|-----------------|------------------------|
| Site Name                                              | Reference Measure | Offset Measure | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation (ft) | Warning                |
| Offset Well - Wellbore - Design                        |                   |                |                               |                                |                 |                        |
| Sec 23-T26S-R34E                                       |                   |                |                               |                                |                 |                        |
| Mean Green 23 FED 1H - Original Hole - Actuals         | 9,124.07          | 11,699.11      | 161.57                        | 69.24                          | 1.750           | Minor Risk, CC, ES, SF |
| Mean Green 23-35 Fed Com 1H - Wellbore #1 - Permit PI  | 2,800.00          | 2,806.50       | 29.98                         | 10.32                          | 1.525           | Minor Risk, CC, ES     |
| Mean Green 23-35 Fed Com 1H - Wellbore #1 - Permit PI  | 2,900.00          | 2,906.49       | 30.73                         | 10.35                          | 1.508           | Minor Risk, SF         |
| Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit PI  | 2,500.00          | 2,506.50       | 30.05                         | 12.53                          | 1.716           | Minor Risk, CC, ES     |
| Mean Green 23-35 Fed Com 3H - Wellbore #1 - Permit PI  | 8,400.00          | 8,404.58       | 100.59                        | 40.59                          | 1.677           | Minor Risk, SF         |
| Mean Green 23-35 Fed Com 4H - Wellbore #1 - Permit PI  | 2,500.00          | 2,506.50       | 59.99                         | 42.47                          | 3.425           | Alert, CC              |
| Mean Green 23-35 Fed Com 4H - Wellbore #1 - Permit PI  | 2,600.00          | 2,605.75       | 60.65                         | 42.42                          | 3.328           | Alert, ES              |
| Mean Green 23-35 Fed Com 4H - Wellbore #1 - Permit PI  | 2,700.00          | 2,704.97       | 62.53                         | 43.60                          | 3.303           | Alert, SF              |
| Sec 26-26S-34E                                         |                   |                |                               |                                |                 |                        |
| Hondo Federal 1 - Wellbore #1 - Wellbore #1            |                   |                |                               |                                |                 | Out of range           |
| Mean Green 26 FED 1H - Original Hole - Original Hole   |                   |                |                               |                                |                 | Out of range           |
| Mean Green 26 FED 1H - Original Hole - Plan 1 v3       |                   |                |                               |                                |                 | Out of range           |
| Mean Green 26 FED 1H - Original Hole - Plan 3v1        |                   |                |                               |                                |                 | Out of range           |
| Mean Green 26 FED 1H - Original Hole - PTL             |                   |                |                               |                                |                 | Out of range           |
| Mean Green 26 FED 1H - Original Hole - T&D             |                   |                |                               |                                |                 | Out of range           |
| Rattlesnake Federal Unit 1 - Wellbore #1 - Wellbore #1 |                   |                |                               |                                |                 | Out of range           |
| Sec 35-T26S-R34E                                       |                   |                |                               |                                |                 |                        |
| Madera 35 Fed 1H - Original Hole - Scientific          | 21,000.68         | 16,782.00      | 339.97                        | 223.83                         | 2.927           | Alert, CC              |
| Madera 35 Fed 1H - Original Hole - Scientific          | 21,100.00         | 16,782.00      | 354.18                        | 222.46                         | 2.689           | Alert, ES              |
| Madera 35 Fed 1H - Original Hole - Scientific          | 21,200.00         | 16,782.00      | 394.09                        | 240.28                         | 2.562           | Alert, SF              |

| Offset Design                                                     |                     |                     |                     |                 |             |              |  |                        |           |                      |                       |                    |        |
|-------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------|-------------|--------------|--|------------------------|-----------|----------------------|-----------------------|--------------------|--------|
| Sec 23-T26S-R34E - Mean Green 23 FED 1H - Original Hole - Actuals |                     |                     |                     |                 |             |              |  |                        |           |                      |                       |                    |        |
| Survey Program: 149-GYRO-NS:8618-MWD+IGRF                         |                     |                     |                     |                 |             |              |  |                        |           |                      |                       |                    |        |
| Reference                                                         |                     | Offset              |                     | Semi Major Axis |             | Highside     |  | Offset Wellbore Centre |           | Distance             |                       | Minimum Separation |        |
| Measured Depth (ft)                                               | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Toolface (°) |  | +N/S (ft)              | +E/W (ft) | Between Centres (ft) | Between Ellipses (ft) | Separation (ft)    | Factor |
| 7,700.00                                                          | 7,690.35            | 11,662.13           | 9,132.53            | 27.51           | 59.63       | 44.02        |  | 174.82                 | 497.01    | 1,432.73             | 1,395.62              | 37.11              | 38.610 |
| 7,800.00                                                          | 7,790.14            | 11,664.71           | 9,132.51            | 27.87           | 59.68       | 43.15        |  | 177.40                 | 496.97    | 1,333.44             | 1,295.84              | 37.60              | 35.462 |
| 7,900.00                                                          | 7,889.93            | 11,667.28           | 9,132.49            | 28.24           | 59.72       | 42.27        |  | 179.97                 | 496.93    | 1,234.27             | 1,196.13              | 38.15              | 32.355 |
| 8,000.00                                                          | 7,989.72            | 11,669.86           | 9,132.47            | 28.60           | 59.76       | 41.39        |  | 182.55                 | 496.89    | 1,135.24             | 1,096.48              | 38.76              | 29.287 |
| 8,100.00                                                          | 8,089.52            | 11,672.44           | 9,132.45            | 28.97           | 59.80       | 40.50        |  | 185.13                 | 496.86    | 1,036.39             | 996.92                | 39.47              | 26.258 |
| 8,200.00                                                          | 8,189.31            | 11,675.03           | 9,132.44            | 29.34           | 59.85       | 39.61        |  | 187.71                 | 496.82    | 937.78               | 897.47                | 40.30              | 23.268 |

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

# Anticollision Report

|                           |                                    |                                    |                                  |
|---------------------------|------------------------------------|------------------------------------|----------------------------------|
| <b>Company:</b>           | WCDSC Permian NM                   | <b>Local Co-ordinate Reference</b> | Well Mean Green 23-35 Fed Com 2H |
| <b>Project:</b>           | Lea County (NAD83 New Mexico East) | <b>TVD Reference:</b>              | RKB1 @ 3218.30ft                 |
| <b>Reference Site:</b>    | Sec 23-T26S-R34E                   | <b>MD Reference:</b>               | RKB1 @ 3218.30ft                 |
| <b>Site Error:</b>        | 0.00 ft                            | <b>North Reference:</b>            | Grid                             |
| <b>Reference Well:</b>    | Mean Green 23-35 Fed Com 2H        | <b>Survey Calculation Method:</b>  | Minimum Curvature                |
| <b>Well Error:</b>        | 0.50 ft                            | <b>Output errors are at</b>        | 2.00 sigma                       |
| <b>Reference Wellbore</b> | Wellbore #1                        | <b>Database:</b>                   | EDM r5000.141_Prod US            |
| <b>Reference Design:</b>  | Permit Plan 2                      | <b>Offset: TVD Reference:</b>      | Offset Datum                     |

| Offset Design      Sec 23-T26S-R34E - Mean Green 23 FED 1H - Original Hole - Actuals |                           |                           |                           |                   |                |                              |                        |               |                            |                             |                               |                      |                        | Offset Site Error: | 0.00 ft |
|--------------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|-------------------|----------------|------------------------------|------------------------|---------------|----------------------------|-----------------------------|-------------------------------|----------------------|------------------------|--------------------|---------|
| Survey Program: 149-GYRO-NS, 8618-MWD+IGRF                                           |                           |                           |                           |                   |                |                              |                        |               |                            |                             |                               |                      |                        | Offset Well Error: | 0.00 ft |
| Reference                                                                            |                           | Offset                    |                           | Semi Major Axis   |                | Highside<br>Toothface<br>(') | Offset Wellbore Centre |               | Distance                   |                             | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning                |                    |         |
| Measured<br>Depth<br>(ft)                                                            | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                              | +N/-S<br>(ft)          | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) |                               |                      |                        |                    |         |
| 8,300.00                                                                             | 8,289.10                  | 11,677.61                 | 9,132.42                  | 29.70             | 59.89          | 38.71                        | 190.30                 | 496.78        | 839.48                     | 798.17                      | 41.32                         | 20.319               |                        |                    |         |
| 8,400.00                                                                             | 8,388.89                  | 11,680.19                 | 9,132.40                  | 30.07             | 59.93          | 37.81                        | 192.88                 | 496.74        | 741.64                     | 699.04                      | 42.59                         | 17.413               |                        |                    |         |
| 8,500.00                                                                             | 8,488.69                  | 11,682.78                 | 9,132.38                  | 30.43             | 59.97          | 36.90                        | 195.46                 | 496.71        | 644.44                     | 600.17                      | 44.27                         | 14.558               |                        |                    |         |
| 8,600.00                                                                             | 8,588.48                  | 11,685.36                 | 9,132.36                  | 30.80             | 60.02          | 35.99                        | 198.05                 | 496.67        | 548.24                     | 501.65                      | 46.59                         | 11.767               |                        |                    |         |
| 8,700.00                                                                             | 8,688.27                  | 11,687.95                 | 9,132.34                  | 31.16             | 60.06          | 35.08                        | 200.63                 | 496.63        | 453.67                     | 403.66                      | 50.01                         | 9.072                |                        |                    |         |
| 8,800.00                                                                             | 8,788.06                  | 11,690.54                 | 9,132.32                  | 31.53             | 60.10          | 34.17                        | 203.22                 | 496.60        | 362.01                     | 306.65                      | 55.36                         | 6.539                |                        |                    |         |
| 8,900.00                                                                             | 8,887.86                  | 11,693.12                 | 9,132.30                  | 31.90             | 60.14          | 33.25                        | 205.81                 | 496.56        | 276.18                     | 211.94                      | 64.24                         | 4.299                | Alert                  |                    |         |
| 9,000.00                                                                             | 8,987.65                  | 11,695.76                 | 9,132.28                  | 32.26             | 60.19          | 32.32                        | 208.44                 | 496.53        | 203.68                     | 125.22                      | 78.46                         | 2.596                | Alert                  |                    |         |
| 9,100.00                                                                             | 9,087.44                  | 11,698.46                 | 9,132.26                  | 32.63             | 60.23          | 31.36                        | 211.14                 | 496.49        | 163.35                     | 71.47                       | 91.88                         | 1.778                | Minor Risk             |                    |         |
| 9,124.07                                                                             | 9,111.46                  | 11,699.11                 | 9,132.26                  | 32.72             | 60.24          | 31.13                        | 211.80                 | 496.48        | 161.57                     | 69.24                       | 92.33                         | 1.750                | Minor Risk, CC, ES, SF |                    |         |
| 9,200.00                                                                             | 9,187.23                  | 11,701.21                 | 9,132.25                  | 32.99             | 60.28          | 30.39                        | 213.89                 | 496.45        | 178.51                     | 94.32                       | 84.19                         | 2.120                | Minor Risk             |                    |         |
| 9,300.00                                                                             | 9,287.03                  | 11,704.01                 | 9,132.23                  | 33.36             | 60.33          | 29.39                        | 216.69                 | 496.40        | 238.82                     | 171.51                      | 67.31                         | 3.548                | Alert                  |                    |         |
| 9,400.00                                                                             | 9,386.82                  | 11,706.87                 | 9,132.21                  | 33.73             | 60.37          | 28.38                        | 219.55                 | 496.36        | 319.66                     | 263.36                      | 56.30                         | 5.678                |                        |                    |         |
| 9,500.00                                                                             | 9,486.61                  | 11,709.78                 | 9,132.19                  | 34.09             | 60.42          | 27.35                        | 222.47                 | 496.31        | 409.05                     | 358.72                      | 50.33                         | 8.128                |                        |                    |         |
| 9,600.00                                                                             | 9,586.40                  | 11,712.76                 | 9,132.18                  | 34.46             | 60.47          | 26.30                        | 225.44                 | 496.26        | 502.43                     | 455.35                      | 47.08                         | 10.672               |                        |                    |         |
| 9,700.00                                                                             | 9,686.20                  | 11,715.79                 | 9,132.16                  | 34.83             | 60.52          | 25.24                        | 228.47                 | 496.21        | 597.95                     | 552.67                      | 45.28                         | 13.205               |                        |                    |         |
| 9,800.00                                                                             | 9,785.99                  | 11,718.88                 | 9,132.15                  | 35.19             | 60.57          | 24.15                        | 231.57                 | 496.15        | 694.72                     | 650.44                      | 44.27                         | 15.691               |                        |                    |         |
| 9,900.00                                                                             | 9,885.78                  | 11,722.04                 | 9,132.13                  | 35.56             | 60.63          | 23.05                        | 234.73                 | 496.09        | 792.27                     | 748.55                      | 43.73                         | 18.118               |                        |                    |         |
| 10,000.00                                                                            | 9,985.58                  | 11,725.27                 | 9,132.12                  | 35.92             | 60.68          | 21.93                        | 237.95                 | 496.03        | 890.36                     | 846.90                      | 43.47                         | 20.484               |                        |                    |         |
| 10,100.00                                                                            | 10,085.37                 | 11,728.56                 | 9,132.10                  | 36.29             | 60.73          | 20.80                        | 241.24                 | 495.96        | 988.83                     | 945.45                      | 43.38                         | 22.793               |                        |                    |         |
| 10,200.00                                                                            | 10,185.16                 | 11,731.92                 | 9,132.09                  | 36.66             | 60.79          | 19.65                        | 244.60                 | 495.89        | 1,087.56                   | 1,044.14                    | 43.42                         | 25.048               |                        |                    |         |
| 10,300.00                                                                            | 10,284.95                 | 11,735.36                 | 9,132.08                  | 37.02             | 60.85          | 18.48                        | 248.04                 | 495.82        | 1,186.50                   | 1,142.96                    | 43.54                         | 27.252               |                        |                    |         |
| 10,400.00                                                                            | 10,384.75                 | 11,738.87                 | 9,132.07                  | 37.39             | 60.91          | 17.30                        | 251.54                 | 495.75        | 1,285.59                   | 1,241.88                    | 43.72                         | 29.409               |                        |                    |         |
| 10,500.00                                                                            | 10,484.54                 | 11,742.45                 | 9,132.06                  | 37.76             | 60.96          | 16.10                        | 255.13                 | 495.67        | 1,384.81                   | 1,340.88                    | 43.94                         | 31.519               |                        |                    |         |
| 10,600.00                                                                            | 10,584.33                 | 11,746.12                 | 9,132.05                  | 38.12             | 61.03          | 14.89                        | 258.80                 | 495.58        | 1,484.13                   | 1,439.94                    | 44.19                         | 33.586               |                        |                    |         |

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

| Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - 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   |                | Highside<br>Toolface<br>(°) | Distance                                |               | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning                    |
| Measured<br>Depth<br>(ft)                                                                  | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                             | Offset Wellbore Centre<br>+N/-S<br>(ft) | +E/-W<br>(ft) |                            |                             |                               |                      |                            |
| 0.00                                                                                       | 0.00                      | 6.50                      | 6.50                      | 0.50              | 0.50           | -90.08                      | -0.04                                   | -29.98        | 29.98                      |                             |                               |                      |                            |
| 100.00                                                                                     | 100.00                    | 106.50                    | 106.50                    | 0.52              | 0.52           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 28.95                       | 1.04                          | 28.864               |                            |
| 200.00                                                                                     | 200.00                    | 206.50                    | 206.50                    | 0.70              | 0.71           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 28.57                       | 1.41                          | 21.223               |                            |
| 300.00                                                                                     | 300.00                    | 306.50                    | 306.50                    | 0.99              | 1.00           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 28.00                       | 1.99                          | 15.104               |                            |
| 400.00                                                                                     | 400.00                    | 406.50                    | 406.50                    | 1.31              | 1.32           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 27.36                       | 2.63                          | 11.403               |                            |
| 500.00                                                                                     | 500.00                    | 506.50                    | 506.50                    | 1.65              | 1.66           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 26.68                       | 3.30                          | 9.076                |                            |
| 600.00                                                                                     | 600.00                    | 606.50                    | 606.50                    | 1.99              | 2.00           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 25.99                       | 3.99                          | 7.509                |                            |
| 700.00                                                                                     | 700.00                    | 706.50                    | 706.50                    | 2.34              | 2.35           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 25.29                       | 4.69                          | 6.393                |                            |
| 800.00                                                                                     | 800.00                    | 806.50                    | 806.50                    | 2.69              | 2.70           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 24.59                       | 5.39                          | 5.560                |                            |
| 900.00                                                                                     | 900.00                    | 906.50                    | 906.50                    | 3.04              | 3.06           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 23.89                       | 6.10                          | 4.916                | Alert                      |
| 1,000.00                                                                                   | 1,000.00                  | 1,006.50                  | 1,006.50                  | 3.40              | 3.41           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 23.18                       | 6.81                          | 4.405                | Alert                      |
| 1,100.00                                                                                   | 1,100.00                  | 1,106.50                  | 1,106.50                  | 3.75              | 3.76           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 22.47                       | 7.52                          | 3.989                | Alert                      |
| 1,200.00                                                                                   | 1,200.00                  | 1,206.50                  | 1,206.50                  | 4.11              | 4.12           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 21.76                       | 8.23                          | 3.644                | Alert                      |
| 1,300.00                                                                                   | 1,300.00                  | 1,306.50                  | 1,306.50                  | 4.46              | 4.48           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 21.04                       | 8.94                          | 3.354                | Alert                      |
| 1,400.00                                                                                   | 1,400.00                  | 1,406.50                  | 1,406.50                  | 4.82              | 4.83           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 20.33                       | 9.65                          | 3.106                | Alert                      |
| 1,500.00                                                                                   | 1,500.00                  | 1,506.50                  | 1,506.50                  | 5.18              | 5.19           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 19.62                       | 10.37                         | 2.892                | Alert                      |
| 1,600.00                                                                                   | 1,600.00                  | 1,606.50                  | 1,606.50                  | 5.53              | 5.55           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 18.90                       | 11.08                         | 2.706                | Alert                      |
| 1,700.00                                                                                   | 1,700.00                  | 1,706.50                  | 1,706.50                  | 5.89              | 5.90           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 18.19                       | 11.79                         | 2.542                | Alert                      |
| 1,800.00                                                                                   | 1,800.00                  | 1,806.50                  | 1,806.50                  | 6.25              | 6.26           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 17.48                       | 12.51                         | 2.397                | Minor Risk                 |
| 1,900.00                                                                                   | 1,900.00                  | 1,906.50                  | 1,906.50                  | 6.61              | 6.62           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 16.76                       | 13.22                         | 2.267                | Minor Risk                 |
| 2,000.00                                                                                   | 2,000.00                  | 2,006.50                  | 2,006.50                  | 6.96              | 6.98           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 16.05                       | 13.94                         | 2.151                | Minor Risk                 |
| 2,100.00                                                                                   | 2,100.00                  | 2,106.50                  | 2,106.50                  | 7.32              | 7.33           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 15.33                       | 14.65                         | 2.046                | Minor Risk                 |
| 2,200.00                                                                                   | 2,200.00                  | 2,206.50                  | 2,206.50                  | 7.68              | 7.69           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 14.62                       | 15.37                         | 1.951                | Minor Risk                 |
| 2,300.00                                                                                   | 2,300.00                  | 2,306.50                  | 2,306.50                  | 8.04              | 8.05           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 13.90                       | 16.08                         | 1.864                | Minor Risk                 |
| 2,400.00                                                                                   | 2,400.00                  | 2,406.50                  | 2,406.50                  | 8.39              | 8.41           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 13.18                       | 16.80                         | 1.785                | Minor Risk                 |
| 2,500.00                                                                                   | 2,500.00                  | 2,506.50                  | 2,506.50                  | 8.75              | 8.76           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 12.47                       | 17.52                         | 1.712                | Minor Risk                 |
| 2,600.00                                                                                   | 2,600.00                  | 2,606.50                  | 2,606.50                  | 9.11              | 9.12           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 11.75                       | 18.23                         | 1.645                | Minor Risk                 |
| 2,700.00                                                                                   | 2,700.00                  | 2,706.50                  | 2,706.50                  | 9.47              | 9.48           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 11.04                       | 18.95                         | 1.582                | Minor Risk                 |
| 2,800.00                                                                                   | 2,800.00                  | 2,806.50                  | 2,806.50                  | 9.83              | 9.84           | -90.08                      | -0.04                                   | -29.98        | 29.98                      | 10.32                       | 19.66                         | 1.525                | Minor Risk, CC, ES         |
| 2,900.00                                                                                   | 2,899.99                  | 2,906.49                  | 2,906.49                  | 10.18             | 10.20          | -148.93                     | -0.04                                   | -29.98        | 30.73                      | 10.35                       | 20.38                         | 1.508                | Minor Risk, SF             |
| 3,000.00                                                                                   | 2,999.96                  | 3,006.46                  | 3,006.46                  | 10.53             | 10.55          | -151.27                     | -0.04                                   | -29.98        | 33.00                      | 11.92                       | 21.08                         | 1.565                | Minor Risk                 |
| 3,100.00                                                                                   | 3,099.86                  | 3,106.36                  | 3,106.36                  | 10.88             | 10.91          | -154.51                     | -0.04                                   | -29.98        | 36.88                      | 15.09                       | 21.79                         | 1.693                | Minor Risk                 |
| 3,200.00                                                                                   | 3,199.68                  | 3,206.18                  | 3,206.18                  | 11.23             | 11.27          | -158.00                     | -0.04                                   | -29.98        | 42.40                      | 19.90                       | 22.50                         | 1.885                | Minor Risk                 |
| 3,300.00                                                                                   | 3,299.47                  | 3,305.97                  | 3,305.97                  | 11.59             | 11.63          | -160.85                     | -0.04                                   | -29.98        | 48.43                      | 25.22                       | 23.21                         | 2.087                | Minor Risk                 |
| 3,400.00                                                                                   | 3,399.27                  | 3,405.77                  | 3,405.77                  | 11.94             | 11.98          | -163.07                     | -0.04                                   | -29.98        | 54.55                      | 30.64                       | 23.91                         | 2.281                | Minor Risk                 |
| 3,500.00                                                                                   | 3,499.06                  | 3,505.56                  | 3,505.56                  | 12.30             | 12.34          | -164.84                     | -0.04                                   | -29.98        | 60.74                      | 36.12                       | 24.62                         | 2.467                | Minor Risk                 |
| 3,600.00                                                                                   | 3,598.85                  | 3,605.35                  | 3,605.35                  | 12.65             | 12.70          | -166.28                     | -0.04                                   | -29.98        | 66.98                      | 41.64                       | 25.33                         | 2.644                | Alert                      |
| 3,700.00                                                                                   | 3,698.64                  | 3,705.14                  | 3,705.14                  | 13.01             | 13.06          | -167.47                     | -0.04                                   | -29.98        | 73.25                      | 47.21                       | 26.04                         | 2.813                | Alert                      |
| 3,800.00                                                                                   | 3,798.44                  | 3,804.94                  | 3,804.94                  | 13.36             | 13.41          | -168.48                     | -0.04                                   | -29.99        | 79.55                      | 52.79                       | 26.75                         | 2.973                | Alert                      |
| 3,900.00                                                                                   | 3,898.23                  | 3,904.80                  | 3,904.79                  | 13.72             | 13.77          | -168.70                     | 0.87                                    | -30.29        | 85.82                      | 58.36                       | 27.46                         | 3.125                | Alert                      |
| 4,000.00                                                                                   | 3,998.02                  | 4,004.64                  | 4,004.60                  | 14.08             | 14.13          | -167.80                     | 3.43                                    | -31.14        | 92.04                      | 63.86                       | 28.17                         | 3.267                | Alert                      |
| 4,100.00                                                                                   | 4,097.81                  | 4,104.42                  | 4,104.28                  | 14.44             | 14.48          | -166.01                     | 7.63                                    | -32.54        | 98.27                      | 69.39                       | 28.88                         | 3.402                | Alert                      |
| 4,200.00                                                                                   | 4,197.61                  | 4,204.07                  | 4,203.73                  | 14.80             | 14.84          | -163.48                     | 13.47                                   | -34.49        | 104.66                     | 75.07                       | 29.59                         | 3.537                | Alert                      |
| 4,300.00                                                                                   | 4,297.40                  | 4,303.58                  | 4,302.93                  | 15.16             | 15.20          | -160.39                     | 20.87                                   | -36.96        | 111.39                     | 81.10                       | 30.30                         | 3.677                | Alert                      |
| 4,400.00                                                                                   | 4,397.19                  | 4,403.15                  | 4,402.17                  | 15.52             | 15.55          | -157.46                     | 28.70                                   | -39.56        | 118.48                     | 87.47                       | 31.01                         | 3.821                | Alert                      |
| 4,500.00                                                                                   | 4,496.98                  | 4,502.72                  | 4,501.40                  | 15.88             | 15.91          | -154.85                     | 36.53                                   | -42.17        | 125.84                     | 94.13                       | 31.72                         | 3.968                | Alert                      |
| 4,600.00                                                                                   | 4,596.78                  | 4,602.30                  | 4,600.63                  | 16.24             | 16.26          | -152.54                     | 44.35                                   | -44.78        | 133.44                     | 101.01                      | 32.43                         | 4.115                | Alert                      |
| 4,700.00                                                                                   | 4,696.57                  | 4,701.87                  | 4,699.86                  | 16.60             | 16.62          | -150.48                     | 52.18                                   | -47.39        | 141.22                     | 108.09                      | 33.14                         | 4.262                | Alert                      |
| 4,800.00                                                                                   | 4,796.36                  | 4,801.45                  | 4,799.09                  | 16.96             | 16.98          | -148.64                     | 60.01                                   | -50.00        | 149.17                     | 115.32                      | 33.85                         | 4.407                | Alert                      |
| 4,900.00                                                                                   | 4,896.15                  | 4,901.02                  | 4,898.33                  | 17.32             | 17.34          | -146.98                     | 67.83                                   | -52.61        | 157.26                     | 122.69                      | 34.56                         | 4.550                | Alert                      |
| 5,000.00                                                                                   | 4,995.95                  | 5,000.60                  | 4,997.56                  | 17.68             | 17.70          | -145.49                     | 75.66                                   | -55.22        | 165.46                     | 130.19                      | 35.28                         | 4.690                | Alert                      |

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

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 2H  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

| Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - 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 |             |                       | Distance                          |            | Minimum Separation   |                       | Separation Factor       |                   | Warning |                            |
| Measured Depth (ft)                                                                        | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor |         |                            |
| 5,100.00                                                                                   | 5,095.74            | 5,100.17            | 5,096.79            | 18.04           | 18.06       | -144.14               | 83.48                             | -57.83     | 173.77               | 137.78                | 35.99                   | 4.828             | Alert   |                            |
| 5,200.00                                                                                   | 5,195.53            | 5,200.25            | 5,196.02            | 18.41           | 18.42       | -142.91               | 91.31                             | -60.44     | 182.16               | 145.45                | 36.71                   | 4.962             | Alert   |                            |
| 5,300.00                                                                                   | 5,295.32            | 5,300.68            | 5,295.26            | 18.77           | 18.78       | -141.79               | 99.14                             | -63.04     | 190.63               | 153.20                | 37.43                   | 5.093             |         |                            |
| 5,400.00                                                                                   | 5,395.12            | 5,401.10            | 5,394.49            | 19.13           | 19.15       | -140.77               | 106.96                            | -65.65     | 199.17               | 161.02                | 38.15                   | 5.221             |         |                            |
| 5,500.00                                                                                   | 5,494.91            | 5,501.53            | 5,493.72            | 19.49           | 19.51       | -139.83               | 114.79                            | -68.26     | 207.76               | 168.89                | 38.87                   | 5.345             |         |                            |
| 5,600.00                                                                                   | 5,594.70            | 5,601.95            | 5,592.95            | 19.86           | 19.88       | -138.96               | 122.62                            | -70.87     | 216.40               | 176.81                | 39.59                   | 5.466             |         |                            |
| 5,700.00                                                                                   | 5,694.49            | 5,702.38            | 5,692.19            | 20.22           | 20.24       | -138.17               | 130.44                            | -73.48     | 225.09               | 184.78                | 40.31                   | 5.584             |         |                            |
| 5,800.00                                                                                   | 5,794.29            | 5,802.81            | 5,791.42            | 20.58           | 20.61       | -137.43               | 138.27                            | -76.09     | 233.82               | 192.79                | 41.04                   | 5.698             |         |                            |
| 5,900.00                                                                                   | 5,894.08            | 5,903.23            | 5,890.65            | 20.95           | 20.97       | -136.74               | 146.10                            | -78.70     | 242.59               | 200.83                | 41.76                   | 5.809             |         |                            |
| 6,000.00                                                                                   | 5,993.87            | 6,003.66            | 5,989.88            | 21.31           | 21.34       | -136.10               | 153.92                            | -81.31     | 251.39               | 208.90                | 42.48                   | 5.917             |         |                            |
| 6,100.00                                                                                   | 6,093.67            | 6,104.08            | 6,089.11            | 21.67           | 21.71       | -135.51               | 161.75                            | -83.91     | 260.21               | 217.01                | 43.21                   | 6.023             |         |                            |
| 6,200.00                                                                                   | 6,193.46            | 6,204.51            | 6,188.35            | 22.04           | 22.07       | -134.96               | 169.58                            | -86.52     | 269.06               | 225.13                | 43.93                   | 6.125             |         |                            |
| 6,300.00                                                                                   | 6,293.25            | 6,304.93            | 6,287.58            | 22.40           | 22.44       | -134.44               | 177.40                            | -89.13     | 277.94               | 233.29                | 44.65                   | 6.224             |         |                            |
| 6,400.00                                                                                   | 6,393.04            | 6,405.36            | 6,386.81            | 22.77           | 22.81       | -133.95               | 185.23                            | -91.74     | 286.84               | 241.46                | 45.38                   | 6.321             |         |                            |
| 6,500.00                                                                                   | 6,492.84            | 6,494.22            | 6,486.04            | 23.13           | 23.13       | -133.49               | 193.05                            | -94.35     | 295.75               | 249.69                | 46.06                   | 6.421             |         |                            |
| 6,600.00                                                                                   | 6,592.63            | 6,606.21            | 6,585.28            | 23.49           | 23.54       | -133.06               | 200.88                            | -96.96     | 304.69               | 257.86                | 46.83                   | 6.506             |         |                            |
| 6,700.00                                                                                   | 6,692.42            | 6,706.63            | 6,684.51            | 23.86           | 23.91       | -132.65               | 208.71                            | -99.57     | 313.64               | 266.08                | 47.55                   | 6.595             |         |                            |
| 6,800.00                                                                                   | 6,792.21            | 6,807.06            | 6,783.74            | 24.22           | 24.28       | -132.27               | 216.53                            | -102.18    | 322.60               | 274.32                | 48.28                   | 6.682             |         |                            |
| 6,900.00                                                                                   | 6,892.01            | 6,907.48            | 6,882.97            | 24.59           | 24.65       | -131.90               | 224.36                            | -104.79    | 331.58               | 282.58                | 49.01                   | 6.766             |         |                            |
| 7,000.00                                                                                   | 6,991.80            | 7,007.91            | 6,982.21            | 24.95           | 25.02       | -131.56               | 232.19                            | -107.39    | 340.57               | 290.84                | 49.73                   | 6.848             |         |                            |
| 7,100.00                                                                                   | 7,091.59            | 7,091.66            | 7,081.44            | 25.32           | 25.33       | -131.23               | 240.01                            | -110.00    | 349.58               | 299.18                | 50.40                   | 6.936             |         |                            |
| 7,200.00                                                                                   | 7,191.38            | 7,208.76            | 7,180.67            | 25.68           | 25.76       | -130.92               | 247.84                            | -112.61    | 358.59               | 307.40                | 51.19                   | 7.006             |         |                            |
| 7,300.00                                                                                   | 7,291.18            | 7,309.19            | 7,279.90            | 26.05           | 26.13       | -130.63               | 255.67                            | -115.22    | 367.61               | 315.70                | 51.91                   | 7.081             |         |                            |
| 7,400.00                                                                                   | 7,390.97            | 7,409.61            | 7,379.13            | 26.41           | 26.50       | -130.34               | 263.49                            | -117.83    | 376.65               | 324.01                | 52.64                   | 7.155             |         |                            |
| 7,500.00                                                                                   | 7,490.76            | 7,489.96            | 7,478.37            | 26.78           | 26.79       | -130.08               | 271.32                            | -120.44    | 385.69               | 332.39                | 53.29                   | 7.237             |         |                            |
| 7,600.00                                                                                   | 7,590.55            | 7,589.54            | 7,577.60            | 27.14           | 27.16       | -129.82               | 279.15                            | -123.05    | 394.74               | 340.72                | 54.02                   | 7.307             |         |                            |
| 7,700.00                                                                                   | 7,690.35            | 7,689.11            | 7,676.83            | 27.51           | 27.52       | -129.58               | 286.97                            | -125.66    | 403.79               | 349.05                | 54.74                   | 7.376             |         |                            |
| 7,800.00                                                                                   | 7,790.14            | 7,795.12            | 7,782.57            | 27.87           | 27.91       | -129.47               | 294.08                            | -128.03    | 412.13               | 356.61                | 55.52                   | 7.423             |         |                            |
| 7,900.00                                                                                   | 7,889.93            | 7,901.83            | 7,889.18            | 28.24           | 28.30       | -129.70               | 298.43                            | -129.48    | 418.81               | 362.52                | 56.29                   | 7.441             |         |                            |
| 8,000.00                                                                                   | 7,989.72            | 8,008.63            | 7,995.96            | 28.60           | 28.68       | -130.24               | 299.96                            | -129.98    | 423.84               | 366.81                | 57.04                   | 7.431             |         |                            |
| 8,100.00                                                                                   | 8,089.52            | 8,108.68            | 8,096.02            | 28.97           | 29.03       | -130.90               | 299.96                            | -129.98    | 428.04               | 370.28                | 57.75                   | 7.412             |         |                            |
| 8,200.00                                                                                   | 8,189.31            | 8,208.48            | 8,195.81            | 29.34           | 29.39       | -131.54               | 299.96                            | -129.98    | 432.28               | 373.82                | 58.47                   | 7.394             |         |                            |
| 8,300.00                                                                                   | 8,289.10            | 8,308.27            | 8,295.60            | 29.70           | 29.74       | -132.17               | 299.96                            | -129.98    | 436.58               | 377.40                | 59.18                   | 7.377             |         |                            |
| 8,400.00                                                                                   | 8,388.89            | 8,408.06            | 8,395.39            | 30.07           | 30.09       | -132.79               | 299.96                            | -129.98    | 440.94               | 381.04                | 59.90                   | 7.361             |         |                            |
| 8,500.00                                                                                   | 8,488.69            | 8,507.85            | 8,495.19            | 30.43           | 30.45       | -133.40               | 299.96                            | -129.98    | 445.34               | 384.73                | 60.61                   | 7.347             |         |                            |
| 8,600.00                                                                                   | 8,588.48            | 8,607.65            | 8,594.98            | 30.80           | 30.80       | -134.00               | 299.96                            | -129.98    | 449.79               | 388.46                | 61.33                   | 7.334             |         |                            |
| 8,700.00                                                                                   | 8,688.27            | 8,707.44            | 8,694.77            | 31.16           | 31.16       | -134.58               | 299.96                            | -129.98    | 454.29               | 392.25                | 62.04                   | 7.322             |         |                            |
| 8,800.00                                                                                   | 8,788.06            | 8,807.23            | 8,794.56            | 31.53           | 31.51       | -135.15               | 299.96                            | -129.98    | 458.84               | 396.08                | 62.76                   | 7.311             |         |                            |
| 8,900.00                                                                                   | 8,887.86            | 8,907.02            | 8,894.36            | 31.90           | 31.86       | -135.71               | 299.96                            | -129.98    | 463.43               | 399.95                | 63.47                   | 7.301             |         |                            |
| 9,000.00                                                                                   | 8,987.65            | 9,006.82            | 8,994.15            | 32.26           | 32.22       | -136.26               | 299.96                            | -129.98    | 468.06               | 403.87                | 64.19                   | 7.292             |         |                            |
| 9,100.00                                                                                   | 9,087.44            | 9,106.61            | 9,093.94            | 32.63           | 32.57       | -136.80               | 299.96                            | -129.98    | 472.74               | 407.84                | 64.90                   | 7.284             |         |                            |
| 9,200.00                                                                                   | 9,187.23            | 9,206.40            | 9,193.73            | 32.99           | 32.93       | -137.33               | 299.96                            | -129.98    | 477.46               | 411.84                | 65.62                   | 7.276             |         |                            |
| 9,300.00                                                                                   | 9,287.03            | 9,306.20            | 9,293.53            | 33.36           | 33.28       | -137.85               | 299.96                            | -129.98    | 482.22               | 415.88                | 66.34                   | 7.269             |         |                            |
| 9,400.00                                                                                   | 9,386.82            | 9,405.99            | 9,393.32            | 33.73           | 33.64       | -138.35               | 299.96                            | -129.98    | 487.01               | 419.96                | 67.05                   | 7.263             |         |                            |
| 9,500.00                                                                                   | 9,486.61            | 9,505.78            | 9,493.11            | 34.09           | 33.99       | -138.85               | 299.96                            | -129.98    | 491.85               | 424.08                | 67.77                   | 7.258             |         |                            |
| 9,600.00                                                                                   | 9,586.40            | 9,605.57            | 9,592.90            | 34.46           | 34.35       | -139.34               | 299.96                            | -129.98    | 496.72               | 428.23                | 68.48                   | 7.253             |         |                            |
| 9,700.00                                                                                   | 9,686.20            | 9,705.37            | 9,692.70            | 34.83           | 34.70       | -139.82               | 299.96                            | -129.98    | 501.62               | 432.42                | 69.20                   | 7.249             |         |                            |
| 9,800.00                                                                                   | 9,785.99            | 9,805.16            | 9,792.49            | 35.19           | 35.05       | -140.29               | 299.96                            | -129.98    | 506.56               | 436.65                | 69.91                   | 7.246             |         |                            |
| 9,900.00                                                                                   | 9,885.78            | 9,904.95            | 9,892.28            | 35.56           | 35.41       | -140.75               | 299.96                            | -129.98    | 511.53               | 440.91                | 70.63                   | 7.243             |         |                            |
| 10,000.00                                                                                  | 9,985.58            | 10,004.74           | 9,992.08            | 35.92           | 35.76       | -141.20               | 299.96                            | -129.98    | 516.54               | 445.20                | 71.34                   | 7.240             |         |                            |
| 10,100.00                                                                                  | 10,085.37           | 10,104.54           | 10,091.87           | 36.29           | 36.12       | -141.64               | 299.96                            | -129.98    | 521.58               | 449.52                | 72.06                   | 7.238             |         |                            |

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

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

| Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - 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   |                | Highside<br>Toolface<br>(°) | Offset Wellbore Centre |               | Distance                   |                             | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning |
| Measured<br>Depth<br>(ft)                                                                  | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                             | +N/-S<br>(ft)          | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) |                               |                      |         |
| 10,200.00                                                                                  | 10,185.16                 | 10,204.33                 | 10,191.66                 | 36.66             | 36.47          | -142.08                     | 299.96                 | -129.98       | 526.64                     | 453.87                      | 72.77                         | 7.237                |         |
| 10,300.00                                                                                  | 10,284.95                 | 10,304.12                 | 10,291.45                 | 37.02             | 36.83          | -142.50                     | 299.96                 | -129.98       | 531.74                     | 458.25                      | 73.49                         | 7.236                |         |
| 10,400.00                                                                                  | 10,384.75                 | 10,403.91                 | 10,391.25                 | 37.39             | 37.18          | -142.92                     | 299.96                 | -129.98       | 536.87                     | 462.68                      | 74.20                         | 7.235                |         |
| 10,500.00                                                                                  | 10,484.54                 | 10,503.71                 | 10,491.04                 | 37.76             | 37.54          | -143.33                     | 299.96                 | -129.98       | 542.02                     | 467.10                      | 74.92                         | 7.235                |         |
| 10,600.00                                                                                  | 10,584.33                 | 10,603.50                 | 10,590.83                 | 38.12             | 37.89          | -143.73                     | 299.96                 | -129.98       | 547.20                     | 471.57                      | 75.63                         | 7.235                |         |
| 10,700.00                                                                                  | 10,684.12                 | 10,703.29                 | 10,690.62                 | 38.49             | 38.25          | -144.13                     | 299.96                 | -129.98       | 552.41                     | 476.06                      | 76.35                         | 7.235                |         |
| 10,800.00                                                                                  | 10,783.92                 | 10,803.08                 | 10,790.42                 | 38.86             | 38.61          | -144.52                     | 299.96                 | -129.98       | 557.64                     | 480.58                      | 77.07                         | 7.236                |         |
| 10,900.00                                                                                  | 10,883.71                 | 10,902.88                 | 10,890.21                 | 39.22             | 38.96          | -144.90                     | 299.96                 | -129.98       | 562.90                     | 485.12                      | 77.78                         | 7.237                |         |
| 11,000.00                                                                                  | 10,983.50                 | 11,002.67                 | 10,990.00                 | 39.59             | 39.32          | -145.27                     | 299.96                 | -129.98       | 568.18                     | 489.68                      | 78.50                         | 7.238                |         |
| 11,100.00                                                                                  | 11,083.29                 | 11,102.46                 | 11,089.79                 | 39.96             | 39.67          | -145.63                     | 299.96                 | -129.98       | 573.49                     | 494.28                      | 79.21                         | 7.240                |         |
| 11,200.00                                                                                  | 11,183.09                 | 11,202.25                 | 11,189.59                 | 40.32             | 40.03          | -145.99                     | 299.96                 | -129.98       | 578.82                     | 498.89                      | 79.93                         | 7.242                |         |
| 11,300.00                                                                                  | 11,282.88                 | 11,302.05                 | 11,289.38                 | 40.69             | 40.38          | -146.35                     | 299.96                 | -129.98       | 584.17                     | 503.52                      | 80.64                         | 7.244                |         |
| 11,400.00                                                                                  | 11,382.67                 | 11,401.84                 | 11,389.17                 | 41.06             | 40.74          | -146.69                     | 299.96                 | -129.98       | 589.54                     | 508.18                      | 81.36                         | 7.246                |         |
| 11,500.00                                                                                  | 11,482.46                 | 11,501.63                 | 11,488.96                 | 41.42             | 41.09          | -147.03                     | 299.96                 | -129.98       | 594.94                     | 512.86                      | 82.08                         | 7.249                |         |
| 11,600.00                                                                                  | 11,582.26                 | 11,601.42                 | 11,588.76                 | 41.79             | 41.45          | -147.37                     | 299.96                 | -129.98       | 600.35                     | 517.56                      | 82.79                         | 7.251                |         |
| 11,700.00                                                                                  | 11,682.07                 | 11,701.23                 | 11,688.57                 | 42.16             | 41.81          | -147.70                     | 299.96                 | -129.98       | 605.55                     | 522.04                      | 83.51                         | 7.252                |         |
| 11,800.00                                                                                  | 11,781.99                 | 11,801.15                 | 11,788.49                 | 42.52             | 42.16          | -147.92                     | 299.96                 | -129.98       | 608.87                     | 524.65                      | 84.22                         | 7.229                |         |
| 11,900.00                                                                                  | 11,882.00                 | 11,901.17                 | 11,888.50                 | 42.87             | 42.52          | -90.00                      | 299.96                 | -129.98       | 609.98                     | 525.05                      | 84.93                         | 7.182                |         |
| 12,000.00                                                                                  | 11,981.97                 | 12,001.14                 | 11,988.47                 | 43.22             | 42.87          | -90.00                      | 299.96                 | -129.98       | 609.98                     | 524.35                      | 85.64                         | 7.123                |         |
| 12,100.00                                                                                  | 12,081.97                 | 12,101.14                 | 12,088.47                 | 43.57             | 43.23          | -90.00                      | 299.96                 | -129.98       | 609.98                     | 523.64                      | 86.35                         | 7.064                |         |
| 12,200.00                                                                                  | 12,181.97                 | 12,201.28                 | 12,188.59                 | 43.92             | 43.58          | -90.11                      | 298.79                 | -129.98       | 609.98                     | 522.94                      | 87.04                         | 7.008                |         |
| 12,219.28                                                                                  | 12,201.25                 | 12,220.55                 | 12,207.80                 | 43.98             | 43.64          | 90.24                       | 297.24                 | -129.97       | 609.98                     | 522.81                      | 87.17                         | 6.998                |         |
| 12,300.00                                                                                  | 12,281.91                 | 12,299.76                 | 12,285.85                 | 44.26             | 43.88          | 89.18                       | 284.12                 | -129.91       | 610.08                     | 522.41                      | 87.67                         | 6.959                |         |
| 12,400.00                                                                                  | 12,380.27                 | 12,395.66                 | 12,376.79                 | 44.56             | 44.14          | 87.83                       | 254.04                 | -129.76       | 610.58                     | 522.38                      | 88.22                         | 6.921                |         |
| 12,500.00                                                                                  | 12,474.12                 | 12,489.44                 | 12,459.66                 | 44.83             | 44.37          | 86.55                       | 210.37                 | -129.54       | 611.41                     | 522.73                      | 88.69                         | 6.894                |         |
| 12,600.00                                                                                  | 12,560.62                 | 12,581.40                 | 12,532.96                 | 45.05             | 44.56          | 85.38                       | 155.00                 | -129.26       | 612.50                     | 523.43                      | 89.07                         | 6.877                |         |
| 12,700.00                                                                                  | 12,637.14                 | 12,671.83                 | 12,595.50                 | 45.22             | 44.73          | 84.35                       | 89.81                  | -128.94       | 613.72                     | 524.35                      | 89.37                         | 6.867                |         |
| 12,800.00                                                                                  | 12,701.34                 | 12,761.01                 | 12,646.38                 | 45.34             | 44.89          | 83.48                       | 16.68                  | -128.57       | 614.97                     | 525.36                      | 89.62                         | 6.862                |         |
| 12,900.00                                                                                  | 12,751.29                 | 12,849.22                 | 12,684.95                 | 45.43             | 45.04          | 82.80                       | -62.55                 | -128.18       | 616.13                     | 526.30                      | 89.83                         | 6.859                |         |
| 13,000.00                                                                                  | 12,785.46                 | 12,936.73                 | 12,710.77                 | 45.55             | 45.19          | 82.30                       | -146.08                | -127.76       | 617.10                     | 527.06                      | 90.05                         | 6.853                |         |
| 13,100.00                                                                                  | 12,802.81                 | 13,023.80                 | 12,723.54                 | 45.73             | 45.33          | 82.02                       | -232.12                | -127.33       | 617.82                     | 527.54                      | 90.28                         | 6.843                |         |
| 13,200.00                                                                                  | 12,805.00                 | 13,117.64                 | 12,725.00                 | 45.92             | 45.48          | 81.96                       | -325.92                | -126.86       | 618.24                     | 527.68                      | 90.58                         | 6.825                |         |
| 13,300.00                                                                                  | 12,805.00                 | 13,217.64                 | 12,725.00                 | 46.14             | 45.68          | 81.96                       | -425.92                | -126.37       | 618.58                     | 527.61                      | 90.97                         | 6.800                |         |
| 13,400.00                                                                                  | 12,805.00                 | 13,317.64                 | 12,725.00                 | 46.40             | 45.93          | 81.97                       | -525.92                | -125.87       | 618.93                     | 527.48                      | 91.45                         | 6.768                |         |
| 13,500.00                                                                                  | 12,805.00                 | 13,417.64                 | 12,725.00                 | 46.70             | 46.22          | 81.97                       | -625.92                | -125.37       | 619.28                     | 527.26                      | 92.02                         | 6.730                |         |
| 13,600.00                                                                                  | 12,805.00                 | 13,517.64                 | 12,725.00                 | 47.05             | 46.55          | 81.98                       | -725.91                | -124.87       | 619.62                     | 526.95                      | 92.67                         | 6.686                |         |
| 13,700.00                                                                                  | 12,805.00                 | 13,617.64                 | 12,725.00                 | 47.43             | 46.92          | 81.98                       | -825.91                | -124.37       | 619.97                     | 526.56                      | 93.41                         | 6.637                |         |
| 13,800.00                                                                                  | 12,805.00                 | 13,717.63                 | 12,725.00                 | 47.85             | 47.34          | 81.98                       | -925.91                | -123.87       | 620.31                     | 526.08                      | 94.23                         | 6.583                |         |
| 13,900.00                                                                                  | 12,805.00                 | 13,817.63                 | 12,725.00                 | 48.31             | 47.80          | 81.99                       | -1,025.91              | -123.37       | 620.66                     | 525.52                      | 95.14                         | 6.524                |         |
| 14,000.00                                                                                  | 12,805.00                 | 13,917.63                 | 12,725.00                 | 48.81             | 48.29          | 81.99                       | -1,125.91              | -122.88       | 621.01                     | 524.89                      | 96.12                         | 6.461                |         |
| 14,100.00                                                                                  | 12,805.00                 | 14,017.63                 | 12,725.00                 | 49.35             | 48.83          | 82.00                       | -1,225.90              | -122.38       | 621.35                     | 524.18                      | 97.17                         | 6.394                |         |
| 14,200.00                                                                                  | 12,805.00                 | 14,117.63                 | 12,725.00                 | 49.92             | 49.40          | 82.00                       | -1,325.90              | -121.88       | 621.70                     | 523.40                      | 98.30                         | 6.324                |         |
| 14,300.00                                                                                  | 12,805.00                 | 14,217.63                 | 12,725.00                 | 50.53             | 50.01          | 82.01                       | -1,425.90              | -121.38       | 622.05                     | 522.54                      | 99.50                         | 6.252                |         |
| 14,400.00                                                                                  | 12,805.00                 | 14,317.63                 | 12,725.00                 | 51.17             | 50.65          | 82.01                       | -1,525.90              | -120.88       | 622.39                     | 521.62                      | 100.77                        | 6.176                |         |
| 14,500.00                                                                                  | 12,805.00                 | 14,417.63                 | 12,725.00                 | 51.84             | 51.32          | 82.02                       | -1,625.90              | -120.38       | 622.74                     | 520.63                      | 102.11                        | 6.099                |         |
| 14,600.00                                                                                  | 12,805.00                 | 14,517.63                 | 12,725.00                 | 52.54             | 52.03          | 82.02                       | -1,725.89              | -119.88       | 623.09                     | 519.58                      | 103.50                        | 6.020                |         |
| 14,700.00                                                                                  | 12,805.00                 | 14,617.63                 | 12,725.00                 | 53.28             | 52.77          | 82.02                       | -1,825.89              | -119.39       | 623.43                     | 518.47                      | 104.96                        | 5.940                |         |
| 14,800.00                                                                                  | 12,805.00                 | 14,717.63                 | 12,725.00                 | 54.04             | 53.53          | 82.03                       | -1,925.89              | -118.89       | 623.78                     | 517.30                      | 106.48                        | 5.858                |         |
| 14,900.00                                                                                  | 12,805.00                 | 14,817.63                 | 12,725.00                 | 54.83             | 54.32          | 82.03                       | -2,025.89              | -118.39       | 624.12                     | 516.07                      | 108.05                        | 5.776                |         |
| 15,000.00                                                                                  | 12,805.00                 | 14,917.63                 | 12,725.00                 | 55.65             | 55.15          | 82.04                       | -2,125.89              | -117.89       | 624.47                     | 514.79                      | 109.68                        | 5.694                |         |
| 15,100.00                                                                                  | 12,805.00                 | 15,017.63                 | 12,725.00                 | 56.49             | 55.99          | 82.04                       | -2,225.89              | -117.39       | 624.82                     | 513.46                      | 111.36                        | 5.611                |         |

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

# Anticollision Report

Company: WCDSC Permian NM  
Project: Lea County (NAD83 New Mexico East)  
Reference Site: Sec 23-T26S-R34E  
Site Error: 0.00 ft  
Reference Well: Mean Green 23-35 Fed Com 2H  
Well Error: 0.50 ft  
Reference Wellbore: Wellbore #1  
Reference Design: Permit Plan 2

Local Co-ordinate Reference  
TVD Reference: RKB1 @ 3218.30ft  
MD Reference: RKB1 @ 3218.30ft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Output errors are at: 2.00 sigma  
Database: EDM r5000.141\_Prod US  
Offset TVD Reference: Offset Datum

| Offset Design      Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - 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   |                |                          | Distance                                |               | Minimum Separation      |                          | Separation Factor  |        | Warning                         |  |
| Measured Depth<br>(ft)                                                                          | Vertical Depth<br>(ft) | Measured Depth<br>(ft) | Vertical Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) | Highside Toolface<br>(°) | Offset Wellbore Centre<br>+N/-S<br>(ft) | +E/-W<br>(ft) | Between Centres<br>(ft) | Between Ellipses<br>(ft) | Separation<br>(ft) | Factor |                                 |  |
| 15,200.00                                                                                       | 12,805.00              | 15,117.63              | 12,725.00              | 57.36             | 56.86          | 82.05                    | -2,325.88                               | -116.89       | 625.16                  | 512.08                   | 113.08             | 5.528  |                                 |  |
| 15,300.00                                                                                       | 12,805.00              | 15,217.63              | 12,725.00              | 58.25             | 57.76          | 82.05                    | -2,425.88                               | -116.39       | 625.51                  | 510.65                   | 114.85             | 5.446  |                                 |  |
| 15,400.00                                                                                       | 12,805.00              | 15,317.62              | 12,725.00              | 59.17             | 58.67          | 82.06                    | -2,525.88                               | -115.90       | 625.86                  | 509.18                   | 116.67             | 5.364  |                                 |  |
| 15,500.00                                                                                       | 12,805.00              | 15,417.62              | 12,725.00              | 60.10             | 59.61          | 82.06                    | -2,625.88                               | -115.40       | 626.20                  | 507.67                   | 118.53             | 5.283  |                                 |  |
| 15,600.00                                                                                       | 12,805.00              | 15,517.62              | 12,725.00              | 61.05             | 60.57          | 82.06                    | -2,725.88                               | -114.90       | 626.55                  | 506.12                   | 120.43             | 5.203  |                                 |  |
| 15,700.00                                                                                       | 12,805.00              | 15,617.62              | 12,725.00              | 62.03             | 61.54          | 82.07                    | -2,825.87                               | -114.40       | 626.90                  | 504.52                   | 122.37             | 5.123  |                                 |  |
| 15,800.00                                                                                       | 12,805.00              | 15,717.62              | 12,725.00              | 63.02             | 62.54          | 82.07                    | -2,925.87                               | -113.90       | 627.24                  | 502.90                   | 124.35             | 5.044  |                                 |  |
| 15,900.00                                                                                       | 12,805.00              | 15,817.62              | 12,725.00              | 64.03             | 63.55          | 82.08                    | -3,025.87                               | -113.40       | 627.59                  | 501.23                   | 126.36             | 4.967  | Alert                           |  |
| 16,000.00                                                                                       | 12,805.00              | 15,917.62              | 12,725.00              | 65.06             | 64.58          | 82.08                    | -3,125.87                               | -112.90       | 627.93                  | 499.53                   | 128.40             | 4.890  | Alert                           |  |
| 16,100.00                                                                                       | 12,805.00              | 16,017.62              | 12,725.00              | 66.10             | 65.63          | 82.09                    | -3,225.87                               | -112.41       | 628.28                  | 497.80                   | 130.48             | 4.815  | Alert                           |  |
| 16,200.00                                                                                       | 12,805.00              | 16,117.62              | 12,725.00              | 67.16             | 66.69          | 82.09                    | -3,325.87                               | -111.91       | 628.63                  | 496.04                   | 132.58             | 4.741  | Alert                           |  |
| 16,300.00                                                                                       | 12,805.00              | 16,217.62              | 12,725.00              | 68.23             | 67.77          | 82.10                    | -3,425.86                               | -111.41       | 628.97                  | 494.26                   | 134.72             | 4.669  | Alert                           |  |
| 16,400.00                                                                                       | 12,805.00              | 16,317.62              | 12,725.00              | 69.32             | 68.86          | 82.10                    | -3,525.86                               | -110.91       | 629.32                  | 492.44                   | 136.88             | 4.598  | Alert                           |  |
| 16,500.00                                                                                       | 12,805.00              | 16,417.62              | 12,725.00              | 70.42             | 69.96          | 82.10                    | -3,625.86                               | -110.41       | 629.67                  | 490.60                   | 139.07             | 4.528  | Alert                           |  |
| 16,600.00                                                                                       | 12,805.00              | 16,517.62              | 12,725.00              | 71.53             | 71.07          | 82.11                    | -3,725.86                               | -109.91       | 630.01                  | 488.73                   | 141.28             | 4.459  | Alert                           |  |
| 16,700.00                                                                                       | 12,805.00              | 16,617.62              | 12,725.00              | 72.65             | 72.20          | 82.11                    | -3,825.86                               | -109.41       | 630.36                  | 486.84                   | 143.52             | 4.392  | Alert                           |  |
| 16,800.00                                                                                       | 12,805.00              | 16,717.62              | 12,725.00              | 73.79             | 73.34          | 82.12                    | -3,925.85                               | -108.92       | 630.71                  | 484.92                   | 145.78             | 4.326  | Alert                           |  |
| 16,900.00                                                                                       | 12,805.00              | 16,817.62              | 12,725.00              | 74.93             | 74.49          | 82.12                    | -4,025.85                               | -108.42       | 631.05                  | 482.99                   | 148.06             | 4.262  | Alert                           |  |
| 17,000.00                                                                                       | 12,805.00              | 16,917.62              | 12,725.00              | 76.09             | 75.65          | 82.13                    | -4,125.85                               | -107.92       | 631.40                  | 481.03                   | 150.37             | 4.199  | Alert                           |  |
| 17,100.00                                                                                       | 12,805.00              | 17,017.61              | 12,725.00              | 77.26             | 76.82          | 82.13                    | -4,225.85                               | -107.42       | 631.74                  | 479.05                   | 152.69             | 4.137  | Alert                           |  |
| 17,200.00                                                                                       | 12,805.00              | 17,117.61              | 12,725.00              | 78.44             | 78.00          | 82.13                    | -4,325.85                               | -106.92       | 632.09                  | 477.06                   | 155.03             | 4.077  | Alert                           |  |
| 17,300.00                                                                                       | 12,805.00              | 17,217.61              | 12,725.00              | 79.62             | 79.19          | 82.14                    | -4,425.84                               | -106.42       | 632.44                  | 475.04                   | 157.39             | 4.018  | Alert                           |  |
| 17,400.00                                                                                       | 12,805.00              | 17,317.61              | 12,725.00              | 80.82             | 80.38          | 82.14                    | -4,525.84                               | -105.92       | 632.78                  | 473.01                   | 159.77             | 3.961  | Alert                           |  |
| 17,500.00                                                                                       | 12,805.00              | 17,417.61              | 12,725.00              | 82.02             | 81.59          | 82.15                    | -4,625.84                               | -105.43       | 633.13                  | 470.96                   | 162.17             | 3.904  | Alert                           |  |
| 17,600.00                                                                                       | 12,805.00              | 17,517.61              | 12,725.00              | 83.23             | 82.80          | 82.15                    | -4,725.84                               | -104.93       | 633.48                  | 468.90                   | 164.58             | 3.849  | Alert                           |  |
| 17,700.00                                                                                       | 12,805.00              | 17,617.61              | 12,725.00              | 84.45             | 84.02          | 82.16                    | -4,825.84                               | -104.43       | 633.82                  | 466.82                   | 167.00             | 3.795  | Alert                           |  |
| 17,800.00                                                                                       | 12,805.00              | 17,717.61              | 12,725.00              | 85.67             | 85.25          | 82.16                    | -4,925.84                               | -103.93       | 634.17                  | 464.73                   | 169.44             | 3.743  | Alert                           |  |
| 17,900.00                                                                                       | 12,805.00              | 17,817.61              | 12,725.00              | 86.91             | 86.48          | 82.16                    | -5,025.83                               | -103.43       | 634.52                  | 462.62                   | 171.89             | 3.691  | Alert                           |  |
| 18,000.00                                                                                       | 12,805.00              | 17,917.61              | 12,725.00              | 88.15             | 87.73          | 82.17                    | -5,125.83                               | -102.93       | 634.86                  | 460.50                   | 174.36             | 3.641  | Alert                           |  |
| 18,100.00                                                                                       | 12,805.00              | 18,017.61              | 12,725.00              | 89.39             | 88.97          | 82.17                    | -5,225.83                               | -102.43       | 635.21                  | 458.37                   | 176.84             | 3.592  | Alert                           |  |
| 18,200.00                                                                                       | 12,805.00              | 18,117.61              | 12,725.00              | 90.65             | 90.23          | 82.18                    | -5,325.83                               | -101.94       | 635.56                  | 456.22                   | 179.33             | 3.544  | Alert                           |  |
| 18,300.00                                                                                       | 12,805.00              | 18,217.61              | 12,725.00              | 91.90             | 91.49          | 82.18                    | -5,425.83                               | -101.44       | 635.90                  | 454.07                   | 181.84             | 3.497  | Alert                           |  |
| 18,400.00                                                                                       | 12,805.00              | 18,317.61              | 12,725.00              | 93.17             | 92.75          | 82.19                    | -5,525.82                               | -100.94       | 636.25                  | 451.90                   | 184.35             | 3.451  | Alert                           |  |
| 18,500.00                                                                                       | 12,805.00              | 18,417.61              | 12,725.00              | 94.44             | 94.02          | 82.19                    | -5,625.82                               | -100.44       | 636.59                  | 449.72                   | 186.88             | 3.406  | Alert                           |  |
| 18,600.00                                                                                       | 12,805.00              | 18,517.61              | 12,725.00              | 95.71             | 95.30          | 82.19                    | -5,725.82                               | -99.94        | 636.94                  | 447.53                   | 189.41             | 3.363  | Alert                           |  |
| 18,700.00                                                                                       | 12,805.00              | 18,617.60              | 12,725.00              | 96.99             | 96.58          | 82.20                    | -5,825.82                               | -99.44        | 637.29                  | 445.33                   | 191.96             | 3.320  | Alert                           |  |
| 18,800.00                                                                                       | 12,805.00              | 18,717.60              | 12,725.00              | 98.28             | 97.87          | 82.20                    | -5,925.82                               | -98.94        | 637.63                  | 443.12                   | 194.51             | 3.278  | Alert                           |  |
| 18,900.00                                                                                       | 12,805.00              | 18,817.60              | 12,725.00              | 99.56             | 99.16          | 82.21                    | -6,025.82                               | -98.45        | 637.98                  | 440.90                   | 197.08             | 3.237  | Alert                           |  |
| 19,000.00                                                                                       | 12,805.00              | 18,917.60              | 12,725.00              | 100.86            | 100.45         | 82.21                    | -6,125.81                               | -97.95        | 638.33                  | 438.67                   | 199.65             | 3.197  | Alert                           |  |
| 19,100.00                                                                                       | 12,805.00              | 19,017.60              | 12,725.00              | 102.16            | 101.75         | 82.22                    | -6,225.81                               | -97.45        | 638.67                  | 436.44                   | 202.24             | 3.158  | Alert                           |  |
| 19,200.00                                                                                       | 12,805.00              | 19,117.60              | 12,725.00              | 103.46            | 103.05         | 82.22                    | -6,325.81                               | -96.95        | 639.02                  | 434.19                   | 204.83             | 3.120  | Alert                           |  |
| 19,300.00                                                                                       | 12,805.00              | 19,217.60              | 12,725.00              | 104.76            | 104.36         | 82.22                    | -6,425.81                               | -96.45        | 639.37                  | 431.94                   | 207.42             | 3.082  | Alert                           |  |
| 19,400.00                                                                                       | 12,805.00              | 19,317.60              | 12,725.00              | 106.07            | 105.67         | 82.23                    | -6,525.81                               | -95.95        | 639.71                  | 429.68                   | 210.03             | 3.046  | Alert                           |  |
| 19,500.00                                                                                       | 12,805.00              | 19,417.60              | 12,725.00              | 107.39            | 106.98         | 82.23                    | -6,625.80                               | -95.45        | 640.06                  | 427.42                   | 212.64             | 3.010  | Alert                           |  |
| 19,600.00                                                                                       | 12,805.00              | 19,517.60              | 12,725.00              | 108.70            | 108.30         | 82.24                    | -6,725.80                               | -94.96        | 640.41                  | 425.14                   | 215.26             | 2.975  | Alert                           |  |
| 19,700.00                                                                                       | 12,805.00              | 19,617.60              | 12,725.00              | 110.02            | 109.62         | 82.24                    | -6,825.80                               | -94.46        | 640.75                  | 422.86                   | 217.89             | 2.941  | Alert                           |  |
| 19,800.00                                                                                       | 12,805.00              | 19,717.60              | 12,725.00              | 111.35            | 110.95         | 82.25                    | -6,925.80                               | -93.96        | 641.10                  | 420.58                   | 220.52             | 2.907  | Alert                           |  |
| 19,900.00                                                                                       | 12,805.00              | 19,817.60              | 12,725.00              | 112.68            | 112.28         | 82.25                    | -7,025.80                               | -93.46        | 641.45                  | 418.28                   | 223.16             | 2.874  | Alert                           |  |
| 20,000.00                                                                                       | 12,805.00              | 19,917.60              | 12,725.00              | 114.01            | 113.61         | 82.25                    | -7,125.79                               | -92.96        | 641.79                  | 415.98                   | 225.81             | 2.842  | Alert                           |  |
| 20,100.00                                                                                       | 12,805.00              | 20,017.60              | 12,725.00              | 115.34            | 114.94         | 82.26                    | -7,225.79                               | -92.46        | 642.14                  | 413.68                   | 228.46             | 2.811  | Alert                           |  |
| 20,200.00                                                                                       | 12,805.00              | 20,117.60              | 12,725.00              | 116.67            | 116.28         | 82.26                    | -7,325.79                               | -91.96        | 642.49                  | 411.37                   | 231.12             | 2.780  | Alert                           |  |

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

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

| Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 1H - 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   |                | Highside<br>Toolface<br>(°) | Offset Wellbore Centre |               | Distance                   |                             | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning                    |
| Measured<br>Depth<br>(ft)                                                                  | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                             | +N/-S<br>(ft)          | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) |                               |                      |                            |
| 20,300.00                                                                                  | 12,805.00                 | 20,217.60                 | 12,725.00                 | 118.01            | 117.62         | 82.27                       | -7,425.79              | -91.47        | 642.83                     | 409.05                      | 233.78                        | 2.750                | Alert                      |
| 20,400.00                                                                                  | 12,805.00                 | 20,317.59                 | 12,725.00                 | 119.35            | 118.96         | 82.27                       | -7,525.79              | -90.97        | 643.18                     | 406.73                      | 236.45                        | 2.720                | Alert                      |
| 20,500.00                                                                                  | 12,805.00                 | 20,417.59                 | 12,725.00                 | 120.70            | 120.30         | 82.28                       | -7,625.79              | -90.47        | 643.53                     | 404.40                      | 239.12                        | 2.691                | Alert                      |
| 20,600.00                                                                                  | 12,805.00                 | 20,517.59                 | 12,725.00                 | 122.05            | 121.65         | 82.28                       | -7,725.78              | -89.97        | 643.87                     | 402.07                      | 241.80                        | 2.663                | Alert                      |
| 20,700.00                                                                                  | 12,805.00                 | 20,617.59                 | 12,725.00                 | 123.39            | 123.00         | 82.28                       | -7,825.78              | -89.47        | 644.22                     | 399.73                      | 244.49                        | 2.635                | Alert                      |
| 20,800.00                                                                                  | 12,805.00                 | 20,717.59                 | 12,725.00                 | 124.75            | 124.35         | 82.29                       | -7,925.78              | -88.97        | 644.56                     | 397.39                      | 247.17                        | 2.608                | Alert                      |
| 20,900.00                                                                                  | 12,805.00                 | 20,817.59                 | 12,725.00                 | 126.10            | 125.70         | 82.29                       | -8,025.78              | -88.47        | 644.91                     | 395.05                      | 249.87                        | 2.581                | Alert                      |
| 21,000.00                                                                                  | 12,805.00                 | 20,917.59                 | 12,725.00                 | 127.45            | 127.06         | 82.30                       | -8,125.78              | -87.98        | 645.26                     | 392.70                      | 252.56                        | 2.555                | Alert                      |
| 21,100.00                                                                                  | 12,805.00                 | 21,017.59                 | 12,725.00                 | 128.81            | 128.42         | 82.30                       | -8,225.77              | -87.48        | 645.60                     | 390.34                      | 255.26                        | 2.529                | Alert                      |
| 21,200.00                                                                                  | 12,805.00                 | 21,117.59                 | 12,725.00                 | 130.17            | 129.78         | 82.30                       | -8,325.77              | -86.98        | 645.95                     | 387.98                      | 257.97                        | 2.504                | Alert                      |
| 21,300.00                                                                                  | 12,805.00                 | 21,217.59                 | 12,725.00                 | 131.53            | 131.14         | 82.31                       | -8,425.77              | -86.48        | 646.30                     | 385.62                      | 260.68                        | 2.479                | Minor Risk                 |
| 21,400.00                                                                                  | 12,805.00                 | 21,317.59                 | 12,725.00                 | 132.90            | 132.50         | 82.31                       | -8,525.77              | -85.98        | 646.64                     | 383.25                      | 263.39                        | 2.455                | Minor Risk                 |
| 21,500.00                                                                                  | 12,805.00                 | 21,417.59                 | 12,725.00                 | 134.26            | 133.87         | 82.32                       | -8,625.77              | -85.48        | 646.99                     | 380.88                      | 266.11                        | 2.431                | Minor Risk                 |
| 21,600.00                                                                                  | 12,805.00                 | 21,517.59                 | 12,725.00                 | 135.63            | 135.24         | 82.32                       | -8,725.77              | -84.98        | 647.34                     | 378.51                      | 268.83                        | 2.408                | Minor Risk                 |
| 21,700.00                                                                                  | 12,805.00                 | 21,617.59                 | 12,725.00                 | 137.00            | 136.61         | 82.33                       | -8,825.76              | -84.49        | 647.68                     | 376.13                      | 271.55                        | 2.385                | Minor Risk                 |
| 21,800.00                                                                                  | 12,805.00                 | 21,717.59                 | 12,725.00                 | 138.37            | 137.98         | 82.33                       | -8,925.76              | -83.99        | 648.03                     | 373.75                      | 274.28                        | 2.363                | Minor Risk                 |
| 21,900.00                                                                                  | 12,805.00                 | 21,817.59                 | 12,725.00                 | 139.75            | 139.35         | 82.33                       | -9,025.76              | -83.49        | 648.38                     | 371.37                      | 277.01                        | 2.341                | Minor Risk                 |
| 22,000.00                                                                                  | 12,805.00                 | 21,917.58                 | 12,725.00                 | 141.12            | 140.72         | 82.34                       | -9,125.76              | -82.99        | 648.72                     | 368.98                      | 279.74                        | 2.319                | Minor Risk                 |
| 22,100.00                                                                                  | 12,805.00                 | 22,017.58                 | 12,725.00                 | 142.50            | 142.10         | 82.34                       | -9,225.76              | -82.49        | 649.07                     | 366.59                      | 282.48                        | 2.298                | Minor Risk                 |
| 22,200.00                                                                                  | 12,805.00                 | 22,117.58                 | 12,725.00                 | 143.87            | 143.48         | 82.35                       | -9,325.75              | -81.99        | 649.42                     | 364.20                      | 285.22                        | 2.277                | Minor Risk                 |
| 22,300.00                                                                                  | 12,805.00                 | 22,217.58                 | 12,725.00                 | 145.25            | 144.85         | 82.35                       | -9,425.75              | -81.49        | 649.76                     | 361.80                      | 287.96                        | 2.256                | Minor Risk                 |
| 22,400.00                                                                                  | 12,805.00                 | 22,317.58                 | 12,725.00                 | 146.63            | 146.23         | 82.35                       | -9,525.75              | -81.00        | 650.11                     | 359.40                      | 290.71                        | 2.236                | Minor Risk                 |
| 22,500.00                                                                                  | 12,805.00                 | 22,417.58                 | 12,725.00                 | 148.01            | 147.62         | 82.36                       | -9,625.75              | -80.50        | 650.46                     | 357.00                      | 293.46                        | 2.217                | Minor Risk                 |
| 22,600.00                                                                                  | 12,805.00                 | 22,517.58                 | 12,725.00                 | 149.40            | 149.00         | 82.36                       | -9,725.75              | -80.00        | 650.80                     | 354.60                      | 296.21                        | 2.197                | Minor Risk                 |
| 22,700.00                                                                                  | 12,805.00                 | 22,617.58                 | 12,725.00                 | 150.78            | 150.38         | 82.37                       | -9,825.74              | -79.50        | 651.15                     | 352.19                      | 298.96                        | 2.178                | Minor Risk                 |
| 22,800.00                                                                                  | 12,805.00                 | 22,717.58                 | 12,725.00                 | 152.17            | 151.77         | 82.37                       | -9,925.74              | -79.00        | 651.50                     | 349.78                      | 301.72                        | 2.159                | Minor Risk                 |
| 22,875.58                                                                                  | 12,805.00                 | 22,793.16                 | 12,725.00                 | 153.22            | 152.82         | 82.37                       | -10,001.32             | -78.62        | 651.76                     | 347.96                      | 303.80                        | 2.145                | Minor Risk                 |



# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference:  
 MD Reference:  
 North Reference:  
 Survey Calculation Method:  
 Output errors are at  
 Database:  
 Offset TVD Reference:

Well Mean Green 23-35 Fed Com 2H  
 RKB1 @ 3218.30ft  
 RKB1 @ 3218.30ft  
 Grid  
 Minimum Curvature  
 2.00 sigma  
 EDM r5000.141\_Prod US  
 Offset Datum

| Offset Design      Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - 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 |             |                       | Distance                          |                                   |                      |                       |                         |                          | Warning |
| Measured Depth (ft)                                                                             | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor        |         |
| 0.00                                                                                            | 0.00                | 6.50                | 6.50                | 0.50            | 0.50        | 89.52                 | 0.25                              | 30.05                             | 30.05                |                       |                         |                          |         |
| 100.00                                                                                          | 100.00              | 106.50              | 106.50              | 0.52            | 0.52        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 29.01                 | 1.04                    | 28.938                   |         |
| 200.00                                                                                          | 200.00              | 206.50              | 206.50              | 0.70            | 0.71        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 28.64                 | 1.41                    | 21.285                   |         |
| 300.00                                                                                          | 300.00              | 306.50              | 306.50              | 0.99            | 1.00        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 28.06                 | 1.98                    | 15.147                   |         |
| 400.00                                                                                          | 400.00              | 406.50              | 406.50              | 1.31            | 1.32        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 27.42                 | 2.63                    | 11.434                   |         |
| 500.00                                                                                          | 500.00              | 506.50              | 506.50              | 1.65            | 1.66        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 26.75                 | 3.30                    | 9.099                    |         |
| 600.00                                                                                          | 600.00              | 606.50              | 606.50              | 1.99            | 2.00        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 26.06                 | 3.99                    | 7.528                    |         |
| 700.00                                                                                          | 700.00              | 706.50              | 706.50              | 2.34            | 2.35        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 25.36                 | 4.69                    | 6.408                    |         |
| 800.00                                                                                          | 800.00              | 806.50              | 806.50              | 2.69            | 2.70        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 24.66                 | 5.39                    | 5.573                    |         |
| 900.00                                                                                          | 900.00              | 906.50              | 906.50              | 3.04            | 3.05        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 23.95                 | 6.10                    | 4.928 Alert              |         |
| 1,000.00                                                                                        | 1,000.00            | 1,006.50            | 1,006.50            | 3.40            | 3.41        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 23.24                 | 6.81                    | 4.415 Alert              |         |
| 1,100.00                                                                                        | 1,100.00            | 1,106.50            | 1,106.50            | 3.75            | 3.76        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 22.53                 | 7.52                    | 3.998 Alert              |         |
| 1,200.00                                                                                        | 1,200.00            | 1,206.50            | 1,206.50            | 4.11            | 4.12        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 21.82                 | 8.23                    | 3.652 Alert              |         |
| 1,300.00                                                                                        | 1,300.00            | 1,306.50            | 1,306.50            | 4.46            | 4.47        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 21.11                 | 8.94                    | 3.361 Alert              |         |
| 1,400.00                                                                                        | 1,400.00            | 1,406.50            | 1,406.50            | 4.82            | 4.83        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 20.40                 | 9.65                    | 3.113 Alert              |         |
| 1,500.00                                                                                        | 1,500.00            | 1,506.50            | 1,506.50            | 5.18            | 5.19        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 19.68                 | 10.36                   | 2.899 Alert              |         |
| 1,600.00                                                                                        | 1,600.00            | 1,606.50            | 1,606.50            | 5.53            | 5.54        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 18.97                 | 11.08                   | 2.712 Alert              |         |
| 1,700.00                                                                                        | 1,700.00            | 1,706.50            | 1,706.50            | 5.89            | 5.90        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 18.25                 | 11.79                   | 2.548 Alert              |         |
| 1,800.00                                                                                        | 1,800.00            | 1,806.50            | 1,806.50            | 6.25            | 6.26        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 17.54                 | 12.51                   | 2.402 Minor Risk         |         |
| 1,900.00                                                                                        | 1,900.00            | 1,906.50            | 1,906.50            | 6.61            | 6.62        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 16.83                 | 13.22                   | 2.273 Minor Risk         |         |
| 2,000.00                                                                                        | 2,000.00            | 2,006.50            | 2,006.50            | 6.96            | 6.97        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 16.11                 | 13.94                   | 2.156 Minor Risk         |         |
| 2,100.00                                                                                        | 2,100.00            | 2,106.50            | 2,106.50            | 7.32            | 7.33        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 15.40                 | 14.65                   | 2.051 Minor Risk         |         |
| 2,200.00                                                                                        | 2,200.00            | 2,206.50            | 2,206.50            | 7.68            | 7.69        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 14.68                 | 15.37                   | 1.955 Minor Risk         |         |
| 2,300.00                                                                                        | 2,300.00            | 2,306.50            | 2,306.50            | 8.04            | 8.05        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 13.96                 | 16.08                   | 1.868 Minor Risk         |         |
| 2,400.00                                                                                        | 2,400.00            | 2,406.50            | 2,406.50            | 8.39            | 8.40        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 13.25                 | 16.80                   | 1.789 Minor Risk         |         |
| 2,500.00                                                                                        | 2,500.00            | 2,506.50            | 2,506.50            | 8.75            | 8.76        | 89.52                 | 0.25                              | 30.05                             | 30.05                | 12.53                 | 17.51                   | 1.716 Minor Risk, CC, ES |         |
| 2,600.00                                                                                        | 2,600.00            | 2,605.82            | 2,605.81            | 9.11            | 9.11        | 88.90                 | 0.60                              | 31.22                             | 31.23                | 13.01                 | 18.22                   | 1.714 Minor Risk         |         |
| 2,700.00                                                                                        | 2,700.00            | 2,705.07            | 2,705.00            | 9.47            | 9.46        | 87.39                 | 1.57                              | 34.44                             | 34.51                | 15.60                 | 18.91                   | 1.825 Minor Risk         |         |
| 2,800.00                                                                                        | 2,800.00            | 2,804.40            | 2,804.18            | 9.83            | 9.80        | 85.49                 | 3.12                              | 39.62                             | 39.81                | 20.22                 | 19.60                   | 2.032 Minor Risk         |         |
| 2,900.00                                                                                        | 2,899.99            | 2,904.27            | 2,903.87            | 10.18           | 10.15       | 26.39                 | 4.83                              | 45.32                             | 44.87                | 24.57                 | 20.30                   | 2.211 Minor Risk         |         |
| 3,000.00                                                                                        | 2,999.96            | 3,004.20            | 3,003.63            | 10.53           | 10.50       | 26.39                 | 6.54                              | 51.02                             | 48.37                | 27.38                 | 20.99                   | 2.304 Minor Risk         |         |
| 3,100.00                                                                                        | 3,099.86            | 3,104.18            | 3,103.43            | 10.88           | 10.85       | 27.29                 | 8.25                              | 56.72                             | 50.32                | 28.63                 | 21.69                   | 2.320 Minor Risk         |         |
| 3,200.00                                                                                        | 3,199.68            | 3,204.17            | 3,203.24            | 11.23           | 11.21       | 29.00                 | 9.96                              | 62.43                             | 50.82                | 28.42                 | 22.39                   | 2.269 Minor Risk         |         |
| 3,300.00                                                                                        | 3,299.47            | 3,304.15            | 3,303.05            | 11.59           | 11.56       | 30.92                 | 11.68                             | 68.13                             | 51.00                | 27.91                 | 23.09                   | 2.208 Minor Risk         |         |
| 3,400.00                                                                                        | 3,399.27            | 3,404.14            | 3,402.86            | 11.94           | 11.91       | 32.83                 | 13.39                             | 73.84                             | 51.24                | 27.45                 | 23.80                   | 2.153 Minor Risk         |         |
| 3,500.00                                                                                        | 3,499.06            | 3,504.12            | 3,502.66            | 12.30           | 12.27       | 34.72                 | 15.10                             | 79.54                             | 51.54                | 27.04                 | 24.50                   | 2.104 Minor Risk         |         |
| 3,600.00                                                                                        | 3,598.85            | 3,604.11            | 3,602.47            | 12.65           | 12.62       | 36.58                 | 16.81                             | 85.24                             | 51.89                | 26.69                 | 25.21                   | 2.059 Minor Risk         |         |
| 3,700.00                                                                                        | 3,598.64            | 3,704.09            | 3,702.28            | 13.01           | 12.98       | 38.42                 | 18.52                             | 90.95                             | 52.30                | 26.38                 | 25.91                   | 2.018 Minor Risk         |         |
| 3,800.00                                                                                        | 3,798.44            | 3,804.08            | 3,802.09            | 13.36           | 13.34       | 40.22                 | 20.23                             | 96.65                             | 52.76                | 26.14                 | 26.62                   | 1.982 Minor Risk         |         |
| 3,900.00                                                                                        | 3,898.23            | 3,904.06            | 3,901.89            | 13.72           | 13.70       | 42.00                 | 21.94                             | 102.35                            | 53.27                | 25.94                 | 27.33                   | 1.949 Minor Risk         |         |
| 4,000.00                                                                                        | 3,998.02            | 4,004.05            | 4,001.70            | 14.08           | 14.05       | 43.73                 | 23.65                             | 108.06                            | 53.83                | 25.79                 | 28.04                   | 1.920 Minor Risk         |         |
| 4,100.00                                                                                        | 4,097.81            | 4,104.03            | 4,101.51            | 14.44           | 14.41       | 45.43                 | 25.36                             | 113.76                            | 54.44                | 25.68                 | 28.76                   | 1.893 Minor Risk         |         |
| 4,200.00                                                                                        | 4,197.61            | 4,204.02            | 4,201.32            | 14.80           | 14.77       | 47.10                 | 27.08                             | 119.47                            | 55.10                | 25.63                 | 29.47                   | 1.870 Minor Risk         |         |
| 4,300.00                                                                                        | 4,297.40            | 4,304.01            | 4,301.13            | 15.16           | 15.13       | 48.72                 | 28.79                             | 125.17                            | 55.80                | 25.61                 | 30.18                   | 1.849 Minor Risk         |         |
| 4,400.00                                                                                        | 4,397.19            | 4,403.99            | 4,400.93            | 15.52           | 15.49       | 50.30                 | 30.50                             | 130.87                            | 56.54                | 25.64                 | 30.90                   | 1.830 Minor Risk         |         |
| 4,500.00                                                                                        | 4,496.98            | 4,503.98            | 4,500.74            | 15.88           | 15.85       | 51.83                 | 32.21                             | 136.58                            | 57.33                | 25.71                 | 31.62                   | 1.813 Minor Risk         |         |
| 4,600.00                                                                                        | 4,596.78            | 4,603.96            | 4,600.55            | 16.24           | 16.21       | 53.33                 | 33.92                             | 142.28                            | 58.16                | 25.82                 | 32.33                   | 1.799 Minor Risk         |         |
| 4,700.00                                                                                        | 4,696.57            | 4,703.95            | 4,700.36            | 16.60           | 16.57       | 54.78                 | 35.63                             | 147.99                            | 59.02                | 25.97                 | 33.05                   | 1.786 Minor Risk         |         |
| 4,800.00                                                                                        | 4,796.36            | 4,803.93            | 4,800.16            | 16.96           | 16.93       | 56.19                 | 37.34                             | 153.69                            | 59.93                | 26.15                 | 33.77                   | 1.774 Minor Risk         |         |
| 4,900.00                                                                                        | 4,896.15            | 4,903.92            | 4,899.97            | 17.32           | 17.29       | 57.55                 | 39.05                             | 159.39                            | 60.86                | 26.37                 | 34.49                   | 1.764 Minor Risk         |         |
| 5,000.00                                                                                        | 4,995.95            | 5,003.90            | 4,999.78            | 17.68           | 17.65       | 58.88                 | 40.76                             | 165.10                            | 61.84                | 26.62                 | 35.22                   | 1.756 Minor Risk         |         |

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

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference: Well Mean Green 23-35 Fed Com 2H  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

| Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - 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   |                | Highside<br>Toolface<br>(°) | Distance                                |                                         | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning                    |
| Measured<br>Depth<br>(ft)                                                                  | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                             | Offset Wellbore Centre<br>+N/-S<br>(ft) | Offset Wellbore Centre<br>+E/-W<br>(ft) |                            |                             |                               |                      |                            |
| 5,100.00                                                                                   | 5,095.74                  | 5,103.89                  | 5,099.59                  | 18.04             | 18.01          | 60.16                       | 42.48                                   | 170.80                                  | 62.84                      | 26.90                       | 35.94                         | 1.749                | Minor Risk                 |
| 5,200.00                                                                                   | 5,195.53                  | 5,203.87                  | 5,199.40                  | 18.41             | 18.38          | 61.40                       | 44.19                                   | 176.50                                  | 63.87                      | 27.21                       | 36.66                         | 1.742                | Minor Risk                 |
| 5,300.00                                                                                   | 5,295.32                  | 5,303.86                  | 5,299.20                  | 18.77             | 18.74          | 62.60                       | 45.90                                   | 182.21                                  | 64.94                      | 27.55                       | 37.38                         | 1.737                | Minor Risk                 |
| 5,400.00                                                                                   | 5,395.12                  | 5,403.84                  | 5,399.01                  | 19.13             | 19.10          | 63.76                       | 47.61                                   | 187.91                                  | 66.03                      | 27.92                       | 38.11                         | 1.733                | Minor Risk                 |
| 5,500.00                                                                                   | 5,494.91                  | 5,503.83                  | 5,498.82                  | 19.49             | 19.46          | 64.89                       | 49.32                                   | 193.62                                  | 67.14                      | 28.31                       | 38.83                         | 1.729                | Minor Risk                 |
| 5,600.00                                                                                   | 5,594.70                  | 5,603.81                  | 5,598.63                  | 19.86             | 19.83          | 65.98                       | 51.03                                   | 199.32                                  | 68.28                      | 28.72                       | 39.56                         | 1.726                | Minor Risk                 |
| 5,700.00                                                                                   | 5,694.49                  | 5,703.80                  | 5,698.43                  | 20.22             | 20.19          | 67.03                       | 52.74                                   | 205.02                                  | 69.45                      | 29.16                       | 40.29                         | 1.724                | Minor Risk                 |
| 5,800.00                                                                                   | 5,794.29                  | 5,803.78                  | 5,798.24                  | 20.58             | 20.55          | 68.04                       | 54.45                                   | 210.73                                  | 70.64                      | 29.63                       | 41.01                         | 1.722                | Minor Risk                 |
| 5,900.00                                                                                   | 5,894.08                  | 5,903.77                  | 5,898.05                  | 20.95             | 20.91          | 69.02                       | 56.17                                   | 216.43                                  | 71.85                      | 30.11                       | 41.74                         | 1.721                | Minor Risk                 |
| 6,000.00                                                                                   | 5,993.87                  | 6,003.75                  | 5,997.86                  | 21.31             | 21.28          | 69.97                       | 57.88                                   | 222.13                                  | 73.08                      | 30.61                       | 42.47                         | 1.721                | Minor Risk                 |
| 6,100.00                                                                                   | 6,093.67                  | 6,103.74                  | 6,097.67                  | 21.67             | 21.64          | 70.89                       | 59.59                                   | 227.84                                  | 74.33                      | 31.13                       | 43.19                         | 1.721                | Minor Risk                 |
| 6,200.00                                                                                   | 6,193.46                  | 6,203.72                  | 6,197.47                  | 22.04             | 22.00          | 71.78                       | 61.30                                   | 233.54                                  | 75.59                      | 31.67                       | 43.92                         | 1.721                | Minor Risk                 |
| 6,300.00                                                                                   | 6,293.25                  | 6,303.71                  | 6,297.28                  | 22.40             | 22.37          | 72.63                       | 63.01                                   | 239.25                                  | 76.88                      | 32.23                       | 44.65                         | 1.722                | Minor Risk                 |
| 6,400.00                                                                                   | 6,393.04                  | 6,403.70                  | 6,397.09                  | 22.77             | 22.73          | 73.46                       | 64.72                                   | 244.95                                  | 78.18                      | 32.80                       | 45.38                         | 1.723                | Minor Risk                 |
| 6,500.00                                                                                   | 6,492.84                  | 6,503.68                  | 6,496.90                  | 23.13             | 23.09          | 74.27                       | 66.43                                   | 250.65                                  | 79.50                      | 33.39                       | 46.11                         | 1.724                | Minor Risk                 |
| 6,600.00                                                                                   | 6,592.63                  | 6,603.67                  | 6,596.70                  | 23.49             | 23.46          | 75.04                       | 68.14                                   | 256.36                                  | 80.83                      | 33.99                       | 46.84                         | 1.726                | Minor Risk                 |
| 6,700.00                                                                                   | 6,692.42                  | 6,703.65                  | 6,696.51                  | 23.86             | 23.82          | 75.79                       | 69.85                                   | 262.06                                  | 82.18                      | 34.61                       | 47.57                         | 1.728                | Minor Risk                 |
| 6,800.00                                                                                   | 6,792.21                  | 6,803.64                  | 6,796.32                  | 24.22             | 24.19          | 76.52                       | 71.57                                   | 267.77                                  | 83.54                      | 35.24                       | 48.30                         | 1.730                | Minor Risk                 |
| 6,900.00                                                                                   | 6,892.01                  | 6,903.62                  | 6,896.13                  | 24.59             | 24.55          | 77.22                       | 73.28                                   | 273.47                                  | 84.91                      | 35.88                       | 49.03                         | 1.732                | Minor Risk                 |
| 7,000.00                                                                                   | 6,991.80                  | 7,003.61                  | 6,995.94                  | 24.95             | 24.91          | 77.90                       | 74.99                                   | 279.17                                  | 86.30                      | 36.54                       | 49.76                         | 1.734                | Minor Risk                 |
| 7,100.00                                                                                   | 7,091.59                  | 7,103.59                  | 7,095.74                  | 25.32             | 25.28          | 78.56                       | 76.70                                   | 284.88                                  | 87.70                      | 37.21                       | 50.49                         | 1.737                | Minor Risk                 |
| 7,200.00                                                                                   | 7,191.38                  | 7,203.58                  | 7,195.55                  | 25.68             | 25.64          | 79.20                       | 78.41                                   | 290.58                                  | 89.10                      | 37.89                       | 51.22                         | 1.740                | Minor Risk                 |
| 7,300.00                                                                                   | 7,291.18                  | 7,303.56                  | 7,295.36                  | 26.05             | 26.01          | 79.81                       | 80.12                                   | 296.28                                  | 90.52                      | 38.57                       | 51.95                         | 1.743                | Minor Risk                 |
| 7,400.00                                                                                   | 7,390.97                  | 7,403.55                  | 7,395.17                  | 26.41             | 26.37          | 80.41                       | 81.83                                   | 301.99                                  | 91.95                      | 39.27                       | 52.68                         | 1.746                | Minor Risk                 |
| 7,500.00                                                                                   | 7,490.76                  | 7,503.53                  | 7,494.97                  | 26.78             | 26.74          | 80.99                       | 83.54                                   | 307.69                                  | 93.39                      | 39.98                       | 53.41                         | 1.749                | Minor Risk                 |
| 7,600.00                                                                                   | 7,590.55                  | 7,603.52                  | 7,594.78                  | 27.14             | 27.10          | 81.55                       | 85.25                                   | 313.40                                  | 94.84                      | 40.70                       | 54.14                         | 1.752                | Minor Risk                 |
| 7,700.00                                                                                   | 7,690.35                  | 7,703.50                  | 7,694.59                  | 27.51             | 27.46          | 82.10                       | 86.97                                   | 319.10                                  | 96.30                      | 41.43                       | 54.87                         | 1.755                | Minor Risk                 |
| 7,800.00                                                                                   | 7,790.14                  | 7,803.71                  | 7,794.62                  | 27.87             | 27.83          | 82.67                       | 88.66                                   | 324.75                                  | 97.74                      | 42.13                       | 55.61                         | 1.758                | Minor Risk                 |
| 7,900.00                                                                                   | 7,889.93                  | 7,904.64                  | 7,895.46                  | 28.24             | 28.19          | 84.22                       | 89.84                                   | 328.68                                  | 98.52                      | 42.17                       | 56.35                         | 1.748                | Minor Risk                 |
| 8,000.00                                                                                   | 7,989.72                  | 8,005.38                  | 7,996.19                  | 28.60             | 28.55          | 87.20                       | 90.25                                   | 330.04                                  | 98.51                      | 41.42                       | 57.09                         | 1.726                | Minor Risk                 |
| 8,074.98                                                                                   | 8,064.55                  | 8,080.24                  | 8,071.05                  | 28.88             | 28.81          | 90.00                       | 90.25                                   | 330.05                                  | 98.39                      | 40.76                       | 57.64                         | 1.707                | Minor Risk                 |
| 8,100.00                                                                                   | 8,089.52                  | 8,105.20                  | 8,096.02                  | 28.97             | 28.90          | 90.94                       | 90.25                                   | 330.05                                  | 98.41                      | 40.59                       | 57.82                         | 1.702                | Minor Risk                 |
| 8,200.00                                                                                   | 8,189.31                  | 8,205.00                  | 8,195.81                  | 29.34             | 29.25          | 94.67                       | 90.25                                   | 330.05                                  | 98.72                      | 40.17                       | 58.55                         | 1.686                | Minor Risk                 |
| 8,300.00                                                                                   | 8,289.10                  | 8,304.79                  | 8,295.60                  | 29.70             | 29.60          | 98.36                       | 90.25                                   | 330.05                                  | 99.45                      | 40.18                       | 59.28                         | 1.678                | Minor Risk                 |
| 8,400.00                                                                                   | 8,388.89                  | 8,404.58                  | 8,395.39                  | 30.07             | 29.95          | 101.98                      | 90.25                                   | 330.05                                  | 100.59                     | 40.59                       | 60.00                         | 1.677                | Minor Risk, SF             |
| 8,500.00                                                                                   | 8,488.69                  | 8,504.37                  | 8,495.19                  | 30.43             | 30.29          | 105.51                      | 90.25                                   | 330.05                                  | 102.13                     | 41.41                       | 60.72                         | 1.682                | Minor Risk                 |
| 8,600.00                                                                                   | 8,588.48                  | 8,604.17                  | 8,594.98                  | 30.80             | 30.64          | 108.92                      | 90.25                                   | 330.05                                  | 104.04                     | 42.60                       | 61.43                         | 1.694                | Minor Risk                 |
| 8,700.00                                                                                   | 8,688.27                  | 8,703.96                  | 8,694.77                  | 31.16             | 30.99          | 112.20                      | 90.25                                   | 330.05                                  | 106.30                     | 44.16                       | 62.14                         | 1.711                | Minor Risk                 |
| 8,800.00                                                                                   | 8,788.06                  | 8,803.75                  | 8,794.56                  | 31.53             | 31.34          | 115.33                      | 90.25                                   | 330.05                                  | 108.90                     | 46.05                       | 62.85                         | 1.733                | Minor Risk                 |
| 8,900.00                                                                                   | 8,887.86                  | 8,903.54                  | 8,894.36                  | 31.90             | 31.69          | 118.31                      | 90.25                                   | 330.05                                  | 111.81                     | 48.26                       | 63.56                         | 1.759                | Minor Risk                 |
| 9,000.00                                                                                   | 8,987.65                  | 9,003.34                  | 8,994.15                  | 32.26             | 32.04          | 121.13                      | 90.25                                   | 330.05                                  | 115.01                     | 50.75                       | 64.26                         | 1.790                | Minor Risk                 |
| 9,100.00                                                                                   | 9,087.44                  | 9,103.13                  | 9,093.94                  | 32.63             | 32.39          | 123.79                      | 90.25                                   | 330.05                                  | 118.47                     | 53.51                       | 64.96                         | 1.824                | Minor Risk                 |
| 9,200.00                                                                                   | 9,187.23                  | 9,202.92                  | 9,193.73                  | 32.99             | 32.74          | 126.30                      | 90.25                                   | 330.05                                  | 122.17                     | 56.52                       | 65.66                         | 1.861                | Minor Risk                 |
| 9,300.00                                                                                   | 9,287.03                  | 9,302.71                  | 9,293.53                  | 33.36             | 33.10          | 128.65                      | 90.25                                   | 330.05                                  | 126.10                     | 59.74                       | 66.36                         | 1.900                | Minor Risk                 |
| 9,400.00                                                                                   | 9,386.82                  | 9,402.51                  | 9,393.32                  | 33.73             | 33.45          | 130.86                      | 90.25                                   | 330.05                                  | 130.22                     | 63.16                       | 67.06                         | 1.942                | Minor Risk                 |
| 9,500.00                                                                                   | 9,486.61                  | 9,502.30                  | 9,493.11                  | 34.09             | 33.80          | 132.94                      | 90.25                                   | 330.05                                  | 134.53                     | 66.77                       | 67.76                         | 1.985                | Minor Risk                 |
| 9,600.00                                                                                   | 9,586.40                  | 9,602.09                  | 9,592.90                  | 34.46             | 34.15          | 134.88                      | 90.25                                   | 330.05                                  | 139.00                     | 70.54                       | 68.45                         | 2.030                | Minor Risk                 |
| 9,700.00                                                                                   | 9,686.20                  | 9,701.88                  | 9,692.70                  | 34.83             | 34.50          | 136.70                      | 90.25                                   | 330.05                                  | 143.61                     | 74.46                       | 69.15                         | 2.077                | Minor Risk                 |
| 9,800.00                                                                                   | 9,785.99                  | 9,801.68                  | 9,792.49                  | 35.19             | 34.85          | 138.40                      | 90.25                                   | 330.05                                  | 148.37                     | 78.52                       | 69.85                         | 2.124                | Minor Risk                 |
| 9,900.00                                                                                   | 9,885.78                  | 9,901.47                  | 9,892.28                  | 35.56             | 35.20          | 140.00                      | 90.25                                   | 330.05                                  | 153.25                     | 82.70                       | 70.55                         | 2.172                | Minor Risk                 |
| 10,000.00                                                                                  | 9,985.58                  | 10,001.26                 | 9,992.08                  | 35.92             | 35.55          | 141.49                      | 90.25                                   | 330.05                                  | 158.24                     | 86.99                       | 71.25                         | 2.221                | Minor Risk                 |

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

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference:  
 MD Reference:  
 North Reference:  
 Survey Calculation Method:  
 Output errors are at:  
 Database:  
 Offset TVD Reference:

Well Mean Green 23-35 Fed Com 2H  
 RKB1 @ 3218.30ft  
 RKB1 @ 3218.30ft  
 Grid  
 Minimum Curvature  
 2.00 sigma  
 EDM r5000.141\_Prod US  
 Offset Datum

| Offset Design      Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 3H - 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   |                | Highside<br>Toothface<br>(') | Distance                                |               | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning |                            |                                 |  |
| Measured<br>Depth<br>(ft)                                                                       | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                              | Offset Wellbore Centre<br>+N/-S<br>(ft) | +E/-W<br>(ft) |                               |                      |         | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft)     |  |
| 10,100.00                                                                                       | 10,085.37                 | 10,101.05                 | 10,091.87                 | 36.29             | 35.91          | 142.90                       | 90.25                                   | 330.05        | 163.33                        | 91.38                | 71.95   | 2.270 Minor Risk           |                                 |  |
| 10,200.00                                                                                       | 10,185.16                 | 10,233.25                 | 10,223.19                 | 36.66             | 36.39          | 143.57                       | 100.56                                  | 337.48        | 159.33                        | 87.28                | 72.05   | 2.211 Minor Risk           |                                 |  |
| 10,300.00                                                                                       | 10,284.95                 | 10,333.46                 | 10,320.14                 | 37.02             | 36.76          | 142.08                       | 120.29                                  | 353.16        | 140.29                        | 87.56                | 72.72   | 1.929 Minor Risk           |                                 |  |
| 10,400.00                                                                                       | 10,384.75                 | 10,415.33                 | 10,400.39                 | 37.39             | 37.07          | 138.73                       | 127.43                                  | 367.36        | 131.38                        | 57.18                | 74.20   | 1.771 Minor Risk           |                                 |  |
| 10,415.10                                                                                       | 10,399.82                 | 10,427.73                 | 10,412.60                 | 37.45             | 37.12          | 138.06                       | 127.54                                  | 369.53        | 131.22                        | 56.88                | 74.34   | 1.765 Minor Risk           |                                 |  |
| 10,500.00                                                                                       | 10,484.54                 | 10,496.84                 | 10,480.48                 | 37.76             | 37.37          | 133.91                       | 123.52                                  | 381.62        | 136.38                        | 61.69                | 74.69   | 1.826 Minor Risk           |                                 |  |
| 10,600.00                                                                                       | 10,584.33                 | 10,575.15                 | 10,556.26                 | 38.12             | 37.65          | 129.07                       | 109.47                                  | 395.21        | 155.66                        | 81.59                | 74.07   | 2.102 Minor Risk           |                                 |  |
| 10,700.00                                                                                       | 10,684.12                 | 10,650.00                 | 10,626.42                 | 38.49             | 37.89          | 125.17                       | 86.83                                   | 407.88        | 188.22                        | 115.42               | 72.79   | 2.586 Alert                |                                 |  |
| 10,800.00                                                                                       | 10,783.92                 | 10,714.15                 | 10,683.95                 | 38.86             | 38.09          | 122.66                       | 60.53                                   | 418.33        | 232.16                        | 161.51               | 70.64   | 3.286 Alert                |                                 |  |
| 10,900.00                                                                                       | 10,883.71                 | 10,773.06                 | 10,734.08                 | 39.22             | 38.25          | 120.99                       | 31.03                                   | 427.49        | 285.55                        | 217.02               | 68.53   | 4.167 Alert                |                                 |  |
| 11,000.00                                                                                       | 10,983.50                 | 10,824.92                 | 10,775.69                 | 39.59             | 38.39          | 119.95                       | 1.06                                    | 435.15        | 346.63                        | 280.18               | 66.46   | 5.216                      |                                 |  |
| 11,100.00                                                                                       | 11,083.29                 | 10,870.29                 | 10,809.89                 | 39.96             | 38.50          | 119.29                       | -28.06                                  | 441.48        | 413.95                        | 349.42               | 64.52   | 6.416                      |                                 |  |
| 11,200.00                                                                                       | 11,183.09                 | 10,909.89                 | 10,837.90                 | 40.32             | 38.60          | 118.87                       | -55.56                                  | 446.70        | 486.31                        | 423.52               | 62.79   | 7.745                      |                                 |  |
| 11,300.00                                                                                       | 11,282.88                 | 10,950.00                 | 10,884.40                 | 40.69             | 38.70          | 118.57                       | -85.24                                  | 451.66        | 562.81                        | 501.19               | 61.62   | 9.133                      |                                 |  |
| 11,400.00                                                                                       | 11,382.67                 | 10,974.75                 | 10,879.76                 | 41.06             | 38.76          | 118.44                       | -104.44                                 | 454.56        | 642.54                        | 582.56               | 59.97   | 10.714                     |                                 |  |
| 11,500.00                                                                                       | 11,482.46                 | 11,000.00                 | 10,894.61                 | 41.42             | 38.82          | 118.33                       | -124.65                                 | 457.38        | 725.05                        | 666.24               | 58.81   | 12.329                     |                                 |  |
| 11,600.00                                                                                       | 11,582.26                 | 11,024.82                 | 10,908.39                 | 41.79             | 38.88          | 118.26                       | -145.13                                 | 460.00        | 809.82                        | 751.86               | 57.96   | 13.973                     |                                 |  |
| 11,700.00                                                                                       | 11,682.07                 | 11,050.00                 | 10,921.50                 | 42.16             | 38.94          | 119.25                       | -166.47                                 | 462.52        | 896.42                        | 839.05               | 57.37   | 15.626                     |                                 |  |
| 11,800.00                                                                                       | 11,781.99                 | 11,064.56                 | 10,928.68                 | 42.52             | 38.98          | 121.49                       | -179.06                                 | 463.91        | 984.03                        | 927.47               | 56.56   | 17.398                     |                                 |  |
| 11,900.03                                                                                       | 11,882.00                 | 11,081.87                 | 10,936.83                 | 42.87             | 39.02          | -178.32                      | -194.26                                 | 465.49        | 1,072.46                      | 1,016.44             | 56.03   | 19.142                     |                                 |  |
| 12,000.00                                                                                       | 11,981.97                 | 11,100.00                 | 10,944.89                 | 43.22             | 39.07          | -178.55                      | -210.42                                 | 467.06        | 1,161.79                      | 1,106.13             | 55.66   | 20.872                     |                                 |  |
| 12,100.00                                                                                       | 12,081.97                 | 11,100.00                 | 10,944.89                 | 43.57             | 39.07          | -178.55                      | -210.42                                 | 467.06        | 1,252.39                      | 1,197.42             | 54.97   | 22.785                     |                                 |  |
| 12,200.00                                                                                       | 12,181.97                 | 11,124.81                 | 10,955.15                 | 43.92             | 39.14          | -178.83                      | -232.92                                 | 469.08        | 1,343.58                      | 1,288.56             | 55.02   | 24.419                     |                                 |  |
| 12,300.00                                                                                       | 12,281.91                 | 11,150.00                 | 10,964.62                 | 44.26             | 39.20          | 1.18                         | -256.18                                 | 470.96        | 1,435.07                      | 1,379.98             | 55.10   | 26.047                     |                                 |  |

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

| Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 4H - 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   |                | Highside<br>Toolface<br>(°) | Offset Wellbore Centre |               | Distance                   |                             | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning                    |
| Measured<br>Depth<br>(ft)                                                                  | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                             | +N/-S<br>(ft)          | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) |                               |                      |                            |
| 0.00                                                                                       | 0.00                      | 6.50                      | 6.50                      | 0.50              | 0.50           | -89.93                      | 0.07                   | -59.99        | 59.99                      |                             |                               |                      |                            |
| 100.00                                                                                     | 100.00                    | 106.50                    | 106.50                    | 0.52              | 0.52           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 58.95                       | 1.04                          | 57.754               |                            |
| 200.00                                                                                     | 200.00                    | 206.50                    | 206.50                    | 0.70              | 0.71           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 58.57                       | 1.41                          | 42.471               |                            |
| 300.00                                                                                     | 300.00                    | 306.50                    | 306.50                    | 0.99              | 1.00           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 58.00                       | 1.98                          | 30.224               |                            |
| 400.00                                                                                     | 400.00                    | 406.50                    | 406.50                    | 1.31              | 1.32           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 57.36                       | 2.63                          | 22.818               |                            |
| 500.00                                                                                     | 500.00                    | 506.50                    | 506.50                    | 1.65              | 1.66           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 56.68                       | 3.30                          | 18.160               |                            |
| 600.00                                                                                     | 600.00                    | 606.50                    | 606.50                    | 1.99              | 2.00           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 55.99                       | 3.99                          | 15.025               |                            |
| 700.00                                                                                     | 700.00                    | 706.50                    | 706.50                    | 2.34              | 2.35           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 55.30                       | 4.69                          | 12.790               |                            |
| 800.00                                                                                     | 800.00                    | 806.50                    | 806.50                    | 2.69              | 2.70           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 54.59                       | 5.39                          | 11.124               |                            |
| 900.00                                                                                     | 900.00                    | 906.50                    | 906.50                    | 3.04              | 3.06           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 53.89                       | 6.10                          | 9.836                |                            |
| 1,000.00                                                                                   | 1,000.00                  | 1,006.50                  | 1,006.50                  | 3.40              | 3.41           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 53.18                       | 6.81                          | 8.813                |                            |
| 1,100.00                                                                                   | 1,100.00                  | 1,106.50                  | 1,106.50                  | 3.75              | 3.76           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 52.47                       | 7.52                          | 7.980                |                            |
| 1,200.00                                                                                   | 1,200.00                  | 1,206.50                  | 1,206.50                  | 4.11              | 4.12           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 51.76                       | 8.23                          | 7.291                |                            |
| 1,300.00                                                                                   | 1,300.00                  | 1,306.50                  | 1,306.50                  | 4.46              | 4.48           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 51.05                       | 8.94                          | 6.710                |                            |
| 1,400.00                                                                                   | 1,400.00                  | 1,406.50                  | 1,406.50                  | 4.82              | 4.83           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 50.33                       | 9.65                          | 6.215                |                            |
| 1,500.00                                                                                   | 1,500.00                  | 1,506.50                  | 1,506.50                  | 5.18              | 5.19           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 49.62                       | 10.37                         | 5.787                |                            |
| 1,600.00                                                                                   | 1,600.00                  | 1,606.50                  | 1,606.50                  | 5.53              | 5.55           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 48.91                       | 11.08                         | 5.414                |                            |
| 1,700.00                                                                                   | 1,700.00                  | 1,706.50                  | 1,706.50                  | 5.89              | 5.90           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 48.19                       | 11.79                         | 5.086                |                            |
| 1,800.00                                                                                   | 1,800.00                  | 1,806.50                  | 1,806.50                  | 6.25              | 6.26           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 47.48                       | 12.51                         | 4.796 Alert          |                            |
| 1,900.00                                                                                   | 1,900.00                  | 1,906.50                  | 1,906.50                  | 6.61              | 6.62           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 46.76                       | 13.22                         | 4.536 Alert          |                            |
| 2,000.00                                                                                   | 2,000.00                  | 2,006.50                  | 2,006.50                  | 6.96              | 6.97           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 46.05                       | 13.94                         | 4.304 Alert          |                            |
| 2,100.00                                                                                   | 2,100.00                  | 2,106.50                  | 2,106.50                  | 7.32              | 7.33           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 45.33                       | 14.65                         | 4.094 Alert          |                            |
| 2,200.00                                                                                   | 2,200.00                  | 2,206.50                  | 2,206.50                  | 7.68              | 7.69           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 44.62                       | 15.37                         | 3.903 Alert          |                            |
| 2,300.00                                                                                   | 2,300.00                  | 2,306.50                  | 2,306.50                  | 8.04              | 8.05           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 43.90                       | 16.08                         | 3.730 Alert          |                            |
| 2,400.00                                                                                   | 2,400.00                  | 2,406.50                  | 2,406.50                  | 8.39              | 8.41           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 43.19                       | 16.80                         | 3.571 Alert          |                            |
| 2,500.00                                                                                   | 2,500.00                  | 2,506.50                  | 2,506.50                  | 8.75              | 8.76           | -89.93                      | 0.07                   | -59.99        | 59.99                      | 42.47                       | 17.52                         | 3.425 Alert, CC      |                            |
| 2,600.00                                                                                   | 2,600.00                  | 2,605.75                  | 2,605.74                  | 9.11              | 9.12           | -89.20                      | 0.85                   | -60.64        | 60.65                      | 42.42                       | 18.23                         | 3.326 Alert, ES      |                            |
| 2,700.00                                                                                   | 2,700.00                  | 2,704.97                  | 2,704.92                  | 9.47              | 9.47           | -87.25                      | 3.00                   | -62.44        | 62.53                      | 43.60                       | 18.93                         | 3.303 Alert, SF      |                            |
| 2,800.00                                                                                   | 2,800.00                  | 2,804.06                  | 2,803.90                  | 9.83              | 9.82           | -84.32                      | 6.51                   | -65.38        | 65.75                      | 46.12                       | 19.63                         | 3.349 Alert          |                            |
| 2,900.00                                                                                   | 2,899.99                  | 2,904.57                  | 2,902.57                  | 10.18             | 10.18          | -139.12                     | 11.37                  | -69.45        | 71.14                      | 50.81                       | 20.33                         | 3.500 Alert          |                            |
| 3,000.00                                                                                   | 2,999.96                  | 3,002.60                  | 3,001.97                  | 10.53             | 10.53          | -136.80                     | 16.97                  | -74.14        | 78.69                      | 57.67                       | 21.02                         | 3.743 Alert          |                            |
| 3,100.00                                                                                   | 3,099.86                  | 3,102.19                  | 3,101.29                  | 10.88             | 10.88          | -135.69                     | 22.56                  | -78.82        | 87.59                      | 65.86                       | 21.72                         | 4.032 Alert          |                            |
| 3,200.00                                                                                   | 3,199.68                  | 3,201.68                  | 3,200.52                  | 11.23             | 11.24          | -135.47                     | 28.15                  | -83.50        | 97.67                      | 75.25                       | 22.43                         | 4.355 Alert          |                            |
| 3,300.00                                                                                   | 3,299.47                  | 3,301.14                  | 3,299.71                  | 11.59             | 11.59          | -135.49                     | 33.74                  | -88.18        | 108.06                     | 84.93                       | 23.13                         | 4.672 Alert          |                            |
| 3,400.00                                                                                   | 3,399.27                  | 3,400.60                  | 3,398.90                  | 11.94             | 11.95          | -135.51                     | 39.32                  | -92.86        | 118.45                     | 94.61                       | 23.83                         | 4.970 Alert          |                            |
| 3,500.00                                                                                   | 3,499.06                  | 3,500.06                  | 3,498.09                  | 12.30             | 12.31          | -135.52                     | 44.91                  | -97.54        | 128.83                     | 104.29                      | 24.54                         | 5.250                |                            |
| 3,600.00                                                                                   | 3,598.85                  | 3,600.48                  | 3,597.28                  | 12.65             | 12.67          | -135.53                     | 50.50                  | -102.21       | 139.22                     | 113.97                      | 25.25                         | 5.513                |                            |
| 3,700.00                                                                                   | 3,698.64                  | 3,701.03                  | 3,696.48                  | 13.01             | 13.04          | -135.54                     | 56.08                  | -106.89       | 149.60                     | 123.64                      | 25.96                         | 5.762                |                            |
| 3,800.00                                                                                   | 3,798.44                  | 3,801.57                  | 3,795.67                  | 13.36             | 13.40          | -135.55                     | 61.67                  | -111.57       | 159.99                     | 133.31                      | 26.67                         | 5.998                |                            |
| 3,900.00                                                                                   | 3,898.23                  | 3,902.11                  | 3,894.86                  | 13.72             | 13.76          | -135.56                     | 67.26                  | -116.25       | 170.37                     | 142.98                      | 27.39                         | 6.221                |                            |
| 4,000.00                                                                                   | 3,998.02                  | 4,002.65                  | 3,994.05                  | 14.08             | 14.13          | -135.57                     | 72.84                  | -120.93       | 180.76                     | 152.66                      | 28.10                         | 6.432                |                            |
| 4,100.00                                                                                   | 4,097.81                  | 4,103.19                  | 4,093.24                  | 14.44             | 14.49          | -135.57                     | 78.43                  | -125.61       | 191.14                     | 162.33                      | 28.82                         | 6.633                |                            |
| 4,200.00                                                                                   | 4,197.61                  | 4,203.73                  | 4,192.44                  | 14.80             | 14.86          | -135.58                     | 84.02                  | -130.29       | 201.53                     | 172.00                      | 29.53                         | 6.824                |                            |
| 4,300.00                                                                                   | 4,297.40                  | 4,304.27                  | 4,291.63                  | 15.16             | 15.22          | -135.58                     | 89.60                  | -134.96       | 211.92                     | 181.67                      | 30.25                         | 7.006                |                            |
| 4,400.00                                                                                   | 4,397.19                  | 4,404.81                  | 4,390.82                  | 15.52             | 15.59          | -135.59                     | 95.19                  | -139.64       | 222.30                     | 191.33                      | 30.97                         | 7.179                |                            |
| 4,500.00                                                                                   | 4,496.98                  | 4,505.35                  | 4,490.01                  | 15.88             | 15.96          | -135.59                     | 100.77                 | -144.32       | 232.69                     | 201.00                      | 31.68                         | 7.344                |                            |
| 4,600.00                                                                                   | 4,596.78                  | 4,605.89                  | 4,589.20                  | 16.24             | 16.32          | -135.60                     | 106.36                 | -149.00       | 243.07                     | 210.67                      | 32.40                         | 7.502                |                            |
| 4,700.00                                                                                   | 4,696.57                  | 4,706.43                  | 4,688.40                  | 16.60             | 16.69          | -135.60                     | 111.95                 | -153.68       | 253.46                     | 220.34                      | 33.12                         | 7.653                |                            |
| 4,800.00                                                                                   | 4,796.36                  | 4,806.97                  | 4,787.59                  | 16.96             | 17.06          | -135.60                     | 117.53                 | -158.36       | 263.84                     | 230.00                      | 33.84                         | 7.797                |                            |
| 4,900.00                                                                                   | 4,896.15                  | 4,907.51                  | 4,886.78                  | 17.32             | 17.43          | -135.60                     | 123.12                 | -163.03       | 274.23                     | 239.67                      | 34.56                         | 7.935                |                            |
| 5,000.00                                                                                   | 4,895.95                  | 5,008.06                  | 4,985.97                  | 17.68             | 17.79          | -135.61                     | 128.71                 | -167.71       | 284.61                     | 249.34                      | 35.28                         | 8.068                |                            |

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

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 23-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference: RKB1 @ 3218.30ft  
 MD Reference: RKB1 @ 3218.30ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at: 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

| Offset Design Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 4H - 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   |                | Highside<br>Tooface<br>(") | Offset Wellbore Centre |               | Distance                   |                             | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning |                    |         |
| Measured<br>Depth<br>(ft)                                                                  | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                            | +N/-S<br>(ft)          | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) |                               |                      |         |                    |         |
| 5,100.00                                                                                   | 5,095.74                  | 5,108.60                  | 5,085.16                  | 18.04             | 18.16          | -135.61                    | 134.29                 | -172.39       | 295.00                     | 259.00                      | 36.00                         | 8.195                |         |                    |         |
| 5,200.00                                                                                   | 5,195.53                  | 5,190.86                  | 5,184.36                  | 18.41             | 18.46          | -135.61                    | 139.88                 | -177.07       | 305.39                     | 268.73                      | 36.65                         | 8.332                |         |                    |         |
| 5,300.00                                                                                   | 5,295.32                  | 5,294.15                  | 5,287.40                  | 18.77             | 18.84          | -135.66                    | 145.35                 | -181.65       | 315.45                     | 278.05                      | 37.40                         | 8.434                |         |                    |         |
| 5,400.00                                                                                   | 5,395.12                  | 5,401.15                  | 5,394.29                  | 19.13             | 19.23          | -136.01                    | 148.91                 | -184.63       | 323.49                     | 285.32                      | 38.17                         | 8.476                |         |                    |         |
| 5,500.00                                                                                   | 5,494.91                  | 5,508.39                  | 5,501.52                  | 19.49             | 19.61          | -136.68                    | 150.07                 | -185.61       | 329.26                     | 290.35                      | 38.91                         | 8.462                |         |                    |         |
| 5,600.00                                                                                   | 5,594.70                  | 5,608.08                  | 5,601.20                  | 19.86             | 19.96          | -137.44                    | 150.07                 | -185.61       | 333.98                     | 294.35                      | 39.62                         | 8.428                |         |                    |         |
| 5,700.00                                                                                   | 5,694.49                  | 5,707.87                  | 5,700.99                  | 20.22             | 20.31          | -138.18                    | 150.07                 | -185.61       | 338.75                     | 298.41                      | 40.34                         | 8.398                |         |                    |         |
| 5,800.00                                                                                   | 5,794.29                  | 5,807.66                  | 5,800.79                  | 20.58             | 20.67          | -138.89                    | 150.07                 | -185.61       | 343.58                     | 302.53                      | 41.05                         | 8.369                |         |                    |         |
| 5,900.00                                                                                   | 5,894.08                  | 5,907.46                  | 5,900.58                  | 20.95             | 21.02          | -139.59                    | 150.07                 | -185.61       | 348.46                     | 306.70                      | 41.77                         | 8.343                |         |                    |         |
| 6,000.00                                                                                   | 5,993.87                  | 6,007.25                  | 6,000.37                  | 21.31             | 21.38          | -140.26                    | 150.07                 | -185.61       | 353.39                     | 310.91                      | 42.48                         | 8.319                |         |                    |         |
| 6,100.00                                                                                   | 6,093.67                  | 6,107.04                  | 6,100.17                  | 21.67             | 21.73          | -140.92                    | 150.07                 | -185.61       | 358.37                     | 315.18                      | 43.19                         | 8.297                |         |                    |         |
| 6,200.00                                                                                   | 6,193.46                  | 6,206.83                  | 6,199.96                  | 22.04             | 22.08          | -141.56                    | 150.07                 | -185.61       | 363.40                     | 319.49                      | 43.91                         | 8.276                |         |                    |         |
| 6,300.00                                                                                   | 6,293.25                  | 6,306.63                  | 6,299.75                  | 22.40             | 22.44          | -142.18                    | 150.07                 | -185.61       | 368.46                     | 323.84                      | 44.62                         | 8.257                |         |                    |         |
| 6,400.00                                                                                   | 6,393.04                  | 6,406.42                  | 6,399.54                  | 22.77             | 22.79          | -142.79                    | 150.07                 | -185.61       | 373.57                     | 328.24                      | 45.34                         | 8.240                |         |                    |         |
| 6,500.00                                                                                   | 6,492.84                  | 6,506.21                  | 6,499.34                  | 23.13             | 23.15          | -143.38                    | 150.07                 | -185.61       | 378.72                     | 332.67                      | 46.05                         | 8.224                |         |                    |         |
| 6,600.00                                                                                   | 6,592.63                  | 6,606.00                  | 6,599.13                  | 23.49             | 23.50          | -143.95                    | 150.07                 | -185.61       | 383.91                     | 337.15                      | 46.77                         | 8.209                |         |                    |         |
| 6,700.00                                                                                   | 6,692.42                  | 6,705.80                  | 6,698.92                  | 23.86             | 23.86          | -144.51                    | 150.07                 | -185.61       | 389.14                     | 341.66                      | 47.48                         | 8.196                |         |                    |         |
| 6,800.00                                                                                   | 6,792.21                  | 6,805.59                  | 6,798.71                  | 24.22             | 24.21          | -145.05                    | 150.07                 | -185.61       | 394.40                     | 346.21                      | 48.20                         | 8.183                |         |                    |         |
| 6,900.00                                                                                   | 6,892.01                  | 6,905.38                  | 6,898.51                  | 24.59             | 24.57          | -145.58                    | 150.07                 | -185.61       | 399.70                     | 350.79                      | 48.91                         | 8.172                |         |                    |         |
| 7,000.00                                                                                   | 6,991.80                  | 7,005.17                  | 6,998.30                  | 24.95             | 24.92          | -146.09                    | 150.07                 | -185.61       | 405.03                     | 355.40                      | 49.63                         | 8.162                |         |                    |         |
| 7,100.00                                                                                   | 7,091.59                  | 7,104.97                  | 7,098.09                  | 25.32             | 25.28          | -146.59                    | 150.07                 | -185.61       | 410.39                     | 360.05                      | 50.34                         | 8.152                |         |                    |         |
| 7,200.00                                                                                   | 7,191.38                  | 7,204.76                  | 7,197.88                  | 25.68             | 25.63          | -147.08                    | 150.07                 | -185.61       | 415.79                     | 364.73                      | 51.06                         | 8.144                |         |                    |         |
| 7,300.00                                                                                   | 7,291.18                  | 7,304.55                  | 7,297.68                  | 26.05             | 25.99          | -147.56                    | 150.07                 | -185.61       | 421.21                     | 369.44                      | 51.77                         | 8.136                |         |                    |         |
| 7,400.00                                                                                   | 7,390.97                  | 7,404.34                  | 7,397.47                  | 26.41             | 26.34          | -148.02                    | 150.07                 | -185.61       | 426.66                     | 374.17                      | 52.49                         | 8.129                |         |                    |         |
| 7,500.00                                                                                   | 7,490.76                  | 7,504.14                  | 7,497.26                  | 26.78             | 26.70          | -148.47                    | 150.07                 | -185.61       | 432.13                     | 378.93                      | 53.20                         | 8.123                |         |                    |         |
| 7,600.00                                                                                   | 7,590.55                  | 7,603.93                  | 7,597.05                  | 27.14             | 27.05          | -148.91                    | 150.07                 | -185.61       | 437.64                     | 383.72                      | 53.92                         | 8.117                |         |                    |         |
| 7,700.00                                                                                   | 7,690.35                  | 7,703.72                  | 7,696.85                  | 27.51             | 27.41          | -149.34                    | 150.07                 | -185.61       | 443.17                     | 388.53                      | 54.63                         | 8.112                |         |                    |         |
| 7,800.00                                                                                   | 7,790.14                  | 7,803.51                  | 7,796.64                  | 27.87             | 27.76          | -149.76                    | 150.07                 | -185.61       | 448.72                     | 393.37                      | 55.35                         | 8.107                |         |                    |         |
| 7,900.00                                                                                   | 7,889.93                  | 7,903.31                  | 7,896.43                  | 28.24             | 28.12          | -150.17                    | 150.07                 | -185.61       | 454.30                     | 398.23                      | 56.06                         | 8.103                |         |                    |         |
| 8,000.00                                                                                   | 7,989.72                  | 8,003.10                  | 7,996.22                  | 28.60             | 28.48          | -150.57                    | 150.07                 | -185.61       | 459.89                     | 403.12                      | 56.78                         | 8.100                |         |                    |         |
| 8,100.00                                                                                   | 8,089.52                  | 8,102.89                  | 8,096.02                  | 28.97             | 28.83          | -150.96                    | 150.07                 | -185.61       | 465.51                     | 408.02                      | 57.49                         | 8.097                |         |                    |         |
| 8,200.00                                                                                   | 8,189.31                  | 8,202.68                  | 8,195.81                  | 29.34             | 29.19          | -151.34                    | 150.07                 | -185.61       | 471.16                     | 412.95                      | 58.21                         | 8.094                |         |                    |         |
| 8,300.00                                                                                   | 8,289.10                  | 8,302.48                  | 8,295.60                  | 29.70             | 29.54          | -151.71                    | 150.07                 | -185.61       | 476.82                     | 417.89                      | 58.93                         | 8.092                |         |                    |         |
| 8,400.00                                                                                   | 8,388.89                  | 8,402.27                  | 8,395.39                  | 30.07             | 29.90          | -152.07                    | 150.07                 | -185.61       | 482.50                     | 422.86                      | 59.64                         | 8.090                |         |                    |         |
| 8,500.00                                                                                   | 8,488.69                  | 8,502.06                  | 8,495.19                  | 30.43             | 30.25          | -152.42                    | 150.07                 | -185.61       | 488.20                     | 427.84                      | 60.36                         | 8.088                |         |                    |         |
| 8,600.00                                                                                   | 8,588.48                  | 8,601.85                  | 8,594.98                  | 30.80             | 30.61          | -152.77                    | 150.07                 | -185.61       | 493.92                     | 432.84                      | 61.07                         | 8.087                |         |                    |         |
| 8,700.00                                                                                   | 8,688.27                  | 8,701.65                  | 8,694.77                  | 31.16             | 30.97          | -153.11                    | 150.07                 | -185.61       | 499.65                     | 437.86                      | 61.79                         | 8.086                |         |                    |         |
| 8,800.00                                                                                   | 8,788.06                  | 8,801.44                  | 8,794.56                  | 31.53             | 31.32          | -153.44                    | 150.07                 | -185.61       | 505.40                     | 442.90                      | 62.51                         | 8.086                |         |                    |         |
| 8,900.00                                                                                   | 8,887.86                  | 8,901.23                  | 8,894.36                  | 31.90             | 31.68          | -153.76                    | 150.07                 | -185.61       | 511.17                     | 447.95                      | 63.22                         | 8.085                |         |                    |         |
| 9,000.00                                                                                   | 8,987.65                  | 9,001.02                  | 8,994.15                  | 32.26             | 32.03          | -154.07                    | 150.07                 | -185.61       | 516.96                     | 453.02                      | 63.94                         | 8.085                |         |                    |         |
| 9,100.00                                                                                   | 9,087.44                  | 9,100.82                  | 9,093.94                  | 32.63             | 32.39          | -154.38                    | 150.07                 | -185.61       | 522.76                     | 458.10                      | 64.65                         | 8.085                |         |                    |         |
| 9,200.00                                                                                   | 9,187.23                  | 9,200.61                  | 9,193.73                  | 32.99             | 32.75          | -154.68                    | 150.07                 | -185.61       | 528.57                     | 463.20                      | 65.37                         | 8.086                |         |                    |         |
| 9,300.00                                                                                   | 9,287.03                  | 9,300.40                  | 9,293.53                  | 33.36             | 33.10          | -154.98                    | 150.07                 | -185.61       | 534.40                     | 468.31                      | 66.09                         | 8.086                |         |                    |         |
| 9,400.00                                                                                   | 9,386.82                  | 9,400.19                  | 9,393.32                  | 33.73             | 33.46          | -155.27                    | 150.07                 | -185.61       | 540.24                     | 473.44                      | 66.80                         | 8.087                |         |                    |         |
| 9,500.00                                                                                   | 9,486.61                  | 9,500.01                  | 9,493.11                  | 34.09             | 33.82          | -155.55                    | 150.07                 | -185.61       | 546.10                     | 478.58                      | 67.52                         | 8.088                |         |                    |         |
| 9,600.00                                                                                   | 9,586.40                  | 9,600.22                  | 9,592.90                  | 34.46             | 34.17          | -155.83                    | 150.07                 | -185.61       | 551.97                     | 483.73                      | 68.24                         | 8.089                |         |                    |         |
| 9,700.00                                                                                   | 9,686.20                  | 9,700.43                  | 9,692.70                  | 34.83             | 34.53          | -156.10                    | 150.07                 | -185.61       | 557.85                     | 488.89                      | 68.95                         | 8.090                |         |                    |         |
| 9,800.00                                                                                   | 9,785.99                  | 9,800.64                  | 9,792.49                  | 35.19             | 34.89          | -156.36                    | 150.07                 | -185.61       | 563.74                     | 494.07                      | 69.67                         | 8.091                |         |                    |         |
| 9,900.00                                                                                   | 9,885.78                  | 9,900.84                  | 9,892.28                  | 35.56             | 35.25          | -156.62                    | 150.07                 | -185.61       | 569.65                     | 499.26                      | 70.39                         | 8.093                |         |                    |         |
| 10,000.00                                                                                  | 9,985.58                  | 10,001.05                 | 9,992.08                  | 35.92             | 35.61          | -156.88                    | 150.07                 | -185.61       | 575.56                     | 504.46                      | 71.11                         | 8.094                |         |                    |         |
| 10,100.00                                                                                  | 10,085.37                 | 10,101.26                 | 10,091.87                 | 36.29             | 35.96          | -157.13                    | 150.07                 | -185.61       | 581.49                     | 509.67                      | 71.83                         | 8.096                |         |                    |         |

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

# Anticollision Report

|                           |                                    |                                    |                                  |
|---------------------------|------------------------------------|------------------------------------|----------------------------------|
| <b>Company:</b>           | WCDSC Permian NM                   | <b>Local Co-ordinate Reference</b> | Well Mean Green 23-35 Fed Com 2H |
| <b>Project:</b>           | Lea County (NAD83 New Mexico East) | <b>TVD Reference:</b>              | RKB1 @ 3218.30ft                 |
| <b>Reference Site:</b>    | Sec 23-T26S-R34E                   | <b>MD Reference:</b>               | RKB1 @ 3218.30ft                 |
| <b>Site Error:</b>        | 0.00 ft                            | <b>North Reference:</b>            | Grid                             |
| <b>Reference Well:</b>    | Mean Green 23-35 Fed Com 2H        | <b>Survey Calculation Method:</b>  | Minimum Curvature                |
| <b>Well Error:</b>        | 0.50 ft                            | <b>Output errors are at</b>        | 2.00 sigma                       |
| <b>Reference Wellbore</b> | Wellbore #1                        | <b>Database:</b>                   | EDM r5000.141_Prod US            |
| <b>Reference Design:</b>  | Permit Plan 2                      | <b>Offset TVD Reference:</b>       | Offset Datum                     |

| Offset Design: Sec 23-T26S-R34E - Mean Green 23-35 Fed Com 4H - 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   |                | Highside<br>Toolface<br>(°) | Offset Wellbore Centre |               | Distance                   |                             | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning |
| Measured<br>Depth<br>(ft)                                                                   | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                             | +N/-S<br>(ft)          | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) |                               |                      |         |
| 10,200.00                                                                                   | 10,185.16                 | 10,201.47                 | 10,191.66                 | 36.66             | 36.32          | -157.37                     | 150.07                 | -185.61       | 587.43                     | 514.89                      | 72.54                         | 8.098                |         |
| 10,300.00                                                                                   | 10,284.95                 | 10,287.06                 | 10,280.05                 | 37.02             | 36.61          | -157.91                     | 146.60                 | -185.61       | 594.08                     | 520.92                      | 73.16                         | 8.120                |         |
| 10,400.00                                                                                   | 10,384.75                 | 10,388.44                 | 10,380.04                 | 37.39             | 36.86          | -159.48                     | 131.94                 | -185.61       | 603.53                     | 529.84                      | 73.68                         | 8.191                |         |
| 10,500.00                                                                                   | 10,484.54                 | 10,443.58                 | 10,431.36                 | 37.76             | 37.07          | -161.79                     | 108.48                 | -185.61       | 616.88                     | 542.83                      | 74.04                         | 8.331                |         |
| 10,600.00                                                                                   | 10,584.33                 | 10,510.92                 | 10,492.19                 | 38.12             | 37.25          | -164.49                     | 79.68                  | -185.61       | 635.46                     | 561.32                      | 74.14                         | 8.571                |         |
| 10,700.00                                                                                   | 10,684.12                 | 10,570.06                 | 10,542.51                 | 38.49             | 37.39          | -167.26                     | 48.66                  | -185.61       | 660.46                     | 586.56                      | 73.90                         | 8.938                |         |
| 10,800.00                                                                                   | 10,783.92                 | 10,621.36                 | 10,583.37                 | 38.86             | 37.50          | -169.90                     | 17.67                  | -185.61       | 692.63                     | 619.37                      | 73.26                         | 9.454                |         |
| 10,900.00                                                                                   | 10,883.71                 | 10,665.62                 | 10,616.27                 | 39.22             | 37.59          | -172.32                     | -11.92                 | -185.61       | 732.22                     | 659.95                      | 72.27                         | 10.132               |         |
| 11,000.00                                                                                   | 10,983.50                 | 10,700.00                 | 10,640.20                 | 39.59             | 37.66          | -174.25                     | -38.60                 | -185.61       | 779.02                     | 708.12                      | 70.91                         | 10.986               |         |
| 11,100.00                                                                                   | 11,083.29                 | 10,736.69                 | 10,664.05                 | 39.96             | 37.74          | -176.35                     | -64.47                 | -185.61       | 832.46                     | 762.89                      | 69.56                         | 11.967               |         |
| 11,200.00                                                                                   | 11,183.09                 | 10,765.23                 | 10,681.34                 | 40.32             | 37.81          | -177.99                     | -87.17                 | -185.61       | 891.88                     | 823.81                      | 68.06                         | 13.104               |         |
| 11,300.00                                                                                   | 11,282.88                 | 10,800.00                 | 10,700.85                 | 40.69             | 37.89          | -180.00                     | -115.95                | -185.61       | 956.63                     | 889.81                      | 66.82                         | 14.317               |         |
| 11,400.00                                                                                   | 11,382.67                 | 10,800.00                 | 10,700.85                 | 41.06             | 37.89          | -180.00                     | -115.95                | -185.61       | 1,025.83                   | 960.92                      | 64.90                         | 15.806               |         |
| 11,500.00                                                                                   | 11,482.46                 | 10,831.03                 | 10,716.76                 | 41.42             | 37.96          | -178.23                     | -142.59                | -185.61       | 1,098.65                   | 1,034.77                    | 63.88                         | 17.198               |         |
| 11,600.00                                                                                   | 11,582.26                 | 10,850.00                 | 10,725.76                 | 41.79             | 38.00          | -177.16                     | -159.28                | -185.61       | 1,174.93                   | 1,112.17                    | 62.76                         | 18.721               |         |
| 11,700.00                                                                                   | 11,682.07                 | 10,850.00                 | 10,725.76                 | 42.16             | 38.00          | -177.20                     | -159.28                | -185.61       | 1,254.01                   | 1,192.59                    | 61.42                         | 20.417               |         |
| 11,800.00                                                                                   | 11,781.99                 | 10,877.09                 | 10,737.65                 | 42.52             | 38.07          | -175.86                     | -183.63                | -185.61       | 1,333.80                   | 1,273.07                    | 60.74                         | 21.960               |         |
| 11,900.00                                                                                   | 11,882.00                 | 10,900.00                 | 10,746.80                 | 42.87             | 38.12          | -127.17                     | -204.63                | -185.61       | 1,414.62                   | 1,354.57                    | 60.05                         | 23.557               |         |
| 12,000.00                                                                                   | 11,981.97                 | 10,900.00                 | 10,746.80                 | 43.22             | 38.12          | -127.17                     | -204.63                | -185.61       | 1,496.47                   | 1,437.39                    | 59.09                         | 25.326               |         |

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

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 35-T26S-R34E  
 Site Error: 0.00 ft  
 Reference Well: Mean Green 23-35 Fed Com 2H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 2

Local Co-ordinate Reference  
 TVD Reference:  
 MD Reference:  
 North Reference:  
 Survey Calculation Method:  
 Output errors are at  
 Database:  
 Offset TVD Reference:

Well Mean Green 23-35 Fed Com 2H  
 RKB1 @ 3218.30ft  
 RKB1 @ 3218.30ft  
 Grid  
 Minimum Curvature  
 2.00 sigma  
 EDM r5000.141\_Prod US  
 Offset Datum

| Offset Design Sec 35-T26S-R34E - Madera 35 Fed 1H - Original Hole - Scientific |                           |                           |                           |                   |                |                             |                                         |               |                               |                      |         | Offset Site Error: | 0.00 ft |
|--------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|-------------------------------|----------------------|---------|--------------------|---------|
| Survey Program: 128-MWD+IGRF                                                   |                           |                           |                           |                   |                |                             |                                         |               |                               |                      |         | Offset Well Error: | 0.00 ft |
| Reference                                                                      |                           | Offset                    |                           | Semi Major Axis   |                | Highside<br>Toolface<br>(°) | Distance                                |               | Minimum<br>Separation<br>(ft) | Separation<br>Factor | Warning |                    |         |
| Measured<br>Depth<br>(ft)                                                      | Vertical<br>Depth<br>(ft) | Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) |                             | Offset Wellbore Centre<br>+N/-S<br>(ft) | +E/-W<br>(ft) |                               |                      |         |                    |         |
| 19,600.00                                                                      | 12,805.00                 | 16,731.34                 | 12,500.92                 | 108.70            | 143.44         | 14.10                       | -8,120.90                               | 467.12        | 1,439.84                      | 1,252.67             | 187.16  | 7.693              |         |
| 19,700.00                                                                      | 12,805.00                 | 16,734.00                 | 12,500.81                 | 110.02            | 143.52         | 13.66                       | -8,121.01                               | 469.78        | 1,342.98                      | 1,156.17             | 186.80  | 7.189              |         |
| 19,800.00                                                                      | 12,805.00                 | 16,734.00                 | 12,500.81                 | 111.35            | 143.52         | 13.66                       | -8,121.01                               | 469.78        | 1,246.61                      | 1,060.32             | 186.30  | 6.692              |         |
| 19,900.00                                                                      | 12,805.00                 | 16,741.42                 | 12,500.50                 | 112.68            | 143.74         | 12.45                       | -8,121.34                               | 477.18        | 1,150.83                      | 965.06               | 185.77  | 6.195              |         |
| 20,000.00                                                                      | 12,805.00                 | 16,744.85                 | 12,500.35                 | 114.01            | 143.84         | 11.89                       | -8,121.50                               | 480.61        | 1,055.83                      | 870.83               | 185.00  | 5.707              |         |
| 20,100.00                                                                      | 12,805.00                 | 16,748.49                 | 12,500.18                 | 115.34            | 143.95         | 11.29                       | -8,121.67                               | 484.24        | 961.81                        | 777.84               | 183.97  | 5.228              |         |
| 20,200.00                                                                      | 12,805.00                 | 16,752.34                 | 12,500.00                 | 116.67            | 144.06         | 10.66                       | -8,121.86                               | 488.08        | 869.12                        | 686.53               | 182.58  | 4.760 Alert        |         |
| 20,300.00                                                                      | 12,805.00                 | 16,756.42                 | 12,499.80                 | 118.01            | 144.18         | 9.98                        | -8,122.07                               | 492.15        | 778.20                        | 597.52               | 180.68  | 4.307 Alert        |         |
| 20,400.00                                                                      | 12,805.00                 | 16,760.77                 | 12,499.58                 | 119.35            | 144.31         | 9.26                        | -8,122.30                               | 496.49        | 689.76                        | 511.78               | 177.98  | 3.875 Alert        |         |
| 20,500.00                                                                      | 12,805.00                 | 16,765.40                 | 12,499.34                 | 120.70            | 144.45         | 8.49                        | -8,122.56                               | 501.11        | 604.89                        | 430.83               | 174.06  | 3.475 Alert        |         |
| 20,600.00                                                                      | 12,805.00                 | 16,770.35                 | 12,499.08                 | 122.05            | 144.59         | 7.66                        | -8,122.84                               | 506.04        | 525.31                        | 357.15               | 168.16  | 3.124 Alert        |         |
| 20,700.00                                                                      | 12,805.00                 | 16,775.65                 | 12,498.78                 | 123.39            | 144.75         | 6.77                        | -8,123.16                               | 511.32        | 453.80                        | 294.74               | 159.06  | 2.853 Alert        |         |
| 20,800.00                                                                      | 12,805.00                 | 16,781.32                 | 12,498.45                 | 124.75            | 144.92         | 5.82                        | -8,123.51                               | 516.98        | 394.78                        | 249.62               | 145.16  | 2.720 Alert        |         |
| 20,900.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 126.10            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 354.57                        | 227.81               | 126.76  | 2.797 Alert        |         |
| 21,000.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 127.45            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 339.97                        | 223.84               | 116.13  | 2.928 Alert        |         |
| 21,000.88                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 127.46            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 339.97                        | 223.83               | 116.14  | 2.927 Alert, CC    |         |
| 21,100.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 128.81            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 354.18                        | 222.46               | 131.72  | 2.689 Alert, ES    |         |
| 21,200.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 130.17            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 394.09                        | 240.28               | 153.81  | 2.562 Alert, SF    |         |
| 21,300.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 131.53            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 452.96                        | 283.33               | 169.63  | 2.670 Alert        |         |
| 21,400.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 132.90            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 524.44                        | 345.01               | 179.43  | 2.823 Alert        |         |
| 21,500.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 134.26            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 604.07                        | 418.70               | 185.37  | 3.259 Alert        |         |
| 21,600.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 135.63            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 689.03                        | 499.99               | 189.04  | 3.645 Alert        |         |
| 21,700.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 137.00            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 777.58                        | 586.19               | 191.39  | 4.063 Alert        |         |
| 21,800.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 138.37            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 868.61                        | 675.66               | 192.95  | 4.502 Alert        |         |
| 21,900.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 139.75            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 961.43                        | 767.41               | 194.02  | 4.955 Alert        |         |
| 22,000.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 141.12            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 1,055.57                      | 860.78               | 194.79  | 5.419              |         |
| 22,100.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 142.50            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 1,150.69                      | 955.34               | 195.35  | 5.890              |         |
| 22,200.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 143.87            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 1,246.57                      | 1,050.80             | 195.77  | 6.368              |         |
| 22,300.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 145.25            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 1,343.06                      | 1,146.96             | 196.10  | 6.849              |         |
| 22,400.00                                                                      | 12,805.00                 | 16,782.00                 | 12,498.41                 | 146.63            | 144.94         | 5.71                        | -8,123.56                               | 517.65        | 1,440.03                      | 1,243.66             | 196.37  | 7.333              |         |

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

# Anticollision Report

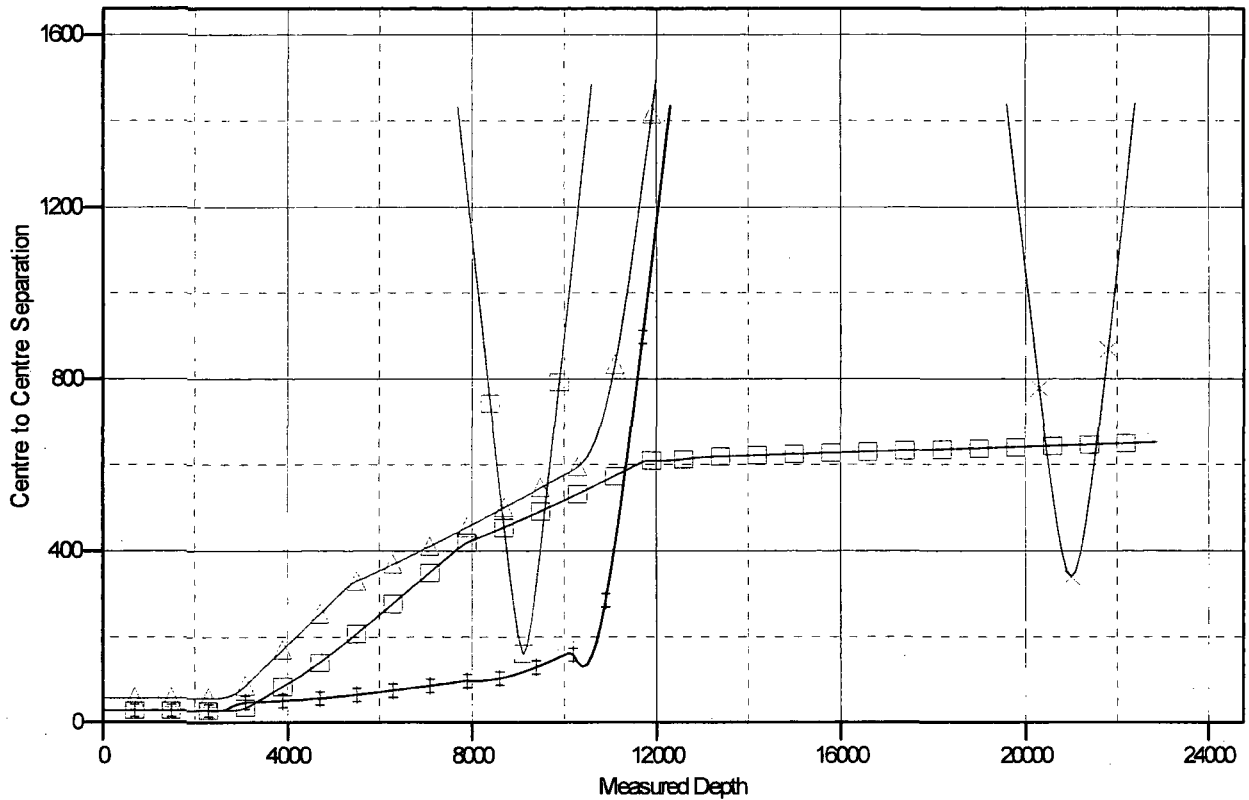
**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 23-T26S-R34E  
**Site Error:** 0.00 ft  
**Reference Well:** Mean Green 23-35 Fed Com 2H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 2

**Local Co-ordinate Reference:** Well Mean Green 23-35 Fed Com 2H  
**TVD Reference:** RKB1 @ 3218.30ft  
**MD Reference:** RKB1 @ 3218.30ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at:** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to RKB1 @ 3218.30ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -104.333334

Coordinates are relative to: Mean Green 23-35 Fed Com 2H  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grid Convergence at Surface is: 0.48°

## Ladder Plot



## LEGEND

Mean Green 23 FED 1H, Original Hole, Actual V0  
 Mean Green 23-35 Fed Com 1H, Wellbore #1, Permit Plan 1 V0  
 Mean Green 23-35 Fed Com 4H, Wellbore #1, Permit Plan 1 V0  
 Mean Green 23-35 Fed Com 3H, Wellbore #1, Permit Plan 1 V0  
 Mean Green 23-35 Fed 1H, Original Hole, Survey V0

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



# Anticollision Report

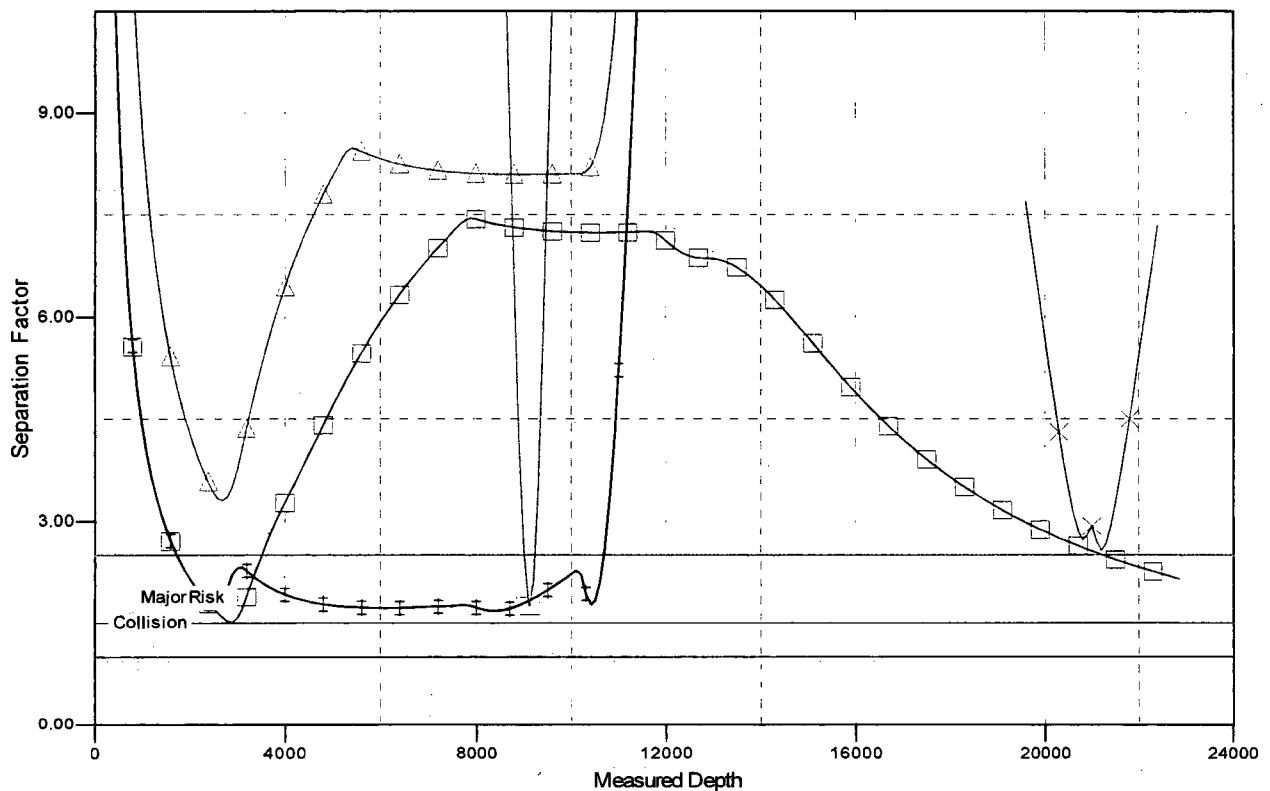
**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 23-T26S-R34E  
**Site Error:** 0.00 ft  
**Reference Well:** Mean Green 23-35 Fed Com 2H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 2

**Local Co-ordinate Reference**  
**TVD Reference:** RKB1 @ 3218.30ft  
**MD Reference:** RKB1 @ 3218.30ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to RKB1 @ 3218.30ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -104.333334

Coordinates are relative to: Mean Green 23-35 Fed Com 2H  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grid Convergence at Surface is: 0.48°

## Separation Factor Plot



### LEGEND

Mean Green 23-35 Fed Com 1H, Original Hole, Actuals V0  
 Mean Green 23-35 Fed Com 1H, Wellbore #1, Permit Plan 1 V0  
 Mean Green 23-35 Fed Com 2H, Wellbore #1, Permit Plan 1 V0  
 Mean Green 23-35 Fed Com 3H, Wellbore #1, Permit Plan 1 V0  
 Madena 35 Fed 1H, Original Hole, Scientific V0

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

# PECOS DISTRICT

## DRILLING CONDITIONS OF APPROVAL

|                              |                                           |
|------------------------------|-------------------------------------------|
| <b>OPERATOR'S NAME:</b>      | <b>Devon Energy Production Company</b>    |
| <b>LEASE NO.:</b>            | <b>NMNM100568</b>                         |
| <b>WELL NAME &amp; NO.:</b>  | <b>Mean Green 23-35 Fed Com 2H</b>        |
| <b>SURFACE HOLE FOOTAGE:</b> | <b>2449'S &amp; 860'E</b>                 |
| <b>BOTTOM HOLE FOOTAGE:</b>  | <b>200'S &amp; 380'E</b>                  |
| <b>LOCATION:</b>             | <b>Section 23, T.26 S., R.34 E., NMPM</b> |
| <b>COUNTY:</b>               | <b>Lea County, New Mexico</b>             |

**COA**

**All previous COA still apply expect the following:**

|                      |                                        |                                            |                               |
|----------------------|----------------------------------------|--------------------------------------------|-------------------------------|
| H2S                  | <input type="radio"/> Yes              | <input checked="" type="radio"/> No        |                               |
| Potash               | <input checked="" type="radio"/> None  | <input type="radio"/> Secretary            | <input type="radio"/> R-111-P |
| Cave/Karst Potential | <input checked="" type="radio"/> Low   | <input type="radio"/> Medium               | <input type="radio"/> High    |
| Variance             | <input type="radio"/> None             | <input checked="" type="radio"/> Flex Hose | <input type="radio"/> Other   |
| Wellhead             | <input type="radio"/> Conventional     | <input checked="" type="radio"/> Multibowl | <input type="radio"/> Both    |
| Other                | <input type="checkbox"/> 4 String Area | <input type="checkbox"/> Capitan Reef      | <input type="checkbox"/> WIPP |

### A. Hydrogen Sulfide

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

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1050** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

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

**Operator shall filled 100% casing with fluid while running intermediate casing to maintain collapse safety factor.**

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

**If Operator is to used DV tool the cement will be adjusted proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall contact BLM before running DV Tool and submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.**

**In case of lost circulation, operator proposed to pump cement down the 8 5/5" x 13 3/8 " annulus. Operator must run a CBL from TD of the 8 5/8" casing to surface and 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. **Additional cement maybe requiried. Excess calculates to -71%.**

### **C. PRESSURE CONTROL**

- 1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
- 2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi.**
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7-5/8 intermediate casing shoe shall be **10,000 (10M) psi.**
- 4. **Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)**

## GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)

393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> 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 (one log per well pad is acceptable) 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 integrity 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 integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a

larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

#### B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

### C. DRILLING MUD

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

### D. WASTE MATERIAL AND FLUIDS

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

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

#### **Waste Minimization Plan (WMP)**

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

**ZS 052918**



263423I SUNDRY MEAN GREEN 23-25 FED COM 2H 30015 NMNM100568 DEVON  
ENERGY 12-55 419642 05292018 ZS

| 13 3/8                                                    | surface csg in a | 17 1/2  | inch hole. | Design Factors |              |          | SURFACE |        |           |
|-----------------------------------------------------------|------------------|---------|------------|----------------|--------------|----------|---------|--------|-----------|
| Segment                                                   | #/ft             | Grade   | Coupling   | Joint          | Collapse     | Burst    | Length  | Weight |           |
| "A"                                                       | 48.00            | H 40    | ST&C       | 6.39           | 1.6          | 0.26     | 1,050   | 50,400 |           |
| "B"                                                       |                  |         |            |                |              |          | 0       | 0      |           |
| w/8.4#/g mud, 30min Sfc Csg Test psig: 753                |                  |         | Tail Cmt   | does           | circ to sfc. | Totals:  | 1,050   | 50,400 |           |
| Comparison of Proposed to Minimum Required Cement Volumes |                  |         |            |                |              |          |         |        |           |
| Hole                                                      | Annular          | 1 Stage | 1 Stage    | Min            | 1 Stage      | Drilling | Calc    | Req'd  | Min Dist  |
| Size                                                      | Volume           | Cmt Sx  | CuFt Cmt   | Cu Ft          | % Excess     | Mud Wt   | MASP    | BOPE   | Hole-Cplg |
| 17 1/2                                                    | 0.6946           | 823     | 1103       | 784            | 41           | 8.80     | 3804    | 5M     | 1.56      |

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

| 8 5/8 casing inside the 13 3/8                        |         |         | Design Factors |         |          | INTERMEDIATE                    |         |           |           |
|-------------------------------------------------------|---------|---------|----------------|---------|----------|---------------------------------|---------|-----------|-----------|
| Segment                                               | #/ft    | Grade   | Coupling       | Joint   | Collapse | Burst                           | Length  | Weight    |           |
| "A"                                                   | 32.00   | P 110   | BUTT           | 2.74    | 1.34     | 1.12                            | 5,000   | 160,000   |           |
| "B"                                                   | 32.00   | P 110   | VAM FJL        | 2.56    | 0.53     | 1.12                            | 7,800   | 249,600   |           |
| w/8.4#/g mud, 30min Sfc Csg Test psig:                |         |         |                |         |          | Totals:                         | 12,800  | 409,600   |           |
| B s would be:                                         |         |         |                | 2.48    | 0.53     | if it were a vertical wellbore. |         |           |           |
| No Pilot Hole Planned                                 |         |         | MTD            | Max VTD | Csg VD   | Curve KOP                       | Dogleg° | Severity° | MEOC      |
|                                                       |         |         | 12800          | 12701   | 12701    | 12250                           | 55      | 0         | 0         |
| The cement volume(s) are intended to achieve a top of |         |         |                |         | 0        | ft from surface or a            |         | 1050      | overlap.  |
| Hole                                                  | Annular | 1 Stage | 1 Stage        | Min     | 1 Stage  | Drilling                        | Calc    | Req'd     | Min Dist  |
| Size                                                  | Volume  | Cmt Sx  | CuFt Cmt       | Cu Ft   | % Excess | Mud Wt                          | MASP    | BOPE      | Hole-Cplg |
| 10 5/8                                                | 0.2100  | 984     | 2945           | 2982    | -1       | 10.00                           | 5165    | 10M       | 1.00      |

Class 'H' tail cmt yld > 1.20

MASP is within 10% of 5000psig, need

OPERATOR WILL FILL FLUID 100% WHILE RUNNING CASING.

| 5 1/2 casing inside the 8 5/8                         |         |         |          |         | Design Factors |                                 |         | PRODUCTION |           |
|-------------------------------------------------------|---------|---------|----------|---------|----------------|---------------------------------|---------|------------|-----------|
| Segment                                               | #/ft    | Grade   | Coupling | Joint   | Collapse       | Burst                           | Length  | Weight     |           |
| "A"                                                   | 20.00   | P 110   | VAM SG   | 2.48    | 1.58           | 1.8                             | 12,250  | 245,000    |           |
| "B"                                                   | 20.00   | P 110   | VAM SG   | 7.89    | 1.40           | 1.8                             | 10,625  | 212,500    |           |
| w/8.4#/g mud, 30min Sfc Csg Test psig: 2,695          |         |         |          |         |                |                                 | Totals: | 22,875     | 457,500   |
| B would be:                                           |         |         |          | 57.12   | 1.51           | if it were a vertical wellbore. |         |            |           |
| No Pilot Hole Planned                                 |         |         | MTD      | Max VTD | Csg VD         | Curve KOP                       | Dogleg° | Severity°  | MEOC      |
|                                                       |         |         | 22875    | 12805   | 12805          | 12250                           | 90      | 10         | 13150     |
| The cement volume(s) are intended to achieve a top of |         |         |          |         | 12600          | ft from surface or a            |         | 200        | overlap.  |
| Hole                                                  | Annular | 1 Stage | 1 Stage  | Min     | 1 Stage        | Drilling                        | Calc    | Req'd      | Min Dist  |
| Size                                                  | Volume  | Cmt Sx  | CuFt Cmt | Cu Ft   | % Excess       | Mud Wt                          | MASP    | BOPE       | Hole-Cplg |
| 7 7/8                                                 | 0.1733  | 385     | 512      | 1786    | -71            | 12.00                           |         |            | 1.09      |

Class 'H' tail cmt yld > 1.20