

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 13 2018

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RECEIVED
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM022080
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY LP		8. Lease Name and Well No. TOMB RAIDER 1-12 FED 524H 316874
3a. Address 333 West Sheridan Avenue Oklahoma City OK 73102		9. API Well No. 6131 30-015-45438
3b. Phone No. (include area code) (405)552-6571		10. Field and Pool, or Exploratory LIVINGSTON RIDGE / BONE SPRING 39350
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface LOT 2 / 360 FNL / 2395 FEL / LAT 32.3397277 / LONG -103.7307088 At proposed prod. zone SESW / 330 FSL / 2100 FWL / LAT 32.312065 / LONG -103.733232		11. Sec., T, R, M, or Blk. and Survey or Area SEC 1 / T23S / R31E / NMP
14. Distance in miles and direction from nearest town or post office*		12. County or Parish EDDY
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 360 feet		13. State NM
16. No of acres in lease 1280		17. Spacing Unit dedicated to this well 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 400 feet		20. BLM/BIA Bond No. in file FED: CO1104
19. Proposed Depth 9185 feet / 19047 feet		21. Estimated duration 30 days
22. Approximate date work will start* 02/01/2019		23. Estimated duration 30 days
24. Attachments		

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

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

25. Signature (Electronic Submission)	Name (Printed/Typed) Jenny Harms / Ph: (405)552-6560	Date 07/13/2018
Title Regulatory Compliance Professional		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 10/31/2018
Title Assistant Field Manager Lands & Minerals		
Office CARLSBAD		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

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

APPROVED WITH CONDITIONS
Approval Date: 10/31/2018

RUP 11-13-18.

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

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

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

Additional Operator Remarks

Location of Well

1. SHL: LOT 2 / 360 FNL / 2395 FEL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3397277 / LONG: -103.7307088 (TVD: 0 feet, MD: 0 feet)
PPP: LOT 3 / 330 FNL / 2100 FWL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3397277 / LONG: -103.733232 (TVD: 8970 feet, MD: 9059 feet)
BHL: SESW / 330 FSL / 2100 FWL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.312065 / LONG: -103.733232 (TVD: 9185 feet, MD: 19047 feet)

BLM Point of Contact

Name: Sipra Dahal

Title: Legal Instruments Examiner

Phone: 5752345983

Email: sdahal@blm.gov

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Review and Appeal Rights

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

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PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

RECEIVED

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION
LEASE NO.:	NMNM022080
WELL NAME & NO.:	524H:TOMB RAIDER 1-12 FED
SURFACE HOLE FOOTAGE:	360'/N & 2395'/E
BOTTOM HOLE FOOTAGE:	330'/S & 2100'/W
LOCATION:	T-23S, R-31E, S1. NMPM
COUNTY:	EDDY, NM

Potash	☒ None	☒ Secretary	☒ R-111-P
Cave/Karst Potential	☒ Low	☒ Medium	☒ High
Variance	☒ None	☒ Flex Hose	☒ Other
Wellhead	☒ Conventional	☒ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

1. 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 815 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 **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours

after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

Option 1 (Single Stage):

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

Option 2:

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

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

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

- Cement should tie-back at least **500** feet into previous string.. Operator shall provide method of verification.

C. PRESSURE CONTROL

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

2.

Option 1:

- i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13 3/8 inch surface casing shoe shall be **3000 (3M)** psi.

Option 2:

- i. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

D. SPECIAL REQUIREMENT(S)

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.

MHH 10272018

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties

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

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

B. PRESSURE CONTROL

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

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

PECOS DISTRICT SURFACE USE CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION
LEASE NO.:	NMNM022080
WELL NAME & NO.:	524H:TOMB RAIDER 1-12 FED
SURFACE HOLE FOOTAGE:	360'/N & 2395'/E
BOTTOM HOLE FOOTAGE:	330'/S & 2100'/W
LOCATION:	T-23S, R-31E, S1. NMPM
COUNTY:	EDDY, NM

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Potash
 - Range
 - Watershed
 - Cultural
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Build as you go, no Grading of all pad.

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

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

The proposed action occurs within one-half mile of the WIPP and Mills lesser prairie-chicken Habitat Evaluation Areas (HEA) as described in the 2008 Special Status Species Resource Management Plan Amendment. Therefore, according to the prescriptions set forth in the RMPA for management of HEAs, non-emergency exceptions to the Timing Limitation Condition-of-Approval will not be granted to afford the species protection during its breeding season.

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

Raptor Nest Mitigation

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

Temporary Fencing Requirement

For the following proposed locations, the BLM would require temporary fencing be installed before construction begins. This fencing would remain in place and be maintained throughout the life of the well pads and CTB pads to protect nearby dune land habitat from harm.

- Todd Apache 6-6 Pad 2
- Todd Apache 6-6 CTB 2
- Todd Apache 8-5 CTB 2

Temporary Fencing Requirement

For the following proposed locations, the BLM would require temporary fencing be installed before construction begins. This fencing would remain in place and be maintained throughout the life of the well pads and CTB pads to protect nearby dune land habitat from harm.

- Todd Apache 6-6 Pad 2
- Todd Apache 6-6 CTB 2
- Todd Apache 8-5 CTB 2

Temporary Fence Crossing Requirement

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

Cattle Guard Requirement

Where entry is granted across a fence line for an access road, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations. Once the road is abandoned, the fence would be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Livestock Watering Requirement

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

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

Interim reclamation will be conducted on all disturbed areas not needed for active support of production operations, and if caliche is used as a surfacing material it will be removed at time of reclamation to enhance re-establishment of vegetation.

Temporary Fencing Requirement

For the following proposed locations, the BLM would require temporary fencing be installed before construction begins. This fencing would remain in place and be maintained throughout the life of the well pads and CTB pads to protect nearby dune land habitat from harm.

- Todd Apache 6-6 Pad 2
- Todd Apache 6-6 CTB 2
- Todd Apache 8-5 CTB 2

Devon would need to avoid the two identified archaeology sites by ensuring that infrastructure and vehicles maintain a minimum distance of 100 feet from these sites.

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

Permitted Exceptions for Drilling in the Designated Potash Area

1. It is the intent of the Department of the Interior to administer oil and gas operations throughout the Designated Potash Area in a manner which promotes safe, orderly co-development of oil, gas, and potash resources. It is the policy of the Department of the Interior to deny approval of most applications for permits to drill oil and gas wells from surface locations within the Designated Potash Area. Three exceptions to this policy will be permitted if the drilling will occur under the following conditions from:
 - a. A Drilling Island associated with a Development Area established under this Order or a Drilling Island established under a prior Order;
 - b. A Barren Area and the Authorized Officer determines that such operations will not adversely affect active or planned potash mining operations in the immediate vicinity of the proposed drill-site; or
 - c. A Drilling Island, not covered by (a) above or single well site established under this Order by the approval and in the sole discretion of the Authorized Officer, provided that such site was jointly recommended to the Authorized Officer by the oil and gas lessee(s) and the nearest potash lessee(s).

Development Areas

2. When processing an application for permit to drill (APD) an oil or gas well in the Designated Potash Area that complies with regulatory requirements, the Authorized Officer will determine whether to establish a Development Area in connection with the application, and if so, will determine the boundaries of the Development Area and the location within the Development Area of one or more Drilling Islands from which drilling will be permitted. The BLM may also designate a Development Area outside of the APD process based on information in its possession, and may modify the boundaries of a Development Area. Existing wells may be included within the boundaries of a Development Area. A Development Area may include Federal oil and gas leases and other Federal and non-Federal lands.
 - a. After designating or modifying a Development Area, the BLM will issue a Notice to Lessees, consistent with its authorities under 43 CFR Subpart 3105 and part 3180, information lessees that future drilling on lands under an oil and gas lease within that Development Area will:
 - i. occur, under most circumstances, from a Barren Area or A Drilling Island within the Development Area; and
 - ii. be managed under a unit or communitization agreement, generally by a single operator, consistent with BLM regulations and this Order. Unit and communitization agreements will be negotiated among lessees. The BLM will consider whether a specific plan of development is necessary or advisable for a particular Drilling Island.
 - b. The Authorized Officer reserves the right to approve an operator or successor operator of a Development Area and/or a Drilling Island, if applicable, to ensure that the operator has the resources to operate and extract the oil and gas resources consistent with the requirements of this Order and all applicable laws

and regulations, and has provided financial assurance in the amount required by the Authorized Officer.

- c. The Authorized Officer will determine the appropriate designation of a Development Area in terms of location, shape and size. In most cases, a single Drilling Island will be established for each Development Area. In establishing the location, shape and size of a Development Area and an associated Drilling Island, the Authorized Officer will consider:
 - i. the appropriate location, shape, and size of a Development Area and associated Drilling Island to allow effective extraction of oil and gas resources while managing the impact on potash resources;
 - ii. the application of available oil and gas drilling and production technology in the Permian Basin;
 - iii. the applicable geology of the Designated Potash Area and optimal locations to minimize loss of potash ore while considering co-development of both resources;
 - iv. any long term exploration and/or mining plans provided by the potash industry;
 - v. whether a Barren Area may be the most appropriate area for a Drilling Island;
 - vi. the requirements of this Order; and
 - vii. any other relevant factors
- d. As the Authorized Officer establishes a Development Area, the Authorized Officer will more strictly apply the factors listed in Section 6.e.(2)(d), especially the appropriate application of the available oil and gas drilling and production technology in the Permian Basin, when closer to current traditional (non-solution) potash mining operations. Greater flexibility in the application of the factors listed in Section 6.e(2)(d) will be applied further from current and near-term traditional (non-solution) potash mining operations. No Drilling Islands will be established within one mile of any area where approved potash mining operations will be conducted within 3 years consistent with the 3-year mine plan referenced above (Section 6.d.(8)) without the consent of the affected potash lessee(s).
- e. The Authorized Officer may establish a Development Area associated with a well or wells drilled from a Barren Area as appropriate and necessary.
- f. As part of the consideration for establishing Development Areas and Drilling Islands, the BLM will consider input from the potash lessees and the oil and gas lessees or mineral right owner who would be potentially subject to a unitization agreement supporting the Development Area, provided that the input is given timely.

Buffer Zones

- 3. Buffer Zones of ¼ mile for oil wells and ½ mile for gas wells are hereby established. These Buffer Zones will stay in effect until such time as revised distances are adopted by the BLM Director or other BLM official, as delegated. However, the Authorized Officer may adjust the Buffer Zones in an individual case, when the facts and circumstances demonstrate that such adjustment would enhance conservation and would not compromise safety. The Director will base revised Buffer Zones on science, engineering, and new technology and will consider comments and reports from the Joint Industry Technical Committee and other interested parties in adopting any revisions.

Unitization and Communitization

4. To more properly conserve the potash, oil, and gas resources in the Designated Potash Area, and to adequately protect the rights of all parties in interest, including the United States, it is the policy of the Department of the Interior that all Federal oil and gas leases within a Development Area should be unitized or subject to an approved communitization agreement unless there is a compelling reason for another operating system. The Authorized Officer will make full use of his/her authorities wherever necessary or advisable to require unitization and/or communitization pursuant to the regulations in 43 CFR Subparts 3105 and 3180. The Authorized Officer will use his/her discretion to the fullest extent possible to assure that any communitization agreement and any unit plan of operations hereafter approved or prescribed within the Designated Potash Area will adhere to the provisions of this Order. The Authorized Officer will work with Federal lessees, and with the State Of New Mexico as provided below, to include non-Federal mineral rights owners in unit or communitization agreements to the extent possible.
5. Coordination with the State of New Mexico.
 - a. If the effective operation of any Development Area requires that the New Mexico Oil Conservation Division (NMOCD) revise the State's mandatory well spacing requirements, the BLM will participate as needed in such a process. The BLM may adopt the NMOCD spacing requirements and require lessees to enter into communitization agreements based on those requirements.
 - b. The BLM will cooperate with the NMOCD in the implementation of that agency's rules and regulations.
 - c. In taking any action under Section 6.e. of this Order, the Authorized Officer will take into consideration the applicable rules and regulations of the NMOCD.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Tomb Raider Drill Island (See Potash Memo and Map in attached file for Drill Island description).

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

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

G. ON LEASE ACCESS ROADS**Road Width**

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

Surfacing

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

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

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

Crowning

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

Ditching

Ditching shall be required on both sides of the road.

Turnouts

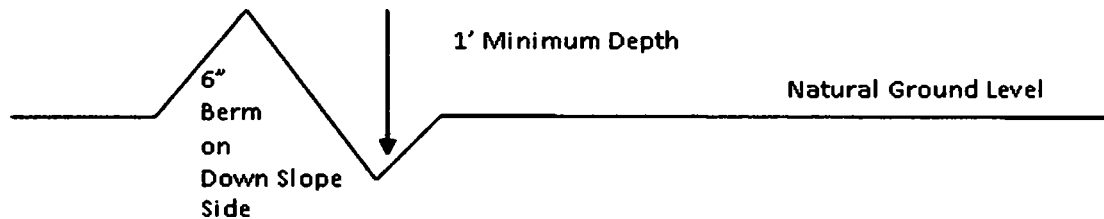
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

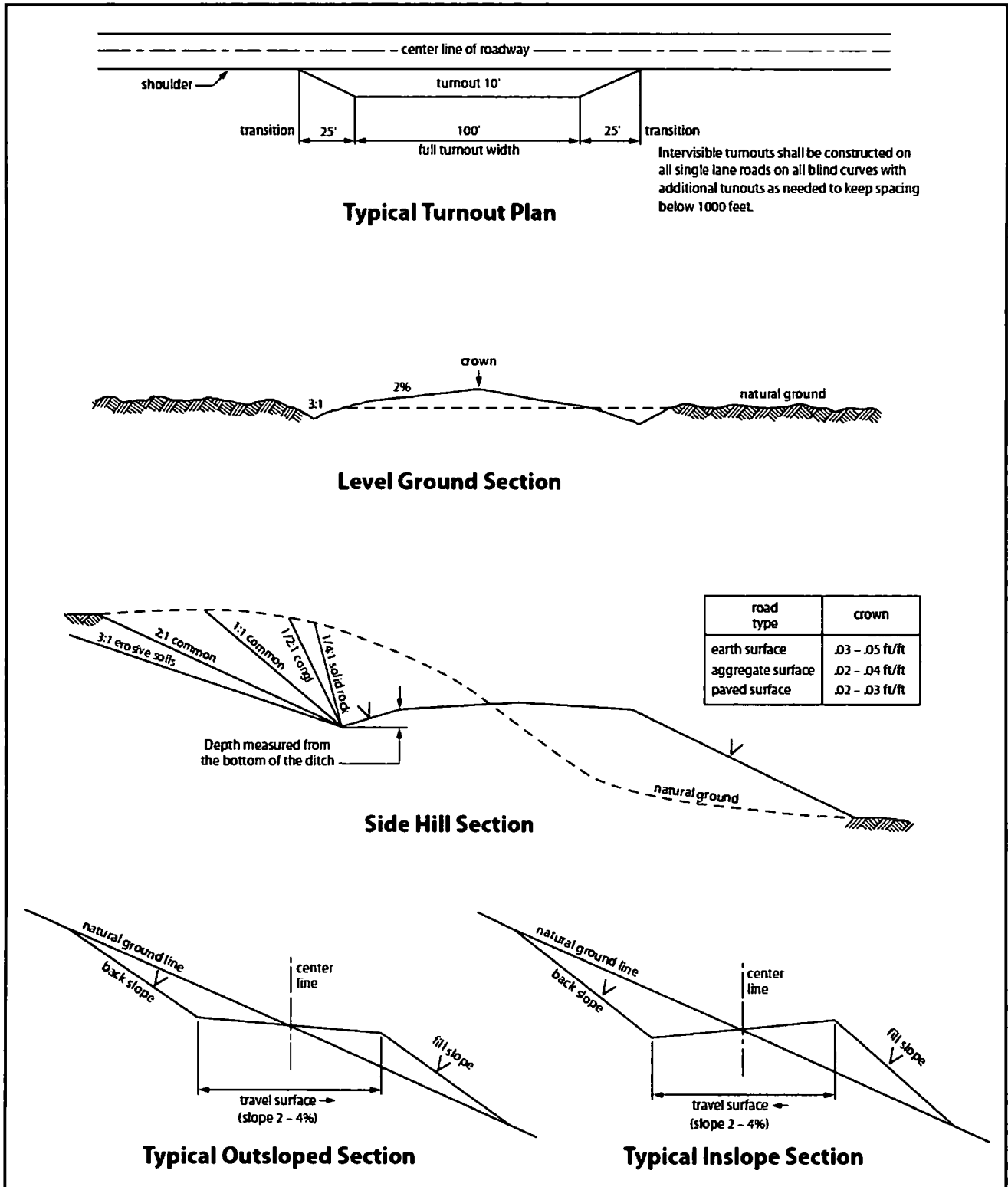


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Exclosure Netting (Open-top Tanks)

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

Chemical and Fuel Secondary Containment and Exclosure Screening

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

Open-Vent Exhaust Stack Exclosures

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

Containment Structures

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

Painting Requirement

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

B. PIPELINES

BURIED PIPELINE STIPULATIONS

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

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

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

5. All construction and maintenance activity will be confined to the authorized right-of-way.
6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.
7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:
- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
 - Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
 - The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

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

- | | |
|--|--|
| ☐ seed mixture 1 | ☐ seed mixture 3 |
| ☐ seed mixture 2 | ☐ seed mixture 4 |
| ☒ seed mixture 2/LPC | ☐ Aplomado Falcon Mixture |

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

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

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

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

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

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

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

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

19. Special Stipulations:

Lesser Prairie-Chicken

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

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

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

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

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on

facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

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

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

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing.
 - (2) Earth-disturbing and earth-moving work.
 - (3) Blasting.
 - (4) Vandalism and sabotage.
- c. Acts of God.

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

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

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up

of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

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

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

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

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

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

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

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**,

Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

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

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

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

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

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

18. Special Stipulations:

- a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted.
- b. This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your

Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The

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

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

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

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

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

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

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

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.

- Fill in any holes from the poles removed.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

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

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

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

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

*Pounds of pure live seed:

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



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

11/01/2018

Operator Certification

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

NAME: Jenny Harms

Signed on: 07/11/2018

Title: Regulatory Compliance Professional

Street Address: 333 W Sheridan Ave

City: Oklahoma City

State: OK

Zip: 73102

Phone: (405)552-6560

Email address: jenny.harms@dvn.com

Field Representative

Representative Name: RAY VAZ

Street Address: 6488 SEVEN RIVERS HWY

City: ARTESIA

State: NM

Zip: 88210

Phone: (575)748-1871

Email address: RAY.VAZ@DVN.COM



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

11/01/2018

APD ID: 10400031998

Submission Date: 07/13/2018

Highlighted data
reflects the most
recent changes.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400031998

Tie to previous NOS?

Submission Date: 07/13/2018

BLM Office: CARLSBAD

User: Jenny Harms

Title: Regulatory Compliance
Professional

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM022080

Lease Acres: 1280

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: DEVON ENERGY PRODUCTION COMPANY LP

Operator letter of designation:

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue

Zip: 73102

Operator PO Box:

Operator City: Oklahoma City State: OK

Operator Phone: (405)552-6571

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: LIVINGSTON
RIDGE

Pool Name: BONE SPRING

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Is the proposed well in an area containing other mineral resources? POTASH

Describe other minerals:

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

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: TODD-Number: 2

APACHE 1-1

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town:

Distance to nearest well: 400 FT

Distance to lease line: 360 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Tomb_Raider_1_12_Fed_524H_C102_20181018072909.pdf

Well work start Date: 02/01/2019

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 6215A

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	360	FNL	2395	FEL	23S	31E	1	Lot 2	32.3397277	-103.7307088	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	3475	0	0
KOP Leg #1	100	FNL	2100	FWL	23S	31E	1	Lot 3	32.3397277	-103.733232	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	5137	8671	8612
PPP Leg #1	330	FNL	2100	FWL	23S	31E	1	Lot 3	32.3397277	-103.733232	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	5495	9059	8970

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FSL	210 0	FWL	23S	31E	12	Aliquot SESW	32.31206 5	- 103.7332 32	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 571 0	190 47	918 5
BHL Leg #1	330	FSL	210 0	FWL	23S	31E	12	Aliquot SESW	32.31206 5	- 103.7332 32	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 571 0	190 47	918 5



APD ID: 10400031998

Submission Date: 07/13/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Show Final Text

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3475	0	0	ALLUVIUM	NONE	No
2	RUSTLER	-697	697	758	SALT	NONE	No
3	BASE OF SALT	-4480	4480	4453	SALT	NONE	No
4	DELAWARE	-4500	4500	4473	SANDSTONE	NATURAL GAS,OIL	No
5	BONE SPRING	-8352	8352	8310	SANDSTONE	OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 9185

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

Requesting Variance? NO

Variance request:

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

Choke Diagram Attachment:

TOMB_RAIDER_1_12_FED_524H_3M_BOPE_20180711110034.pdf

BOP Diagram Attachment:

TOMB_RAIDER_1_12_FED_524H_3M_BOPE_20180711110040.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Pressure Rating (PSI): 3M

Rating Depth: 6000

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

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

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

Choke Diagram Attachment:

TOMB_RAIDER_1_12_FED_524H_3M_BOPE_20180711110049.pdf

BOP Diagram Attachment:

TOMB_RAIDER_1_12_FED_524H_3M_BOPE_20180711110057.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	750	0	750	0		750	H-40	48	STC	1.125	1	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	6000	0	6000			6000	J-55	40	LTC	1.125	1	BUOY	1.6	BUOY	1.6
3	PRODUCTION	8.75	5.5	NEW	API	N	0	19047	0	9185			19047	P-110	17	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TOMB_RAIDER_1_12_FED_524H_SurfCsg_Ass_20180711110138.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TOMB_RAIDER_1_12_FED_524H_Int_Csg_Ass_20180711110202.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

TOMB_RAIDER_1_12_FED_524H_ProdCasing_Ass_20180711110245.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	750	786	1.33	13.2	1046	100	C	Class C + adds

INTERMEDIATE	Lead		0	5500	1290	1.94	9	2503	50	C	Class C + Adds
INTERMEDIATE	Tail		5500	6000	190	1.33	13.2	252	50	C	Class C + Adds
PRODUCTION	Lead		0	5500	349	3.27	9	1263	25	Tuned	N/A
PRODUCTION	Tail		8157	1897 2	1810	1.2	14.5	2643	10	H	(50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
6000	9185	WATER-BASED MUD	8.5	9				2			

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
750	6000	WATER-BASED MUD	10	10.5				2			
0	750	OTHER : FW GEL	8.5	9				12			

Section 6 - Test, Logging, Coring

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

Will run GRMWD from TD to from KOP. Cement bond logs will be run in vertical to determine top of cement. Stated logs run will be in the Completion Report and submitted to the BLM.

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

CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4299

Anticipated Surface Pressure: 2278.3

Anticipated Bottom Hole Temperature(F): 152

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Tomb_Raider_1_12_Fed_524H_H2S_20180711111317.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Tomb_Raider_1_12_Fed_Com_524H__Permit_Plan_2_20180711111355.pdf

Devon_Tomb_Raider_1_12_Fed_Com_524H_AC_Report_Permi_Plan_2_20180711111355.pdf

Devon_Tomb_Raider_1_12_Fed_Com_524H_Plot_Permi_Plan_2_20180711111356.pdf

Devon_Tomb_Raider_1_12_Plot.wpc_20180711111356.pdf

Other proposed operations facets description:

REVISED DRILLING PLAN_10-18-2018

CLOSED LOOP DESIGN

GAS CAPTURE PLAN

MB WELLHEAD

MB VERB

Other proposed operations facets attachment:

TOMB_RAIDER_1_12_FED_524H_Clsd_Loop_20180711111543.pdf

TOMB_RAIDER_1_12_GasCapturePlan_20180711111544.pdf

TOMB_RAIDER_1_12_FED_524H_MB_Wellhd_20180711111559.pdf

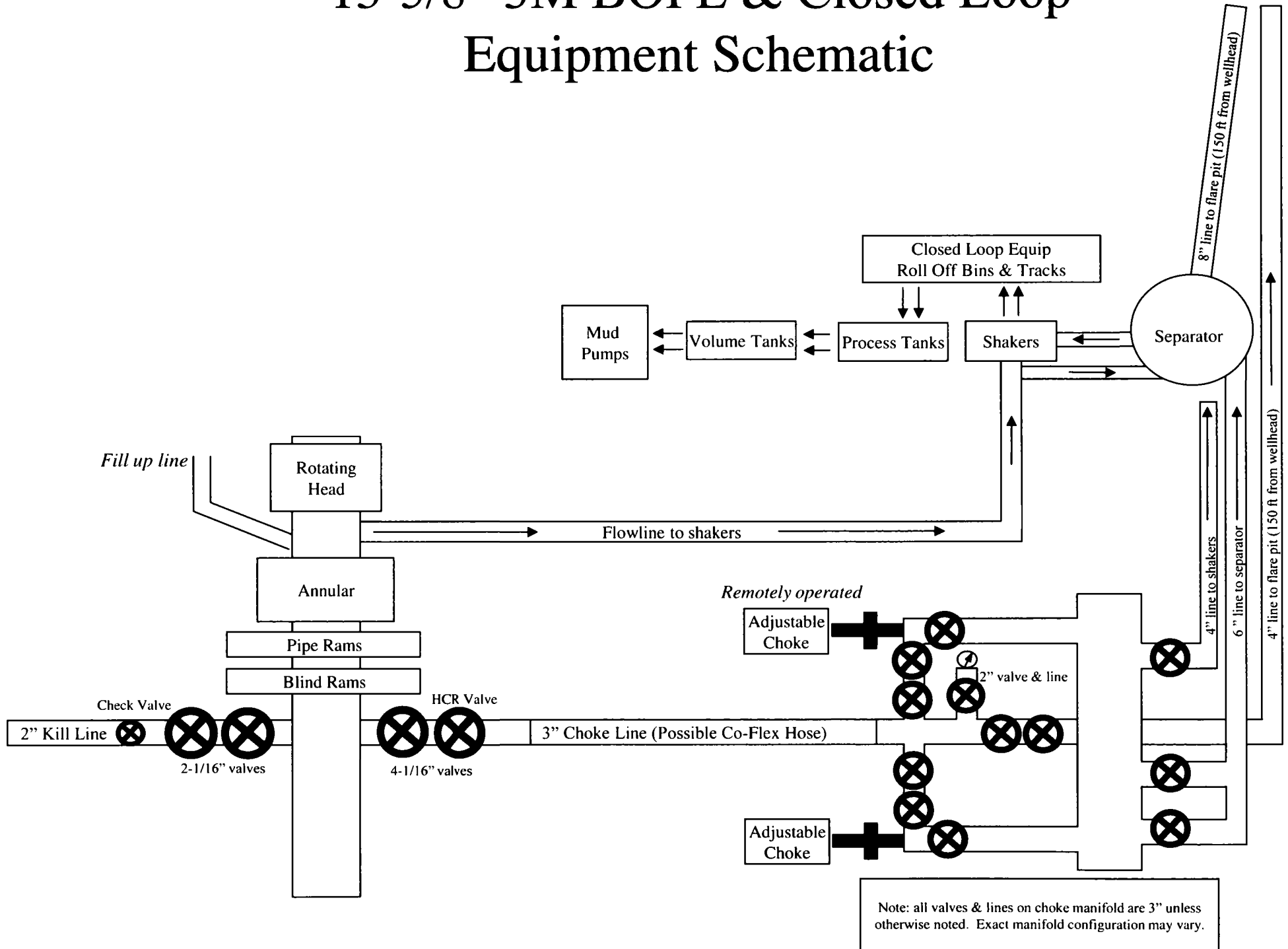
Tomb_Raider_1_12_Fed_524H__MB_Verb_20180712100601.pdf

Tomb_Raider_1_12_Fed_524H_Drilling_Plan_Rev2_20181018073227.pdf

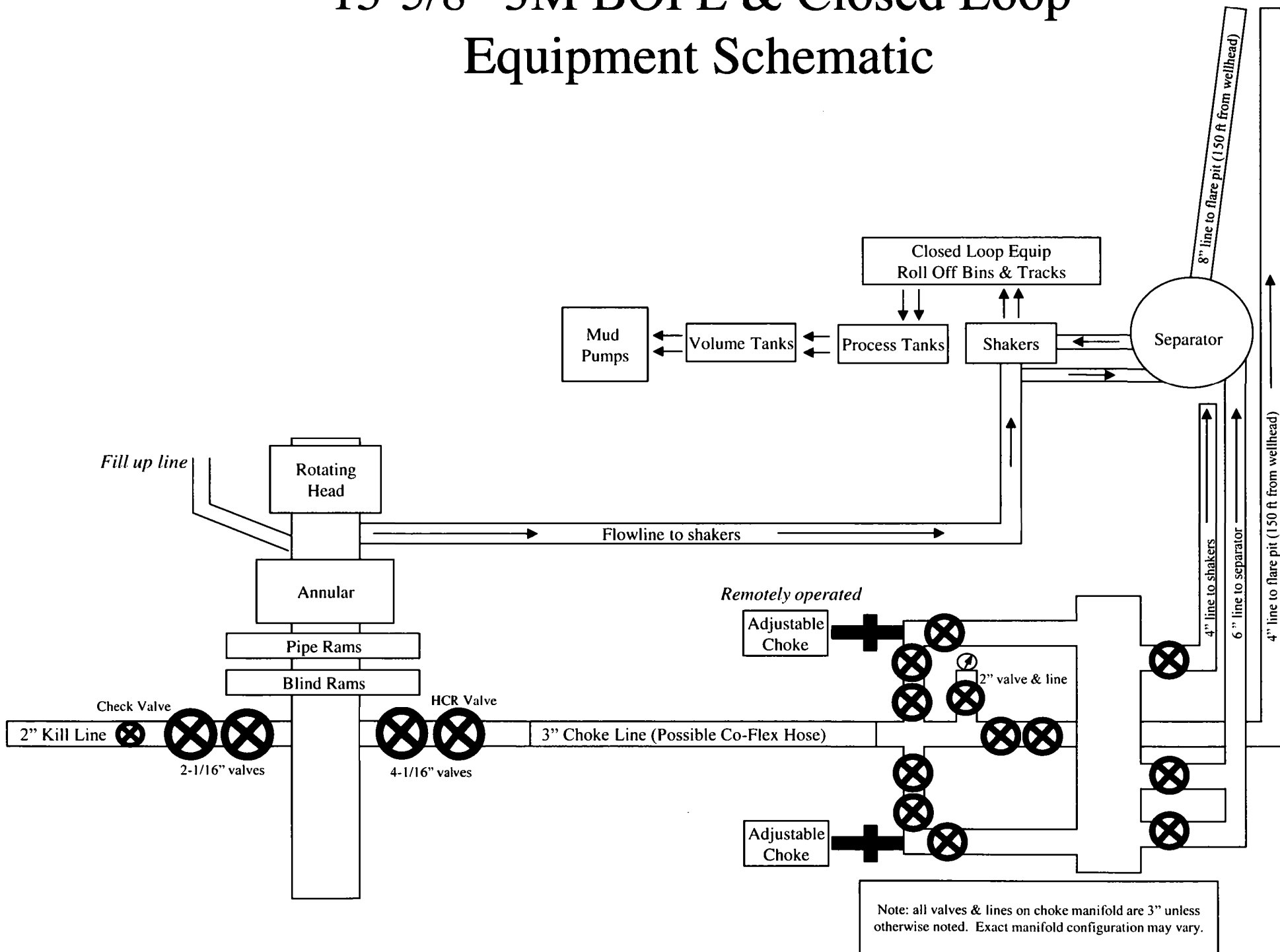
Other Variance attachment:

TOMB_RAIDER_1_12_FED_524H_Co_flex_20180711111613.pdf

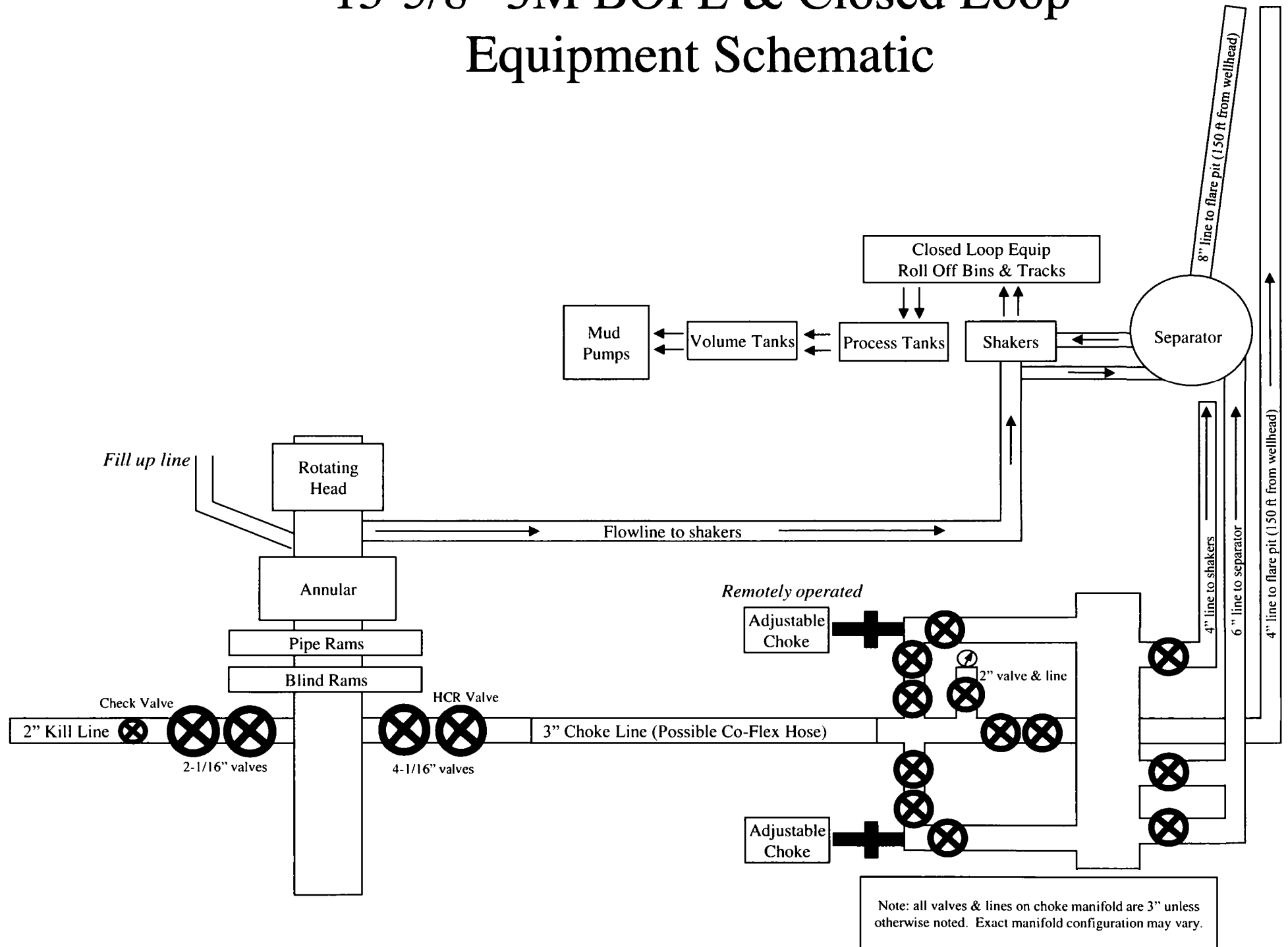
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



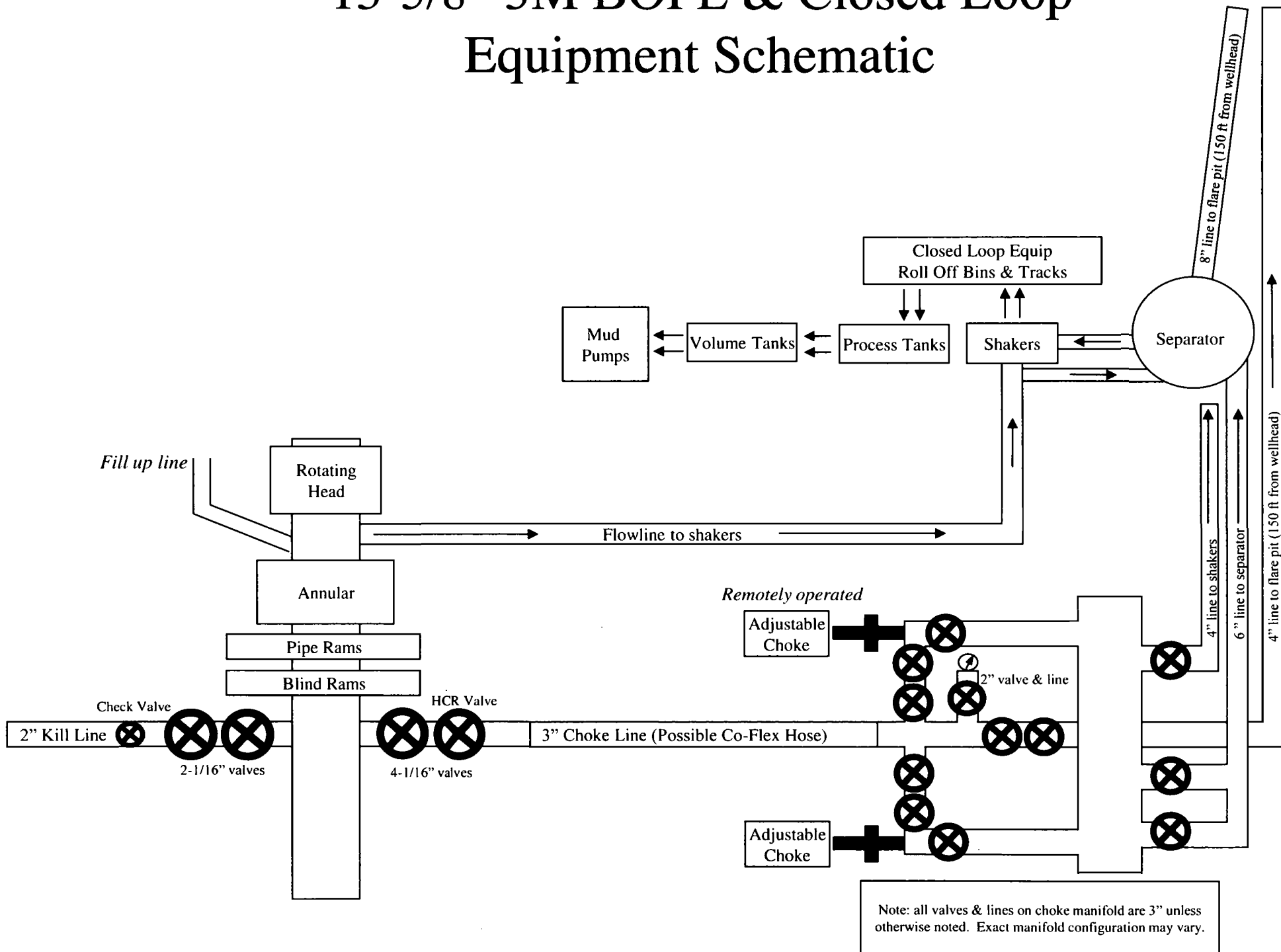
Equipment Schematic



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



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



Casing Assumptions and Load Cases

Intermediate

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

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

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

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

Casing Assumptions and Load Cases

Surface

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

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

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

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

Casing Assumptions and Load Cases

Production

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

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

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

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



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

Hydrogen Sulfide (H₂S) Contingency Plan

For

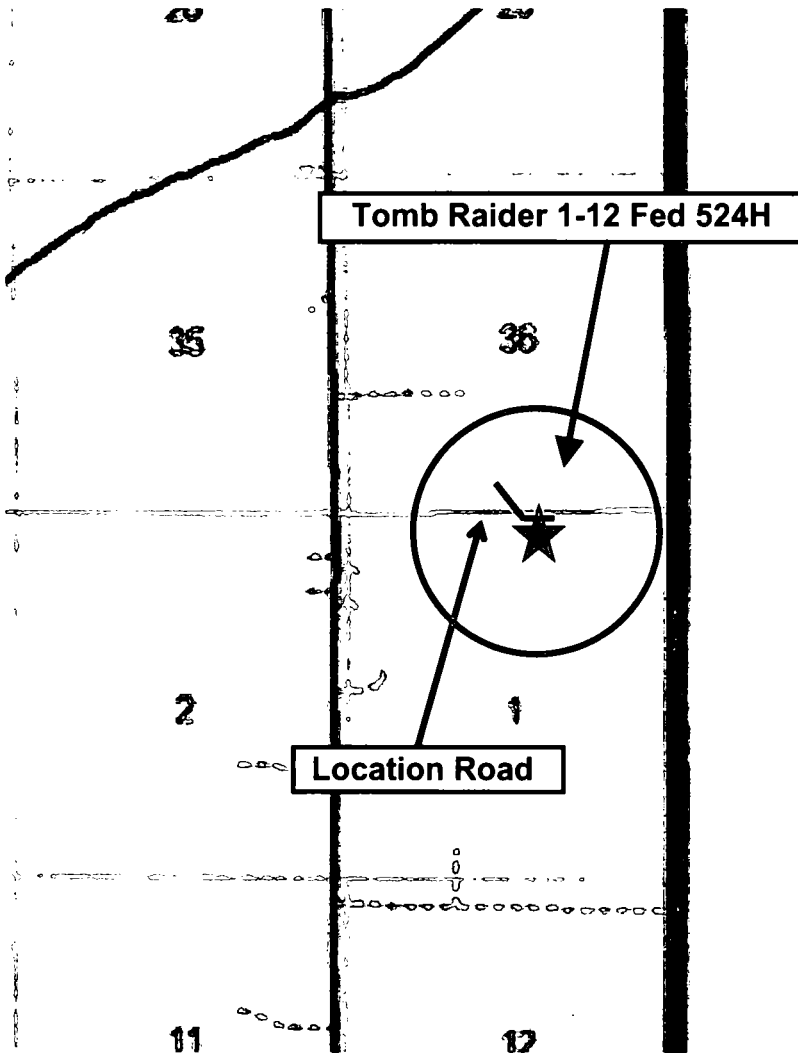
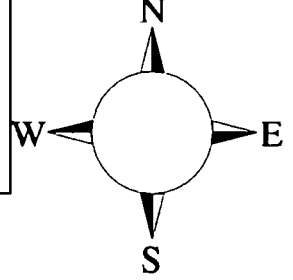
Tomb Raider 1-12 Fed 524H

**Sec-1 T-23S R-31E
360' FNL & 2395' FEL
LAT. = 32.3397277' N (NAD83)
LONG = 103.7307088' W**

Eddy County NM

Tomb Raider 1-12 Fed 524H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



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

Escape

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

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H₂S monitors and air packs in order to control the release.**
- **Use the “buddy system” to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
 - **Detection of H₂S, and**
 - **Measures for protection against the gas,**
 - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H₂S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

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

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

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

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

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

1. The effects of H₂S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – Remotely Operated
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

2. Protective equipment for essential personnel:

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

3. H₂S detection and monitoring equipment:

Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights which activate when H₂S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

- Bell nipple
- Possum Belly/Shale shaker
- Rig floor
- Choke manifold
- Cellar

Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. Mud program:

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

5. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S trim.

6. Communication:

- A. Company personnel have/use cellular telephones in the field.
- B. Land line (telephone) communications at Office

7. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
Agency Call List		
Lea County (575)	Hobbs	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	911
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	Carlsbad	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	911
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control	(915) 699-0139 (915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small



WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 01-T23S-R31E

Tomb Raider 1-12 Fed 524H

Wellbore #1

Plan: Permit Plan 2

Standard Planning Report - Geographic

28 June, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.60ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Project	Eddy County (NAD 83 NM Eastern)		
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 01-T23S-R31E			
Site Position:		Northing:	488,170.26 usft	Latitude:	32.340736
From:	Map	Easting:	719,281.88 usft	Longitude:	-103.757161
Position Uncertainty:	5.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.31 °

Well	Tomb Raider 1-12 Fed 524H					
Well Position	+N/-S	0.00 ft	Northing:	487,848.53 usft	Latitude:	32.339728
	+E/-W	0.00 ft	Easting:	727,453.32 usft	Longitude:	-103.730709
Position Uncertainty		0.50 ft	Wellhead Elevation:		Ground Level:	3,475.60 ft

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/14/2018	6.93	60.13	47,887.58250673

Design	Permit Plan 2				
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Audit Notes:					
Version:		Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	184.29	

Plan Survey Tool Program	Date	6/28/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	19,046.37 Permit Plan 2 (Wellbore #1)	MWD+IFR1 OWSG MWD + IFR1		

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.60ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,208.67	8.86	281.23	3,205.85	10.65	-53.63	1.25	1.25	0.00	281.23	
7,769.01	8.86	281.23	7,711.79	147.41	-742.44	0.00	0.00	0.00	0.00	
8,359.57	0.00	0.00	8,300.00	156.29	-787.13	1.50	-1.50	0.00	180.00	VP - Tomb Raider 524
8,671.61	0.00	0.00	8,612.04	156.29	-787.13	0.00	0.00	0.00	0.00	
9,571.61	90.00	179.64	9,185.00	-416.66	-783.52	10.00	10.00	0.00	179.64	PBHL - Tomb Raider
12,306.51	90.00	179.64	9,185.00	-3,151.51	-766.31	0.00	0.00	0.00	0.00	
12,938.48	90.00	167.00	9,185.00	-3,777.92	-692.94	2.00	0.00	-2.00	-90.00	
14,238.48	90.00	193.00	9,185.00	-5,066.79	-692.94	2.00	0.00	2.00	90.00	
14,906.49	90.00	179.64	9,185.00	-5,729.23	-766.31	2.00	0.00	-2.00	-90.00	
19,047.07	90.00	179.64	9,185.00	-9,869.74	-740.29	0.00	0.00	0.00	0.00	PBHL - Tomb Raider

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.60ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
100.00	0.00	0.00	100.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
200.00	0.00	0.00	200.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
300.00	0.00	0.00	300.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
400.00	0.00	0.00	400.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
500.00	0.00	0.00	500.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
600.00	0.00	0.00	600.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
700.00	0.00	0.00	700.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
800.00	0.00	0.00	800.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
900.00	0.00	0.00	900.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,000.00	0.00	0.00	1,000.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,100.00	0.00	0.00	1,100.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,200.00	0.00	0.00	1,200.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
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1,400.00	0.00	0.00	1,400.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,500.00	0.00	0.00	1,500.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,600.00	0.00	0.00	1,600.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,700.00	0.00	0.00	1,700.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,800.00	0.00	0.00	1,800.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
1,900.00	0.00	0.00	1,900.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
2,000.00	0.00	0.00	2,000.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
2,100.00	0.00	0.00	2,100.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
2,200.00	0.00	0.00	2,200.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
2,300.00	0.00	0.00	2,300.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
2,400.00	0.00	0.00	2,400.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
2,500.00	0.00	0.00	2,500.00	0.00	0.00	487,848.53	727,453.32	32.339728	-103.730709
2,600.00	1.25	281.23	2,599.99	0.21	-1.07	487,848.74	727,452.25	32.339728	-103.730713
2,700.00	2.50	281.23	2,699.94	0.85	-4.28	487,849.38	727,449.04	32.339730	-103.730723
2,800.00	3.75	281.23	2,799.79	1.91	-9.63	487,850.44	727,443.69	32.339733	-103.730740
2,900.00	5.00	281.23	2,899.49	3.40	-17.11	487,851.93	727,436.21	32.339737	-103.730764
3,000.00	6.25	281.23	2,999.01	5.31	-26.72	487,853.84	727,426.59	32.339743	-103.730795
3,100.00	7.50	281.23	3,098.29	7.64	-38.46	487,856.17	727,414.85	32.339749	-103.730833
3,200.00	8.75	281.23	3,197.28	10.39	-52.33	487,858.92	727,400.99	32.339757	-103.730878
3,208.67	8.86	281.23	3,205.85	10.65	-53.63	487,859.18	727,399.69	32.339758	-103.730882
3,300.00	8.86	281.23	3,296.09	13.39	-67.42	487,861.92	727,385.89	32.339766	-103.730927
3,400.00	8.86	281.23	3,394.90	16.39	-82.53	487,864.92	727,370.79	32.339774	-103.730976
3,500.00	8.86	281.23	3,493.71	19.38	-97.63	487,867.92	727,355.69	32.339783	-103.731025
3,600.00	8.86	281.23	3,592.51	22.38	-112.74	487,870.91	727,340.58	32.339791	-103.731074
3,700.00	8.86	281.23	3,691.32	25.38	-127.84	487,873.91	727,325.48	32.339800	-103.731122
3,800.00	8.86	281.23	3,790.13	28.38	-142.94	487,876.91	727,310.37	32.339808	-103.731171
3,900.00	8.86	281.23	3,888.93	31.38	-158.05	487,879.91	727,295.27	32.339816	-103.731220
4,000.00	8.86	281.23	3,987.74	34.38	-173.15	487,882.91	727,280.16	32.339825	-103.731269
4,100.00	8.86	281.23	4,086.55	37.38	-188.26	487,885.91	727,265.06	32.339833	-103.731318
4,200.00	8.86	281.23	4,185.36	40.38	-203.36	487,888.91	727,249.96	32.339842	-103.731367
4,300.00	8.86	281.23	4,284.16	43.38	-218.47	487,891.91	727,234.85	32.339850	-103.731416
4,400.00	8.86	281.23	4,382.97	46.38	-233.57	487,894.91	727,219.75	32.339859	-103.731464
4,500.00	8.86	281.23	4,481.78	49.38	-248.67	487,897.91	727,204.64	32.339867	-103.731513
4,600.00	8.86	281.23	4,580.58	52.37	-263.78	487,900.91	727,189.54	32.339876	-103.731562
4,700.00	8.86	281.23	4,679.39	55.37	-278.88	487,903.90	727,174.43	32.339884	-103.731611
4,800.00	8.86	281.23	4,778.20	58.37	-293.99	487,906.90	727,159.33	32.339893	-103.731660
4,900.00	8.86	281.23	4,877.01	61.37	-309.09	487,909.90	727,144.22	32.339901	-103.731709
5,000.00	8.86	281.23	4,975.81	64.37	-324.20	487,912.90	727,129.12	32.339910	-103.731758
5,100.00	8.86	281.23	5,074.62	67.37	-339.30	487,915.90	727,114.02	32.339918	-103.731806
5,200.00	8.86	281.23	5,173.43	70.37	-354.41	487,918.90	727,098.91	32.339927	-103.731855

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.60ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.00	8.86	281.23	5,272.23	73.37	-369.51	487,921.90	727,083.81	32.339935	-103.731904
5,400.00	8.86	281.23	5,371.04	76.37	-384.61	487,924.90	727,068.70	32.339944	-103.731953
5,500.00	8.86	281.23	5,469.85	79.37	-399.72	487,927.90	727,053.60	32.339952	-103.732002
5,600.00	8.86	281.23	5,568.66	82.36	-414.82	487,930.90	727,038.49	32.339961	-103.732051
5,700.00	8.86	281.23	5,667.46	85.36	-429.93	487,933.89	727,023.39	32.339969	-103.732099
5,800.00	8.86	281.23	5,766.27	88.36	-445.03	487,936.89	727,008.28	32.339978	-103.732148
5,900.00	8.86	281.23	5,865.08	91.36	-460.14	487,939.89	726,993.18	32.339986	-103.732197
6,000.00	8.86	281.23	5,963.89	94.36	-475.24	487,942.89	726,978.08	32.339994	-103.732246
6,100.00	8.86	281.23	6,062.69	97.36	-490.35	487,945.89	726,962.97	32.340003	-103.732295
6,200.00	8.86	281.23	6,161.50	100.36	-505.45	487,948.89	726,947.87	32.340011	-103.732344
6,300.00	8.86	281.23	6,260.31	103.36	-520.55	487,951.89	726,932.76	32.340020	-103.732393
6,400.00	8.86	281.23	6,359.11	106.36	-535.66	487,954.89	726,917.66	32.340028	-103.732441
6,500.00	8.86	281.23	6,457.92	109.36	-550.76	487,957.89	726,902.55	32.340037	-103.732490
6,600.00	8.86	281.23	6,556.73	112.36	-565.87	487,960.89	726,887.45	32.340045	-103.732539
6,700.00	8.86	281.23	6,655.54	115.35	-580.97	487,963.88	726,872.35	32.340054	-103.732588
6,800.00	8.86	281.23	6,754.34	118.35	-596.08	487,966.88	726,857.24	32.340062	-103.732637
6,900.00	8.86	281.23	6,853.15	121.35	-611.18	487,969.88	726,842.14	32.340071	-103.732686
7,000.00	8.86	281.23	6,951.96	124.35	-626.29	487,972.88	726,827.03	32.340079	-103.732735
7,100.00	8.86	281.23	7,050.76	127.35	-641.39	487,975.88	726,811.93	32.340088	-103.732783
7,200.00	8.86	281.23	7,149.57	130.35	-656.49	487,978.88	726,796.82	32.340096	-103.732832
7,300.00	8.86	281.23	7,248.38	133.35	-671.60	487,981.88	726,781.72	32.340105	-103.732881
7,400.00	8.86	281.23	7,347.19	136.35	-686.70	487,984.88	726,766.61	32.340113	-103.732930
7,500.00	8.86	281.23	7,445.99	139.35	-701.81	487,987.88	726,751.51	32.340122	-103.732979
7,600.00	8.86	281.23	7,544.80	142.35	-716.91	487,990.88	726,736.41	32.340130	-103.733028
7,700.00	8.86	281.23	7,643.61	145.34	-732.02	487,993.88	726,721.30	32.340139	-103.733076
7,769.01	8.86	281.23	7,711.79	147.41	-742.44	487,995.94	726,710.88	32.340144	-103.733110
7,800.00	8.39	281.23	7,742.43	148.32	-747.00	487,996.85	726,706.32	32.340147	-103.733125
7,900.00	6.89	281.23	7,841.54	150.91	-760.04	487,999.44	726,693.27	32.340154	-103.733167
8,000.00	5.39	281.23	7,940.97	152.99	-770.54	488,001.52	726,682.78	32.340160	-103.733201
8,100.00	3.89	281.23	8,040.63	154.57	-778.48	488,003.10	726,674.84	32.340165	-103.733227
8,200.00	2.39	281.23	8,140.48	155.64	-783.86	488,004.17	726,669.46	32.340168	-103.733244
8,300.00	0.89	281.23	8,240.44	156.20	-786.67	488,004.73	726,666.64	32.340169	-103.733253
8,359.57	0.00	0.00	8,300.00	156.29	-787.13	488,004.82	726,666.19	32.340170	-103.733255
8,400.00	0.00	0.00	8,340.43	156.29	-787.13	488,004.82	726,666.19	32.340170	-103.733255
8,500.00	0.00	0.00	8,440.43	156.29	-787.13	488,004.82	726,666.19	32.340170	-103.733255
8,600.00	0.00	0.00	8,540.43	156.29	-787.13	488,004.82	726,666.19	32.340170	-103.733255
8,671.61	0.00	0.00	8,612.04	156.29	-787.13	488,004.82	726,666.19	32.340170	-103.733255
KOP @ 8672' MD, 200' FNL, 2100' FWL									
8,700.00	2.84	179.64	8,640.42	155.58	-787.12	488,004.11	726,666.19	32.340168	-103.733255
8,800.00	12.84	179.64	8,739.36	141.96	-787.04	487,990.49	726,666.28	32.340130	-103.733255
8,900.00	22.84	179.64	8,834.43	111.37	-786.85	487,959.90	726,666.47	32.340046	-103.733255
9,000.00	32.84	179.64	8,922.75	64.73	-786.55	487,913.26	726,666.77	32.339918	-103.733255
9,059.38	38.78	179.64	8,970.88	30.00	-786.33	487,878.53	726,666.98	32.339822	-103.733254
1st Take Point @ 9059' MD, 330' FNL, 2100' FWL									
9,100.00	42.84	179.64	9,001.62	3.46	-786.17	487,851.99	726,667.15	32.339749	-103.733254
9,200.00	52.84	179.64	9,068.66	-70.57	-785.70	487,777.96	726,667.62	32.339546	-103.733254
9,300.00	62.84	179.64	9,121.82	-155.12	-785.17	487,693.41	726,668.15	32.339314	-103.733254
9,400.00	72.84	179.64	9,159.49	-247.61	-784.59	487,600.92	726,668.73	32.339059	-103.733254
9,500.00	82.84	179.64	9,180.53	-345.24	-783.97	487,503.29	726,669.35	32.338791	-103.733254
9,571.61	90.00	179.64	9,185.00	-416.66	-783.52	487,431.87	726,669.80	32.338595	-103.733253
9,600.00	90.00	179.64	9,185.00	-445.05	-783.34	487,403.48	726,669.97	32.338517	-103.733253
9,700.00	90.00	179.64	9,185.00	-545.05	-782.71	487,303.48	726,670.60	32.338242	-103.733253
9,800.00	90.00	179.64	9,185.00	-645.05	-782.08	487,203.48	726,671.23	32.337967	-103.733253

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.60ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,900.00	90.00	179.64	9,185.00	-745.05	-781.46	487,103.49	726,671.86	32.337692	-103.733253
10,000.00	90.00	179.64	9,185.00	-845.04	-780.83	487,003.49	726,672.49	32.337417	-103.733252
10,100.00	90.00	179.64	9,185.00	-945.04	-780.20	486,903.49	726,673.12	32.337142	-103.733252
10,200.00	90.00	179.64	9,185.00	-1,045.04	-779.57	486,803.49	726,673.75	32.336867	-103.733252
10,300.00	90.00	179.64	9,185.00	-1,145.04	-778.94	486,703.50	726,674.38	32.336592	-103.733252
10,400.00	90.00	179.64	9,185.00	-1,245.04	-778.31	486,603.50	726,675.01	32.336318	-103.733252
10,500.00	90.00	179.64	9,185.00	-1,345.03	-777.68	486,503.50	726,675.64	32.336043	-103.733251
10,600.00	90.00	179.64	9,185.00	-1,445.03	-777.05	486,403.50	726,676.27	32.335768	-103.733251
10,700.00	90.00	179.64	9,185.00	-1,545.03	-776.42	486,303.50	726,676.90	32.335493	-103.733251
10,800.00	90.00	179.64	9,185.00	-1,645.03	-775.79	486,203.51	726,677.53	32.335218	-103.733251
10,900.00	90.00	179.64	9,185.00	-1,745.03	-775.16	486,103.51	726,678.16	32.334943	-103.733250
11,000.00	90.00	179.64	9,185.00	-1,845.02	-774.53	486,003.51	726,678.79	32.334668	-103.733250
11,100.00	90.00	179.64	9,185.00	-1,945.02	-773.90	485,903.51	726,679.42	32.334393	-103.733250
11,200.00	90.00	179.64	9,185.00	-2,045.02	-773.27	485,803.51	726,680.05	32.334119	-103.733250
11,300.00	90.00	179.64	9,185.00	-2,145.02	-772.64	485,703.52	726,680.67	32.333844	-103.733250
11,400.00	90.00	179.64	9,185.00	-2,245.02	-772.01	485,603.52	726,681.30	32.333569	-103.733249
11,500.00	90.00	179.64	9,185.00	-2,345.01	-771.38	485,503.52	726,681.93	32.333294	-103.733249
11,600.00	90.00	179.64	9,185.00	-2,445.01	-770.75	485,403.52	726,682.56	32.333019	-103.733249
11,700.00	90.00	179.64	9,185.00	-2,545.01	-770.13	485,303.53	726,683.19	32.332744	-103.733249
11,800.00	90.00	179.64	9,185.00	-2,645.01	-769.50	485,203.53	726,683.82	32.332469	-103.733248
11,900.00	90.00	179.64	9,185.00	-2,745.01	-768.87	485,103.53	726,684.45	32.332194	-103.733248
12,000.00	90.00	179.64	9,185.00	-2,845.00	-768.24	485,003.53	726,685.08	32.331920	-103.733248
12,100.00	90.00	179.64	9,185.00	-2,945.00	-767.61	484,903.53	726,685.71	32.331645	-103.733248
12,200.00	90.00	179.64	9,185.00	-3,045.00	-766.98	484,803.54	726,686.34	32.331370	-103.733248
12,300.00	90.00	179.64	9,185.00	-3,145.00	-766.35	484,703.54	726,686.97	32.331095	-103.733247
12,306.51	90.00	179.64	9,185.00	-3,151.51	-766.31	484,697.03	726,687.01	32.331077	-103.733247
12,400.00	90.00	177.77	9,185.00	-3,244.97	-764.19	484,603.57	726,689.12	32.330820	-103.733242
12,500.00	90.00	175.77	9,185.00	-3,344.81	-758.56	484,503.73	726,694.76	32.330546	-103.733226
12,600.00	90.00	173.77	9,185.00	-3,444.39	-749.44	484,404.15	726,703.87	32.330272	-103.733198
12,700.00	90.00	171.77	9,185.00	-3,543.58	-736.86	484,304.95	726,716.46	32.329999	-103.733159
12,800.00	90.00	169.77	9,185.00	-3,642.28	-720.82	484,206.25	726,732.50	32.329727	-103.733109
12,900.00	90.00	167.77	9,185.00	-3,740.37	-701.34	484,108.17	726,751.97	32.329457	-103.733048
12,938.48	90.00	167.00	9,185.00	-3,777.92	-692.94	484,070.62	726,760.38	32.329354	-103.733021
13,000.00	90.00	168.23	9,185.00	-3,838.00	-679.75	484,010.54	726,773.57	32.329189	-103.732980
13,100.00	90.00	170.23	9,185.00	-3,936.24	-661.06	483,912.30	726,792.26	32.328918	-103.732921
13,200.00	90.00	172.23	9,185.00	-4,035.06	-645.82	483,813.48	726,807.50	32.328647	-103.732873
13,300.00	90.00	174.23	9,185.00	-4,134.36	-634.03	483,714.18	726,819.29	32.328373	-103.732837
13,400.00	90.00	176.23	9,185.00	-4,234.01	-625.71	483,614.53	726,827.60	32.328099	-103.732812
13,500.00	90.00	178.23	9,185.00	-4,333.89	-620.88	483,514.65	726,832.44	32.327825	-103.732798
13,600.00	90.00	180.23	9,185.00	-4,433.87	-619.54	483,414.67	726,833.78	32.327550	-103.732795
13,700.00	90.00	182.23	9,185.00	-4,533.85	-621.69	483,314.69	726,831.63	32.327275	-103.732804
13,800.00	90.00	184.23	9,185.00	-4,633.68	-627.32	483,214.86	726,826.00	32.327001	-103.732824
13,900.00	90.00	186.23	9,185.00	-4,733.26	-636.44	483,115.28	726,816.88	32.326727	-103.732856
14,000.00	90.00	188.23	9,185.00	-4,832.46	-649.02	483,016.08	726,804.30	32.326455	-103.732898
14,100.00	90.00	190.23	9,185.00	-4,931.16	-665.06	482,917.38	726,788.26	32.326184	-103.732952
14,200.00	90.00	192.23	9,185.00	-5,029.24	-684.53	482,819.30	726,768.78	32.325914	-103.733017
14,238.48	90.00	193.00	9,185.00	-5,066.79	-692.94	482,781.75	726,760.38	32.325811	-103.733045
14,300.00	90.00	191.77	9,185.00	-5,126.88	-706.13	482,721.66	726,747.18	32.325646	-103.733088
14,400.00	90.00	189.77	9,185.00	-5,225.11	-724.82	482,623.43	726,728.50	32.325377	-103.733151
14,500.00	90.00	187.77	9,185.00	-5,323.94	-740.06	482,524.60	726,713.25	32.325105	-103.733202
14,600.00	90.00	185.77	9,185.00	-5,423.24	-751.85	482,425.31	726,701.47	32.324833	-103.733242
14,700.00	90.00	183.77	9,185.00	-5,522.88	-760.17	482,325.66	726,693.15	32.324559	-103.733270
14,800.00	90.00	181.77	9,185.00	-5,622.76	-765.00	482,225.78	726,688.32	32.324284	-103.733288
14,900.00	90.00	179.77	9,185.00	-5,722.75	-766.34	482,125.79	726,686.98	32.324009	-103.733294

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.60ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,906.49	90.00	179.64	9,185.00	-5,729.23	-766.31	482,119.31	726,687.01	32.323992	-103.733294
15,000.00	90.00	179.64	9,185.00	-5,822.75	-765.72	482,025.80	726,687.60	32.323735	-103.733294
15,100.00	90.00	179.64	9,185.00	-5,922.74	-765.09	481,925.80	726,688.23	32.323460	-103.733294
15,200.00	90.00	179.64	9,185.00	-6,022.74	-764.46	481,825.80	726,688.85	32.323185	-103.733293
15,300.00	90.00	179.64	9,185.00	-6,122.74	-763.84	481,725.80	726,689.48	32.322910	-103.733293
15,400.00	90.00	179.64	9,185.00	-6,222.74	-763.21	481,625.81	726,690.11	32.322635	-103.733293
15,500.00	90.00	179.64	9,185.00	-6,322.74	-762.58	481,525.81	726,690.74	32.322360	-103.733293
15,600.00	90.00	179.64	9,185.00	-6,422.73	-761.95	481,425.81	726,691.37	32.322085	-103.733293
15,700.00	90.00	179.64	9,185.00	-6,522.73	-761.32	481,325.81	726,692.00	32.321810	-103.733292
15,800.00	90.00	179.64	9,185.00	-6,622.73	-760.69	481,225.81	726,692.62	32.321536	-103.733292
15,900.00	90.00	179.64	9,185.00	-6,722.73	-760.07	481,125.82	726,693.25	32.321261	-103.733292
16,000.00	90.00	179.64	9,185.00	-6,822.73	-759.44	481,025.82	726,693.88	32.320986	-103.733292
16,100.00	90.00	179.64	9,185.00	-6,922.72	-758.81	480,925.82	726,694.51	32.320711	-103.733291
16,200.00	90.00	179.64	9,185.00	-7,022.72	-758.18	480,825.82	726,695.14	32.320436	-103.733291
16,300.00	90.00	179.64	9,185.00	-7,122.72	-757.55	480,725.82	726,695.77	32.320161	-103.733291
16,400.00	90.00	179.64	9,185.00	-7,222.72	-756.92	480,625.83	726,696.39	32.319886	-103.733291
16,500.00	90.00	179.64	9,185.00	-7,322.72	-756.30	480,525.83	726,697.02	32.319611	-103.733291
16,600.00	90.00	179.64	9,185.00	-7,422.71	-755.67	480,425.83	726,697.65	32.319337	-103.733290
16,700.00	90.00	179.64	9,185.00	-7,522.71	-755.04	480,325.83	726,698.28	32.319062	-103.733290
16,800.00	90.00	179.64	9,185.00	-7,622.71	-754.41	480,225.84	726,698.91	32.318787	-103.733290
16,900.00	90.00	179.64	9,185.00	-7,722.71	-753.78	480,125.84	726,699.54	32.318512	-103.733290
17,000.00	90.00	179.64	9,185.00	-7,822.71	-753.15	480,025.84	726,700.16	32.318237	-103.733289
17,100.00	90.00	179.64	9,185.00	-7,922.70	-752.53	479,925.84	726,700.79	32.317962	-103.733289
17,200.00	90.00	179.64	9,185.00	-8,022.70	-751.90	479,825.84	726,701.42	32.317687	-103.733289
17,300.00	90.00	179.64	9,185.00	-8,122.70	-751.27	479,725.85	726,702.05	32.317412	-103.733289
17,400.00	90.00	179.64	9,185.00	-8,222.70	-750.64	479,625.85	726,702.68	32.317138	-103.733289
17,500.00	90.00	179.64	9,185.00	-8,322.70	-750.01	479,525.85	726,703.31	32.316863	-103.733288
17,600.00	90.00	179.64	9,185.00	-8,422.69	-749.38	479,425.85	726,703.93	32.316588	-103.733288
17,700.00	90.00	179.64	9,185.00	-8,522.69	-748.76	479,325.86	726,704.56	32.316313	-103.733288
17,800.00	90.00	179.64	9,185.00	-8,622.69	-748.13	479,225.86	726,705.19	32.316038	-103.733288
17,900.00	90.00	179.64	9,185.00	-8,722.69	-747.50	479,125.86	726,705.82	32.315763	-103.733287
18,000.00	90.00	179.64	9,185.00	-8,822.69	-746.87	479,025.86	726,706.45	32.315488	-103.733287
18,100.00	90.00	179.64	9,185.00	-8,922.68	-746.24	478,925.86	726,707.08	32.315213	-103.733287
18,200.00	90.00	179.64	9,185.00	-9,022.68	-745.61	478,825.87	726,707.70	32.314939	-103.733287
18,300.00	90.00	179.64	9,185.00	-9,122.68	-744.99	478,725.87	726,708.33	32.314664	-103.733287
18,400.00	90.00	179.64	9,185.00	-9,222.68	-744.36	478,625.87	726,708.96	32.314389	-103.733286
18,500.00	90.00	179.64	9,185.00	-9,322.68	-743.73	478,525.87	726,709.59	32.314114	-103.733286
18,600.00	90.00	179.64	9,185.00	-9,422.67	-743.10	478,425.87	726,710.22	32.313839	-103.733286
18,700.00	90.00	179.64	9,185.00	-9,522.67	-742.47	478,325.88	726,710.85	32.313564	-103.733286
18,800.00	90.00	179.64	9,185.00	-9,622.67	-741.84	478,225.88	726,711.47	32.313289	-103.733285
18,900.00	90.00	179.64	9,185.00	-9,722.67	-741.22	478,125.88	726,712.10	32.313014	-103.733285
19,000.00	90.00	179.64	9,185.00	-9,822.67	-740.59	478,025.88	726,712.73	32.312740	-103.733285
19,047.07	90.00	179.64	9,185.00	-9,869.74	-740.29	477,978.81	726,713.03	32.312610	-103.733285

PBHL; 330' FSL, 2100' FWL

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3500.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3500.60ft
Site:	Sec 01-T23S-R31E	North Reference:	Grid
	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
PBHL - Tomb Raider 1-1	0.00	0.00	0.00	-9,870.96	-724.01	477,977.59	726,729.31	32.312607	-103.733232
- plan misses target center by 9185.01ft at 19047.07ft MD (9185.00 TVD, -9869.74 N, -740.29 E)									
- Point									
VP - Tomb Raider 524H	0.00	0.00	8,300.00	156.29	-787.13	488,004.82	726,666.19	32.340170	-103.733255
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
8,671.61	8,612.04	156.29	-787.13	KOP @ 8672' MD, 200' FNL, 2100' FWL
9,059.38	8,970.88	30.00	-786.33	1st Take Point @ 9059' MD, 330' FNL, 2100' FWL
19,047.07	9,185.00	-9,869.74	-740.29	PBHL; 330' FSL, 2100' FWL

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 01-T23S-R31E

Tomb Raider 1-12 Fed 524H

Wellbore #1

Permit Plan 2

Anticollision Report

28 June, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method	MD Interval 50.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 6/28/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	19,041.54	Permit Plan 2 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1

Summary						
Site Name	Reference Measure	Offset Measure	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation	Warning
Offset Well - Wellbore - Design						
Sec 01-T23S-R31E						
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1	13,415.37	9,193.33	247.17	1.69	1.007	Major Risk, CC, ES, SF
Belloq 2 State 5H - Wellbore #1 - Actual						Out of range
Belloq 2 State 5H - Wellbore #1 - Plan #1						Out of range
Belloq 2 State 5H - Wellbore #1 - Plan #2						Out of range
Belloq 2 State 5H - Wellbore #1 - Plan #3						Out of range
Belloq 2 State 5H - Wellbore #1 - PTL						Out of range
Belloq 2 State 5H - Wellbore #1 - PTL - WellCon						Out of range
Belloq 2 State 5H - Wellbore #1 - T&D						Out of range
Tomb Raider 1 Fed 1H - Original - Actual	0.00	3.27	421.38			
Tomb Raider 1 Fed 1H - Original - Actual	2,550.00	2,554.79	424.54	406.92	24.086	ES
Tomb Raider 1 Fed 1H - Original - Actual	13,800.00	14,690.00	1,478.08	1,352.15	11.737	SF
Tomb Raider 1 Fed 1H - Original - Plan 2	0.00	3.27	421.38			
Tomb Raider 1 Fed 1H - Original - Plan 2	13,800.00	14,682.85	1,496.52	1,311,998.491	0.000	Collision, ES, SF
Tomb Raider 1 Fed 1H - Original - Plan1v2	2,500.00	2,503.30	421.38	412.63	48.145	CC, ES
Tomb Raider 1 Fed 1H - Original - Plan1v2	13,800.00	14,738.42	1,496.70	1,444.17	28.493	SF
Tomb Raider 1 Fed 1H - Original - PTL	0.00	3.27	421.38			
Tomb Raider 1 Fed 1H - Original - PTL	2,550.00	2,554.79	424.54	406.92	24.086	ES
Tomb Raider 1 Fed 1H - Original - PTL	9,150.00	9,038.86	1,246.01	1,182.42	19.594	SF
Tomb Raider 1 Fed 1H - Original - T&D	2,298.91	2,302.26	421.31	413.28	52.452	CC
Tomb Raider 1 Fed 1H - Original - T&D	2,500.00	2,503.08	421.33	412.58	48.141	ES
Tomb Raider 1 Fed 1H - Original - T&D	9,100.00	9,006.30	1,185.85	1,153.73	36.913	SF
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1	1,693.07	1,698.09	1,319.50	1,307.86	113.450	CC
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1	2,300.00	2,294.92	1,320.17	1,304.31	83.238	ES
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1	3,750.00	3,688.22	1,498.45	1,472.62	58.018	SF
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	8,801.91	8,753.98	801.82	740.00	12.970	CC
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	19,047.07	18,822.20	826.68	579.61	3.346	Alert, ES, SF
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1	2,500.00	2,500.10	30.02	12.52	1.715	Minor Risk, CC
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1	2,550.00	2,550.10	30.29	12.43	1.696	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1	2,500.00	2,500.20	59.97	42.47	3.426	Alert, CC, ES
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1	2,550.00	2,549.70	60.44	42.59	3.386	Alert, SF
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	2,500.00	2,501.40	120.05	102.55	6.858	CC
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	2,550.00	2,550.14	120.27	102.41	6.736	ES
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1	2,750.00	2,744.64	125.61	106.40	6.537	SF
Tomb Raider 1-12 Fed 61H - Original Hol - P1v2	7,831.50	7,612.18	1,200.52	1,145.80	21.942	CC
Tomb Raider 1-12 Fed 61H - Original Hol - P1v2	7,850.00	7,630.68	1,200.56	1,145.71	21.888	ES
Tomb Raider 1-12 Fed 61H - Original Hol - P1v2	8,700.00	8,475.60	1,283.52	1,222.64	21.081	SF

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measure	Offset Measure	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation	Warning
Offset Well - Wellbore - Design						
Sec 01-T23S-R31E						
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	8,584.75	8,522.45	433.22	372.73	7.162	CC
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	8,650.00	8,585.61	433.40	372.47	7.113	ES
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	8,750.00	8,686.90	435.59	373.98	7.069	SF
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	184.91	192.12	123.75	122.80	130.216	CC
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	2,400.00	2,406.38	125.31	108.83	7.605	ES
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals	2,600.00	2,600.51	131.22	113.36	7.349	SF
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	184.91	192.12	123.75	122.80	130.216	CC
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	2,400.00	2,406.38	125.31	108.83	7.605	ES
Tomb Raider 1-12 Fed 714H - Original Hole - NTL	2,600.00	2,600.51	131.22	113.36	7.349	SF
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbor	1,909.45	1,912.45	1,369.31	1,356.11	103.696	CC
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbor	2,500.00	2,493.73	1,372.17	1,354.91	79.472	ES
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbor	3,350.00	3,212.75	1,488.61	1,466.03	65.934	SF
Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbor	0.00	2.45	1,414.74			
Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbor	2,900.00	2,747.90	1,492.29	1,472.73	76.274	SF
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbor	2,509.66	2,517.28	1,343.58	1,326.17	77.205	CC
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbor	2,550.00	2,558.19	1,343.74	1,326.06	75.972	ES
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbor	3,800.00	3,724.93	1,492.52	1,466.47	57.286	SF
Sec 12-T23S-R31E						
Tomb Raider 12-1 Fed 516H - Wellbore #1 - Permit Plan 1						Out of range
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 1						Out of range

Offset Design													Offset Site Error: 5.00 ft
Sec 01-T23S-R31E - Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1													Offset Well Error: 10.00 ft
Survey Program: 228-INC-ONLY													
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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,950.00	9,185.00	9,184.14	9,182.43	43.04	191.63	85.27	-4,264.21	-871.47	1,472.84	1,247.95	224.89	6.549	
12,000.00	9,185.00	9,184.43	9,182.71	43.35	191.63	85.42	-4,264.22	-871.47	1,422.99	1,198.08	224.91	6.327	
12,050.00	9,185.00	9,184.72	9,183.00	43.68	191.64	85.57	-4,264.22	-871.47	1,373.15	1,148.22	224.93	6.105	
12,100.00	9,185.00	9,185.01	9,183.29	44.00	191.65	85.71	-4,264.22	-871.47	1,323.33	1,098.38	224.95	5.883	
12,150.00	9,185.00	9,185.30	9,183.59	44.32	191.65	85.86	-4,264.22	-871.47	1,273.51	1,048.54	224.97	5.661	
12,200.00	9,185.00	9,185.60	9,183.88	44.65	191.66	86.01	-4,264.22	-871.47	1,223.72	998.73	224.99	5.439	
12,250.00	9,185.00	9,185.90	9,184.18	44.99	191.67	86.16	-4,264.22	-871.47	1,173.94	948.92	225.01	5.217	
12,300.00	9,185.00	9,186.19	9,184.48	45.32	191.67	86.32	-4,264.23	-871.47	1,124.18	899.14	225.04	4.995	Alert
12,350.00	9,185.00	9,186.49	9,184.78	45.66	191.68	86.92	-4,264.23	-871.47	1,074.48	849.41	225.07	4.774	Alert
12,400.00	9,185.00	9,186.80	9,185.08	46.00	191.69	87.42	-4,264.23	-871.47	1,024.91	799.82	225.09	4.553	Alert
12,450.00	9,185.00	9,187.10	9,185.38	46.35	191.70	87.80	-4,264.23	-871.47	975.52	750.39	225.13	4.333	Alert
12,500.00	9,185.00	9,187.41	9,185.69	46.70	191.70	88.09	-4,264.23	-871.47	926.35	701.18	225.17	4.114	Alert
12,550.00	9,185.00	9,187.71	9,186.00	47.06	191.71	88.33	-4,264.24	-871.47	877.46	652.24	225.22	3.896	Alert
12,600.00	9,185.00	9,188.02	9,186.31	47.42	191.72	88.53	-4,264.24	-871.47	828.90	603.61	225.29	3.679	Alert
12,650.00	9,185.00	9,188.33	9,186.62	47.78	191.73	88.70	-4,264.24	-871.47	780.76	555.38	225.38	3.464	Alert
12,700.00	9,185.00	9,188.65	9,186.93	48.15	191.73	88.84	-4,264.24	-871.47	733.14	507.63	225.50	3.251	Alert
12,750.00	9,185.00	9,188.96	9,187.24	48.52	191.74	88.97	-4,264.24	-871.47	686.15	460.48	225.67	3.040	Alert
12,800.00	9,185.00	9,189.27	9,187.56	48.90	191.75	89.08	-4,264.25	-871.47	639.96	414.05	225.91	2.833	Alert
12,850.00	9,185.00	9,189.59	9,187.87	49.28	191.76	89.18	-4,264.25	-871.47	594.77	368.52	226.25	2.629	Alert
12,900.00	9,185.00	9,189.91	9,188.19	49.67	191.76	89.27	-4,264.25	-871.47	550.83	324.12	226.71	2.430	Minor Risk
12,950.00	9,185.00	9,190.22	9,188.51	50.05	191.77	89.35	-4,264.25	-871.47	508.46	281.10	227.36	2.236	Minor Risk
13,000.00	9,185.00	9,190.54	9,188.83	50.44	191.78	89.40	-4,264.26	-871.47	467.39	239.15	228.24	2.048	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	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft	
Survey Program: 228-INC-ONLY													Offset Well Error: 10.00 ft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
13,050.00	9,185.00	9,190.87	9,189.15	50.84	191.79	89.46	-4,264.26	-871.47	427.67	198.28	229.39	1.864	Minor Risk	
13,100.00	9,185.00	9,191.19	9,189.48	51.23	191.79	89.52	-4,264.26	-871.47	389.71	158.85	230.87	1.688	Minor Risk	
13,150.00	9,185.00	9,191.52	9,189.81	51.63	191.80	89.58	-4,264.26	-871.47	354.10	121.37	232.74	1.521	Minor Risk	
13,200.00	9,185.00	9,191.86	9,190.14	52.03	191.81	89.65	-4,264.26	-871.47	321.64	86.60	235.04	1.368	Major Risk	
13,250.00	9,185.00	9,192.19	9,190.48	52.42	191.82	89.72	-4,264.27	-871.47	293.38	55.66	237.73	1.234	Major Risk	
13,300.00	9,185.00	9,192.53	9,190.81	52.82	191.83	89.80	-4,264.27	-871.47	270.65	30.05	240.60	1.125	Major Risk	
13,350.00	9,185.00	9,192.87	9,191.16	53.22	191.83	89.87	-4,264.27	-871.47	254.95	11.69	243.26	1.048	Major Risk	
13,400.00	9,185.00	9,193.22	9,191.50	53.62	191.84	89.95	-4,264.27	-871.47	247.61	2.47	245.13	1.010	Major Risk	
13,415.37	9,185.00	9,193.33	9,191.61	53.74	191.84	89.98	-4,264.27	-871.47	247.17	1.69	245.48	1.007	Major Risk, CC, ES, SF	
13,450.00	9,185.00	9,193.57	9,191.85	54.01	191.85	90.04	-4,264.28	-871.47	249.38	3.58	245.80	1.015	Major Risk	
13,500.00	9,185.00	9,193.92	9,192.20	54.40	191.86	90.12	-4,264.28	-871.47	260.07	14.88	245.20	1.061	Major Risk	
13,550.00	9,185.00	9,194.27	9,192.55	54.79	191.87	90.20	-4,264.28	-871.47	278.66	34.99	243.67	1.144	Major Risk	
13,600.00	9,185.00	9,194.63	9,192.91	55.19	191.88	90.27	-4,264.28	-871.47	303.69	62.00	241.69	1.257	Major Risk	
13,650.00	9,185.00	9,194.99	9,193.27	55.57	191.88	90.35	-4,264.29	-871.47	333.72	94.09	239.63	1.393	Major Risk	
13,700.00	9,185.00	9,195.35	9,193.63	55.96	191.89	90.43	-4,264.29	-871.47	367.50	129.81	237.69	1.546	Minor Risk	
13,750.00	9,185.00	9,195.71	9,193.99	56.34	191.90	90.50	-4,264.29	-871.47	404.09	168.11	235.98	1.712	Minor Risk	
13,800.00	9,185.00	9,196.08	9,194.36	56.72	191.91	90.56	-4,264.29	-871.47	442.79	208.29	234.50	1.888	Minor Risk	
13,850.00	9,185.00	9,196.45	9,194.73	57.10	191.92	90.63	-4,264.30	-871.47	483.07	249.83	233.24	2.071	Minor Risk	
13,900.00	9,185.00	9,196.82	9,195.10	57.47	191.93	90.68	-4,264.30	-871.47	524.57	292.39	232.18	2.259	Minor Risk	
13,950.00	9,185.00	9,197.19	9,195.47	57.84	191.94	90.74	-4,264.30	-871.47	567.00	335.71	231.29	2.451	Minor Risk	
14,000.00	9,185.00	9,197.56	9,195.84	58.21	191.95	90.79	-4,264.30	-871.47	610.16	379.63	230.53	2.647	Alert	
14,050.00	9,185.00	9,197.94	9,196.22	58.57	191.95	90.83	-4,264.31	-871.47	653.90	424.00	229.90	2.844	Alert	
14,100.00	9,185.00	9,198.32	9,196.60	58.93	191.96	90.87	-4,264.31	-871.47	698.08	468.73	229.35	3.044	Alert	
14,150.00	9,185.00	9,198.69	9,196.98	59.29	191.97	90.91	-4,264.31	-871.47	742.62	513.73	228.90	3.244	Alert	
14,200.00	9,185.00	9,199.07	9,197.36	59.64	191.98	90.94	-4,264.32	-871.47	787.45	558.95	228.50	3.446	Alert	
14,250.00	9,185.00	9,199.46	9,197.74	59.99	191.99	90.98	-4,264.32	-871.47	832.53	604.36	228.17	3.649	Alert	
14,300.00	9,185.00	9,199.84	9,198.12	60.34	192.00	91.09	-4,264.32	-871.47	878.28	650.37	227.91	3.854	Alert	
14,350.00	9,185.00	9,200.23	9,198.51	60.71	192.01	91.21	-4,264.32	-871.47	924.79	697.09	227.70	4.061	Alert	
14,400.00	9,185.00	9,200.63	9,198.91	61.07	192.02	91.34	-4,264.33	-871.47	971.94	744.39	227.55	4.271	Alert	
14,450.00	9,185.00	9,201.02	9,199.31	61.45	192.03	91.50	-4,264.33	-871.47	1,019.62	792.19	227.43	4.483	Alert	
14,500.00	9,185.00	9,201.43	9,199.71	61.82	192.04	91.68	-4,264.33	-871.47	1,067.75	840.41	227.34	4.697	Alert	
14,550.00	9,185.00	9,201.83	9,200.11	62.21	192.05	91.89	-4,264.34	-871.47	1,116.26	888.99	227.27	4.912	Alert	
14,600.00	9,185.00	9,202.24	9,200.52	62.60	192.06	92.15	-4,264.34	-871.47	1,165.09	937.86	227.23	5.127		
14,650.00	9,185.00	9,202.66	9,200.94	63.00	192.07	92.46	-4,264.34	-871.47	1,214.18	986.98	227.20	5.344		
14,700.00	9,185.00	9,203.07	9,201.35	63.39	192.08	92.85	-4,264.35	-871.47	1,263.49	1,036.30	227.18	5.562		
14,750.00	9,185.00	9,203.50	9,201.78	63.80	192.09	93.36	-4,264.35	-871.47	1,312.98	1,085.80	227.18	5.780		
14,800.00	9,185.00	9,203.92	9,202.20	64.21	192.10	94.05	-4,264.35	-871.47	1,362.62	1,135.44	227.18	5.998		
14,850.00	9,185.00	9,204.35	9,202.63	64.63	192.11	95.03	-4,264.36	-871.47	1,412.37	1,185.18	227.19	6.217		
14,900.00	9,185.00	9,204.78	9,203.06	65.04	192.12	96.53	-4,264.36	-871.47	1,462.22	1,235.01	227.21	6.436		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Offset Wellbore Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
0.00	0.00	3.27	3.27	0.50	0.00	67.41	161.84	389.06	421.38					
50.00	50.00	52.78	52.78	0.50	0.07	67.40	161.96	389.05	421.41	420.84	0.57	735.977		
100.00	100.00	102.28	102.28	0.52	0.14	67.35	162.30	389.00	421.50	420.85	0.65	643.665		
150.00	150.00	152.96	152.95	0.59	0.31	67.30	162.71	388.92	421.58	420.68	0.90	465.947		
200.00	200.00	203.63	203.63	0.70	0.49	67.25	163.03	388.79	421.59	420.39	1.19	353.056		
250.00	250.00	253.38	253.37	0.84	0.67	67.21	163.30	388.66	421.57	420.07	1.50	280.465		
278.19	278.19	281.49	281.49	0.92	0.76	67.19	163.45	388.59	421.57	419.88	1.68	250.313		
300.00	300.00	303.07	303.06	0.99	0.84	67.17	163.56	388.55	421.57	419.75	1.83	230.880		
350.00	350.00	352.29	352.28	1.15	1.01	67.15	163.76	388.55	421.65	419.49	2.16	195.597		
400.00	400.00	401.88	401.88	1.31	1.19	67.13	163.90	388.66	421.81	419.31	2.49	169.237		
450.00	450.00	452.10	452.09	1.48	1.36	67.10	164.21	388.70	421.96	419.13	2.84	148.837		
500.00	500.00	502.26	502.25	1.65	1.54	67.03	164.71	388.63	422.09	418.91	3.18	132.726		
550.00	550.00	552.37	552.36	1.82	1.71	66.96	165.22	388.54	422.21	418.68	3.53	119.703		
600.00	600.00	601.58	601.57	1.99	1.89	66.90	165.71	388.48	422.35	418.48	3.87	109.071		
650.00	650.00	650.30	650.28	2.16	2.06	66.83	166.27	388.54	422.63	418.42	4.22	100.229		
700.00	700.00	700.59	700.57	2.34	2.23	66.76	166.88	388.68	423.00	418.43	4.57	92.615		
750.00	750.00	751.49	751.47	2.51	2.41	66.71	167.33	388.78	423.27	418.35	4.92	86.019		
800.00	800.00	801.84	801.81	2.69	2.59	66.66	167.74	388.82	423.46	418.19	5.27	80.315		
850.00	850.00	852.11	852.08	2.87	2.76	66.59	168.28	388.76	423.62	418.00	5.62	75.317		
900.00	900.00	902.29	902.25	3.04	2.94	66.52	168.87	388.65	423.75	417.78	5.98	70.902		
950.00	950.00	952.46	952.43	3.22	3.12	66.44	169.42	388.54	423.87	417.54	6.33	66.973		
1,000.00	1,000.00	1,001.73	1,001.69	3.40	3.29	66.38	169.86	388.51	424.02	417.34	6.68	63.493		
1,050.00	1,050.00	1,051.48	1,051.44	3.58	3.46	66.35	170.19	388.60	424.24	417.21	7.03	60.353		
1,100.00	1,100.00	1,102.25	1,102.21	3.75	3.64	66.30	170.56	388.63	424.42	417.03	7.38	57.475		
1,150.00	1,150.00	1,152.38	1,152.34	3.93	3.82	66.24	171.01	388.55	424.51	416.78	7.74	54.868		
1,200.00	1,200.00	1,201.61	1,201.57	4.11	3.99	66.21	171.32	388.58	424.67	416.59	8.09	52.514		
1,250.00	1,250.00	1,251.39	1,251.35	4.29	4.16	66.20	171.48	388.76	424.90	416.47	8.44	50.351		
1,300.00	1,300.00	1,301.70	1,301.65	4.46	4.34	66.20	171.57	388.95	425.12	416.32	8.79	48.348		
1,350.00	1,350.00	1,352.29	1,352.25	4.64	4.51	66.20	171.64	389.10	425.28	416.13	9.15	46.490		
1,400.00	1,400.00	1,403.04	1,403.00	4.82	4.69	66.18	171.81	389.12	425.36	415.86	9.50	44.759		
1,450.00	1,450.00	1,453.00	1,452.95	5.00	4.87	66.14	172.09	389.03	425.39	415.53	9.86	43.161		
1,500.00	1,500.00	1,502.76	1,502.71	5.18	5.04	66.08	172.52	388.90	425.45	415.24	10.21	41.677		
1,550.00	1,550.00	1,553.01	1,552.96	5.36	5.22	66.02	172.97	388.76	425.50	414.94	10.56	40.287		
1,600.00	1,600.00	1,603.30	1,603.24	5.53	5.39	65.98	173.24	388.66	425.53	414.61	10.92	38.983		
1,650.00	1,650.00	1,653.34	1,653.29	5.71	5.57	65.95	173.43	388.58	425.53	414.26	11.27	37.762		
1,698.58	1,698.58	1,701.98	1,701.93	5.89	5.74	65.92	173.59	388.51	425.53	413.92	11.61	36.646		
1,700.00	1,700.00	1,703.28	1,703.22	5.89	5.74	65.92	173.60	388.51	425.53	413.91	11.62	36.616		
1,750.00	1,750.00	1,752.71	1,752.66	6.07	5.92	65.92	173.66	388.53	425.57	413.60	11.97	35.545		
1,800.00	1,800.00	1,802.31	1,802.26	6.25	6.09	65.93	173.61	388.66	425.68	413.35	12.32	34.539		
1,850.00	1,850.00	1,852.29	1,852.24	6.43	6.26	65.95	173.52	388.84	425.80	413.12	12.68	33.586		
1,900.00	1,900.00	1,902.32	1,902.26	6.61	6.44	65.97	173.42	389.02	425.93	412.89	13.03	32.685		
1,950.00	1,950.00	1,952.41	1,952.35	6.78	6.61	65.99	173.32	389.19	426.04	412.66	13.39	31.830		
2,000.00	2,000.00	2,003.41	2,003.35	6.96	6.79	66.01	173.25	389.31	426.12	412.38	13.74	31.009		
2,050.00	2,050.00	2,055.12	2,055.07	7.14	6.97	66.00	173.24	389.19	426.01	411.91	14.10	30.212		
2,100.00	2,100.00	2,105.19	2,105.13	7.32	7.14	65.98	173.29	388.91	425.78	411.32	14.45	29.458		
2,150.00	2,150.00	2,154.70	2,154.64	7.50	7.31	65.96	173.34	388.69	425.59	410.78	14.80	28.747		
2,200.00	2,200.00	2,205.11	2,205.06	7.68	7.49	65.95	173.38	388.47	425.42	410.26	15.16	28.063		
2,250.00	2,250.00	2,255.68	2,255.62	7.86	7.67	65.93	173.38	388.21	425.18	409.66	15.51	27.406		
2,300.00	2,300.00	2,304.21	2,304.15	8.04	7.83	65.93	173.35	388.03	424.99	409.13	15.86	26.793		
2,328.98	2,328.98	2,332.34	2,332.28	8.14	7.93	65.93	173.33	388.01	424.96	408.90	16.06	26.454		
2,350.00	2,350.00	2,352.95	2,352.90	8.22	8.00	65.93	173.31	388.03	424.97	408.76	16.21	26.215		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,400.00	2,400.00	2,404.26	2,404.20	8.39	8.18	65.94	173.27	388.01	424.95	408.38	16.57	25.647		
2,450.00	2,450.00	2,455.25	2,455.19	8.57	8.36	65.93	173.25	387.82	424.77	407.84	16.93	25.096		
2,500.00	2,500.00	2,505.30	2,505.25	8.75	8.53	65.92	173.23	387.59	424.54	407.26	17.28	24.570		
2,526.14	2,526.14	2,531.47	2,531.41	8.84	8.63	144.69	173.22	387.46	424.48	407.02	17.46	24.310		
2,550.00	2,550.00	2,554.79	2,554.73	8.93	8.71	144.70	173.20	387.36	424.54	406.92	17.63	24.086 ES		
2,600.00	2,599.99	2,603.34	2,603.28	9.10	8.88	144.76	173.15	387.29	425.13	407.16	17.97	23.656		
2,650.00	2,649.97	2,652.46	2,652.40	9.28	9.05	144.87	173.08	387.40	426.31	408.00	18.31	23.277		
2,700.00	2,699.94	2,702.25	2,702.19	9.45	9.22	145.02	173.00	387.56	427.99	409.33	18.66	22.935		
2,750.00	2,749.88	2,752.64	2,752.58	9.62	9.40	145.21	172.92	387.71	430.11	411.10	19.01	22.626		
2,800.00	2,799.79	2,803.48	2,803.42	9.79	9.57	145.43	172.91	387.74	432.59	413.24	19.36	22.346		
2,850.00	2,849.66	2,853.55	2,853.49	9.97	9.75	145.67	172.94	387.66	435.46	415.75	19.71	22.097		
2,900.00	2,899.49	2,903.31	2,903.25	10.14	9.92	145.93	172.99	387.57	438.78	418.73	20.05	21.881		
2,950.00	2,949.28	2,953.20	2,953.14	10.32	10.10	146.23	173.06	387.49	442.57	422.17	20.40	21.694		
3,000.00	2,999.01	3,003.07	3,003.01	10.49	10.27	146.55	173.15	387.37	446.82	426.07	20.75	21.536		
3,050.00	3,048.68	3,051.48	3,051.42	10.67	10.44	146.90	173.24	387.32	451.60	430.51	21.09	21.413		
3,100.00	3,098.29	3,099.82	3,099.76	10.84	10.61	147.27	173.33	387.43	456.99	435.56	21.43	21.323		
3,150.00	3,147.82	3,149.46	3,149.40	11.02	10.78	147.69	173.40	387.61	462.93	441.15	21.78	21.256		
3,200.00	3,197.28	3,199.31	3,199.25	11.20	10.96	148.13	173.45	387.78	469.34	447.22	22.13	21.212		
3,250.00	3,246.69	3,250.80	3,250.74	11.37	11.14	148.61	173.56	387.77	475.94	453.46	22.48	21.172		
3,300.00	3,296.09	3,301.62	3,301.56	11.55	11.31	149.07	173.74	387.52	482.38	459.55	22.83	21.128		
3,350.00	3,345.49	3,350.97	3,350.90	11.73	11.49	149.49	173.99	387.20	488.80	465.62	23.18	21.089		
3,400.00	3,394.90	3,399.70	3,399.64	11.91	11.66	149.89	174.29	386.89	495.27	471.75	23.52	21.056		
3,450.00	3,444.30	3,447.61	3,447.54	12.09	11.82	150.28	174.57	386.73	501.89	478.03	23.86	21.032		
3,500.00	3,493.71	3,496.43	3,496.37	12.27	12.00	150.68	174.81	386.71	508.67	484.46	24.21	21.013		
3,550.00	3,543.11	3,546.30	3,546.23	12.45	12.17	151.08	175.03	386.69	515.46	490.90	24.56	20.990		
3,600.00	3,592.51	3,596.86	3,596.79	12.63	12.35	151.47	175.23	386.60	522.20	497.29	24.91	20.964		
3,650.00	3,641.92	3,647.93	3,647.86	12.81	12.53	151.84	175.50	386.33	528.83	503.56	25.26	20.932		
3,700.00	3,691.32	3,697.39	3,697.32	12.99	12.70	152.19	175.83	385.96	535.38	509.76	25.61	20.903		
3,750.00	3,740.72	3,746.36	3,746.28	13.17	12.87	152.51	176.22	385.61	541.98	516.03	25.96	20.878		
3,800.00	3,790.13	3,795.05	3,794.98	13.35	13.04	152.82	176.68	385.30	548.67	522.36	26.31	20.858		
3,850.00	3,839.53	3,843.70	3,843.62	13.53	13.21	153.11	177.24	385.04	555.44	528.79	26.65	20.841		
3,900.00	3,888.93	3,890.90	3,890.82	13.72	13.38	153.39	177.85	384.89	562.35	535.36	26.99	20.834		
3,950.00	3,938.34	3,937.95	3,937.86	13.90	13.54	153.66	178.47	384.95	569.49	542.16	27.33	20.837		
4,000.00	3,987.74	3,985.72	3,985.63	14.08	13.71	153.94	179.01	385.21	576.81	549.14	27.67	20.844		
4,050.00	4,037.14	4,033.47	4,033.37	14.27	13.88	154.24	179.32	385.66	584.29	556.27	28.01	20.856		
4,100.00	4,086.55	4,080.78	4,080.68	14.45	14.04	154.55	179.48	386.29	591.93	563.57	28.35	20.876		
4,150.00	4,135.95	4,128.02	4,127.92	14.63	14.21	154.87	179.53	387.11	599.76	571.06	28.69	20.902		
4,200.00	4,185.36	4,175.00	4,174.88	14.82	14.37	155.19	179.45	388.13	607.78	578.75	29.03	20.935		
4,250.00	4,234.76	4,221.90	4,221.76	15.00	14.53	155.53	179.19	389.38	616.01	586.64	29.37	20.976		
4,300.00	4,284.16	4,270.28	4,270.12	15.18	14.70	155.89	178.75	390.82	624.39	594.67	29.71	21.014		
4,350.00	4,333.57	4,318.61	4,318.42	15.37	14.87	156.25	178.19	392.35	632.85	602.79	30.06	21.054		
4,400.00	4,382.97	4,366.73	4,366.51	15.55	15.04	156.61	177.45	393.98	641.40	611.00	30.40	21.098		
4,450.00	4,432.37	4,414.92	4,414.65	15.74	15.21	156.99	176.49	395.74	650.06	619.31	30.75	21.143		
4,500.00	4,481.78	4,463.91	4,463.60	15.92	15.38	157.37	175.48	397.56	658.77	627.68	31.09	21.187		
4,550.00	4,531.18	4,512.31	4,511.96	16.11	15.55	157.73	174.53	399.36	667.52	636.08	31.44	21.232		
4,600.00	4,580.58	4,558.51	4,558.12	16.29	15.71	158.06	173.80	401.18	676.45	644.67	31.77	21.291		
4,650.00	4,629.99	4,605.83	4,605.39	16.48	15.88	158.37	173.27	403.20	685.59	653.48	32.11	21.351		
4,700.00	4,679.39	4,656.11	4,657.62	16.66	16.06	158.69	172.72	405.34	694.66	662.18	32.48	21.387		
4,750.00	4,728.80	4,710.15	4,709.63	16.85	16.24	159.01	172.10	407.23	703.53	670.68	32.85	21.418		
4,800.00	4,778.20	4,761.79	4,761.23	17.03	16.42	159.32	171.35	408.93	712.23	679.02	33.21	21.445		
4,850.00	4,827.60	4,811.67	4,811.08	17.22	16.60	159.63	170.52	410.45	720.81	687.24	33.57	21.474		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
4,900.00	4,877.01	4,860.27	4,859.65	17.40	16.77	159.92	169.72	411.94	729.42	695.51	33.91	21.508		
4,950.00	4,926.41	4,909.90	4,909.26	17.59	16.94	160.20	168.96	413.47	738.07	703.80	34.27	21.538		
5,000.00	4,975.81	4,960.11	4,959.44	17.78	17.12	160.47	168.34	414.93	746.66	712.04	34.62	21.564		
5,050.00	5,025.22	5,010.08	5,009.39	17.96	17.29	160.72	167.83	416.30	755.21	720.23	34.98	21.590		
5,100.00	5,074.62	5,060.02	5,059.31	18.15	17.47	160.96	167.39	417.62	763.72	728.39	35.34	21.613		
5,150.00	5,124.02	5,109.11	5,108.38	18.34	17.64	161.19	166.91	418.88	772.22	736.53	35.69	21.639		
5,200.00	5,173.43	5,158.13	5,157.38	18.52	17.81	161.44	166.28	420.18	780.74	744.71	36.04	21.665		
5,250.00	5,222.83	5,209.98	5,209.20	18.71	17.99	161.69	165.48	421.49	789.20	752.80	36.40	21.679		
5,300.00	5,272.23	5,261.88	5,261.08	18.90	18.17	161.95	164.59	422.63	797.50	760.73	36.77	21.688		
5,350.00	5,321.64	5,309.02	5,308.21	19.08	18.34	162.16	164.04	423.64	805.83	768.72	37.11	21.713		
5,400.00	5,371.04	5,357.49	5,356.67	19.27	18.50	162.34	163.85	424.71	814.23	776.77	37.46	21.736		
5,450.00	5,420.45	5,407.47	5,406.64	19.46	18.68	162.51	163.89	425.77	822.63	784.81	37.82	21.753		
5,500.00	5,469.85	5,457.59	5,456.75	19.65	18.85	162.67	164.07	426.78	830.99	792.81	38.17	21.768		
5,550.00	5,519.25	5,507.87	5,507.01	19.83	19.03	162.85	163.96	427.75	839.29	800.76	38.53	21.781		
5,600.00	5,568.66	5,558.21	5,557.35	20.02	19.21	163.04	163.49	428.71	847.55	808.66	38.89	21.793		
5,650.00	5,618.06	5,608.66	5,607.78	20.21	19.38	163.23	163.02	429.59	855.74	816.49	39.25	21.802		
5,700.00	5,667.46	5,659.60	5,658.72	20.40	19.56	163.42	162.60	430.39	863.87	824.25	39.61	21.808		
5,750.00	5,716.87	5,710.84	5,709.95	20.58	19.74	163.59	162.32	431.08	871.89	831.91	39.98	21.810		
5,800.00	5,766.27	5,760.71	5,759.82	20.77	19.91	163.75	162.15	431.66	879.84	839.51	40.33	21.815		
5,850.00	5,815.67	5,810.32	5,809.43	20.96	20.09	163.90	162.02	432.21	887.79	847.10	40.69	21.819		
5,900.00	5,865.08	5,860.19	5,859.29	21.15	20.26	164.05	161.84	432.75	895.71	854.66	41.04	21.823		
5,950.00	5,914.48	5,910.08	5,909.18	21.34	20.43	164.21	161.50	433.27	903.61	862.21	41.40	21.825		
6,000.00	5,963.89	5,960.19	5,959.28	21.52	20.61	164.37	161.11	433.75	911.48	869.72	41.76	21.827		
6,050.00	6,013.29	6,010.31	6,009.40	21.71	20.78	164.53	160.74	434.20	919.31	877.19	42.12	21.827		
6,100.00	6,062.69	6,059.39	6,058.47	21.90	20.95	164.68	160.38	434.62	927.14	884.67	42.47	21.830		
6,150.00	6,112.10	6,108.97	6,108.06	22.09	21.13	164.83	160.02	435.04	934.97	892.15	42.83	21.832		
6,200.00	6,161.50	6,159.37	6,158.45	22.28	21.30	164.97	159.80	435.43	942.77	899.59	43.19	21.831		
6,250.00	6,210.90	6,209.44	6,208.52	22.47	21.48	165.09	159.78	435.74	950.53	906.98	43.54	21.829		
6,300.00	6,260.31	6,259.06	6,258.14	22.65	21.65	165.21	159.79	436.03	958.26	914.37	43.90	21.828		
6,350.00	6,309.71	6,308.45	6,307.54	22.84	21.82	165.33	159.79	436.31	966.00	921.74	44.25	21.828		
6,400.00	6,359.11	6,357.65	6,356.73	23.03	22.00	165.46	159.62	436.60	973.74	929.13	44.61	21.828		
6,450.00	6,408.52	6,407.04	6,406.12	23.22	22.17	165.59	159.30	436.91	981.49	936.52	44.96	21.829		
6,500.00	6,457.92	6,456.54	6,455.62	23.41	22.34	165.72	159.00	437.21	989.24	943.92	45.32	21.828		
6,550.00	6,507.32	6,506.82	6,505.89	23.60	22.52	165.84	158.77	437.49	996.97	951.29	45.68	21.826		
6,600.00	6,556.73	6,557.37	6,556.44	23.79	22.69	165.96	158.67	437.70	1,004.65	958.61	46.04	21.821		
6,650.00	6,606.13	6,607.86	6,606.93	23.98	22.87	166.07	158.65	437.86	1,012.27	965.87	46.40	21.816		
6,700.00	6,655.54	6,658.36	6,657.43	24.16	23.04	166.18	158.61	437.96	1,019.85	973.09	46.76	21.810		
6,750.00	6,704.94	6,706.58	6,705.65	24.35	23.21	166.28	158.49	438.06	1,027.43	980.32	47.11	21.809		
6,800.00	6,754.34	6,754.98	6,754.05	24.54	23.38	166.40	158.23	438.21	1,035.07	987.60	47.46	21.809		
6,850.00	6,803.75	6,803.95	6,803.02	24.73	23.55	166.51	157.92	438.41	1,042.74	994.92	47.81	21.808		
6,900.00	6,853.15	6,852.92	6,851.99	24.92	23.72	166.63	157.64	438.61	1,050.43	1,002.26	48.17	21.808		
6,950.00	6,902.55	6,901.90	6,900.97	25.11	23.89	166.73	157.49	438.84	1,058.15	1,009.63	48.52	21.808		
7,000.00	6,951.96	6,950.92	6,949.99	25.30	24.06	166.82	157.52	439.07	1,065.89	1,017.01	48.87	21.809		
7,050.00	7,001.36	7,000.01	6,999.08	25.49	24.24	166.92	157.55	439.32	1,073.64	1,024.41	49.23	21.809		
7,100.00	7,050.76	7,048.74	7,047.81	25.68	24.41	167.01	157.52	439.58	1,081.41	1,031.83	49.58	21.811		
7,150.00	7,100.17	7,096.88	7,095.94	25.87	24.57	167.11	157.30	439.89	1,089.23	1,039.30	49.93	21.815		
7,200.00	7,149.57	7,146.31	7,145.37	26.06	24.75	167.22	156.91	440.26	1,097.10	1,046.82	50.29	21.817		
7,250.00	7,198.98	7,197.43	7,196.49	26.25	24.93	167.33	156.61	440.58	1,104.92	1,054.26	50.65	21.814		
7,300.00	7,248.38	7,246.80	7,245.86	26.44	25.10	167.42	156.46	440.82	1,112.68	1,061.67	51.01	21.815		
7,350.00	7,297.78	7,295.02	7,294.08	26.62	25.27	167.52	156.29	441.10	1,120.48	1,069.12	51.36	21.818		
7,400.00	7,347.19	7,342.58	7,341.64	26.81	25.43	167.61	156.02	441.44	1,128.35	1,076.65	51.70	21.824		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual													Offset Site Error: 5.00 ft	
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF													Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (")	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)						
7,450.00	7,396.59	7,389.78	7,388.83	27.00	25.60	167.72	155.46	441.86	1,136.31	1,084.26	52.05	21.833		
7,500.00	7,445.99	7,438.29	7,437.33	27.19	25.77	167.85	154.61	442.37	1,144.34	1,091.95	52.40	21.840		
7,550.00	7,495.40	7,487.39	7,486.42	27.38	25.94	167.98	153.59	442.90	1,152.40	1,099.65	52.75	21.846		
7,600.00	7,544.80	7,538.73	7,537.75	27.57	26.12	168.12	152.47	443.43	1,160.43	1,107.31	53.12	21.846		
7,650.00	7,594.20	7,590.75	7,589.75	27.76	26.30	168.25	151.50	443.84	1,168.35	1,114.87	53.49	21.843		
7,700.00	7,643.61	7,639.80	7,638.80	27.95	26.47	168.37	150.61	444.17	1,176.23	1,122.39	53.84	21.846		
7,750.00	7,693.01	7,688.78	7,687.76	28.14	26.64	168.49	149.60	444.52	1,184.13	1,129.93	54.20	21.849		
7,800.00	7,742.43	7,735.20	7,734.17	28.33	26.80	168.63	148.53	444.92	1,191.98	1,137.44	54.54	21.856		
7,850.00	7,791.94	7,781.85	7,780.80	28.52	26.96	168.77	147.32	445.43	1,199.36	1,144.48	54.88	21.856		
7,900.00	7,841.54	7,828.85	7,827.77	28.71	27.13	168.90	146.08	446.04	1,206.21	1,151.00	55.22	21.845		
7,950.00	7,891.22	7,876.45	7,875.36	28.89	27.30	169.03	144.90	446.76	1,212.54	1,156.98	55.56	21.824		
8,000.00	7,940.97	7,931.41	7,930.30	29.08	27.49	169.15	143.67	447.50	1,218.15	1,162.21	55.95	21.774		
8,050.00	7,990.77	7,984.23	7,983.10	29.26	27.67	169.25	142.65	448.00	1,222.93	1,166.61	56.32	21.716		
8,100.00	8,040.63	8,033.20	8,032.06	29.44	27.84	169.34	141.66	448.45	1,227.05	1,170.39	56.67	21.654		
8,150.00	8,090.54	8,082.11	8,080.96	29.62	28.01	169.43	140.56	448.92	1,230.57	1,173.56	57.01	21.584		
8,200.00	8,140.48	8,130.92	8,129.75	29.79	28.18	169.51	139.33	449.44	1,233.49	1,176.13	57.36	21.505		
8,250.00	8,190.45	8,181.09	8,179.89	29.97	28.36	169.60	137.92	450.00	1,235.80	1,178.09	57.71	21.414		
8,300.00	8,240.44	8,232.42	8,231.21	30.15	28.54	169.68	136.48	450.53	1,237.42	1,179.35	58.07	21.309		
8,350.00	8,290.43	8,286.16	8,284.93	30.32	28.73	169.75	135.01	450.98	1,238.31	1,179.87	58.44	21.190		
8,400.00	8,340.43	8,340.87	8,339.62	30.49	28.92	91.05	133.66	451.24	1,238.58	1,179.77	58.81	21.061		
8,450.00	8,390.43	8,394.50	8,393.24	30.66	29.10	91.10	132.45	451.32	1,238.68	1,179.50	59.17	20.933		
8,500.00	8,440.43	8,446.15	8,444.87	30.83	29.28	91.15	131.37	451.25	1,238.63	1,179.10	59.53	20.807		
8,513.78	8,454.22	8,458.80	8,457.52	30.88	29.33	91.17	131.10	451.24	1,238.63	1,179.01	59.62	20.776		
8,550.00	8,490.43	8,492.04	8,490.75	31.00	29.44	91.20	130.34	451.27	1,238.67	1,178.82	59.85	20.695		
8,600.00	8,540.43	8,539.84	8,538.54	31.17	29.61	91.26	129.14	451.43	1,238.87	1,178.68	60.19	20.583		
8,650.00	8,590.43	8,594.53	8,593.21	31.34	29.80	91.32	127.80	451.53	1,238.98	1,178.42	60.56	20.459		
8,700.00	8,640.42	8,648.84	8,647.50	31.51	29.99	-88.31	126.60	451.42	1,238.89	1,177.97	60.93	20.335		
8,750.00	8,690.19	8,702.58	8,701.23	31.67	30.18	-88.53	125.62	451.15	1,238.53	1,177.25	61.28	20.211		
8,800.00	8,739.36	8,751.54	8,750.19	31.83	30.35	-88.95	124.84	450.82	1,238.00	1,176.39	61.61	20.095		
8,850.00	8,787.57	8,798.37	8,797.01	31.97	30.51	-89.54	124.02	450.55	1,237.53	1,175.61	61.92	19.985		
8,900.00	8,834.43	8,843.79	8,842.43	32.12	30.67	-90.26	123.20	450.35	1,237.26	1,175.03	62.23	19.882		
8,914.10	8,847.36	8,856.30	8,854.93	32.15	30.71	-90.48	123.01	450.31	1,237.25	1,174.93	62.32	19.854		
8,950.00	8,879.61	8,887.49	8,886.11	32.25	30.82	-91.09	122.57	450.22	1,237.37	1,174.84	62.53	19.789		
9,000.00	8,922.75	8,927.46	8,926.09	32.37	30.96	-91.93	122.09	450.18	1,238.06	1,175.25	62.81	19.713		
9,050.00	8,963.52	8,964.37	8,963.00	32.48	31.09	-92.74	121.68	450.26	1,239.61	1,176.55	63.07	19.656		
9,100.00	9,001.62	8,999.56	8,998.18	32.59	31.21	-93.52	121.30	450.45	1,242.24	1,178.92	63.32	19.619		
9,150.00	9,036.75	9,038.86	9,037.48	32.67	31.35	-94.41	120.89	450.64	1,246.01	1,182.42	63.59	19.594		
9,200.00	9,068.66	9,074.60	9,073.21	32.75	31.47	-95.16	120.52	450.71	1,251.09	1,187.25	63.85	19.595		
9,250.00	9,097.08	9,106.99	9,105.60	32.81	31.59	-95.71	120.21	450.68	1,257.70	1,193.61	64.09	19.625		
9,300.00	9,121.82	9,135.41	9,134.02	32.86	31.69	-96.00	120.00	450.56	1,266.02	1,201.72	64.30	19.689		
9,350.00	9,142.67	9,159.21	9,157.82	32.90	31.77	-95.95	119.89	450.39	1,276.21	1,211.72	64.49	19.789		
9,400.00	9,159.49	9,178.25	9,176.85	32.93	31.84	-95.52	119.84	450.20	1,288.38	1,223.72	64.65	19.927		
9,450.00	9,172.14	9,192.45	9,191.06	32.95	31.88	-94.68	119.83	450.04	1,302.56	1,237.77	64.79	20.105		
9,500.00	9,180.53	9,201.92	9,200.52	32.96	31.92	-93.40	119.78	449.93	1,318.72	1,253.83	64.89	20.322		
9,550.00	9,184.59	9,206.72	9,205.32	33.01	31.93	-91.69	119.76	449.87	1,336.76	1,271.80	64.96	20.577		
9,600.00	9,185.00	9,207.45	9,206.05	33.08	31.94	-90.82	119.76	449.86	1,356.51	1,291.50	65.01	20.867		
9,650.00	9,185.00	9,207.72	9,206.33	33.16	31.94	-90.84	119.76	449.86	1,377.80	1,312.74	65.06	21.178		
9,700.00	9,185.00	9,208.00	9,206.60	33.25	31.94	-90.85	119.76	449.85	1,400.55	1,335.45	65.09	21.516		
9,750.00	9,185.00	9,208.28	9,206.89	33.35	31.94	-90.86	119.76	449.85	1,424.69	1,359.55	65.14	21.871		
9,800.00	9,185.00	9,208.57	9,207.18	33.45	31.94	-90.87	119.75	449.85	1,450.15	1,384.97	65.18	22.248		
9,850.00	9,185.00	9,208.86	9,207.47	33.56	31.94	-90.89	119.75	449.84	1,476.87	1,411.64	65.23	22.642		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Actual													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,150.00	9,185.00	14,078.04	10,231.48	51.63	85.25	-134.45	-3,976.29	421.59	1,497.68	1,383.70	113.98	13.140		
13,200.00	9,185.00	14,122.66	10,231.99	52.03	86.03	-134.57	-4,020.91	421.59	1,492.94	1,378.20	114.74	13.012		
13,250.00	9,185.00	14,171.39	10,232.89	52.42	86.90	-134.71	-4,069.63	421.39	1,488.91	1,373.35	115.56	12.884		
13,300.00	9,185.00	14,227.81	10,234.20	52.82	87.89	-134.88	-4,126.03	420.84	1,485.50	1,369.00	116.50	12.751		
13,350.00	9,185.00	14,299.78	10,234.98	53.22	89.17	-135.06	-4,197.99	419.87	1,482.15	1,364.45	117.70	12.592		
13,400.00	9,185.00	14,358.84	10,235.08	53.62	90.22	-135.17	-4,257.04	418.74	1,478.90	1,360.17	118.74	12.455		
13,450.00	9,185.00	14,408.86	10,235.10	54.01	91.10	-135.24	-4,307.04	417.48	1,476.02	1,356.36	119.66	12.335		
13,500.00	9,185.00	14,446.27	10,235.18	54.40	91.77	-135.28	-4,344.45	416.79	1,474.06	1,353.62	120.44	12.239		
13,550.00	9,185.00	14,487.00	10,235.38	54.79	92.50	-135.30	-4,385.17	416.44	1,473.13	1,351.84	121.29	12.146		
13,590.39	9,185.00	14,526.78	10,235.57	55.11	93.21	-135.32	-4,424.95	416.30	1,472.98	1,350.88	122.11	12.063		
13,600.00	9,185.00	14,537.39	10,235.61	55.19	93.40	-135.32	-4,435.56	416.25	1,472.99	1,350.67	122.32	12.042		
13,650.00	9,185.00	14,594.48	10,235.66	55.57	94.42	-135.31	-4,492.65	415.94	1,473.29	1,349.80	123.49	11.931		
13,700.00	9,185.00	14,650.64	10,235.55	55.96	95.43	-135.29	-4,548.81	415.32	1,473.89	1,349.23	124.66	11.823		
13,750.00	9,185.00	14,690.00	10,235.45	56.34	96.13	-135.26	-4,588.16	414.85	1,475.09	1,349.49	125.60	11.744		
13,800.00	9,185.00	14,690.00	10,235.45	56.72	96.13	-135.31	-4,588.16	414.85	1,478.08	1,352.15	125.93	11.737 SF		
13,850.00	9,185.00	14,690.00	10,235.45	57.10	96.13	-135.38	-4,588.16	414.85	1,483.36	1,357.18	126.18	11.756		
13,900.00	9,185.00	14,690.00	10,235.45	57.47	96.13	-135.49	-4,588.16	414.85	1,490.90	1,364.54	126.36	11.799		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.27	3.27	0.50	0.00	67.41	161.84	389.06	421.38					
50.00	50.00	52.78	52.78	0.50	0.07	67.40	161.96	389.05	421.41	420.84	0.57	735.977		
100.00	100.00	102.28	102.28	0.52	0.14	67.35	162.30	389.00	421.50	420.85	0.65	643.665		
150.00	150.00	152.96	152.95	0.59	0.31	67.30	162.71	388.92	421.58	420.68	0.90	465.947		
200.00	200.00	203.63	203.63	0.70	0.49	67.25	163.03	388.79	421.59	420.39	1.19	353.056		
250.00	250.00	253.38	253.37	0.84	0.67	67.21	163.30	388.66	421.57	420.07	1.50	280.465		
278.19	278.19	281.49	281.49	0.92	0.76	67.19	163.45	388.59	421.57	419.88	1.68	250.313		
300.00	300.00	303.07	303.06	0.99	0.84	67.17	163.56	388.55	421.57	419.75	1.83	230.880		
350.00	350.00	352.29	352.28	1.15	1.01	67.15	163.76	388.55	421.65	419.49	2.16	195.597		
400.00	400.00	401.88	401.88	1.31	1.19	67.13	163.90	388.66	421.81	419.31	2.49	169.238		
450.00	450.00	452.10	452.09	1.48	1.36	67.10	164.21	388.70	421.96	419.13	2.84	148.838		
500.00	500.00	502.26	502.25	1.65	1.54	67.03	164.71	388.63	422.09	418.91	3.18	132.726		
550.00	550.00	552.37	552.36	1.82	1.71	66.96	165.22	388.54	422.21	418.68	3.53	119.703		
600.00	600.00	601.58	601.57	1.99	1.89	66.90	165.71	388.48	422.35	418.48	3.87	109.071		
650.00	650.00	650.30	650.28	2.16	2.06	66.83	166.27	388.54	422.63	418.42	4.22	100.229		
700.00	700.00	700.59	700.57	2.34	2.23	66.76	166.88	388.68	423.00	418.43	4.57	92.615		
750.00	750.00	751.49	751.47	2.51	2.41	66.71	167.33	388.78	423.27	418.35	4.92	86.019		
800.00	800.00	801.84	801.81	2.69	2.59	66.66	167.74	388.82	423.46	418.19	5.27	80.315		
850.00	850.00	852.11	852.08	2.87	2.76	66.59	168.28	388.76	423.62	418.00	5.62	75.317		
900.00	900.00	902.29	902.25	3.04	2.94	66.52	168.87	388.65	423.75	417.78	5.98	70.902		
950.00	950.00	952.46	952.43	3.22	3.12	66.44	169.42	388.54	423.87	417.54	6.33	66.973		
1,000.00	1,000.00	1,001.73	1,001.69	3.40	3.29	66.38	169.86	388.51	424.02	417.34	6.68	63.493		
1,050.00	1,050.00	1,051.48	1,051.44	3.58	3.46	66.35	170.19	388.60	424.24	417.21	7.03	60.353		
1,100.00	1,100.00	1,102.25	1,102.21	3.75	3.64	66.30	170.56	388.63	424.42	417.03	7.38	57.475		
1,150.00	1,150.00	1,152.38	1,152.34	3.93	3.82	66.24	171.01	388.55	424.51	416.78	7.74	54.868		
1,200.00	1,200.00	1,201.61	1,201.57	4.11	3.99	66.21	171.32	388.58	424.67	416.59	8.09	52.514		
1,250.00	1,250.00	1,251.39	1,251.35	4.29	4.16	66.20	171.48	388.76	424.90	416.47	8.44	50.351		
1,300.00	1,300.00	1,301.70	1,301.65	4.46	4.34	66.20	171.57	388.95	425.12	416.32	8.79	48.348		
1,350.00	1,350.00	1,352.29	1,352.25	4.64	4.51	66.20	171.64	389.10	425.28	416.13	9.15	46.490		
1,400.00	1,400.00	1,403.04	1,403.00	4.82	4.69	66.18	171.81	389.12	425.36	415.86	9.50	44.759		
1,450.00	1,450.00	1,453.00	1,452.95	5.00	4.87	66.14	172.09	389.03	425.39	415.53	9.86	43.161		
1,500.00	1,500.00	1,502.76	1,502.71	5.18	5.04	66.08	172.52	388.90	425.45	415.24	10.21	41.677		
1,550.00	1,550.00	1,553.01	1,552.96	5.36	5.22	66.02	172.97	388.76	425.50	414.94	10.56	40.287		
1,600.00	1,600.00	1,603.30	1,603.24	5.53	5.39	65.98	173.24	388.66	425.53	414.61	10.92	38.983		
1,650.00	1,650.00	1,653.34	1,653.29	5.71	5.57	65.95	173.43	388.58	425.53	414.26	11.27	37.762		
1,698.58	1,698.58	1,701.98	1,701.93	5.89	5.74	65.92	173.59	388.51	425.53	413.92	11.61	36.646		
1,700.00	1,700.00	1,703.28	1,703.22	5.89	5.74	65.92	173.60	388.51	425.53	413.91	11.62	36.616		
1,750.00	1,750.00	1,752.71	1,752.66	6.07	5.92	65.92	173.66	388.53	425.57	413.60	11.97	35.545		
1,800.00	1,800.00	1,802.31	1,802.26	6.25	6.09	65.93	173.61	388.66	425.68	413.35	12.32	34.539		
1,850.00	1,850.00	1,852.29	1,852.24	6.43	6.26	65.95	173.52	388.84	425.80	413.12	12.68	33.586		
1,900.00	1,900.00	1,902.32	1,902.26	6.61	6.44	65.97	173.42	389.02	425.93	412.89	13.03	32.685		
1,950.00	1,950.00	1,952.41	1,952.35	6.78	6.61	65.99	173.32	389.19	426.04	412.66	13.39	31.830		
2,000.00	2,000.00	2,003.41	2,003.35	6.96	6.79	66.01	173.25	389.31	426.12	412.38	13.74	31.009		
2,050.00	2,050.00	2,055.12	2,055.07	7.14	6.97	66.00	173.24	389.19	426.01	411.91	14.10	30.212		
2,100.00	2,100.00	2,105.19	2,105.13	7.32	7.14	65.98	173.29	388.91	425.78	411.32	14.45	29.458		
2,150.00	2,150.00	2,154.70	2,154.64	7.50	7.31	65.96	173.34	388.69	425.59	410.78	14.80	28.747		
2,200.00	2,200.00	2,205.11	2,205.06	7.68	7.49	65.95	173.38	388.47	425.42	410.26	15.16	28.063		
2,250.00	2,250.00	2,255.68	2,255.62	7.86	7.67	65.93	173.38	388.21	425.18	409.66	15.51	27.406		
2,300.00	2,300.00	2,304.21	2,304.15	8.04	7.83	65.93	173.35	388.03	424.99	409.13	15.86	26.793		
2,328.98	2,328.98	2,332.34	2,332.28	8.14	7.93	65.93	173.33	388.01	424.96	408.90	16.06	26.454		
2,350.00	2,350.00	2,352.95	2,352.90	8.22	8.00	65.93	173.31	388.03	424.97	408.76	16.21	26.215		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
2,400.00	2,400.00	2,404.26	2,404.20	8.39	8.18	65.94	173.27	388.01	424.95	408.38	16.57	25.647		
2,450.00	2,450.00	2,455.25	2,455.19	8.57	8.36	65.93	173.25	387.82	424.77	407.84	16.93	25.096		
2,500.00	2,500.00	2,505.30	2,505.25	8.75	8.53	65.92	173.23	387.59	424.54	407.26	17.28	24.570		
2,526.14	2,526.14	2,531.47	2,531.41	8.84	8.63	144.69	173.22	387.46	424.48	407.02	17.46	24.310		
2,550.00	2,550.00	2,554.79	2,554.73	8.93	8.71	144.70	173.20	387.36	424.54	406.92	17.63	24.086		
2,600.00	2,599.99	2,603.34	2,603.28	9.10	8.88	144.76	173.15	387.29	425.13	407.16	17.97	23.656		
2,650.00	2,649.97	2,652.46	2,652.40	9.28	9.05	144.87	173.08	387.40	426.31	408.00	18.31	23.277		
2,700.00	2,699.94	2,702.25	2,702.19	9.45	9.22	145.02	173.00	387.56	427.99	409.33	18.66	22.935		
2,750.00	2,749.88	2,752.64	2,752.58	9.62	9.40	145.21	172.92	387.71	430.11	411.10	19.01	22.626		
2,800.00	2,799.79	2,803.48	2,803.42	9.79	9.57	145.43	172.91	387.74	432.59	413.24	19.36	22.346		
2,850.00	2,849.66	2,853.55	2,853.49	9.97	9.75	145.67	172.94	387.66	435.46	415.75	19.71	22.097		
2,900.00	2,899.49	2,903.31	2,903.25	10.14	9.92	145.93	172.99	387.57	438.78	418.73	20.05	21.881		
2,950.00	2,949.28	2,953.20	2,953.14	10.32	10.10	146.23	173.06	387.49	442.57	422.17	20.40	21.694		
3,000.00	2,999.01	3,003.07	3,003.01	10.49	10.27	146.55	173.15	387.37	446.82	426.07	20.75	21.536		
3,050.00	3,048.68	3,051.48	3,051.42	10.67	10.44	146.90	173.24	387.32	451.60	430.51	21.09	21.413		
3,100.00	3,098.29	3,099.82	3,099.76	10.84	10.61	147.27	173.33	387.43	456.99	435.56	21.43	21.323		
3,150.00	3,147.82	3,149.46	3,149.40	11.02	10.78	147.69	173.40	387.61	462.93	441.15	21.78	21.256		
3,200.00	3,197.28	3,199.31	3,199.25	11.20	10.96	148.13	173.45	387.78	469.34	447.22	22.13	21.212		
3,250.00	3,246.69	3,250.80	3,250.74	11.37	11.14	148.61	173.56	387.77	475.94	453.46	22.48	21.172		
3,300.00	3,296.09	3,301.62	3,301.56	11.55	11.31	149.07	173.74	387.52	482.38	459.55	22.83	21.128		
3,350.00	3,345.49	3,350.97	3,350.90	11.73	11.49	149.49	173.99	387.20	488.80	465.62	23.18	21.089		
3,400.00	3,394.90	3,399.70	3,399.64	11.91	11.66	149.89	174.29	386.89	495.27	471.75	23.52	21.056		
3,450.00	3,444.30	3,447.61	3,447.54	12.09	11.82	150.28	174.57	386.73	501.89	478.03	23.86	21.032		
3,500.00	3,493.71	3,496.43	3,496.37	12.27	12.00	150.68	174.81	386.71	508.67	484.46	24.21	21.013		
3,550.00	3,543.11	3,546.30	3,546.23	12.45	12.17	151.08	175.03	386.69	515.46	490.90	24.56	20.990		
3,600.00	3,592.51	3,596.86	3,596.79	12.63	12.35	151.47	175.23	386.60	522.20	497.29	24.91	20.964		
3,650.00	3,641.92	3,647.93	3,647.86	12.81	12.53	151.84	175.50	386.33	528.83	503.56	25.26	20.932		
3,700.00	3,691.32	3,697.39	3,697.32	12.99	12.70	152.19	175.83	385.96	535.38	509.76	25.61	20.903		
3,750.00	3,740.72	3,746.36	3,746.28	13.17	12.87	152.51	176.22	385.61	541.98	516.03	25.96	20.878		
3,800.00	3,790.13	3,795.05	3,794.98	13.35	13.04	152.82	176.68	385.30	548.67	522.36	26.31	20.858		
3,850.00	3,839.53	3,843.70	3,843.62	13.53	13.21	153.11	177.24	385.04	555.44	528.79	26.65	20.841		
3,900.00	3,888.93	3,890.90	3,890.82	13.72	13.38	153.39	177.85	384.89	562.35	535.36	26.99	20.834		
3,950.00	3,938.34	3,937.95	3,937.86	13.90	13.54	153.66	178.47	384.95	569.49	542.16	27.33	20.837		
4,000.00	3,987.74	3,985.72	3,985.63	14.08	13.71	153.94	179.01	385.21	576.81	549.14	27.67	20.844		
4,050.00	4,037.14	4,033.47	4,033.37	14.27	13.88	154.24	179.32	385.66	584.29	556.27	28.01	20.856		
4,100.00	4,086.55	4,080.78	4,080.68	14.45	14.04	154.55	179.48	386.29	591.93	563.57	28.35	20.876		
4,150.00	4,135.95	4,128.02	4,127.92	14.63	14.21	154.87	179.53	387.11	599.76	571.06	28.69	20.902		
4,200.00	4,185.36	4,175.00	4,174.88	14.82	14.37	155.19	179.45	388.13	607.78	578.75	29.03	20.935		
4,250.00	4,234.76	4,221.90	4,221.76	15.00	14.53	155.53	179.19	389.38	616.01	586.64	29.37	20.976		
4,300.00	4,284.16	4,270.28	4,270.12	15.18	14.70	155.89	178.75	390.82	624.39	594.67	29.71	21.014		
4,350.00	4,333.57	4,318.61	4,318.42	15.37	14.87	156.25	178.19	392.35	632.85	602.79	30.06	21.054		
4,400.00	4,382.97	4,366.73	4,366.51	15.55	15.04	156.61	177.45	393.98	641.40	611.00	30.40	21.098		
4,450.00	4,432.37	4,414.92	4,414.65	15.74	15.21	156.99	176.49	395.74	650.06	619.31	30.75	21.143		
4,500.00	4,481.78	4,463.91	4,463.60	15.92	15.38	157.37	175.48	397.56	658.77	627.68	31.09	21.187		
4,550.00	4,531.18	4,512.31	4,511.96	16.11	15.55	157.73	174.53	399.36	667.52	636.08	31.44	21.232		
4,600.00	4,580.58	4,558.51	4,558.12	16.29	15.71	158.06	173.80	401.18	676.45	644.67	31.77	21.291		
4,650.00	4,629.99	4,605.83	4,605.39	16.48	15.88	158.37	173.27	403.20	685.59	653.48	32.11	21.351		
4,700.00	4,679.39	4,658.11	4,657.62	16.66	16.06	158.69	172.72	405.34	694.66	662.18	32.48	21.387		
4,750.00	4,728.80	4,710.15	4,709.63	16.85	16.24	159.01	172.10	407.23	703.53	670.68	32.85	21.418		
4,800.00	4,778.20	4,761.79	4,761.23	17.03	16.42	159.32	171.35	408.93	712.23	679.02	33.21	21.445		
4,850.00	4,827.60	4,811.67	4,811.08	17.22	16.60	159.63	170.52	410.45	720.81	687.24	33.57	21.474		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
4,900.00	4,877.01	4,860.27	4,859.65	17.40	16.77	159.92	169.72	411.94	729.42	695.51	33.91	21.508		
4,950.00	4,926.41	4,909.90	4,909.26	17.59	16.94	160.20	168.96	413.47	738.07	703.80	34.27	21.538		
5,000.00	4,975.81	4,960.11	4,959.44	17.78	17.12	160.47	168.34	414.93	746.66	712.04	34.62	21.564		
5,050.00	5,025.22	5,010.08	5,009.39	17.96	17.29	160.72	167.83	416.30	755.21	720.23	34.98	21.590		
5,100.00	5,074.62	5,060.02	5,059.31	18.15	17.47	160.96	167.39	417.62	763.72	728.39	35.34	21.613		
5,150.00	5,124.02	5,109.11	5,108.38	18.34	17.64	161.19	166.91	418.88	772.22	736.53	35.69	21.639		
5,200.00	5,173.43	5,158.13	5,157.38	18.52	17.81	161.44	166.28	420.18	780.74	744.71	36.04	21.665		
5,250.00	5,222.83	5,209.98	5,209.20	18.71	17.99	161.69	165.48	421.49	789.20	752.80	36.40	21.679		
5,300.00	5,272.23	5,261.88	5,261.08	18.90	18.17	161.95	164.59	422.63	797.50	760.73	36.77	21.688		
5,350.00	5,321.64	5,309.02	5,308.21	19.08	18.34	162.16	164.04	423.64	805.83	768.72	37.11	21.713		
5,400.00	5,371.04	5,357.49	5,356.67	19.27	18.50	162.34	163.85	424.71	814.23	776.77	37.46	21.736		
5,450.00	5,420.45	5,407.47	5,406.64	19.46	18.68	162.51	163.89	425.77	822.63	784.81	37.82	21.753		
5,500.00	5,469.85	5,457.59	5,456.75	19.65	18.85	162.67	164.07	426.78	830.99	792.81	38.17	21.768		
5,550.00	5,519.25	5,507.87	5,507.01	19.83	19.03	162.85	163.96	427.75	839.29	800.76	38.53	21.781		
5,600.00	5,568.66	5,558.21	5,557.35	20.02	19.21	163.04	163.49	428.71	847.55	808.66	38.89	21.793		
5,650.00	5,618.06	5,608.66	5,607.78	20.21	19.38	163.23	163.02	429.59	855.74	816.49	39.25	21.802		
5,700.00	5,667.46	5,659.60	5,658.72	20.40	19.56	163.42	162.60	430.39	863.87	824.25	39.61	21.808		
5,750.00	5,716.87	5,710.84	5,709.95	20.58	19.74	163.59	162.32	431.08	871.89	831.91	39.98	21.810		
5,800.00	5,766.27	5,760.71	5,759.82	20.77	19.91	163.75	162.15	431.66	879.84	839.51	40.33	21.815		
5,850.00	5,815.67	5,810.32	5,809.43	20.96	20.09	163.90	162.02	432.21	887.79	847.10	40.69	21.819		
5,900.00	5,865.08	5,860.19	5,859.29	21.15	20.26	164.05	161.84	432.75	895.71	854.66	41.04	21.823		
5,950.00	5,914.48	5,910.08	5,909.18	21.34	20.43	164.21	161.50	433.27	903.61	862.21	41.40	21.825		
6,000.00	5,963.89	5,960.19	5,959.28	21.52	20.61	164.37	161.11	433.75	911.48	869.72	41.76	21.827		
6,050.00	6,013.29	6,010.31	6,009.40	21.71	20.78	164.53	160.74	434.20	919.31	877.19	42.12	21.827		
6,100.00	6,062.69	6,059.39	6,058.47	21.90	20.95	164.68	160.38	434.62	927.14	884.67	42.47	21.830		
6,150.00	6,112.10	6,108.97	6,108.06	22.09	21.13	164.83	160.02	435.04	934.97	892.15	42.83	21.832		
6,200.00	6,161.50	6,159.37	6,158.45	22.28	21.30	164.97	159.80	435.43	942.77	899.59	43.19	21.831		
6,250.00	6,210.90	6,209.44	6,208.52	22.47	21.48	165.09	159.78	435.74	950.53	906.98	43.54	21.829		
6,300.00	6,260.31	6,259.06	6,258.14	22.65	21.65	165.21	159.79	436.03	958.26	914.37	43.90	21.828		
6,350.00	6,309.71	6,308.45	6,307.54	22.84	21.82	165.33	159.79	436.31	966.00	921.74	44.25	21.828		
6,400.00	6,359.11	6,357.65	6,356.73	23.03	22.00	165.46	159.62	436.60	973.74	929.13	44.61	21.828		
6,450.00	6,408.52	6,407.04	6,406.12	23.22	22.17	165.59	159.30	436.91	981.49	936.52	44.96	21.829		
6,500.00	6,457.92	6,456.54	6,455.62	23.41	22.34	165.72	159.00	437.21	989.24	943.92	45.32	21.828		
6,550.00	6,507.32	6,506.82	6,505.89	23.60	22.52	165.84	158.77	437.49	996.97	951.29	45.68	21.826		
6,600.00	6,556.73	6,557.37	6,556.44	23.79	22.69	165.96	158.67	437.70	1,004.65	958.61	46.04	21.821		
6,650.00	6,606.13	6,607.86	6,606.93	23.98	22.87	166.07	158.65	437.86	1,012.27	965.87	46.40	21.816		
6,700.00	6,655.54	6,658.36	6,657.43	24.16	23.04	166.18	158.61	437.96	1,019.85	973.09	46.76	21.810		
6,750.00	6,704.94	6,706.58	6,705.65	24.35	23.21	166.28	158.49	438.06	1,027.43	980.32	47.11	21.809		
6,800.00	6,754.34	6,754.98	6,754.05	24.54	23.38	166.40	158.23	438.21	1,035.07	987.60	47.46	21.809		
6,850.00	6,803.75	6,803.95	6,803.02	24.73	23.55	166.51	157.92	438.41	1,042.74	994.92	47.81	21.808		
6,900.00	6,853.15	6,852.92	6,851.99	24.92	23.72	166.63	157.64	438.61	1,050.43	1,002.26	48.17	21.808		
6,950.00	6,902.55	6,901.90	6,900.97	25.11	23.89	166.73	157.49	438.84	1,058.15	1,009.63	48.52	21.808		
7,000.00	6,951.96	6,950.92	6,949.99	25.30	24.06	166.82	157.52	439.07	1,065.89	1,017.01	48.87	21.809		
7,050.00	7,001.36	7,000.01	6,999.08	25.49	24.24	166.92	157.55	439.32	1,073.64	1,024.41	49.23	21.809		
7,100.00	7,050.76	7,048.74	7,047.81	25.68	24.41	167.01	157.52	439.58	1,081.41	1,031.83	49.58	21.811		
7,150.00	7,100.17	7,096.88	7,095.94	25.87	24.57	167.11	157.30	439.89	1,089.23	1,039.30	49.93	21.815		
7,200.00	7,149.57	7,146.31	7,145.37	26.06	24.75	167.22	156.91	440.26	1,097.10	1,046.82	50.29	21.817		
7,250.00	7,198.98	7,197.43	7,196.49	26.25	24.93	167.33	156.61	440.58	1,104.92	1,054.26	50.65	21.814		
7,300.00	7,248.38	7,246.80	7,245.86	26.44	25.10	167.42	156.46	440.82	1,112.68	1,061.67	51.01	21.815		
7,350.00	7,297.78	7,295.02	7,294.08	26.62	25.27	167.52	156.29	441.10	1,120.48	1,069.12	51.36	21.818		
7,400.00	7,347.19	7,342.58	7,341.64	26.81	25.43	167.61	156.02	441.44	1,128.35	1,076.65	51.70	21.824		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2													Offset Site Error: 5.00 ft	
Survey Program: 102-GYRO-NS, 9558-													Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
7,450.00	7,396.59	7,389.78	7,388.83	27.00	25.60	167.72	155.46	441.86	1,136.31	1,084.26	52.05	21.833		
7,500.00	7,445.99	7,438.29	7,437.33	27.19	25.77	167.85	154.61	442.37	1,144.34	1,091.95	52.40	21.840		
7,550.00	7,495.40	7,487.39	7,486.42	27.38	25.94	167.98	153.59	442.90	1,152.40	1,099.65	52.75	21.846		
7,600.00	7,544.80	7,538.73	7,537.75	27.57	26.12	168.12	152.47	443.43	1,160.43	1,107.31	53.12	21.846		
7,650.00	7,594.20	7,590.75	7,589.75	27.76	26.30	168.25	151.50	443.84	1,168.35	1,114.87	53.49	21.843		
7,700.00	7,643.61	7,639.80	7,638.80	27.95	26.47	168.37	150.61	444.17	1,176.23	1,122.39	53.84	21.846		
7,750.00	7,693.01	7,688.78	7,687.76	28.14	26.64	168.49	149.60	444.52	1,184.13	1,129.93	54.20	21.849		
7,800.00	7,742.43	7,735.20	7,734.17	28.33	26.80	168.63	148.53	444.92	1,191.98	1,137.44	54.54	21.856		
7,850.00	7,791.94	7,781.85	7,780.80	28.52	26.96	168.77	147.32	445.43	1,199.36	1,144.48	54.88	21.856		
7,900.00	7,841.54	7,828.85	7,827.77	28.71	27.13	168.90	146.08	446.04	1,206.21	1,151.00	55.22	21.845		
7,950.00	7,891.22	7,876.45	7,875.36	28.89	27.30	169.03	144.90	446.76	1,212.54	1,156.98	55.56	21.824		
8,000.00	7,940.97	7,931.41	7,930.30	29.08	27.49	169.15	143.67	447.50	1,218.15	1,162.21	55.95	21.774		
8,050.00	7,990.77	7,984.23	7,983.10	29.26	27.67	169.25	142.65	448.00	1,222.93	1,166.61	56.32	21.716		
8,100.00	8,040.63	8,033.20	8,032.06	29.44	27.84	169.34	141.66	448.45	1,227.05	1,170.39	56.67	21.654		
8,150.00	8,090.54	8,082.11	8,080.96	29.62	28.01	169.43	140.56	448.92	1,230.57	1,173.56	57.01	21.584		
8,200.00	8,140.48	8,130.92	8,129.75	29.79	28.18	169.51	139.33	449.44	1,233.49	1,176.13	57.36	21.505		
8,250.00	8,190.45	8,181.09	8,179.89	29.97	28.36	169.60	137.92	450.00	1,235.80	1,178.09	57.71	21.414		
8,300.00	8,240.44	8,232.42	8,231.21	30.15	28.54	169.68	136.48	450.53	1,237.42	1,179.35	58.07	21.309		
8,350.00	8,290.43	8,286.16	8,284.93	30.32	28.73	169.75	135.01	450.98	1,238.31	1,179.87	58.44	21.190		
8,400.00	8,340.43	8,340.87	8,339.62	30.49	28.92	91.05	133.66	451.24	1,238.58	1,179.77	58.81	21.061		
8,450.00	8,390.43	8,394.50	8,393.24	30.66	29.10	91.10	132.45	451.32	1,238.68	1,179.50	59.17	20.933		
8,500.00	8,440.43	8,446.15	8,444.87	30.83	29.28	91.15	131.37	451.25	1,238.63	1,179.10	59.53	20.807		
8,513.78	8,454.22	8,458.80	8,457.52	30.86	29.33	91.17	131.10	451.24	1,238.63	1,179.01	59.62	20.776		
8,550.00	8,490.43	8,492.04	8,490.75	31.00	29.44	91.20	130.34	451.27	1,238.67	1,178.82	59.85	20.695		
8,600.00	8,540.43	8,539.84	8,538.54	31.17	29.61	91.26	129.14	451.43	1,238.87	1,178.68	60.19	20.583		
8,650.00	8,590.43	8,594.53	8,593.21	31.34	29.80	91.32	127.80	451.53	1,238.98	1,178.42	60.56	20.459		
8,700.00	8,640.42	8,648.84	8,647.50	31.51	29.99	-88.31	126.60	451.42	1,238.89	1,177.97	60.93	20.335		
8,750.00	8,690.19	8,702.58	8,701.23	31.67	30.18	-88.53	125.62	451.15	1,238.53	1,177.25	61.28	20.211		
8,800.00	8,739.36	8,751.54	8,750.19	31.83	30.35	-88.95	124.84	450.82	1,238.00	1,176.39	61.61	20.095		
8,850.00	8,787.57	8,798.37	8,797.01	31.97	30.51	-89.54	124.02	450.55	1,237.53	1,175.61	61.92	19.985		
8,900.00	8,834.43	8,843.79	8,842.43	32.12	30.67	-90.26	123.20	450.35	1,237.26	1,175.03	62.23	19.882		
8,914.10	8,847.36	8,856.30	8,854.93	32.15	30.71	-90.48	123.01	450.31	1,237.25	1,174.93	62.32	19.854		
8,950.00	8,879.61	8,887.49	8,886.11	32.25	30.82	-91.09	122.57	450.22	1,237.37	1,174.84	62.53	19.789		
9,000.00	8,922.75	8,927.46	8,926.09	32.37	30.96	-91.93	122.09	450.18	1,238.06	1,175.25	62.81	19.713		
9,050.00	8,963.52	8,964.37	8,963.00	32.48	31.09	-92.74	121.68	450.26	1,239.61	1,176.55	63.07	19.656		
9,100.00	9,001.62	8,999.56	8,998.18	32.59	31.21	-93.52	121.30	450.45	1,242.24	1,178.92	63.32	19.619		
9,150.00	9,036.75	9,038.86	9,037.48	32.67	31.35	-94.41	120.89	450.64	1,246.01	1,182.42	63.59	19.594		
9,200.00	9,068.66	9,074.60	9,073.21	32.75	31.47	-95.16	120.52	450.71	1,251.09	1,187.25	63.85	19.595		
9,250.00	9,097.08	9,106.99	9,105.60	32.81	31.59	-95.71	120.21	450.68	1,257.70	1,193.61	64.09	19.625		
9,300.00	9,121.82	9,135.41	9,134.02	32.86	31.69	-96.00	120.00	450.56	1,266.02	1,201.72	64.30	19.689		
9,350.00	9,142.67	9,159.21	9,157.82	32.90	31.77	-95.95	119.89	450.39	1,276.21	1,211.72	64.49	19.789		
9,400.00	9,159.49	9,178.25	9,176.85	32.93	31.84	-95.52	119.84	450.20	1,288.38	1,223.72	64.65	19.927		
9,450.00	9,172.14	9,192.45	9,191.06	32.95	31.88	-94.68	119.83	450.04	1,302.56	1,237.77	64.79	20.105		
9,500.00	9,180.53	9,201.92	9,200.52	32.96	31.92	-93.40	119.78	449.93	1,318.72	1,253.83	64.89	20.322		
9,550.00	9,184.59	9,206.72	9,205.32	33.01	31.93	-91.69	119.76	449.87	1,336.76	1,271.80	64.96	20.577		
9,600.00	9,185.00	9,207.45	9,206.05	33.08	31.94	-90.82	119.76	449.86	1,356.51	1,291.50	65.01	20.867		
9,650.00	9,185.00	9,207.72	9,206.33	33.16	31.94	-90.84	119.76	449.86	1,377.80	1,312.74	65.06	21.178		
9,700.00	9,185.00	9,208.00	9,206.60	33.25	31.94	-90.85	119.76	449.85	1,400.55	1,335.45	65.09	21.516		
9,750.00	9,185.00	9,208.28	9,206.89	33.35	31.94	-90.86	119.76	449.85	1,424.69	1,359.55	65.14	21.871		
9,800.00	9,185.00	9,208.57	9,207.18	33.45	31.94	-90.87	119.75	449.85	1,450.15	1,384.97	65.18	22.248		
9,850.00	9,185.00	9,208.86	9,207.47	33.56	31.94	-90.89	119.75	449.84	1,476.87	1,411.64	65.23	22.642		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan 2												Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9558-												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
13,300.00	9,185.00	14,221.61	10,234.00	52,828,187,360	-134.38		-4,126.97	439.08	1,498.37,873,497,999	73,499,498.00	0.000	Collision	
13,350.00	9,185.00	14,271.43	10,234.00	53,228,111,558,084	-134.46		-4,176.78	439.43	1,495.33,773,603,456	73,604,953.00	0.000	Collision	
13,400.00	9,185.00	14,321.32	10,234.00	53,628,92,759,613	-134.51		-4,226.67	439.77	1,492.91,916,731,991	16,733,484.00	0.000	Collision	
13,450.00	9,185.00	14,371.25	10,234.00	54,028,6154,453	-134.55		-4,276.60	440.11	1,491.13,452,374,004	52,375,496.00	0.000	Collision	
13,500.00	9,185.00	14,421.22	10,234.00	54,428,94,790,508	-134.58		-4,326.57	440.46	1,489.96,022,243,060	22,244,550.00	0.000	Collision	
13,550.00	9,185.00	14,471.22	10,234.00	54,792,24,331,651	-134.60		-4,376.57	440.80	1,489.42,707,506,664	17,508,154.00	0.000	Collision	
13,568.74	9,185.00	14,489.96	10,234.00	54,925,402,059	-134.60		-4,395.31	440.93	1,489.37,264,453,579	34,455,069.00	0.000	Collision	
13,600.00	9,185.00	14,521.22	10,234.00	55,190,0882,502	-134.59		-4,426.56	441.15	1,489.49,982,415,820	32,417,310.00	0.000	Collision	
13,650.00	9,185.00	14,571.21	10,234.00	55,573,1,726,704	-134.58		-4,476.55	441.49	1,490.19,631,585,776	31,587,267.00	0.000	Collision	
13,700.00	9,185.00	14,621.17	10,234.00	55,929,97,023,325	-134.55		-4,526.52	441.84	1,491.51,341,034,268	11,035,759.00	0.000	Collision	
13,750.00	9,185.00	14,671.10	10,234.00	56,343,11,127,666	-134.50		-4,576.44	442.18	1,493.46,537,895,576	37,897,069.00	0.000	Collision	
13,800.00	9,185.00	14,682.85	10,234.00	56,727,91,530,998	-134.52		-4,588.19	442.26	1,496.52,311,998,491	111,999,988.00	0.000	Collision, ES, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2											Offset Site Error: 5.00 ft		
Survey Program: 0-GYRO											Offset Well Error: 0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
0.00	0.00	3.30	3.30	0.50	0.00	67.41	161.84	389.06	421.38				
50.00	50.00	53.30	53.30	0.50	0.00	67.41	161.84	389.06	421.38	420.88	0.50	839.216	
100.00	100.00	103.30	103.30	0.52	0.00	67.41	161.84	389.06	421.38	420.86	0.52	813.544	
150.00	150.00	153.30	153.30	0.59	0.00	67.41	161.84	389.06	421.38	420.79	0.59	713.669	
200.00	200.00	203.30	203.30	0.70	0.00	67.41	161.84	389.06	421.38	420.68	0.70	599.996	
250.00	250.00	253.30	253.30	0.84	0.00	67.41	161.84	389.06	421.38	420.54	0.84	502.891	
300.00	300.00	303.30	303.30	0.99	0.00	67.41	161.84	389.06	421.38	420.39	0.99	426.698	
350.00	350.00	353.30	353.30	1.15	0.00	67.41	161.84	389.06	421.38	420.23	1.15	367.795	
400.00	400.00	403.30	403.30	1.31	0.00	67.41	161.84	389.06	421.38	420.07	1.31	321.838	
450.00	450.00	453.30	453.30	1.48	0.00	67.41	161.84	389.06	421.38	419.90	1.48	285.386	
500.00	500.00	503.30	503.30	1.65	0.00	67.41	161.84	389.06	421.38	419.73	1.65	255.957	
550.00	550.00	553.30	553.30	1.82	0.00	67.41	161.84	389.06	421.38	419.56	1.82	231.798	
600.00	600.00	603.30	603.30	1.99	0.00	67.41	161.84	389.06	421.38	419.39	1.99	211.663	
650.00	650.00	653.30	653.30	2.16	0.00	67.41	161.84	389.06	421.38	419.21	2.16	194.654	
700.00	700.00	703.30	703.30	2.34	0.00	67.41	161.84	389.06	421.38	419.04	2.34	180.114	
750.00	750.00	753.30	753.30	2.51	0.00	67.41	161.84	389.06	421.38	418.86	2.51	167.553	
800.00	800.00	803.30	803.30	2.69	0.00	67.41	161.84	389.06	421.38	418.69	2.69	156.600	
850.00	850.00	853.30	853.30	2.87	0.00	67.41	161.84	389.06	421.38	418.51	2.87	146.971	
900.00	900.00	903.30	903.30	3.04	0.00	67.41	161.84	389.06	421.38	418.34	3.04	138.441	
950.00	950.00	953.30	953.30	3.22	0.00	67.41	161.84	389.06	421.38	418.16	3.22	130.835	
1,000.00	1,000.00	1,003.30	1,003.30	3.40	0.00	67.41	161.84	389.06	421.38	417.98	3.40	124.013	
1,050.00	1,050.00	1,053.30	1,053.30	3.58	0.00	67.41	161.84	389.06	421.38	417.80	3.58	117.860	
1,100.00	1,100.00	1,103.30	1,103.30	3.75	0.00	67.41	161.84	389.06	421.38	417.63	3.75	112.284	
1,150.00	1,150.00	1,153.30	1,153.30	3.93	0.00	67.41	161.84	389.06	421.38	417.45	3.93	107.207	
1,200.00	1,200.00	1,203.30	1,203.30	4.11	0.00	67.41	161.84	389.06	421.38	417.27	4.11	102.566	
1,250.00	1,250.00	1,253.30	1,253.30	4.29	0.00	67.41	161.84	389.06	421.38	417.09	4.29	98.308	
1,300.00	1,300.00	1,303.30	1,303.30	4.46	0.00	67.41	161.84	389.06	421.38	416.92	4.46	94.387	
1,350.00	1,350.00	1,353.30	1,353.30	4.64	0.00	67.41	161.84	389.06	421.38	416.74	4.64	90.765	
1,400.00	1,400.00	1,403.30	1,403.30	4.82	0.00	67.41	161.84	389.06	421.38	416.56	4.82	87.409	
1,450.00	1,450.00	1,453.30	1,453.30	5.00	0.00	67.41	161.84	389.06	421.38	416.38	5.00	84.292	
1,500.00	1,500.00	1,503.30	1,503.30	5.18	0.00	67.41	161.84	389.06	421.38	416.20	5.18	81.388	
1,550.00	1,550.00	1,553.30	1,553.30	5.36	0.00	67.41	161.84	389.06	421.38	416.02	5.36	78.676	
1,600.00	1,600.00	1,603.30	1,603.30	5.53	0.00	67.41	161.84	389.06	421.38	415.85	5.53	76.139	
1,650.00	1,650.00	1,653.30	1,653.30	5.71	0.00	67.41	161.84	389.06	421.38	415.67	5.71	73.760	
1,700.00	1,700.00	1,703.30	1,703.30	5.89	0.00	67.41	161.84	389.06	421.38	415.49	5.89	71.524	
1,750.00	1,750.00	1,753.30	1,753.30	6.07	0.00	67.41	161.84	389.06	421.38	415.31	6.07	69.420	
1,800.00	1,800.00	1,803.30	1,803.30	6.25	0.00	67.41	161.84	389.06	421.38	415.13	6.25	67.435	
1,850.00	1,850.00	1,853.30	1,853.30	6.43	0.00	67.41	161.84	389.06	421.38	414.95	6.43	65.560	
1,900.00	1,900.00	1,903.30	1,903.30	6.61	0.00	67.41	161.84	389.06	421.38	414.77	6.61	63.787	
1,950.00	1,950.00	1,953.30	1,953.30	6.78	0.00	67.41	161.84	389.06	421.38	414.59	6.78	62.106	
2,000.00	2,000.00	2,003.30	2,003.30	6.96	0.00	67.41	161.84	389.06	421.38	414.42	6.96	60.512	
2,050.00	2,050.00	2,053.30	2,053.30	7.14	0.00	67.41	161.84	389.06	421.38	414.24	7.14	58.997	
2,100.00	2,100.00	2,103.30	2,103.30	7.32	0.00	67.41	161.84	389.06	421.38	414.06	7.32	57.556	
2,150.00	2,150.00	2,153.30	2,153.30	7.50	0.00	67.41	161.84	389.06	421.38	413.88	7.50	56.184	
2,200.00	2,200.00	2,203.30	2,203.30	7.68	0.00	67.41	161.84	389.06	421.38	413.70	7.68	54.875	
2,250.00	2,250.00	2,253.30	2,253.30	7.86	0.00	67.41	161.84	389.06	421.38	413.52	7.86	53.626	
2,300.00	2,300.00	2,303.30	2,303.30	8.04	0.00	67.41	161.84	389.06	421.38	413.34	8.04	52.433	
2,350.00	2,350.00	2,353.30	2,353.30	8.22	0.00	67.41	161.84	389.06	421.38	413.16	8.22	51.291	
2,400.00	2,400.00	2,403.30	2,403.30	8.39	0.00	67.41	161.84	389.06	421.38	412.99	8.39	50.198	
2,450.00	2,450.00	2,453.30	2,453.30	8.57	0.00	67.41	161.84	389.06	421.38	412.81	8.57	49.150	
2,500.00	2,500.00	2,503.30	2,503.30	8.75	0.00	67.41	161.84	389.06	421.38	412.63	8.75	48.145 CC, ES	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2													Offset Site Error:	5.00 ft
Survey Program: 0-GYRO													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,550.00	2,550.00	2,553.30	2,553.30	8.93	0.00	146.20	161.84	389.06	421.61	412.68	8.93	47.225		
2,600.00	2,599.99	2,603.29	2,603.29	9.10	0.00	146.26	161.84	389.06	422.29	413.18	9.10	46.390		
2,650.00	2,649.97	2,653.27	2,653.27	9.28	0.00	146.35	161.84	389.06	423.42	414.15	9.27	45.652		
2,700.00	2,699.94	2,703.24	2,703.24	9.45	0.00	146.49	161.84	389.06	425.01	415.56	9.45	44.988		
2,750.00	2,749.88	2,753.18	2,753.18	9.62	0.00	146.65	161.84	389.06	427.06	417.44	9.62	44.394		
2,800.00	2,799.79	2,803.09	2,803.09	9.79	0.00	146.86	161.84	389.06	429.57	419.78	9.79	43.868		
2,850.00	2,849.66	2,852.96	2,852.96	9.97	0.00	147.09	161.84	389.06	432.54	422.57	9.97	43.405		
2,900.00	2,899.49	2,902.79	2,902.79	10.14	0.00	147.36	161.84	389.06	435.98	425.84	10.14	43.004		
2,950.00	2,949.28	2,952.58	2,952.58	10.32	0.00	147.66	161.84	389.06	439.89	429.58	10.31	42.661		
3,000.00	2,999.01	3,002.31	3,002.31	10.49	0.00	147.99	161.84	389.06	444.27	433.79	10.48	42.375		
3,050.00	3,048.68	3,051.98	3,051.98	10.67	0.00	148.34	161.84	389.06	449.14	438.48	10.66	42.142		
3,100.00	3,098.29	3,101.59	3,101.59	10.84	0.00	148.72	161.84	389.06	454.48	443.65	10.83	41.962		
3,150.00	3,147.82	3,151.12	3,151.12	11.02	0.00	149.12	161.84	389.06	460.32	449.31	11.00	41.830		
3,200.00	3,197.28	3,200.58	3,200.58	11.20	0.00	149.54	161.84	389.06	466.65	455.47	11.18	41.747		
3,250.00	3,246.69	3,249.99	3,249.99	11.37	0.00	150.00	161.84	389.06	473.31	461.96	11.35	41.696		
3,300.00	3,296.09	3,300.61	3,299.39	11.55	0.00	150.46	161.84	389.06	480.02	468.49	11.53	41.649		
3,350.00	3,345.49	3,348.79	3,348.79	11.73	0.00	150.91	161.84	389.06	486.75	475.05	11.70	41.606		
3,400.00	3,394.90	3,401.80	3,398.20	11.91	0.00	151.34	161.84	389.06	493.51	481.64	11.87	41.566		
3,450.00	3,444.30	3,447.60	3,447.60	12.09	0.00	151.76	161.84	389.06	500.30	488.25	12.05	41.527		
3,500.00	3,493.71	3,502.99	3,497.01	12.27	0.00	152.17	161.84	389.06	507.11	494.89	12.22	41.491		
3,550.00	3,543.11	3,546.41	3,546.41	12.45	0.00	152.57	161.84	389.06	513.95	501.55	12.40	41.457		
3,600.00	3,592.51	3,604.19	3,595.81	12.63	0.00	152.96	161.84	389.06	520.81	508.24	12.57	41.425		
3,650.00	3,641.92	3,645.22	3,645.22	12.81	0.00	153.34	161.84	389.06	527.70	514.95	12.75	41.395		
3,700.00	3,691.32	3,705.38	3,694.62	12.99	0.00	153.71	161.84	389.06	534.61	521.69	12.92	41.367		
3,750.00	3,740.72	3,744.02	3,744.02	13.17	0.00	154.07	161.84	389.06	541.54	528.44	13.10	41.339		
3,800.00	3,790.13	3,806.57	3,793.43	13.35	0.00	154.42	161.84	389.06	548.49	535.21	13.28	41.315		
3,850.00	3,839.53	3,842.83	3,842.83	13.53	0.00	154.76	161.84	389.06	555.46	542.01	13.45	41.290		
3,900.00	3,888.93	3,907.77	3,892.23	13.72	0.00	155.10	161.84	389.06	562.45	548.82	13.63	41.268		
3,950.00	3,938.34	3,941.64	3,941.64	13.90	0.00	155.42	161.84	389.06	569.46	555.65	13.81	41.247		
4,000.00	3,987.74	4,008.96	3,991.04	14.08	0.00	155.74	161.84	389.06	576.48	562.50	13.98	41.227		
4,050.00	4,037.14	4,040.44	4,040.44	14.27	0.00	156.05	161.84	389.06	583.52	569.36	14.16	41.208		
4,100.00	4,086.55	4,089.85	4,089.85	14.45	0.00	156.35	161.84	389.06	590.58	576.24	14.34	41.190		
4,150.00	4,135.95	4,139.25	4,139.25	14.63	0.00	156.65	161.84	389.06	597.66	583.14	14.52	41.173		
4,200.00	4,185.36	4,188.66	4,188.66	14.82	0.00	156.94	161.84	389.06	604.75	590.05	14.69	41.158		
4,250.00	4,234.76	4,238.06	4,238.06	15.00	0.00	157.22	161.84	389.06	611.85	596.98	14.87	41.143		
4,300.00	4,284.16	4,287.46	4,287.46	15.18	0.00	157.49	161.84	389.06	618.97	603.92	15.05	41.129		
4,350.00	4,333.57	4,336.87	4,336.87	15.37	0.00	157.76	161.84	389.06	626.10	610.87	15.23	41.115		
4,400.00	4,382.97	4,386.27	4,386.27	15.55	0.00	158.03	161.84	389.06	633.25	617.84	15.41	41.103		
4,450.00	4,432.37	4,435.67	4,435.67	15.74	0.00	158.28	161.84	389.06	640.41	624.82	15.59	41.091		
4,500.00	4,481.78	4,485.08	4,485.08	15.92	0.00	158.54	161.84	389.06	647.58	631.81	15.76	41.080		
4,550.00	4,531.18	4,534.48	4,534.48	16.11	0.00	158.78	161.84	389.06	654.76	638.82	15.94	41.069		
4,600.00	4,580.58	4,583.88	4,583.88	16.29	0.00	159.02	161.84	389.06	661.95	645.83	16.12	41.059		
4,650.00	4,629.99	4,633.29	4,633.29	16.48	0.00	159.26	161.84	389.06	669.16	652.86	16.30	41.050		
4,700.00	4,679.39	4,682.69	4,682.69	16.66	0.00	159.49	161.84	389.06	676.38	659.90	16.48	41.041		
4,750.00	4,728.80	4,732.10	4,732.10	16.85	0.00	159.71	161.84	389.06	683.60	666.94	16.66	41.033		
4,800.00	4,778.20	4,781.50	4,781.50	17.03	0.00	159.94	161.84	389.06	690.84	674.00	16.84	41.025		
4,850.00	4,827.60	4,830.90	4,830.90	17.22	0.00	160.15	161.84	389.06	698.09	681.07	17.02	41.018		
4,900.00	4,877.01	4,880.31	4,880.31	17.40	0.00	160.36	161.84	389.06	705.35	688.15	17.20	41.011		
4,950.00	4,926.41	4,929.71	4,929.71	17.59	0.00	160.57	161.84	389.06	712.61	695.23	17.38	41.004		
5,000.00	4,975.81	4,979.11	4,979.11	17.78	0.00	160.78	161.84	389.06	719.89	702.33	17.56	40.998		
5,050.00	5,025.22	5,028.52	5,028.52	17.96	0.00	160.97	161.84	389.06	727.17	709.43	17.74	40.992		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2													Offset Site Error:	5.00 ft
Survey Program: 0-GYRO													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)						
5,100.00	5,074.62	5,077.92	5,077.92	18.15	0.00	161.17	161.84	389.06	734.46	716.54	17.92	40.987		
5,150.00	5,124.02	5,127.32	5,127.32	18.34	0.00	161.36	161.84	389.06	741.76	723.66	18.10	40.982		
5,200.00	5,173.43	5,176.73	5,176.73	18.52	0.00	161.55	161.84	389.06	749.07	730.79	18.28	40.977		
5,250.00	5,222.83	5,226.13	5,226.13	18.71	0.00	161.73	161.84	389.06	756.39	737.93	18.46	40.973		
5,300.00	5,272.23	5,275.53	5,275.53	18.90	0.00	161.92	161.84	389.06	763.71	745.07	18.64	40.969		
5,350.00	5,321.64	5,324.94	5,324.94	19.08	0.00	162.09	161.84	389.06	771.04	752.22	18.82	40.964		
5,400.00	5,371.04	5,374.34	5,374.34	19.27	0.00	162.27	161.84	389.06	778.38	759.38	19.00	40.961		
5,450.00	5,420.45	5,423.75	5,423.75	19.46	0.00	162.44	161.84	389.06	785.73	766.54	19.18	40.957		
5,500.00	5,469.85	5,473.15	5,473.15	19.65	0.00	162.61	161.84	389.06	793.08	773.71	19.37	40.954		
5,550.00	5,519.25	5,522.55	5,522.55	19.83	0.00	162.77	161.84	389.06	800.44	780.89	19.55	40.951		
5,600.00	5,568.66	5,571.96	5,571.96	20.02	0.00	162.93	161.84	389.06	807.80	788.08	19.73	40.948		
5,650.00	5,618.06	5,621.36	5,621.36	20.21	0.00	163.09	161.84	389.06	815.17	795.27	19.91	40.946		
5,700.00	5,667.46	5,670.76	5,670.76	20.40	0.00	163.25	161.84	389.06	822.55	802.46	20.09	40.943		
5,750.00	5,716.87	5,720.17	5,720.17	20.58	0.00	163.40	161.84	389.06	829.93	809.66	20.27	40.941		
5,800.00	5,766.27	5,769.57	5,769.57	20.77	0.00	163.55	161.84	389.06	837.32	816.87	20.45	40.939		
5,850.00	5,815.67	5,818.97	5,818.97	20.96	0.00	163.70	161.84	389.06	844.72	824.08	20.63	40.937		
5,900.00	5,865.08	5,868.38	5,868.38	21.15	0.00	163.84	161.84	389.06	852.12	831.30	20.82	40.936		
5,950.00	5,914.48	5,917.78	5,917.78	21.34	0.00	163.99	161.84	389.06	859.52	838.52	21.00	40.934		
6,000.00	5,963.89	5,967.19	5,967.19	21.52	0.00	164.13	161.84	389.06	866.93	845.75	21.18	40.932		
6,050.00	6,013.29	6,016.59	6,016.59	21.71	0.00	164.26	161.84	389.06	874.35	852.99	21.36	40.931		
6,100.00	6,062.69	6,065.99	6,065.99	21.90	0.00	164.40	161.84	389.06	881.77	860.22	21.54	40.930		
6,150.00	6,112.10	6,115.40	6,115.40	22.09	0.00	164.53	161.84	389.06	889.19	867.47	21.73	40.929		
6,200.00	6,161.50	6,164.80	6,164.80	22.28	0.00	164.66	161.84	389.06	896.62	874.71	21.91	40.928		
6,250.00	6,210.90	6,214.20	6,214.20	22.47	0.00	164.79	161.84	389.06	904.06	881.97	22.09	40.927		
6,300.00	6,260.31	6,263.61	6,263.61	22.65	0.00	164.92	161.84	389.06	911.49	889.22	22.27	40.926		
6,350.00	6,309.71	6,313.01	6,313.01	22.84	0.00	165.04	161.84	389.06	918.94	896.48	22.45	40.925		
6,400.00	6,359.11	6,362.41	6,362.41	23.03	0.00	165.17	161.84	389.06	926.38	903.75	22.64	40.925		
6,450.00	6,408.52	6,411.82	6,411.82	23.22	0.00	165.29	161.84	389.06	933.83	911.01	22.82	40.924		
6,500.00	6,457.92	6,461.22	6,461.22	23.41	0.00	165.41	161.84	389.06	941.29	918.29	23.00	40.924		
6,550.00	6,507.32	6,510.62	6,510.62	23.60	0.00	165.52	161.84	389.06	948.75	925.56	23.18	40.923		
6,600.00	6,556.73	6,560.03	6,560.03	23.79	0.00	165.64	161.84	389.06	956.21	932.84	23.37	40.923		
6,650.00	6,606.13	6,609.43	6,609.43	23.98	0.00	165.75	161.84	389.06	963.68	940.13	23.55	40.923		
6,700.00	6,655.54	6,658.84	6,658.84	24.16	0.00	165.86	161.84	389.06	971.15	947.41	23.73	40.923		
6,750.00	6,704.94	6,708.24	6,708.24	24.35	0.00	165.97	161.84	389.06	978.62	954.71	23.91	40.923		
6,800.00	6,754.34	6,757.64	6,757.64	24.54	0.00	166.08	161.84	389.06	986.10	962.00	24.10	40.923		
6,850.00	6,803.75	6,807.05	6,807.05	24.73	0.00	166.19	161.84	389.06	993.58	969.30	24.28	40.923		
6,900.00	6,853.15	6,856.45	6,856.45	24.92	0.00	166.29	161.84	389.06	1,001.06	976.60	24.46	40.923		
6,950.00	6,902.55	6,905.85	6,905.85	25.11	0.00	166.40	161.84	389.06	1,008.55	983.90	24.65	40.923		
7,000.00	6,951.96	6,955.26	6,955.26	25.30	0.00	166.50	161.84	389.06	1,016.04	991.21	24.83	40.923		
7,050.00	7,001.36	7,004.66	7,004.66	25.49	0.00	166.60	161.84	389.06	1,023.53	998.52	25.01	40.923		
7,100.00	7,050.76	7,054.06	7,054.06	25.68	0.00	166.70	161.84	389.06	1,031.03	1,005.83	25.19	40.923		
7,150.00	7,100.17	7,103.47	7,103.47	25.87	0.00	166.80	161.84	389.06	1,038.53	1,013.15	25.38	40.924		
7,200.00	7,149.57	7,152.87	7,152.87	26.06	0.00	166.89	161.84	389.06	1,046.03	1,020.47	25.56	40.924		
7,250.00	7,198.98	7,202.28	7,202.28	26.25	0.00	166.99	161.84	389.06	1,053.53	1,027.79	25.74	40.924		
7,300.00	7,248.38	7,251.68	7,251.68	26.44	0.00	167.08	161.84	389.06	1,061.04	1,035.12	25.93	40.925		
7,350.00	7,297.78	7,301.08	7,301.08	26.62	0.00	167.17	161.84	389.06	1,068.55	1,042.44	26.11	40.925		
7,400.00	7,347.19	7,350.49	7,350.49	26.81	0.00	167.27	161.84	389.06	1,076.07	1,049.77	26.29	40.926		
7,450.00	7,396.59	7,400.11	7,399.89	27.00	0.00	167.35	161.84	389.06	1,083.58	1,057.11	26.48	40.926		
7,500.00	7,445.99	7,449.29	7,449.29	27.19	0.00	167.44	161.84	389.06	1,091.10	1,064.44	26.66	40.927		
7,550.00	7,495.40	7,501.30	7,498.70	27.38	0.00	167.53	161.84	389.06	1,098.62	1,071.78	26.84	40.927		
7,600.00	7,544.80	7,548.10	7,548.10	27.57	0.00	167.62	161.84	389.06	1,106.14	1,079.12	27.03	40.928		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2													Offset Site Error:	5.00 ft
Survey Program: 0-GYRO													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,594.20	7,602.50	7,597.50	27.76	0.00	167.70	161.84	389.06	1,113.67	1,086.46	27.21	40.928		
7,700.00	7,643.61	7,646.91	7,646.91	27.95	0.00	167.79	161.84	389.06	1,121.20	1,093.80	27.39	40.929		
7,750.00	7,693.01	7,703.69	7,696.31	28.14	0.00	167.87	161.84	389.06	1,128.73	1,101.15	27.58	40.929		
7,800.00	7,742.43	7,745.73	7,745.73	28.33	0.00	167.96	161.84	389.06	1,136.14	1,108.38	27.76	40.926		
7,850.00	7,791.94	7,804.76	7,795.24	28.52	0.00	168.06	161.84	389.06	1,142.97	1,115.02	27.94	40.903		
7,900.00	7,841.54	7,844.84	7,844.84	28.71	0.00	168.14	161.84	389.06	1,149.16	1,121.03	28.13	40.857		
7,950.00	7,891.22	7,905.48	7,894.52	28.89	0.00	168.22	161.84	389.06	1,154.71	1,126.41	28.31	40.792		
8,000.00	7,940.97	7,944.27	7,944.27	29.08	0.00	168.28	161.84	389.06	1,159.64	1,131.15	28.49	40.705		
8,050.00	7,990.77	8,005.93	7,994.07	29.26	0.00	168.34	161.84	389.06	1,163.92	1,135.25	28.67	40.599		
8,100.00	8,040.63	8,043.93	8,043.93	29.44	0.00	168.39	161.84	389.06	1,167.57	1,138.72	28.85	40.472		
8,150.00	8,090.54	8,106.16	8,093.84	29.62	0.00	168.43	161.84	389.06	1,170.57	1,141.54	29.03	40.328		
8,200.00	8,140.48	8,143.78	8,143.78	29.79	0.00	168.46	161.84	389.06	1,172.94	1,143.73	29.20	40.163		
8,250.00	8,190.45	8,206.25	8,193.75	29.97	0.00	168.48	161.84	389.06	1,174.66	1,145.28	29.38	39.980		
8,300.00	8,240.44	8,243.74	8,243.74	30.15	0.00	168.49	161.84	389.06	1,175.75	1,146.19	29.56	39.778		
8,350.00	8,290.43	8,306.27	8,293.73	30.32	0.00	168.50	161.84	389.06	1,176.19	1,146.46	29.73	39.561		
8,400.00	8,340.43	8,343.73	8,343.73	30.49	0.00	89.73	161.84	389.06	1,176.20	1,146.30	29.90	39.334		
8,450.00	8,390.43	8,406.27	8,393.73	30.66	0.00	89.73	161.84	389.06	1,176.20	1,146.13	30.07	39.110		
8,500.00	8,440.43	8,443.73	8,443.73	30.83	0.00	89.73	161.84	389.06	1,176.20	1,145.96	30.25	38.888		
8,550.00	8,490.43	8,506.27	8,493.73	31.00	0.00	89.73	161.84	389.06	1,176.20	1,145.78	30.42	38.668		
8,600.00	8,540.43	8,543.73	8,543.73	31.17	0.00	89.73	161.84	389.06	1,176.20	1,145.61	30.59	38.451		
8,650.00	8,590.43	8,606.27	8,593.73	31.34	0.00	89.73	161.84	389.06	1,176.20	1,145.44	30.76	38.236		
8,700.00	8,640.42	8,643.72	8,643.72	31.51	0.00	-89.94	161.84	389.06	1,176.20	1,145.27	30.93	38.027		
8,717.67	8,658.05	8,661.35	8,661.35	31.57	0.00	-90.00	161.84	389.06	1,176.20	1,145.21	30.99	37.957		
8,750.00	8,690.19	8,706.51	8,693.49	31.67	0.00	-90.17	161.84	389.06	1,176.21	1,145.11	31.09	37.830		
8,800.00	8,739.36	8,742.66	8,742.66	31.83	0.00	-90.59	161.84	389.06	1,176.27	1,145.02	31.25	37.639		
8,850.00	8,787.57	8,809.13	8,790.87	31.97	0.00	-91.19	161.84	389.06	1,176.48	1,145.08	31.41	37.460		
8,900.00	8,834.43	8,837.73	8,837.73	32.12	0.00	-91.93	161.84	389.06	1,176.99	1,145.43	31.56	37.296		
8,950.00	8,879.61	8,882.91	8,882.91	32.25	0.00	-92.77	161.84	389.06	1,177.97	1,146.26	31.71	37.153		
9,000.00	8,922.75	8,926.05	8,926.05	32.37	0.00	-93.67	161.84	389.06	1,179.62	1,147.77	31.85	37.037		
9,050.00	8,963.52	8,966.82	8,966.82	32.48	0.00	-94.55	161.84	389.06	1,182.17	1,150.18	31.99	36.954		
9,100.00	9,001.82	9,004.92	9,004.92	32.59	0.00	-95.38	161.84	389.06	1,185.85	1,153.73	32.13	36.913		
9,150.00	9,036.75	9,040.05	9,040.05	32.67	0.00	-96.08	161.84	389.06	1,190.90	1,158.64	32.26	36.920		
9,200.00	9,068.66	9,071.96	9,071.96	32.75	0.00	-96.59	161.84	389.06	1,197.53	1,165.15	32.38	36.981		
9,250.00	9,097.08	9,100.38	9,100.38	32.81	0.00	-96.87	161.84	389.06	1,205.93	1,173.43	32.50	37.104		
9,300.00	9,121.82	9,125.12	9,125.12	32.86	0.00	-96.85	161.84	389.06	1,216.25	1,183.64	32.61	37.294		
9,350.00	9,142.67	9,145.97	9,145.97	32.90	0.00	-96.49	161.84	389.06	1,228.60	1,195.89	32.71	37.555		
9,400.00	9,159.49	9,162.79	9,162.79	32.93	0.00	-95.76	161.84	389.06	1,243.02	1,210.21	32.81	37.890		
9,450.00	9,172.14	9,175.44	9,175.44	32.95	0.00	-94.61	161.84	389.06	1,259.49	1,226.61	32.89	38.300		
9,500.00	9,180.53	9,183.83	9,183.83	32.96	0.00	-93.03	161.84	389.06	1,277.94	1,244.99	32.95	38.784		
9,550.00	9,184.59	9,187.89	9,187.89	33.01	0.00	-91.01	161.84	389.06	1,298.23	1,265.23	33.00	39.339		
9,600.00	9,185.00	9,188.30	9,188.30	33.08	0.00	-90.00	161.84	389.06	1,320.17	1,287.13	33.04	39.957		
9,650.00	9,185.00	9,188.30	9,188.30	33.16	0.00	-90.00	161.84	389.06	1,343.61	1,310.53	33.08	40.613		
9,700.00	9,185.00	9,188.30	9,188.30	33.25	0.00	-90.00	161.84	389.06	1,368.48	1,335.37	33.12	41.324		
9,750.00	9,185.00	9,188.30	9,188.30	33.35	0.00	-90.00	161.84	389.06	1,394.70	1,361.55	33.16	42.063		
9,800.00	9,185.00	9,188.30	9,188.30	33.45	0.00	-90.00	161.84	389.06	1,422.20	1,389.01	33.19	42.849		
9,850.00	9,185.00	9,188.30	9,188.30	33.56	0.00	-90.00	161.84	389.06	1,450.90	1,417.67	33.23	43.661		
9,900.00	9,185.00	9,188.30	9,188.30	33.67	0.00	-90.00	161.84	389.06	1,480.73	1,447.46	33.26	44.516		
13,300.00	9,185.00	14,272.50	10,234.00	52.82	0.00	-134.42	-4,122.30	437.28	1,497.11	1,448.25	48.86	30.641		
13,350.00	9,185.00	14,322.33	10,234.00	53.22	0.00	-134.49	-4,172.14	437.84	1,494.22	1,445.01	49.21	30.364		
13,400.00	9,185.00	14,372.23	10,234.00	53.62	0.00	-134.54	-4,222.03	438.40	1,491.97	1,442.40	49.57	30.101		
13,450.00	9,185.00	14,422.18	10,234.00	54.01	0.00	-134.58	-4,271.98	438.96	1,490.34	1,440.41	49.93	29.851		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - Plan1v2												Offset Site Error:	5.00 ft
Survey Program: 0-GYRO												Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,500.00	9,185.00	14,472.16	10,234.00	54.40	0.00	-134.60	-4,321.95	439.52	1,489.33	1,439.03	50.29	29.613	
13,550.00	9,185.00	14,522.16	10,234.00	54.79	0.00	-134.61	-4,371.95	440.09	1,488.94	1,438.27	50.66	29.389	
13,556.24	9,185.00	14,528.40	10,234.00	54.84	0.00	-134.61	-4,378.19	440.16	1,488.93	1,438.22	50.71	29.362	
13,600.00	9,185.00	14,572.15	10,234.00	55.19	0.00	-134.61	-4,421.94	440.65	1,489.17	1,438.13	51.04	29.178	
13,650.00	9,185.00	14,622.14	10,234.00	55.57	0.00	-134.59	-4,471.92	441.21	1,490.02	1,438.61	51.42	28.979	
13,700.00	9,185.00	14,672.10	10,234.00	55.96	0.00	-134.55	-4,521.88	441.77	1,491.50	1,439.70	51.80	28.792	
13,750.00	9,185.00	14,722.01	10,234.00	56.34	0.00	-134.50	-4,571.79	442.34	1,493.60	1,441.41	52.19	28.619	
13,800.00	9,185.00	14,738.42	10,234.00	56.72	0.00	-134.51	-4,588.20	442.52	1,496.70	1,444.17	52.53	28.493 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H -Original - PTL													Offset Site Error: 5.00 ft	
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898-													Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.00	0.00	3.27	3.27	0.50	0.00	67.41	161.84	389.06	421.38					
50.00	50.00	52.78	52.78	0.50	0.07	67.40	161.96	389.05	421.41	420.84	0.57	735.977		
100.00	100.00	102.28	102.28	0.52	0.14	67.35	162.30	389.00	421.50	420.85	0.65	643.665		
150.00	150.00	152.96	152.95	0.59	0.31	67.30	162.71	388.92	421.58	420.68	0.90	465.947		
200.00	200.00	203.63	203.63	0.70	0.49	67.25	163.03	388.79	421.59	420.39	1.19	353.056		
250.00	250.00	253.38	253.37	0.84	0.67	67.21	163.30	388.66	421.57	420.07	1.50	280.465		
278.19	278.19	281.49	281.49	0.92	0.76	67.19	163.45	388.59	421.57	419.88	1.68	250.313		
300.00	300.00	303.07	303.06	0.99	0.84	67.17	163.56	388.55	421.57	419.75	1.83	230.880		
350.00	350.00	352.29	352.28	1.15	1.01	67.15	163.76	388.55	421.65	419.49	2.16	195.597		
400.00	400.00	401.88	401.88	1.31	1.19	67.13	163.90	388.66	421.81	419.31	2.49	169.238		
450.00	450.00	452.10	452.09	1.48	1.36	67.10	164.21	388.70	421.96	419.13	2.84	148.838		
500.00	500.00	502.26	502.25	1.65	1.54	67.03	164.71	388.63	422.09	418.91	3.18	132.726		
550.00	550.00	552.37	552.36	1.82	1.71	66.96	165.22	388.54	422.21	418.68	3.53	119.703		
600.00	600.00	601.58	601.57	1.99	1.89	66.90	165.71	388.48	422.35	418.48	3.87	109.071		
650.00	650.00	650.30	650.28	2.16	2.06	66.83	166.27	388.54	422.63	418.42	4.22	100.229		
700.00	700.00	700.59	700.57	2.34	2.23	66.76	166.88	388.68	423.00	418.43	4.57	92.615		
750.00	750.00	751.49	751.47	2.51	2.41	66.71	167.33	388.78	423.27	418.35	4.92	86.019		
800.00	800.00	801.84	801.81	2.69	2.59	66.66	167.74	388.82	423.46	418.19	5.27	80.315		
850.00	850.00	852.11	852.08	2.87	2.76	66.59	168.28	388.76	423.62	418.00	5.62	75.317		
900.00	900.00	902.29	902.25	3.04	2.94	66.52	168.87	388.65	423.75	417.78	5.98	70.902		
950.00	950.00	952.46	952.43	3.22	3.12	66.44	169.42	388.54	423.87	417.54	6.33	66.973		
1,000.00	1,000.00	1,001.73	1,001.69	3.40	3.29	66.38	169.86	388.51	424.02	417.34	6.68	63.493		
1,050.00	1,050.00	1,051.48	1,051.44	3.58	3.46	66.35	170.19	388.60	424.24	417.21	7.03	60.353		
1,100.00	1,100.00	1,102.25	1,102.21	3.75	3.64	66.30	170.56	388.63	424.42	417.03	7.38	57.475		
1,150.00	1,150.00	1,152.38	1,152.34	3.93	3.82	66.24	171.01	388.55	424.51	416.78	7.74	54.868		
1,200.00	1,200.00	1,201.61	1,201.57	4.11	3.99	66.21	171.32	388.58	424.67	416.59	8.09	52.514		
1,250.00	1,250.00	1,251.39	1,251.35	4.29	4.16	66.20	171.48	388.76	424.90	416.47	8.44	50.351		
1,300.00	1,300.00	1,301.70	1,301.65	4.46	4.34	66.20	171.57	388.95	425.12	416.32	8.79	48.348		
1,350.00	1,350.00	1,352.29	1,352.25	4.64	4.51	66.20	171.64	389.10	425.28	416.13	9.15	46.490		
1,400.00	1,400.00	1,403.04	1,403.00	4.82	4.69	66.18	171.81	389.12	425.36	415.86	9.50	44.759		
1,450.00	1,450.00	1,453.00	1,452.95	5.00	4.87	66.14	172.09	389.03	425.39	415.53	9.86	43.161		
1,500.00	1,500.00	1,502.76	1,502.71	5.18	5.04	66.08	172.52	388.90	425.45	415.24	10.21	41.677		
1,550.00	1,550.00	1,553.01	1,552.96	5.36	5.22	66.02	172.97	388.76	425.50	414.94	10.56	40.287		
1,600.00	1,600.00	1,603.30	1,603.24	5.53	5.39	65.98	173.24	388.66	425.53	414.61	10.92	38.983		
1,650.00	1,650.00	1,653.34	1,653.29	5.71	5.57	65.95	173.43	388.58	425.53	414.26	11.27	37.762		
1,698.58	1,698.58	1,701.98	1,701.93	5.89	5.74	65.92	173.59	388.51	425.53	413.92	11.61	36.646		
1,700.00	1,700.00	1,703.28	1,703.22	5.89	5.74	65.92	173.60	388.51	425.53	413.91	11.62	36.616		
1,750.00	1,750.00	1,752.71	1,752.66	6.07	5.92	65.92	173.66	388.53	425.57	413.60	11.97	35.545		
1,800.00	1,800.00	1,802.31	1,802.26	6.25	6.09	65.93	173.61	388.66	425.68	413.35	12.32	34.539		
1,850.00	1,850.00	1,852.29	1,852.24	6.43	6.26	65.95	173.52	388.84	425.80	413.12	12.68	33.586		
1,900.00	1,900.00	1,902.32	1,902.26	6.61	6.44	65.97	173.42	389.02	425.93	412.89	13.03	32.685		
1,950.00	1,950.00	1,952.41	1,952.35	6.78	6.61	65.99	173.32	389.19	426.04	412.66	13.39	31.830		
2,000.00	2,000.00	2,003.41	2,003.35	6.96	6.79	66.01	173.25	389.31	426.12	412.38	13.74	31.009		
2,050.00	2,050.00	2,055.12	2,055.07	7.14	6.97	66.00	173.24	389.19	426.01	411.91	14.10	30.212		
2,100.00	2,100.00	2,105.19	2,105.13	7.32	7.14	65.98	173.29	388.91	425.78	411.32	14.45	29.458		
2,150.00	2,150.00	2,154.70	2,154.64	7.50	7.31	65.96	173.34	388.69	425.59	410.78	14.80	28.747		
2,200.00	2,200.00	2,205.11	2,205.06	7.68	7.49	65.95	173.38	388.47	425.42	410.26	15.16	28.063		
2,250.00	2,250.00	2,255.68	2,255.62	7.86	7.67	65.93	173.38	388.21	425.18	409.66	15.51	27.406		
2,300.00	2,300.00	2,304.21	2,304.15	8.04	7.83	65.93	173.35	388.03	424.99	409.13	15.86	26.793		
2,328.98	2,328.98	2,332.34	2,332.28	8.14	7.93	65.93	173.33	388.01	424.96	408.90	16.06	26.454		
2,350.00	2,350.00	2,352.95	2,352.90	8.22	8.00	65.93	173.31	388.03	424.97	408.76	16.21	26.215		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL														
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898-													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance			Minimum Separation	Separation Factor	Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres				Between Ellipses	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
2,400.00	2,400.00	2,404.26	2,404.20	8.39	8.18	65.94	173.27	388.01	424.95	408.38	16.57	25.647		
2,450.00	2,450.00	2,455.25	2,455.19	8.57	8.36	65.93	173.25	387.82	424.77	407.84	16.93	25.096		
2,500.00	2,500.00	2,505.30	2,505.25	8.75	8.53	65.92	173.23	387.59	424.54	407.26	17.28	24.570		
2,526.14	2,526.14	2,531.47	2,531.41	8.84	8.63	144.69	173.22	387.46	424.48	407.02	17.46	24.310		
2,550.00	2,550.00	2,554.79	2,554.73	8.93	8.71	144.70	173.20	387.36	424.54	406.92	17.63	24.086 ES		
2,600.00	2,599.99	2,603.34	2,603.28	9.10	8.88	144.76	173.15	387.29	425.13	407.16	17.97	23.656		
2,650.00	2,649.97	2,652.46	2,652.40	9.28	9.05	144.87	173.08	387.40	426.31	408.00	18.31	23.277		
2,700.00	2,699.94	2,702.25	2,702.19	9.45	9.22	145.02	173.00	387.56	427.99	409.33	18.66	22.935		
2,750.00	2,749.88	2,752.64	2,752.58	9.62	9.40	145.21	172.92	387.71	430.11	411.10	19.01	22.626		
2,800.00	2,799.79	2,803.48	2,803.42	9.79	9.57	145.43	172.91	387.74	432.59	413.24	19.36	22.346		
2,850.00	2,849.66	2,853.55	2,853.49	9.97	9.75	145.67	172.94	387.66	435.46	415.75	19.71	22.097		
2,900.00	2,899.49	2,903.31	2,903.25	10.14	9.92	145.93	172.99	387.57	438.78	418.73	20.05	21.881		
2,950.00	2,949.28	2,953.20	2,953.14	10.32	10.10	146.23	173.06	387.49	442.57	422.17	20.40	21.694		
3,000.00	2,999.01	3,003.07	3,003.01	10.49	10.27	146.55	173.15	387.37	446.82	426.07	20.75	21.536		
3,050.00	3,048.68	3,051.48	3,051.42	10.67	10.44	146.90	173.24	387.32	451.60	430.51	21.09	21.413		
3,100.00	3,098.29	3,099.82	3,099.76	10.84	10.61	147.27	173.33	387.43	456.99	435.56	21.43	21.323		
3,150.00	3,147.82	3,149.46	3,149.40	11.02	10.78	147.69	173.40	387.61	462.93	441.15	21.78	21.256		
3,200.00	3,197.28	3,199.31	3,199.25	11.20	10.96	148.13	173.45	387.78	469.34	447.22	22.13	21.212		
3,250.00	3,246.69	3,250.80	3,250.74	11.37	11.14	148.61	173.56	387.77	475.94	453.46	22.48	21.172		
3,300.00	3,296.09	3,301.62	3,301.56	11.55	11.31	149.07	173.74	387.52	482.38	459.55	22.83	21.128		
3,350.00	3,345.49	3,350.97	3,350.90	11.73	11.49	149.49	173.99	387.20	488.80	465.62	23.18	21.089		
3,400.00	3,394.90	3,399.70	3,399.64	11.91	11.66	149.89	174.29	386.89	495.27	471.75	23.52	21.056		
3,450.00	3,444.30	3,447.61	3,447.54	12.09	11.82	150.28	174.57	386.73	501.89	478.03	23.86	21.032		
3,500.00	3,493.71	3,496.43	3,496.37	12.27	12.00	150.68	174.81	386.71	508.67	484.46	24.21	21.013		
3,550.00	3,543.11	3,546.30	3,546.23	12.45	12.17	151.08	175.03	386.69	515.46	490.90	24.56	20.990		
3,600.00	3,592.51	3,596.86	3,596.79	12.63	12.35	151.47	175.23	386.60	522.20	497.29	24.91	20.964		
3,650.00	3,641.92	3,647.93	3,647.86	12.81	12.53	151.84	175.50	386.33	528.83	503.56	25.26	20.932		
3,700.00	3,691.32	3,697.39	3,697.32	12.99	12.70	152.19	175.83	385.96	535.38	509.76	25.61	20.903		
3,750.00	3,740.72	3,746.36	3,746.28	13.17	12.87	152.51	176.22	385.61	541.98	516.03	25.96	20.878		
3,800.00	3,790.13	3,795.05	3,794.98	13.35	13.04	152.82	176.68	385.30	548.67	522.36	26.31	20.858		
3,850.00	3,839.53	3,843.70	3,843.62	13.53	13.21	153.11	177.24	385.04	555.44	528.79	26.65	20.841		
3,900.00	3,888.93	3,890.90	3,890.82	13.72	13.38	153.39	177.85	384.89	562.35	535.36	26.99	20.834		
3,950.00	3,938.34	3,937.95	3,937.86	13.90	13.54	153.66	178.47	384.95	569.49	542.16	27.33	20.837		
4,000.00	3,987.74	3,985.72	3,985.63	14.08	13.71	153.94	179.01	385.21	576.81	549.14	27.67	20.844		
4,050.00	4,037.14	4,033.47	4,033.37	14.27	13.88	154.24	179.32	385.66	584.29	556.27	28.01	20.856		
4,100.00	4,086.55	4,080.78	4,080.68	14.45	14.04	154.55	179.48	386.29	591.93	563.57	28.35	20.876		
4,150.00	4,135.95	4,128.02	4,127.92	14.63	14.21	154.87	179.53	387.11	599.76	571.06	28.69	20.902		
4,200.00	4,185.36	4,175.00	4,174.88	14.82	14.37	155.19	179.45	388.13	607.78	578.75	29.03	20.935		
4,250.00	4,234.76	4,221.90	4,221.76	15.00	14.53	155.53	179.19	389.38	616.01	586.64	29.37	20.976		
4,300.00	4,284.16	4,270.28	4,270.12	15.18	14.70	155.89	178.75	390.82	624.39	594.67	29.71	21.014		
4,350.00	4,333.57	4,318.61	4,318.42	15.37	14.87	156.25	178.19	392.35	632.85	602.79	30.06	21.054		
4,400.00	4,382.97	4,366.73	4,366.51	15.55	15.04	156.61	177.45	393.98	641.40	611.00	30.40	21.098		
4,450.00	4,432.37	4,414.92	4,414.65	15.74	15.21	156.99	176.49	395.74	650.06	619.31	30.75	21.143		
4,500.00	4,481.78	4,463.91	4,463.60	15.92	15.38	157.37	175.48	397.56	658.77	627.68	31.09	21.187		
4,550.00	4,531.18	4,512.31	4,511.96	16.11	15.55	157.73	174.53	399.36	667.52	636.08	31.44	21.232		
4,600.00	4,580.58	4,558.51	4,558.12	16.29	15.71	158.06	173.80	401.18	676.45	644.67	31.77	21.291		
4,650.00	4,629.99	4,605.83	4,605.39	16.48	15.88	158.37	173.27	403.20	685.59	653.48	32.11	21.351		
4,700.00	4,679.39	4,658.11	4,657.62	16.66	16.06	158.69	172.72	405.34	694.66	662.18	32.48	21.387		
4,750.00	4,728.80	4,710.15	4,709.63	16.85	16.24	159.01	172.10	407.23	703.53	670.68	32.85	21.418		
4,800.00	4,778.20	4,761.79	4,761.23	17.03	16.42	159.32	171.35	408.93	712.23	679.02	33.21	21.445		
4,850.00	4,827.60	4,811.67	4,811.08	17.22	16.60	159.63	170.52	410.45	720.81	687.24	33.57	21.474		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL													Offset Site Error:	5.00 ft
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898-													Offset Well Error:	0.00 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		
4,900.00	4,877.01	4,860.27	4,859.65	17.40	16.77	159.92	169.72	411.94	729.42	695.51	33.91	21.508		
4,950.00	4,926.41	4,909.90	4,909.26	17.59	16.94	160.20	168.96	413.47	738.07	703.80	34.27	21.538		
5,000.00	4,975.81	4,960.11	4,959.44	17.78	17.12	160.47	168.34	414.93	746.66	712.04	34.62	21.564		
5,050.00	5,025.22	5,010.08	5,009.39	17.96	17.29	160.72	167.83	416.30	755.21	720.23	34.98	21.590		
5,100.00	5,074.62	5,060.02	5,059.31	18.15	17.47	160.96	167.39	417.62	763.72	728.39	35.34	21.613		
5,150.00	5,124.02	5,109.11	5,108.38	18.34	17.64	161.19	166.91	418.88	772.22	736.53	35.69	21.639		
5,200.00	5,173.43	5,158.13	5,157.38	18.52	17.81	161.44	166.28	420.18	780.74	744.71	36.04	21.665		
5,250.00	5,222.83	5,209.98	5,209.20	18.71	17.99	161.69	165.48	421.49	789.20	752.80	36.40	21.679		
5,300.00	5,272.23	5,261.88	5,261.08	18.90	18.17	161.95	164.59	422.63	797.50	760.73	36.77	21.688		
5,350.00	5,321.64	5,309.02	5,308.21	19.08	18.34	162.16	164.04	423.64	805.83	768.72	37.11	21.713		
5,400.00	5,371.04	5,357.49	5,356.67	19.27	18.50	162.34	163.85	424.71	814.23	776.77	37.46	21.736		
5,450.00	5,420.45	5,407.47	5,406.64	19.46	18.68	162.51	163.89	425.77	822.63	784.81	37.82	21.753		
5,500.00	5,469.85	5,457.59	5,456.75	19.65	18.85	162.67	164.07	426.78	830.99	792.81	38.17	21.768		
5,550.00	5,519.25	5,507.87	5,507.01	19.83	19.03	162.85	163.96	427.75	839.29	800.76	38.53	21.781		
5,600.00	5,568.66	5,558.21	5,557.35	20.02	19.21	163.04	163.49	428.71	847.55	808.66	38.89	21.793		
5,650.00	5,618.06	5,608.66	5,607.78	20.21	19.38	163.23	163.02	429.59	855.74	816.49	39.25	21.802		
5,700.00	5,667.46	5,659.60	5,658.72	20.40	19.56	163.42	162.60	430.39	863.87	824.25	39.61	21.808		
5,750.00	5,716.87	5,710.84	5,709.95	20.58	19.74	163.59	162.32	431.08	871.89	831.91	39.98	21.810		
5,800.00	5,766.27	5,760.71	5,759.82	20.77	19.91	163.75	162.15	431.66	879.84	839.51	40.33	21.815		
5,850.00	5,815.67	5,810.32	5,809.43	20.96	20.09	163.90	162.02	432.21	887.79	847.10	40.69	21.819		
5,900.00	5,865.08	5,860.19	5,859.29	21.15	20.26	164.05	161.84	432.75	895.71	854.66	41.04	21.823		
5,950.00	5,914.48	5,910.08	5,909.18	21.34	20.43	164.21	161.50	433.27	903.61	862.21	41.40	21.825		
6,000.00	5,963.89	5,960.19	5,959.28	21.52	20.61	164.37	161.11	433.75	911.48	869.72	41.76	21.827		
6,050.00	6,013.29	6,010.31	6,009.40	21.71	20.78	164.53	160.74	434.20	919.31	877.19	42.12	21.827		
6,100.00	6,062.69	6,059.39	6,058.47	21.90	20.95	164.68	160.38	434.62	927.14	884.67	42.47	21.830		
6,150.00	6,112.10	6,108.97	6,108.06	22.09	21.13	164.83	160.02	435.04	934.97	892.15	42.83	21.832		
6,200.00	6,161.50	6,159.37	6,158.45	22.28	21.30	164.97	159.80	435.43	942.77	899.59	43.19	21.831		
6,250.00	6,210.90	6,209.44	6,208.52	22.47	21.48	165.09	159.78	435.74	950.53	906.98	43.54	21.829		
6,300.00	6,260.31	6,259.06	6,258.14	22.65	21.65	165.21	159.79	436.03	958.26	914.37	43.90	21.828		
6,350.00	6,309.71	6,308.45	6,307.54	22.84	21.82	165.33	159.79	436.31	966.00	921.74	44.25	21.828		
6,400.00	6,359.11	6,357.65	6,356.73	23.03	22.00	165.46	159.62	436.60	973.74	929.13	44.61	21.828		
6,450.00	6,408.52	6,407.04	6,406.12	23.22	22.17	165.59	159.30	436.91	981.49	936.52	44.96	21.829		
6,500.00	6,457.92	6,456.54	6,455.62	23.41	22.34	165.72	159.00	437.21	989.24	943.92	45.32	21.828		
6,550.00	6,507.32	6,506.82	6,505.89	23.60	22.52	165.84	158.77	437.49	996.97	951.29	45.68	21.826		
6,600.00	6,556.73	6,557.37	6,556.44	23.79	22.69	165.96	158.67	437.70	1,004.65	958.61	46.04	21.821		
6,650.00	6,606.13	6,607.86	6,606.93	23.98	22.87	166.07	158.65	437.86	1,012.27	965.87	46.40	21.816		
6,700.00	6,655.54	6,658.36	6,657.43	24.16	23.04	166.18	158.61	437.96	1,019.85	973.09	46.76	21.810		
6,750.00	6,704.94	6,706.58	6,705.65	24.35	23.21	166.28	158.49	438.06	1,027.43	980.32	47.11	21.809		
6,800.00	6,754.34	6,754.98	6,754.05	24.54	23.38	166.40	158.23	438.21	1,035.07	987.60	47.46	21.809		
6,850.00	6,803.75	6,803.95	6,803.02	24.73	23.55	166.51	157.92	438.41	1,042.74	994.92	47.81	21.808		
6,900.00	6,853.15	6,852.92	6,851.99	24.92	23.72	166.63	157.64	438.61	1,050.43	1,002.26	48.17	21.808		
6,950.00	6,902.55	6,901.90	6,900.97	25.11	23.89	166.73	157.49	438.84	1,058.15	1,009.63	48.52	21.808		
7,000.00	6,951.96	6,950.92	6,949.99	25.30	24.06	166.82	157.52	439.07	1,065.89	1,017.01	48.87	21.809		
7,050.00	7,001.36	7,000.01	6,999.08	25.49	24.24	166.92	157.55	439.32	1,073.64	1,024.41	49.23	21.809		
7,100.00	7,050.76	7,048.74	7,047.81	25.68	24.41	167.01	157.52	439.58	1,081.41	1,031.83	49.58	21.811		
7,150.00	7,100.17	7,096.88	7,095.94	25.87	24.57	167.11	157.30	439.89	1,089.23	1,039.30	49.93	21.815		
7,200.00	7,149.57	7,146.31	7,145.37	26.06	24.75	167.22	156.91	440.26	1,097.10	1,046.82	50.29	21.817		
7,250.00	7,198.98	7,197.43	7,196.49	26.25	24.93	167.33	156.61	440.58	1,104.92	1,054.26	50.65	21.814		
7,300.00	7,248.38	7,246.80	7,245.86	26.44	25.10	167.42	156.46	440.82	1,112.68	1,061.67	51.01	21.815		
7,350.00	7,297.78	7,295.02	7,294.08	26.62	25.27	167.52	156.29	441.10	1,120.48	1,069.12	51.36	21.818		
7,400.00	7,347.19	7,342.58	7,341.64	26.81	25.43	167.61	156.02	441.44	1,128.35	1,076.65	51.70	21.824		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - PTL										Offset Site Error:		5.00 ft	
Survey Program: 102-GYRO-NS, 9646-MWD+IGRF, 9898-										Offset Well Error:		0.00 ft	
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth 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
7,450.00	7,396.59	7,389.78	7,388.83	27.00	25.60	167.72	155.46	441.86	1,136.31	1,084.26	52.05	21.833	
7,500.00	7,445.99	7,438.29	7,437.33	27.19	25.77	167.85	154.61	442.37	1,144.34	1,091.95	52.40	21.840	
7,550.00	7,495.40	7,487.39	7,486.42	27.38	25.94	167.98	153.59	442.90	1,152.40	1,099.65	52.75	21.846	
7,600.00	7,544.80	7,538.73	7,537.75	27.57	26.12	168.12	152.47	443.43	1,160.43	1,107.31	53.12	21.846	
7,650.00	7,594.20	7,590.75	7,589.75	27.76	26.30	168.25	151.50	443.84	1,168.35	1,114.87	53.49	21.843	
7,700.00	7,643.61	7,639.80	7,638.80	27.95	26.47	168.37	150.61	444.17	1,176.23	1,122.39	53.84	21.846	
7,750.00	7,693.01	7,688.78	7,687.76	28.14	26.64	168.49	149.60	444.52	1,184.13	1,129.93	54.20	21.849	
7,800.00	7,742.43	7,735.20	7,734.17	28.33	26.80	168.63	148.53	444.92	1,191.98	1,137.44	54.54	21.856	
7,850.00	7,791.94	7,781.85	7,780.80	28.52	26.96	168.77	147.32	445.43	1,199.36	1,144.48	54.88	21.856	
7,900.00	7,841.54	7,828.85	7,827.77	28.71	27.13	168.90	146.08	446.04	1,206.21	1,151.00	55.22	21.845	
7,950.00	7,891.22	7,876.45	7,875.36	28.89	27.30	169.03	144.90	446.76	1,212.54	1,156.98	55.56	21.824	
8,000.00	7,940.97	7,931.41	7,930.30	29.08	27.49	169.15	143.67	447.50	1,218.15	1,162.21	55.95	21.774	
8,050.00	7,990.77	7,984.23	7,983.10	29.26	27.67	169.25	142.65	448.00	1,222.93	1,166.61	56.32	21.716	
8,100.00	8,040.63	8,033.20	8,032.06	29.44	27.84	169.34	141.66	448.45	1,227.05	1,170.39	56.67	21.654	
8,150.00	8,090.54	8,082.11	8,080.96	29.62	28.01	169.43	140.56	448.92	1,230.57	1,173.56	57.01	21.584	
8,200.00	8,140.48	8,130.92	8,129.75	29.79	28.18	169.51	139.33	449.44	1,233.49	1,176.13	57.36	21.505	
8,250.00	8,190.45	8,181.09	8,179.89	29.97	28.36	169.60	137.92	450.00	1,235.80	1,178.09	57.71	21.414	
8,300.00	8,240.44	8,232.42	8,231.21	30.15	28.54	169.68	136.48	450.53	1,237.42	1,179.35	58.07	21.309	
8,350.00	8,290.43	8,286.16	8,284.93	30.32	28.73	169.75	135.01	450.98	1,238.31	1,179.87	58.44	21.190	
8,400.00	8,340.43	8,340.87	8,339.62	30.49	28.92	91.05	133.66	451.24	1,238.58	1,179.77	58.81	21.061	
8,450.00	8,390.43	8,394.50	8,393.24	30.66	29.10	91.10	132.45	451.32	1,238.68	1,179.50	59.17	20.933	
8,500.00	8,440.43	8,446.15	8,444.87	30.83	29.28	91.15	131.37	451.25	1,238.63	1,179.10	59.53	20.807	
8,513.78	8,454.22	8,458.80	8,457.52	30.88	29.33	91.17	131.10	451.24	1,238.63	1,179.01	59.62	20.776	
8,550.00	8,490.43	8,492.04	8,490.75	31.00	29.44	91.20	130.34	451.27	1,238.67	1,178.82	59.85	20.695	
8,600.00	8,540.43	8,539.84	8,538.54	31.17	29.61	91.26	129.14	451.43	1,238.87	1,178.68	60.19	20.583	
8,650.00	8,590.43	8,594.53	8,593.21	31.34	29.80	91.32	127.80	451.53	1,238.98	1,178.42	60.56	20.459	
8,700.00	8,640.42	8,648.84	8,647.50	31.51	29.99	-88.31	126.60	451.42	1,238.89	1,177.97	60.93	20.335	
8,750.00	8,690.19	8,702.58	8,701.23	31.67	30.18	-88.53	125.62	451.15	1,238.53	1,177.25	61.28	20.211	
8,800.00	8,739.36	8,751.54	8,750.19	31.83	30.35	-88.95	124.84	450.82	1,238.00	1,176.39	61.61	20.095	
8,850.00	8,787.57	8,798.37	8,797.01	31.97	30.51	-89.54	124.02	450.55	1,237.53	1,175.61	61.92	19.985	
8,900.00	8,834.43	8,843.79	8,842.43	32.12	30.67	-90.26	123.20	450.35	1,237.26	1,175.03	62.23	19.882	
8,914.10	8,847.36	8,856.30	8,854.93	32.15	30.71	-90.48	123.01	450.31	1,237.25	1,174.93	62.32	19.854	
8,950.00	8,879.61	8,887.49	8,886.11	32.25	30.82	-91.09	122.57	450.22	1,237.37	1,174.84	62.53	19.789	
9,000.00	8,922.75	8,927.46	8,926.09	32.37	30.96	-91.93	122.09	450.18	1,238.06	1,175.25	62.81	19.713	
9,050.00	8,963.52	8,964.37	8,963.00	32.48	31.09	-92.74	121.68	450.26	1,239.61	1,176.55	63.07	19.656	
9,100.00	9,001.62	8,999.56	8,998.18	32.59	31.21	-93.52	121.30	450.45	1,242.24	1,178.92	63.32	19.619	
9,150.00	9,036.75	9,038.86	9,037.48	32.67	31.35	-94.41	120.89	450.64	1,246.01	1,182.42	63.59	19.594 SF	
9,200.00	9,068.66	9,074.60	9,073.21	32.75	31.47	-95.16	120.52	450.71	1,251.09	1,187.25	63.85	19.595	
9,250.00	9,097.08	9,106.99	9,105.60	32.81	31.59	-95.71	120.21	450.68	1,257.70	1,193.61	64.09	19.625	
9,300.00	9,121.82	9,135.41	9,134.02	32.86	31.69	-96.00	120.00	450.56	1,266.02	1,201.72	64.30	19.689	
9,350.00	9,142.67	9,159.21	9,157.82	32.90	31.77	-95.95	119.89	450.39	1,276.21	1,211.72	64.49	19.789	
9,400.00	9,159.49	9,178.25	9,176.85	32.93	31.84	-95.52	119.84	450.20	1,288.38	1,223.72	64.65	19.927	
9,450.00	9,172.14	9,192.45	9,191.06	32.95	31.88	-94.68	119.83	450.04	1,302.56	1,237.77	64.79	20.105	
9,500.00	9,180.53	9,201.92	9,200.52	32.96	31.92	-93.40	119.78	449.93	1,318.72	1,253.83	64.89	20.322	
9,550.00	9,184.59	9,206.72	9,205.32	33.01	31.93	-91.69	119.76	449.87	1,336.76	1,271.80	64.96	20.577	
9,600.00	9,185.00	9,207.45	9,206.05	33.08	31.94	-90.82	119.76	449.86	1,356.51	1,291.50	65.01	20.867	
9,650.00	9,185.00	9,207.72	9,206.33	33.16	31.94	-90.84	119.76	449.86	1,377.80	1,312.74	65.06	21.178	
9,700.00	9,185.00	9,208.00	9,206.60	33.25	31.94	-90.85	119.76	449.85	1,400.55	1,335.45	65.09	21.516	
9,750.00	9,185.00	9,208.28	9,206.89	33.35	31.94	-90.86	119.76	449.85	1,424.69	1,359.55	65.14	21.871	
9,800.00	9,185.00	9,208.57	9,207.18	33.45	31.94	-90.87	119.75	449.85	1,450.15	1,384.97	65.18	22.248	
9,850.00	9,185.00	9,208.86	9,207.47	33.56	31.94	-90.89	119.75	449.84	1,476.87	1,411.64	65.23	22.642	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D												Offset Site Error:	5.00 ft
Survey Program:												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)					
0.00	0.00	3.30	3.30	0.50		67.41	161.84	389.06	421.38				
50.00	50.00	53.30	53.30	0.50		67.41	161.84	389.06	421.38	420.88	0.50	839.395	
100.00	100.00	103.30	103.30	0.52		67.41	161.84	389.06	421.38	420.86	0.52	813.858	
150.00	150.00	153.35	153.35	0.59		67.40	161.94	389.05	421.41	420.82	0.59	713.957	
200.00	200.00	203.89	203.89	0.70		67.42	161.80	389.07	421.37	420.67	0.70	600.147	
201.67	201.67	205.58	205.57	0.71		67.42	161.79	389.07	421.37	420.66	0.71	596.564	
250.00	250.00	253.28	253.27	0.84		67.40	161.90	389.03	421.37	420.54	0.84	503.003	
300.00	300.00	303.31	303.30	0.99		67.41	161.84	389.06	421.38	420.39	0.99	426.784	
332.94	332.94	336.25	336.24	1.09		67.40	161.90	389.03	421.38	420.29	1.09	386.302	
350.00	350.00	353.31	353.30	1.15		67.41	161.89	389.04	421.38	420.23	1.15	367.859	
400.00	400.00	403.31	403.30	1.31		67.41	161.84	389.06	421.38	420.07	1.31	321.887	
450.00	450.00	453.69	453.68	1.48		67.41	161.86	389.09	421.41	419.93	1.48	285.445	
500.00	500.00	503.31	503.30	1.65		67.41	161.84	389.06	421.38	419.73	1.65	255.988	
550.00	550.00	553.65	553.64	1.82		67.40	161.91	389.05	421.40	419.58	1.82	231.833	
600.00	600.00	603.31	603.30	1.99		67.41	161.84	389.06	421.38	419.39	1.99	211.684	
650.00	650.00	653.65	653.63	2.16		67.41	161.88	389.05	421.39	419.22	2.16	194.676	
669.00	669.00	672.82	672.80	2.23		67.42	161.79	389.07	421.37	419.14	2.23	188.881	
700.00	700.00	703.32	703.30	2.34		67.41	161.84	389.06	421.38	419.04	2.34	180.129	
750.00	750.00	761.65	753.30	2.51		67.41	161.84	389.06	421.38	418.86	2.51	167.566	
800.00	800.00	803.33	803.30	2.69		67.41	161.84	389.06	421.38	418.69	2.69	156.612	
850.00	850.00	854.22	854.19	2.87		67.42	161.83	389.06	421.37	418.51	2.87	146.979	
856.93	856.93	861.27	861.25	2.89		67.42	161.80	389.05	421.36	418.47	2.89	145.731	
900.00	900.00	903.40	903.36	3.04		67.40	161.98	389.04	421.41	418.37	3.04	138.460	
950.00	950.00	954.01	953.97	3.22		67.42	161.78	389.07	421.37	418.15	3.22	130.839	
958.63	958.63	961.97	961.93	3.25		67.41	161.84	389.06	421.38	418.13	3.25	129.613	
1,000.00	1,000.00	1,003.44	1,003.40	3.40		67.40	161.96	389.03	421.40	418.00	3.40	124.026	
1,050.00	1,050.00	1,053.34	1,053.30	3.58		67.41	161.84	389.06	421.38	417.80	3.58	117.867	
1,100.00	1,100.00	1,103.74	1,103.70	3.75		67.41	161.90	389.09	421.43	417.67	3.75	112.302	
1,150.00	1,150.00	1,153.34	1,153.30	3.93		67.41	161.84	389.06	421.38	417.45	3.93	107.213	
1,200.00	1,200.00	1,203.48	1,203.44	4.11		67.40	161.92	389.04	421.39	417.28	4.11	102.574	
1,250.00	1,250.00	1,253.34	1,253.30	4.29		67.41	161.84	389.06	421.38	417.09	4.29	98.313	
1,300.00	1,300.00	1,304.05	1,304.00	4.46		67.41	161.86	389.09	421.41	416.95	4.46	94.399	
1,350.00	1,350.00	1,353.35	1,353.30	4.64		67.41	161.84	389.06	421.38	416.74	4.64	90.769	
1,400.00	1,400.00	1,403.97	1,403.92	4.82		67.41	161.84	389.07	421.39	416.57	4.82	87.416	
1,418.83	1,418.83	1,423.11	1,423.07	4.89		67.41	161.83	389.04	421.36	416.47	4.89	86.208	
1,450.00	1,450.00	1,453.35	1,453.30	5.00		67.41	161.84	389.06	421.38	416.38	5.00	84.295	
1,500.00	1,500.00	1,509.55	1,503.30	5.18		67.41	161.84	389.06	421.38	416.20	5.18	81.391	
1,550.00	1,550.00	1,553.35	1,553.30	5.36		67.40	161.96	389.02	421.39	416.04	5.36	78.682	
1,600.00	1,600.00	1,603.61	1,603.56	5.53		67.42	161.82	389.07	421.38	415.84	5.53	76.142	
1,606.06	1,606.06	1,609.70	1,609.65	5.56		67.42	161.79	389.08	421.37	415.82	5.56	75.844	
1,650.00	1,650.00	1,653.35	1,653.30	5.71		67.41	161.89	389.04	421.38	415.67	5.71	73.762	
1,700.00	1,700.00	1,703.35	1,703.30	5.89		67.41	161.84	389.06	421.38	415.49	5.89	71.527	
1,738.21	1,738.21	1,741.56	1,741.51	6.03		67.41	161.88	389.04	421.38	415.35	6.03	69.907	
1,750.00	1,750.00	1,753.34	1,753.29	6.07		67.41	161.87	389.04	421.38	415.31	6.07	69.422	
1,800.00	1,800.00	1,803.35	1,803.30	6.25		67.41	161.84	389.06	421.38	415.13	6.25	67.437	
1,850.00	1,850.00	1,853.57	1,853.52	6.43		67.42	161.82	389.09	421.40	414.98	6.43	65.566	
1,900.00	1,900.00	1,903.35	1,903.30	6.61		67.41	161.84	389.06	421.38	414.77	6.61	63.789	
1,950.00	1,950.00	1,953.66	1,953.61	6.78		67.42	161.82	389.09	421.40	414.62	6.78	62.111	
2,000.00	2,000.00	2,003.35	2,003.30	6.96		67.41	161.84	389.06	421.38	414.42	6.96	60.514	
2,050.00	2,050.00	2,053.68	2,053.62	7.14		67.42	161.83	389.08	421.39	414.25	7.14	59.001	
2,100.00	2,100.00	2,103.35	2,103.30	7.32		67.41	161.84	389.06	421.38	414.06	7.32	57.558	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D													Offset Site Error:	5.00 ft
Survey Program:													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)						
2,111.83	2,111.83	2,115.18	2,115.13	7.36		67.41	161.85	388.99	421.32	413.95	7.36	57.219		
2,150.00	2,150.00	2,152.47	2,152.41	7.50		67.41	161.84	389.04	421.36	413.86	7.50	56.183		
2,200.00	2,200.00	2,203.36	2,203.30	7.68		67.41	161.84	389.06	421.38	413.70	7.68	54.877		
2,207.04	2,207.04	2,210.37	2,210.31	7.70		67.41	161.85	389.02	421.34	413.64	7.70	54.693		
2,250.00	2,250.00	2,252.75	2,252.69	7.86		67.41	161.84	389.06	421.38	413.52	7.86	53.627		
2,298.91	2,298.91	2,302.26	2,302.20	8.03		67.41	161.83	388.99	421.31	413.28	8.03	52.452 CC		
2,300.00	2,300.00	2,303.33	2,303.27	8.04		67.41	161.83	388.99	421.31	413.28	8.04	52.426		
2,350.00	2,350.00	2,353.36	2,353.30	8.22		67.41	161.84	389.06	421.38	413.16	8.22	51.292		
2,400.00	2,400.00	2,403.40	2,403.34	8.39		67.42	161.83	389.08	421.39	413.00	8.39	50.201		
2,450.00	2,450.00	2,453.36	2,453.30	8.57		67.41	161.84	389.06	421.38	412.81	8.57	49.151		
2,487.99	2,487.99	2,491.31	2,491.25	8.71		67.41	161.84	389.01	421.33	412.62	8.71	48.378		
2,500.00	2,500.00	2,503.08	2,503.03	8.75		67.41	161.84	389.01	421.33	412.58	8.75	48.141 ES		
2,550.00	2,550.00	2,553.36	2,553.30	8.93		146.20	161.84	389.06	421.61	412.68	8.93	47.226		
2,600.00	2,599.99	2,602.93	2,602.87	9.10		146.26	161.83	389.01	422.24	413.14	9.10	46.387		
2,650.00	2,649.97	2,653.33	2,653.27	9.28		146.35	161.84	389.06	423.42	414.15	9.27	45.653		
2,700.00	2,699.94	2,703.54	2,703.48	9.45		146.49	161.83	389.08	425.03	415.58	9.45	44.991		
2,750.00	2,749.88	2,753.24	2,753.18	9.62		146.65	161.84	389.06	427.06	417.44	9.62	44.395		
2,800.00	2,799.79	2,803.56	2,803.50	9.79		146.86	161.83	389.08	429.58	419.79	9.79	43.871		
2,850.00	2,849.66	2,853.02	2,852.96	9.97		147.09	161.84	389.06	432.54	422.57	9.96	43.406		
2,900.00	2,899.49	2,902.60	2,902.54	10.14		147.36	161.84	389.05	435.97	425.84	10.14	43.005		
2,950.00	2,949.28	2,952.64	2,952.58	10.32		147.66	161.84	389.06	439.89	429.58	10.31	42.662		
3,000.00	2,999.01	3,002.14	3,002.08	10.49		147.98	161.84	389.06	444.27	433.79	10.48	42.376		
3,050.00	3,048.68	3,052.03	3,051.97	10.67		148.34	161.86	389.03	449.12	438.46	10.66	42.141		
3,100.00	3,098.29	3,101.65	3,101.59	10.84		148.72	161.84	389.06	454.48	443.65	10.83	41.962		
3,150.00	3,147.82	3,151.31	3,151.25	11.02		149.12	161.86	389.10	460.36	449.36	11.00	41.835		
3,200.00	3,197.28	3,201.78	3,201.72	11.20		149.55	161.83	389.04	466.63	455.45	11.18	41.746		
3,250.00	3,246.69	3,250.26	3,250.20	11.37		150.00	161.85	389.10	473.35	462.00	11.35	41.700		
3,300.00	3,296.09	3,299.45	3,299.39	11.55		150.46	161.84	389.06	480.02	468.49	11.52	41.650		
3,350.00	3,345.49	3,348.45	3,348.39	11.73		150.90	161.88	389.00	486.70	475.00	11.70	41.603		
3,400.00	3,394.90	3,398.26	3,398.20	11.91		151.34	161.84	389.06	493.51	481.64	11.87	41.566		
3,450.00	3,444.30	3,447.15	3,447.08	12.09		151.75	161.90	389.00	500.26	488.21	12.05	41.525		
3,500.00	3,493.71	3,497.07	3,497.01	12.27		152.17	161.84	389.06	507.11	494.89	12.22	41.492		
3,550.00	3,543.11	3,546.70	3,546.63	12.45		152.57	161.88	389.06	513.96	501.57	12.40	41.458		
3,600.00	3,592.51	3,595.88	3,595.81	12.63		152.96	161.84	389.06	520.81	508.24	12.57	41.426		
3,650.00	3,641.92	3,645.25	3,645.18	12.81		153.34	161.86	389.05	527.70	514.95	12.75	41.395		
3,700.00	3,691.32	3,694.69	3,694.62	12.99		153.71	161.84	389.06	534.61	521.69	12.92	41.367		
3,750.00	3,740.72	3,742.82	3,742.75	13.17		154.06	161.87	389.02	541.51	528.41	13.10	41.340		
3,800.00	3,790.13	3,793.50	3,793.43	13.35		154.42	161.84	389.06	548.49	535.21	13.28	41.315		
3,850.00	3,839.53	3,841.80	3,841.72	13.53		154.75	161.86	389.04	555.45	542.00	13.45	41.292		
3,900.00	3,888.93	3,892.32	3,892.23	13.72		155.10	161.84	389.06	562.45	548.82	13.63	41.269		
3,950.00	3,938.34	3,941.73	3,941.64	13.90		155.42	161.84	389.06	569.46	555.65	13.81	41.247		
4,000.00	3,987.74	3,991.29	3,991.19	14.08		155.73	162.00	389.10	576.55	562.57	13.98	41.233		
4,050.00	4,037.14	4,042.72	4,042.62	14.27		156.07	161.78	389.04	583.50	569.34	14.16	41.202		
4,100.00	4,086.55	4,090.69	4,090.59	14.45		156.35	161.89	389.19	590.72	576.38	14.34	41.199		
4,150.00	4,135.95	4,139.36	4,139.25	14.63		156.65	161.84	389.06	597.66	583.14	14.52	41.174		
4,200.00	4,185.36	4,190.76	4,190.64	14.82		156.95	161.84	389.26	604.95	590.25	14.69	41.167		
4,250.00	4,234.76	4,238.20	4,238.06	15.00		157.22	161.84	389.06	611.85	596.98	14.87	41.143		
4,300.00	4,284.16	4,291.82	4,291.67	15.18		157.53	161.78	389.31	619.22	604.17	15.05	41.136		
4,350.00	4,333.57	4,337.05	4,336.87	15.37		157.76	161.84	389.06	626.10	610.87	15.23	41.116		
4,400.00	4,382.97	4,392.69	4,392.49	15.55		158.07	161.76	389.28	633.47	618.06	15.41	41.104		
4,450.00	4,432.37	4,435.93	4,435.67	15.74		158.28	161.84	389.06	640.41	624.82	15.58	41.091		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D												Offset Site Error:	5.00 ft
Survey Program:												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance		Minimum		Separation		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)	Separation (ft)	Factor	
4,500.00	4,481.78	4,494.31	4,494.03	15.92		158.59	161.76	389.20	647.76	631.99	15.77	41.072	
4,550.00	4,531.18	4,534.82	4,534.48	16.11		158.78	161.84	389.06	654.76	638.82	15.94	41.070	
4,600.00	4,580.58	4,595.22	4,594.85	16.29		159.08	161.83	389.07	662.06	645.92	16.13	41.041	
4,650.00	4,629.99	4,633.72	4,633.29	16.48		159.26	161.84	389.06	669.16	652.86	16.30	41.050	
4,700.00	4,679.39	4,700.86	4,700.39	16.66		159.56	161.90	388.78	676.34	659.85	16.50	41.002	
4,750.00	4,728.80	4,732.61	4,732.10	16.85		159.71	161.84	389.06	683.60	666.94	16.66	41.033	
4,800.00	4,778.20	4,797.24	4,796.70	17.03		159.99	161.93	388.77	690.73	673.88	16.85	40.985	
4,850.00	4,827.60	4,831.87	4,831.29	17.22		160.17	161.64	389.41	698.41	681.39	17.02	41.036	
4,900.00	4,877.01	4,894.24	4,893.64	17.40		160.40	162.02	388.75	705.19	687.97	17.21	40.970	
4,950.00	4,926.41	4,932.25	4,931.62	17.59		160.60	161.66	389.41	712.94	695.56	17.38	41.018	
5,000.00	4,975.81	4,979.79	4,979.11	17.78		160.78	161.84	389.06	719.89	702.33	17.56	40.999	
5,050.00	5,025.22	5,032.28	5,031.60	17.96		161.00	161.73	389.35	727.45	709.71	17.74	41.000	
5,100.00	5,074.62	5,078.63	5,077.92	18.15		161.17	161.84	389.06	734.46	716.54	17.92	40.988	
5,150.00	5,124.02	5,132.19	5,131.47	18.34		161.39	161.77	389.30	742.00	723.90	18.10	40.984	
5,200.00	5,173.43	5,177.48	5,176.73	18.52		161.55	161.84	389.06	749.07	730.79	18.28	40.978	
5,250.00	5,222.83	5,232.59	5,231.83	18.71		161.77	161.73	389.26	756.60	738.13	18.47	40.969	
5,300.00	5,272.23	5,276.33	5,275.53	18.90		161.92	161.84	389.06	763.71	745.07	18.64	40.969	
5,350.00	5,321.64	5,330.87	5,330.07	19.08		162.12	161.74	389.19	771.17	752.35	18.83	40.957	
5,400.00	5,371.04	5,375.16	5,374.34	19.27		162.27	161.84	389.06	778.38	759.38	19.00	40.961	
5,450.00	5,420.45	5,432.02	5,431.19	19.46		162.46	161.84	389.13	785.83	766.64	19.19	40.942	
5,500.00	5,469.85	5,473.99	5,473.15	19.65		162.61	161.84	389.06	793.08	773.72	19.36	40.955	
5,550.00	5,519.25	5,540.81	5,522.55	19.83		162.77	161.84	389.06	800.44	780.89	19.55	40.952	
5,600.00	5,568.66	5,572.82	5,571.96	20.02		162.93	161.84	389.06	807.80	788.08	19.73	40.949	
5,650.00	5,618.06	5,630.31	5,629.44	20.21		163.11	161.86	389.01	815.17	795.25	19.92	40.924	
5,700.00	5,667.46	5,671.64	5,670.76	20.40		163.25	161.84	389.06	822.55	802.46	20.09	40.944	
5,750.00	5,716.87	5,728.77	5,727.89	20.58		163.42	161.89	388.98	829.89	809.61	20.28	40.918	
5,800.00	5,766.27	5,770.95	5,770.06	20.77		163.55	161.80	389.20	837.46	817.00	20.45	40.945	
5,850.00	5,815.67	5,826.02	5,825.12	20.96		163.71	161.87	388.97	844.66	824.01	20.64	40.917	
5,900.00	5,865.08	5,870.30	5,869.41	21.15		163.85	161.82	389.18	852.24	831.42	20.82	40.939	
5,950.00	5,914.48	5,918.68	5,917.78	21.34		163.99	161.84	389.06	859.52	838.52	21.00	40.934	
6,000.00	5,963.89	5,969.52	5,968.62	21.52		164.14	161.76	389.17	867.03	845.85	21.18	40.933	
6,050.00	6,013.29	6,017.50	6,016.59	21.71		164.26	161.84	389.06	874.35	852.99	21.36	40.931	
6,100.00	6,062.69	6,068.53	6,067.62	21.90		164.41	161.77	389.14	881.84	860.30	21.55	40.929	
6,150.00	6,112.10	6,116.31	6,115.40	22.09		164.53	161.84	389.06	889.19	867.47	21.73	40.929	
6,200.00	6,161.50	6,167.86	6,166.94	22.28		164.67	161.78	389.13	896.69	874.78	21.91	40.925	
6,250.00	6,210.90	6,215.12	6,214.20	22.47		164.79	161.84	389.06	904.06	881.97	22.09	40.927	
6,300.00	6,260.31	6,266.44	6,265.52	22.65		164.92	161.84	389.10	911.53	889.26	22.27	40.923	
6,350.00	6,309.71	6,313.93	6,313.01	22.84		165.04	161.84	389.06	918.94	896.48	22.45	40.926	
6,400.00	6,359.11	6,365.41	6,364.49	23.03		165.17	161.84	389.08	926.41	903.77	22.64	40.920	
6,450.00	6,408.52	6,412.74	6,411.82	23.22		165.29	161.84	389.06	933.83	911.02	22.82	40.925	
6,500.00	6,457.92	6,474.47	6,461.22	23.41		165.41	161.84	389.06	941.29	918.29	23.00	40.924	
6,550.00	6,507.32	6,511.55	6,510.62	23.60		165.52	161.84	389.06	948.75	925.56	23.18	40.924	
6,600.00	6,556.73	6,563.77	6,562.84	23.79		165.65	161.85	389.06	956.21	932.84	23.37	40.915	
6,650.00	6,606.13	6,610.42	6,609.49	23.98		165.75	161.84	389.10	963.72	940.17	23.55	40.925	
6,700.00	6,655.54	6,661.67	6,660.74	24.16		165.87	161.84	389.05	971.14	947.40	23.73	40.917	
6,750.00	6,704.94	6,709.27	6,708.34	24.35		165.98	161.83	389.08	978.64	954.72	23.91	40.923	
6,800.00	6,754.34	6,758.57	6,757.64	24.54		166.08	161.84	389.06	986.10	962.00	24.10	40.923	
6,850.00	6,803.75	6,808.43	6,807.50	24.73		166.19	161.77	389.10	993.61	969.33	24.28	40.923	
6,900.00	6,853.15	6,857.38	6,856.45	24.92		166.29	161.84	389.06	1,001.06	976.60	24.46	40.923	
6,950.00	6,902.55	6,907.60	6,906.66	25.11		166.40	161.78	389.10	1,008.59	983.94	24.65	40.922	
7,000.00	6,951.96	6,956.19	6,955.26	25.30		166.50	161.84	389.06	1,016.04	991.21	24.83	40.923	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D													Offset Site Error:	5.00 ft
Survey Program:													Offset Well Error:	0.00 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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,050.00	7,001.36	7,006.85	7,005.92	25.49		166.60	161.85	389.10	1,023.57	998.56	25.01	40.922		
7,100.00	7,050.76	7,055.00	7,054.06	25.68		166.70	161.84	389.06	1,031.03	1,005.83	25.19	40.924		
7,150.00	7,100.17	7,106.14	7,105.21	25.87		166.80	161.84	389.10	1,038.57	1,013.19	25.38	40.921		
7,200.00	7,149.57	7,153.81	7,152.87	26.06		166.89	161.84	389.06	1,046.03	1,020.47	25.56	40.924		
7,250.00	7,198.98	7,206.26	7,205.32	26.25		167.00	161.80	389.10	1,053.58	1,027.83	25.75	40.918		
7,300.00	7,248.38	7,252.62	7,251.68	26.44		167.08	161.84	389.06	1,061.04	1,035.12	25.93	40.925		
7,350.00	7,297.78	7,319.75	7,301.08	26.62		167.17	161.84	389.06	1,068.55	1,042.44	26.11	40.925		
7,400.00	7,347.19	7,351.43	7,350.49	26.81		167.27	161.84	389.06	1,076.07	1,049.77	26.29	40.926		
7,450.00	7,396.59	7,408.18	7,399.89	27.00		167.35	161.84	389.06	1,083.58	1,057.11	26.48	40.926		
7,500.00	7,445.99	7,450.25	7,449.29	27.19		167.44	161.84	389.06	1,091.10	1,064.44	26.66	40.927		
7,550.00	7,495.40	7,506.35	7,505.39	27.38		167.54	161.92	389.01	1,098.60	1,071.74	26.85	40.909		
7,600.00	7,544.80	7,549.68	7,548.70	27.57		167.63	161.58	389.19	1,106.27	1,079.24	27.03	40.931		
7,650.00	7,594.20	7,606.33	7,605.34	27.76		167.70	162.03	388.97	1,113.61	1,086.38	27.22	40.906		
7,700.00	7,643.61	7,648.71	7,647.70	27.95		167.80	161.65	389.14	1,121.27	1,093.88	27.40	40.930		
7,750.00	7,693.01	7,697.33	7,696.31	28.14		167.87	161.84	389.06	1,128.73	1,101.15	27.58	40.930		
7,800.00	7,742.43	7,748.14	7,747.11	28.33		167.98	161.62	389.14	1,136.21	1,108.45	27.76	40.925		
7,850.00	7,791.94	7,796.30	7,795.24	28.52		168.06	161.84	389.06	1,142.97	1,115.02	27.94	40.903		
7,900.00	7,841.54	7,849.30	7,848.24	28.71		168.16	161.60	389.17	1,149.27	1,121.13	28.13	40.853		
7,950.00	7,891.22	7,895.61	7,894.52	28.89		168.22	161.84	389.06	1,154.71	1,126.41	28.31	40.792		
8,000.00	7,940.97	7,951.75	7,950.65	29.08		168.30	161.69	389.16	1,159.75	1,131.25	28.50	40.693		
8,050.00	7,990.77	7,995.19	7,994.07	29.26		168.34	161.84	389.06	1,163.92	1,135.25	28.67	40.599		
8,100.00	8,040.63	8,048.88	8,047.76	29.44		168.39	161.75	389.10	1,167.61	1,138.76	28.86	40.465		
8,150.00	8,090.54	8,094.98	8,093.84	29.62		168.43	161.84	389.06	1,170.57	1,141.54	29.03	40.328		
8,200.00	8,140.48	8,161.98	8,143.78	29.79		168.46	161.84	389.06	1,172.94	1,143.73	29.20	40.163		
8,250.00	8,190.45	8,194.93	8,193.75	29.97		168.48	161.84	389.06	1,174.66	1,145.28	29.38	39.981		
8,300.00	8,240.44	8,252.44	8,251.25	30.15		168.49	161.92	389.03	1,175.74	1,146.17	29.57	39.761		
8,350.00	8,290.43	8,295.10	8,293.87	30.32		168.52	161.51	389.17	1,176.30	1,146.57	29.73	39.565		
8,400.00	8,340.43	8,351.83	8,350.59	30.49		89.72	162.01	389.00	1,176.16	1,146.25	29.91	39.317		
8,403.52	8,343.95	8,355.82	8,354.58	30.50		89.72	162.09	388.98	1,176.14	1,146.22	29.93	39.300		
8,450.00	8,390.43	8,395.28	8,394.02	30.66		89.74	161.57	389.10	1,176.24	1,146.16	30.07	39.111		
8,500.00	8,440.43	8,445.01	8,443.73	30.83		89.73	161.84	389.06	1,176.20	1,145.96	30.25	38.888		
8,538.02	8,478.45	8,482.98	8,481.70	30.96		89.74	161.60	389.04	1,176.18	1,145.80	30.38	38.720		
8,550.00	8,490.43	8,494.65	8,493.37	31.00		89.74	161.62	389.04	1,176.18	1,145.76	30.42	38.689		
8,600.00	8,540.43	8,545.04	8,543.73	31.17		89.73	161.84	389.06	1,176.20	1,145.61	30.59	38.451		
8,650.00	8,590.43	8,596.26	8,594.95	31.34		89.74	161.60	389.10	1,176.24	1,145.48	30.76	38.235		
8,700.00	8,640.42	8,645.05	8,643.72	31.51		-89.94	161.84	389.06	1,176.20	1,145.27	30.93	38.027		
8,723.41	8,663.78	8,668.41	8,667.07	31.59		-90.01	161.58	389.04	1,176.18	1,145.17	31.01	37.934		
8,750.00	8,690.19	8,694.17	8,692.83	31.67		-90.16	161.66	389.05	1,176.19	1,145.10	31.09	37.831		
8,800.00	8,739.36	8,744.01	8,742.66	31.83		-90.59	161.84	389.06	1,176.27	1,145.02	31.25	37.640		
8,850.00	8,787.57	8,789.57	8,788.22	31.97		-91.15	161.72	389.01	1,176.43	1,145.03	31.40	37.464		
8,900.00	8,834.43	8,839.10	8,837.73	32.12		-91.93	161.84	389.06	1,176.99	1,145.43	31.56	37.286		
8,950.00	8,879.61	8,882.33	8,880.97	32.25		-92.72	161.69	389.02	1,177.92	1,146.22	31.70	37.156		
9,000.00	8,922.75	8,927.42	8,926.05	32.37		-93.67	161.84	389.06	1,179.62	1,147.77	31.85	37.037		
9,050.00	8,963.52	8,967.52	8,966.14	32.48		-94.53	161.72	389.04	1,182.14	1,150.15	31.99	36.955		
9,100.00	9,001.62	9,006.30	9,004.92	32.59		-95.38	161.84	389.06	1,185.85	1,153.73	32.13	36.913 SF		
9,150.00	9,036.75	9,041.44	9,040.05	32.67		-96.08	161.84	389.06	1,190.90	1,158.64	32.26	36.920		
9,200.00	9,068.66	9,075.26	9,073.87	32.75		-96.66	161.78	389.10	1,197.56	1,165.17	32.39	36.979		
9,250.00	9,097.08	9,101.77	9,100.38	32.81		-96.87	161.84	389.06	1,205.93	1,173.43	32.50	37.105		
9,300.00	9,121.82	9,126.51	9,125.12	32.86		-96.85	161.84	389.06	1,216.25	1,183.64	32.61	37.294		
9,350.00	9,142.67	9,146.88	9,145.49	32.90		-96.47	161.73	389.05	1,228.56	1,195.85	32.71	37.555		
9,400.00	9,159.49	9,162.83	9,161.44	32.93		-95.70	161.76	389.06	1,242.99	1,210.19	32.80	37.892		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: Sec 01-T23S-R31E - Tomb Raider 1 Fed 1H - Original - T&D													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
9,450.00	9,172.14	9,174.67	9,173.28	32.95		-94.51	161.80	389.06	1,259.48	1,226.60	32.88	38.304		
9,500.00	9,180.53	9,185.22	9,183.83	32.96		-93.03	161.84	389.06	1,277.94	1,244.99	32.95	38.784		
9,550.00	9,184.59	9,189.28	9,187.89	33.01		-91.01	161.84	389.06	1,298.23	1,265.23	33.00	39.339		
9,600.00	9,185.00	9,189.69	9,188.30	33.08		-90.00	161.84	389.06	1,320.17	1,287.13	33.04	39.957		
9,650.00	9,185.00	9,189.69	9,188.30	33.16		-90.00	161.84	389.06	1,343.61	1,310.53	33.08	40.613		
9,700.00	9,185.00	9,189.69	9,188.30	33.25		-90.00	161.84	389.06	1,368.48	1,335.37	33.12	41.324		
9,750.00	9,185.00	9,189.69	9,188.30	33.35		-90.00	161.84	389.06	1,394.70	1,361.55	33.16	42.063		
9,800.00	9,185.00	9,189.69	9,188.30	33.45		-90.00	161.84	389.06	1,422.20	1,389.01	33.19	42.849		
9,850.00	9,185.00	9,189.69	9,188.30	33.56		-90.00	161.84	389.06	1,450.90	1,417.67	33.23	43.662		
9,900.00	9,185.00	9,189.69	9,188.30	33.67		-90.00	161.84	389.06	1,480.73	1,447.46	33.26	44.516		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 104-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	4.89	4.89	0.50	0.50	89.73	6.17	1,324.62	1,324.64					
50.00	50.00	53.74	53.74	0.50	0.51	89.73	6.21	1,324.65	1,324.66	1,323.66	1.01	1,315.027		
100.00	100.00	102.59	102.59	0.52	0.52	89.73	6.32	1,324.72	1,324.73	1,323.70	1.04	1,277.581		
150.00	150.00	156.33	156.33	0.59	0.60	89.72	6.42	1,324.74	1,324.76	1,323.57	1.19	1,116.908		
200.00	200.00	205.30	205.30	0.70	0.70	89.72	6.44	1,324.69	1,324.70	1,323.30	1.41	942.127		
205.57	205.57	210.57	210.57	0.72	0.72	89.72	6.44	1,324.69	1,324.70	1,323.27	1.43	924.188		
250.00	250.00	253.65	253.64	0.84	0.83	89.72	6.50	1,324.72	1,324.73	1,323.06	1.67	793.017		
300.00	300.00	304.96	304.96	0.99	0.98	89.72	6.53	1,324.75	1,324.76	1,322.80	1.97	672.933		
350.00	350.00	358.83	358.83	1.15	1.15	89.72	6.47	1,324.69	1,324.71	1,322.42	2.29	578.157		
400.00	400.00	413.98	413.98	1.31	1.32	89.72	6.49	1,324.42	1,324.47	1,321.84	2.63	503.731		
450.00	450.00	462.89	462.88	1.48	1.48	89.72	6.47	1,324.11	1,324.15	1,321.19	2.96	447.849		
500.00	500.00	512.13	512.13	1.65	1.64	89.73	6.30	1,323.84	1,323.87	1,320.58	3.29	402.368		
550.00	550.00	564.87	564.87	1.82	1.82	89.73	6.13	1,323.50	1,323.55	1,319.91	3.64	363.621		
600.00	600.00	615.35	615.34	1.99	1.99	89.74	6.09	1,323.09	1,323.14	1,319.16	3.99	332.028		
650.00	650.00	662.30	662.29	2.16	2.16	89.73	6.15	1,322.77	1,322.81	1,318.49	4.32	306.162		
700.00	700.00	711.43	711.42	2.34	2.33	89.73	6.28	1,322.54	1,322.57	1,317.91	4.67	283.483		
750.00	750.00	763.20	763.19	2.51	2.51	89.72	6.39	1,322.25	1,322.29	1,317.27	5.02	263.359		
800.00	800.00	814.12	814.11	2.69	2.68	89.72	6.44	1,321.91	1,321.96	1,316.58	5.37	245.966		
850.00	850.00	864.06	864.05	2.87	2.86	89.72	6.42	1,321.57	1,321.62	1,315.89	5.73	230.817		
900.00	900.00	911.32	911.30	3.04	3.02	89.72	6.38	1,321.28	1,321.31	1,315.25	6.07	217.761		
950.00	950.00	957.82	957.81	3.22	3.19	89.72	6.45	1,321.12	1,321.14	1,314.73	6.41	206.192		
1,000.00	1,000.00	1,009.87	1,009.86	3.40	3.37	89.72	6.54	1,320.99	1,321.02	1,314.25	6.77	195.233		
1,050.00	1,050.00	1,063.10	1,063.08	3.58	3.56	89.72	6.41	1,320.73	1,320.77	1,313.64	7.13	185.246		
1,100.00	1,100.00	1,107.58	1,107.57	3.75	3.71	89.73	6.20	1,320.57	1,320.59	1,313.13	7.46	177.009		
1,127.81	1,127.81	1,132.82	1,132.81	3.85	3.80	89.74	6.05	1,320.55	1,320.56	1,312.91	7.65	172.701		
1,150.00	1,150.00	1,153.37	1,153.35	3.93	3.87	89.74	5.91	1,320.56	1,320.58	1,312.78	7.80	169.390		
1,200.00	1,200.00	1,202.41	1,202.40	4.11	4.03	89.76	5.58	1,320.64	1,320.66	1,312.52	8.14	162.221		
1,250.00	1,250.00	1,253.65	1,253.63	4.29	4.21	89.77	5.25	1,320.75	1,320.76	1,312.27	8.49	155.480		
1,300.00	1,300.00	1,311.32	1,311.30	4.46	4.41	89.78	5.00	1,320.65	1,320.67	1,311.80	8.87	148.834		
1,350.00	1,350.00	1,361.63	1,361.61	4.64	4.59	89.79	4.92	1,320.35	1,320.38	1,311.15	9.23	143.094		
1,400.00	1,400.00	1,408.42	1,408.40	4.82	4.75	89.78	5.02	1,320.18	1,320.19	1,310.62	9.57	137.957		
1,450.00	1,450.00	1,458.13	1,458.11	5.00	4.92	89.77	5.20	1,320.07	1,320.08	1,310.16	9.92	133.044		
1,500.00	1,500.00	1,508.92	1,508.90	5.18	5.10	89.77	5.22	1,319.93	1,319.95	1,309.67	10.28	128.418		
1,550.00	1,550.00	1,559.15	1,559.12	5.36	5.28	89.78	5.10	1,319.78	1,319.80	1,309.16	10.63	124.110		
1,600.00	1,600.00	1,609.32	1,609.30	5.53	5.46	89.79	4.92	1,319.62	1,319.64	1,308.65	10.99	120.080		
1,650.00	1,650.00	1,656.90	1,656.88	5.71	5.62	89.79	4.84	1,319.52	1,319.53	1,308.19	11.33	116.428		
1,693.07	1,693.07	1,698.09	1,698.07	5.87	5.77	89.79	4.91	1,319.49	1,319.50	1,307.86	11.63	113.450 CC		
1,700.00	1,700.00	1,704.85	1,704.83	5.89	5.79	89.79	4.93	1,319.49	1,319.50	1,307.82	11.68	112.984		
1,750.00	1,750.00	1,753.76	1,753.74	6.07	5.96	89.78	5.00	1,319.51	1,319.52	1,307.50	12.03	109.731		
1,800.00	1,800.00	1,803.02	1,802.99	6.25	6.13	89.79	4.91	1,319.58	1,319.59	1,307.22	12.37	106.652		
1,850.00	1,850.00	1,854.14	1,854.12	6.43	6.30	89.79	4.94	1,319.64	1,319.64	1,306.92	12.73	103.685		
1,900.00	1,900.00	1,905.47	1,905.45	6.61	6.48	89.77	5.23	1,319.65	1,319.66	1,306.57	13.08	100.864		
1,950.00	1,950.00	1,957.24	1,957.22	6.78	6.66	89.76	5.49	1,319.59	1,319.61	1,306.16	13.44	98.165		
2,000.00	2,000.00	2,006.40	2,006.37	6.96	6.83	89.76	5.62	1,319.50	1,319.51	1,305.72	13.79	95.672		
2,018.86	2,018.86	2,023.88	2,023.86	7.03	6.89	89.75	5.64	1,319.49	1,319.50	1,305.58	13.92	94.792		
2,050.00	2,050.00	2,052.76	2,052.73	7.14	6.99	89.75	5.66	1,319.51	1,319.53	1,305.40	14.13	93.378		
2,100.00	2,100.00	2,101.51	2,101.48	7.32	7.16	89.76	5.64	1,319.65	1,319.66	1,305.19	14.48	91.151		
2,150.00	2,150.00	2,153.68	2,153.65	7.50	7.34	89.75	5.75	1,319.74	1,319.76	1,304.92	14.84	88.958		
2,200.00	2,200.00	2,203.10	2,203.08	7.68	7.51	89.74	6.00	1,319.78	1,319.80	1,304.61	15.19	86.914		
2,250.00	2,250.00	2,250.63	2,250.60	7.86	7.67	89.73	6.32	1,319.90	1,319.92	1,304.39	15.53	85.000		
2,300.00	2,300.00	2,294.92	2,294.90	8.04	7.83	89.71	6.72	1,320.11	1,320.17	1,304.31	15.86	83.238 ES		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 104-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance							
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	Warning
2,350.00	2,350.00	2,337.17	2,337.13	8.22	7.97	89.68	7.43	1,320.56	1,320.70	1,304.51	16.18	81.604	
2,400.00	2,400.00	2,379.65	2,379.60	8.39	8.12	89.63	8.49	1,321.25	1,321.52	1,305.01	16.51	80.050	
2,450.00	2,450.00	2,422.62	2,422.54	8.57	8.27	89.57	9.84	1,322.18	1,322.61	1,305.78	16.83	78.565	
2,500.00	2,500.00	2,466.05	2,465.92	8.75	8.42	89.50	11.46	1,323.35	1,323.97	1,306.81	17.16	77.146	
2,550.00	2,550.00	2,512.15	2,511.95	8.93	8.58	168.18	13.53	1,324.75	1,325.79	1,308.29	17.50	75.777	
2,600.00	2,599.99	2,558.26	2,557.97	9.10	8.74	168.08	15.98	1,326.29	1,328.29	1,310.46	17.83	74.497	
2,650.00	2,649.97	2,605.26	2,604.85	9.28	8.90	167.96	18.90	1,327.97	1,331.45	1,313.28	18.16	73.297	
2,700.00	2,699.94	2,652.42	2,651.85	9.45	9.07	167.82	22.29	1,329.74	1,335.25	1,316.75	18.50	72.174	
2,750.00	2,749.88	2,704.76	2,703.98	9.62	9.25	167.65	26.48	1,331.70	1,339.59	1,320.73	18.86	71.037	
2,800.00	2,799.79	2,757.01	2,756.00	9.79	9.44	167.47	31.05	1,333.54	1,344.36	1,325.15	19.21	69.967	
2,850.00	2,849.66	2,808.53	2,807.29	9.97	9.62	167.30	35.63	1,335.27	1,349.60	1,330.03	19.57	68.964	
2,900.00	2,899.49	2,859.60	2,858.13	10.14	9.80	167.13	40.15	1,336.91	1,355.31	1,335.38	19.92	68.027	
2,950.00	2,949.28	2,909.78	2,908.09	10.32	9.98	166.97	44.56	1,338.49	1,361.51	1,341.24	20.27	67.156	
3,000.00	2,999.01	2,960.88	2,958.98	10.49	10.16	166.82	48.99	1,340.06	1,368.22	1,347.59	20.63	66.327	
3,050.00	3,048.68	3,012.95	3,010.84	10.67	10.35	166.67	53.34	1,341.58	1,375.38	1,354.39	20.99	65.534	
3,100.00	3,098.29	3,062.66	3,060.37	10.84	10.52	166.54	57.33	1,342.97	1,382.99	1,361.65	21.34	64.816	
3,150.00	3,147.82	3,111.16	3,108.71	11.02	10.70	166.43	61.08	1,344.35	1,391.15	1,369.47	21.68	64.161	
3,200.00	3,197.28	3,163.20	3,160.58	11.20	10.88	166.32	65.00	1,345.81	1,399.83	1,377.78	22.04	63.508	
3,250.00	3,246.69	3,216.66	3,213.86	11.37	11.07	166.23	69.14	1,347.16	1,408.70	1,386.29	22.41	62.869	
3,300.00	3,296.09	3,265.74	3,262.77	11.55	11.25	166.14	72.99	1,348.31	1,417.51	1,394.75	22.76	62.293	
3,350.00	3,345.49	3,314.52	3,311.39	11.73	11.43	166.06	76.81	1,349.48	1,426.33	1,403.23	23.10	61.738	
3,400.00	3,394.90	3,365.45	3,362.15	11.91	11.61	165.98	80.77	1,350.67	1,435.14	1,411.68	23.46	61.175	
3,450.00	3,444.30	3,416.43	3,412.98	12.09	11.79	165.90	84.64	1,351.80	1,443.88	1,420.06	23.82	60.624	
3,500.00	3,493.71	3,460.08	3,456.48	12.27	11.95	165.84	88.00	1,352.84	1,452.70	1,428.56	24.14	60.166	
3,550.00	3,543.11	3,504.37	3,500.62	12.45	12.11	165.77	91.50	1,354.03	1,461.69	1,437.22	24.48	59.720	
3,600.00	3,592.51	3,553.24	3,549.31	12.63	12.29	165.69	95.39	1,355.43	1,470.77	1,445.95	24.83	59.244	
3,650.00	3,641.92	3,602.29	3,598.20	12.81	12.47	165.61	99.20	1,356.85	1,479.86	1,454.68	25.18	58.779	
3,700.00	3,691.32	3,645.27	3,641.03	12.99	12.62	165.55	102.43	1,358.19	1,489.05	1,463.55	25.50	58.389	
3,750.00	3,740.72	3,688.22	3,683.84	13.17	12.78	165.50	105.54	1,359.71	1,498.45	1,472.62	25.83	58.018 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 117-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	-83.87	153.35	-1,427.40	1,435.76					
50.00	50.00	30.01	30.01	0.50	0.50	-83.87	153.35	-1,427.40	1,435.61	1,434.61	1.00	1,430.245		
100.00	100.00	81.04	81.04	0.52	0.51	-83.87	153.33	-1,427.36	1,435.57	1,434.54	1.03	1,393.260		
150.00	150.00	131.20	131.20	0.59	0.54	-83.87	153.30	-1,427.29	1,435.50	1,434.37	1.13	1,266.416		
196.68	196.68	176.08	176.08	0.69	0.62	-83.87	153.30	-1,427.26	1,435.47	1,434.16	1.31	1,091.735		
200.00	200.00	179.27	179.27	0.70	0.63	-83.87	153.30	-1,427.26	1,435.47	1,434.14	1.33	1,079.479		
250.00	250.00	227.34	227.34	0.84	0.74	-83.87	153.35	-1,427.29	1,435.51	1,433.93	1.58	909.483		
300.00	300.00	275.44	275.44	0.99	0.87	-83.86	153.46	-1,427.38	1,435.61	1,433.76	1.86	772.410		
350.00	350.00	323.72	323.72	1.15	1.01	-83.86	153.58	-1,427.53	1,435.78	1,433.62	2.16	664.961		
400.00	400.00	372.92	372.92	1.31	1.17	-83.86	153.69	-1,427.74	1,436.01	1,433.53	2.48	580.129		
450.00	450.00	425.66	425.66	1.48	1.34	-83.85	153.75	-1,427.93	1,436.19	1,433.37	2.81	510.664		
500.00	500.00	475.35	475.35	1.65	1.50	-83.86	153.74	-1,428.03	1,436.29	1,433.15	3.15	456.552		
550.00	550.00	521.48	521.48	1.82	1.65	-83.86	153.76	-1,428.23	1,436.50	1,433.03	3.47	413.706		
600.00	600.00	569.04	569.04	1.99	1.82	-83.85	153.83	-1,428.54	1,436.83	1,433.03	3.81	377.451		
650.00	650.00	618.20	618.20	2.16	1.98	-83.85	153.98	-1,428.89	1,437.21	1,433.06	4.15	346.374		
700.00	700.00	666.74	666.74	2.34	2.15	-83.84	154.16	-1,429.27	1,437.62	1,433.13	4.49	320.059		
750.00	750.00	714.90	714.89	2.51	2.32	-83.84	154.27	-1,429.72	1,438.09	1,433.26	4.83	297.477		
800.00	800.00	765.51	765.49	2.69	2.50	-83.84	154.33	-1,430.23	1,438.60	1,433.41	5.19	277.368		
850.00	850.00	817.13	817.11	2.87	2.68	-83.84	154.47	-1,430.68	1,439.05	1,433.51	5.54	259.595		
900.00	900.00	868.75	868.73	3.04	2.86	-83.83	154.70	-1,431.07	1,439.45	1,433.55	5.90	243.931		
950.00	950.00	920.76	920.74	3.22	3.04	-83.82	154.97	-1,431.40	1,439.79	1,433.53	6.26	229.965		
1,000.00	1,000.00	973.01	972.99	3.40	3.23	-83.81	155.15	-1,431.66	1,440.05	1,433.43	6.62	217.467		
1,050.00	1,050.00	1,027.22	1,027.20	3.58	3.41	-83.81	155.32	-1,431.80	1,440.20	1,433.21	6.99	206.091		
1,100.00	1,100.00	1,080.34	1,080.32	3.75	3.60	-83.80	155.49	-1,431.79	1,440.21	1,432.86	7.35	195.950		
1,150.00	1,150.00	1,131.51	1,131.50	3.93	3.77	-83.80	155.65	-1,431.72	1,440.16	1,432.46	7.70	186.956		
1,200.00	1,200.00	1,182.00	1,181.98	4.11	3.95	-83.79	155.78	-1,431.62	1,440.07	1,432.02	8.05	178.822		
1,250.00	1,250.00	1,231.94	1,231.92	4.29	4.12	-83.79	155.84	-1,431.52	1,439.98	1,431.58	8.40	171.420		
1,300.00	1,300.00	1,281.77	1,281.75	4.46	4.29	-83.79	155.87	-1,431.44	1,439.90	1,431.15	8.75	164.587		
1,350.00	1,350.00	1,331.56	1,331.54	4.64	4.46	-83.78	156.04	-1,431.34	1,439.82	1,430.72	9.10	158.269		
1,400.00	1,400.00	1,384.02	1,384.00	4.82	4.64	-83.77	156.21	-1,431.20	1,439.71	1,430.25	9.46	152.263		
1,450.00	1,450.00	1,436.82	1,436.80	5.00	4.82	-83.77	156.17	-1,430.99	1,439.50	1,429.69	9.81	146.667		
1,500.00	1,500.00	1,482.01	1,481.98	5.18	4.97	-83.78	156.05	-1,430.86	1,439.34	1,429.20	10.15	141.851		
1,531.86	1,531.86	1,511.28	1,511.26	5.29	5.07	-83.78	155.96	-1,430.84	1,439.31	1,428.95	10.36	138.927		
1,550.00	1,550.00	1,528.59	1,528.57	5.36	5.13	-83.78	155.90	-1,430.85	1,439.32	1,428.84	10.48	137.288		
1,600.00	1,600.00	1,580.48	1,580.46	5.53	5.31	-83.79	155.78	-1,430.86	1,439.32	1,428.48	10.84	132.780		
1,650.00	1,650.00	1,631.92	1,631.90	5.71	5.48	-83.79	155.72	-1,430.80	1,439.25	1,428.06	11.19	128.565		
1,700.00	1,700.00	1,682.38	1,682.36	5.89	5.66	-83.79	155.75	-1,430.70	1,439.16	1,427.61	11.55	124.631		
1,750.00	1,750.00	1,733.72	1,733.70	6.07	5.83	-83.78	155.86	-1,430.57	1,439.04	1,427.13	11.90	120.893		
1,800.00	1,800.00	1,786.13	1,786.11	6.25	6.02	-83.78	155.89	-1,430.36	1,438.85	1,426.58	12.26	117.327		
1,850.00	1,850.00	1,833.81	1,833.79	6.43	6.18	-83.78	155.87	-1,430.15	1,438.63	1,426.02	12.61	114.104		
1,896.00	1,896.00	1,875.43	1,875.40	6.59	6.33	-83.78	155.87	-1,430.09	1,438.56	1,425.64	12.92	111.367		
1,900.00	1,900.00	1,879.04	1,879.02	6.61	6.34	-83.78	155.87	-1,430.09	1,438.56	1,425.61	12.94	111.136		
1,950.00	1,950.00	1,929.05	1,929.02	6.78	6.51	-83.78	155.91	-1,430.13	1,438.60	1,425.31	13.30	108.187		
2,000.00	2,000.00	1,982.49	1,982.47	6.96	6.70	-83.77	156.00	-1,430.07	1,438.56	1,424.89	13.66	105.288		
2,050.00	2,050.00	2,030.26	2,030.23	7.14	6.87	-83.77	156.12	-1,429.98	1,438.47	1,424.46	14.01	102.680		
2,062.03	2,062.03	2,041.45	2,041.43	7.19	6.91	-83.77	156.16	-1,429.97	1,438.47	1,424.38	14.09	102.080		
2,100.00	2,100.00	2,076.79	2,076.77	7.32	7.03	-83.76	156.30	-1,429.98	1,438.50	1,424.15	14.35	100.235		
2,150.00	2,150.00	2,124.55	2,124.53	7.50	7.20	-83.76	156.49	-1,430.09	1,438.64	1,423.94	14.70	97.883		
2,200.00	2,200.00	2,172.62	2,172.59	7.68	7.37	-83.75	156.53	-1,430.29	1,438.84	1,423.80	15.04	95.638		
2,250.00	2,250.00	2,226.63	2,226.60	7.86	7.55	-83.76	156.46	-1,430.49	1,439.02	1,423.61	15.41	93.379		
2,300.00	2,300.00	2,281.72	2,281.70	8.04	7.74	-83.76	156.38	-1,430.51	1,439.03	1,423.25	15.78	91.195		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design													Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1		Offset Site Error: 5.00 ft	
Survey Program: 117-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)			
2,350.00	2,350.00	2,331.57	2,331.54	8.22	7.92	-83.76	156.34	-1,430.45	1,438.97	1,422.84	16.13	89.207				
2,400.00	2,400.00	2,379.82	2,379.79	8.39	8.08	-83.76	156.33	-1,430.38	1,438.90	1,422.42	16.48	87.330				
2,402.60	2,402.60	2,382.03	2,382.00	8.40	8.09	-83.76	156.33	-1,430.38	1,438.90	1,422.40	16.49	87.240				
2,450.00	2,450.00	2,422.26	2,422.23	8.57	8.23	-83.76	156.45	-1,430.47	1,439.01	1,422.21	16.80	85.638				
2,500.00	2,500.00	2,464.85	2,464.82	8.75	8.38	-83.75	156.73	-1,430.76	1,439.39	1,422.26	17.13	84.024				
2,550.00	2,550.00	2,509.75	2,509.72	8.93	8.54	-4.96	157.17	-1,431.25	1,439.72	1,422.25	17.46	82.442				
2,600.00	2,599.99	2,554.65	2,554.61	9.10	8.70	-4.95	157.72	-1,431.89	1,439.67	1,421.88	17.80	80.901				
2,650.00	2,649.97	2,595.40	2,595.35	9.28	8.84	-4.93	158.33	-1,432.66	1,439.34	1,421.23	18.11	79.481				
2,700.00	2,699.94	2,636.02	2,635.95	9.45	8.98	-4.91	159.06	-1,433.67	1,438.78	1,420.36	18.42	78.103				
2,750.00	2,749.88	2,681.57	2,681.47	9.62	9.14	-4.89	159.99	-1,435.05	1,437.95	1,419.19	18.75	76.679				
2,800.00	2,799.79	2,729.70	2,729.56	9.79	9.31	-4.87	160.95	-1,436.59	1,436.65	1,417.56	19.09	75.241				
2,850.00	2,849.66	2,782.56	2,782.38	9.97	9.50	-4.85	161.99	-1,438.28	1,434.82	1,415.37	19.45	73.754				
2,900.00	2,899.49	2,837.38	2,837.18	10.14	9.69	-4.83	163.05	-1,439.86	1,432.29	1,412.47	19.82	72.257				
2,950.00	2,949.28	2,887.97	2,887.74	10.32	9.87	-4.82	164.03	-1,441.22	1,429.12	1,408.94	20.17	70.839				
3,000.00	2,999.01	2,938.47	2,938.20	10.49	10.05	-4.81	165.05	-1,442.55	1,425.38	1,404.85	20.53	69.443				
3,050.00	3,048.68	2,978.28	2,977.99	10.67	10.19	-4.79	165.98	-1,443.74	1,421.28	1,400.45	20.84	68.211				
3,100.00	3,098.29	3,019.14	3,018.81	10.84	10.34	-4.78	167.14	-1,445.18	1,416.96	1,395.81	21.15	66.993				
3,150.00	3,147.82	3,065.41	3,065.02	11.02	10.50	-4.75	168.62	-1,447.03	1,412.33	1,390.84	21.49	65.730				
3,200.00	3,197.28	3,112.93	3,112.47	11.20	10.67	-4.73	170.18	-1,448.99	1,407.24	1,385.41	21.83	64.470				
3,250.00	3,246.69	3,159.42	3,158.89	11.37	10.84	-4.70	171.71	-1,451.00	1,401.89	1,379.73	22.16	63.249				
3,300.00	3,296.09	3,205.71	3,205.11	11.55	11.00	-4.67	173.12	-1,453.13	1,396.66	1,374.16	22.50	62.071				
3,350.00	3,345.49	3,253.64	3,252.98	11.73	11.17	-4.65	174.45	-1,455.44	1,391.52	1,368.68	22.84	60.913				
3,400.00	3,394.90	3,301.97	3,301.22	11.91	11.34	-4.64	175.69	-1,457.84	1,386.44	1,363.25	23.19	59.787				
3,450.00	3,444.30	3,352.67	3,351.84	12.09	11.53	-4.63	176.95	-1,460.37	1,381.36	1,357.82	23.55	58.669				
3,500.00	3,493.71	3,403.76	3,402.85	12.27	11.71	-4.61	178.34	-1,462.86	1,376.25	1,352.34	23.90	57.578				
3,550.00	3,543.11	3,446.68	3,445.70	12.45	11.86	-4.59	179.58	-1,465.03	1,371.23	1,347.00	24.23	56.599				
3,600.00	3,592.51	3,489.77	3,488.70	12.63	12.02	-4.57	180.89	-1,467.41	1,366.45	1,341.90	24.55	55.656				
3,650.00	3,641.92	3,542.40	3,541.22	12.81	12.20	-4.54	182.48	-1,470.43	1,361.78	1,336.86	24.92	54.652				
3,700.00	3,691.32	3,597.36	3,596.08	12.99	12.40	-4.52	184.01	-1,473.40	1,356.93	1,331.64	25.29	53.651				
3,750.00	3,740.72	3,655.91	3,654.54	13.17	12.61	-4.50	185.50	-1,476.28	1,351.83	1,326.14	25.68	52.638				
3,800.00	3,790.13	3,708.34	3,708.90	13.35	12.80	-4.49	186.78	-1,478.58	1,346.45	1,320.40	26.05	51.695				
3,850.00	3,839.53	3,754.79	3,753.28	13.53	12.97	-4.47	188.12	-1,480.65	1,341.14	1,314.75	26.39	50.825				
3,900.00	3,888.93	3,799.18	3,797.61	13.72	13.13	-4.44	189.61	-1,482.73	1,335.97	1,309.25	26.72	49.997				
3,950.00	3,938.34	3,841.55	3,839.88	13.90	13.28	-4.40	191.20	-1,484.92	1,331.06	1,304.01	27.05	49.213				
4,000.00	3,987.74	3,886.50	3,884.73	14.08	13.44	-4.36	193.03	-1,487.46	1,326.41	1,299.03	27.38	48.440				
4,050.00	4,037.14	3,938.81	3,936.92	14.27	13.63	-4.31	195.02	-1,490.44	1,321.77	1,294.02	27.75	47.633				
4,100.00	4,086.55	3,989.87	3,987.86	14.45	13.81	-4.28	196.71	-1,493.30	1,317.05	1,288.94	28.11	46.852				
4,150.00	4,135.95	4,039.47	4,037.37	14.63	13.99	-4.26	198.19	-1,496.08	1,312.31	1,283.85	28.47	46.100				
4,200.00	4,185.36	4,085.65	4,083.45	14.82	14.16	-4.24	199.49	-1,498.72	1,307.62	1,278.82	28.81	45.391				
4,250.00	4,234.76	4,129.23	4,126.93	15.00	14.32	-4.21	200.86	-1,501.39	1,303.15	1,274.01	29.14	44.721				
4,300.00	4,284.16	4,175.64	4,173.21	15.18	14.48	-4.18	202.50	-1,504.41	1,298.89	1,269.41	29.48	44.056				
4,350.00	4,333.57	4,226.11	4,223.55	15.37	14.67	-4.14	204.37	-1,507.70	1,294.66	1,264.81	29.84	43.382				
4,400.00	4,382.97	4,282.01	4,279.29	15.55	14.87	-4.10	206.45	-1,511.24	1,290.34	1,260.11	30.23	42.689				
4,450.00	4,432.37	4,342.36	4,339.51	15.74	15.09	-4.06	208.45	-1,514.66	1,285.65	1,255.02	30.63	41.977				
4,500.00	4,481.78	4,388.59	4,385.65	15.92	15.26	-4.03	209.94	-1,517.15	1,280.82	1,249.85	30.97	41.355				
4,550.00	4,531.18	4,434.70	4,431.66	16.11	15.42	-3.99	211.52	-1,519.76	1,276.14	1,244.83	31.32	40.752				
4,600.00	4,580.58	4,485.70	4,482.54	16.29	15.61	-3.95	213.34	-1,522.68	1,271.51	1,239.83	31.68	40.138				
4,650.00	4,629.99	4,536.94	4,533.67	16.48	15.79	-3.91	215.17	-1,525.56	1,266.83	1,234.78	32.04	39.535				
4,700.00	4,679.39	4,581.57	4,578.20	16.66	15.96	-3.88	216.79	-1,528.15	1,262.23	1,229.85	32.38	38.980				
4,750.00	4,728.80	4,627.03	4,623.53	16.85	16.12	-3.84	218.48	-1,530.94	1,257.80	1,225.08	32.72	38.438				
4,800.00	4,778.20	4,674.85	4,671.23	17.03	16.30	-3.80	220.30	-1,533.98	1,253.50	1,220.43	33.07	37.899				

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 117-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)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,850.00	4,827.60	4,723.34	4,719.57	17.22	16.47	-3.75	222.20	-1,537.14	1,249.28	1,215.85	33.43	37.371		
4,900.00	4,877.01	4,779.54	4,775.62	17.40	16.68	-3.70	224.35	-1,540.68	1,244.95	1,211.13	33.82	36.816		
4,950.00	4,926.41	4,836.31	4,832.26	17.59	16.88	-3.65	226.42	-1,543.97	1,240.35	1,206.15	34.20	36.264		
5,000.00	4,975.81	4,893.91	4,889.75	17.78	17.09	-3.60	228.38	-1,546.97	1,235.45	1,200.86	34.59	35.714		
5,050.00	5,025.22	4,949.85	4,945.59	17.96	17.30	-3.56	230.14	-1,549.57	1,230.27	1,195.29	34.98	35.175		
5,100.00	5,074.62	5,005.26	5,000.94	18.15	17.50	-3.53	231.73	-1,551.91	1,224.85	1,189.49	35.36	34.644		
5,150.00	5,124.02	5,056.26	5,051.88	18.34	17.68	-3.50	233.08	-1,553.93	1,219.29	1,183.57	35.72	34.135		
5,200.00	5,173.43	5,107.63	5,103.19	18.52	17.87	-3.48	234.35	-1,555.92	1,213.67	1,177.58	36.08	33.634		
5,250.00	5,222.83	5,159.19	5,154.71	18.71	18.05	-3.46	235.44	-1,557.86	1,207.97	1,171.52	36.45	33.140		
5,300.00	5,272.23	5,211.76	5,207.23	18.90	18.24	-3.46	236.34	-1,559.77	1,202.18	1,165.37	36.82	32.651		
5,350.00	5,321.64	5,265.70	5,261.13	19.08	18.44	-3.45	237.11	-1,561.58	1,196.24	1,159.05	37.19	32.164		
5,400.00	5,371.04	5,317.23	5,312.64	19.27	18.62	-3.46	237.72	-1,563.17	1,190.15	1,152.59	37.56	31.690		
5,450.00	5,420.45	5,367.65	5,363.03	19.46	18.80	-3.47	238.25	-1,564.70	1,184.02	1,146.10	37.92	31.226		
5,500.00	5,469.85	5,417.22	5,412.58	19.65	18.98	-3.48	238.69	-1,566.19	1,177.87	1,139.60	38.28	30.773		
5,550.00	5,519.25	5,466.61	5,461.94	19.83	19.16	-3.49	239.04	-1,567.70	1,171.73	1,133.10	38.63	30.329		
5,600.00	5,568.66	5,519.59	5,514.90	20.02	19.34	-3.51	239.40	-1,569.26	1,165.54	1,126.53	39.00	29.883		
5,650.00	5,618.06	5,572.89	5,568.18	20.21	19.54	-3.52	239.81	-1,570.64	1,159.18	1,119.81	39.37	29.441		
5,700.00	5,667.46	5,621.73	5,617.00	20.40	19.71	-3.54	240.18	-1,571.87	1,152.77	1,113.04	39.73	29.016		
5,750.00	5,716.87	5,672.03	5,667.29	20.58	19.89	-3.55	240.52	-1,573.14	1,146.37	1,106.28	40.09	28.595		
5,800.00	5,766.27	5,725.03	5,720.27	20.77	20.08	-3.57	240.85	-1,574.36	1,139.86	1,099.40	40.46	28.173		
5,850.00	5,815.67	5,777.55	5,772.78	20.96	20.27	-3.59	241.18	-1,575.42	1,133.21	1,092.38	40.83	27.758		
5,900.00	5,865.08	5,829.49	5,824.71	21.15	20.45	-3.60	241.53	-1,576.35	1,126.45	1,085.26	41.19	27.347		
5,950.00	5,914.48	5,882.06	5,877.27	21.34	20.64	-3.61	241.90	-1,577.17	1,119.57	1,078.01	41.56	26.941		
6,000.00	5,963.89	5,934.94	5,930.14	21.52	20.83	-3.63	242.30	-1,577.83	1,112.54	1,070.62	41.92	26.538		
6,050.00	6,013.29	5,987.25	5,982.46	21.71	21.02	-3.63	242.71	-1,578.32	1,105.37	1,063.08	42.29	26.139		
6,100.00	6,062.69	6,038.95	6,034.15	21.90	21.20	-3.64	243.15	-1,578.69	1,098.10	1,055.44	42.65	25.746		
6,150.00	6,112.10	6,087.51	6,082.71	22.09	21.37	-3.65	243.57	-1,579.00	1,090.78	1,047.77	43.01	25.362		
6,200.00	6,161.50	6,135.75	6,130.95	22.28	21.54	-3.65	244.01	-1,579.36	1,083.52	1,040.16	43.36	24.986		
6,250.00	6,210.90	6,186.38	6,181.57	22.47	21.72	-3.65	244.49	-1,579.74	1,076.27	1,032.54	43.73	24.614		
6,300.00	6,260.31	6,237.10	6,232.28	22.65	21.90	-3.65	245.02	-1,580.06	1,068.96	1,024.87	44.09	24.247		
6,350.00	6,309.71	6,284.87	6,280.06	22.84	22.08	-3.66	245.50	-1,580.37	1,061.66	1,017.22	44.44	23.889		
6,400.00	6,359.11	6,333.22	6,328.40	23.03	22.25	-3.66	245.94	-1,580.76	1,054.43	1,009.63	44.80	23.537		
6,450.00	6,408.52	6,383.24	6,378.41	23.22	22.43	-3.67	246.39	-1,581.17	1,047.21	1,002.05	45.16	23.189		
6,500.00	6,457.92	6,433.25	6,428.42	23.41	22.60	-3.67	246.87	-1,581.55	1,039.96	994.44	45.52	22.846		
6,550.00	6,507.32	6,483.25	6,478.42	23.60	22.78	-3.67	247.37	-1,581.91	1,032.69	986.81	45.88	22.508		
6,600.00	6,556.73	6,533.57	6,528.74	23.79	22.96	-3.67	247.89	-1,582.23	1,025.38	979.14	46.24	22.175		
6,650.00	6,606.13	6,584.39	6,579.55	23.98	23.14	-3.68	248.40	-1,582.50	1,018.02	971.42	46.60	21.845		
6,700.00	6,655.54	6,635.70	6,630.86	24.16	23.32	-3.68	248.88	-1,582.69	1,010.59	963.63	46.96	21.519		
6,750.00	6,704.94	6,687.46	6,682.62	24.35	23.51	-3.69	249.25	-1,582.80	1,003.05	955.72	47.32	21.195		
6,800.00	6,754.34	6,736.20	6,731.36	24.54	23.68	-3.70	249.52	-1,582.84	995.44	947.76	47.68	20.877		
6,850.00	6,803.75	6,783.68	6,778.84	24.73	23.85	-3.72	249.77	-1,582.97	987.93	939.89	48.04	20.566		
6,900.00	6,853.15	6,832.09	6,827.24	24.92	24.02	-3.73	250.05	-1,583.17	980.49	932.10	48.39	20.260		
6,950.00	6,902.55	6,880.86	6,876.01	25.11	24.19	-3.74	250.36	-1,583.42	973.09	924.34	48.75	19.960		
7,000.00	6,951.96	6,930.15	6,925.30	25.30	24.37	-3.75	250.74	-1,583.68	965.72	916.61	49.11	19.663		
7,050.00	7,001.36	6,979.58	6,974.73	25.49	24.54	-3.75	251.22	-1,583.93	958.34	908.87	49.47	19.372		
7,100.00	7,050.76	7,028.17	7,023.31	25.68	24.72	-3.75	251.75	-1,584.19	950.99	901.16	49.83	19.085		
7,150.00	7,100.17	7,076.67	7,071.81	25.87	24.89	-3.76	252.25	-1,584.50	943.69	893.50	50.19	18.803		
7,200.00	7,149.57	7,126.09	7,121.23	26.06	25.07	-3.76	252.72	-1,584.85	936.42	885.87	50.55	18.525		
7,250.00	7,198.98	7,175.56	7,170.70	26.25	25.24	-3.77	253.12	-1,585.21	929.14	878.23	50.91	18.251		
7,300.00	7,248.38	7,224.09	7,219.22	26.44	25.42	-3.78	253.49	-1,585.59	921.89	870.62	51.27	17.982		
7,350.00	7,297.78	7,272.90	7,268.02	26.62	25.59	-3.79	253.87	-1,586.02	914.69	863.06	51.63	17.717		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 117-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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,400.00	7,347.19	7,323.44	7,318.56	26.81	25.77	-3.80	254.28	-1,586.45	907.47	855.49	51.99	17.455		
7,450.00	7,396.59	7,373.50	7,368.62	27.00	25.95	-3.81	254.67	-1,586.82	900.20	847.85	52.35	17.196		
7,500.00	7,445.99	7,422.21	7,417.33	27.19	26.12	-3.82	255.06	-1,587.19	892.95	840.24	52.71	16.941		
7,550.00	7,495.40	7,471.35	7,466.47	27.38	26.30	-3.83	255.48	-1,587.60	885.73	832.66	53.07	16.690		
7,600.00	7,544.80	7,521.44	7,516.55	27.57	26.48	-3.85	255.81	-1,588.01	878.49	825.06	53.43	16.442		
7,650.00	7,594.20	7,571.36	7,566.47	27.76	26.66	-3.87	256.01	-1,588.41	871.22	817.43	53.79	16.196		
7,700.00	7,643.61	7,621.09	7,616.20	27.95	26.83	-3.90	256.23	-1,588.78	863.94	809.79	54.15	15.954		
7,750.00	7,693.01	7,670.93	7,666.04	28.14	27.01	-3.92	256.47	-1,589.14	856.64	802.13	54.51	15.714		
7,800.00	7,742.43	7,720.88	7,715.99	28.33	27.19	-3.94	256.65	-1,589.48	849.43	794.56	54.87	15.480		
7,850.00	7,791.94	7,770.02	7,765.12	28.52	27.36	-3.96	256.78	-1,589.81	842.82	787.59	55.23	15.260		
7,900.00	7,841.54	7,818.82	7,813.92	28.71	27.54	-3.98	256.83	-1,590.19	836.90	781.31	55.59	15.055		
7,950.00	7,891.22	7,866.82	7,861.92	28.89	27.71	-4.01	256.81	-1,590.64	831.70	775.75	55.95	14.866		
8,000.00	7,940.97	7,914.60	7,909.70	29.08	27.88	-4.04	256.74	-1,591.21	827.27	770.97	56.30	14.693		
8,050.00	7,990.77	7,963.97	7,959.06	29.26	28.05	-4.07	256.64	-1,591.89	823.57	766.92	56.66	14.536		
8,100.00	8,040.63	8,013.80	8,008.89	29.44	28.23	-4.10	256.56	-1,592.58	820.54	763.52	57.01	14.392		
8,150.00	8,090.54	8,061.93	8,057.01	29.62	28.40	-4.12	256.47	-1,593.30	818.20	760.84	57.37	14.263		
8,200.00	8,140.48	8,109.89	8,104.96	29.79	28.57	-4.15	256.35	-1,594.14	816.65	758.93	57.72	14.148		
8,250.00	8,190.45	8,160.53	8,155.59	29.97	28.74	-4.17	256.19	-1,595.07	815.79	757.71	58.07	14.048		
8,296.23	8,236.66	8,207.52	8,202.58	30.13	28.91	-4.20	256.03	-1,595.90	815.53	757.13	58.40	13.964		
8,300.00	8,240.44	8,211.36	8,206.41	30.15	28.92	-4.20	256.02	-1,595.96	815.53	757.11	58.43	13.958		
8,350.00	8,290.43	8,260.19	8,255.23	30.32	29.10	-4.22	255.80	-1,596.84	815.95	757.17	58.78	13.882		
8,400.00	8,340.43	8,309.44	8,304.47	30.49	29.27	-83.02	255.51	-1,597.79	816.86	757.74	59.12	13.816		
8,450.00	8,390.43	8,360.26	8,355.28	30.66	29.45	-83.05	255.21	-1,598.77	817.77	758.30	59.47	13.751		
8,500.00	8,440.43	8,427.82	8,422.82	30.83	29.68	-83.14	254.02	-1,599.72	818.45	758.63	59.82	13.681		
8,550.00	8,490.43	8,526.45	8,520.28	31.00	30.00	-84.11	239.90	-1,598.04	818.77	756.70	60.07	13.596		
8,600.00	8,540.43	8,602.57	8,592.40	31.17	30.23	-85.76	216.06	-1,594.36	812.68	752.37	60.31	13.476		
8,650.00	8,590.43	8,649.65	8,634.81	31.34	30.35	-87.19	195.82	-1,591.95	808.41	747.74	60.67	13.324		
8,700.00	8,640.42	8,689.40	8,689.00	31.51	30.46	91.96	175.65	-1,590.19	804.82	743.75	61.07	13.178		
8,750.00	8,690.19	8,721.45	8,695.33	31.67	30.53	91.07	157.40	-1,589.25	802.59	741.13	61.46	13.059		
8,800.00	8,739.36	8,752.79	8,719.88	31.83	30.60	90.09	137.93	-1,588.85	801.82	740.01	61.81	12.973		
8,801.91	8,741.22	8,753.98	8,720.78	31.83	30.60	90.05	137.16	-1,588.85	801.82	740.00	61.82	12.970 CC		
8,850.00	8,787.57	8,786.78	8,745.05	31.97	30.67	88.94	115.10	-1,588.97	802.43	740.31	62.11	12.919		
8,900.00	8,834.43	8,825.27	8,771.74	32.12	30.77	87.59	87.39	-1,589.36	803.98	741.59	62.39	12.887		
8,950.00	8,879.61	8,862.81	8,795.82	32.25	30.87	86.24	58.61	-1,589.93	806.31	743.69	62.62	12.876		
9,000.00	8,922.75	8,895.58	8,815.06	32.37	30.96	85.00	32.09	-1,590.65	809.46	746.66	62.80	12.890		
9,050.00	8,963.52	8,927.25	8,831.82	32.48	31.04	83.74	5.24	-1,591.65	813.48	750.55	62.93	12.927		
9,100.00	9,001.62	8,960.00	8,847.16	32.59	31.13	82.43	-23.65	-1,592.98	818.30	755.27	63.03	12.982		
9,150.00	9,036.75	8,991.45	8,859.96	32.67	31.22	81.15	-52.33	-1,594.48	823.74	760.64	63.10	13.055		
9,200.00	9,068.66	9,024.16	8,871.25	32.75	31.31	79.84	-82.98	-1,596.18	829.63	766.48	63.15	13.138		
9,250.00	9,097.08	9,058.06	8,880.73	32.81	31.40	78.52	-115.46	-1,598.06	835.87	772.69	63.19	13.228		
9,300.00	9,121.82	9,112.82	8,890.53	32.86	31.55	76.77	-169.27	-1,599.90	841.65	778.35	63.31	13.295		
9,350.00	9,142.67	9,171.10	8,897.11	32.90	31.72	75.13	-227.17	-1,600.20	846.21	782.77	63.43	13.340		
9,400.00	9,159.49	9,225.26	8,901.84	32.93	31.89	73.93	-281.12	-1,599.48	849.34	785.77	63.57	13.361		
9,450.00	9,172.14	9,276.03	8,906.09	32.95	32.07	73.17	-331.70	-1,598.59	851.25	787.51	63.74	13.355		
9,500.00	9,180.53	9,322.59	8,909.79	32.96	32.24	72.82	-378.11	-1,597.72	851.96	788.00	63.95	13.322		
9,550.00	9,184.59	9,366.93	8,912.48	33.01	32.42	72.78	-422.35	-1,596.91	851.69	787.49	64.20	13.266		
9,600.00	9,185.00	9,411.93	8,914.31	33.08	32.60	72.90	-467.32	-1,596.11	850.67	786.17	64.49	13.190		
9,650.00	9,185.00	9,457.54	8,915.25	33.16	32.80	72.95	-512.90	-1,595.28	849.79	784.99	64.80	13.114		
9,700.00	9,185.00	9,505.20	8,915.36	33.25	33.02	72.94	-560.55	-1,594.36	849.14	784.02	65.11	13.041		
9,750.00	9,185.00	9,555.02	8,915.17	33.35	33.26	72.92	-610.36	-1,593.36	848.53	783.07	65.46	12.963		
9,800.00	9,185.00	9,605.87	8,914.83	33.45	33.53	72.88	-661.21	-1,592.28	847.92	782.10	65.82	12.882		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 117-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,850.00	9,185.00	9,657.42	8,914.47	33.56	33.81	72.84	-712.73	-1,591.09	847.22	781.01	66.21	12.796		
9,900.00	9,185.00	9,704.40	8,914.13	33.67	34.08	72.80	-759.70	-1,590.02	846.53	779.94	66.60	12.711		
9,950.00	9,185.00	9,750.07	8,913.77	33.80	34.35	72.77	-805.37	-1,589.20	846.10	779.10	67.00	12.629		
10,000.00	9,185.00	9,796.23	8,913.35	33.92	34.64	72.74	-851.51	-1,588.60	845.91	778.49	67.42	12.547		
10,018.93	9,185.00	9,813.77	8,913.19	33.97	34.75	72.72	-869.06	-1,588.42	845.89	778.31	67.58	12.516		
10,050.00	9,185.00	9,842.57	8,912.90	34.06	34.93	72.70	-897.85	-1,588.19	845.93	778.08	67.86	12.466		
10,100.00	9,185.00	9,885.63	8,912.39	34.20	35.22	72.67	-940.91	-1,588.03	846.24	777.95	68.29	12.391		
10,150.00	9,185.00	9,927.04	8,911.62	34.35	35.50	72.63	-982.31	-1,588.22	847.04	778.30	68.74	12.323		
10,200.00	9,185.00	9,970.03	8,910.55	34.50	35.80	72.58	-1,025.28	-1,588.78	848.32	779.13	69.20	12.260		
10,250.00	9,185.00	10,015.43	8,909.40	34.66	36.13	72.53	-1,070.66	-1,589.65	849.92	780.23	69.69	12.196		
10,300.00	9,185.00	10,061.76	8,908.25	34.82	36.47	72.49	-1,116.97	-1,590.81	851.78	781.59	70.19	12.135		
10,350.00	9,185.00	10,110.03	8,907.04	34.99	36.84	72.44	-1,165.20	-1,592.14	853.78	783.05	70.73	12.070		
10,400.00	9,185.00	10,160.79	8,905.74	35.17	37.23	72.39	-1,215.92	-1,593.62	855.85	784.56	71.29	12.004		
10,450.00	9,185.00	10,215.67	8,904.60	35.35	37.67	72.36	-1,270.77	-1,595.05	857.71	785.80	71.90	11.929		
10,500.00	9,185.00	10,277.62	8,903.70	35.53	38.18	72.33	-1,332.70	-1,596.22	859.14	786.57	72.57	11.839		
10,550.00	9,185.00	10,343.15	8,903.13	35.73	38.73	72.31	-1,398.23	-1,596.40	859.71	786.44	73.27	11.734		
10,600.00	9,185.00	10,401.75	8,903.17	35.93	39.24	72.31	-1,456.83	-1,595.93	859.62	785.66	73.95	11.624		
10,650.00	9,185.00	10,452.76	8,903.58	36.13	39.70	72.33	-1,507.83	-1,595.20	859.12	784.50	74.61	11.514		
10,700.00	9,185.00	10,499.22	8,903.98	36.34	40.12	72.35	-1,554.29	-1,594.70	858.77	783.52	75.25	11.412		
10,750.00	9,185.00	10,554.37	8,904.55	36.56	40.63	72.38	-1,609.43	-1,594.18	858.48	782.51	75.97	11.300		
10,800.00	9,185.00	10,615.46	8,905.55	36.77	41.20	72.43	-1,670.50	-1,593.04	857.64	780.91	76.73	11.178		
10,850.00	9,185.00	10,687.01	8,907.16	37.00	41.90	72.49	-1,741.98	-1,590.38	855.83	778.26	77.56	11.034		
10,900.00	9,185.00	10,738.83	8,908.54	37.23	42.42	72.53	-1,793.72	-1,587.66	853.22	774.92	78.30	10.897		
10,950.00	9,185.00	10,786.30	8,909.89	37.46	42.89	72.57	-1,841.10	-1,585.32	850.74	771.72	79.03	10.765		
11,000.00	9,185.00	10,836.76	8,911.52	37.70	43.41	72.64	-1,891.48	-1,582.96	848.33	768.54	79.79	10.633		
11,050.00	9,185.00	10,887.60	8,913.51	37.95	43.93	72.72	-1,942.23	-1,580.64	845.87	765.31	80.56	10.500		
11,100.00	9,185.00	10,933.92	8,915.09	38.19	44.42	72.79	-1,988.47	-1,578.54	843.49	762.17	81.32	10.373		
11,150.00	9,185.00	10,980.56	8,916.07	38.45	44.91	72.82	-2,035.06	-1,576.42	841.32	759.24	82.08	10.250		
11,200.00	9,185.00	11,025.93	8,916.52	38.70	45.39	72.81	-2,080.38	-1,574.43	839.38	756.54	82.83	10.133		
11,250.00	9,185.00	11,072.01	8,916.54	38.97	45.89	72.78	-2,126.43	-1,572.54	837.70	754.11	83.59	10.021		
11,300.00	9,185.00	11,123.60	8,916.27	39.23	46.45	72.73	-2,177.97	-1,570.38	836.08	751.69	84.39	9.908		
11,350.00	9,185.00	11,173.39	8,915.86	39.50	46.99	72.66	-2,227.71	-1,568.16	834.38	749.20	85.18	9.795		
11,400.00	9,185.00	11,219.29	8,915.37	39.77	47.50	72.59	-2,273.56	-1,566.24	832.84	746.89	85.96	9.689		
11,450.00	9,185.00	11,264.59	8,914.77	40.05	48.00	72.53	-2,318.82	-1,564.55	831.56	744.82	86.74	9.587		
11,500.00	9,185.00	11,308.40	8,914.21	40.33	48.49	72.47	-2,362.61	-1,563.23	830.61	743.10	87.52	9.491		
11,550.00	9,185.00	11,353.02	8,913.72	40.62	48.99	72.42	-2,407.22	-1,562.25	830.03	741.73	88.31	9.399		
11,600.00	9,185.00	11,401.09	8,913.16	40.91	49.54	72.37	-2,455.28	-1,561.39	829.66	740.53	89.13	9.309		
11,650.00	9,185.00	11,451.62	8,912.49	41.21	50.11	72.32	-2,505.80	-1,560.56	829.38	739.41	89.97	9.219		
11,700.00	9,185.00	11,508.03	8,911.94	41.50	50.76	72.26	-2,562.20	-1,559.38	828.83	737.98	90.86	9.122		
11,750.00	9,185.00	11,562.93	8,911.79	41.80	51.40	72.23	-2,617.07	-1,557.96	827.93	736.18	91.75	9.024		
11,800.00	9,185.00	11,617.05	8,912.34	42.10	52.03	72.24	-2,671.17	-1,556.48	826.77	734.13	92.65	8.924		
11,850.00	9,185.00	11,664.99	8,913.27	42.41	52.60	72.29	-2,719.09	-1,555.23	825.54	732.01	93.53	8.826		
11,900.00	9,185.00	11,712.58	8,914.41	42.72	53.16	72.35	-2,766.65	-1,554.21	824.46	730.04	94.41	8.732		
11,950.00	9,185.00	11,757.04	8,915.37	43.04	53.69	72.40	-2,811.09	-1,553.45	823.61	728.32	95.29	8.643		
12,000.00	9,185.00	11,801.48	8,915.93	43.35	54.22	72.43	-2,855.52	-1,552.87	823.10	726.95	96.15	8.560		
12,050.00	9,185.00	11,848.63	8,916.22	43.68	54.78	72.45	-2,902.67	-1,552.43	822.86	725.82	97.04	8.480		
12,100.00	9,185.00	11,896.09	8,916.44	44.00	55.35	72.46	-2,950.13	-1,552.11	822.77	724.84	97.93	8.402		
12,150.00	9,185.00	11,951.76	8,916.76	44.32	56.02	72.48	-3,005.80	-1,551.66	822.60	723.71	98.89	8.318		
12,200.00	9,185.00	12,007.95	8,917.38	44.65	56.70	72.51	-3,061.98	-1,550.86	822.06	722.20	99.86	8.232		
12,250.00	9,185.00	12,053.77	8,917.73	44.99	57.27	72.53	-3,107.79	-1,550.19	821.54	720.77	100.76	8.153		
12,300.00	9,185.00	12,102.70	8,917.88	45.32	57.87	72.53	-3,156.72	-1,549.49	821.11	719.42	101.69	8.075		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 117-MWDD+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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,336.19	9,185.00	12,139.77	8,917.99	45.56	58.32	72.53	-3,193.79	-1,548.95	820.98	718.61	102.37	8.019		
12,350.00	9,185.00	12,153.93	8,918.05	45.66	58.50	72.54	-3,207.94	-1,548.74	820.97	718.34	102.64	7.999		
12,400.00	9,185.00	12,204.89	8,918.32	46.00	59.13	72.57	-3,258.90	-1,547.94	821.59	718.00	103.59	7.931		
12,450.00	9,185.00	12,255.56	8,918.72	46.35	59.76	72.62	-3,309.56	-1,547.15	823.00	718.43	104.57	7.870		
12,500.00	9,185.00	12,310.47	8,919.36	46.70	60.45	72.70	-3,364.46	-1,546.21	825.11	719.53	105.59	7.815		
12,550.00	9,185.00	12,366.03	8,920.44	47.06	61.17	72.83	-3,421.99	-1,544.83	827.63	721.00	106.64	7.761		
12,600.00	9,185.00	12,411.56	8,921.29	47.42	61.72	72.93	-3,465.49	-1,543.74	830.94	723.33	107.61	7.722		
12,650.00	9,185.00	12,454.49	8,921.81	47.78	62.26	73.03	-3,508.41	-1,542.94	835.48	726.91	108.58	7.695		
12,700.00	9,185.00	12,494.06	8,922.01	48.15	62.76	73.10	-3,547.98	-1,542.52	841.34	731.83	109.51	7.683		
12,750.00	9,185.00	12,532.50	8,921.92	48.52	63.25	73.17	-3,586.42	-1,542.54	848.68	738.24	110.44	7.685		
12,800.00	9,185.00	12,573.47	8,921.56	48.90	63.77	73.24	-3,627.39	-1,543.03	857.45	746.08	111.37	7.699		
12,850.00	9,185.00	12,619.79	8,921.11	49.28	64.35	73.34	-3,673.70	-1,543.81	867.31	754.94	112.37	7.718		
12,900.00	9,185.00	12,664.68	8,920.69	49.67	64.92	73.44	-3,718.58	-1,544.72	878.15	764.79	113.36	7.747		
12,950.00	9,185.00	12,706.55	8,920.15	50.05	65.45	73.56	-3,760.43	-1,545.81	890.09	775.77	114.31	7.786		
13,000.00	9,185.00	12,748.70	8,919.36	50.44	65.98	73.77	-3,802.55	-1,547.16	902.06	786.80	115.26	7.826		
13,050.00	9,185.00	12,796.78	8,918.38	50.84	66.59	73.98	-3,850.59	-1,548.86	913.40	797.12	116.28	7.855		
13,100.00	9,185.00	12,845.62	8,917.43	51.23	67.21	74.16	-3,899.39	-1,550.63	923.96	806.65	117.31	7.876		
13,150.00	9,185.00	12,899.65	8,916.46	51.63	67.90	74.33	-3,953.38	-1,552.45	933.55	815.14	118.40	7.884		
13,200.00	9,185.00	12,950.88	8,915.63	52.03	68.55	74.48	-4,004.58	-1,553.95	942.08	822.62	119.46	7.886		
13,250.00	9,185.00	12,996.95	8,914.87	52.42	69.14	74.59	-4,050.63	-1,555.37	949.87	829.42	120.45	7.886		
13,300.00	9,185.00	13,044.46	8,914.05	52.82	69.75	74.69	-4,098.09	-1,556.98	956.99	835.54	121.45	7.879		
13,350.00	9,185.00	13,095.16	8,913.20	53.22	70.40	74.78	-4,148.76	-1,558.72	963.28	840.78	122.50	7.864		
13,400.00	9,185.00	13,146.93	8,912.45	53.62	71.07	74.85	-4,200.50	-1,560.44	968.66	845.11	123.56	7.840		
13,450.00	9,185.00	13,199.95	8,912.27	54.01	71.76	74.94	-4,253.49	-1,562.20	973.06	848.43	124.63	7.807		
13,500.00	9,185.00	13,245.03	8,912.60	54.40	72.34	75.03	-4,298.54	-1,563.79	976.59	850.98	125.61	7.775		
13,550.00	9,185.00	13,286.31	8,913.19	54.79	72.87	75.12	-4,339.77	-1,565.68	979.69	853.16	126.53	7.743		
13,600.00	9,185.00	13,332.55	8,914.10	55.19	73.47	75.22	-4,385.92	-1,568.24	982.34	854.82	127.52	7.703		
13,650.00	9,185.00	13,386.24	8,915.03	55.57	74.16	75.32	-4,439.54	-1,571.09	984.07	855.46	128.61	7.651		
13,700.00	9,185.00	13,445.01	8,915.95	55.96	74.93	75.39	-4,498.24	-1,573.85	984.69	854.91	129.77	7.588		
13,750.00	9,185.00	13,506.48	8,917.29	56.34	75.73	75.45	-4,559.64	-1,576.12	983.90	852.94	130.96	7.513		
13,800.00	9,185.00	13,560.16	8,918.57	56.72	76.44	75.48	-4,613.28	-1,577.73	981.90	849.86	132.04	7.438		
13,850.00	9,185.00	13,620.24	8,919.95	57.10	77.23	75.49	-4,673.34	-1,579.15	978.77	845.59	133.19	7.349		
13,900.00	9,185.00	13,688.64	8,921.66	57.47	78.14	75.47	-4,741.71	-1,579.65	973.98	839.58	134.41	7.247		
13,950.00	9,185.00	13,747.54	8,923.10	57.84	78.93	75.41	-4,800.59	-1,579.21	967.65	832.14	135.50	7.141		
14,000.00	9,185.00	13,804.54	8,924.34	58.21	79.70	75.31	-4,857.57	-1,578.19	960.01	823.44	136.57	7.030		
14,050.00	9,185.00	13,858.91	8,925.58	58.57	80.43	75.19	-4,911.91	-1,576.89	951.24	813.64	137.59	6.913		
14,100.00	9,185.00	13,913.80	8,926.79	58.93	81.18	75.04	-4,966.76	-1,575.24	941.36	802.75	138.61	6.791		
14,150.00	9,185.00	13,968.64	8,927.52	59.29	81.92	74.83	-5,021.55	-1,573.11	930.35	790.74	139.61	6.664		
14,200.00	9,185.00	14,010.69	8,927.74	59.64	82.49	74.60	-5,063.56	-1,571.39	918.53	778.01	140.52	6.537		
14,250.00	9,185.00	14,052.59	8,927.67	59.99	83.06	74.38	-5,105.44	-1,569.90	906.28	764.88	141.41	6.409		
14,300.00	9,185.00	14,099.72	8,927.41	60.34	83.71	74.23	-5,152.54	-1,568.42	894.63	752.30	142.33	6.286		
14,350.00	9,185.00	14,148.73	8,927.35	60.71	84.37	74.08	-5,201.53	-1,566.94	883.80	740.53	143.27	6.169		
14,400.00	9,185.00	14,195.89	8,927.33	61.07	85.02	73.96	-5,248.67	-1,565.55	873.84	729.62	144.22	6.059		
14,450.00	9,185.00	14,242.81	8,927.03	61.45	85.66	73.83	-5,295.57	-1,564.22	864.83	719.66	145.17	5.957		
14,500.00	9,185.00	14,289.90	8,926.54	61.82	86.30	73.69	-5,342.65	-1,562.94	856.77	710.65	146.12	5.864		
14,550.00	9,185.00	14,337.17	8,926.05	62.21	86.95	73.56	-5,389.90	-1,561.79	849.68	702.59	147.09	5.777		
14,600.00	9,185.00	14,386.67	8,925.61	62.60	87.62	73.44	-5,439.39	-1,560.68	843.50	695.42	148.08	5.696		
14,650.00	9,185.00	14,436.71	8,925.40	63.00	88.31	73.35	-5,489.41	-1,559.61	838.13	689.04	149.09	5.622		
14,700.00	9,185.00	14,495.15	8,925.53	63.39	89.11	73.27	-5,547.84	-1,558.15	833.34	683.18	150.16	5.550		
14,750.00	9,185.00	14,548.47	8,926.08	63.80	89.85	73.24	-5,601.12	-1,556.42	828.90	677.68	151.22	5.481		
14,800.00	9,185.00	14,591.90	8,926.70	64.21	90.44	73.24	-5,644.53	-1,555.23	825.50	673.24	152.26	5.422		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 117-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,850.00	9,185.00	14,636.21	8,927.43	64.63	91.05	73.26	-5,688.82	-1,554.41	823.31	670.00	153.31	5.370		
14,900.00	9,185.00	14,683.89	8,927.94	65.04	91.71	73.28	-5,736.50	-1,553.66	822.18	667.80	154.38	5.326		
14,950.00	9,185.00	14,732.99	8,928.01	65.46	92.38	73.28	-5,785.59	-1,552.89	821.70	666.24	155.46	5.286		
15,000.00	9,185.00	14,787.01	8,928.19	65.88	93.13	73.28	-5,839.60	-1,551.92	821.09	664.53	156.56	5.244		
15,050.00	9,185.00	14,837.33	8,928.67	66.31	93.82	73.30	-5,889.91	-1,550.92	820.30	662.64	157.66	5.203		
15,100.00	9,185.00	14,883.67	8,929.23	66.73	94.46	73.33	-5,936.24	-1,550.18	819.66	660.93	158.74	5.164		
15,150.00	9,185.00	14,931.35	8,929.89	67.15	95.12	73.37	-5,983.91	-1,549.65	819.24	659.41	159.83	5.126		
15,200.00	9,185.00	14,980.63	8,930.58	67.58	95.80	73.41	-6,033.18	-1,549.18	818.88	657.95	160.93	5.088		
15,250.00	9,185.00	15,029.46	8,931.17	68.00	96.47	73.45	-6,082.01	-1,548.73	818.57	656.54	162.03	5.052		
15,300.00	9,185.00	15,077.94	8,931.20	68.43	97.14	73.44	-6,130.48	-1,548.22	818.35	655.24	163.11	5.017		
15,343.93	9,185.00	15,119.05	8,930.76	68.80	97.71	73.41	-6,171.59	-1,547.74	818.26	654.22	164.04	4.988 Alert		
15,350.00	9,185.00	15,124.57	8,930.67	68.86	97.79	73.40	-6,177.11	-1,547.68	818.26	654.09	164.17	4.984 Alert		
15,400.00	9,185.00	15,170.01	8,929.64	69.28	98.42	73.33	-6,222.53	-1,547.25	818.43	653.24	165.19	4.954 Alert		
15,450.00	9,185.00	15,216.98	8,928.15	69.71	99.07	73.23	-6,269.48	-1,546.93	818.86	652.64	166.22	4.926 Alert		
15,500.00	9,185.00	15,265.29	8,926.64	70.14	99.74	73.13	-6,317.76	-1,546.73	819.41	652.15	167.26	4.899 Alert		
15,550.00	9,185.00	15,314.93	8,925.18	70.57	100.42	73.04	-6,367.39	-1,546.63	820.05	651.73	168.32	4.872 Alert		
15,600.00	9,185.00	15,365.59	8,923.83	71.00	101.12	72.95	-6,418.03	-1,546.54	820.65	651.27	169.38	4.845 Alert		
15,650.00	9,185.00	15,419.74	8,922.59	71.44	101.88	72.87	-6,472.16	-1,546.37	821.15	650.66	170.49	4.816 Alert		
15,700.00	9,185.00	15,475.27	8,921.65	71.87	102.65	72.81	-6,527.69	-1,545.93	821.31	649.71	171.61	4.786 Alert		
15,750.00	9,185.00	15,525.61	8,921.00	72.30	103.35	72.76	-6,578.02	-1,545.40	821.30	648.61	172.69	4.756 Alert		
15,800.00	9,185.00	15,576.56	8,920.44	72.73	104.06	72.72	-6,628.96	-1,544.86	821.27	647.48	173.78	4.726 Alert		
15,850.00	9,185.00	15,629.76	8,920.13	73.17	104.80	72.69	-6,682.16	-1,544.24	821.09	646.19	174.90	4.695 Alert		
15,900.00	9,185.00	15,681.72	8,920.14	73.60	105.52	72.69	-6,734.11	-1,543.53	820.73	644.72	176.01	4.663 Alert		
15,950.00	9,185.00	15,731.77	8,920.11	74.04	106.22	72.67	-6,784.15	-1,542.79	820.34	643.22	177.11	4.632 Alert		
16,000.00	9,185.00	15,786.11	8,919.98	74.48	106.98	72.65	-6,838.48	-1,541.87	819.87	641.63	178.24	4.600 Alert		
16,050.00	9,185.00	15,844.47	8,920.17	74.91	107.80	72.64	-6,896.83	-1,540.44	818.95	639.58	179.38	4.565 Alert		
16,100.00	9,185.00	15,898.88	8,920.41	75.35	108.56	72.63	-6,951.20	-1,538.67	817.64	637.14	180.50	4.530 Alert		
16,150.00	9,185.00	15,953.20	8,920.34	75.79	109.33	72.59	-7,005.49	-1,536.53	816.07	634.47	181.60	4.494 Alert		
16,200.00	9,185.00	16,009.29	8,920.34	76.23	110.13	72.54	-7,061.52	-1,533.94	814.18	631.47	182.70	4.456 Alert		
16,250.00	9,185.00	16,058.29	8,920.55	76.67	110.82	72.51	-7,110.45	-1,531.48	812.01	628.20	183.81	4.418 Alert		
16,300.00	9,185.00	16,099.89	8,920.77	77.11	111.41	72.49	-7,152.02	-1,529.75	810.24	625.34	184.91	4.382 Alert		
16,350.00	9,185.00	16,141.52	8,920.99	77.55	112.00	72.49	-7,193.63	-1,528.46	808.99	623.00	186.00	4.349 Alert		
16,400.00	9,185.00	16,183.17	8,921.21	77.99	112.58	72.49	-7,235.26	-1,527.63	808.26	621.19	187.07	4.321 Alert		
16,446.15	9,185.00	16,221.61	8,921.41	78.39	113.12	72.50	-7,273.70	-1,527.26	808.04	619.98	188.05	4.297 Alert		
16,450.00	9,185.00	16,224.82	8,921.43	78.43	113.17	72.50	-7,276.92	-1,527.24	808.04	619.90	188.14	4.295 Alert		
16,500.00	9,185.00	16,275.97	8,921.76	78.87	113.88	72.53	-7,328.07	-1,527.04	808.05	618.78	189.27	4.269 Alert		
16,550.00	9,185.00	16,327.40	8,922.25	79.31	114.60	72.56	-7,379.49	-1,526.79	807.98	617.56	190.41	4.243 Alert		
16,553.51	9,185.00	16,331.01	8,922.29	79.34	114.65	72.56	-7,383.10	-1,526.77	807.97	617.47	190.49	4.241 Alert		
16,600.00	9,185.00	16,371.64	8,922.51	79.76	115.22	72.58	-7,423.73	-1,526.68	808.07	616.57	191.49	4.220 Alert		
16,650.00	9,185.00	16,417.29	8,922.49	80.20	115.86	72.59	-7,469.38	-1,526.76	808.45	615.88	192.57	4.198 Alert		
16,700.00	9,185.00	16,470.58	8,922.33	80.64	116.61	72.59	-7,522.67	-1,526.83	808.86	615.14	193.72	4.175 Alert		
16,750.00	9,185.00	16,522.30	8,922.22	81.09	117.33	72.58	-7,574.39	-1,526.70	809.07	614.22	194.85	4.152 Alert		
16,800.00	9,185.00	16,570.32	8,921.93	81.53	118.01	72.57	-7,622.41	-1,526.56	809.33	613.39	195.94	4.130 Alert		
16,850.00	9,185.00	16,620.62	8,921.36	81.98	118.71	72.53	-7,672.70	-1,526.45	809.69	612.64	197.05	4.109 Alert		
16,900.00	9,185.00	16,675.37	8,920.55	82.42	119.48	72.48	-7,727.44	-1,526.02	809.84	611.66	198.18	4.086 Alert		
16,932.16	9,185.00	16,710.57	8,919.94	82.71	119.98	72.43	-7,762.64	-1,525.54	809.78	610.89	198.90	4.071 Alert		
16,950.00	9,185.00	16,723.18	8,919.81	82.87	120.16	72.42	-7,775.24	-1,525.48	809.83	610.58	199.25	4.064 Alert		
17,000.00	9,185.00	16,766.80	8,919.52	83.32	120.77	72.41	-7,818.87	-1,525.43	810.17	609.87	200.30	4.045 Alert		
17,050.00	9,185.00	16,817.40	8,919.71	83.76	121.48	72.43	-7,869.46	-1,525.84	810.81	609.36	201.45	4.025 Alert		
17,100.00	9,185.00	16,875.93	8,920.53	84.21	122.30	72.50	-7,927.99	-1,526.02	811.04	608.37	202.68	4.002 Alert		
17,122.55	9,185.00	16,902.32	8,921.11	84.41	122.67	72.54	-7,954.37	-1,525.95	810.98	607.75	203.23	3.990 Alert		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 117-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
17,150.00	9,185.00	16,920.50	8,921.40	84.66	122.93	72.57	-7,972.55	-1,526.08	811.13	607.34	203.79	3.980	Alert	
17,200.00	9,185.00	16,962.84	8,922.06	85.11	123.52	72.63	-8,014.88	-1,526.51	811.67	606.81	204.86	3.962	Alert	
17,250.00	9,185.00	17,009.22	8,922.61	85.56	124.17	72.69	-8,061.25	-1,527.30	812.61	606.63	205.97	3.945	Alert	
17,300.00	9,185.00	17,057.86	8,923.05	86.01	124.85	72.74	-8,109.89	-1,528.20	813.65	606.55	207.11	3.929	Alert	
17,350.00	9,185.00	17,109.25	8,923.52	86.46	125.57	72.80	-8,161.26	-1,529.17	814.72	606.45	208.28	3.912	Alert	
17,400.00	9,185.00	17,161.87	8,924.37	86.91	126.31	72.88	-8,213.86	-1,530.12	815.65	606.17	209.48	3.894	Alert	
17,450.00	9,185.00	17,208.64	8,925.00	87.36	126.96	72.95	-8,260.62	-1,530.92	816.57	605.97	210.60	3.877	Alert	
17,500.00	9,185.00	17,254.78	8,924.74	87.81	127.61	72.95	-8,306.75	-1,531.67	817.73	606.06	211.67	3.863	Alert	
17,550.00	9,185.00	17,307.13	8,923.86	88.26	128.35	72.91	-8,359.09	-1,532.41	818.96	606.15	212.81	3.848	Alert	
17,600.00	9,185.00	17,360.97	8,922.99	88.71	129.10	72.88	-8,412.93	-1,532.97	819.98	606.02	213.96	3.832	Alert	
17,650.00	9,185.00	17,419.41	8,922.19	89.16	129.93	72.83	-8,471.35	-1,533.13	820.62	605.47	215.16	3.814	Alert	
17,700.00	9,185.00	17,474.02	8,921.61	89.62	130.70	72.79	-8,525.96	-1,532.82	820.81	604.50	216.31	3.795	Alert	
17,750.00	9,185.00	17,524.70	8,921.22	90.07	131.42	72.77	-8,576.64	-1,532.47	820.89	603.46	217.43	3.775	Alert	
17,800.00	9,185.00	17,581.11	8,921.05	90.52	132.22	72.75	-8,633.05	-1,531.97	820.81	602.21	218.60	3.755	Alert	
17,850.00	9,185.00	17,640.74	8,921.49	90.97	133.06	72.77	-8,692.67	-1,530.95	820.19	600.40	219.79	3.732	Alert	
17,900.00	9,185.00	17,680.18	8,921.87	91.43	133.62	72.79	-8,732.10	-1,530.37	819.63	598.75	220.88	3.711	Alert	
17,923.95	9,185.00	17,699.64	8,921.99	91.65	133.90	72.80	-8,751.56	-1,530.23	819.57	598.17	221.40	3.702	Alert	
17,950.00	9,185.00	17,720.81	8,922.07	91.88	134.20	72.80	-8,772.73	-1,530.19	819.64	597.69	221.95	3.693	Alert	
18,000.00	9,185.00	17,769.63	8,922.30	92.34	134.89	72.83	-8,821.55	-1,530.36	820.04	596.95	223.09	3.676	Alert	
18,050.00	9,185.00	17,821.19	8,923.01	92.79	135.62	72.89	-8,873.10	-1,530.60	820.36	596.09	224.27	3.658	Alert	
18,100.00	9,185.00	17,870.78	8,923.79	93.25	136.32	72.95	-8,922.69	-1,530.82	820.64	595.21	225.44	3.640	Alert	
18,150.00	9,185.00	17,920.23	8,924.15	93.70	137.02	72.98	-8,972.14	-1,530.95	820.96	594.37	226.59	3.623	Alert	
18,200.00	9,185.00	17,962.75	8,924.14	94.16	137.62	72.99	-9,014.65	-1,531.18	821.53	593.88	227.65	3.609	Alert	
18,250.00	9,185.00	18,005.42	8,923.83	94.61	138.22	72.99	-9,057.32	-1,531.72	822.54	593.85	228.69	3.597	Alert	
18,300.00	9,185.00	18,059.19	8,923.27	95.07	138.98	72.98	-9,111.07	-1,532.54	823.72	593.86	229.86	3.584	Alert	
18,350.00	9,185.00	18,115.37	8,922.97	95.53	139.77	72.97	-9,167.26	-1,533.05	824.54	593.47	231.07	3.568	Alert	
18,400.00	9,185.00	18,168.15	8,923.03	95.98	140.52	72.99	-9,220.04	-1,533.36	825.10	592.85	232.24	3.553	Alert	
18,450.00	9,185.00	18,220.75	8,923.41	96.44	141.27	73.03	-9,272.63	-1,533.55	825.47	592.04	233.43	3.536	Alert	
18,500.00	9,185.00	18,272.32	8,923.73	96.90	142.00	73.05	-9,324.20	-1,533.60	825.72	591.13	234.60	3.520	Alert	
18,550.00	9,185.00	18,322.40	8,923.88	97.36	142.71	73.07	-9,374.28	-1,533.52	825.91	590.16	235.75	3.503	Alert	
18,600.00	9,185.00	18,371.31	8,923.82	97.81	143.40	73.07	-9,423.19	-1,533.44	826.14	589.27	236.88	3.488	Alert	
18,650.00	9,185.00	18,421.94	8,923.64	98.27	144.12	73.06	-9,473.82	-1,533.35	826.41	588.40	238.02	3.472	Alert	
18,700.00	9,185.00	18,473.56	8,923.76	98.73	144.85	73.07	-9,525.44	-1,533.26	826.60	587.42	239.18	3.456	Alert	
18,750.00	9,185.00	18,532.01	8,924.41	99.19	145.69	73.12	-9,583.89	-1,532.98	826.51	586.10	240.41	3.438	Alert	
18,800.00	9,185.00	18,591.97	8,925.79	99.65	146.54	73.20	-9,643.82	-1,532.17	825.83	584.19	241.65	3.418	Alert	
18,850.00	9,185.00	18,626.23	8,926.20	100.11	147.03	73.23	-9,678.08	-1,531.92	825.52	582.80	242.73	3.401	Alert	
18,852.09	9,185.00	18,627.87	8,926.21	100.13	147.05	73.23	-9,679.73	-1,531.91	825.52	582.75	242.77	3.400	Alert	
18,900.00	9,185.00	18,665.63	8,926.17	100.57	147.59	73.23	-9,717.48	-1,531.91	825.82	582.04	243.78	3.388	Alert	
18,950.00	9,185.00	18,719.20	8,925.55	101.03	148.35	73.20	-9,771.05	-1,532.01	826.38	581.45	244.94	3.374	Alert	
19,000.00	9,185.00	18,775.01	8,924.73	101.49	149.15	73.15	-9,826.85	-1,531.67	826.61	580.51	246.10	3.359	Alert	
19,047.07	9,185.00	18,822.20	8,923.93	101.87	149.82	73.09	-9,874.03	-1,531.21	826.68	579.61	247.07	3.346	Alert, ES, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference	Vertical	Offset	Semi Major Axis		Distance		Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Measured Depth (ft)	Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
0.00	0.00	0.10	0.10	0.50	0.50	89.62	0.20	30.02	30.02					
50.00	50.00	50.10	50.10	0.50	0.50	89.62	0.20	30.02	30.02	29.01	1.01	29.826		
100.00	100.00	100.10	100.10	0.52	0.52	89.62	0.20	30.02	30.02	28.99	1.04	28.989		
150.00	150.00	150.10	150.10	0.59	0.59	89.62	0.20	30.02	30.02	28.84	1.18	25.427		
200.00	200.00	200.10	200.10	0.70	0.70	89.62	0.20	30.02	30.02	28.62	1.40	21.375		
250.00	250.00	250.10	250.10	0.84	0.84	89.62	0.20	30.02	30.02	28.35	1.68	17.915		
300.00	300.00	300.10	300.10	0.99	0.99	89.62	0.20	30.02	30.02	28.05	1.97	15.201		
350.00	350.00	350.10	350.10	1.15	1.15	89.62	0.20	30.02	30.02	27.73	2.29	13.102		
400.00	400.00	400.10	400.10	1.31	1.31	89.62	0.20	30.02	30.02	27.40	2.62	11.465		
450.00	450.00	450.10	450.10	1.48	1.48	89.62	0.20	30.02	30.02	27.07	2.95	10.166		
500.00	500.00	500.10	500.10	1.65	1.65	89.62	0.20	30.02	30.02	26.73	3.29	9.118		
550.00	550.00	550.10	550.10	1.82	1.82	89.62	0.20	30.02	30.02	26.39	3.64	8.257		
600.00	600.00	600.10	600.10	1.99	1.99	89.62	0.20	30.02	30.02	26.04	3.98	7.540		
650.00	650.00	650.10	650.10	2.16	2.16	89.62	0.20	30.02	30.02	25.69	4.33	6.934		
700.00	700.00	700.10	700.10	2.34	2.34	89.62	0.20	30.02	30.02	25.34	4.68	6.416		
750.00	750.00	750.10	750.10	2.51	2.52	89.62	0.20	30.02	30.02	24.99	5.03	5.969		
800.00	800.00	800.10	800.10	2.69	2.69	89.62	0.20	30.02	30.02	24.64	5.38	5.578		
850.00	850.00	850.10	850.10	2.87	2.87	89.62	0.20	30.02	30.02	24.29	5.73	5.235		
900.00	900.00	900.10	900.10	3.04	3.04	89.62	0.20	30.02	30.02	23.93	6.09	4.932 Alert		
950.00	950.00	950.10	950.10	3.22	3.22	89.62	0.20	30.02	30.02	23.58	6.44	4.661 Alert		
1,000.00	1,000.00	1,000.10	1,000.10	3.40	3.40	89.62	0.20	30.02	30.02	23.23	6.80	4.418 Alert		
1,050.00	1,050.00	1,050.10	1,050.10	3.58	3.58	89.62	0.20	30.02	30.02	22.87	7.15	4.198 Alert		
1,100.00	1,100.00	1,100.10	1,100.10	3.75	3.75	89.62	0.20	30.02	30.02	22.52	7.51	4.000 Alert		
1,150.00	1,150.00	1,150.10	1,150.10	3.93	3.93	89.62	0.20	30.02	30.02	22.16	7.86	3.819 Alert		
1,200.00	1,200.00	1,200.10	1,200.10	4.11	4.11	89.62	0.20	30.02	30.02	21.80	8.22	3.654 Alert		
1,250.00	1,250.00	1,250.10	1,250.10	4.29	4.29	89.62	0.20	30.02	30.02	21.45	8.57	3.502 Alert		
1,300.00	1,300.00	1,300.10	1,300.10	4.46	4.46	89.62	0.20	30.02	30.02	21.09	8.93	3.362 Alert		
1,350.00	1,350.00	1,350.10	1,350.10	4.64	4.64	89.62	0.20	30.02	30.02	20.74	9.29	3.233 Alert		
1,400.00	1,400.00	1,400.10	1,400.10	4.82	4.82	89.62	0.20	30.02	30.02	20.38	9.64	3.114 Alert		
1,450.00	1,450.00	1,450.10	1,450.10	5.00	5.00	89.62	0.20	30.02	30.02	20.02	10.00	3.003 Alert		
1,500.00	1,500.00	1,500.10	1,500.10	5.18	5.18	89.62	0.20	30.02	30.02	19.67	10.35	2.899 Alert		
1,550.00	1,550.00	1,550.10	1,550.10	5.36	5.36	89.62	0.20	30.02	30.02	19.31	10.71	2.803 Alert		
1,600.00	1,600.00	1,600.10	1,600.10	5.53	5.53	89.62	0.20	30.02	30.02	18.95	11.07	2.712 Alert		
1,650.00	1,650.00	1,650.10	1,650.10	5.71	5.71	89.62	0.20	30.02	30.02	18.60	11.43	2.627 Alert		
1,700.00	1,700.00	1,700.10	1,700.10	5.89	5.89	89.62	0.20	30.02	30.02	18.24	11.78	2.548 Alert		
1,750.00	1,750.00	1,750.10	1,750.10	6.07	6.07	89.62	0.20	30.02	30.02	17.88	12.14	2.473 Minor Risk		
1,800.00	1,800.00	1,800.10	1,800.10	6.25	6.25	89.62	0.20	30.02	30.02	17.52	12.50	2.402 Minor Risk		
1,850.00	1,850.00	1,850.10	1,850.10	6.43	6.43	89.62	0.20	30.02	30.02	17.17	12.85	2.335 Minor Risk		
1,900.00	1,900.00	1,900.10	1,900.10	6.61	6.61	89.62	0.20	30.02	30.02	16.81	13.21	2.272 Minor Risk		
1,950.00	1,950.00	1,950.10	1,950.10	6.78	6.78	89.62	0.20	30.02	30.02	16.45	13.57	2.212 Minor Risk		
2,000.00	2,000.00	2,000.10	2,000.10	6.96	6.96	89.62	0.20	30.02	30.02	16.09	13.93	2.156 Minor Risk		
2,050.00	2,050.00	2,050.10	2,050.10	7.14	7.14	89.62	0.20	30.02	30.02	15.74	14.28	2.102 Minor Risk		
2,100.00	2,100.00	2,100.10	2,100.10	7.32	7.32	89.62	0.20	30.02	30.02	15.38	14.64	2.050 Minor Risk		
2,150.00	2,150.00	2,150.10	2,150.10	7.50	7.50	89.62	0.20	30.02	30.02	15.02	15.00	2.001 Minor Risk		
2,200.00	2,200.00	2,200.10	2,200.10	7.68	7.68	89.62	0.20	30.02	30.02	14.66	15.36	1.955 Minor Risk		
2,250.00	2,250.00	2,250.10	2,250.10	7.86	7.86	89.62	0.20	30.02	30.02	14.31	15.72	1.910 Minor Risk		
2,300.00	2,300.00	2,300.10	2,300.10	8.04	8.04	89.62	0.20	30.02	30.02	13.95	16.07	1.868 Minor Risk		
2,350.00	2,350.00	2,350.10	2,350.10	8.22	8.22	89.62	0.20	30.02	30.02	13.59	16.43	1.827 Minor Risk		
2,400.00	2,400.00	2,400.10	2,400.10	8.39	8.39	89.62	0.20	30.02	30.02	13.23	16.79	1.788 Minor Risk		
2,450.00	2,450.00	2,450.10	2,450.10	8.57	8.57	89.62	0.20	30.02	30.02	12.87	17.15	1.751 Minor Risk		
2,500.00	2,500.00	2,500.10	2,500.10	8.75	8.75	89.62	0.20	30.02	30.02	12.52	17.50	1.715 Minor Risk, CC		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,550.00	2,550.00	2,550.10	2,550.10	8.93	8.93	168.49	0.20	30.02	30.29	12.43	17.86	1.696	Minor Risk, ES, SF	
2,600.00	2,599.99	2,600.09	2,600.09	9.10	9.11	168.79	0.20	30.02	31.09	12.88	18.21	1.707	Minor Risk	
2,650.00	2,649.97	2,650.07	2,650.07	9.28	9.29	169.26	0.20	30.02	32.43	13.86	18.56	1.747	Minor Risk	
2,700.00	2,699.94	2,700.04	2,700.04	9.45	9.47	169.85	0.20	30.02	34.31	15.39	18.91	1.814	Minor Risk	
2,750.00	2,749.88	2,749.98	2,749.98	9.62	9.65	170.52	0.20	30.02	36.72	17.46	19.27	1.906	Minor Risk	
2,800.00	2,799.79	2,800.11	2,799.89	9.79	9.83	171.22	0.20	30.02	39.68	20.07	19.62	2.023	Minor Risk	
2,850.00	2,849.66	2,849.76	2,849.76	9.97	10.00	171.93	0.20	30.02	43.19	23.22	19.97	2.163	Minor Risk	
2,900.00	2,899.49	2,900.41	2,899.59	10.14	10.19	172.62	0.20	30.02	47.24	26.91	20.32	2.324	Minor Risk	
2,950.00	2,949.28	2,949.38	2,949.38	10.32	10.36	173.27	0.20	30.02	51.83	31.16	20.67	2.507	Alert	
3,000.00	2,999.01	3,000.89	2,999.11	10.49	10.55	173.88	0.20	30.02	56.97	35.94	21.03	2.709	Alert	
3,050.00	3,048.68	3,048.78	3,048.78	10.67	10.72	174.43	0.20	30.02	62.66	41.28	21.37	2.932	Alert	
3,100.00	3,098.29	3,101.61	3,098.39	10.84	10.91	174.92	0.20	30.02	68.89	47.15	21.73	3.169	Alert	
3,150.00	3,147.82	3,147.92	3,147.92	11.02	11.07	175.37	0.20	30.02	75.66	53.58	22.07	3.428	Alert	
3,200.00	3,197.28	3,202.62	3,197.38	11.20	11.27	175.77	0.20	30.02	82.97	60.53	22.44	3.697	Alert	
3,250.00	3,246.69	3,246.79	3,246.79	11.37	11.43	176.13	0.20	30.02	90.65	67.87	22.77	3.980	Alert	
3,300.00	3,296.09	3,303.81	3,296.19	11.55	11.63	176.43	0.20	30.02	98.33	75.18	23.15	4.247	Alert	
3,350.00	3,345.49	3,345.59	3,345.59	11.73	11.78	176.69	0.20	30.02	106.02	82.54	23.47	4.516	Alert	
3,400.00	3,394.90	3,405.00	3,395.00	11.91	11.99	176.92	0.20	30.02	113.70	89.84	23.86	4.765	Alert	
3,450.00	3,444.30	3,444.40	3,444.40	12.09	12.13	177.11	0.20	30.02	121.39	97.22	24.18	5.021		
3,500.00	3,493.71	3,506.19	3,493.81	12.27	12.35	177.28	0.20	30.02	129.08	104.51	24.57	5.253		
3,550.00	3,543.11	3,543.21	3,543.21	12.45	12.49	177.44	0.20	30.02	136.78	111.90	24.88	5.498		
3,600.00	3,592.51	3,607.39	3,592.61	12.63	12.72	177.57	0.20	30.02	144.47	119.18	25.28	5.714		
3,650.00	3,641.92	3,642.02	3,642.02	12.81	12.84	177.70	0.20	30.02	152.16	126.58	25.58	5.948		
3,700.00	3,691.32	3,708.58	3,691.42	12.99	13.08	177.81	0.20	30.02	159.86	133.86	26.00	6.149		
3,750.00	3,740.72	3,740.82	3,740.82	13.17	13.20	177.91	0.20	30.02	167.55	141.26	26.29	6.374		
3,800.00	3,790.13	3,809.77	3,790.23	13.35	13.44	178.00	0.20	30.02	175.24	148.53	26.71	6.561		
3,850.00	3,839.53	3,839.63	3,839.63	13.53	13.55	178.08	0.20	30.02	182.94	155.95	26.99	6.777		
3,900.00	3,888.93	3,889.03	3,889.03	13.72	13.73	178.16	0.20	30.02	190.64	163.29	27.35	6.971		
3,950.00	3,938.34	3,938.44	3,938.44	13.90	13.90	178.23	0.20	30.02	198.33	170.63	27.70	7.159		
4,000.00	3,987.74	3,987.84	3,987.84	14.08	14.08	178.30	0.20	30.02	206.03	177.97	28.06	7.343		
4,050.00	4,037.14	4,038.71	4,038.71	14.27	14.26	178.34	0.32	29.91	213.60	185.18	28.42	7.516		
4,100.00	4,086.55	4,090.17	4,090.16	14.45	14.44	178.29	0.83	29.40	220.73	191.95	28.78	7.669		
4,150.00	4,135.95	4,141.76	4,141.73	14.63	14.63	178.15	1.76	28.48	227.41	198.27	29.14	7.804		
4,200.00	4,185.36	4,193.46	4,193.40	14.82	14.81	177.94	3.11	27.16	233.65	204.15	29.50	7.920		
4,250.00	4,234.76	4,245.26	4,245.14	15.00	14.99	177.65	4.88	25.42	239.44	209.58	29.86	8.019		
4,300.00	4,284.16	4,296.43	4,296.23	15.18	15.17	177.31	7.02	23.32	244.80	214.59	30.21	8.102		
4,350.00	4,333.57	4,346.13	4,345.84	15.37	15.35	176.97	9.18	21.20	250.07	219.50	30.57	8.181		
4,400.00	4,382.97	4,404.17	4,395.44	15.55	15.56	176.65	11.35	19.07	255.35	224.40	30.95	8.250		
4,450.00	4,432.37	4,445.53	4,445.05	15.74	15.70	176.34	13.52	16.94	260.64	229.36	31.28	8.333		
4,500.00	4,481.78	4,504.77	4,494.66	15.92	15.91	176.04	15.69	14.81	265.93	234.27	31.67	8.398		
4,550.00	4,531.18	4,544.94	4,544.27	16.11	16.06	175.75	17.85	12.68	271.24	239.25	31.99	8.479		
4,600.00	4,580.58	4,605.36	4,593.87	16.29	16.27	175.48	20.02	10.55	276.54	244.16	32.38	8.540		
4,650.00	4,629.99	4,644.34	4,643.48	16.48	16.41	175.21	22.19	8.42	281.86	249.16	32.70	8.619		
4,700.00	4,679.39	4,705.96	4,693.09	16.66	16.63	174.95	24.36	6.29	287.18	254.08	33.10	8.676		
4,750.00	4,728.80	4,743.74	4,742.69	16.85	16.76	174.71	26.52	4.16	292.50	259.09	33.41	8.754		
4,800.00	4,778.20	4,806.56	4,792.30	17.03	16.99	174.47	28.69	2.03	297.83	264.02	33.82	8.807		
4,850.00	4,827.60	4,843.14	4,841.91	17.22	17.12	174.24	30.86	-0.10	303.17	269.04	34.13	8.883		
4,900.00	4,877.01	4,907.16	4,891.52	17.40	17.35	174.02	33.02	-2.23	308.51	273.97	34.54	8.933		
4,950.00	4,926.41	4,942.54	4,941.12	17.59	17.47	173.81	35.19	-4.36	313.85	279.01	34.84	9.008		
5,000.00	4,975.81	5,007.76	4,990.73	17.78	17.71	173.60	37.36	-6.48	319.20	283.95	35.26	9.054		
5,050.00	5,025.22	5,041.94	5,040.34	17.96	17.83	173.40	39.53	-8.61	324.55	289.00	35.56	9.128		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,074.62	5,108.36	5,089.94	18.15	18.07	173.21	41.69	-10.74	329.91	293.94	35.97	9.171		
5,150.00	5,124.02	5,141.34	5,139.55	18.34	18.18	173.02	43.86	-12.87	335.27	299.00	36.27	9.243		
5,200.00	5,173.43	5,208.96	5,189.16	18.52	18.43	172.84	46.03	-15.00	340.63	303.94	36.70	9.283		
5,250.00	5,222.83	5,240.74	5,238.77	18.71	18.54	172.66	48.20	-17.13	346.00	309.01	36.99	9.354		
5,300.00	5,272.23	5,309.56	5,288.37	18.90	18.79	172.49	50.36	-19.26	351.37	313.95	37.42	9.391		
5,350.00	5,321.64	5,340.14	5,337.98	19.08	18.90	172.33	52.53	-21.39	356.74	319.04	37.71	9.461		
5,400.00	5,371.04	5,389.84	5,387.59	19.27	19.07	172.17	54.70	-23.52	362.12	324.05	38.07	9.513		
5,450.00	5,420.45	5,439.54	5,437.19	19.46	19.25	172.01	56.87	-25.65	367.50	329.07	38.43	9.564		
5,500.00	5,469.85	5,489.24	5,486.80	19.65	19.43	171.86	59.03	-27.78	372.88	334.09	38.78	9.614		
5,550.00	5,519.25	5,538.94	5,536.41	19.83	19.61	171.71	61.20	-29.91	378.26	339.12	39.14	9.663		
5,600.00	5,568.66	5,588.64	5,586.02	20.02	19.79	171.57	63.37	-32.04	383.65	344.14	39.50	9.712		
5,650.00	5,618.06	5,638.34	5,635.62	20.21	19.97	171.43	65.54	-34.17	389.04	349.17	39.86	9.759		
5,700.00	5,667.46	5,688.04	5,685.23	20.40	20.15	171.30	67.70	-36.29	394.43	354.20	40.22	9.806		
5,750.00	5,716.87	5,737.74	5,734.84	20.58	20.32	171.16	69.87	-38.42	399.82	359.23	40.58	9.852		
5,800.00	5,766.27	5,787.44	5,784.45	20.77	20.50	171.04	72.04	-40.55	405.21	364.27	40.94	9.897		
5,850.00	5,815.67	5,837.14	5,834.05	20.96	20.68	170.91	74.21	-42.68	410.61	369.31	41.30	9.941		
5,900.00	5,865.08	5,886.84	5,883.66	21.15	20.86	170.79	76.37	-44.81	416.01	374.34	41.66	9.985		
5,950.00	5,914.48	5,936.54	5,933.27	21.34	21.04	170.67	78.54	-46.94	421.41	379.38	42.02	10.028		
6,000.00	5,963.89	5,986.24	5,982.87	21.52	21.22	170.56	80.71	-49.07	426.81	384.42	42.38	10.070		
6,050.00	6,013.29	6,035.94	6,032.48	21.71	21.40	170.45	82.88	-51.20	432.21	389.47	42.74	10.111		
6,100.00	6,062.69	6,085.64	6,082.09	21.90	21.58	170.34	85.04	-53.33	437.62	394.51	43.11	10.152		
6,150.00	6,112.10	6,135.34	6,131.70	22.09	21.76	170.23	87.21	-55.46	443.02	399.56	43.47	10.192		
6,200.00	6,161.50	6,185.04	6,181.30	22.28	21.94	170.13	89.38	-57.59	448.43	404.60	43.83	10.232		
6,250.00	6,210.90	6,234.74	6,230.91	22.47	22.12	170.02	91.55	-59.72	453.84	409.65	44.19	10.271		
6,300.00	6,260.31	6,284.44	6,280.52	22.65	22.29	169.92	93.71	-61.85	459.25	414.70	44.55	10.309		
6,350.00	6,309.71	6,334.14	6,330.12	22.84	22.47	169.83	95.88	-63.97	464.66	419.75	44.91	10.346		
6,400.00	6,359.11	6,383.84	6,379.73	23.03	22.65	169.73	98.05	-66.10	470.08	424.80	45.27	10.383		
6,450.00	6,408.52	6,433.54	6,429.34	23.22	22.83	169.64	100.22	-68.23	475.49	429.86	45.63	10.420		
6,500.00	6,457.92	6,483.24	6,478.95	23.41	23.01	169.55	102.38	-70.36	480.91	434.91	46.00	10.456		
6,550.00	6,507.32	6,532.94	6,528.55	23.60	23.19	169.46	104.55	-72.49	486.32	439.97	46.36	10.491		
6,600.00	6,556.73	6,582.64	6,578.16	23.79	23.37	169.37	106.72	-74.62	491.74	445.02	46.72	10.526		
6,650.00	6,606.13	6,632.34	6,627.77	23.98	23.55	169.29	108.89	-76.75	497.16	450.08	47.08	10.560		
6,700.00	6,655.54	6,682.04	6,677.37	24.16	23.73	169.21	111.05	-78.88	502.58	455.14	47.44	10.594		
6,750.00	6,704.94	6,731.74	6,726.98	24.35	23.91	169.13	113.22	-81.01	508.00	460.20	47.80	10.627		
6,800.00	6,754.34	6,781.44	6,776.59	24.54	24.09	169.05	115.39	-83.14	513.43	465.26	48.17	10.659		
6,850.00	6,803.75	6,831.14	6,826.20	24.73	24.27	168.97	117.55	-85.27	518.85	470.32	48.53	10.692		
6,900.00	6,853.15	6,880.84	6,875.80	24.92	24.45	168.89	119.72	-87.40	524.27	475.38	48.89	10.723		
6,950.00	6,902.55	6,930.54	6,925.41	25.11	24.63	168.82	121.89	-89.53	529.70	480.44	49.25	10.755		
7,000.00	6,951.96	6,980.24	6,975.02	25.30	24.81	168.74	124.06	-91.65	535.12	485.51	49.61	10.786		
7,050.00	7,001.36	7,029.94	7,024.62	25.49	24.99	168.67	126.22	-93.78	540.55	490.57	49.98	10.816		
7,100.00	7,050.76	7,079.64	7,074.23	25.68	25.17	168.60	128.39	-95.91	545.98	495.64	50.34	10.846		
7,150.00	7,100.17	7,129.34	7,123.84	25.87	25.35	168.53	130.56	-98.04	551.41	500.70	50.70	10.875		
7,200.00	7,149.57	7,179.04	7,173.45	26.06	25.53	168.47	132.73	-100.17	556.84	505.77	51.07	10.904		
7,250.00	7,198.98	7,228.74	7,223.05	26.25	25.71	168.40	134.89	-102.30	562.27	510.84	51.43	10.933		
7,300.00	7,248.38	7,278.44	7,272.66	26.44	25.89	168.34	137.06	-104.43	567.70	515.91	51.79	10.961		
7,350.00	7,297.78	7,328.14	7,322.27	26.62	26.07	168.27	139.23	-106.56	573.13	520.97	52.15	10.989		
7,400.00	7,347.19	7,377.84	7,371.88	26.81	26.25	168.21	141.40	-108.69	578.56	526.04	52.52	11.017		
7,450.00	7,396.59	7,427.54	7,421.48	27.00	26.43	168.15	143.56	-110.82	583.99	531.11	52.88	11.044		
7,500.00	7,445.99	7,477.24	7,471.09	27.19	26.61	168.09	145.73	-112.95	589.42	536.18	53.24	11.071		
7,550.00	7,495.40	7,526.94	7,520.70	27.38	26.79	168.03	147.90	-115.08	594.86	541.25	53.61	11.097		
7,600.00	7,544.80	7,576.64	7,570.30	27.57	26.97	167.97	150.07	-117.21	600.29	546.32	53.97	11.123		

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Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,650.00	7,594.20	7,626.34	7,619.91	27.76	27.15	167.91	152.23	-119.34	605.73	551.40	54.33	11.149		
7,700.00	7,643.61	7,676.04	7,669.52	27.95	27.33	167.86	154.40	-121.46	611.16	556.47	54.69	11.174		
7,750.00	7,693.01	7,720.46	7,713.86	28.14	27.49	167.83	156.13	-123.16	616.83	561.79	55.03	11.208		
7,800.00	7,742.43	7,765.10	7,758.47	28.33	27.65	167.84	157.49	-124.50	622.77	567.40	55.37	11.248		
7,850.00	7,791.94	7,809.72	7,803.06	28.52	27.81	167.89	158.49	-125.48	628.52	572.82	55.70	11.285		
7,900.00	7,841.54	7,854.32	7,847.65	28.71	27.97	167.96	159.11	-126.09	634.04	578.01	56.02	11.317		
7,950.00	7,891.22	7,915.35	7,891.32	28.89	28.19	168.04	159.37	-126.34	639.31	582.91	56.40	11.335		
8,000.00	7,940.97	7,947.73	7,941.07	29.08	28.31	168.15	159.37	-126.34	644.23	587.53	56.70	11.363		
8,050.00	7,990.77	8,002.46	7,990.87	29.26	28.50	168.24	159.37	-126.34	648.51	591.44	57.07	11.363		
8,100.00	8,040.63	8,047.40	8,040.73	29.44	28.66	168.32	159.37	-126.34	652.16	594.75	57.41	11.359		
8,150.00	8,090.54	8,102.69	8,090.64	29.62	28.86	168.39	159.37	-126.34	655.16	597.38	57.79	11.338		
8,200.00	8,140.48	8,147.25	8,140.58	29.79	29.02	168.44	159.37	-126.34	657.53	599.41	58.12	11.313		
8,250.00	8,190.45	8,202.78	8,190.55	29.97	29.21	168.47	159.37	-126.34	659.26	600.76	58.50	11.270		
8,300.00	8,240.44	8,247.20	8,240.54	30.15	29.37	168.49	159.37	-126.34	660.34	601.51	58.83	11.224		
8,350.00	8,290.43	8,302.80	8,290.53	30.32	29.57	168.50	159.37	-126.34	660.78	601.58	59.20	11.161		
8,400.00	8,340.43	8,347.20	8,340.53	30.49	29.73	89.73	159.37	-126.34	660.79	601.26	59.53	11.100		
8,450.00	8,390.43	8,402.80	8,390.53	30.66	29.92	89.73	159.37	-126.34	660.79	600.89	59.90	11.031		
8,500.00	8,440.43	8,447.20	8,440.53	30.83	30.08	89.73	159.37	-126.34	660.79	600.56	60.23	10.971		
8,550.00	8,490.43	8,502.80	8,490.53	31.00	30.28	89.73	159.37	-126.34	660.79	600.19	60.60	10.904		
8,600.00	8,540.43	8,547.20	8,540.53	31.17	30.44	89.73	159.37	-126.34	660.79	599.86	60.93	10.845		
8,650.00	8,590.43	8,597.20	8,590.53	31.34	30.62	89.73	159.37	-126.34	660.79	599.51	61.28	10.783		
8,700.00	8,640.42	8,647.17	8,640.49	31.51	30.79	-89.91	158.66	-126.34	660.79	599.17	61.62	10.723		
8,750.00	8,690.19	8,697.11	8,690.20	31.67	30.95	-89.91	154.01	-126.31	660.79	598.85	61.94	10.668		
8,800.00	8,739.36	8,747.05	8,739.32	31.83	31.10	-89.91	145.05	-126.26	660.79	598.53	62.25	10.615		
8,850.00	8,787.57	8,797.00	8,787.47	31.97	31.25	-89.91	131.85	-126.19	660.78	598.23	62.55	10.564		
8,900.00	8,834.43	8,846.94	8,834.29	32.12	31.39	-89.91	114.51	-126.09	660.77	597.92	62.84	10.515		
8,950.00	8,879.61	8,896.89	8,879.42	32.25	31.52	-89.91	93.15	-125.97	660.75	597.63	63.12	10.468		
9,000.00	8,922.75	8,946.83	8,922.52	32.37	31.64	-89.92	67.95	-125.83	660.73	597.34	63.39	10.423		
9,050.00	8,963.52	8,996.78	8,963.27	32.48	31.75	-89.92	39.09	-125.66	660.72	597.06	63.65	10.380		
9,100.00	9,001.62	9,046.73	9,001.35	32.59	31.84	-89.93	6.79	-125.48	660.69	596.79	63.91	10.339		
9,150.00	9,036.75	9,096.69	9,036.48	32.67	31.94	-89.93	-28.71	-125.28	660.67	596.52	64.15	10.299		
9,200.00	9,068.66	9,146.65	9,068.38	32.75	32.05	-89.94	-67.13	-125.06	660.65	596.26	64.39	10.260		
9,250.00	9,097.08	9,196.61	9,096.82	32.81	32.17	-89.94	-108.19	-124.83	660.62	595.99	64.62	10.222		
9,300.00	9,121.82	9,246.57	9,121.58	32.86	32.29	-89.95	-151.57	-124.59	660.59	595.74	64.85	10.186		
9,350.00	9,142.67	9,296.54	9,142.46	32.90	32.42	-89.96	-196.94	-124.33	660.56	595.48	65.08	10.150		
9,400.00	9,159.49	9,346.51	9,159.32	32.93	32.55	-89.96	-243.97	-124.07	660.53	595.22	65.31	10.114		
9,450.00	9,172.14	9,396.49	9,172.01	32.95	32.69	-89.97	-292.29	-123.80	660.50	594.97	65.53	10.080		
9,500.00	9,180.53	9,446.47	9,180.45	32.96	32.82	-89.98	-341.54	-123.52	660.46	594.72	65.74	10.046		
9,550.00	9,184.59	9,496.46	9,184.57	33.01	32.96	-89.99	-391.34	-123.24	660.43	594.47	65.96	10.013		
9,600.00	9,185.00	9,546.45	9,185.00	33.08	33.11	-89.99	-441.33	-122.96	660.40	594.23	66.17	9.980		
9,650.00	9,185.00	9,603.55	9,185.00	33.16	33.29	-89.99	-491.33	-122.67	660.37	593.94	66.43	9.941		
9,700.00	9,185.00	9,646.45	9,185.00	33.25	33.44	-89.99	-541.33	-122.39	660.33	593.67	66.66	9.905		
9,750.00	9,185.00	9,703.55	9,185.00	33.35	33.65	-89.99	-591.33	-122.11	660.30	593.34	66.96	9.860		
9,800.00	9,185.00	9,746.45	9,185.00	33.45	33.83	-89.99	-641.33	-121.83	660.27	593.03	67.24	9.820		
9,850.00	9,185.00	9,803.55	9,185.00	33.56	34.07	-89.99	-691.33	-121.55	660.23	592.65	67.59	9.769		
9,900.00	9,185.00	9,846.45	9,185.00	33.67	34.28	-89.99	-741.32	-121.26	660.20	592.30	67.90	9.724		
9,950.00	9,185.00	9,903.55	9,185.00	33.80	34.55	-89.99	-791.32	-120.98	660.17	591.88	68.29	9.667		
10,000.00	9,185.00	9,946.45	9,185.00	33.92	34.77	-89.99	-841.32	-120.70	660.14	591.50	68.64	9.618		
10,050.00	9,185.00	10,003.55	9,185.00	34.06	35.08	-89.99	-891.32	-120.42	660.10	591.03	69.08	9.556		
10,100.00	9,185.00	10,046.45	9,185.00	34.20	35.33	-89.99	-941.32	-120.14	660.07	590.61	69.46	9.503		
10,150.00	9,185.00	10,103.55	9,185.00	34.35	35.66	-89.99	-991.32	-119.85	660.04	590.10	69.94	9.437		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,200.00	9,185.00	10,146.45	9,185.00	34.50	35.93	-89.99	-1,041.32	-119.57	660.00	589.65	70.36	9.381		
10,250.00	9,185.00	10,203.55	9,185.00	34.66	36.29	-89.99	-1,091.32	-119.29	659.97	589.10	70.88	9.312		
10,300.00	9,185.00	10,246.45	9,185.00	34.82	36.58	-89.99	-1,141.32	-119.01	659.94	588.61	71.32	9.253		
10,350.00	9,185.00	10,303.55	9,185.00	34.99	36.97	-89.99	-1,191.32	-118.73	659.91	588.02	71.88	9.180		
10,400.00	9,185.00	10,346.45	9,185.00	35.17	37.28	-89.99	-1,241.32	-118.45	659.87	587.51	72.36	9.119		
10,450.00	9,185.00	10,403.55	9,185.00	35.35	37.69	-89.99	-1,291.32	-118.16	659.84	586.88	72.96	9.044		
10,500.00	9,185.00	10,446.45	9,185.00	35.53	38.02	-89.99	-1,341.32	-117.88	659.81	586.34	73.47	8.981		
10,550.00	9,185.00	10,503.55	9,185.00	35.73	38.45	-89.99	-1,391.31	-117.60	659.77	585.67	74.10	8.904		
10,600.00	9,185.00	10,546.45	9,185.00	35.93	38.80	-89.99	-1,441.31	-117.32	659.74	585.10	74.64	8.839		
10,650.00	9,185.00	10,603.55	9,185.00	36.13	39.26	-89.99	-1,491.31	-117.04	659.71	584.41	75.30	8.761		
10,700.00	9,185.00	10,646.45	9,185.00	36.34	39.62	-89.99	-1,541.31	-116.75	659.68	583.81	75.87	8.695		
10,750.00	9,185.00	10,703.55	9,185.00	36.56	40.10	-89.99	-1,591.31	-116.47	659.64	583.08	76.56	8.616		
10,800.00	9,185.00	10,746.45	9,185.00	36.77	40.47	-89.99	-1,641.31	-116.19	659.61	582.46	77.15	8.549		
10,850.00	9,185.00	10,803.55	9,185.00	37.00	40.97	-89.99	-1,691.31	-115.91	659.58	581.70	77.88	8.469		
10,900.00	9,185.00	10,846.45	9,185.00	37.23	41.36	-89.99	-1,741.31	-115.63	659.54	581.05	78.50	8.402		
10,950.00	9,185.00	10,903.55	9,185.00	37.46	41.88	-89.99	-1,791.31	-115.35	659.51	580.26	79.25	8.322		
11,000.00	9,185.00	10,946.45	9,185.00	37.70	42.28	-89.99	-1,841.31	-115.06	659.48	579.59	79.89	8.255		
11,050.00	9,185.00	11,003.55	9,185.00	37.95	42.81	-89.99	-1,891.31	-114.78	659.45	578.78	80.67	8.175		
11,100.00	9,185.00	11,046.45	9,185.00	38.19	43.23	-89.99	-1,941.31	-114.50	659.41	578.08	81.33	8.108		
11,150.00	9,185.00	11,103.55	9,185.00	38.45	43.78	-89.99	-1,991.30	-114.22	659.38	577.24	82.13	8.028		
11,200.00	9,185.00	11,146.45	9,185.00	38.70	44.21	-89.99	-2,041.30	-113.94	659.35	576.53	82.81	7.962		
11,250.00	9,185.00	11,203.55	9,185.00	38.97	44.77	-89.99	-2,091.30	-113.65	659.31	575.67	83.65	7.882		
11,300.00	9,185.00	11,246.45	9,185.00	39.23	45.21	-89.99	-2,141.30	-113.37	659.28	574.94	84.34	7.816		
11,350.00	9,185.00	11,303.55	9,185.00	39.50	45.79	-89.99	-2,191.30	-113.09	659.25	574.05	85.20	7.738		
11,400.00	9,185.00	11,346.45	9,185.00	39.77	46.24	-89.99	-2,241.30	-112.81	659.22	573.30	85.92	7.673		
11,450.00	9,185.00	11,403.55	9,185.00	40.05	46.83	-89.99	-2,291.30	-112.53	659.18	572.39	86.79	7.595		
11,500.00	9,185.00	11,446.45	9,185.00	40.33	47.29	-89.99	-2,341.30	-112.25	659.15	571.62	87.53	7.531		
11,550.00	9,185.00	11,503.55	9,185.00	40.62	47.89	-89.99	-2,391.30	-111.96	659.12	570.70	88.42	7.454		
11,600.00	9,185.00	11,546.45	9,185.00	40.91	48.36	-89.99	-2,441.30	-111.68	659.08	569.91	89.17	7.391		
11,650.00	9,185.00	11,603.55	9,185.00	41.21	48.97	-89.99	-2,491.30	-111.40	659.05	568.96	90.09	7.316		
11,700.00	9,185.00	11,646.45	9,185.00	41.50	49.45	-89.99	-2,541.30	-111.12	659.02	568.16	90.85	7.254		
11,750.00	9,185.00	11,703.55	9,185.00	41.80	50.08	-89.99	-2,591.29	-110.84	658.98	567.20	91.79	7.180		
11,800.00	9,185.00	11,746.45	9,185.00	42.10	50.56	-89.99	-2,641.29	-110.55	658.95	566.38	92.57	7.119		
11,850.00	9,185.00	11,803.55	9,185.00	42.41	51.20	-89.99	-2,691.29	-110.27	658.92	565.40	93.52	7.046		
11,900.00	9,185.00	11,846.45	9,185.00	42.72	51.68	-89.99	-2,741.29	-109.99	658.89	564.57	94.31	6.986		
11,950.00	9,185.00	11,903.55	9,185.00	43.04	52.33	-89.99	-2,791.29	-109.71	658.85	563.58	95.28	6.915		
12,000.00	9,185.00	11,946.45	9,185.00	43.35	52.83	-89.99	-2,841.29	-109.43	658.82	562.73	96.09	6.857		
12,050.00	9,185.00	12,003.55	9,185.00	43.68	53.48	-89.99	-2,891.29	-109.14	658.79	561.72	97.07	6.787		
12,100.00	9,185.00	12,046.45	9,185.00	44.00	53.98	-89.99	-2,941.29	-108.86	658.75	560.87	97.89	6.730		
12,150.00	9,185.00	12,103.55	9,185.00	44.32	54.65	-89.99	-2,991.29	-108.58	658.72	559.84	98.88	6.662		
12,200.00	9,185.00	12,146.45	9,185.00	44.65	55.16	-89.99	-3,041.29	-108.30	658.69	558.97	99.72	6.606		
12,250.00	9,185.00	12,203.55	9,185.00	44.99	55.83	-89.99	-3,091.29	-108.02	658.66	557.93	100.72	6.539		
12,300.00	9,185.00	12,246.45	9,185.00	45.32	56.34	-89.99	-3,141.29	-107.74	658.62	557.05	101.57	6.484		
12,350.00	9,185.00	12,303.55	9,185.00	45.66	57.02	-89.99	-3,191.28	-107.45	658.26	555.67	102.59	6.416		
12,400.00	9,185.00	12,346.44	9,185.00	46.00	57.54	-89.99	-3,241.27	-107.17	657.03	553.58	103.45	6.351		
12,450.00	9,185.00	12,403.61	9,185.00	46.35	58.23	-89.99	-3,291.22	-106.89	654.93	550.44	104.49	6.268		
12,500.00	9,185.00	12,446.30	9,185.00	46.70	58.75	-89.99	-3,341.13	-106.61	651.96	546.60	105.36	6.188		
12,550.00	9,185.00	12,503.85	9,185.00	47.06	59.45	-89.99	-3,390.98	-106.33	648.12	541.70	106.42	6.090		
12,600.00	9,185.00	12,545.93	9,185.00	47.42	59.96	-89.99	-3,440.76	-106.05	643.41	536.11	107.30	5.996		
12,650.00	9,185.00	12,604.38	9,185.00	47.78	60.68	-89.99	-3,490.44	-105.77	637.83	529.44	108.39	5.885		
12,700.00	9,185.00	12,645.20	9,185.00	48.15	61.19	-89.99	-3,540.03	-105.49	631.38	522.12	109.26	5.779		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1											Offset Site Error: 5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)		Minimum Separation (ft)	Separation Factor
12,750.00	9,185.00	12,705.34	9,185.00	48.52	61.93	-89.99	-3,589.49	-105.21	624.07	513.68	110.39	5.653	
12,800.00	9,185.00	12,743.99	9,185.00	48.90	62.41	-89.99	-3,638.81	-104.93	615.90	504.65	111.25	5.536	
12,850.00	9,185.00	12,806.84	9,185.00	49.28	63.19	-89.99	-3,687.99	-104.65	606.86	494.45	112.42	5.398	
12,900.00	9,185.00	12,842.18	9,185.00	49.67	63.64	-89.99	-3,737.00	-104.38	596.98	483.73	113.25	5.271	
12,950.00	9,185.00	12,908.98	9,185.00	50.05	64.48	-89.99	-3,785.84	-104.10	586.28	471.80	114.48	5.121	
13,000.00	9,185.00	12,939.93	9,185.00	50.44	64.87	-89.99	-3,834.76	-103.83	575.93	460.66	115.27	4.996	Alert
13,050.00	9,185.00	12,989.02	9,185.00	50.84	65.49	-89.99	-3,883.85	-103.55	566.43	450.15	116.29	4.871	Alert
13,100.00	9,185.00	13,038.27	9,185.00	51.23	66.11	-89.99	-3,933.09	-103.27	557.80	440.49	117.31	4.755	Alert
13,150.00	9,185.00	13,087.66	9,185.00	51.63	66.74	-89.99	-3,982.48	-102.99	550.02	431.69	118.34	4.648	Alert
13,200.00	9,185.00	13,137.18	9,185.00	52.03	67.37	-89.99	-4,032.00	-102.71	543.11	423.74	119.37	4.550	Alert
13,250.00	9,185.00	13,186.81	9,185.00	52.42	68.01	-89.99	-4,081.63	-102.44	537.06	416.66	120.40	4.461	Alert
13,300.00	9,185.00	13,236.55	9,185.00	52.82	68.65	-89.99	-4,131.36	-102.15	531.88	410.44	121.44	4.380	Alert
13,350.00	9,185.00	13,286.36	9,185.00	53.22	69.29	-89.99	-4,181.17	-101.87	527.57	405.09	122.48	4.308	Alert
13,400.00	9,185.00	13,336.24	9,185.00	53.62	69.93	-89.99	-4,231.05	-101.59	524.13	400.61	123.52	4.243	Alert
13,450.00	9,185.00	13,386.17	9,185.00	54.01	70.58	-89.99	-4,280.99	-101.31	521.56	397.00	124.56	4.187	Alert
13,500.00	9,185.00	13,436.14	9,185.00	54.40	71.22	-89.99	-4,330.96	-101.03	519.86	394.26	125.60	4.139	Alert
13,550.00	9,185.00	13,486.14	9,185.00	54.79	71.87	-89.99	-4,380.95	-100.75	519.03	392.39	126.64	4.098	Alert
13,572.33	9,185.00	13,508.47	9,185.00	54.97	72.16	-89.99	-4,403.28	-100.62	518.95	391.84	127.11	4.083	Alert
13,600.00	9,185.00	13,536.13	9,185.00	55.19	72.53	-89.99	-4,430.95	-100.47	519.08	391.40	127.68	4.065	Alert
13,650.00	9,185.00	13,586.13	9,185.00	55.57	73.18	-89.99	-4,480.94	-100.18	520.00	391.28	128.72	4.040	Alert
13,700.00	9,185.00	13,636.09	9,185.00	55.96	73.83	-89.99	-4,530.90	-99.90	521.79	392.03	129.76	4.021	Alert
13,750.00	9,185.00	13,686.02	9,185.00	56.34	74.49	-89.99	-4,580.83	-99.62	524.45	393.66	130.80	4.010	Alert
13,800.00	9,185.00	13,735.90	9,185.00	56.72	75.14	-89.99	-4,630.70	-99.34	527.99	396.15	131.83	4.005	Alert
13,850.00	9,185.00	13,785.70	9,185.00	57.10	75.80	-89.99	-4,680.51	-99.06	532.39	399.53	132.86	4.007	Alert
13,900.00	9,185.00	13,835.42	9,185.00	57.47	76.45	-89.99	-4,730.23	-98.78	537.67	403.77	133.89	4.016	Alert
13,950.00	9,185.00	13,885.04	9,185.00	57.84	77.11	-89.99	-4,779.85	-98.50	543.80	408.89	134.92	4.031	Alert
14,000.00	9,185.00	13,934.55	9,185.00	58.21	77.76	-89.99	-4,829.35	-98.22	550.81	414.87	135.94	4.052	Alert
14,050.00	9,185.00	13,983.92	9,185.00	58.57	78.42	-89.99	-4,878.73	-97.94	558.68	421.72	136.95	4.079	Alert
14,100.00	9,185.00	14,033.16	9,185.00	58.93	79.07	-89.99	-4,927.96	-97.66	567.41	429.44	137.97	4.113	Alert
14,150.00	9,185.00	14,082.23	9,185.00	59.29	79.73	-89.99	-4,977.03	-97.39	576.99	438.02	138.97	4.152	Alert
14,200.00	9,185.00	14,131.13	9,185.00	59.64	80.38	-89.99	-5,025.93	-97.11	587.43	447.45	139.98	4.197	Alert
14,250.00	9,185.00	14,179.84	9,185.00	59.99	81.03	-89.99	-5,074.65	-96.84	598.68	457.70	140.97	4.247	Alert
14,300.00	9,185.00	14,228.64	9,185.00	60.34	81.68	-89.99	-5,123.44	-96.56	609.58	467.60	141.98	4.294	Alert
14,350.00	9,185.00	14,277.62	9,185.00	60.71	82.34	-89.99	-5,172.42	-96.29	619.63	476.64	142.99	4.333	Alert
14,400.00	9,185.00	14,326.77	9,185.00	61.07	82.99	-89.99	-5,221.57	-96.01	628.82	484.81	144.01	4.366	Alert
14,450.00	9,185.00	14,376.07	9,185.00	61.45	83.66	-89.99	-5,270.87	-95.73	637.15	492.10	145.05	4.393	Alert
14,500.00	9,185.00	14,425.51	9,185.00	61.82	84.32	-89.99	-5,320.30	-95.45	644.62	498.53	146.09	4.413	Alert
14,550.00	9,185.00	14,475.07	9,185.00	62.21	84.99	-89.99	-5,369.86	-95.17	651.23	504.09	147.14	4.426	Alert
14,600.00	9,185.00	14,524.74	9,185.00	62.60	85.66	-89.99	-5,419.53	-94.89	656.97	508.77	148.19	4.433	Alert
14,650.00	9,185.00	14,574.50	9,185.00	63.00	86.33	-89.99	-5,469.29	-94.61	661.84	512.58	149.26	4.434	Alert
14,700.00	9,185.00	14,624.34	9,185.00	63.39	87.00	-89.99	-5,519.13	-94.33	665.84	515.51	150.33	4.429	Alert
14,750.00	9,185.00	14,674.24	9,185.00	63.80	87.68	-89.99	-5,569.03	-94.05	668.98	517.56	151.41	4.418	Alert
14,800.00	9,185.00	14,724.18	9,185.00	64.21	88.36	-89.99	-5,618.98	-93.77	671.24	518.74	152.50	4.402	Alert
14,850.00	9,185.00	14,774.16	9,185.00	64.63	89.04	-89.99	-5,668.96	-93.49	672.63	519.04	153.59	4.379	Alert
14,900.00	9,185.00	14,824.16	9,185.00	65.04	89.71	-89.99	-5,718.95	-93.21	673.15	518.46	154.69	4.352	Alert
14,950.00	9,185.00	14,874.16	9,185.00	65.46	90.39	-89.99	-5,768.95	-92.92	673.12	517.33	155.79	4.321	Alert
15,000.00	9,185.00	14,924.16	9,185.00	65.88	91.08	-89.99	-5,818.95	-92.64	673.09	516.20	156.89	4.290	Alert
15,050.00	9,185.00	14,974.16	9,185.00	66.31	91.76	-89.99	-5,868.95	-92.36	673.06	515.06	157.99	4.260	Alert
15,100.00	9,185.00	15,024.16	9,185.00	66.73	92.44	-89.99	-5,918.95	-92.08	673.02	513.92	159.10	4.230	Alert
15,150.00	9,185.00	15,074.16	9,185.00	67.15	93.12	-89.99	-5,968.95	-91.80	672.99	512.78	160.21	4.201	Alert
15,200.00	9,185.00	15,124.16	9,185.00	67.58	93.81	-89.99	-6,018.95	-91.51	672.96	511.64	161.32	4.172	Alert

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
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	Warning	
15,250.00	9,185.00	15,174.16	9,185.00	68.00	94.49	-89.99	-6,068.95	-91.23	672.93	510.50	162.43	4.143 Alert		
15,300.00	9,185.00	15,224.16	9,185.00	68.43	95.17	-89.99	-6,118.95	-90.95	672.89	509.36	163.54	4.115 Alert		
15,350.00	9,185.00	15,274.16	9,185.00	68.86	95.86	-89.99	-6,168.95	-90.67	672.86	508.21	164.65	4.087 Alert		
15,400.00	9,185.00	15,324.16	9,185.00	69.28	96.55	-89.99	-6,218.95	-90.39	672.83	507.06	165.77	4.059 Alert		
15,450.00	9,185.00	15,374.16	9,185.00	69.71	97.23	-89.99	-6,268.94	-90.11	672.80	505.92	166.88	4.032 Alert		
15,500.00	9,185.00	15,424.16	9,185.00	70.14	97.92	-89.99	-6,318.94	-89.82	672.77	504.77	168.00	4.005 Alert		
15,550.00	9,185.00	15,474.16	9,185.00	70.57	98.61	-89.99	-6,368.94	-89.54	672.73	503.62	169.12	3.978 Alert		
15,600.00	9,185.00	15,524.16	9,185.00	71.00	99.30	-89.99	-6,418.94	-89.26	672.70	502.46	170.24	3.952 Alert		
15,650.00	9,185.00	15,574.16	9,185.00	71.44	99.99	-89.99	-6,468.94	-88.98	672.67	501.31	171.36	3.925 Alert		
15,700.00	9,185.00	15,624.16	9,185.00	71.87	100.68	-89.99	-6,518.94	-88.70	672.64	500.16	172.48	3.900 Alert		
15,750.00	9,185.00	15,674.16	9,185.00	72.30	101.37	-89.99	-6,568.94	-88.41	672.60	499.00	173.61	3.874 Alert		
15,800.00	9,185.00	15,724.16	9,185.00	72.73	102.06	-89.99	-6,618.94	-88.13	672.57	497.84	174.73	3.849 Alert		
15,850.00	9,185.00	15,774.16	9,185.00	73.17	102.75	-89.99	-6,668.94	-87.85	672.54	496.68	175.86	3.824 Alert		
15,900.00	9,185.00	15,824.16	9,185.00	73.60	103.44	-89.99	-6,718.94	-87.57	672.51	495.52	176.98	3.800 Alert		
15,950.00	9,185.00	15,874.16	9,185.00	74.04	104.13	-89.99	-6,768.94	-87.29	672.47	494.36	178.11	3.776 Alert		
16,000.00	9,185.00	15,924.16	9,185.00	74.48	104.83	-89.99	-6,818.94	-87.01	672.44	493.20	179.24	3.752 Alert		
16,050.00	9,185.00	15,974.16	9,185.00	74.91	105.52	-89.99	-6,868.93	-86.72	672.41	492.04	180.37	3.728 Alert		
16,100.00	9,185.00	16,024.16	9,185.00	75.35	106.21	-89.99	-6,918.93	-86.44	672.38	490.87	181.50	3.704 Alert		
16,150.00	9,185.00	16,074.16	9,185.00	75.79	106.91	-89.99	-6,968.93	-86.16	672.35	489.71	182.64	3.681 Alert		
16,200.00	9,185.00	16,124.16	9,185.00	76.23	107.60	-89.99	-7,018.93	-85.88	672.31	488.54	183.77	3.658 Alert		
16,250.00	9,185.00	16,174.16	9,185.00	76.67	108.30	-89.99	-7,068.93	-85.60	672.28	487.38	184.91	3.636 Alert		
16,300.00	9,185.00	16,224.16	9,185.00	77.11	108.99	-89.99	-7,118.93	-85.31	672.25	486.21	186.04	3.613 Alert		
16,350.00	9,185.00	16,274.16	9,185.00	77.55	109.69	-89.99	-7,168.93	-85.03	672.22	485.04	187.18	3.591 Alert		
16,400.00	9,185.00	16,324.16	9,185.00	77.99	110.39	-89.99	-7,218.93	-84.75	672.18	483.87	188.32	3.569 Alert		
16,450.00	9,185.00	16,374.16	9,185.00	78.43	111.08	-89.99	-7,268.93	-84.47	672.15	482.70	189.45	3.548 Alert		
16,500.00	9,185.00	16,424.16	9,185.00	78.87	111.78	-89.99	-7,318.93	-84.19	672.12	481.53	190.59	3.526 Alert		
16,550.00	9,185.00	16,474.16	9,185.00	79.31	112.48	-89.99	-7,368.93	-83.91	672.09	480.35	191.73	3.505 Alert		
16,600.00	9,185.00	16,524.16	9,185.00	79.76	113.18	-89.99	-7,418.93	-83.62	672.05	479.18	192.88	3.484 Alert		
16,650.00	9,185.00	16,574.16	9,185.00	80.20	113.88	-89.99	-7,468.93	-83.34	672.02	478.00	194.02	3.464 Alert		
16,700.00	9,185.00	16,624.16	9,185.00	80.64	114.57	-89.99	-7,518.92	-83.06	671.99	476.83	195.16	3.443 Alert		
16,750.00	9,185.00	16,674.16	9,185.00	81.09	115.27	-89.99	-7,568.92	-82.78	671.96	475.65	196.31	3.423 Alert		
16,800.00	9,185.00	16,724.16	9,185.00	81.53	115.97	-89.99	-7,618.92	-82.50	671.93	474.47	197.45	3.403 Alert		
16,850.00	9,185.00	16,774.16	9,185.00	81.98	116.67	-89.99	-7,668.92	-82.21	671.89	473.30	198.60	3.383 Alert		
16,900.00	9,185.00	16,824.16	9,185.00	82.42	117.37	-89.99	-7,718.92	-81.93	671.86	472.12	199.74	3.364 Alert		
16,950.00	9,185.00	16,874.16	9,185.00	82.87	118.07	-89.99	-7,768.92	-81.65	671.83	470.94	200.89	3.344 Alert		
17,000.00	9,185.00	16,924.16	9,185.00	83.32	118.78	-89.99	-7,818.92	-81.37	671.80	469.76	202.04	3.325 Alert		
17,050.00	9,185.00	16,974.16	9,185.00	83.76	119.48	-89.99	-7,868.92	-81.09	671.76	468.58	203.19	3.306 Alert		
17,100.00	9,185.00	17,024.16	9,185.00	84.21	120.18	-89.99	-7,918.92	-80.80	671.73	467.39	204.34	3.287 Alert		
17,150.00	9,185.00	17,074.16	9,185.00	84.66	120.88	-89.99	-7,968.92	-80.52	671.70	466.21	205.49	3.269 Alert		
17,200.00	9,185.00	17,124.16	9,185.00	85.11	121.58	-89.99	-8,018.92	-80.24	671.67	465.03	206.64	3.250 Alert		
17,250.00	9,185.00	17,174.16	9,185.00	85.56	122.29	-89.99	-8,068.92	-79.96	671.63	463.84	207.79	3.232 Alert		
17,300.00	9,185.00	17,224.16	9,185.00	86.01	122.99	-89.99	-8,118.91	-79.68	671.60	462.66	208.94	3.214 Alert		
17,350.00	9,185.00	17,274.16	9,185.00	86.46	123.69	-89.99	-8,168.91	-79.40	671.57	461.47	210.10	3.196 Alert		
17,400.00	9,185.00	17,324.16	9,185.00	86.91	124.40	-89.99	-8,218.91	-79.11	671.54	460.29	211.25	3.179 Alert		
17,450.00	9,185.00	17,374.16	9,185.00	87.36	125.10	-89.99	-8,268.91	-78.83	671.51	459.10	212.40	3.161 Alert		
17,500.00	9,185.00	17,424.16	9,185.00	87.81	125.80	-89.99	-8,318.91	-78.55	671.47	457.91	213.56	3.144 Alert		
17,550.00	9,185.00	17,474.16	9,185.00	88.26	126.51	-89.99	-8,368.91	-78.27	671.44	456.72	214.72	3.127 Alert		
17,600.00	9,185.00	17,524.16	9,185.00	88.71	127.21	-89.99	-8,418.91	-77.99	671.41	455.54	215.87	3.110 Alert		
17,650.00	9,185.00	17,574.16	9,185.00	89.16	127.92	-89.99	-8,468.91	-77.70	671.38	454.35	217.03	3.093 Alert		
17,700.00	9,185.00	17,624.16	9,185.00	89.62	128.62	-89.99	-8,518.91	-77.42	671.34	453.16	218.19	3.077 Alert		
17,750.00	9,185.00	17,674.16	9,185.00	90.07	129.33	-89.99	-8,568.91	-77.14	671.31	451.96	219.35	3.061 Alert		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
17,800.00	9,185.00	17,724.16	9,185.00	90.52	130.03	-89.99	-8,618.91	-76.86	671.28	450.77	220.51	3.044	Alert	
17,850.00	9,185.00	17,774.16	9,185.00	90.97	130.74	-89.99	-8,668.91	-76.58	671.25	449.58	221.67	3.028	Alert	
17,900.00	9,185.00	17,824.16	9,185.00	91.43	131.45	-89.99	-8,718.91	-76.30	671.21	448.39	222.83	3.012	Alert	
17,950.00	9,185.00	17,874.16	9,185.00	91.88	132.15	-89.99	-8,768.90	-76.01	671.18	447.20	223.99	2.997	Alert	
18,000.00	9,185.00	17,924.16	9,185.00	92.34	132.86	-89.99	-8,818.90	-75.73	671.15	446.00	225.15	2.981	Alert	
18,050.00	9,185.00	17,974.16	9,185.00	92.79	133.57	-89.99	-8,868.90	-75.45	671.12	444.81	226.31	2.965	Alert	
18,100.00	9,185.00	18,024.16	9,185.00	93.25	134.27	-89.99	-8,918.90	-75.17	671.09	443.61	227.47	2.950	Alert	
18,150.00	9,185.00	18,074.16	9,185.00	93.70	134.98	-89.99	-8,968.90	-74.89	671.05	442.42	228.64	2.935	Alert	
18,200.00	9,185.00	18,124.16	9,185.00	94.16	135.69	-89.99	-9,018.90	-74.60	671.02	441.22	229.80	2.920	Alert	
18,250.00	9,185.00	18,174.16	9,185.00	94.61	136.40	-89.99	-9,068.90	-74.32	670.99	440.03	230.96	2.905	Alert	
18,300.00	9,185.00	18,224.16	9,185.00	95.07	137.11	-89.99	-9,118.90	-74.04	670.96	438.83	232.13	2.890	Alert	
18,350.00	9,185.00	18,274.16	9,185.00	95.53	137.81	-89.99	-9,168.90	-73.76	670.92	437.63	233.29	2.876	Alert	
18,400.00	9,185.00	18,324.16	9,185.00	95.98	138.52	-89.99	-9,218.90	-73.48	670.89	436.43	234.46	2.861	Alert	
18,450.00	9,185.00	18,374.16	9,185.00	96.44	139.23	-89.99	-9,268.90	-73.20	670.86	435.23	235.62	2.847	Alert	
18,500.00	9,185.00	18,424.16	9,185.00	96.90	139.94	-89.99	-9,318.90	-72.91	670.83	434.04	236.79	2.833	Alert	
18,550.00	9,185.00	18,474.16	9,185.00	97.36	140.65	-89.99	-9,368.89	-72.63	670.79	432.84	237.96	2.819	Alert	
18,600.00	9,185.00	18,524.16	9,185.00	97.81	141.36	-89.99	-9,418.89	-72.35	670.76	431.64	239.13	2.805	Alert	
18,650.00	9,185.00	18,574.16	9,185.00	98.27	142.07	-89.99	-9,468.89	-72.07	670.73	430.44	240.29	2.791	Alert	
18,700.00	9,185.00	18,624.16	9,185.00	98.73	142.78	-89.99	-9,518.89	-71.79	670.70	429.24	241.46	2.778	Alert	
18,750.00	9,185.00	18,674.16	9,185.00	99.19	143.49	-89.99	-9,568.89	-71.50	670.66	428.03	242.63	2.764	Alert	
18,800.00	9,185.00	18,724.16	9,185.00	99.65	144.20	-89.99	-9,618.89	-71.22	670.63	426.83	243.80	2.751	Alert	
18,850.00	9,185.00	18,774.16	9,185.00	100.11	144.91	-89.99	-9,668.89	-70.94	670.60	425.63	244.97	2.737	Alert	
18,900.00	9,185.00	18,824.16	9,185.00	100.57	145.62	-89.99	-9,718.89	-70.66	670.57	424.43	246.14	2.724	Alert	
18,950.00	9,185.00	18,874.16	9,185.00	101.03	146.33	-89.99	-9,768.89	-70.38	670.54	423.22	247.31	2.711	Alert	
19,000.00	9,185.00	18,924.16	9,185.00	101.49	147.04	-89.99	-9,818.89	-70.09	670.50	422.02	248.48	2.698	Alert	
19,047.07	9,185.00	18,971.23	9,185.00	101.87	147.71	-89.99	-9,865.96	-69.83	670.47	420.95	249.52	2.687	Alert	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.00	0.00	0.20	0.20	0.50	0.50	89.70	0.31	59.97	59.97					
50.00	50.00	50.20	50.20	0.50	0.50	89.70	0.31	59.97	59.97	58.96	1.01	59.581		
100.00	100.00	100.20	100.20	0.52	0.52	89.70	0.31	59.97	59.97	58.94	1.04	57.904		
150.00	150.00	150.20	150.20	0.59	0.59	89.70	0.31	59.97	59.97	58.79	1.18	50.788		
200.00	200.00	200.20	200.20	0.70	0.70	89.70	0.31	59.97	59.97	58.57	1.40	42.693		
250.00	250.00	250.20	250.20	0.84	0.84	89.70	0.31	59.97	59.97	58.29	1.68	35.782		
300.00	300.00	300.20	300.20	0.99	0.99	89.70	0.31	59.97	59.97	58.00	1.98	30.361		
350.00	350.00	350.20	350.20	1.15	1.15	89.70	0.31	59.97	59.97	57.68	2.29	26.170		
400.00	400.00	400.20	400.20	1.31	1.31	89.70	0.31	59.97	59.97	57.35	2.62	22.900		
450.00	450.00	450.20	450.20	1.48	1.48	89.70	0.31	59.97	59.97	57.02	2.95	20.306		
500.00	500.00	500.20	500.20	1.65	1.65	89.70	0.31	59.97	59.97	56.68	3.29	18.212		
550.00	550.00	550.20	550.20	1.82	1.82	89.70	0.31	59.97	59.97	56.33	3.64	16.494		
600.00	600.00	600.20	600.20	1.99	1.99	89.70	0.31	59.97	59.97	55.99	3.98	15.061		
650.00	650.00	650.20	650.20	2.16	2.17	89.70	0.31	59.97	59.97	55.64	4.33	13.851		
700.00	700.00	700.20	700.20	2.34	2.34	89.70	0.31	59.97	59.97	55.29	4.68	12.816		
750.00	750.00	750.20	750.20	2.51	2.52	89.70	0.31	59.97	59.97	54.94	5.03	11.922		
800.00	800.00	800.20	800.20	2.69	2.69	89.70	0.31	59.97	59.97	54.59	5.38	11.143		
850.00	850.00	850.20	850.20	2.87	2.87	89.70	0.31	59.97	59.97	54.24	5.73	10.458		
900.00	900.00	900.20	900.20	3.04	3.04	89.70	0.31	59.97	59.97	53.88	6.09	9.851		
950.00	950.00	950.20	950.20	3.22	3.22	89.70	0.31	59.97	59.97	53.53	6.44	9.310		
1,000.00	1,000.00	1,000.20	1,000.20	3.40	3.40	89.70	0.31	59.97	59.97	53.17	6.80	8.824		
1,050.00	1,050.00	1,050.20	1,050.20	3.58	3.58	89.70	0.31	59.97	59.97	52.82	7.15	8.387		
1,100.00	1,100.00	1,100.20	1,100.20	3.75	3.75	89.70	0.31	59.97	59.97	52.47	7.51	7.990		
1,150.00	1,150.00	1,150.20	1,150.20	3.93	3.93	89.70	0.31	59.97	59.97	52.11	7.86	7.629		
1,200.00	1,200.00	1,200.20	1,200.20	4.11	4.11	89.70	0.31	59.97	59.97	51.75	8.22	7.298		
1,250.00	1,250.00	1,250.20	1,250.20	4.29	4.29	89.70	0.31	59.97	59.97	51.40	8.57	6.995		
1,300.00	1,300.00	1,300.20	1,300.20	4.46	4.46	89.70	0.31	59.97	59.97	51.04	8.93	6.716		
1,350.00	1,350.00	1,350.20	1,350.20	4.64	4.64	89.70	0.31	59.97	59.97	50.69	9.29	6.459		
1,400.00	1,400.00	1,400.20	1,400.20	4.82	4.82	89.70	0.31	59.97	59.97	50.33	9.64	6.220		
1,450.00	1,450.00	1,450.20	1,450.20	5.00	5.00	89.70	0.31	59.97	59.97	49.97	10.00	5.998		
1,500.00	1,500.00	1,500.20	1,500.20	5.18	5.18	89.70	0.31	59.97	59.97	49.62	10.36	5.791		
1,550.00	1,550.00	1,550.20	1,550.20	5.36	5.36	89.70	0.31	59.97	59.97	49.26	10.71	5.598		
1,600.00	1,600.00	1,600.20	1,600.20	5.53	5.53	89.70	0.31	59.97	59.97	48.90	11.07	5.418		
1,650.00	1,650.00	1,650.20	1,650.20	5.71	5.71	89.70	0.31	59.97	59.97	48.54	11.43	5.249		
1,700.00	1,700.00	1,700.20	1,700.20	5.89	5.89	89.70	0.31	59.97	59.97	48.19	11.78	5.090		
1,750.00	1,750.00	1,750.20	1,750.20	6.07	6.07	89.70	0.31	59.97	59.97	47.83	12.14	4.940 Alert		
1,800.00	1,800.00	1,800.20	1,800.20	6.25	6.25	89.70	0.31	59.97	59.97	47.47	12.50	4.799 Alert		
1,850.00	1,850.00	1,850.20	1,850.20	6.43	6.43	89.70	0.31	59.97	59.97	47.12	12.86	4.665 Alert		
1,900.00	1,900.00	1,900.20	1,900.20	6.61	6.61	89.70	0.31	59.97	59.97	46.76	13.21	4.539 Alert		
1,950.00	1,950.00	1,950.20	1,950.20	6.78	6.79	89.70	0.31	59.97	59.97	46.40	13.57	4.419 Alert		
2,000.00	2,000.00	2,000.20	2,000.20	6.96	6.96	89.70	0.31	59.97	59.97	46.04	13.93	4.306 Alert		
2,050.00	2,050.00	2,050.20	2,050.20	7.14	7.14	89.70	0.31	59.97	59.97	45.69	14.29	4.198 Alert		
2,100.00	2,100.00	2,100.20	2,100.20	7.32	7.32	89.70	0.31	59.97	59.97	45.33	14.64	4.096 Alert		
2,150.00	2,150.00	2,150.20	2,150.20	7.50	7.50	89.70	0.31	59.97	59.97	44.97	15.00	3.998 Alert		
2,200.00	2,200.00	2,200.20	2,200.20	7.68	7.68	89.70	0.31	59.97	59.97	44.61	15.36	3.905 Alert		
2,250.00	2,250.00	2,250.20	2,250.20	7.86	7.86	89.70	0.31	59.97	59.97	44.26	15.72	3.816 Alert		
2,300.00	2,300.00	2,300.20	2,300.20	8.04	8.04	89.70	0.31	59.97	59.97	43.90	16.07	3.731 Alert		
2,350.00	2,350.00	2,350.20	2,350.20	8.22	8.22	89.70	0.31	59.97	59.97	43.54	16.43	3.650 Alert		
2,400.00	2,400.00	2,400.20	2,400.20	8.39	8.39	89.70	0.31	59.97	59.97	43.18	16.79	3.572 Alert		
2,450.00	2,450.00	2,450.20	2,450.20	8.57	8.57	89.70	0.31	59.97	59.97	42.82	17.15	3.497 Alert		
2,500.00	2,500.00	2,500.20	2,500.20	8.75	8.75	89.70	0.31	59.97	59.97	42.47	17.50	3.426 Alert, CC, ES		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,550.00	2,550.00	2,549.70	2,549.70	8.93	8.93	168.46	0.38	60.17	60.44	42.59	17.85	3.386	Alert, SF	
2,600.00	2,599.99	2,599.18	2,599.18	9.10	9.10	168.42	0.59	60.78	61.86	43.66	18.20	3.399	Alert	
2,650.00	2,649.97	2,648.61	2,648.59	9.28	9.27	168.35	0.93	61.79	64.22	45.68	18.54	3.464	Alert	
2,700.00	2,699.94	2,697.96	2,697.92	9.45	9.44	168.26	1.42	63.21	67.52	48.64	18.88	3.576	Alert	
2,750.00	2,749.88	2,747.21	2,747.14	9.62	9.62	168.16	2.04	65.02	71.76	52.54	19.22	3.734	Alert	
2,800.00	2,799.79	2,796.34	2,796.21	9.79	9.79	168.05	2.79	67.22	76.94	57.39	19.56	3.934	Alert	
2,850.00	2,849.66	2,845.31	2,845.11	9.97	9.96	167.94	3.68	69.81	83.06	63.16	19.89	4.175	Alert	
2,900.00	2,899.49	2,894.11	2,893.80	10.14	10.13	167.83	4.70	72.79	90.10	69.87	20.22	4.455	Alert	
2,950.00	2,949.28	2,942.72	2,942.28	10.32	10.30	167.72	5.85	76.14	98.07	77.51	20.56	4.771	Alert	
3,000.00	2,999.01	2,991.09	2,990.49	10.49	10.47	167.61	7.12	79.87	106.96	86.08	20.89	5.121		
3,050.00	3,048.68	3,039.23	3,038.43	10.67	10.64	167.51	8.52	83.96	116.77	95.56	21.21	5.505		
3,100.00	3,098.29	3,087.21	3,086.18	10.84	10.81	167.42	10.04	88.41	127.49	105.95	21.54	5.919		
3,150.00	3,147.82	3,135.89	3,134.62	11.02	10.98	167.36	11.64	93.08	138.88	117.00	21.88	6.348		
3,200.00	3,197.28	3,184.45	3,182.93	11.20	11.16	167.36	13.24	97.74	150.79	128.57	22.22	6.786		
3,250.00	3,246.69	3,232.93	3,231.15	11.37	11.33	167.40	14.83	102.38	163.04	140.48	22.56	7.227		
3,300.00	3,296.09	3,281.40	3,279.38	11.55	11.50	167.44	16.42	107.03	175.30	152.40	22.90	7.655		
3,350.00	3,345.49	3,329.88	3,327.60	11.73	11.68	167.48	18.01	111.68	187.55	164.31	23.24	8.070		
3,400.00	3,394.90	3,378.35	3,375.83	11.91	11.85	167.51	19.60	116.33	199.81	176.23	23.58	8.473		
3,450.00	3,444.30	3,426.83	3,424.05	12.09	12.02	167.54	21.19	120.97	212.07	188.14	23.93	8.864		
3,500.00	3,493.71	3,475.30	3,472.28	12.27	12.20	167.57	22.78	125.62	224.32	200.06	24.27	9.244		
3,550.00	3,543.11	3,523.78	3,520.50	12.45	12.37	167.59	24.37	130.27	236.58	211.97	24.61	9.613		
3,600.00	3,592.51	3,572.25	3,568.73	12.63	12.55	167.62	25.96	134.92	248.84	223.88	24.95	9.972		
3,650.00	3,641.92	3,620.72	3,616.95	12.81	12.73	167.63	27.55	139.57	261.09	235.80	25.30	10.321		
3,700.00	3,691.32	3,669.20	3,665.18	12.99	12.90	167.65	29.14	144.21	273.35	247.71	25.64	10.661		
3,750.00	3,740.72	3,717.67	3,713.40	13.17	13.08	167.67	30.74	148.86	285.61	259.62	25.99	10.991		
3,800.00	3,790.13	3,766.15	3,761.63	13.35	13.25	167.68	32.33	153.51	297.87	271.53	26.33	11.312		
3,850.00	3,839.53	3,814.62	3,809.85	13.53	13.43	167.70	33.92	158.16	310.12	283.45	26.68	11.625		
3,900.00	3,888.93	3,863.10	3,858.07	13.72	13.61	167.71	35.51	162.80	322.38	295.36	27.02	11.930		
3,950.00	3,938.34	3,911.57	3,906.30	13.90	13.79	167.72	37.10	167.45	334.64	307.27	27.37	12.227		
4,000.00	3,987.74	3,960.05	3,954.52	14.08	13.96	167.73	38.69	172.10	346.89	319.18	27.72	12.516		
4,050.00	4,037.14	4,008.52	4,002.75	14.27	14.14	167.74	40.28	176.75	359.15	331.09	28.06	12.798		
4,100.00	4,086.55	4,056.99	4,050.97	14.45	14.32	167.75	41.87	181.40	371.41	343.00	28.41	13.073		
4,150.00	4,135.95	4,105.47	4,099.20	14.63	14.50	167.76	43.46	186.04	383.66	354.91	28.76	13.342		
4,200.00	4,185.36	4,153.94	4,147.42	14.82	14.68	167.77	45.05	190.69	395.92	366.82	29.10	13.603		
4,250.00	4,234.76	4,202.42	4,195.65	15.00	14.85	167.78	46.64	195.34	408.18	378.73	29.45	13.859		
4,300.00	4,284.16	4,250.89	4,243.87	15.18	15.03	167.78	48.23	199.99	420.44	390.63	29.80	14.108		
4,350.00	4,333.57	4,300.63	4,292.10	15.37	15.22	167.79	49.83	204.63	432.69	402.54	30.15	14.349		
4,400.00	4,382.97	4,347.84	4,340.32	15.55	15.39	167.80	51.42	209.28	444.95	414.45	30.50	14.589		
4,450.00	4,432.37	4,403.69	4,398.55	15.74	15.60	167.80	53.01	213.93	457.21	426.33	30.88	14.808		
4,500.00	4,481.78	4,444.79	4,436.77	15.92	15.75	167.81	54.60	218.58	469.46	438.27	31.20	15.048		
4,550.00	4,531.18	4,506.74	4,495.00	16.11	15.98	167.81	56.19	223.23	481.72	450.12	31.60	15.246		
4,600.00	4,580.58	4,541.74	4,533.22	16.29	16.11	167.82	57.78	227.87	493.98	462.08	31.90	15.486		
4,650.00	4,629.99	4,609.79	4,591.45	16.48	16.36	167.82	59.37	232.52	506.24	473.92	32.32	15.664		
4,700.00	4,679.39	4,658.69	4,649.67	16.66	16.47	167.83	60.96	237.17	518.49	485.89	32.60	15.905		
4,750.00	4,728.80	4,697.16	4,687.90	16.85	16.65	167.83	62.55	241.82	530.75	497.80	32.95	16.108		
4,800.00	4,778.20	4,735.63	4,726.12	17.03	16.83	167.84	64.14	246.47	543.01	509.71	33.30	16.306		
4,850.00	4,827.60	4,784.11	4,774.35	17.22	17.01	167.84	65.73	251.11	555.26	521.61	33.65	16.500		
4,900.00	4,877.01	4,832.58	4,822.57	17.40	17.19	167.85	67.32	255.76	567.52	533.52	34.00	16.690		
4,950.00	4,926.41	4,881.06	4,870.80	17.59	17.37	167.85	68.91	260.41	579.78	545.42	34.35	16.876		
5,000.00	4,975.81	4,929.53	4,919.02	17.78	17.55	167.85	70.51	265.06	592.03	557.33	34.71	17.058		
5,050.00	5,025.22	4,978.01	4,967.24	17.96	17.73	167.86	72.10	269.70	604.29	569.23	35.06	17.237		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,074.62	5,026.48	5,015.47	18.15	17.91	167.86	73.69	274.35	616.55	581.14	35.41	17.411		
5,150.00	5,124.02	5,074.96	5,063.69	18.34	18.09	167.86	75.28	279.00	628.81	593.04	35.76	17.583		
5,200.00	5,173.43	5,123.43	5,111.92	18.52	18.27	167.87	76.87	283.65	641.06	604.95	36.12	17.750		
5,250.00	5,222.83	5,171.90	5,160.14	18.71	18.46	167.87	78.46	288.30	653.32	616.85	36.47	17.915		
5,300.00	5,272.23	5,220.38	5,208.37	18.90	18.64	167.87	80.05	292.94	665.58	628.76	36.82	18.076		
5,350.00	5,321.64	5,268.85	5,256.59	19.08	18.82	167.87	81.64	297.59	677.83	640.66	37.17	18.234		
5,400.00	5,371.04	5,317.33	5,304.82	19.27	19.00	167.88	83.23	302.24	690.09	652.56	37.53	18.389		
5,450.00	5,420.45	5,365.80	5,353.04	19.46	19.18	167.88	84.82	306.89	702.35	664.47	37.88	18.541		
5,500.00	5,469.85	5,414.28	5,401.27	19.65	19.36	167.88	86.41	311.53	714.61	676.37	38.23	18.690		
5,550.00	5,519.25	5,462.75	5,449.49	19.83	19.54	167.88	88.00	316.18	726.86	688.28	38.59	18.837		
5,600.00	5,568.66	5,511.22	5,497.72	20.02	19.73	167.89	89.60	320.83	739.12	700.18	38.94	18.981		
5,650.00	5,618.06	5,559.70	5,545.94	20.21	19.91	167.89	91.19	325.48	751.38	712.08	39.29	19.122		
5,700.00	5,667.46	5,608.17	5,594.17	20.40	20.09	167.89	92.78	330.13	763.63	723.99	39.65	19.260		
5,750.00	5,716.87	5,656.65	5,642.39	20.58	20.27	167.89	94.37	334.77	775.89	735.89	40.00	19.396		
5,800.00	5,766.27	5,705.12	5,690.62	20.77	20.45	167.90	95.96	339.42	788.15	747.79	40.36	19.529		
5,850.00	5,815.67	5,753.60	5,738.84	20.96	20.64	167.90	97.55	344.07	800.41	759.69	40.71	19.660		
5,900.00	5,865.08	5,802.07	5,787.07	21.15	20.82	167.90	99.14	348.72	812.66	771.60	41.07	19.789		
5,950.00	5,914.48	5,850.54	5,835.29	21.34	21.00	167.90	100.73	353.36	824.92	783.50	41.42	19.916		
6,000.00	5,963.89	5,900.98	5,883.52	21.52	21.19	167.90	102.32	358.01	837.18	795.39	41.78	20.037		
6,050.00	6,013.29	5,947.49	5,931.74	21.71	21.37	167.91	103.91	362.66	849.43	807.30	42.13	20.162		
6,100.00	6,062.69	6,004.03	5,979.97	21.90	21.58	167.91	105.50	367.31	861.69	819.18	42.51	20.268		
6,150.00	6,112.10	6,044.44	6,028.19	22.09	21.73	167.91	107.09	371.96	873.95	831.11	42.84	20.400		
6,200.00	6,161.50	6,107.08	6,076.41	22.28	21.97	167.91	108.69	376.60	886.21	842.96	43.25	20.492		
6,250.00	6,210.90	6,141.39	6,124.64	22.47	22.10	167.91	110.28	381.25	898.46	854.91	43.55	20.630		
6,300.00	6,260.31	6,189.87	6,172.86	22.65	22.28	167.91	111.87	385.90	910.72	866.81	43.91	20.742		
6,350.00	6,309.71	6,238.34	6,221.09	22.84	22.46	167.91	113.46	390.55	922.98	878.72	44.26	20.853		
6,400.00	6,359.11	6,286.81	6,269.31	23.03	22.64	167.92	115.05	395.19	935.23	890.62	44.62	20.961		
6,450.00	6,408.52	6,335.29	6,317.54	23.22	22.83	167.92	116.64	399.84	947.49	902.52	44.97	21.068		
6,500.00	6,457.92	6,383.76	6,365.76	23.41	23.01	167.92	118.23	404.49	959.75	914.42	45.33	21.173		
6,550.00	6,507.32	6,432.24	6,413.99	23.60	23.19	167.92	119.82	409.14	972.01	926.32	45.68	21.276		
6,600.00	6,556.73	6,480.71	6,462.21	23.79	23.38	167.92	121.41	413.79	984.26	938.22	46.04	21.378		
6,650.00	6,606.13	6,529.19	6,510.44	23.98	23.56	167.92	123.00	418.43	996.52	950.12	46.40	21.478		
6,700.00	6,655.54	6,577.66	6,558.66	24.16	23.74	167.92	124.59	423.08	1,008.78	962.02	46.75	21.577		
6,750.00	6,704.94	6,626.13	6,606.89	24.35	23.92	167.93	126.18	427.73	1,021.03	973.92	47.11	21.674		
6,800.00	6,754.34	6,674.61	6,655.11	24.54	24.11	167.93	127.78	432.38	1,033.29	985.83	47.47	21.769		
6,850.00	6,803.75	6,723.08	6,703.34	24.73	24.29	167.93	129.37	437.02	1,045.55	997.73	47.82	21.863		
6,900.00	6,853.15	6,771.56	6,751.56	24.92	24.47	167.93	130.96	441.67	1,057.81	1,009.63	48.18	21.956		
6,950.00	6,902.55	6,820.03	6,799.79	25.11	24.66	167.93	132.55	446.32	1,070.06	1,021.53	48.53	22.047		
7,000.00	6,951.96	6,868.51	6,848.01	25.30	24.84	167.93	134.14	450.97	1,082.32	1,033.43	48.89	22.137		
7,050.00	7,001.36	6,916.98	6,896.24	25.49	25.02	167.93	135.73	455.62	1,094.58	1,045.33	49.25	22.226		
7,100.00	7,050.76	6,965.45	6,944.46	25.68	25.21	167.93	137.32	460.26	1,106.83	1,057.23	49.61	22.313		
7,150.00	7,100.17	7,013.93	6,992.69	25.87	25.39	167.93	138.91	464.91	1,119.09	1,069.13	49.96	22.399		
7,200.00	7,149.57	7,062.40	7,040.91	26.06	25.57	167.94	140.50	469.56	1,131.35	1,081.03	50.32	22.484		
7,250.00	7,198.98	7,110.88	7,089.14	26.25	25.76	167.94	142.09	474.21	1,143.61	1,092.93	50.68	22.567		
7,300.00	7,248.38	7,159.35	7,137.36	26.44	25.94	167.94	143.68	478.85	1,155.86	1,104.83	51.03	22.649		
7,350.00	7,297.78	7,207.83	7,185.58	26.62	26.13	167.94	145.27	483.50	1,168.12	1,116.73	51.39	22.730		
7,400.00	7,347.19	7,256.30	7,233.81	26.81	26.31	167.94	146.86	488.15	1,180.38	1,128.63	51.75	22.810		
7,450.00	7,396.59	7,304.78	7,282.03	27.00	26.49	167.94	148.46	492.80	1,192.63	1,140.53	52.11	22.889		
7,500.00	7,445.99	7,353.25	7,330.26	27.19	26.68	167.94	150.05	497.45	1,204.89	1,152.43	52.46	22.967		
7,550.00	7,495.40	7,401.72	7,378.48	27.38	26.86	167.94	151.64	502.09	1,217.15	1,164.33	52.82	23.043		
7,600.00	7,544.80	7,450.20	7,426.71	27.57	27.04	167.94	153.23	506.74	1,229.41	1,176.23	53.18	23.119		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,594.20	7,498.67	7,474.93	27.76	27.23	167.94	154.82	511.39	1,241.66	1,188.13	53.54	23.193		
7,700.00	7,643.61	7,551.82	7,527.81	27.95	27.43	167.94	156.55	516.46	1,253.90	1,199.97	53.93	23.252		
7,750.00	7,693.01	7,622.60	7,598.32	28.14	27.69	167.96	158.58	522.36	1,265.55	1,211.11	54.44	23.246		
7,800.00	7,742.43	7,694.00	7,669.54	28.33	27.96	168.01	160.19	527.07	1,276.22	1,221.27	54.95	23.226		
7,850.00	7,791.94	7,766.09	7,741.53	28.52	28.22	168.08	161.37	530.54	1,285.43	1,229.99	55.44	23.187		
7,900.00	7,841.54	7,838.76	7,814.17	28.71	28.48	168.16	162.13	532.74	1,293.13	1,237.21	55.92	23.125		
7,950.00	7,891.22	7,911.93	7,887.33	28.89	28.73	168.24	162.43	533.63	1,299.29	1,242.91	56.38	23.044		
8,000.00	7,940.97	7,965.77	7,941.17	29.08	28.92	168.30	162.44	533.65	1,304.23	1,247.47	56.76	22.980		
8,050.00	7,990.77	8,015.57	7,990.97	29.26	29.09	168.36	162.44	533.65	1,308.51	1,251.40	57.11	22.912		
8,100.00	8,040.63	8,065.44	8,040.83	29.44	29.26	168.40	162.44	533.65	1,312.16	1,254.70	57.46	22.835		
8,150.00	8,090.54	8,115.34	8,090.74	29.62	29.43	168.44	162.44	533.65	1,315.16	1,257.35	57.82	22.748		
8,200.00	8,140.48	8,165.28	8,140.68	29.79	29.60	168.46	162.44	533.65	1,317.53	1,259.36	58.17	22.650		
8,250.00	8,190.45	8,215.25	8,190.65	29.97	29.78	168.48	162.44	533.65	1,319.26	1,260.74	58.52	22.544		
8,300.00	8,240.44	8,265.24	8,240.64	30.15	29.95	168.50	162.44	533.65	1,320.34	1,261.47	58.87	22.428		
8,350.00	8,290.43	8,315.24	8,290.63	30.32	30.12	168.50	162.44	533.65	1,320.78	1,261.57	59.22	22.304		
8,400.00	8,340.43	8,365.24	8,340.63	30.49	30.29	89.73	162.44	533.65	1,320.80	1,261.23	59.56	22.174		
8,450.00	8,390.43	8,415.24	8,390.63	30.66	30.46	89.73	162.44	533.65	1,320.80	1,260.89	59.91	22.046		
8,500.00	8,440.43	8,465.24	8,440.63	30.83	30.64	89.73	162.44	533.65	1,320.80	1,260.54	60.26	21.919		
8,550.00	8,490.43	8,515.24	8,490.63	31.00	30.81	89.73	162.44	533.65	1,320.80	1,260.19	60.60	21.794		
8,600.00	8,540.43	8,565.24	8,540.63	31.17	30.98	89.73	162.44	533.65	1,320.80	1,259.85	60.95	21.670		
8,650.00	8,590.43	8,615.24	8,590.63	31.34	31.16	89.73	162.44	533.65	1,320.80	1,259.50	61.30	21.547		
8,700.00	8,640.42	8,665.17	8,640.56	31.51	31.32	-89.91	161.73	533.66	1,320.80	1,259.16	61.64	21.429		
8,750.00	8,690.19	8,715.06	8,690.21	31.67	31.48	-89.91	157.08	533.68	1,320.79	1,258.84	61.96	21.318		
8,800.00	8,739.36	8,764.95	8,739.28	31.83	31.63	-89.91	148.13	533.73	1,320.79	1,258.52	62.27	21.211		
8,850.00	8,787.57	8,814.84	8,787.38	31.97	31.78	-89.91	134.95	533.81	1,320.78	1,258.21	62.57	21.108		
8,900.00	8,834.43	8,864.73	8,834.15	32.12	31.91	-89.91	117.64	533.91	1,320.77	1,257.90	62.86	21.010		
8,950.00	8,879.61	8,914.62	8,879.24	32.25	32.04	-89.91	96.32	534.03	1,320.75	1,257.60	63.15	20.915		
9,000.00	8,922.75	8,964.51	8,922.31	32.37	32.16	-89.92	71.16	534.17	1,320.73	1,257.31	63.42	20.825		
9,050.00	8,963.52	9,014.41	8,963.03	32.48	32.27	-89.92	42.35	534.33	1,320.72	1,257.03	63.68	20.739		
9,100.00	9,001.62	9,064.32	9,001.09	32.59	32.36	-89.93	10.10	534.51	1,320.69	1,256.75	63.94	20.655		
9,150.00	9,036.75	9,114.23	9,036.21	32.67	32.45	-89.93	-25.34	534.71	1,320.67	1,256.48	64.19	20.575		
9,200.00	9,068.66	9,164.14	9,068.12	32.75	32.53	-89.94	-63.71	534.93	1,320.64	1,256.21	64.43	20.497		
9,250.00	9,097.08	9,214.06	9,096.57	32.81	32.60	-89.94	-104.71	535.16	1,320.62	1,255.95	64.67	20.422		
9,300.00	9,121.82	9,263.99	9,121.34	32.86	32.68	-89.95	-148.04	535.40	1,320.59	1,255.69	64.90	20.348		
9,350.00	9,142.67	9,313.93	9,142.26	32.90	32.76	-89.96	-193.37	535.65	1,320.56	1,255.43	65.13	20.276		
9,400.00	9,159.49	9,363.88	9,159.15	32.93	32.86	-89.96	-240.35	535.92	1,320.52	1,255.17	65.35	20.206		
9,450.00	9,172.14	9,413.83	9,171.89	32.95	32.98	-89.97	-288.64	536.19	1,320.49	1,254.92	65.58	20.137		
9,500.00	9,180.53	9,463.80	9,180.37	32.96	33.11	-89.98	-337.86	536.47	1,320.46	1,254.66	65.80	20.069		
9,550.00	9,184.59	9,513.77	9,184.54	33.01	33.26	-89.99	-387.64	536.75	1,320.43	1,254.42	66.01	20.004		
9,600.00	9,185.00	9,563.76	9,185.00	33.08	33.41	-89.99	-437.63	537.03	1,320.39	1,254.17	66.22	19.938		
9,650.00	9,185.00	9,613.76	9,185.00	33.16	33.57	-89.99	-487.63	537.31	1,320.36	1,253.90	66.46	19.867		
9,700.00	9,185.00	9,663.76	9,185.00	33.25	33.75	-89.99	-537.63	537.59	1,320.33	1,253.61	66.72	19.790		
9,750.00	9,185.00	9,713.76	9,185.00	33.35	33.94	-89.99	-587.62	537.87	1,320.29	1,253.30	66.99	19.708		
9,800.00	9,185.00	9,763.76	9,185.00	33.45	34.15	-89.99	-637.62	538.15	1,320.26	1,252.97	67.29	19.620		
9,850.00	9,185.00	9,813.76	9,185.00	33.56	34.36	-89.99	-687.62	538.43	1,320.22	1,252.61	67.61	19.527		
9,900.00	9,185.00	9,863.76	9,185.00	33.67	34.60	-89.99	-737.62	538.72	1,320.19	1,252.24	67.95	19.428		
9,950.00	9,185.00	9,913.76	9,185.00	33.80	34.84	-89.99	-787.62	539.00	1,320.16	1,251.84	68.31	19.325		
10,000.00	9,185.00	9,963.76	9,185.00	33.92	35.10	-89.99	-837.62	539.28	1,320.12	1,251.43	68.69	19.217		
10,050.00	9,185.00	10,013.76	9,185.00	34.06	35.37	-89.99	-887.62	539.56	1,320.09	1,251.00	69.09	19.105		
10,100.00	9,185.00	10,063.76	9,185.00	34.20	35.66	-89.99	-937.62	539.84	1,320.06	1,250.54	69.51	18.990		
10,150.00	9,185.00	10,113.76	9,185.00	34.35	35.95	-89.99	-987.62	540.12	1,320.02	1,250.07	69.95	18.870		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,200.00	9,185.00	10,163.76	9,185.00	34.50	36.26	-89.99	-1,037.62	540.40	1,319.99	1,249.58	70.41	18.747		
10,250.00	9,185.00	10,213.76	9,185.00	34.66	36.58	-89.99	-1,087.62	540.68	1,319.96	1,249.07	70.89	18.620		
10,300.00	9,185.00	10,263.76	9,185.00	34.82	36.91	-89.99	-1,137.62	540.96	1,319.92	1,248.54	71.38	18.491		
10,350.00	9,185.00	10,313.76	9,185.00	34.99	37.25	-89.99	-1,187.61	541.25	1,319.89	1,248.00	71.89	18.359		
10,400.00	9,185.00	10,363.76	9,185.00	35.17	37.61	-89.99	-1,237.61	541.53	1,319.86	1,247.43	72.42	18.225		
10,450.00	9,185.00	10,413.76	9,185.00	35.35	37.97	-89.99	-1,287.61	541.81	1,319.82	1,246.86	72.97	18.088		
10,500.00	9,185.00	10,463.76	9,185.00	35.53	38.34	-89.99	-1,337.61	542.09	1,319.79	1,246.26	73.53	17.950		
10,550.00	9,185.00	10,513.76	9,185.00	35.73	38.73	-89.99	-1,387.61	542.37	1,319.76	1,245.65	74.11	17.809		
10,600.00	9,185.00	10,563.76	9,185.00	35.93	39.12	-89.99	-1,437.61	542.65	1,319.72	1,245.02	74.70	17.668		
10,650.00	9,185.00	10,613.76	9,185.00	36.13	39.52	-89.99	-1,487.61	542.93	1,319.69	1,244.38	75.31	17.525		
10,700.00	9,185.00	10,663.76	9,185.00	36.34	39.94	-89.99	-1,537.61	543.21	1,319.65	1,243.73	75.93	17.381		
10,750.00	9,185.00	10,713.76	9,185.00	36.56	40.36	-89.99	-1,587.61	543.50	1,319.62	1,243.06	76.56	17.236		
10,800.00	9,185.00	10,763.76	9,185.00	36.77	40.79	-89.99	-1,637.61	543.78	1,319.59	1,242.37	77.21	17.090		
10,850.00	9,185.00	10,813.76	9,185.00	37.00	41.22	-89.99	-1,687.61	544.06	1,319.55	1,241.68	77.88	16.944		
10,900.00	9,185.00	10,863.76	9,185.00	37.23	41.67	-89.99	-1,737.61	544.34	1,319.52	1,240.97	78.55	16.798		
10,950.00	9,185.00	10,913.76	9,185.00	37.46	42.13	-89.99	-1,787.61	544.62	1,319.49	1,240.24	79.24	16.651		
11,000.00	9,185.00	10,963.76	9,185.00	37.70	42.59	-89.99	-1,837.60	544.90	1,319.45	1,239.51	79.95	16.504		
11,050.00	9,185.00	11,013.76	9,185.00	37.95	43.06	-89.99	-1,887.60	545.18	1,319.42	1,238.76	80.66	16.357		
11,100.00	9,185.00	11,063.76	9,185.00	38.19	43.53	-89.99	-1,937.60	545.46	1,319.39	1,238.00	81.39	16.211		
11,150.00	9,185.00	11,113.76	9,185.00	38.45	44.02	-89.99	-1,987.60	545.74	1,319.35	1,237.23	82.13	16.065		
11,200.00	9,185.00	11,163.76	9,185.00	38.70	44.51	-89.99	-2,037.60	546.03	1,319.32	1,236.44	82.87	15.920		
11,250.00	9,185.00	11,213.76	9,185.00	38.97	45.00	-89.99	-2,087.60	546.31	1,319.29	1,235.65	83.63	15.774		
11,300.00	9,185.00	11,263.76	9,185.00	39.23	45.51	-89.99	-2,137.60	546.59	1,319.25	1,234.85	84.40	15.630		
11,350.00	9,185.00	11,313.76	9,185.00	39.50	46.01	-89.99	-2,187.60	546.87	1,319.22	1,234.03	85.19	15.486		
11,400.00	9,185.00	11,363.76	9,185.00	39.77	46.53	-89.99	-2,237.60	547.15	1,319.18	1,233.21	85.98	15.344		
11,450.00	9,185.00	11,413.76	9,185.00	40.05	47.05	-89.99	-2,287.60	547.43	1,319.15	1,232.38	86.78	15.202		
11,500.00	9,185.00	11,463.76	9,185.00	40.33	47.57	-89.99	-2,337.60	547.71	1,319.12	1,231.53	87.58	15.061		
11,550.00	9,185.00	11,513.76	9,185.00	40.62	48.10	-89.99	-2,387.60	547.99	1,319.08	1,230.68	88.40	14.921		
11,600.00	9,185.00	11,563.76	9,185.00	40.91	48.64	-89.99	-2,437.59	548.28	1,319.05	1,229.82	89.23	14.782		
11,650.00	9,185.00	11,613.76	9,185.00	41.21	49.18	-89.99	-2,487.59	548.56	1,319.02	1,228.95	90.07	14.645		
11,700.00	9,185.00	11,663.76	9,185.00	41.50	49.73	-89.99	-2,537.59	548.84	1,318.98	1,228.07	90.91	14.508		
11,750.00	9,185.00	11,713.76	9,185.00	41.80	50.27	-89.99	-2,587.59	549.12	1,318.95	1,227.18	91.77	14.373		
11,800.00	9,185.00	11,763.76	9,185.00	42.10	50.83	-89.99	-2,637.59	549.40	1,318.92	1,226.29	92.63	14.239		
11,850.00	9,185.00	11,813.76	9,185.00	42.41	51.39	-89.99	-2,687.59	549.68	1,318.88	1,225.39	93.50	14.106		
11,900.00	9,185.00	11,863.76	9,185.00	42.72	51.95	-89.99	-2,737.59	549.96	1,318.85	1,224.48	94.37	13.975		
11,950.00	9,185.00	11,913.76	9,185.00	43.04	52.52	-89.99	-2,787.59	550.24	1,318.82	1,223.56	95.26	13.845		
12,000.00	9,185.00	11,963.76	9,185.00	43.35	53.09	-89.99	-2,837.59	550.52	1,318.78	1,222.64	96.15	13.717		
12,050.00	9,185.00	12,013.76	9,185.00	43.68	53.67	-89.99	-2,887.59	550.81	1,318.75	1,221.71	97.04	13.589		
12,100.00	9,185.00	12,063.76	9,185.00	44.00	54.25	-89.99	-2,937.59	551.09	1,318.72	1,220.77	97.95	13.464		
12,150.00	9,185.00	12,113.76	9,185.00	44.32	54.83	-89.99	-2,987.59	551.37	1,318.68	1,219.82	98.86	13.339		
12,200.00	9,185.00	12,163.76	9,185.00	44.65	55.41	-89.99	-3,037.59	551.65	1,318.65	1,218.87	99.77	13.216		
12,250.00	9,185.00	12,213.76	9,185.00	44.99	56.00	-89.99	-3,087.58	551.93	1,318.61	1,217.92	100.70	13.095		
12,300.00	9,185.00	12,263.76	9,185.00	45.32	56.59	-89.99	-3,137.58	552.21	1,318.58	1,216.95	101.63	12.975		
12,350.00	9,185.00	12,313.76	9,185.00	45.66	57.19	-89.99	-3,187.58	552.49	1,318.54	1,215.95	102.56	12.853		
12,400.00	9,185.00	12,363.74	9,185.00	46.00	57.79	-89.99	-3,237.56	552.77	1,318.50	1,214.94	103.51	12.724		
12,450.00	9,185.00	12,413.70	9,185.00	46.35	58.39	-89.99	-3,287.52	553.05	1,318.46	1,213.93	104.46	12.587		
12,500.00	9,185.00	12,463.61	9,185.00	46.70	58.99	-89.99	-3,337.43	553.34	1,318.42	1,212.92	105.42	12.445		
12,550.00	9,185.00	12,513.46	9,185.00	47.06	59.60	-89.99	-3,387.28	553.62	1,318.38	1,211.90	106.39	12.296		
12,600.00	9,185.00	12,563.24	9,185.00	47.42	60.21	-89.99	-3,437.06	553.90	1,318.34	1,210.87	107.36	12.140		
12,650.00	9,185.00	12,612.92	9,185.00	47.78	60.81	-89.99	-3,486.74	554.18	1,297.78	1,189.44	108.34	11.979		
12,700.00	9,185.00	12,662.51	9,185.00	48.15	61.42	-89.99	-3,536.32	554.45	1,291.33	1,182.01	109.32	11.812		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,750.00	9,185.00	12,711.97	9,185.00	48.52	62.03	-89.99	-3,585.78	554.73	1,284.02	1,173.71	110.31	11.640		
12,800.00	9,185.00	12,761.29	9,185.00	48.90	62.65	-89.99	-3,635.11	555.01	1,275.85	1,164.54	111.30	11.463		
12,850.00	9,185.00	12,810.47	9,185.00	49.28	63.26	-89.99	-3,684.29	555.29	1,266.82	1,154.51	112.30	11.280		
12,900.00	9,185.00	12,859.48	9,185.00	49.67	63.87	-89.99	-3,733.30	555.56	1,256.93	1,143.62	113.31	11.093		
12,950.00	9,185.00	12,908.32	9,185.00	50.05	64.48	-89.99	-3,782.14	555.84	1,246.23	1,131.92	114.31	10.902		
13,000.00	9,185.00	12,957.24	9,185.00	50.44	65.10	-89.99	-3,831.05	556.11	1,235.88	1,120.55	115.32	10.717		
13,050.00	9,185.00	13,006.33	9,185.00	50.84	65.71	-89.99	-3,880.14	556.39	1,226.38	1,110.04	116.34	10.541		
13,100.00	9,185.00	13,055.58	9,185.00	51.23	66.34	-89.99	-3,929.39	556.66	1,217.74	1,100.38	117.36	10.376		
13,150.00	9,185.00	13,104.97	9,185.00	51.63	66.96	-89.99	-3,978.78	556.94	1,209.97	1,091.58	118.39	10.220		
13,200.00	9,185.00	13,154.49	9,185.00	52.03	67.60	-89.99	-4,028.30	557.22	1,203.05	1,083.63	119.42	10.074		
13,250.00	9,185.00	13,204.12	9,185.00	52.42	68.23	-89.99	-4,077.93	557.50	1,197.01	1,076.55	120.46	9.937		
13,300.00	9,185.00	13,253.85	9,185.00	52.82	68.87	-89.99	-4,127.66	557.78	1,191.83	1,070.33	121.49	9.810		
13,350.00	9,185.00	13,303.66	9,185.00	53.22	69.50	-89.99	-4,177.47	558.06	1,187.51	1,064.98	122.53	9.691		
13,400.00	9,185.00	13,353.54	9,185.00	53.62	70.15	-89.99	-4,227.35	558.34	1,184.07	1,060.50	123.57	9.582		
13,450.00	9,185.00	13,403.48	9,185.00	54.01	70.79	-89.99	-4,277.28	558.62	1,181.50	1,056.89	124.61	9.481		
13,500.00	9,185.00	13,453.45	9,185.00	54.40	71.44	-89.99	-4,327.25	558.90	1,179.80	1,054.15	125.66	9.389		
13,550.00	9,185.00	13,503.44	9,185.00	54.79	72.08	-89.99	-4,377.24	559.18	1,178.98	1,052.28	126.70	9.305		
13,572.37	9,185.00	13,525.81	9,185.00	54.97	72.38	-89.99	-4,399.62	559.31	1,178.89	1,051.72	127.16	9.271		
13,600.00	9,185.00	13,553.44	9,185.00	55.19	72.74	-89.99	-4,427.24	559.46	1,179.02	1,051.28	127.74	9.230		
13,650.00	9,185.00	13,603.43	9,185.00	55.57	73.39	-89.99	-4,477.23	559.75	1,179.94	1,051.16	128.78	9.163		
13,700.00	9,185.00	13,653.40	9,185.00	55.96	74.04	-89.99	-4,527.20	560.03	1,181.73	1,051.91	129.82	9.103		
13,750.00	9,185.00	13,703.33	9,185.00	56.34	74.69	-89.99	-4,577.13	560.31	1,184.39	1,053.54	130.85	9.051		
13,800.00	9,185.00	13,753.20	9,185.00	56.72	75.35	-89.99	-4,627.00	560.59	1,187.93	1,056.04	131.89	9.007		
13,850.00	9,185.00	13,803.01	9,185.00	57.10	76.00	-89.99	-4,676.80	560.87	1,192.33	1,059.41	132.92	8.970		
13,900.00	9,185.00	13,852.73	9,185.00	57.47	76.65	-89.99	-4,726.52	561.15	1,197.60	1,063.65	133.95	8.941		
13,950.00	9,185.00	13,902.35	9,185.00	57.84	77.31	-89.99	-4,776.15	561.43	1,203.74	1,068.77	134.97	8.919		
14,000.00	9,185.00	13,951.85	9,185.00	58.21	77.96	-89.99	-4,825.65	561.70	1,210.74	1,074.75	135.99	8.903		
14,050.00	9,185.00	14,001.23	9,185.00	58.57	78.62	-89.99	-4,875.03	561.98	1,218.61	1,081.60	137.01	8.895		
14,100.00	9,185.00	14,050.46	9,185.00	58.93	79.27	-89.99	-4,924.26	562.26	1,227.34	1,089.32	138.02	8.892		
14,150.00	9,185.00	14,100.47	9,185.00	59.29	79.93	-89.99	-4,973.33	562.54	1,236.92	1,097.89	139.04	8.896		
14,200.00	9,185.00	14,148.43	9,185.00	59.64	80.57	-89.99	-5,022.23	562.81	1,247.36	1,107.33	140.03	8.908		
14,250.00	9,185.00	14,202.85	9,185.00	59.99	81.30	-89.99	-5,070.94	563.08	1,258.61	1,117.51	141.10	8.920		
14,300.00	9,185.00	14,245.95	9,185.00	60.34	81.87	-89.99	-5,119.74	563.36	1,269.51	1,127.48	142.03	8.938		
14,350.00	9,185.00	14,305.07	9,185.00	60.71	82.66	-89.99	-5,168.72	563.63	1,279.56	1,136.38	143.18	8.937		
14,400.00	9,185.00	14,344.07	9,185.00	61.07	83.18	-89.99	-5,217.86	563.91	1,288.75	1,144.68	144.07	8.946		
14,450.00	9,185.00	14,406.63	9,185.00	61.45	84.02	-89.99	-5,267.16	564.19	1,297.08	1,151.80	145.28	8.928		
14,500.00	9,185.00	14,442.81	9,185.00	61.82	84.51	-89.99	-5,316.60	564.47	1,304.55	1,158.41	146.14	8.927		
14,550.00	9,185.00	14,507.63	9,185.00	62.21	85.38	-89.99	-5,366.16	564.74	1,311.16	1,163.76	147.40	8.895		
14,600.00	9,185.00	14,542.04	9,185.00	62.60	85.84	-89.99	-5,415.83	565.02	1,316.90	1,168.65	148.25	8.883		
14,650.00	9,185.00	14,608.20	9,185.00	63.00	86.74	-89.99	-5,465.59	565.30	1,321.77	1,172.23	149.54	8.839		
14,700.00	9,185.00	14,641.64	9,185.00	63.39	87.19	-89.99	-5,515.43	565.58	1,325.77	1,175.39	150.39	8.816		
14,750.00	9,185.00	14,708.46	9,185.00	63.80	88.09	-89.99	-5,565.33	565.86	1,328.90	1,177.21	151.70	8.760		
14,800.00	9,185.00	14,741.49	9,185.00	64.21	88.54	-89.99	-5,615.28	566.15	1,331.16	1,178.61	152.55	8.726		
14,850.00	9,185.00	14,808.53	9,185.00	64.63	89.45	-89.99	-5,665.26	566.43	1,332.55	1,178.68	153.88	8.660		
14,900.00	9,185.00	14,841.47	9,185.00	65.04	89.89	-89.99	-5,715.25	566.71	1,333.07	1,178.33	154.74	8.615		
14,950.00	9,185.00	14,908.53	9,185.00	65.46	90.80	-89.99	-5,765.25	566.99	1,333.04	1,176.97	156.07	8.541		
15,000.00	9,185.00	14,941.47	9,185.00	65.88	91.25	-89.99	-5,815.25	567.27	1,333.01	1,176.07	156.94	8.494		
15,050.00	9,185.00	15,008.53	9,185.00	66.31	92.16	-89.99	-5,865.25	567.55	1,332.98	1,174.70	158.28	8.422		
15,100.00	9,185.00	15,041.47	9,185.00	66.73	92.61	-89.99	-5,915.25	567.83	1,332.95	1,173.79	159.15	8.375		
15,150.00	9,185.00	15,108.53	9,185.00	67.15	93.53	-89.99	-5,965.25	568.11	1,332.91	1,172.42	160.49	8.305		
15,200.00	9,185.00	15,141.47	9,185.00	67.58	93.98	-89.99	-6,015.25	568.39	1,332.88	1,171.51	161.37	8.260		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,250.00	9,185.00	15,208.53	9,185.00	68.00	94.89	-89.99	-6,065.25	568.68	1,332.85	1,170.13	162.71	8.191		
15,300.00	9,185.00	15,241.47	9,185.00	68.43	95.35	-89.99	-6,115.24	568.96	1,332.81	1,169.22	163.59	8.147		
15,350.00	9,185.00	15,308.53	9,185.00	68.86	96.26	-89.99	-6,165.24	569.24	1,332.78	1,167.84	164.94	8.081		
15,400.00	9,185.00	15,341.47	9,185.00	69.28	96.72	-89.99	-6,215.24	569.52	1,332.75	1,166.93	165.82	8.037		
15,450.00	9,185.00	15,408.53	9,185.00	69.71	97.64	-89.99	-6,265.24	569.80	1,332.71	1,165.55	167.17	7.972		
15,500.00	9,185.00	15,441.47	9,185.00	70.14	98.09	-89.99	-6,315.24	570.08	1,332.68	1,164.63	168.05	7.930		
15,550.00	9,185.00	15,508.53	9,185.00	70.57	99.01	-89.99	-6,365.24	570.36	1,332.65	1,163.24	169.40	7.867		
15,600.00	9,185.00	15,541.47	9,185.00	71.00	99.46	-89.99	-6,415.24	570.64	1,332.62	1,162.33	170.29	7.826		
15,650.00	9,185.00	15,608.53	9,185.00	71.44	100.39	-89.99	-6,465.24	570.93	1,332.58	1,160.94	171.65	7.784		
15,700.00	9,185.00	15,641.47	9,185.00	71.87	100.84	-89.99	-6,515.24	571.21	1,332.55	1,160.02	172.53	7.723		
15,750.00	9,185.00	15,708.53	9,185.00	72.30	101.77	-89.99	-6,565.24	571.49	1,332.52	1,158.62	173.89	7.663		
15,800.00	9,185.00	15,741.47	9,185.00	72.73	102.22	-89.99	-6,615.24	571.77	1,332.48	1,157.70	174.78	7.624		
15,850.00	9,185.00	15,808.53	9,185.00	73.17	103.15	-89.99	-6,665.24	572.05	1,332.45	1,156.31	176.14	7.565		
15,900.00	9,185.00	15,841.47	9,185.00	73.60	103.60	-89.99	-6,715.24	572.33	1,332.42	1,155.38	177.03	7.526		
15,950.00	9,185.00	15,908.53	9,185.00	74.04	104.53	-89.99	-6,765.23	572.61	1,332.38	1,153.99	178.40	7.469		
16,000.00	9,185.00	15,941.47	9,185.00	74.48	104.99	-89.99	-6,815.23	572.89	1,332.35	1,153.06	179.29	7.431		
16,050.00	9,185.00	16,008.53	9,185.00	74.91	105.91	-89.99	-6,865.23	573.17	1,332.32	1,151.66	180.66	7.375		
16,100.00	9,185.00	16,041.47	9,185.00	75.35	106.37	-89.99	-6,915.23	573.46	1,332.29	1,150.73	181.55	7.338		
16,150.00	9,185.00	16,108.53	9,185.00	75.79	107.30	-89.99	-6,965.23	573.74	1,332.25	1,149.33	182.92	7.283		
16,200.00	9,185.00	16,141.47	9,185.00	76.23	107.76	-89.99	-7,015.23	574.02	1,332.22	1,148.40	183.82	7.247		
16,250.00	9,185.00	16,208.53	9,185.00	76.67	108.69	-89.99	-7,065.23	574.30	1,332.19	1,146.99	185.19	7.194		
16,300.00	9,185.00	16,241.47	9,185.00	77.11	109.15	-89.99	-7,115.23	574.58	1,332.15	1,146.06	186.09	7.159		
16,350.00	9,185.00	16,308.53	9,185.00	77.55	110.08	-89.99	-7,165.23	574.86	1,332.12	1,144.66	187.47	7.106		
16,400.00	9,185.00	16,341.47	9,185.00	77.99	110.54	-89.99	-7,215.23	575.14	1,332.09	1,143.72	188.37	7.072		
16,450.00	9,185.00	16,408.53	9,185.00	78.43	111.47	-89.99	-7,265.23	575.42	1,332.05	1,142.31	189.74	7.020		
16,500.00	9,185.00	16,441.47	9,185.00	78.87	111.93	-89.99	-7,315.23	575.71	1,332.02	1,141.38	190.64	6.987		
16,550.00	9,185.00	16,508.53	9,185.00	79.31	112.87	-89.99	-7,365.22	575.99	1,331.99	1,139.97	192.02	6.937		
16,600.00	9,185.00	16,541.47	9,185.00	79.76	113.33	-89.99	-7,415.22	576.27	1,331.96	1,139.03	192.93	6.904		
16,650.00	9,185.00	16,608.53	9,185.00	80.20	114.26	-89.99	-7,465.22	576.55	1,331.92	1,137.62	194.31	6.855		
16,700.00	9,185.00	16,641.47	9,185.00	80.64	114.72	-89.99	-7,515.22	576.83	1,331.89	1,136.68	195.21	6.823		
16,750.00	9,185.00	16,708.53	9,185.00	81.09	115.66	-89.99	-7,565.22	577.11	1,331.86	1,135.26	196.59	6.775		
16,800.00	9,185.00	16,741.47	9,185.00	81.53	116.12	-89.99	-7,615.22	577.39	1,331.82	1,134.32	197.50	6.743		
16,850.00	9,185.00	16,808.53	9,185.00	81.98	117.06	-89.99	-7,665.22	577.67	1,331.79	1,132.91	198.88	6.696		
16,900.00	9,185.00	16,841.47	9,185.00	82.42	117.52	-89.99	-7,715.22	577.95	1,331.76	1,131.97	199.79	6.666		
16,950.00	9,185.00	16,908.53	9,185.00	82.87	118.46	-89.99	-7,765.22	578.24	1,331.72	1,130.55	201.18	6.620		
17,000.00	9,185.00	16,941.47	9,185.00	83.32	118.92	-89.99	-7,815.22	578.52	1,331.69	1,129.60	202.09	6.590		
17,050.00	9,185.00	17,008.53	9,185.00	83.76	119.86	-89.99	-7,865.22	578.80	1,331.66	1,128.18	203.48	6.545		
17,100.00	9,185.00	17,041.47	9,185.00	84.21	120.32	-89.99	-7,915.22	579.08	1,331.63	1,127.24	204.39	6.515		
17,150.00	9,185.00	17,108.53	9,185.00	84.66	121.26	-89.99	-7,965.22	579.36	1,331.59	1,125.82	205.78	6.471		
17,200.00	9,185.00	17,141.47	9,185.00	85.11	121.73	-89.99	-8,015.21	579.64	1,331.56	1,124.87	206.69	6.442		
17,250.00	9,185.00	17,208.53	9,185.00	85.56	122.67	-89.99	-8,065.21	579.92	1,331.53	1,123.45	208.08	6.399		
17,300.00	9,185.00	17,241.47	9,185.00	86.01	123.13	-89.99	-8,115.21	580.20	1,331.49	1,122.50	208.99	6.371		
17,350.00	9,185.00	17,308.53	9,185.00	86.46	124.07	-89.99	-8,165.21	580.49	1,331.46	1,121.08	210.39	6.329		
17,400.00	9,185.00	17,341.47	9,185.00	86.91	124.54	-89.99	-8,215.21	580.77	1,331.43	1,120.13	211.30	6.301		
17,450.00	9,185.00	17,408.53	9,185.00	87.36	125.48	-89.99	-8,265.21	581.05	1,331.40	1,118.70	212.69	6.260		
17,500.00	9,185.00	17,441.47	9,185.00	87.81	125.94	-89.99	-8,315.21	581.33	1,331.36	1,117.75	213.61	6.233		
17,550.00	9,185.00	17,508.53	9,185.00	88.26	126.89	-89.99	-8,365.21	581.61	1,331.33	1,116.32	215.01	6.192		
17,600.00	9,185.00	17,541.47	9,185.00	88.71	127.35	-89.99	-8,415.21	581.89	1,331.30	1,115.38	215.92	6.166		
17,650.00	9,185.00	17,608.53	9,185.00	89.16	128.30	-89.99	-8,465.21	582.17	1,331.26	1,113.94	217.32	6.126		
17,700.00	9,185.00	17,641.47	9,185.00	89.62	128.76	-89.99	-8,515.21	582.45	1,331.23	1,112.99	218.24	6.100		
17,750.00	9,185.00	17,691.47	9,185.00	90.07	129.47	-89.99	-8,565.21	582.73	1,331.20	1,111.80	219.39	6.068		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Tooface (°)	Offset Wellbore Centre		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
17,800.00	9,185.00	17,741.47	9,185.00	90.52	130.17	-89.99	-8,615.20	583.02	1,331.16	1,110.61	220.55	6.036		
17,850.00	9,185.00	17,791.47	9,185.00	90.97	130.88	-89.99	-8,665.20	583.30	1,331.13	1,109.42	221.71	6.004		
17,900.00	9,185.00	17,841.47	9,185.00	91.43	131.58	-89.99	-8,715.20	583.58	1,331.10	1,108.22	222.87	5.972		
17,950.00	9,185.00	17,908.53	9,185.00	91.88	132.53	-89.99	-8,765.20	583.86	1,331.07	1,106.79	224.28	5.935		
18,000.00	9,185.00	17,941.47	9,185.00	92.34	132.99	-89.99	-8,815.20	584.14	1,331.03	1,105.84	225.20	5.911		
18,050.00	9,185.00	18,008.53	9,185.00	92.79	133.94	-89.99	-8,865.20	584.42	1,331.00	1,104.40	226.60	5.874		
18,100.00	9,185.00	18,041.47	9,185.00	93.25	134.41	-89.99	-8,915.20	584.70	1,330.97	1,103.45	227.52	5.850		
18,150.00	9,185.00	18,108.53	9,185.00	93.70	135.36	-89.99	-8,965.20	584.98	1,330.93	1,102.01	228.92	5.814		
18,200.00	9,185.00	18,141.47	9,185.00	94.16	135.82	-89.99	-9,015.20	585.27	1,330.90	1,101.05	229.85	5.790		
18,250.00	9,185.00	18,208.53	9,185.00	94.61	136.77	-89.99	-9,065.20	585.55	1,330.87	1,099.62	231.25	5.755		
18,300.00	9,185.00	18,241.47	9,185.00	95.07	137.24	-89.99	-9,115.20	585.83	1,330.83	1,098.66	232.18	5.732		
18,350.00	9,185.00	18,308.53	9,185.00	95.53	138.19	-89.99	-9,165.20	586.11	1,330.80	1,097.22	233.58	5.697		
18,400.00	9,185.00	18,341.47	9,185.00	95.98	138.65	-89.99	-9,215.20	586.39	1,330.77	1,096.26	234.51	5.675		
18,450.00	9,185.00	18,408.53	9,185.00	96.44	139.60	-89.99	-9,265.19	586.67	1,330.74	1,094.82	235.91	5.641		
18,500.00	9,185.00	18,441.47	9,185.00	96.90	140.07	-89.99	-9,315.19	586.95	1,330.70	1,093.86	236.84	5.619		
18,550.00	9,185.00	18,508.53	9,185.00	97.36	141.02	-89.99	-9,365.19	587.23	1,330.67	1,092.42	238.25	5.585		
18,600.00	9,185.00	18,541.47	9,185.00	97.81	141.49	-89.99	-9,415.19	587.51	1,330.64	1,091.46	239.17	5.563		
18,650.00	9,185.00	18,608.53	9,185.00	98.27	142.44	-89.99	-9,465.19	587.80	1,330.60	1,090.02	240.58	5.531		
18,700.00	9,185.00	18,641.47	9,185.00	98.73	142.91	-89.99	-9,515.19	588.08	1,330.57	1,089.06	241.51	5.509		
18,750.00	9,185.00	18,708.53	9,185.00	99.19	143.86	-89.99	-9,565.19	588.36	1,330.54	1,087.62	242.92	5.477		
18,800.00	9,185.00	18,741.47	9,185.00	99.65	144.33	-89.99	-9,615.19	588.64	1,330.50	1,086.66	243.85	5.456		
18,850.00	9,185.00	18,808.53	9,185.00	100.11	145.28	-89.99	-9,665.19	588.92	1,330.47	1,085.21	245.26	5.425		
18,900.00	9,185.00	18,841.47	9,185.00	100.57	145.75	-89.99	-9,715.19	589.20	1,330.44	1,084.25	246.19	5.404		
18,950.00	9,185.00	18,908.53	9,185.00	101.03	146.70	-89.99	-9,765.19	589.48	1,330.41	1,082.80	247.60	5.373		
19,000.00	9,185.00	18,941.47	9,185.00	101.49	147.17	-89.99	-9,815.19	589.76	1,330.37	1,081.84	248.53	5.353		
19,047.07	9,185.00	18,988.54	9,185.00	101.87	147.84	-89.99	-9,862.26	590.03	1,330.34	1,080.77	249.57	5.331		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
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	Warning	
0.00	0.00	1.40	1.40	0.50	0.50	-0.30	120.05	-0.62	120.05					
50.00	50.00	51.40	51.40	0.50	0.50	-0.30	120.05	-0.62	120.05	119.05	1.01	119.276		
100.00	100.00	101.40	101.40	0.52	0.52	-0.30	120.05	-0.62	120.05	119.02	1.04	115.893		
150.00	150.00	151.40	151.40	0.59	0.59	-0.30	120.05	-0.62	120.05	118.87	1.18	101.632		
200.00	200.00	201.40	201.40	0.70	0.70	-0.30	120.05	-0.62	120.05	118.65	1.41	85.433		
250.00	250.00	251.40	251.40	0.84	0.84	-0.30	120.05	-0.62	120.05	118.38	1.68	71.605		
300.00	300.00	301.40	301.40	0.99	0.99	-0.30	120.05	-0.62	120.05	118.08	1.98	60.758		
350.00	350.00	351.40	351.40	1.15	1.15	-0.30	120.05	-0.62	120.05	117.76	2.29	52.372		
400.00	400.00	401.40	401.40	1.31	1.31	-0.30	120.05	-0.62	120.05	117.43	2.62	45.830		
450.00	450.00	451.40	451.40	1.48	1.48	-0.30	120.05	-0.62	120.05	117.10	2.95	40.640		
500.00	500.00	501.40	501.40	1.65	1.65	-0.30	120.05	-0.62	120.05	116.76	3.29	36.451		
550.00	550.00	551.40	551.40	1.82	1.82	-0.30	120.05	-0.62	120.05	116.42	3.64	33.011		
600.00	600.00	601.40	601.40	1.99	1.99	-0.30	120.05	-0.62	120.05	116.07	3.98	30.144		
650.00	650.00	651.40	651.40	2.16	2.17	-0.30	120.05	-0.62	120.05	115.72	4.33	27.722		
700.00	700.00	701.40	701.40	2.34	2.34	-0.30	120.05	-0.62	120.05	115.37	4.68	25.652		
750.00	750.00	751.40	751.40	2.51	2.52	-0.30	120.05	-0.62	120.05	115.02	5.03	23.863		
800.00	800.00	801.40	801.40	2.69	2.69	-0.30	120.05	-0.62	120.05	114.67	5.38	22.304		
850.00	850.00	851.40	851.40	2.87	2.87	-0.30	120.05	-0.62	120.05	114.32	5.74	20.932		
900.00	900.00	901.40	901.40	3.04	3.04	-0.30	120.05	-0.62	120.05	113.96	6.09	19.718		
950.00	950.00	951.40	951.40	3.22	3.22	-0.30	120.05	-0.62	120.05	113.61	6.44	18.635		
1,000.00	1,000.00	1,001.40	1,001.40	3.40	3.40	-0.30	120.05	-0.62	120.05	113.26	6.80	17.663		
1,050.00	1,050.00	1,051.40	1,051.40	3.58	3.58	-0.30	120.05	-0.62	120.05	112.90	7.15	16.787		
1,100.00	1,100.00	1,101.40	1,101.40	3.75	3.75	-0.30	120.05	-0.62	120.05	112.55	7.51	15.993		
1,150.00	1,150.00	1,151.40	1,151.40	3.93	3.93	-0.30	120.05	-0.62	120.05	112.19	7.86	15.270		
1,200.00	1,200.00	1,201.40	1,201.40	4.11	4.11	-0.30	120.05	-0.62	120.05	111.83	8.22	14.609		
1,250.00	1,250.00	1,251.40	1,251.40	4.29	4.29	-0.30	120.05	-0.62	120.05	111.48	8.57	14.002		
1,300.00	1,300.00	1,301.40	1,301.40	4.46	4.47	-0.30	120.05	-0.62	120.05	111.12	8.93	13.444		
1,350.00	1,350.00	1,351.40	1,351.40	4.64	4.64	-0.30	120.05	-0.62	120.05	110.77	9.29	12.928		
1,400.00	1,400.00	1,401.40	1,401.40	4.82	4.82	-0.30	120.05	-0.62	120.05	110.41	9.64	12.450		
1,450.00	1,450.00	1,451.40	1,451.40	5.00	5.00	-0.30	120.05	-0.62	120.05	110.05	10.00	12.006		
1,500.00	1,500.00	1,501.40	1,501.40	5.18	5.18	-0.30	120.05	-0.62	120.05	109.70	10.36	11.593		
1,550.00	1,550.00	1,551.40	1,551.40	5.36	5.36	-0.30	120.05	-0.62	120.05	109.34	10.71	11.208		
1,600.00	1,600.00	1,601.40	1,601.40	5.53	5.54	-0.30	120.05	-0.62	120.05	108.98	11.07	10.845		
1,650.00	1,650.00	1,651.40	1,651.40	5.71	5.71	-0.30	120.05	-0.62	120.05	108.63	11.43	10.506		
1,700.00	1,700.00	1,701.40	1,701.40	5.89	5.89	-0.30	120.05	-0.62	120.05	108.27	11.78	10.188		
1,750.00	1,750.00	1,751.40	1,751.40	6.07	6.07	-0.30	120.05	-0.62	120.05	107.91	12.14	9.888		
1,800.00	1,800.00	1,801.40	1,801.40	6.25	6.25	-0.30	120.05	-0.62	120.05	107.55	12.50	9.605		
1,850.00	1,850.00	1,851.40	1,851.40	6.43	6.43	-0.30	120.05	-0.62	120.05	107.20	12.86	9.338		
1,900.00	1,900.00	1,901.40	1,901.40	6.61	6.61	-0.30	120.05	-0.62	120.05	106.84	13.21	9.086		
1,950.00	1,950.00	1,951.40	1,951.40	6.78	6.79	-0.30	120.05	-0.62	120.05	106.48	13.57	8.846		
2,000.00	2,000.00	2,001.40	2,001.40	6.96	6.96	-0.30	120.05	-0.62	120.05	106.12	13.93	8.619		
2,050.00	2,050.00	2,051.40	2,051.40	7.14	7.14	-0.30	120.05	-0.62	120.05	105.77	14.29	8.404		
2,100.00	2,100.00	2,101.40	2,101.40	7.32	7.32	-0.30	120.05	-0.62	120.05	105.41	14.64	8.198		
2,150.00	2,150.00	2,151.40	2,151.40	7.50	7.50	-0.30	120.05	-0.62	120.05	105.05	15.00	8.003		
2,200.00	2,200.00	2,201.40	2,201.40	7.68	7.68	-0.30	120.05	-0.62	120.05	104.69	15.36	7.817		
2,250.00	2,250.00	2,251.40	2,251.40	7.86	7.86	-0.30	120.05	-0.62	120.05	104.34	15.72	7.639		
2,300.00	2,300.00	2,301.40	2,301.40	8.04	8.04	-0.30	120.05	-0.62	120.05	103.98	16.07	7.469		
2,350.00	2,350.00	2,351.40	2,351.40	8.22	8.22	-0.30	120.05	-0.62	120.05	103.62	16.43	7.306		
2,400.00	2,400.00	2,401.40	2,401.40	8.39	8.40	-0.30	120.05	-0.62	120.05	103.26	16.79	7.150		
2,450.00	2,450.00	2,451.40	2,451.40	8.57	8.57	-0.30	120.05	-0.62	120.05	102.90	17.15	7.001		
2,500.00	2,500.00	2,501.40	2,501.40	8.75	8.75	-0.30	120.05	-0.62	120.05	102.55	17.51	6.858 CC		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,550.00	2,550.00	2,550.14	2,550.14	8.93	8.93	78.69	120.31	-0.42	120.27	102.41	17.85	6.736 ES		
2,600.00	2,599.99	2,598.89	2,598.88	9.10	9.10	79.33	121.07	0.15	120.89	102.69	18.20	6.642		
2,650.00	2,649.97	2,647.57	2,647.54	9.28	9.27	80.37	122.32	1.10	121.95	103.41	18.54	6.578		
2,700.00	2,699.94	2,696.17	2,696.08	9.45	9.45	81.79	124.06	2.42	123.51	104.63	18.88	6.542		
2,750.00	2,749.88	2,744.64	2,744.47	9.62	9.62	83.55	126.29	4.11	125.61	106.40	19.22	6.537 SF		
2,800.00	2,799.79	2,792.96	2,792.67	9.79	9.79	85.61	129.00	6.16	128.35	108.80	19.55	6.566		
2,850.00	2,849.66	2,841.09	2,840.64	9.97	9.96	87.92	132.18	8.57	131.79	111.91	19.88	6.630		
2,900.00	2,899.49	2,889.02	2,888.35	10.14	10.13	90.43	135.82	11.34	136.03	115.82	20.20	6.733		
2,950.00	2,949.28	2,936.71	2,935.76	10.32	10.30	93.06	139.92	14.44	141.14	120.61	20.52	6.877		
3,000.00	2,999.01	2,984.14	2,982.84	10.49	10.47	95.76	144.47	17.89	147.19	126.35	20.84	7.063		
3,050.00	3,048.68	3,035.48	3,029.48	10.67	10.65	98.47	149.44	21.65	154.25	133.09	21.16	7.288		
3,100.00	3,098.29	3,079.93	3,077.75	10.84	10.81	101.23	154.84	25.75	162.09	140.61	21.49	7.543		
3,150.00	3,147.82	3,128.57	3,125.92	11.02	10.99	103.90	160.24	29.84	170.44	148.60	21.83	7.807		
3,200.00	3,197.28	3,177.10	3,173.97	11.20	11.17	106.47	165.62	33.92	179.29	157.12	22.17	8.085		
3,250.00	3,246.69	3,225.56	3,221.96	11.37	11.34	108.97	171.00	37.99	188.62	166.10	22.52	8.376		
3,300.00	3,296.09	3,274.01	3,269.94	11.55	11.52	111.26	176.37	42.07	198.27	175.41	22.86	8.672		
3,350.00	3,345.49	3,322.47	3,317.92	11.73	11.70	113.34	181.74	46.14	208.21	185.00	23.21	8.972		
3,400.00	3,394.90	3,370.92	3,365.91	11.91	11.87	115.24	187.12	50.21	218.39	194.84	23.55	9.273		
3,450.00	3,444.30	3,419.38	3,413.89	12.09	12.05	116.96	192.49	54.29	228.78	204.89	23.90	9.574		
3,500.00	3,493.71	3,467.83	3,461.87	12.27	12.23	118.54	197.87	58.36	239.36	215.12	24.24	9.873		
3,550.00	3,543.11	3,516.29	3,509.85	12.45	12.41	119.98	203.24	62.43	250.10	225.51	24.59	10.171		
3,600.00	3,592.51	3,564.74	3,557.84	12.63	12.59	121.31	208.62	66.51	260.98	236.04	24.94	10.465		
3,650.00	3,641.92	3,613.19	3,605.82	12.81	12.77	122.53	213.99	70.58	271.99	246.70	25.29	10.757		
3,700.00	3,691.32	3,661.65	3,653.80	12.99	12.95	123.65	219.36	74.65	283.10	257.47	25.63	11.044		
3,750.00	3,740.72	3,710.10	3,701.79	13.17	13.13	124.70	224.74	78.73	294.32	268.33	25.98	11.327		
3,800.00	3,790.13	3,758.56	3,749.77	13.35	13.32	125.66	230.11	82.80	305.61	279.28	26.33	11.606		
3,850.00	3,839.53	3,807.01	3,797.75	13.53	13.50	126.56	235.49	86.87	316.99	290.31	26.68	11.880		
3,900.00	3,888.93	3,855.47	3,845.73	13.72	13.68	127.40	240.86	90.95	328.44	301.40	27.03	12.150		
3,950.00	3,938.34	3,903.92	3,893.72	13.90	13.86	128.18	246.24	95.02	339.94	312.56	27.38	12.415		
4,000.00	3,987.74	3,952.37	3,941.70	14.08	14.05	128.90	251.61	99.09	351.51	323.78	27.73	12.675		
4,050.00	4,037.14	4,000.83	3,989.68	14.27	14.23	129.59	256.98	103.17	363.12	335.04	28.08	12.930		
4,100.00	4,086.55	4,049.28	4,037.66	14.45	14.41	130.23	262.36	107.24	374.78	346.35	28.44	13.180		
4,150.00	4,135.95	4,102.26	4,085.65	14.63	14.61	130.83	267.73	111.31	386.49	357.68	28.80	13.417		
4,200.00	4,185.36	4,146.19	4,133.63	14.82	14.78	131.40	273.11	115.39	398.23	369.09	29.14	13.666		
4,250.00	4,234.76	4,194.65	4,181.61	15.00	14.97	131.93	278.48	119.46	410.01	380.51	29.49	13.901		
4,300.00	4,284.16	4,246.66	4,233.14	15.18	15.16	132.48	284.13	123.74	421.69	391.80	29.89	14.110		
4,350.00	4,333.57	4,301.06	4,287.13	15.37	15.37	133.05	289.48	127.80	432.79	402.49	30.30	14.284		
4,400.00	4,382.97	4,355.76	4,341.49	15.55	15.57	133.62	294.24	131.40	443.26	412.55	30.71	14.434		
4,450.00	4,432.37	4,410.72	4,396.21	15.74	15.78	134.20	298.39	134.55	453.10	421.99	31.12	14.561		
4,500.00	4,481.78	4,465.94	4,451.25	15.92	15.98	134.79	301.94	137.24	462.32	430.80	31.52	14.667		
4,550.00	4,531.18	4,521.38	4,506.57	16.11	16.19	135.39	304.86	139.45	470.90	438.98	31.92	14.752		
4,600.00	4,580.58	4,577.03	4,562.15	16.29	16.39	136.00	307.14	141.19	478.85	446.53	32.32	14.818		
4,650.00	4,629.99	4,632.87	4,617.94	16.48	16.59	136.62	308.79	142.43	486.17	453.46	32.71	14.865		
4,700.00	4,679.39	4,688.86	4,673.92	16.66	16.79	137.26	309.79	143.19	492.87	459.77	33.09	14.893		
4,750.00	4,728.80	4,744.99	4,730.05	16.85	16.99	137.92	310.13	143.45	498.94	465.46	33.47	14.905		
4,800.00	4,778.20	4,805.46	4,779.60	17.03	17.20	138.51	310.13	143.45	504.71	470.84	33.87	14.901		
4,850.00	4,827.60	4,843.94	4,829.00	17.22	17.33	139.08	310.13	143.45	510.53	476.34	34.19	14.933		
4,900.00	4,877.01	4,906.65	4,878.41	17.40	17.55	139.63	310.13	143.45	516.40	481.81	34.59	14.929		
4,950.00	4,926.41	4,942.75	4,927.81	17.59	17.68	140.18	310.13	143.45	522.32	487.42	34.90	14.967		
5,000.00	4,975.81	5,007.85	4,977.21	17.78	17.91	140.71	310.13	143.45	528.29	492.98	35.31	14.961		
5,050.00	5,025.22	5,041.56	5,026.62	17.96	18.03	141.23	310.13	143.45	534.30	498.69	35.61	15.003		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.00	5,074.62	5,109.04	5,076.02	18.15	18.26	141.74	310.13	143.45	540.35	504.32	36.03	14.996		
5,150.00	5,124.02	5,140.37	5,125.42	18.34	18.38	142.24	310.13	143.45	546.44	510.12	36.33	15.043		
5,200.00	5,173.43	5,189.77	5,174.83	18.52	18.55	142.72	310.13	143.45	552.58	515.90	36.68	15.064		
5,250.00	5,222.83	5,239.17	5,224.23	18.71	18.72	143.20	310.13	143.45	558.75	521.71	37.04	15.086		
5,300.00	5,272.23	5,288.58	5,273.63	18.90	18.90	143.67	310.13	143.45	564.96	527.57	37.40	15.108		
5,350.00	5,321.64	5,337.98	5,323.04	19.08	19.07	144.12	310.13	143.45	571.21	533.46	37.75	15.131		
5,400.00	5,371.04	5,387.38	5,372.44	19.27	19.25	144.57	310.13	143.45	577.49	539.38	38.11	15.154		
5,450.00	5,420.45	5,436.79	5,421.85	19.46	19.42	145.00	310.13	143.45	583.81	545.34	38.47	15.177		
5,500.00	5,469.85	5,486.19	5,471.25	19.65	19.59	145.43	310.13	143.45	590.15	551.33	38.82	15.201		
5,550.00	5,519.25	5,535.59	5,520.65	19.83	19.77	145.85	310.13	143.45	596.53	557.35	39.18	15.225		
5,600.00	5,568.66	5,585.00	5,570.06	20.02	19.94	146.26	310.13	143.45	602.95	563.41	39.54	15.250		
5,650.00	5,618.06	5,634.40	5,619.46	20.21	20.12	146.66	310.13	143.45	609.39	569.49	39.89	15.275		
5,700.00	5,667.46	5,683.81	5,668.86	20.40	20.29	147.05	310.13	143.45	615.86	575.60	40.25	15.300		
5,750.00	5,716.87	5,733.21	5,718.27	20.58	20.47	147.44	310.13	143.45	622.35	581.74	40.61	15.325		
5,800.00	5,766.27	5,782.61	5,767.67	20.77	20.64	147.81	310.13	143.45	628.88	587.91	40.97	15.351		
5,850.00	5,815.67	5,832.02	5,817.07	20.96	20.81	148.18	310.13	143.45	635.43	594.11	41.32	15.377		
5,900.00	5,865.08	5,881.42	5,866.48	21.15	20.99	148.54	310.13	143.45	642.01	600.33	41.68	15.402		
5,950.00	5,914.48	5,930.82	5,915.88	21.34	21.16	148.90	310.13	143.45	648.61	606.57	42.04	15.428		
6,000.00	5,963.89	5,980.23	5,965.29	21.52	21.34	149.24	310.13	143.45	655.23	612.84	42.40	15.454		
6,050.00	6,013.29	6,029.63	6,014.69	21.71	21.51	149.58	310.13	143.45	661.88	619.13	42.76	15.481		
6,100.00	6,062.69	6,079.03	6,064.09	21.90	21.69	149.92	310.13	143.45	668.55	625.44	43.11	15.507		
6,150.00	6,112.10	6,128.44	6,113.50	22.09	21.86	150.24	310.13	143.45	675.25	631.78	43.47	15.533		
6,200.00	6,161.50	6,177.84	6,162.90	22.28	22.04	150.56	310.13	143.45	681.96	638.13	43.83	15.559		
6,250.00	6,210.90	6,227.24	6,212.30	22.47	22.21	150.88	310.13	143.45	688.70	644.51	44.19	15.586		
6,300.00	6,260.31	6,276.65	6,261.71	22.65	22.39	151.18	310.13	143.45	695.45	650.91	44.55	15.612		
6,350.00	6,309.71	6,326.05	6,311.11	22.84	22.56	151.49	310.13	143.45	702.23	657.32	44.90	15.638		
6,400.00	6,359.11	6,375.46	6,360.51	23.03	22.74	151.78	310.13	143.45	709.02	663.76	45.26	15.665		
6,450.00	6,408.52	6,424.86	6,409.92	23.22	22.91	152.07	310.13	143.45	715.83	670.21	45.62	15.691		
6,500.00	6,457.92	6,474.26	6,459.32	23.41	23.09	152.36	310.13	143.45	722.66	676.68	45.98	15.717		
6,550.00	6,507.32	6,523.67	6,508.72	23.60	23.26	152.64	310.13	143.45	729.51	683.17	46.34	15.743		
6,600.00	6,556.73	6,573.07	6,558.13	23.79	23.44	152.91	310.13	143.45	736.37	689.68	46.70	15.770		
6,650.00	6,606.13	6,622.47	6,607.53	23.98	23.61	153.18	310.13	143.45	743.25	696.20	47.05	15.796		
6,700.00	6,655.54	6,671.88	6,656.94	24.16	23.79	153.45	310.13	143.45	750.15	702.73	47.41	15.822		
6,750.00	6,704.94	6,721.28	6,706.34	24.35	23.96	153.71	310.13	143.45	757.06	709.29	47.77	15.847		
6,800.00	6,754.34	6,770.68	6,755.74	24.54	24.14	153.96	310.13	143.45	763.99	715.86	48.13	15.873		
6,850.00	6,803.75	6,820.09	6,805.15	24.73	24.31	154.21	310.13	143.45	770.93	722.44	48.49	15.899		
6,900.00	6,853.15	6,869.49	6,854.55	24.92	24.49	154.46	310.13	143.45	777.88	729.03	48.85	15.925		
6,950.00	6,902.55	6,918.90	6,903.95	25.11	24.67	154.70	310.13	143.45	784.85	735.65	49.21	15.950		
7,000.00	6,951.96	6,968.30	6,953.36	25.30	24.84	154.94	310.13	143.45	791.83	742.27	49.57	15.975		
7,050.00	7,001.36	7,017.70	7,002.76	25.49	25.02	155.17	310.13	143.45	798.83	748.91	49.92	16.001		
7,100.00	7,050.76	7,067.11	7,052.16	25.68	25.19	155.40	310.13	143.45	805.84	755.56	50.28	16.026		
7,150.00	7,100.17	7,116.51	7,101.57	25.87	25.37	155.63	310.13	143.45	812.86	762.22	50.64	16.051		
7,200.00	7,149.57	7,165.91	7,150.97	26.06	25.54	155.85	310.13	143.45	819.90	768.89	51.00	16.076		
7,250.00	7,198.98	7,215.32	7,200.38	26.25	25.72	156.07	310.13	143.45	826.94	775.58	51.36	16.101		
7,300.00	7,248.38	7,264.72	7,249.78	26.44	25.89	156.28	310.13	143.45	834.00	782.28	51.72	16.125		
7,350.00	7,297.78	7,314.12	7,299.18	26.62	26.07	156.49	310.13	143.45	841.07	788.99	52.08	16.150		
7,400.00	7,347.19	7,363.53	7,348.59	26.81	26.24	156.70	310.13	143.45	848.15	795.71	52.44	16.174		
7,450.00	7,396.59	7,412.93	7,397.99	27.00	26.42	156.90	310.13	143.45	855.24	802.44	52.80	16.198		
7,500.00	7,445.99	7,462.33	7,447.39	27.19	26.60	157.10	310.13	143.45	862.34	809.18	53.16	16.222		
7,550.00	7,495.40	7,511.74	7,496.80	27.38	26.77	157.30	310.13	143.45	869.45	815.93	53.52	16.246		
7,600.00	7,544.80	7,561.14	7,546.20	27.57	26.95	157.49	310.13	143.45	876.57	822.69	53.88	16.270		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1													Offset Site Error:	5.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,650.00	7,594.20	7,610.55	7,595.60	27.76	27.12	157.68	310.13	143.45	883.70	829.46	54.24	16.293		
7,700.00	7,643.61	7,659.95	7,645.01	27.95	27.30	157.87	310.13	143.45	890.84	836.24	54.60	16.317		
7,750.00	7,693.01	7,709.35	7,694.41	28.14	27.47	158.06	310.13	143.45	897.99	843.03	54.96	16.340		
7,800.00	7,742.43	7,758.78	7,743.83	28.33	27.65	158.26	310.13	143.45	905.03	849.71	55.32	16.361		
7,850.00	7,791.94	7,808.29	7,793.34	28.52	27.83	158.46	310.13	143.45	911.52	855.85	55.67	16.372		
7,900.00	7,841.54	7,857.88	7,842.94	28.71	28.00	158.63	310.13	143.45	917.41	861.38	56.03	16.373		
7,950.00	7,891.22	7,907.56	7,892.62	28.89	28.18	158.79	310.13	143.45	922.71	866.32	56.39	16.362		
8,000.00	7,940.97	7,957.31	7,942.37	29.08	28.36	158.93	310.13	143.45	927.40	870.65	56.75	16.342		
8,050.00	7,990.77	8,007.11	7,992.17	29.26	28.53	159.05	310.13	143.45	931.48	874.38	57.11	16.311		
8,100.00	8,040.63	8,056.98	8,042.03	29.44	28.71	159.15	310.13	143.45	934.96	877.50	57.46	16.270		
8,150.00	8,090.54	8,106.88	8,091.94	29.62	28.89	159.23	310.13	143.45	937.83	880.01	57.82	16.220		
8,200.00	8,140.48	8,156.82	8,141.88	29.79	29.07	159.29	310.13	143.45	940.09	881.91	58.18	16.159		
8,250.00	8,190.45	8,206.79	8,191.85	29.97	29.24	159.34	310.13	143.45	941.74	883.21	58.53	16.090		
8,300.00	8,240.44	8,256.78	8,241.84	30.15	29.42	159.37	310.13	143.45	942.77	883.89	58.89	16.010		
8,350.00	8,290.43	8,306.78	8,291.83	30.32	29.60	159.38	310.13	143.45	943.20	883.96	59.24	15.922		
8,400.00	8,340.43	8,356.78	8,341.83	30.49	29.78	80.61	310.13	143.45	943.21	883.62	59.59	15.829		
8,450.00	8,390.43	8,406.78	8,391.83	30.66	29.96	80.61	310.13	143.45	943.21	883.27	59.94	15.737		
8,500.00	8,440.43	8,456.78	8,441.83	30.83	30.13	80.61	310.13	143.45	943.21	882.92	60.29	15.645		
8,550.00	8,490.43	8,506.78	8,491.83	31.00	30.31	80.61	310.13	143.45	943.21	882.57	60.64	15.555		
8,600.00	8,540.43	8,556.78	8,541.83	31.17	30.49	80.61	310.13	143.45	943.21	882.22	60.99	15.465		
8,650.00	8,590.43	8,606.78	8,591.83	31.34	30.67	80.61	310.13	143.45	943.21	881.87	61.34	15.377		
8,650.01	8,590.44	8,606.79	8,591.84	31.34	30.67	80.61	310.13	143.45	943.21	881.87	61.34	15.377		
8,700.00	8,640.42	8,656.76	8,641.82	31.51	30.85	-99.06	310.13	143.45	943.32	881.63	61.69	15.292		
8,750.00	8,690.19	8,706.53	8,691.59	31.67	31.02	-99.26	310.13	143.45	944.06	882.04	62.03	15.220		
8,800.00	8,739.36	8,755.70	8,740.76	31.83	31.20	-99.64	310.13	143.45	945.56	883.20	62.36	15.163		
8,850.00	8,787.57	8,803.91	8,788.97	31.97	31.37	-100.17	310.13	143.45	947.92	885.23	62.69	15.121		
8,900.00	8,834.43	8,850.78	8,835.83	32.12	31.54	-100.80	310.13	143.45	951.29	888.28	63.01	15.097		
8,950.00	8,879.61	8,894.05	8,881.01	32.25	31.73	-101.50	310.13	143.45	955.86	892.50	63.35	15.088		
9,000.00	8,922.75	8,939.09	8,924.15	32.37	31.85	-102.19	310.13	143.45	961.83	898.21	63.63	15.117		
9,050.00	8,963.52	8,979.86	8,964.92	32.48	32.00	-102.82	310.13	143.45	969.44	905.52	63.91	15.168		
9,100.00	9,001.62	9,017.96	9,003.02	32.59	32.13	-103.32	310.13	143.45	978.89	914.70	64.19	15.251		
9,150.00	9,036.75	9,053.10	9,038.15	32.67	32.26	-103.62	310.13	143.45	990.39	925.95	64.44	15.368		
9,200.00	9,088.66	9,085.00	9,070.06	32.75	32.37	-103.66	310.13	143.45	1,004.12	939.43	64.68	15.524		
9,250.00	9,097.08	9,113.43	9,098.48	32.81	32.47	-103.37	310.13	143.45	1,020.18	955.28	64.90	15.719		
9,300.00	9,121.82	9,138.16	9,123.22	32.86	32.56	-102.69	310.13	143.45	1,038.64	973.55	65.09	15.957		
9,350.00	9,142.67	9,159.02	9,144.07	32.90	32.64	-101.55	310.13	143.45	1,059.52	994.26	65.26	16.236		
9,400.00	9,159.49	9,175.83	9,160.89	32.93	32.70	-99.92	310.13	143.45	1,082.74	1,017.34	65.40	16.556		
9,450.00	9,172.14	9,188.48	9,173.54	32.95	32.74	-97.73	310.13	143.45	1,108.17	1,042.66	65.51	16.917		
9,500.00	9,180.53	9,203.13	9,181.93	32.96	32.79	-94.97	310.13	143.45	1,135.61	1,070.00	65.61	17.309		
9,550.00	9,184.59	9,200.93	9,185.99	33.01	32.79	-91.62	310.13	143.45	1,164.82	1,099.19	65.63	17.747		
9,600.00	9,185.00	9,201.34	9,186.40	33.08	32.79	-90.00	310.13	143.45	1,195.51	1,129.85	65.66	18.209		
9,650.00	9,185.00	9,201.34	9,186.40	33.16	32.79	-90.00	310.13	143.45	1,227.47	1,161.78	65.68	18.688		
9,700.00	9,185.00	9,201.34	9,186.40	33.25	32.79	-90.00	310.13	143.45	1,260.60	1,194.90	65.70	19.188		
9,750.00	9,185.00	9,201.34	9,186.40	33.35	32.79	-90.00	310.13	143.45	1,294.81	1,229.09	65.72	19.701		
9,800.00	9,185.00	9,201.34	9,186.40	33.45	32.79	-90.00	310.13	143.45	1,330.03	1,264.29	65.74	20.232		
9,850.00	9,185.00	9,201.34	9,186.40	33.56	32.79	-90.00	310.13	143.45	1,366.16	1,300.40	65.76	20.775		
9,900.00	9,185.00	9,201.34	9,186.40	33.67	32.79	-90.00	310.13	143.45	1,403.15	1,337.38	65.78	21.332		
9,950.00	9,185.00	9,201.34	9,186.40	33.80	32.79	-90.00	310.13	143.45	1,440.93	1,375.13	65.80	21.899		
10,000.00	9,185.00	9,201.34	9,186.40	33.92	32.79	-90.00	310.13	143.45	1,479.43	1,413.61	65.81	22.479		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hol - P1v2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)						
3,450.00	3,444.30	3,422.60	3,422.60	12.09	12.05	-6.12	152.69	-1,577.45	1,493.47	1,469.38	24.09	62.002		
3,500.00	3,493.71	3,472.01	3,472.01	12.27	12.22	-6.16	152.69	-1,577.45	1,485.81	1,461.37	24.44	60.798		
3,550.00	3,543.11	3,521.41	3,521.41	12.45	12.40	-6.19	152.69	-1,577.45	1,478.15	1,453.36	24.79	59.626		
3,600.00	3,592.51	3,570.81	3,570.81	12.63	12.58	-6.22	152.69	-1,577.45	1,470.50	1,445.36	25.14	58.487		
3,650.00	3,641.92	3,620.22	3,620.22	12.81	12.75	-6.25	152.69	-1,577.45	1,462.84	1,437.35	25.49	57.378		
3,700.00	3,691.32	3,669.62	3,669.62	12.99	12.93	-6.29	152.69	-1,577.45	1,455.19	1,429.34	25.85	56.300		
3,750.00	3,740.72	3,719.02	3,719.02	13.17	13.11	-6.32	152.69	-1,577.45	1,447.53	1,421.33	26.20	55.249		
3,800.00	3,790.13	3,768.43	3,768.43	13.35	13.28	-6.35	152.69	-1,577.45	1,439.88	1,413.33	26.55	54.226		
3,850.00	3,839.53	3,817.83	3,817.83	13.53	13.46	-6.39	152.69	-1,577.45	1,432.23	1,405.32	26.91	53.230		
3,900.00	3,888.93	3,867.23	3,867.23	13.72	13.64	-6.42	152.69	-1,577.45	1,424.57	1,397.31	27.26	52.259		
3,950.00	3,938.34	3,916.64	3,916.64	13.90	13.82	-6.46	152.69	-1,577.45	1,416.92	1,389.31	27.61	51.312		
4,000.00	3,987.74	3,966.04	3,966.04	14.08	13.99	-6.49	152.69	-1,577.45	1,409.27	1,381.30	27.97	50.389		
4,050.00	4,037.14	4,015.44	4,015.44	14.27	14.17	-6.53	152.69	-1,577.45	1,401.62	1,373.30	28.32	49.488		
4,100.00	4,086.55	4,064.85	4,064.85	14.45	14.35	-6.56	152.69	-1,577.45	1,393.97	1,365.29	28.68	48.609		
4,150.00	4,135.95	4,114.25	4,114.25	14.63	14.52	-6.60	152.69	-1,577.45	1,386.32	1,357.29	29.03	47.752		
4,200.00	4,185.36	4,163.66	4,163.66	14.82	14.70	-6.64	152.69	-1,577.45	1,378.67	1,349.28	29.39	46.915		
4,250.00	4,234.76	4,213.06	4,213.06	15.00	14.88	-6.67	152.69	-1,577.45	1,371.02	1,341.28	29.74	46.098		
4,300.00	4,284.16	4,262.46	4,262.46	15.18	15.06	-6.71	152.69	-1,577.45	1,363.37	1,333.27	30.10	45.299		
4,350.00	4,333.57	4,311.87	4,311.87	15.37	15.23	-6.75	152.69	-1,577.45	1,355.72	1,325.27	30.45	44.519		
4,400.00	4,382.97	4,361.27	4,361.27	15.55	15.41	-6.79	152.69	-1,577.45	1,348.08	1,317.27	30.81	43.757		
4,450.00	4,432.37	4,410.67	4,410.67	15.74	15.59	-6.83	152.69	-1,577.45	1,340.43	1,309.27	31.16	43.012		
4,500.00	4,481.78	4,460.08	4,460.08	15.92	15.76	-6.87	152.69	-1,577.45	1,332.78	1,301.26	31.52	42.284		
4,550.00	4,531.18	4,509.48	4,509.48	16.11	15.94	-6.91	152.69	-1,577.45	1,325.14	1,293.26	31.88	41.572		
4,600.00	4,580.58	4,557.22	4,557.22	16.29	16.11	-6.94	152.69	-1,577.45	1,317.50	1,285.27	32.23	40.883		
4,650.00	4,629.99	4,597.41	4,597.41	16.48	16.25	-6.98	152.74	-1,577.64	1,310.09	1,277.54	32.55	40.246		
4,700.00	4,679.39	4,637.69	4,637.69	16.66	16.39	-7.01	152.87	-1,578.11	1,303.03	1,270.16	32.87	39.637		
4,750.00	4,728.80	4,678.06	4,678.06	16.85	16.53	-7.03	153.06	-1,578.86	1,296.32	1,263.13	33.20	39.052		
4,800.00	4,778.20	4,718.49	4,718.47	17.03	16.67	-7.06	153.33	-1,579.89	1,289.97	1,256.45	33.52	38.489		
4,850.00	4,827.60	4,759.00	4,758.96	17.22	16.81	-7.08	153.68	-1,581.21	1,283.96	1,250.12	33.84	37.947		
4,900.00	4,877.01	4,800.00	4,799.92	17.40	16.95	-7.10	154.10	-1,582.83	1,278.31	1,244.15	34.16	37.425		
4,950.00	4,926.41	4,840.23	4,840.10	17.59	17.09	-7.12	154.59	-1,584.70	1,273.01	1,238.53	34.47	36.928		
5,000.00	4,975.81	4,880.93	4,880.74	17.78	17.24	-7.14	155.16	-1,586.87	1,268.06	1,233.27	34.79	36.449		
5,050.00	5,025.22	4,921.69	4,921.42	17.96	17.38	-7.15	155.81	-1,589.33	1,263.47	1,228.36	35.11	35.989		
5,100.00	5,074.62	4,962.51	4,962.14	18.15	17.52	-7.16	156.53	-1,592.09	1,259.23	1,223.81	35.42	35.549		
5,150.00	5,124.02	5,003.37	5,002.88	18.34	17.66	-7.17	157.33	-1,595.13	1,255.35	1,219.62	35.74	35.128		
5,200.00	5,173.43	5,044.27	5,043.64	18.52	17.81	-7.18	158.21	-1,598.46	1,251.83	1,215.78	36.05	34.725		
5,250.00	5,222.83	5,085.22	5,084.41	18.71	17.95	-7.19	159.16	-1,602.09	1,248.66	1,212.30	36.36	34.340		
5,300.00	5,272.23	5,126.20	5,125.19	18.90	18.10	-7.19	160.18	-1,606.00	1,245.85	1,209.18	36.67	33.972		
5,350.00	5,321.64	5,167.21	5,165.97	19.08	18.24	-7.19	161.29	-1,610.20	1,243.40	1,206.42	36.98	33.621		
5,400.00	5,371.04	5,208.25	5,206.75	19.27	18.39	-7.18	162.46	-1,614.70	1,241.31	1,204.02	37.29	33.287		
5,450.00	5,420.45	5,249.31	5,247.51	19.46	18.54	-7.18	163.72	-1,619.49	1,239.58	1,201.98	37.60	32.969		
5,500.00	5,469.85	5,290.39	5,288.25	19.65	18.68	-7.17	165.05	-1,624.56	1,238.20	1,200.30	37.90	32.666		
5,550.00	5,519.25	5,336.13	5,328.51	19.83	18.85	-7.16	166.44	-1,629.87	1,237.19	1,198.96	38.22	32.367		
5,600.00	5,568.66	5,381.02	5,378.02	20.02	19.01	-7.14	168.21	-1,636.59	1,236.37	1,197.81	38.56	32.061		
5,650.00	5,618.06	5,431.01	5,427.53	20.21	19.19	-7.13	169.97	-1,643.31	1,235.56	1,196.64	38.92	31.746		
5,700.00	5,667.46	5,481.00	5,477.04	20.40	19.38	-7.11	171.73	-1,650.03	1,234.74	1,195.46	39.28	31.436		
5,750.00	5,716.87	5,531.00	5,526.54	20.58	19.56	-7.10	173.50	-1,656.75	1,233.92	1,194.29	39.64	31.132		
5,800.00	5,766.27	5,580.99	5,576.05	20.77	19.74	-7.08	175.26	-1,663.47	1,233.11	1,193.11	39.99	30.833		
5,850.00	5,815.67	5,630.98	5,625.56	20.96	19.93	-7.07	177.02	-1,670.20	1,232.29	1,191.94	40.35	30.539		
5,900.00	5,865.08	5,680.97	5,675.06	21.15	20.12	-7.05	178.79	-1,676.92	1,231.47	1,190.76	40.71	30.250		
5,950.00	5,914.48	5,730.97	5,724.57	21.34	20.30	-7.04	180.55	-1,683.64	1,230.66	1,189.59	41.07	29.966		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hol - P1v2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,000.00	5,963.89	5,780.96	5,774.08	21.52	20.49	-7.02	182.31	-1,690.36	1,229.84	1,188.41	41.43	29.687		
6,050.00	6,013.29	5,830.95	5,823.58	21.71	20.68	-7.01	184.08	-1,697.08	1,229.03	1,187.24	41.79	29.412		
6,100.00	6,062.69	5,880.94	5,873.09	21.90	20.87	-6.99	185.84	-1,703.80	1,228.21	1,186.06	42.15	29.142		
6,150.00	6,112.10	5,930.93	5,922.60	22.09	21.06	-6.98	187.60	-1,710.52	1,227.39	1,184.89	42.51	28.876		
6,200.00	6,161.50	5,980.93	5,972.11	22.28	21.25	-6.96	189.37	-1,717.25	1,226.58	1,183.71	42.87	28.614		
6,250.00	6,210.90	6,030.92	6,021.61	22.47	21.44	-6.95	191.13	-1,723.97	1,225.76	1,182.54	43.23	28.357		
6,300.00	6,260.31	6,080.91	6,071.12	22.65	21.63	-6.93	192.89	-1,730.69	1,224.95	1,181.36	43.59	28.104		
6,350.00	6,309.71	6,130.90	6,120.63	22.84	21.82	-6.92	194.66	-1,737.41	1,224.13	1,180.18	43.95	27.854		
6,400.00	6,359.11	6,180.90	6,170.13	23.03	22.01	-6.90	196.42	-1,744.13	1,223.32	1,179.01	44.31	27.609		
6,450.00	6,408.52	6,230.89	6,219.64	23.22	22.21	-6.89	198.18	-1,750.85	1,222.50	1,177.83	44.67	27.368		
6,500.00	6,457.92	6,280.88	6,269.15	23.41	22.40	-6.87	199.95	-1,757.57	1,221.69	1,176.65	45.03	27.130		
6,550.00	6,507.32	6,330.87	6,318.65	23.60	22.59	-6.86	201.71	-1,764.30	1,220.87	1,175.48	45.39	26.896		
6,600.00	6,556.73	6,380.87	6,368.16	23.79	22.79	-6.84	203.47	-1,771.02	1,220.05	1,174.30	45.75	26.665		
6,650.00	6,606.13	6,430.86	6,417.67	23.98	22.98	-6.83	205.24	-1,777.74	1,219.24	1,173.12	46.12	26.438		
6,700.00	6,655.54	6,480.85	6,467.18	24.16	23.18	-6.81	207.00	-1,784.46	1,218.43	1,171.95	46.48	26.215		
6,750.00	6,704.94	6,530.84	6,516.68	24.35	23.38	-6.80	208.76	-1,791.18	1,217.61	1,170.77	46.84	25.995		
6,800.00	6,754.34	6,580.83	6,566.19	24.54	23.57	-6.78	210.53	-1,797.90	1,216.80	1,169.59	47.20	25.778		
6,850.00	6,803.75	6,630.83	6,615.70	24.73	23.77	-6.77	212.29	-1,804.63	1,215.98	1,168.42	47.57	25.564		
6,900.00	6,853.15	6,680.82	6,665.20	24.92	23.97	-6.75	214.05	-1,811.35	1,215.17	1,167.24	47.93	25.354		
6,950.00	6,902.55	6,730.81	6,714.71	25.11	24.16	-6.73	215.82	-1,818.07	1,214.35	1,166.06	48.29	25.146		
7,000.00	6,951.96	6,780.80	6,764.22	25.30	24.36	-6.72	217.58	-1,824.79	1,213.54	1,164.88	48.65	24.942		
7,050.00	7,001.36	6,830.80	6,813.72	25.49	24.56	-6.70	219.34	-1,831.51	1,212.72	1,163.71	49.02	24.740		
7,100.00	7,050.76	6,880.79	6,863.23	25.68	24.76	-6.69	221.11	-1,838.23	1,211.91	1,162.53	49.38	24.542		
7,150.00	7,100.17	6,930.78	6,912.74	25.87	24.96	-6.67	222.87	-1,844.95	1,211.10	1,161.35	49.75	24.346		
7,200.00	7,149.57	6,980.77	6,962.25	26.06	25.16	-6.66	224.63	-1,851.68	1,210.28	1,160.17	50.11	24.153		
7,250.00	7,198.98	7,030.77	7,011.75	26.25	25.36	-6.64	226.40	-1,858.40	1,209.47	1,158.99	50.47	23.963		
7,300.00	7,248.38	7,080.76	7,061.26	26.44	25.56	-6.63	228.16	-1,865.12	1,208.65	1,157.82	50.84	23.775		
7,350.00	7,297.78	7,130.75	7,110.77	26.62	25.76	-6.61	229.92	-1,871.84	1,207.84	1,156.64	51.20	23.590		
7,400.00	7,347.19	7,180.74	7,160.27	26.81	25.96	-6.59	231.69	-1,878.56	1,207.03	1,155.46	51.57	23.408		
7,450.00	7,396.59	7,230.73	7,209.78	27.00	26.16	-6.58	233.45	-1,885.28	1,206.21	1,154.28	51.93	23.228		
7,500.00	7,445.99	7,280.73	7,259.29	27.19	26.36	-6.56	235.21	-1,892.00	1,205.40	1,153.10	52.29	23.050		
7,550.00	7,495.40	7,330.72	7,308.79	27.38	26.57	-6.55	236.98	-1,898.73	1,204.59	1,151.93	52.66	22.875		
7,600.00	7,544.80	7,380.71	7,358.30	27.57	26.77	-6.53	238.74	-1,905.45	1,203.77	1,150.75	53.02	22.702		
7,650.00	7,594.20	7,430.70	7,407.81	27.76	26.97	-6.52	240.50	-1,912.17	1,202.96	1,149.57	53.39	22.532		
7,700.00	7,643.61	7,480.70	7,457.32	27.95	27.17	-6.50	242.27	-1,918.89	1,202.15	1,148.39	53.75	22.364		
7,750.00	7,693.01	7,530.69	7,506.82	28.14	27.38	-6.48	244.03	-1,925.61	1,201.33	1,147.21	54.12	22.198		
7,800.00	7,742.43	7,580.68	7,556.33	28.33	27.58	-6.47	245.79	-1,932.33	1,200.52	1,146.03	54.48	22.036		
7,831.50	7,773.61	7,612.18	7,587.52	28.45	27.71	-6.46	246.91	-1,936.57	1,200.52	1,145.80	54.71	21.942 CC		
7,850.00	7,791.94	7,630.68	7,605.84	28.52	27.78	-6.45	247.56	-1,939.06	1,200.56	1,145.71	54.85	21.888 ES		
7,900.00	7,841.54	7,680.67	7,655.35	28.71	27.99	-6.43	249.32	-1,945.78	1,201.13	1,145.91	55.21	21.754		
7,950.00	7,891.22	7,730.66	7,704.85	28.89	28.19	-6.40	251.08	-1,952.50	1,202.34	1,146.77	55.58	21.634		
8,000.00	7,940.97	7,780.62	7,754.32	29.08	28.40	-6.37	252.85	-1,959.22	1,204.21	1,148.27	55.94	21.527		
8,050.00	7,990.77	7,830.55	7,803.77	29.26	28.60	-6.34	254.61	-1,965.93	1,206.73	1,150.43	56.30	21.434		
8,100.00	8,040.63	7,880.44	7,853.18	29.44	28.81	-6.31	256.37	-1,972.64	1,209.89	1,153.23	56.66	21.354		
8,150.00	8,090.54	7,930.29	7,902.54	29.62	29.01	-6.28	258.13	-1,979.34	1,213.71	1,156.69	57.02	21.286		
8,200.00	8,140.48	7,980.08	7,951.85	29.79	29.22	-6.24	259.88	-1,986.03	1,218.18	1,160.80	57.38	21.231		
8,250.00	8,190.45	8,029.81	8,001.10	29.97	29.42	-6.21	261.64	-1,992.72	1,223.29	1,165.56	57.73	21.189		
8,300.00	8,240.44	8,079.46	8,050.27	30.15	29.62	-6.17	263.39	-1,999.40	1,229.05	1,170.96	58.09	21.159		
8,350.00	8,290.43	8,129.04	8,099.36	30.32	29.83	-6.13	265.14	-2,006.06	1,235.46	1,177.02	58.44	21.141		
8,400.00	8,340.43	8,178.55	8,148.40	30.49	30.03	-6.08	266.88	-2,012.72	1,242.30	1,183.51	58.79	21.131		
8,450.00	8,390.43	8,228.07	8,197.43	30.66	30.24	-6.04	268.63	-2,019.38	1,249.16	1,190.02	59.14	21.122		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hol - P1v2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+GRF													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,500.00	8,440.43	8,277.58	8,246.47	30.83	30.44	-84.74	270.38	-2,026.03	1,256.02	1,196.53	59.49	21.113		
8,550.00	8,490.43	8,327.10	8,295.50	31.00	30.65	-84.69	272.12	-2,032.69	1,262.87	1,203.03	59.84	21.105		
8,600.00	8,540.43	8,376.61	8,344.53	31.17	30.85	-84.64	273.87	-2,039.35	1,269.73	1,209.54	60.19	21.096		
8,650.00	8,590.43	8,426.13	8,393.57	31.34	31.06	-84.59	275.62	-2,046.00	1,276.59	1,216.05	60.54	21.087		
8,700.00	8,640.42	8,475.60	8,442.57	31.51	31.26	95.46	277.36	-2,052.66	1,283.52	1,222.64	60.89	21.081 SF		
8,750.00	8,690.19	8,524.72	8,491.21	31.67	31.47	94.98	279.09	-2,059.26	1,290.84	1,229.61	61.22	21.084		
8,800.00	8,739.36	8,573.09	8,539.11	31.83	31.67	94.63	280.80	-2,065.76	1,298.57	1,237.02	61.55	21.096		
8,850.00	8,787.57	8,620.35	8,585.91	31.97	31.87	94.40	282.47	-2,072.12	1,306.77	1,244.90	61.88	21.119		
8,900.00	8,834.43	8,666.14	8,631.25	32.12	32.06	94.26	284.08	-2,078.27	1,315.50	1,253.32	62.19	21.153		
8,950.00	8,879.61	8,710.10	8,674.78	32.25	32.24	94.18	285.63	-2,084.18	1,324.86	1,262.37	62.49	21.201		
9,000.00	8,922.75	8,751.91	8,716.19	32.37	32.42	94.11	287.11	-2,089.81	1,334.95	1,272.17	62.78	21.264		
9,050.00	8,963.52	8,808.76	8,755.14	32.48	32.65	94.01	288.49	-2,095.09	1,345.90	1,282.78	63.12	21.323		
9,100.00	9,001.62	8,827.80	8,791.34	32.59	32.73	93.83	289.78	-2,100.01	1,357.84	1,294.52	63.32	21.445		
9,150.00	9,036.75	8,861.31	8,824.53	32.67	32.87	93.53	290.97	-2,104.51	1,370.88	1,307.31	63.56	21.567		
9,200.00	9,068.66	8,891.51	8,854.44	32.75	33.00	93.06	292.03	-2,108.58	1,385.11	1,321.32	63.79	21.712		
9,250.00	9,097.08	8,918.18	8,880.84	32.81	33.11	92.38	292.97	-2,112.16	1,400.63	1,336.62	64.01	21.881		
9,300.00	9,121.82	8,942.95	8,905.38	32.86	33.21	91.53	293.84	-2,115.49	1,417.48	1,353.26	64.22	22.072		
9,350.00	9,142.67	8,968.47	8,930.66	32.90	33.32	90.59	294.72	-2,118.83	1,435.59	1,371.15	64.44	22.278		
9,400.00	9,159.49	8,988.71	8,950.72	32.93	33.40	89.31	295.40	-2,121.40	1,454.97	1,390.33	64.63	22.511		
9,450.00	9,172.14	9,003.44	8,965.33	32.95	33.47	87.66	295.88	-2,123.23	1,475.58	1,410.78	64.80	22.771		
9,500.00	9,180.53	9,012.51	8,974.33	32.96	33.50	85.63	296.17	-2,124.34	1,497.34	1,432.40	64.94	23.056		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 147-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
3,050.00	3,048.68	3,026.72	3,026.68	10.67	10.38	-5.88	147.04	-1,522.45	1,496.74	1,475.71	21.03	71.159		
3,100.00	3,098.29	3,076.58	3,076.54	10.84	10.56	-5.92	146.89	-1,522.43	1,490.48	1,469.10	21.38	69.700		
3,150.00	3,147.82	3,125.97	3,125.93	11.02	10.73	-5.96	146.79	-1,522.39	1,483.68	1,461.95	21.73	68.269		
3,200.00	3,197.28	3,174.30	3,174.27	11.20	10.90	-6.00	146.64	-1,522.39	1,476.37	1,454.29	22.08	66.871		
3,250.00	3,246.69	3,223.20	3,223.17	11.37	11.08	-6.05	146.41	-1,522.43	1,468.74	1,446.31	22.42	65.497		
3,300.00	3,296.09	3,273.39	3,273.35	11.55	11.25	-6.09	146.20	-1,522.46	1,461.09	1,438.31	22.78	64.151		
3,350.00	3,345.49	3,322.43	3,322.39	11.73	11.43	-6.13	146.04	-1,522.46	1,453.42	1,430.30	23.12	62.856		
3,400.00	3,394.90	3,370.07	3,370.03	11.91	11.60	-6.16	145.84	-1,522.52	1,445.80	1,422.34	23.47	61.614		
3,450.00	3,444.30	3,419.22	3,419.18	12.09	11.77	-6.21	145.57	-1,522.63	1,438.23	1,414.42	23.81	60.395		
3,500.00	3,493.71	3,470.13	3,470.09	12.27	11.95	-6.26	145.24	-1,522.71	1,430.63	1,406.46	24.17	59.196		
3,550.00	3,543.11	3,521.98	3,521.94	12.45	12.14	-6.31	144.86	-1,522.73	1,422.96	1,398.43	24.53	58.017		
3,600.00	3,592.51	3,574.41	3,574.37	12.63	12.32	-6.36	144.42	-1,522.65	1,415.19	1,390.31	24.89	56.864		
3,650.00	3,641.92	3,626.80	3,626.75	12.81	12.51	-6.42	143.90	-1,522.46	1,407.32	1,382.07	25.25	55.739		
3,700.00	3,691.32	3,679.15	3,679.10	12.99	12.70	-6.48	143.33	-1,522.16	1,399.35	1,373.74	25.61	54.642		
3,750.00	3,740.72	3,734.93	3,734.87	13.17	12.90	-6.55	142.60	-1,521.67	1,391.20	1,365.22	25.98	53.545		
3,800.00	3,790.13	3,790.68	3,790.61	13.35	13.09	-6.62	141.69	-1,520.93	1,382.83	1,356.48	26.35	52.473		
3,850.00	3,839.53	3,838.70	3,838.61	13.53	13.27	-6.69	140.90	-1,520.24	1,374.41	1,347.71	26.70	51.473		
3,900.00	3,888.93	3,889.35	3,889.25	13.72	13.45	-6.76	140.05	-1,519.48	1,365.96	1,338.90	27.06	50.483		
3,950.00	3,938.34	3,941.31	3,941.20	13.90	13.63	-6.84	139.09	-1,518.62	1,357.43	1,330.01	27.42	49.508		
4,000.00	3,987.74	3,993.23	3,993.10	14.08	13.82	-6.93	138.02	-1,517.67	1,348.80	1,321.02	27.78	48.556		
4,050.00	4,037.14	4,045.11	4,044.96	14.27	14.00	-7.02	136.85	-1,516.61	1,340.07	1,311.93	28.14	47.624		
4,100.00	4,086.55	4,096.18	4,095.99	14.45	14.19	-7.11	135.61	-1,515.49	1,331.26	1,302.76	28.50	46.717		
4,150.00	4,135.95	4,146.96	4,146.75	14.63	14.37	-7.20	134.37	-1,514.32	1,322.39	1,293.54	28.85	45.831		
4,200.00	4,185.36	4,197.72	4,197.48	14.82	14.55	-7.30	133.11	-1,513.08	1,313.47	1,284.25	29.21	44.965		
4,250.00	4,234.76	4,248.46	4,248.19	15.00	14.73	-7.39	131.84	-1,511.78	1,304.48	1,274.91	29.57	44.117		
4,300.00	4,284.16	4,297.69	4,297.39	15.18	14.91	-7.49	130.46	-1,510.50	1,295.47	1,265.55	29.92	43.295		
4,350.00	4,333.57	4,346.94	4,346.59	15.37	15.09	-7.61	128.82	-1,509.24	1,286.46	1,256.19	30.28	42.491		
4,400.00	4,382.97	4,396.50	4,396.10	15.55	15.26	-7.72	127.25	-1,507.94	1,277.45	1,246.82	30.63	41.704		
4,450.00	4,432.37	4,449.59	4,449.16	15.74	15.45	-7.83	125.96	-1,506.49	1,268.40	1,237.40	30.99	40.923		
4,500.00	4,481.78	4,511.44	4,510.96	15.92	15.67	-7.93	124.86	-1,504.31	1,258.98	1,227.60	31.38	40.125		
4,550.00	4,531.18	4,583.24	4,582.67	16.11	15.93	-8.02	124.26	-1,500.76	1,248.91	1,217.14	31.77	39.309		
4,600.00	4,580.58	4,650.52	4,649.78	16.29	16.16	-8.06	124.73	-1,496.15	1,237.92	1,205.78	32.15	38.508		
4,650.00	4,629.99	4,710.14	4,709.20	16.48	16.37	-8.04	126.16	-1,491.36	1,226.43	1,193.92	32.51	37.729		
4,700.00	4,679.39	4,765.43	4,764.23	16.66	16.56	-7.98	128.25	-1,486.47	1,214.57	1,181.71	32.86	36.965		
4,750.00	4,728.80	4,820.17	4,818.66	16.85	16.75	-7.89	130.88	-1,481.31	1,202.46	1,169.26	33.21	36.212		
4,800.00	4,778.20	4,868.40	4,866.60	17.03	16.92	-7.80	133.42	-1,476.66	1,190.26	1,156.72	33.55	35.477		
4,850.00	4,827.60	4,917.13	4,915.03	17.22	17.08	-7.71	136.07	-1,471.92	1,178.04	1,144.14	33.89	34.756		
4,900.00	4,877.01	4,964.48	4,962.08	17.40	17.25	-7.61	138.63	-1,467.34	1,165.83	1,131.59	34.24	34.050		
4,950.00	4,926.41	5,011.39	5,008.71	17.59	17.41	-7.52	141.12	-1,462.85	1,153.68	1,119.10	34.58	33.360		
5,000.00	4,975.81	5,057.05	5,054.09	17.78	17.57	-7.41	143.84	-1,458.56	1,141.63	1,106.71	34.93	32.686		
5,050.00	5,025.22	5,103.62	5,100.35	17.96	17.73	-7.28	147.07	-1,454.26	1,129.71	1,094.43	35.27	32.028		
5,100.00	5,074.62	5,154.00	5,150.37	18.15	17.90	-7.11	150.79	-1,449.58	1,117.77	1,082.15	35.62	31.381		
5,150.00	5,124.02	5,202.62	5,198.63	18.34	18.07	-6.95	154.47	-1,444.98	1,105.77	1,069.81	35.97	30.745		
5,200.00	5,173.43	5,247.74	5,243.43	18.52	18.23	-6.80	157.86	-1,440.81	1,093.88	1,057.57	36.31	30.125		
5,250.00	5,222.83	5,294.16	5,289.54	18.71	18.39	-6.64	161.28	-1,436.66	1,082.13	1,045.47	36.66	29.520		
5,300.00	5,272.23	5,344.88	5,339.90	18.90	18.57	-6.45	165.23	-1,432.08	1,070.37	1,033.36	37.01	28.924		
5,350.00	5,321.64	5,395.45	5,390.07	19.08	18.74	-6.24	169.51	-1,427.38	1,058.52	1,021.17	37.35	28.337		
5,400.00	5,371.04	5,445.87	5,440.06	19.27	18.92	-6.01	173.97	-1,422.58	1,046.59	1,008.89	37.70	27.758		
5,450.00	5,420.45	5,494.01	5,487.78	19.46	19.09	-5.78	178.35	-1,417.92	1,034.61	996.56	38.05	27.189		
5,500.00	5,469.85	5,539.81	5,533.18	19.65	19.25	-5.56	182.48	-1,413.58	1,022.74	984.33	38.40	26.632		
5,550.00	5,519.25	5,586.58	5,579.56	19.83	19.42	-5.34	186.64	-1,409.27	1,010.99	972.24	38.75	26.089		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		5.00 ft
Survey Program: 147-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,600.00	5,568.66	5,634.67	5,627.26	20.02	19.59	-5.10	190.95	-1,404.86	999.30	960.20	39.10	25.556			
5,650.00	5,618.06	5,682.14	5,674.33	20.21	19.76	-4.85	195.26	-1,400.53	987.65	948.20	39.45	25.033			
5,700.00	5,667.46	5,728.88	5,720.68	20.40	19.92	-4.60	199.55	-1,396.33	976.10	936.29	39.81	24.521			
5,750.00	5,716.87	5,775.75	5,767.16	20.58	20.09	-4.34	203.90	-1,392.19	964.64	924.48	40.16	24.021			
5,800.00	5,766.27	5,822.77	5,813.81	20.77	20.26	-4.08	208.26	-1,388.12	953.28	912.77	40.51	23.531			
5,850.00	5,815.67	5,871.85	5,862.50	20.96	20.44	-3.80	212.79	-1,383.92	942.00	901.13	40.87	23.051			
5,900.00	5,865.08	5,923.46	5,913.71	21.15	20.62	-3.51	217.41	-1,379.39	930.61	889.39	41.22	22.577			
5,950.00	5,914.48	5,979.98	5,969.77	21.34	20.83	-3.19	222.22	-1,374.17	919.00	877.43	41.57	22.108			
6,000.00	5,963.89	6,039.50	6,028.79	21.52	21.04	-2.86	226.93	-1,368.04	906.85	864.93	41.91	21.637			
6,050.00	6,013.29	6,085.05	6,073.96	21.71	21.21	-2.62	230.30	-1,363.17	894.49	852.22	42.27	21.161			
6,100.00	6,062.69	6,130.82	6,119.36	21.90	21.37	-2.38	233.52	-1,358.43	882.30	839.67	42.63	20.698			
6,150.00	6,112.10	6,175.68	6,163.90	22.09	21.54	-2.15	236.55	-1,353.97	870.29	827.30	42.99	20.246			
6,200.00	6,161.50	6,220.59	6,208.51	22.28	21.70	-1.92	239.48	-1,349.70	858.49	815.14	43.35	19.806			
6,250.00	6,210.90	6,268.13	6,255.75	22.47	21.87	-1.68	242.51	-1,345.32	846.84	803.13	43.70	19.377			
6,300.00	6,260.31	6,316.12	6,303.44	22.65	22.05	-1.43	245.52	-1,340.95	835.24	791.18	44.06	18.957			
6,350.00	6,309.71	6,370.60	6,357.59	22.84	22.25	-1.16	248.72	-1,335.86	823.51	779.10	44.41	18.544			
6,400.00	6,359.11	6,425.83	6,412.47	23.03	22.45	-0.90	251.48	-1,330.32	811.40	766.65	44.75	18.131			
6,450.00	6,408.52	6,471.08	6,457.45	23.22	22.61	-0.70	253.58	-1,325.76	799.24	754.13	45.11	17.716			
6,500.00	6,457.92	6,517.77	6,503.86	23.41	22.79	-0.49	255.68	-1,321.17	787.19	741.72	45.47	17.311			
6,550.00	6,507.32	6,563.93	6,549.76	23.60	22.95	-0.28	257.76	-1,316.74	775.28	729.45	45.83	16.915			
6,600.00	6,556.73	6,610.61	6,596.19	23.79	23.13	-0.05	259.89	-1,312.40	763.52	717.32	46.19	16.528			
6,650.00	6,606.13	6,660.24	6,645.56	23.98	23.31	0.18	262.02	-1,307.81	751.78	705.23	46.55	16.150			
6,700.00	6,655.54	6,712.87	6,697.92	24.16	23.50	0.42	264.01	-1,302.90	739.96	693.06	46.90	15.778			
6,750.00	6,704.94	6,777.21	6,761.88	24.35	23.74	0.65	265.46	-1,298.10	727.41	680.20	47.20	15.410			
6,800.00	6,754.34	6,834.05	6,818.30	24.54	23.95	0.82	265.95	-1,289.22	713.99	666.46	47.52	15.025			
6,850.00	6,803.75	6,888.31	6,872.09	24.73	24.15	1.00	266.49	-1,282.12	700.12	652.28	47.84	14.633			
6,900.00	6,853.15	6,929.83	6,913.25	24.92	24.30	1.16	267.11	-1,276.64	686.27	638.04	48.23	14.228			
6,950.00	6,902.55	6,971.40	6,954.49	25.11	24.46	1.35	268.04	-1,271.50	672.89	624.27	48.62	13.840			
7,000.00	6,951.96	7,019.24	7,001.97	25.30	24.64	1.59	269.38	-1,265.83	659.83	610.85	48.98	13.472			
7,050.00	7,001.36	7,069.37	7,051.72	25.49	24.82	1.86	270.78	-1,259.77	646.65	597.33	49.33	13.110			
7,100.00	7,050.76	7,109.96	7,092.00	25.68	24.97	2.08	271.90	-1,254.98	633.64	583.92	49.72	12.744			
7,150.00	7,100.17	7,148.86	7,130.68	25.87	25.12	2.29	272.96	-1,250.99	621.35	571.24	50.12	12.397			
7,200.00	7,149.57	7,190.19	7,171.84	26.06	25.27	2.50	274.08	-1,247.37	609.79	559.28	50.50	12.074			
7,250.00	7,198.98	7,235.11	7,216.58	26.25	25.44	2.75	275.55	-1,243.74	598.61	547.73	50.88	11.766			
7,300.00	7,248.38	7,280.93	7,262.24	26.44	25.60	3.05	277.35	-1,240.24	587.74	536.50	51.25	11.469			
7,350.00	7,297.78	7,328.80	7,309.94	26.62	25.78	3.37	279.29	-1,236.70	577.02	525.42	51.61	11.181			
7,400.00	7,347.19	7,376.35	7,357.32	26.81	25.95	3.69	281.17	-1,233.28	566.40	514.43	51.97	10.898			
7,450.00	7,396.59	7,423.13	7,403.97	27.00	26.12	4.00	282.88	-1,230.09	555.94	503.60	52.34	10.621			
7,500.00	7,445.99	7,470.27	7,450.99	27.19	26.29	4.30	284.44	-1,227.10	545.67	492.97	52.71	10.353			
7,550.00	7,495.40	7,518.15	7,498.75	27.38	26.47	4.60	285.94	-1,224.19	535.53	482.46	53.07	10.091			
7,600.00	7,544.80	7,566.08	7,546.58	27.57	26.64	4.90	287.37	-1,221.40	525.50	472.06	53.44	9.834			
7,650.00	7,594.20	7,614.11	7,594.52	27.76	26.82	5.21	288.74	-1,218.70	515.56	461.76	53.80	9.583			
7,700.00	7,643.61	7,662.14	7,642.46	27.95	26.99	5.51	290.04	-1,216.11	505.73	451.56	54.17	9.337			
7,750.00	7,693.01	7,710.14	7,690.38	28.14	27.16	5.82	291.29	-1,213.64	496.00	441.47	54.53	9.096			
7,800.00	7,742.43	7,757.78	7,737.94	28.33	27.33	6.12	292.46	-1,211.30	486.51	431.61	54.90	8.862			
7,850.00	7,791.94	7,804.89	7,784.99	28.52	27.50	6.39	293.55	-1,209.20	477.82	422.55	55.26	8.646			
7,900.00	7,841.54	7,852.68	7,832.74	28.71	27.68	6.65	294.56	-1,207.31	469.98	414.35	55.63	8.449			
7,950.00	7,891.22	7,901.48	7,881.49	28.89	27.85	6.90	295.50	-1,205.51	462.89	406.90	55.99	8.268			
8,000.00	7,940.97	7,950.08	7,930.06	29.08	28.02	7.13	296.38	-1,203.81	456.53	400.18	56.35	8.102			
8,050.00	7,990.77	7,998.36	7,978.31	29.26	28.20	7.36	297.26	-1,202.26	450.97	394.25	56.71	7.952			
8,100.00	8,040.63	8,046.62	8,026.53	29.44	28.37	7.57	298.17	-1,200.86	446.20	389.13	57.08	7.818			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 147-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,150.00	8,090.54	8,094.82	8,074.72	29.62	28.54	7.77	299.00	-1,199.66	442.27	384.84	57.43	7.700		
8,200.00	8,140.48	8,143.64	8,123.52	29.79	28.71	7.94	299.76	-1,198.65	439.16	381.37	57.79	7.599		
8,250.00	8,190.45	8,193.06	8,172.92	29.97	28.88	8.10	300.52	-1,197.71	436.77	378.62	58.15	7.511		
8,300.00	8,240.44	8,241.89	8,221.74	30.15	29.06	8.24	301.24	-1,196.88	435.11	376.61	58.50	7.437		
8,350.00	8,290.43	8,290.34	8,270.18	30.32	29.23	8.35	301.79	-1,196.28	434.27	375.42	58.85	7.379		
8,400.00	8,340.43	8,340.01	8,319.85	30.49	29.40	-70.36	302.18	-1,195.86	434.00	374.79	59.20	7.331		
8,450.00	8,390.43	8,390.38	8,370.22	30.66	29.58	-70.31	302.44	-1,195.46	433.71	374.16	59.55	7.283		
8,500.00	8,440.43	8,439.68	8,419.52	30.83	29.75	-70.27	302.62	-1,195.10	433.42	373.53	59.90	7.236		
8,550.00	8,490.43	8,488.63	8,468.46	31.00	29.92	-70.23	302.86	-1,194.84	433.26	373.01	60.24	7.192		
8,584.75	8,525.19	8,522.45	8,502.29	31.12	30.04	-70.19	303.10	-1,194.71	433.22	372.73	60.48	7.162 CC		
8,600.00	8,540.43	8,536.88	8,516.72	31.17	30.09	-70.17	303.26	-1,194.66	433.23	372.64	60.59	7.150		
8,650.00	8,590.43	8,585.61	8,565.44	31.34	30.25	-70.08	303.97	-1,194.59	433.40	372.47	60.93	7.113 ES		
8,700.00	8,640.42	8,636.45	8,616.27	31.51	30.43	110.44	304.76	-1,194.51	433.84	372.56	61.28	7.080		
8,750.00	8,690.19	8,686.90	8,666.72	31.67	30.60	110.93	305.36	-1,194.40	435.59	373.98	61.62	7.069 SF		
8,800.00	8,739.36	8,734.00	8,713.82	31.83	30.76	111.69	305.81	-1,194.43	439.12	377.16	61.95	7.088		
8,850.00	8,787.57	8,781.26	8,761.08	31.97	30.92	112.73	306.27	-1,194.60	444.64	382.36	62.28	7.139		
8,900.00	8,834.43	8,827.64	8,807.45	32.12	31.08	113.95	306.63	-1,194.89	452.37	389.76	62.61	7.225		
8,950.00	8,879.61	8,871.08	8,850.89	32.25	31.22	115.19	307.01	-1,195.22	462.62	399.70	62.93	7.352		
9,000.00	8,922.75	8,913.58	8,893.39	32.37	31.37	116.43	307.46	-1,195.63	475.72	412.49	63.23	7.523		
9,050.00	8,963.52	8,952.97	8,932.77	32.48	31.50	117.47	307.87	-1,196.07	491.86	428.34	63.52	7.743		
9,100.00	9,001.62	8,990.55	8,970.35	32.59	31.62	118.28	308.26	-1,196.54	511.25	447.45	63.80	8.014		
9,150.00	9,036.75	9,025.95	9,005.74	32.67	31.74	118.75	308.56	-1,197.01	533.93	469.88	64.05	8.336		
9,200.00	9,068.66	9,058.69	9,038.47	32.75	31.85	118.78	308.70	-1,197.50	559.89	495.60	64.29	8.709		
9,250.00	9,097.08	9,087.73	9,067.51	32.81	31.95	118.17	308.74	-1,197.94	589.03	524.54	64.50	9.132		
9,300.00	9,121.82	9,112.78	9,092.55	32.86	32.03	116.81	308.76	-1,198.32	621.22	556.54	64.68	9.604		
9,350.00	9,142.67	9,133.94	9,113.71	32.90	32.10	114.54	308.76	-1,198.64	656.22	591.38	64.84	10.121		
9,400.00	9,159.49	9,151.04	9,130.82	32.93	32.16	111.21	308.75	-1,198.90	693.70	628.74	64.97	10.677		
9,450.00	9,172.14	9,163.95	9,143.72	32.95	32.20	106.60	308.74	-1,199.09	733.32	668.25	65.07	11.269		
9,500.00	9,180.53	9,172.61	9,152.38	32.96	32.23	100.56	308.73	-1,199.22	774.68	709.53	65.15	11.890		
9,550.00	9,184.59	9,176.90	9,156.67	33.01	32.24	93.01	308.72	-1,199.28	817.36	752.15	65.21	12.534		
9,600.00	9,185.00	9,177.41	9,157.18	33.08	32.24	89.32	308.72	-1,199.29	860.94	795.69	65.25	13.195		
9,650.00	9,185.00	9,177.50	9,157.27	33.16	32.25	89.33	308.72	-1,199.29	905.18	839.90	65.28	13.866		
9,700.00	9,185.00	9,177.59	9,157.36	33.25	32.25	89.34	308.72	-1,199.29	949.99	884.68	65.31	14.545		
9,750.00	9,185.00	9,177.68	9,157.45	33.35	32.25	89.35	308.72	-1,199.29	995.30	929.96	65.34	15.232		
9,800.00	9,185.00	9,177.77	9,157.55	33.45	32.25	89.37	308.72	-1,199.30	1,041.04	975.67	65.37	15.926		
9,850.00	9,185.00	9,177.87	9,157.64	33.56	32.25	89.38	308.72	-1,199.30	1,087.15	1,021.76	65.39	16.625		
9,900.00	9,185.00	9,177.96	9,157.73	33.67	32.25	89.39	308.72	-1,199.30	1,133.59	1,068.18	65.42	17.329		
9,950.00	9,185.00	9,178.05	9,157.83	33.80	32.25	89.40	308.72	-1,199.30	1,180.33	1,114.89	65.44	18.037		
10,000.00	9,185.00	9,178.15	9,157.92	33.92	32.25	89.42	308.72	-1,199.30	1,227.32	1,161.86	65.46	18.749		
10,050.00	9,185.00	9,178.24	9,158.02	34.06	32.25	89.43	308.72	-1,199.30	1,274.54	1,209.06	65.48	19.465		
10,100.00	9,185.00	9,178.34	9,158.11	34.20	32.25	89.44	308.72	-1,199.30	1,321.96	1,256.47	65.50	20.183		
10,150.00	9,185.00	11,501.36	10,441.33	34.35	40.65	162.44	-997.88	-1,184.76	1,341.77	1,297.53	44.24	30.326		
10,200.00	9,185.00	11,552.91	10,441.33	34.50	40.98	162.44	-1,049.43	-1,184.30	1,341.73	1,297.13	44.60	30.081		
10,223.00	9,185.00	11,574.07	10,441.34	34.57	41.13	162.45	-1,070.58	-1,184.06	1,341.71	1,296.95	44.76	29.972		
10,250.00	9,185.00	11,598.62	10,441.40	34.66	41.29	162.45	-1,095.14	-1,183.79	1,341.74	1,296.79	44.95	29.847		
10,300.00	9,185.00	11,644.09	10,441.64	34.82	41.61	162.46	-1,140.59	-1,183.29	1,341.91	1,296.61	45.30	29.622		
10,350.00	9,185.00	11,689.67	10,442.04	34.99	41.94	162.48	-1,186.17	-1,182.75	1,342.26	1,296.59	45.67	29.390		
10,400.00	9,185.00	11,735.26	10,442.64	35.17	42.27	162.50	-1,231.76	-1,182.09	1,342.76	1,296.73	46.04	29.166		
10,450.00	9,185.00	11,785.89	10,443.42	35.35	42.65	162.53	-1,282.37	-1,181.30	1,343.36	1,296.90	46.45	28.918		
10,500.00	9,185.00	11,837.39	10,444.15	35.53	43.04	162.56	-1,333.86	-1,180.52	1,343.89	1,297.02	46.88	28.669		
10,550.00	9,185.00	11,885.71	10,444.84	35.73	43.43	162.59	-1,382.18	-1,179.74	1,344.44	1,297.13	47.30	28.423		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 147-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,600.00	9,185.00	11,934.06	10,445.63	35.93	43.81	162.62	-1,430.51	-1,178.88	1,345.04	1,297.31	47.72	28.183		
10,650.00	9,185.00	11,980.73	10,446.44	36.13	44.20	162.65	-1,477.16	-1,178.17	1,345.74	1,297.58	48.16	27.944		
10,700.00	9,185.00	12,028.20	10,447.30	36.34	44.59	162.66	-1,524.63	-1,177.74	1,346.55	1,297.95	48.60	27.705		
10,750.00	9,185.00	12,098.28	10,447.90	36.56	45.19	162.66	-1,594.70	-1,177.61	1,347.03	1,297.81	49.23	27.364		
10,800.00	9,185.00	12,152.89	10,447.65	36.77	45.66	162.63	-1,649.31	-1,177.84	1,346.96	1,297.20	49.76	27.069		
10,837.47	9,185.00	12,188.62	10,447.50	36.94	45.97	162.61	-1,685.03	-1,178.01	1,346.94	1,296.81	50.13	26.868		
10,850.00	9,185.00	12,200.56	10,447.47	37.00	46.08	162.61	-1,696.98	-1,178.07	1,346.94	1,296.69	50.26	26.802		
10,900.00	9,185.00	12,248.57	10,447.37	37.23	46.51	162.59	-1,744.99	-1,178.26	1,347.00	1,296.25	50.76	26.539		
10,950.00	9,185.00	12,296.74	10,447.40	37.46	46.94	162.57	-1,793.16	-1,178.29	1,347.13	1,295.87	51.27	26.277		
11,000.00	9,185.00	12,368.59	10,447.08	37.70	47.61	162.56	-1,865.00	-1,178.08	1,347.01	1,295.04	51.98	25.916		
11,050.00	9,185.00	12,434.37	10,445.63	37.95	48.23	162.54	-1,930.76	-1,177.75	1,345.95	1,293.29	52.66	25.559		
11,100.00	9,185.00	12,487.81	10,444.09	38.19	48.74	162.51	-1,984.19	-1,177.68	1,344.65	1,291.40	53.25	25.254		
11,150.00	9,185.00	12,532.32	10,442.76	38.45	49.18	162.48	-2,028.68	-1,177.78	1,343.35	1,289.59	53.76	24.986		
11,200.00	9,185.00	12,574.48	10,441.75	38.70	49.59	162.45	-2,070.82	-1,177.89	1,342.34	1,288.08	54.26	24.738		
11,250.00	9,185.00	12,620.22	10,440.90	38.97	50.04	162.42	-2,116.55	-1,178.00	1,341.58	1,286.78	54.80	24.480		
11,300.00	9,185.00	12,669.03	10,440.13	39.23	50.53	162.40	-2,165.36	-1,177.90	1,340.90	1,285.53	55.37	24.216		
11,350.00	9,185.00	12,717.98	10,439.47	39.50	51.03	162.39	-2,214.30	-1,177.60	1,340.26	1,284.31	55.95	23.955		
11,400.00	9,185.00	12,767.02	10,438.84	39.77	51.53	162.38	-2,263.33	-1,177.29	1,339.65	1,283.12	56.53	23.699		
11,450.00	9,185.00	12,808.00	10,438.42	40.05	51.95	162.38	-2,304.32	-1,177.06	1,339.18	1,282.14	57.04	23.477		
11,476.17	9,185.00	12,827.43	10,438.36	40.20	52.15	162.38	-2,323.74	-1,176.99	1,339.11	1,281.82	57.29	23.373		
11,500.00	9,185.00	12,845.10	10,438.38	40.33	52.34	162.37	-2,341.42	-1,176.93	1,339.17	1,281.65	57.52	23.280		
11,550.00	9,185.00	12,883.22	10,438.70	40.62	52.74	162.37	-2,379.54	-1,176.88	1,339.64	1,281.62	58.02	23.088		
11,600.00	9,185.00	12,932.19	10,439.32	40.91	53.25	162.37	-2,428.50	-1,176.87	1,340.33	1,281.71	58.62	22.863		
11,650.00	9,185.00	12,981.83	10,439.97	41.21	53.78	162.36	-2,478.13	-1,176.89	1,341.06	1,281.82	59.24	22.639		
11,700.00	9,185.00	13,034.87	10,440.61	41.50	54.35	162.36	-2,531.18	-1,176.88	1,341.73	1,281.84	59.89	22.405		
11,750.00	9,185.00	13,087.06	10,441.14	41.80	54.91	162.35	-2,583.36	-1,176.82	1,342.29	1,281.75	60.53	22.174		
11,800.00	9,185.00	13,137.82	10,441.58	42.10	55.47	162.34	-2,634.12	-1,176.85	1,342.80	1,281.63	61.17	21.950		
11,850.00	9,185.00	13,189.48	10,441.95	42.41	56.03	162.33	-2,685.78	-1,176.98	1,343.28	1,281.45	61.83	21.724		
11,900.00	9,185.00	13,242.05	10,442.23	42.72	56.62	162.31	-2,738.35	-1,177.13	1,343.67	1,281.17	62.50	21.498		
11,950.00	9,185.00	13,295.30	10,442.40	43.04	57.21	162.30	-2,791.59	-1,177.25	1,343.96	1,280.77	63.19	21.269		
12,000.00	9,185.00	13,348.87	10,442.47	43.35	57.81	162.28	-2,845.16	-1,177.26	1,344.12	1,280.24	63.88	21.042		
12,050.00	9,185.00	13,399.12	10,442.54	43.68	58.38	162.28	-2,895.42	-1,176.99	1,344.19	1,279.66	64.54	20.829		
12,100.00	9,185.00	13,449.23	10,442.76	44.00	58.95	162.30	-2,945.52	-1,176.24	1,344.28	1,279.09	65.18	20.623		
12,150.00	9,185.00	13,509.46	10,442.87	44.32	59.65	162.34	-3,005.74	-1,175.09	1,344.16	1,278.23	65.94	20.385		
12,200.00	9,185.00	13,561.89	10,442.59	44.65	60.25	162.36	-3,058.16	-1,174.16	1,343.73	1,277.11	66.62	20.171		
12,250.00	9,185.00	13,604.52	10,442.52	44.99	60.75	162.38	-3,100.78	-1,173.39	1,343.48	1,276.27	67.21	19.991		
12,271.80	9,185.00	13,623.10	10,442.57	45.13	60.97	162.39	-3,119.36	-1,173.05	1,343.45	1,275.99	67.46	19.915		
12,300.00	9,185.00	13,649.03	10,442.71	45.32	61.27	162.40	-3,145.28	-1,172.55	1,343.49	1,275.68	67.81	19.813		
12,350.00	9,185.00	13,700.44	10,443.02	45.66	61.88	162.43	-3,196.68	-1,171.43	1,343.64	1,275.15	68.49	19.617		
12,400.00	9,185.00	13,750.63	10,443.33	46.00	62.48	162.43	-3,246.85	-1,170.18	1,344.02	1,274.84	69.18	19.429		
12,450.00	9,185.00	13,798.69	10,443.68	46.35	63.05	162.40	-3,294.89	-1,168.98	1,344.71	1,274.84	69.86	19.247		
12,500.00	9,185.00	13,855.43	10,444.06	46.70	63.73	162.33	-3,351.62	-1,167.63	1,345.66	1,275.00	70.66	19.044		
12,550.00	9,185.00	13,924.61	10,443.64	47.06	64.57	162.16	-3,420.78	-1,166.15	1,346.31	1,274.69	71.61	18.799		
12,600.00	9,185.00	13,973.96	10,442.94	47.42	65.17	162.00	-3,470.12	-1,165.26	1,346.90	1,274.51	72.39	18.606		
12,650.00	9,185.00	14,023.92	10,442.17	47.78	65.77	161.80	-3,520.07	-1,164.53	1,347.76	1,274.56	73.20	18.411		
12,700.00	9,185.00	14,062.39	10,441.76	48.15	66.24	161.63	-3,558.53	-1,164.04	1,349.16	1,275.24	73.91	18.253		
12,750.00	9,185.00	14,102.32	10,441.60	48.52	66.73	161.44	-3,598.45	-1,163.56	1,351.21	1,276.54	74.67	18.097		
12,800.00	9,185.00	14,146.67	10,441.69	48.90	67.27	161.21	-3,642.80	-1,163.05	1,353.85	1,278.37	75.49	17.935		
12,850.00	9,185.00	14,192.15	10,441.92	49.28	67.83	160.96	-3,688.28	-1,162.53	1,356.97	1,280.62	76.35	17.774		
12,900.00	9,185.00	14,239.42	10,442.27	49.67	68.41	160.67	-3,735.55	-1,162.00	1,360.53	1,283.28	77.25	17.612		
12,950.00	9,185.00	14,287.28	10,442.65	50.05	69.01	160.31	-3,783.40	-1,161.48	1,364.47	1,286.29	78.19	17.451		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 147-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)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,000.00	9,185.00	14,334.90	10,443.07	50.44	69.60	159.86	-3,831.02	-1,160.97	1,368.40	1,289.28	79.12	17.294		
13,050.00	9,185.00	14,382.58	10,443.55	50.84	70.19	159.45	-3,878.69	-1,160.46	1,372.14	1,292.09	80.05	17.142		
13,100.00	9,185.00	14,441.42	10,443.97	51.23	70.93	159.01	-3,937.53	-1,159.94	1,375.52	1,294.44	81.09	16.964		
13,150.00	9,185.00	14,503.77	10,443.65	51.63	71.70	158.57	-3,999.88	-1,159.79	1,378.19	1,296.02	82.17	16.772		
13,200.00	9,185.00	14,557.62	10,442.96	52.03	72.38	158.22	-4,053.72	-1,159.86	1,380.29	1,297.14	83.15	16.600		
13,250.00	9,185.00	14,609.68	10,442.05	52.42	73.03	157.91	-4,105.77	-1,160.05	1,381.92	1,297.82	84.09	16.433		
13,300.00	9,185.00	14,658.87	10,441.18	52.82	73.65	157.66	-4,154.96	-1,160.22	1,383.24	1,298.25	84.99	16.276		
13,350.00	9,185.00	14,710.00	10,440.35	53.22	74.30	157.45	-4,206.08	-1,160.20	1,384.24	1,298.36	85.88	16.118		
13,400.00	9,185.00	14,762.47	10,439.73	53.62	74.97	157.31	-4,258.54	-1,159.40	1,384.83	1,298.08	86.75	15.963		
13,450.00	9,185.00	14,804.17	10,439.49	54.01	75.51	157.25	-4,300.22	-1,158.28	1,385.16	1,297.70	87.46	15.837		
13,500.00	9,185.00	14,843.48	10,439.66	54.40	76.01	157.23	-4,339.52	-1,157.09	1,385.53	1,297.42	88.11	15.724		
13,550.00	9,185.00	14,900.08	10,440.31	54.79	76.75	157.27	-4,396.07	-1,155.08	1,385.83	1,296.90	88.93	15.584		
13,600.00	9,185.00	14,974.28	10,440.34	55.19	77.72	157.42	-4,470.18	-1,151.35	1,384.93	1,295.04	89.89	15.407		
13,650.00	9,185.00	15,023.92	10,440.14	55.57	78.37	157.58	-4,519.74	-1,148.44	1,383.38	1,292.82	90.56	15.276		
13,700.00	9,185.00	15,069.81	10,440.04	55.96	78.97	157.77	-4,565.54	-1,145.65	1,381.55	1,290.38	91.16	15.154		
13,750.00	9,185.00	15,108.90	10,440.21	56.34	79.49	157.97	-4,604.55	-1,143.26	1,379.70	1,288.03	91.67	15.051		
13,800.00	9,185.00	15,147.90	10,440.70	56.72	80.01	158.20	-4,643.48	-1,140.91	1,377.93	1,285.78	92.15	14.954		
13,850.00	9,185.00	15,200.66	10,441.50	57.10	80.71	158.53	-4,696.15	-1,137.78	1,376.01	1,283.27	92.74	14.837		
13,900.00	9,185.00	15,254.51	10,442.10	57.47	81.42	158.92	-4,749.90	-1,134.69	1,373.66	1,280.33	93.33	14.718		
13,950.00	9,185.00	15,303.82	10,442.56	57.84	82.08	159.31	-4,799.13	-1,131.89	1,370.97	1,277.12	93.85	14.607		
14,000.00	9,185.00	15,354.66	10,443.00	58.21	82.76	159.75	-4,849.89	-1,129.02	1,367.99	1,273.63	94.37	14.496		
14,050.00	9,185.00	15,408.09	10,443.25	58.57	83.47	160.25	-4,903.23	-1,126.15	1,364.66	1,269.76	94.89	14.381		
14,100.00	9,185.00	15,457.93	10,443.30	58.93	84.13	160.75	-4,953.01	-1,123.62	1,360.97	1,265.61	95.36	14.272		
14,150.00	9,185.00	15,504.30	10,443.41	59.29	84.75	161.26	-4,999.32	-1,121.21	1,357.13	1,261.36	95.77	14.171		
14,200.00	9,185.00	15,550.30	10,443.64	59.64	85.37	161.82	-5,045.25	-1,118.73	1,353.19	1,257.04	96.15	14.074		
14,250.00	9,185.00	15,595.88	10,443.99	59.99	85.98	162.37	-5,090.76	-1,116.14	1,349.20	1,252.70	96.50	13.981		
14,300.00	9,185.00	15,657.52	10,444.43	60.34	86.62	162.98	-5,152.29	-1,112.50	1,345.42	1,248.38	97.03	13.865		
14,350.00	9,185.00	15,728.75	10,444.45	60.71	87.78	163.61	-5,223.39	-1,108.54	1,341.00	1,243.29	97.70	13.725		
14,400.00	9,185.00	15,765.44	10,442.86	61.07	88.27	163.87	-5,260.03	-1,106.57	1,336.90	1,238.86	98.04	13.636		
14,450.00	9,185.00	15,802.30	10,442.61	61.45	88.77	164.13	-5,296.84	-1,104.62	1,333.57	1,235.17	98.40	13.553		
14,500.00	9,185.00	15,842.71	10,442.68	61.82	89.32	164.41	-5,337.19	-1,102.48	1,330.94	1,232.13	98.81	13.469		
14,550.00	9,185.00	15,884.27	10,443.02	62.21	89.88	164.69	-5,378.68	-1,100.20	1,328.90	1,229.64	99.26	13.388		
14,600.00	9,185.00	15,940.64	10,443.67	62.60	90.65	165.05	-5,434.96	-1,096.99	1,327.28	1,227.40	99.88	13.288		
14,650.00	9,185.00	16,011.76	10,443.52	63.00	91.62	165.45	-5,505.96	-1,092.87	1,325.26	1,224.58	100.68	13.162		
14,700.00	9,185.00	16,053.04	10,443.35	63.39	92.19	165.64	-5,547.17	-1,090.39	1,323.35	1,222.15	101.20	13.077		
14,750.00	9,185.00	16,098.95	10,443.29	63.80	92.81	165.84	-5,592.98	-1,087.53	1,321.80	1,220.03	101.77	12.988		
14,800.00	9,185.00	16,143.99	10,443.45	64.21	93.43	166.03	-5,637.92	-1,084.43	1,320.65	1,218.30	102.35	12.903		
14,850.00	9,185.00	16,189.19	10,443.87	64.63	94.06	166.21	-5,682.98	-1,080.93	1,319.91	1,216.96	102.94	12.822		
14,900.00	9,185.00	16,263.43	10,443.99	65.04	95.08	166.45	-5,756.99	-1,075.14	1,319.01	1,215.16	103.85	12.701		
14,950.00	9,185.00	16,317.78	10,443.29	65.46	95.84	166.59	-5,811.20	-1,071.23	1,317.60	1,213.02	104.58	12.599		
15,000.00	9,185.00	16,364.48	10,442.74	65.88	96.48	166.71	-5,857.77	-1,067.90	1,316.28	1,211.04	105.24	12.508		
15,050.00	9,185.00	16,409.29	10,442.35	66.31	97.10	166.83	-5,902.47	-1,064.71	1,315.11	1,209.24	105.87	12.422		
15,100.00	9,185.00	16,453.34	10,442.16	66.73	97.71	166.95	-5,946.41	-1,061.58	1,314.16	1,207.67	106.50	12.340		
15,150.00	9,185.00	16,499.50	10,442.15	67.15	98.36	167.08	-5,992.45	-1,058.31	1,313.43	1,206.28	107.14	12.258		
15,200.00	9,185.00	16,547.36	10,442.25	67.58	99.02	167.21	-6,040.19	-1,054.86	1,312.79	1,204.98	107.81	12.177		
15,250.00	9,185.00	16,594.57	10,442.43	68.00	99.68	167.35	-6,087.27	-1,051.42	1,312.24	1,203.78	108.46	12.099		
15,300.00	9,185.00	16,641.28	10,442.72	68.43	100.33	167.49	-6,133.86	-1,048.02	1,311.82	1,202.71	109.11	12.023		
15,350.00	9,185.00	16,687.00	10,443.13	68.86	100.97	167.62	-6,179.46	-1,044.71	1,311.54	1,201.79	109.75	11.950		
15,397.11	9,185.00	16,729.26	10,443.66	69.26	101.56	167.74	-6,221.60	-1,041.63	1,311.45	1,201.11	110.34	11.885		
15,400.00	9,185.00	16,731.85	10,443.70	69.28	101.59	167.75	-6,224.18	-1,041.44	1,311.45	1,201.08	110.38	11.882		
15,450.00	9,185.00	16,781.06	10,444.49	69.71	102.28	167.90	-6,273.25	-1,037.80	1,311.53	1,200.48	111.05	11.810		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 147-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,500.00	9,185.00	16,836.33	10,445.30	70.14	103.06	168.08	-6,328.35	-1,033.42	1,311.48	1,199.69	111.78	11.732		
15,550.00	9,185.00	16,888.46	10,445.92	70.57	103.79	168.26	-6,380.28	-1,029.06	1,311.27	1,198.79	112.48	11.658		
15,600.00	9,185.00	16,939.25	10,446.46	71.00	104.51	168.43	-6,430.91	-1,024.94	1,311.04	1,197.87	113.17	11.585		
15,650.00	9,185.00	17,001.50	10,446.81	71.44	105.38	168.62	-6,492.96	-1,020.02	1,310.60	1,196.62	113.97	11.499		
15,700.00	9,185.00	17,058.36	10,446.57	71.87	106.19	168.80	-6,549.64	-1,015.57	1,309.67	1,194.94	114.73	11.415		
15,750.00	9,185.00	17,102.11	10,446.50	72.30	106.81	168.95	-6,593.24	-1,011.80	1,308.82	1,193.48	115.34	11.347		
15,800.00	9,185.00	17,148.36	10,446.74	72.73	107.46	169.13	-6,639.26	-1,007.35	1,308.21	1,192.24	115.97	11.281		
15,850.00	9,185.00	17,204.79	10,446.89	73.17	108.26	169.34	-6,695.44	-1,002.06	1,307.52	1,190.82	116.70	11.204		
15,900.00	9,185.00	17,262.10	10,446.66	73.60	109.08	169.54	-6,752.54	-997.08	1,306.58	1,189.13	117.45	11.124		
15,950.00	9,185.00	17,320.01	10,446.07	74.04	109.90	169.74	-6,810.22	-991.99	1,305.35	1,187.14	118.21	11.043		
16,000.00	9,185.00	17,367.35	10,445.44	74.48	110.57	169.89	-6,857.39	-988.07	1,304.01	1,185.14	118.87	10.970		
16,050.00	9,185.00	17,413.99	10,444.81	74.91	111.23	170.01	-6,903.92	-984.86	1,302.80	1,183.27	119.53	10.899		
16,100.00	9,185.00	17,456.98	10,444.33	75.35	111.83	170.11	-6,946.83	-982.29	1,301.79	1,181.62	120.17	10.833		
16,150.00	9,185.00	17,499.64	10,444.09	75.79	112.44	170.20	-6,989.41	-979.78	1,301.06	1,180.26	120.80	10.771		
16,200.00	9,185.00	17,541.62	10,444.07	76.23	113.02	170.29	-7,031.33	-977.47	1,300.62	1,179.20	121.42	10.712		
16,243.47	9,185.00	17,577.89	10,444.20	76.61	113.53	170.35	-7,067.56	-975.87	1,300.50	1,178.54	121.96	10.663		
16,250.00	9,185.00	17,583.33	10,444.23	76.67	113.61	170.36	-7,073.01	-975.66	1,300.50	1,178.46	122.05	10.656		
16,300.00	9,185.00	17,627.72	10,444.59	77.11	114.23	170.41	-7,117.37	-974.26	1,300.68	1,177.97	122.71	10.599		
16,350.00	9,185.00	17,675.59	10,445.02	77.55	114.90	170.45	-7,165.23	-973.09	1,300.98	1,177.55	123.43	10.540		
16,400.00	9,185.00	17,721.13	10,445.49	77.99	115.53	170.48	-7,210.75	-972.24	1,301.38	1,177.26	124.12	10.485		
16,450.00	9,185.00	17,763.79	10,446.12	78.43	116.12	170.50	-7,253.40	-971.54	1,302.03	1,177.26	124.77	10.435		
16,500.00	9,185.00	17,808.31	10,447.03	78.87	116.74	170.53	-7,297.91	-970.89	1,302.96	1,177.51	125.45	10.386		
16,550.00	9,185.00	17,860.43	10,448.10	79.31	117.46	170.55	-7,350.02	-970.23	1,303.92	1,177.69	126.23	10.329		
16,600.00	9,185.00	17,919.87	10,449.12	79.76	118.29	170.56	-7,409.45	-969.64	1,304.75	1,177.63	127.12	10.264		
16,650.00	9,185.00	17,991.51	10,449.27	80.20	119.28	170.55	-7,481.07	-969.52	1,304.90	1,176.73	128.17	10.181		
16,679.51	9,185.00	18,014.00	10,449.21	80.46	119.59	170.54	-7,503.56	-969.51	1,304.84	1,176.30	128.54	10.151		
16,700.00	9,185.00	18,030.67	10,449.23	80.64	119.82	170.54	-7,520.24	-969.46	1,304.87	1,176.06	128.80	10.131		
16,750.00	9,185.00	18,071.35	10,449.51	81.09	120.39	170.55	-7,560.92	-969.10	1,305.19	1,175.75	129.44	10.083		
16,800.00	9,185.00	18,115.04	10,450.16	81.53	121.00	170.57	-7,604.59	-968.36	1,305.83	1,175.72	130.11	10.036		
16,850.00	9,185.00	18,159.77	10,451.08	81.98	121.62	170.62	-7,649.30	-967.16	1,306.68	1,175.89	130.78	9.991		
16,900.00	9,185.00	18,231.68	10,452.47	82.42	122.64	170.74	-7,721.13	-964.11	1,307.41	1,175.62	131.79	9.921		
16,950.00	9,185.00	18,295.48	10,452.65	82.87	123.55	170.90	-7,784.81	-960.10	1,307.04	1,174.39	132.65	9.853		
17,000.00	9,185.00	18,339.40	10,452.80	83.32	124.18	171.02	-7,828.62	-957.20	1,306.75	1,173.46	133.29	9.804		
17,050.00	9,185.00	18,399.85	10,453.10	83.76	125.04	171.17	-7,888.95	-953.24	1,306.56	1,172.45	134.11	9.743		
17,100.00	9,185.00	18,481.37	10,451.86	84.21	126.20	171.38	-7,970.27	-947.83	1,305.33	1,170.20	135.13	9.660		
17,150.00	9,185.00	18,552.13	10,449.35	84.66	127.22	171.53	-8,040.85	-943.43	1,303.16	1,167.13	136.03	9.580		
17,200.00	9,185.00	18,615.18	10,446.22	85.11	128.12	171.65	-8,103.72	-939.85	1,300.33	1,163.48	136.85	9.502		
17,250.00	9,185.00	18,674.79	10,442.67	85.56	128.97	171.75	-8,163.14	-936.71	1,297.04	1,159.39	137.65	9.423		
17,300.00	9,185.00	18,730.32	10,439.03	86.01	129.76	171.83	-8,218.49	-934.04	1,293.49	1,155.07	138.42	9.345		
17,350.00	9,185.00	18,774.65	10,436.02	86.46	130.38	171.88	-8,262.67	-932.15	1,289.88	1,150.76	139.12	9.272		
17,400.00	9,185.00	18,814.63	10,433.53	86.91	130.95	171.91	-8,302.55	-930.90	1,286.63	1,146.84	139.79	9.204		
17,450.00	9,185.00	18,857.39	10,431.13	87.36	131.55	171.92	-8,345.24	-930.04	1,283.74	1,143.26	140.49	9.138		
17,500.00	9,185.00	18,905.48	10,428.49	87.81	132.22	171.91	-8,393.25	-929.56	1,281.00	1,139.76	141.24	9.070		
17,550.00	9,185.00	18,949.73	10,426.08	88.26	132.84	171.88	-8,437.44	-929.54	1,278.35	1,136.38	141.96	9.005		
17,600.00	9,185.00	18,986.70	10,424.37	88.71	133.36	171.86	-8,474.37	-929.57	1,276.12	1,133.50	142.62	8.948		
17,650.00	9,185.00	19,023.71	10,423.05	89.16	133.88	171.84	-8,511.35	-929.54	1,274.39	1,131.13	143.26	8.896		
17,700.00	9,185.00	19,063.43	10,422.02	89.62	134.43	171.83	-8,551.06	-929.48	1,273.13	1,129.21	143.92	8.846		
17,750.00	9,185.00	19,103.94	10,421.26	90.07	135.00	171.81	-8,591.57	-929.47	1,272.25	1,127.66	144.59	8.799		
17,800.00	9,185.00	19,145.48	10,420.79	90.52	135.58	171.80	-8,633.10	-929.46	1,271.73	1,126.47	145.26	8.755		
17,850.00	9,185.00	19,188.24	10,420.59	90.97	136.18	171.80	-8,675.86	-929.23	1,271.50	1,125.57	145.94	8.713		
17,864.03	9,185.00	19,200.24	10,420.59	91.10	136.34	171.80	-8,687.86	-929.12	1,271.49	1,125.37	146.13	8.701		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 147-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
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	Warning
17,900.00	9,185.00	19,240.92	10,420.64	91.43	136.92	171.81	-8,728.54	-928.57	1,271.52	1,124.78	146.74	8.665	
17,950.00	9,185.00	19,322.22	10,419.54	91.88	138.07	171.87	-8,809.80	-926.58	1,270.72	1,122.87	147.85	8.595	
18,000.00	9,185.00	19,383.79	10,417.76	92.34	138.94	171.93	-8,871.31	-924.53	1,269.10	1,120.39	148.71	8.534	
18,050.00	9,185.00	19,435.65	10,415.90	92.79	139.68	172.00	-8,923.10	-922.55	1,267.10	1,117.63	149.47	8.477	
18,100.00	9,185.00	19,479.06	10,414.57	93.25	140.30	172.07	-8,966.44	-920.44	1,265.28	1,115.15	150.13	8.428	
18,150.00	9,185.00	19,535.19	10,413.10	93.70	141.11	172.20	-9,022.45	-917.07	1,263.63	1,112.73	150.91	8.374	
18,200.00	9,185.00	19,612.05	10,409.96	94.16	142.22	172.40	-9,099.05	-911.63	1,261.17	1,109.36	151.82	8.307	
18,250.00	9,185.00	19,670.50	10,406.91	94.61	143.07	172.59	-9,157.21	-906.72	1,258.08	1,105.51	152.57	8.246	
18,300.00	9,185.00	19,726.46	10,403.64	95.07	143.89	172.79	-9,212.82	-901.48	1,254.60	1,101.32	153.29	8.185	
18,350.00	9,185.00	19,779.18	10,400.35	95.53	144.66	172.97	-9,265.24	-896.83	1,251.00	1,097.00	153.99	8.124	
18,400.00	9,185.00	19,833.48	10,396.77	95.98	145.45	173.14	-9,319.23	-892.35	1,247.26	1,092.54	154.71	8.062	
18,450.00	9,185.00	19,888.20	10,392.94	96.44	146.24	173.30	-9,373.65	-887.93	1,243.33	1,087.89	155.44	7.999	
18,500.00	9,185.00	19,929.12	10,390.14	96.90	146.84	173.43	-9,414.34	-884.70	1,239.50	1,083.40	156.10	7.940	
18,550.00	9,185.00	19,970.62	10,387.56	97.36	147.44	173.55	-9,455.63	-881.51	1,236.00	1,079.25	156.76	7.885	
18,600.00	9,185.00	20,015.46	10,385.02	97.81	148.09	173.67	-9,500.28	-878.17	1,232.80	1,075.37	157.44	7.831	
18,650.00	9,185.00	20,061.30	10,382.56	98.27	148.76	173.80	-9,545.94	-874.88	1,229.77	1,071.65	158.12	7.777	
18,700.00	9,185.00	20,105.19	10,380.36	98.73	149.40	173.92	-9,589.66	-871.82	1,226.94	1,068.15	158.79	7.727	
18,750.00	9,185.00	20,148.26	10,378.44	99.19	150.02	174.04	-9,632.59	-868.83	1,224.39	1,064.93	159.46	7.678	
18,800.00	9,185.00	20,191.57	10,376.74	99.65	150.65	174.16	-9,675.76	-865.84	1,222.11	1,061.99	160.12	7.632	
18,850.00	9,185.00	20,235.12	10,375.26	100.11	151.28	174.27	-9,719.18	-862.90	1,220.10	1,059.32	160.79	7.588	
18,900.00	9,185.00	20,280.44	10,373.93	100.57	151.94	174.39	-9,764.38	-859.92	1,218.35	1,056.89	161.46	7.546	
18,950.00	9,185.00	20,329.58	10,372.55	101.03	152.65	174.51	-9,813.42	-856.94	1,216.69	1,054.51	162.18	7.502	
19,000.00	9,185.00	20,378.48	10,371.19	101.49	153.36	174.62	-9,862.22	-854.27	1,215.06	1,052.16	162.90	7.459	
19,047.07	9,185.00	20,424.62	10,369.93	101.87	154.02	174.71	-9,908.28	-851.79	1,213.58	1,050.26	163.32	7.431	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals													Offset Site Error:	5.00 ft
Survey Program: 188-MWD+HDGM													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (")	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)			Minimum Separation (ft)	
							+N/-S (ft)	+E/-W (ft)						
0.00	0.00	7.20	7.20	0.50	0.01	13.72	120.22	29.36	123.75					
50.00	50.00	57.20	57.20	0.50	0.09	13.77	120.20	29.45	123.75	123.17	0.59	210.863		
100.00	100.00	107.20	107.20	0.52	0.16	13.87	120.14	29.67	123.75	123.07	0.68	182.837		
150.00	150.00	157.20	157.20	0.59	0.23	14.04	120.05	30.03	123.75	122.93	0.82	150.269		
184.91	184.91	192.12	192.11	0.67	0.29	14.20	119.97	30.36	123.75	122.80	0.95	130.216 CC		
200.00	200.00	207.05	207.04	0.70	0.35	14.27	119.94	30.51	123.76	122.71	1.05	117.951		
250.00	250.00	256.64	256.64	0.84	0.52	14.51	119.95	31.05	123.91	122.54	1.36	90.945		
300.00	300.00	306.60	306.59	0.99	0.70	14.76	120.08	31.63	124.18	122.49	1.69	73.436		
350.00	350.00	356.92	356.90	1.15	0.88	15.00	120.12	32.18	124.36	122.33	2.03	61.281		
400.00	400.00	407.00	406.99	1.31	1.06	15.24	120.07	32.71	124.45	122.08	2.37	52.453		
450.00	450.00	456.97	456.95	1.48	1.24	15.47	120.03	33.23	124.54	121.82	2.72	45.803		
500.00	500.00	506.95	506.92	1.65	1.42	15.70	120.00	33.74	124.65	121.58	3.07	40.627		
550.00	550.00	556.92	556.90	1.82	1.60	15.91	119.98	34.20	124.76	121.34	3.42	36.491		
600.00	600.00	607.13	607.10	1.99	1.78	16.08	119.96	34.59	124.85	121.07	3.77	33.102		
650.00	650.00	657.35	657.32	2.16	1.96	16.22	119.87	34.87	124.84	120.72	4.13	30.263		
689.00	689.00	696.22	696.20	2.30	2.10	16.32	119.80	35.08	124.83	120.43	4.40	28.365		
700.00	700.00	707.20	707.17	2.34	2.14	16.35	119.78	35.15	124.83	120.35	4.48	27.873		
750.00	750.00	757.08	757.05	2.51	2.32	16.51	119.71	35.49	124.86	120.03	4.83	25.838		
800.00	800.00	806.99	806.96	2.69	2.50	16.70	119.68	35.90	124.95	119.76	5.19	24.088		
850.00	850.00	857.13	857.10	2.87	2.68	16.85	119.65	36.24	125.02	119.47	5.54	22.553		
900.00	900.00	907.20	907.17	3.04	2.86	16.94	119.61	36.44	125.03	119.13	5.90	21.196		
950.00	950.00	957.12	957.09	3.22	3.03	17.00	119.60	36.57	125.06	118.81	6.25	19.997		
1,000.00	1,000.00	1,007.11	1,007.08	3.40	3.21	17.03	119.63	36.64	125.12	118.51	6.61	18.940		
1,050.00	1,050.00	1,057.16	1,057.13	3.58	3.38	17.02	119.67	36.64	125.15	118.20	6.95	17.998		
1,100.00	1,100.00	1,107.21	1,107.18	3.75	3.55	16.99	119.71	36.57	125.17	117.87	7.30	17.151		
1,150.00	1,150.00	1,157.26	1,157.23	3.93	3.71	16.95	119.74	36.49	125.17	117.53	7.64	16.382		
1,200.00	1,200.00	1,207.28	1,207.25	4.11	3.88	16.92	119.74	36.43	125.16	117.17	7.99	15.666		
1,250.00	1,250.00	1,257.29	1,257.26	4.29	4.05	16.94	119.71	36.45	125.13	116.80	8.34	15.007		
1,291.33	1,291.33	1,298.56	1,298.53	4.43	4.20	16.98	119.67	36.53	125.12	116.49	8.63	14.494		
1,300.00	1,300.00	1,307.22	1,307.19	4.46	4.23	16.99	119.67	36.55	125.12	116.43	8.69	14.391		
1,350.00	1,350.00	1,357.16	1,357.13	4.64	4.41	17.06	119.64	36.70	125.14	116.09	9.05	13.827		
1,400.00	1,400.00	1,407.20	1,407.16	4.82	4.59	17.12	119.62	36.85	125.17	115.76	9.41	13.304		
1,450.00	1,450.00	1,457.16	1,457.13	5.00	4.76	17.16	119.60	36.94	125.18	115.42	9.76	12.821		
1,500.00	1,500.00	1,506.96	1,506.93	5.18	4.94	17.17	119.67	36.97	125.25	115.13	10.12	12.381		
1,550.00	1,550.00	1,557.01	1,556.97	5.36	5.11	17.13	119.81	36.94	125.37	114.91	10.47	11.978		
1,600.00	1,600.00	1,607.32	1,607.29	5.53	5.28	17.11	119.85	36.89	125.40	114.58	10.82	11.594		
1,650.00	1,650.00	1,657.43	1,657.39	5.71	5.45	17.09	119.79	36.84	125.33	114.16	11.17	11.224		
1,700.00	1,700.00	1,707.43	1,707.39	5.89	5.63	17.10	119.72	36.82	125.25	113.74	11.52	10.876		
1,750.00	1,750.00	1,757.39	1,757.36	6.07	5.80	17.12	119.63	36.85	125.18	113.31	11.87	10.546		
1,800.00	1,800.00	1,807.35	1,807.32	6.25	5.98	17.15	119.56	36.89	125.13	112.90	12.22	10.236		
1,850.00	1,850.00	1,857.29	1,857.26	6.43	6.15	17.17	119.51	36.94	125.09	112.51	12.58	9.945		
1,900.00	1,900.00	1,907.23	1,907.20	6.61	6.33	17.18	119.50	36.95	125.08	112.15	12.93	9.671		
1,950.00	1,950.00	1,957.23	1,957.20	6.78	6.50	17.18	119.50	36.95	125.08	111.79	13.28	9.415		
2,000.00	2,000.00	2,007.23	2,007.20	6.96	6.67	17.18	119.50	36.95	125.08	111.44	13.64	9.172		
2,050.00	2,050.00	2,057.18	2,057.15	7.14	6.85	17.21	119.49	37.01	125.09	111.10	13.99	8.941		
2,100.00	2,100.00	2,107.13	2,107.10	7.32	7.02	17.28	119.47	37.16	125.12	110.78	14.35	8.722		
2,150.00	2,150.00	2,157.06	2,157.03	7.50	7.20	17.33	119.49	37.28	125.18	110.47	14.70	8.515		
2,200.00	2,200.00	2,207.10	2,207.07	7.68	7.38	17.34	119.55	37.34	125.25	110.19	15.06	8.319		
2,250.00	2,250.00	2,257.29	2,257.26	7.86	7.55	17.36	119.56	37.38	125.26	109.85	15.41	8.128		
2,300.00	2,300.00	2,307.33	2,307.30	8.04	7.73	17.39	119.50	37.43	125.22	109.45	15.77	7.942		
2,350.00	2,350.00	2,357.26	2,357.23	8.22	7.91	17.40	119.46	37.45	125.20	109.07	16.12	7.765		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals													Offset Site Error:	5.00 ft
Survey Program: 188-MWD+HDGM													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,366.77	2,366.77	2,374.00	2,373.97	8.28	7.97	17.40	119.46	37.45	125.19	108.95	16.24	7.708		
2,400.00	2,400.00	2,406.38	2,406.34	8.39	8.08	17.47	119.52	37.62	125.31	108.83	16.48	7.605 ES		
2,450.00	2,450.00	2,455.07	2,455.03	8.57	8.26	17.83	119.84	38.54	125.91	109.08	16.83	7.483		
2,500.00	2,500.00	2,503.71	2,503.63	8.75	8.43	18.49	120.43	40.28	127.04	109.87	17.18	7.397		
2,550.00	2,550.00	2,552.24	2,552.08	8.93	8.60	98.35	121.26	42.90	128.77	111.25	17.52	7.351		
2,600.00	2,599.99	2,600.51	2,600.21	9.10	8.77	99.91	122.37	46.34	131.22	113.36	17.86	7.349 SF		
2,650.00	2,649.97	2,648.56	2,648.07	9.28	8.95	101.84	123.82	50.45	134.50	116.31	18.19	7.395		
2,700.00	2,699.94	2,696.75	2,696.00	9.45	9.12	104.03	125.61	55.15	138.64	120.12	18.52	7.487		
2,750.00	2,749.88	2,744.81	2,743.74	9.62	9.29	106.36	127.70	60.22	143.61	124.77	18.85	7.621		
2,800.00	2,799.79	2,793.80	2,792.36	9.79	9.47	108.86	129.98	65.74	149.31	130.13	19.19	7.783		
2,850.00	2,849.66	2,842.74	2,840.91	9.97	9.64	111.45	132.14	71.53	155.55	136.03	19.53	7.966		
2,900.00	2,899.49	2,892.21	2,889.97	10.14	9.82	114.17	134.07	77.66	162.29	142.41	19.88	8.165		
2,950.00	2,949.28	2,941.51	2,938.82	10.32	10.00	116.95	135.62	84.01	169.47	149.25	20.22	8.380		
3,000.00	2,999.01	2,990.06	2,986.94	10.49	10.18	119.68	136.97	90.40	177.27	156.71	20.56	8.620		
3,050.00	3,048.68	3,038.57	3,035.00	10.67	10.36	122.33	138.29	96.83	185.77	164.86	20.90	8.887		
3,100.00	3,098.29	3,087.53	3,083.53	10.84	10.54	124.86	139.64	103.20	194.87	173.62	21.25	9.170		
3,150.00	3,147.82	3,136.56	3,132.15	11.02	10.72	127.23	141.03	109.34	204.51	182.91	21.60	9.468		
3,200.00	3,197.28	3,185.97	3,181.19	11.20	10.91	129.45	142.47	115.19	214.60	192.64	21.96	9.774		
3,250.00	3,246.69	3,234.99	3,229.88	11.37	11.09	131.52	143.96	122.64	224.95	202.64	22.31	10.084		
3,300.00	3,296.09	3,282.71	3,277.28	11.55	11.27	133.38	145.43	125.94	235.59	212.94	22.64	10.404		
3,350.00	3,345.49	3,329.71	3,323.96	11.73	11.44	135.07	146.92	131.29	246.59	223.61	22.97	10.735		
3,400.00	3,394.90	3,374.84	3,368.71	11.91	11.61	136.57	148.52	136.82	258.24	234.97	23.27	11.095		
3,450.00	3,444.30	3,419.94	3,413.38	12.09	11.78	137.95	150.35	142.83	270.64	247.06	23.58	11.478		
3,500.00	3,493.71	3,465.76	3,458.69	12.27	11.95	139.26	152.33	149.32	283.62	259.73	23.89	11.871		
3,550.00	3,543.11	3,511.95	3,504.32	12.45	12.13	140.49	154.41	156.19	297.08	272.87	24.21	12.271		
3,600.00	3,592.51	3,561.70	3,553.47	12.63	12.32	141.70	156.60	163.53	310.60	286.03	24.58	12.638		
3,650.00	3,641.92	3,611.25	3,602.48	12.81	12.51	142.80	158.65	170.56	323.93	298.99	24.94	12.988		
3,700.00	3,691.32	3,659.73	3,650.45	12.99	12.70	143.82	160.42	177.38	337.20	311.91	25.29	13.333		
3,750.00	3,740.72	3,708.28	3,698.48	13.17	12.88	144.81	161.93	184.23	350.49	324.84	25.64	13.688		
3,800.00	3,790.13	3,756.98	3,746.68	13.35	13.07	145.78	163.12	191.12	363.75	337.76	26.00	13.993		
3,850.00	3,839.53	3,806.19	3,795.39	13.53	13.26	146.74	164.02	198.06	376.99	350.64	26.36	14.304		
3,900.00	3,888.93	3,856.35	3,845.07	13.72	13.45	147.66	164.77	204.93	390.07	363.35	26.72	14.596		
3,950.00	3,938.34	3,906.54	3,894.82	13.90	13.65	148.52	165.39	211.55	402.96	375.86	27.09	14.873		
4,000.00	3,987.74	3,956.74	3,944.61	14.08	13.84	149.34	165.86	217.94	415.66	388.20	27.46	15.137		
4,050.00	4,037.14	4,006.06	3,993.55	14.27	14.03	150.11	166.15	224.04	428.22	400.40	27.82	15.393		
4,100.00	4,086.55	4,054.82	4,041.94	14.45	14.22	150.85	166.18	230.06	440.76	412.58	28.17	15.645		
4,150.00	4,135.95	4,102.14	4,088.89	14.63	14.40	151.56	166.04	235.94	453.34	424.83	28.51	15.900		
4,200.00	4,185.36	4,148.77	4,135.15	14.82	14.58	152.22	165.98	241.84	466.13	437.29	28.85	16.160		
4,250.00	4,234.76	4,195.12	4,181.11	15.00	14.76	152.82	166.14	247.81	479.14	449.96	29.18	16.422		
4,300.00	4,284.16	4,241.36	4,226.96	15.18	14.94	153.32	166.87	253.78	492.36	462.86	29.51	16.687		
4,350.00	4,333.57	4,290.57	4,275.75	15.37	15.13	153.75	168.21	260.08	505.70	475.83	29.87	16.932		
4,400.00	4,382.97	4,341.62	4,326.39	15.55	15.32	154.15	169.80	266.30	518.82	488.58	30.24	17.155		
4,450.00	4,432.37	4,393.69	4,378.08	15.74	15.52	154.53	171.47	272.30	531.66	501.03	30.63	17.358		
4,500.00	4,481.78	4,446.17	4,430.23	15.92	15.73	154.89	172.96	277.97	544.14	513.12	31.02	17.543		
4,550.00	4,531.18	4,494.04	4,477.83	16.11	15.91	155.21	174.26	283.00	556.47	525.11	31.36	17.743		
4,600.00	4,580.58	4,541.92	4,525.42	16.29	16.09	155.51	175.65	288.05	568.86	537.15	31.71	17.939		
4,650.00	4,629.99	4,586.36	4,569.56	16.48	16.26	155.77	177.07	292.88	581.45	549.43	32.03	18.155		
4,700.00	4,679.39	4,630.85	4,613.74	16.66	16.43	156.00	178.69	297.97	594.37	562.02	32.35	18.376		
4,750.00	4,728.80	4,673.22	4,655.76	16.85	16.60	156.20	180.46	303.11	607.68	575.03	32.64	18.616		
4,800.00	4,778.20	4,715.29	4,697.42	17.03	16.76	156.37	182.49	308.56	621.46	588.52	32.94	18.869		
4,850.00	4,827.60	4,758.72	4,740.38	17.22	16.93	156.52	184.84	314.52	635.66	602.42	33.24	19.123		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals													Offset Site Error: 5.00 ft	
Survey Program: 188-MWD+HDGM													Offset Well Error: 0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,877.01	4,802.54	4,783.67	17.40	17.11	156.66	187.35	320.79	650.18	616.63	33.55	19.379		
4,950.00	4,926.41	4,848.54	4,829.08	17.59	17.29	156.80	190.11	327.59	664.94	631.06	33.88	19.625		
5,000.00	4,975.81	4,896.05	4,875.98	17.78	17.48	156.93	192.89	334.65	679.75	645.52	34.23	19.858		
5,050.00	5,025.22	4,945.12	4,924.43	17.96	17.67	157.08	195.66	341.96	694.54	659.94	34.59	20.076		
5,100.00	5,074.62	4,995.21	4,973.91	18.15	17.87	157.23	198.32	349.29	709.19	674.22	34.97	20.281		
5,150.00	5,124.02	5,044.01	5,022.13	18.34	18.07	157.38	200.78	356.33	723.72	688.39	35.33	20.485		
5,200.00	5,173.43	5,092.36	5,069.93	18.52	18.26	157.53	203.14	363.28	738.22	702.53	35.69	20.686		
5,250.00	5,222.83	5,140.70	5,117.71	18.71	18.46	157.68	205.43	370.21	752.68	716.64	36.04	20.883		
5,300.00	5,272.23	5,189.04	5,165.50	18.90	18.65	157.84	207.63	377.13	767.12	730.72	36.40	21.075		
5,350.00	5,321.64	5,236.78	5,212.71	19.08	18.84	157.99	209.71	383.96	781.55	744.80	36.75	21.266		
5,400.00	5,371.04	5,284.43	5,259.82	19.27	19.03	158.14	211.69	390.80	795.99	758.89	37.10	21.454		
5,450.00	5,420.45	5,336.39	5,311.22	19.46	19.24	158.31	213.69	398.18	810.34	772.84	37.49	21.613		
5,500.00	5,469.85	5,388.85	5,363.15	19.65	19.45	158.49	215.47	405.37	824.42	786.53	37.89	21.760		
5,550.00	5,519.25	5,439.92	5,413.73	19.83	19.65	158.66	217.14	412.15	838.29	800.03	38.27	21.906		
5,600.00	5,568.66	5,490.86	5,464.23	20.02	19.85	158.82	218.84	418.72	851.99	813.34	38.65	22.046		
5,650.00	5,618.06	5,540.92	5,513.86	20.21	20.05	158.96	220.63	425.01	865.55	826.54	39.02	22.184		
5,700.00	5,667.46	5,590.14	5,562.66	20.40	20.24	159.09	222.52	431.08	879.03	839.65	39.38	22.321		
5,750.00	5,716.87	5,638.20	5,610.32	20.58	20.43	159.20	224.37	436.99	892.49	852.75	39.73	22.461		
5,800.00	5,766.27	5,687.01	5,658.73	20.77	20.62	159.32	226.22	442.98	905.95	865.85	40.09	22.595		
5,850.00	5,815.67	5,736.64	5,707.96	20.96	20.82	159.44	228.01	449.02	919.34	878.88	40.46	22.721		
5,900.00	5,865.08	5,785.80	5,756.73	21.15	21.01	159.56	229.69	454.95	932.67	891.84	40.82	22.846		
5,950.00	5,914.48	5,834.65	5,805.20	21.34	21.20	159.69	231.28	460.81	945.96	904.78	41.19	22.968		
6,000.00	5,963.89	5,883.60	5,853.78	21.52	21.40	159.81	232.80	466.66	959.22	917.67	41.55	23.088		
6,050.00	6,013.29	5,932.61	5,902.42	21.71	21.59	159.93	234.29	472.48	972.44	930.54	41.91	23.204		
6,100.00	6,062.69	5,981.60	5,951.04	21.90	21.78	160.05	235.74	478.26	985.63	943.36	42.27	23.317		
6,150.00	6,112.10	6,030.59	5,999.67	22.09	21.97	160.17	237.12	484.01	998.78	956.15	42.63	23.428		
6,200.00	6,161.50	6,078.12	6,046.86	22.28	22.16	160.29	238.42	489.58	1,011.93	968.95	42.98	23.543		
6,250.00	6,210.90	6,125.37	6,093.76	22.47	22.34	160.41	239.70	495.17	1,025.12	981.79	43.33	23.658		
6,300.00	6,260.31	6,170.81	6,138.86	22.65	22.52	160.51	240.99	500.61	1,038.40	994.74	43.66	23.781		
6,350.00	6,309.71	6,215.91	6,183.59	22.84	22.70	160.60	242.48	506.11	1,051.82	1,007.82	44.00	23.907		
6,400.00	6,359.11	6,264.94	6,232.22	23.03	22.89	160.69	244.23	512.15	1,065.31	1,020.95	44.36	24.015		
6,450.00	6,408.52	6,315.02	6,281.89	23.22	23.09	160.78	245.98	518.23	1,078.72	1,033.99	44.73	24.116		
6,500.00	6,457.92	6,364.85	6,331.33	23.41	23.29	160.87	247.65	524.20	1,092.05	1,046.95	45.10	24.214		
6,550.00	6,507.32	6,414.69	6,380.80	23.60	23.48	160.97	249.18	530.13	1,105.31	1,059.85	45.47	24.309		
6,600.00	6,556.73	6,463.76	6,429.51	23.79	23.68	161.06	250.60	535.91	1,118.52	1,072.69	45.83	24.405		
6,650.00	6,606.13	6,513.13	6,478.52	23.98	23.87	161.16	251.98	541.70	1,131.70	1,085.50	46.20	24.497		
6,700.00	6,655.54	6,564.37	6,529.40	24.16	24.07	161.26	253.31	547.61	1,144.78	1,098.20	46.58	24.578		
6,750.00	6,704.94	6,615.38	6,580.06	24.35	24.27	161.37	254.50	553.39	1,157.74	1,110.78	46.95	24.656		
6,800.00	6,754.34	6,665.71	6,630.07	24.54	24.47	161.47	255.56	559.00	1,170.60	1,123.27	47.33	24.735		
6,850.00	6,803.75	6,716.09	6,680.14	24.73	24.66	161.58	256.51	564.54	1,183.39	1,135.69	47.70	24.810		
6,900.00	6,853.15	6,766.52	6,730.26	24.92	24.86	161.69	257.36	570.01	1,196.09	1,148.02	48.07	24.882		
6,950.00	6,902.55	6,818.43	6,781.87	25.11	25.06	161.81	258.13	575.54	1,208.69	1,160.24	48.45	24.945		
7,000.00	6,951.96	6,871.58	6,834.73	25.30	25.26	161.93	258.79	581.02	1,221.12	1,172.28	48.84	25.000		
7,050.00	7,001.36	6,923.83	6,886.72	25.49	25.46	162.06	259.32	586.23	1,233.38	1,184.15	49.23	25.054		
7,100.00	7,050.76	6,975.89	6,938.53	25.68	25.66	162.18	259.73	591.28	1,245.50	1,195.89	49.61	25.106		
7,150.00	7,100.17	7,029.47	6,991.87	25.87	25.86	162.31	260.02	596.31	1,257.46	1,207.45	50.00	25.149		
7,200.00	7,149.57	7,083.20	7,045.39	26.06	26.07	162.44	260.17	601.14	1,269.22	1,218.83	50.39	25.187		
7,250.00	7,198.98	7,135.53	7,097.52	26.25	26.26	162.58	260.18	605.69	1,280.82	1,230.05	50.77	25.226		
7,300.00	7,248.38	7,189.02	7,150.82	26.44	26.47	162.72	260.04	610.17	1,292.27	1,241.11	51.16	25.258		
7,350.00	7,297.78	7,243.85	7,205.48	26.62	26.67	162.87	259.69	614.54	1,303.50	1,251.95	51.56	25.282		
7,400.00	7,347.19	7,298.00	7,259.47	26.81	26.87	163.02	259.12	618.63	1,314.52	1,262.58	51.95	25.305		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - Actuals													Offset Site Error:	5.00 ft
Survey Program: 188-MWD+HDGM													Offset Well Error:	0.00 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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,450.00	7,396.59	7,351.83	7,313.16	27.00	27.07	163.17	258.39	622.50	1,325.36	1,273.02	52.34	25.325		
7,500.00	7,445.99	7,407.02	7,368.21	27.19	27.27	163.34	257.49	626.23	1,335.99	1,283.26	52.73	25.337		
7,550.00	7,495.40	7,462.49	7,423.56	27.38	27.47	163.50	256.49	629.73	1,346.39	1,293.27	53.12	25.345		
7,600.00	7,544.80	7,518.37	7,479.34	27.57	27.67	163.67	255.36	632.97	1,356.55	1,303.04	53.52	25.348		
7,650.00	7,594.20	7,573.16	7,534.04	27.76	27.87	163.83	254.16	635.89	1,366.48	1,312.57	53.91	25.349		
7,700.00	7,643.61	7,627.02	7,587.81	27.95	28.06	163.99	252.94	638.55	1,376.23	1,321.94	54.29	25.351		
7,750.00	7,693.01	7,678.46	7,639.19	28.14	28.24	164.14	251.74	640.95	1,385.84	1,331.19	54.66	25.355		
7,800.00	7,742.43	7,729.25	7,689.91	28.33	28.42	164.31	250.53	643.25	1,395.28	1,340.26	55.02	25.359		
7,850.00	7,791.94	7,782.25	7,742.84	28.52	28.60	164.49	249.28	645.55	1,404.06	1,348.66	55.40	25.345		
7,900.00	7,841.54	7,835.64	7,796.18	28.71	28.79	164.65	248.05	647.70	1,412.07	1,356.30	55.77	25.318		
7,950.00	7,891.22	7,887.00	7,847.48	28.89	28.97	164.79	246.86	649.67	1,419.37	1,363.23	56.14	25.284		
8,000.00	7,940.97	7,938.53	7,898.96	29.08	29.15	164.93	245.64	651.56	1,425.97	1,369.47	56.50	25.237		
8,050.00	7,990.77	7,989.66	7,950.05	29.26	29.33	165.06	244.35	653.39	1,431.89	1,375.02	56.86	25.181		
8,100.00	8,040.63	8,042.44	8,002.77	29.44	29.51	165.18	242.97	655.20	1,437.11	1,379.88	57.23	25.110		
8,150.00	8,090.54	8,097.24	8,057.53	29.62	29.70	165.29	241.54	656.92	1,441.56	1,383.95	57.61	25.023		
8,200.00	8,140.48	8,149.73	8,109.98	29.79	29.88	165.39	240.17	658.40	1,445.23	1,387.26	57.97	24.929		
8,250.00	8,190.45	8,201.39	8,161.60	29.97	30.06	165.48	238.77	659.80	1,448.21	1,389.88	58.33	24.827		
8,300.00	8,240.44	8,250.85	8,211.04	30.15	30.23	165.54	237.70	661.11	1,450.53	1,391.85	58.68	24.718		
8,350.00	8,290.43	8,300.39	8,260.55	30.32	30.40	165.57	237.23	662.39	1,452.24	1,393.21	59.03	24.602		
8,400.00	8,340.43	8,339.10	8,299.25	30.49	30.54	86.81	237.22	663.55	1,453.74	1,394.41	59.33	24.504		
8,450.00	8,390.43	8,378.67	8,338.79	30.66	30.68	86.80	237.49	664.99	1,455.58	1,395.96	59.63	24.412		
8,500.00	8,440.43	8,435.78	8,395.85	30.83	30.88	86.77	238.41	667.20	1,457.57	1,397.56	60.01	24.289		
8,550.00	8,490.43	8,499.94	8,459.96	31.00	31.11	86.70	240.26	669.07	1,459.10	1,398.67	60.43	24.147		
8,600.00	8,540.43	8,547.45	8,507.43	31.17	31.28	86.65	241.71	670.32	1,460.50	1,399.74	60.76	24.036		
8,650.00	8,590.43	8,601.44	8,561.38	31.34	31.46	86.59	243.27	671.68	1,461.84	1,400.71	61.13	23.914		
8,700.00	8,640.42	8,660.88	8,620.78	31.51	31.67	-93.08	244.86	672.86	1,462.96	1,401.44	61.52	23.782		
8,750.00	8,690.19	8,724.07	8,683.95	31.67	31.88	-93.28	246.42	673.65	1,463.92	1,402.02	61.90	23.648		
8,800.00	8,739.36	8,785.65	8,745.51	31.83	32.09	-93.68	247.82	673.84	1,464.71	1,402.43	62.28	23.519		
8,850.00	8,787.57	8,842.35	8,802.20	31.97	32.28	-94.22	248.79	673.64	1,465.54	1,402.91	62.63	23.402		
8,900.00	8,834.43	8,896.42	8,856.27	32.12	32.45	-94.86	249.30	673.18	1,466.60	1,403.65	62.96	23.296		
8,950.00	8,879.61	8,948.38	8,908.21	32.25	32.61	-95.58	249.30	672.54	1,468.08	1,404.81	63.27	23.203		
9,000.00	8,922.75	8,993.48	8,953.32	32.37	32.75	-96.25	248.99	671.88	1,470.21	1,406.65	63.56	23.131		
9,050.00	8,963.52	9,035.70	8,995.54	32.48	32.89	-96.88	248.60	671.24	1,473.26	1,409.43	63.84	23.078		
9,100.00	9,001.62	9,073.14	9,032.97	32.59	33.00	-97.39	248.23	670.65	1,477.44	1,413.34	64.10	23.051		
9,150.00	9,036.75	9,106.48	9,066.30	32.67	33.11	-97.75	248.03	670.16	1,482.97	1,418.63	64.34	23.050		
9,200.00	9,068.66	9,136.50	9,096.32	32.75	33.20	-97.94	247.97	669.73	1,490.02	1,425.46	64.56	23.079		
9,250.00	9,097.08	9,162.98	9,122.80	32.81	33.28	-97.90	247.99	669.37	1,498.73	1,433.95	64.77	23.139		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL													Offset Site Error:	5.00 ft
Survey Program: 188-MWD+HDGM													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	7.20	7.20	0.50	0.01	13.72	120.22	29.36	123.75					
50.00	50.00	57.20	57.20	0.50	0.09	13.77	120.20	29.45	123.75	123.17	0.59	210.863		
100.00	100.00	107.20	107.20	0.52	0.16	13.87	120.14	29.67	123.75	123.07	0.68	182.837		
150.00	150.00	157.20	157.20	0.59	0.23	14.04	120.05	30.03	123.75	122.93	0.82	150.289		
184.91	184.91	192.12	192.11	0.67	0.29	14.20	119.97	30.36	123.75	122.80	0.95	130.216 CC		
200.00	200.00	207.05	207.04	0.70	0.35	14.27	119.94	30.51	123.76	122.71	1.05	117.951		
250.00	250.00	256.64	256.64	0.84	0.52	14.51	119.95	31.05	123.91	122.54	1.36	90.945		
300.00	300.00	306.60	306.59	0.99	0.70	14.76	120.08	31.63	124.18	122.49	1.69	73.436		
350.00	350.00	356.92	356.90	1.15	0.88	15.00	120.12	32.18	124.36	122.33	2.03	61.281		
400.00	400.00	407.00	406.99	1.31	1.06	15.24	120.07	32.71	124.45	122.08	2.37	52.453		
450.00	450.00	456.97	456.95	1.48	1.24	15.47	120.03	33.23	124.54	121.82	2.72	45.803		
500.00	500.00	506.95	506.92	1.65	1.42	15.70	120.00	33.74	124.65	121.58	3.07	40.627		
550.00	550.00	556.92	556.90	1.82	1.60	15.91	119.98	34.20	124.76	121.34	3.42	36.491		
600.00	600.00	607.13	607.10	1.99	1.78	16.08	119.96	34.59	124.85	121.07	3.77	33.102		
650.00	650.00	657.35	657.32	2.16	1.96	16.22	119.87	34.87	124.84	120.72	4.13	30.263		
689.00	689.00	686.22	686.20	2.30	2.10	16.32	119.80	35.08	124.83	120.43	4.40	28.365		
700.00	700.00	707.20	707.17	2.34	2.14	16.35	119.78	35.15	124.83	120.35	4.48	27.873		
750.00	750.00	757.08	757.05	2.51	2.32	16.51	119.71	35.49	124.86	120.03	4.83	25.838		
800.00	800.00	806.99	806.96	2.69	2.50	16.70	119.68	35.90	124.95	119.76	5.19	24.088		
850.00	850.00	857.13	857.10	2.87	2.68	16.85	119.65	36.24	125.02	119.47	5.54	22.553		
900.00	900.00	907.20	907.17	3.04	2.86	16.94	119.61	36.44	125.03	119.13	5.90	21.196		
950.00	950.00	957.12	957.09	3.22	3.03	17.00	119.60	36.57	125.06	118.81	6.25	19.997		
1,000.00	1,000.00	1,007.11	1,007.08	3.40	3.21	17.03	119.63	36.64	125.12	118.51	6.61	18.940		
1,050.00	1,050.00	1,057.16	1,057.13	3.58	3.38	17.02	119.67	36.64	125.15	118.20	6.95	17.998		
1,100.00	1,100.00	1,107.21	1,107.18	3.75	3.55	16.99	119.71	36.57	125.17	117.87	7.30	17.151		
1,150.00	1,150.00	1,157.26	1,157.23	3.93	3.71	16.95	119.74	36.49	125.17	117.53	7.64	16.382		
1,200.00	1,200.00	1,207.28	1,207.25	4.11	3.88	16.92	119.74	36.43	125.16	117.17	7.99	15.666		
1,250.00	1,250.00	1,257.29	1,257.26	4.29	4.05	16.94	119.71	36.45	125.13	116.80	8.34	15.007		
1,291.33	1,291.33	1,298.56	1,298.53	4.43	4.20	16.98	119.67	36.53	125.12	116.49	8.63	14.494		
1,300.00	1,300.00	1,307.22	1,307.19	4.46	4.23	16.99	119.67	36.55	125.12	116.43	8.69	14.391		
1,350.00	1,350.00	1,357.18	1,357.13	4.64	4.41	17.06	119.64	36.70	125.14	116.09	9.05	13.827		
1,400.00	1,400.00	1,407.20	1,407.16	4.82	4.59	17.12	119.62	36.85	125.17	115.76	9.41	13.304		
1,450.00	1,450.00	1,457.16	1,457.13	5.00	4.76	17.16	119.60	36.94	125.18	115.42	9.76	12.821		
1,500.00	1,500.00	1,506.96	1,506.93	5.18	4.94	17.17	119.67	36.97	125.25	115.13	10.12	12.381		
1,550.00	1,550.00	1,557.01	1,556.97	5.36	5.11	17.13	119.81	36.94	125.37	114.91	10.47	11.978		
1,600.00	1,600.00	1,607.32	1,607.29	5.53	5.28	17.11	119.85	36.89	125.40	114.58	10.82	11.594		
1,650.00	1,650.00	1,657.43	1,657.39	5.71	5.45	17.09	119.79	36.84	125.33	114.16	11.17	11.224		
1,700.00	1,700.00	1,707.43	1,707.39	5.89	5.63	17.10	119.72	36.82	125.25	113.74	11.52	10.876		
1,750.00	1,750.00	1,757.39	1,757.36	6.07	5.80	17.12	119.63	36.85	125.18	113.31	11.87	10.546		
1,800.00	1,800.00	1,807.35	1,807.32	6.25	5.98	17.15	119.56	36.89	125.13	112.90	12.22	10.236		
1,850.00	1,850.00	1,857.29	1,857.26	6.43	6.15	17.17	119.51	36.94	125.09	112.51	12.58	9.945		
1,900.00	1,900.00	1,907.23	1,907.20	6.61	6.33	17.18	119.50	36.95	125.08	112.15	12.93	9.671		
1,950.00	1,950.00	1,957.23	1,957.20	6.78	6.50	17.18	119.50	36.95	125.08	111.79	13.28	9.415		
2,000.00	2,000.00	2,007.23	2,007.20	6.96	6.67	17.18	119.50	36.95	125.08	111.44	13.64	9.172		
2,050.00	2,050.00	2,057.18	2,057.15	7.14	6.85	17.21	119.49	37.01	125.09	111.10	13.99	8.941		
2,100.00	2,100.00	2,107.13	2,107.10	7.32	7.02	17.28	119.47	37.16	125.12	110.78	14.35	8.722		
2,150.00	2,150.00	2,157.06	2,157.03	7.50	7.20	17.33	119.49	37.28	125.18	110.47	14.70	8.515		
2,200.00	2,200.00	2,207.10	2,207.07	7.68	7.38	17.34	119.55	37.34	125.25	110.19	15.06	8.319		
2,250.00	2,250.00	2,257.29	2,257.26	7.86	7.55	17.36	119.56	37.38	125.26	109.85	15.41	8.128		
2,300.00	2,300.00	2,307.33	2,307.30	8.04	7.73	17.39	119.50	37.43	125.22	109.45	15.77	7.942		
2,350.00	2,350.00	2,357.26	2,357.23	8.22	7.91	17.40	119.46	37.45	125.20	109.07	16.12	7.765		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL													Offset Site Error:	5.00 ft
Survey Program: 188-MWD+HDGM													Offset Well Error:	0.00 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,366.77	2,366.77	2,374.00	2,373.97	8.28	7.97	17.40	119.46	37.45	125.19	108.95	16.24	7.708		
2,400.00	2,400.00	2,406.38	2,406.34	8.39	8.08	17.47	119.52	37.62	125.31	108.83	16.48	7.605 ES		
2,450.00	2,450.00	2,455.07	2,455.03	8.57	8.26	17.83	119.84	38.54	125.91	109.08	16.83	7.483		
2,500.00	2,500.00	2,503.71	2,503.63	8.75	8.43	18.49	120.43	40.28	127.04	109.87	17.18	7.397		
2,550.00	2,550.00	2,552.24	2,552.08	8.93	8.60	98.35	121.26	42.90	128.77	111.25	17.52	7.351		
2,600.00	2,599.99	2,600.51	2,600.21	9.10	8.77	99.91	122.37	46.34	131.22	113.36	17.86	7.349 SF		
2,650.00	2,649.97	2,648.56	2,648.07	9.28	8.95	101.84	123.82	50.45	134.50	116.31	18.19	7.395		
2,700.00	2,699.94	2,696.75	2,696.00	9.45	9.12	104.03	125.61	55.15	138.64	120.12	18.52	7.487		
2,750.00	2,749.88	2,744.81	2,743.74	9.62	9.29	106.36	127.70	60.22	143.61	124.77	18.85	7.621		
2,800.00	2,799.79	2,793.80	2,792.36	9.79	9.47	108.86	129.98	65.74	149.31	130.13	19.19	7.783		
2,850.00	2,849.66	2,842.74	2,840.91	9.97	9.64	111.45	132.14	71.53	155.55	136.03	19.53	7.966		
2,900.00	2,899.49	2,892.21	2,889.97	10.14	9.82	114.17	134.07	77.66	162.29	142.41	19.88	8.165		
2,950.00	2,949.28	2,941.51	2,938.82	10.32	10.00	116.95	135.62	84.01	169.47	149.25	20.22	8.380		
3,000.00	2,999.01	2,990.06	2,986.94	10.49	10.18	119.68	136.97	90.40	177.27	156.71	20.56	8.620		
3,050.00	3,048.68	3,038.57	3,035.00	10.67	10.36	122.33	138.29	96.83	185.77	164.86	20.90	8.887		
3,100.00	3,098.29	3,087.53	3,083.53	10.84	10.54	124.86	139.64	103.20	194.87	173.62	21.25	9.170		
3,150.00	3,147.82	3,136.56	3,132.15	11.02	10.72	127.23	141.03	109.34	204.51	182.91	21.60	9.468		
3,200.00	3,197.28	3,185.97	3,181.19	11.20	10.91	129.45	142.47	115.19	214.60	192.64	21.96	9.774		
3,250.00	3,246.69	3,234.99	3,229.88	11.37	11.09	131.52	143.96	120.64	224.95	202.64	22.31	10.084		
3,300.00	3,296.09	3,282.71	3,277.28	11.55	11.27	133.38	145.43	125.94	235.59	212.94	22.64	10.404		
3,350.00	3,345.49	3,329.71	3,323.96	11.73	11.44	135.07	146.92	131.29	246.59	223.61	22.97	10.735		
3,400.00	3,394.90	3,374.84	3,368.71	11.91	11.61	136.57	148.52	136.82	258.24	234.97	23.27	11.095		
3,450.00	3,444.30	3,419.94	3,413.38	12.09	11.78	137.95	150.35	142.83	270.64	247.06	23.58	11.478		
3,500.00	3,493.71	3,465.76	3,458.69	12.27	11.95	139.26	152.33	149.32	283.62	259.73	23.89	11.871		
3,550.00	3,543.11	3,511.95	3,504.32	12.45	12.13	140.49	154.41	156.19	297.08	272.87	24.21	12.271		
3,600.00	3,592.51	3,561.70	3,553.47	12.63	12.32	141.70	156.60	163.53	310.60	286.03	24.58	12.638		
3,650.00	3,641.92	3,611.25	3,602.48	12.81	12.51	142.80	158.65	170.56	323.93	298.99	24.94	12.988		
3,700.00	3,691.32	3,659.73	3,650.45	12.99	12.70	143.82	160.42	177.38	337.20	311.91	25.29	13.333		
3,750.00	3,740.72	3,708.28	3,698.48	13.17	12.88	144.81	161.93	184.23	350.49	324.84	25.64	13.668		
3,800.00	3,790.13	3,756.98	3,746.68	13.35	13.07	145.78	163.12	191.12	363.75	337.76	26.00	13.993		
3,850.00	3,839.53	3,806.19	3,795.39	13.53	13.26	146.74	164.02	198.08	376.99	350.64	26.36	14.304		
3,900.00	3,888.93	3,856.35	3,845.07	13.72	13.45	147.66	164.77	204.93	390.07	363.35	26.72	14.596		
3,950.00	3,938.34	3,906.54	3,894.82	13.90	13.65	148.52	165.39	211.55	402.96	375.86	27.09	14.873		
4,000.00	3,987.74	3,956.74	3,944.61	14.08	13.84	149.34	165.86	217.94	415.68	388.20	27.46	15.137		
4,050.00	4,037.14	4,006.06	3,993.55	14.27	14.03	150.11	166.15	224.04	428.22	400.40	27.82	15.393		
4,100.00	4,086.55	4,054.82	4,041.94	14.45	14.22	150.85	166.18	230.06	440.76	412.58	28.17	15.645		
4,150.00	4,135.95	4,102.14	4,088.89	14.63	14.40	151.56	166.04	235.94	453.34	424.83	28.51	15.900		
4,200.00	4,185.36	4,148.77	4,135.15	14.82	14.58	152.22	165.98	241.84	466.13	437.29	28.85	16.160		
4,250.00	4,234.76	4,195.12	4,181.11	15.00	14.76	152.82	166.14	247.81	479.14	449.96	29.18	16.422		
4,300.00	4,284.16	4,241.36	4,226.96	15.18	14.94	153.32	166.87	253.78	492.36	462.86	29.51	16.687		
4,350.00	4,333.57	4,290.57	4,275.75	15.37	15.13	153.75	168.21	260.08	505.70	475.83	29.87	16.932		
4,400.00	4,382.97	4,341.62	4,326.39	15.55	15.32	154.15	169.80	266.30	518.82	488.58	30.24	17.155		
4,450.00	4,432.37	4,393.69	4,378.08	15.74	15.52	154.53	171.47	272.30	531.66	501.03	30.63	17.358		
4,500.00	4,481.78	4,446.17	4,430.23	15.92	15.73	154.89	172.96	277.97	544.14	513.12	31.02	17.543		
4,550.00	4,531.18	4,494.04	4,477.83	16.11	15.91	155.21	174.26	283.00	556.47	525.11	31.36	17.743		
4,600.00	4,580.58	4,541.92	4,525.42	16.29	16.09	155.51	175.65	288.05	568.86	537.15	31.71	17.939		
4,650.00	4,629.99	4,586.36	4,569.56	16.48	16.26	155.77	177.07	292.88	581.45	549.43	32.03	18.155		
4,700.00	4,679.39	4,630.85	4,613.74	16.66	16.43	156.00	178.69	297.97	594.37	562.02	32.35	18.376		
4,750.00	4,728.80	4,673.22	4,655.76	16.85	16.60	156.20	180.46	303.11	607.68	575.03	32.64	18.616		
4,800.00	4,778.20	4,715.29	4,697.42	17.03	16.76	156.37	182.49	308.56	621.46	588.52	32.94	18.869		
4,850.00	4,827.60	4,758.72	4,740.38	17.22	16.93	156.52	184.84	314.52	635.66	602.42	33.24	19.123		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL													Offset Site Error:	5.00 ft
Survey Program: 188-MWD+HDGM													Offset Well Error:	0.00 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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,877.01	4,802.54	4,783.67	17.40	17.11	156.66	187.35	320.79	650.18	616.63	33.55	19.379		
4,950.00	4,926.41	4,848.54	4,829.08	17.59	17.29	156.80	190.11	327.59	664.94	631.06	33.88	19.625		
5,000.00	4,975.81	4,896.05	4,875.98	17.78	17.48	156.93	192.89	334.65	679.75	645.52	34.23	19.858		
5,050.00	5,025.22	4,945.12	4,924.43	17.96	17.67	157.08	195.66	341.96	694.54	659.94	34.59	20.076		
5,100.00	5,074.62	4,995.21	4,973.91	18.15	17.87	157.23	198.32	349.29	709.19	674.22	34.97	20.281		
5,150.00	5,124.02	5,044.01	5,022.13	18.34	18.07	157.38	200.78	356.33	723.72	688.39	35.33	20.485		
5,200.00	5,173.43	5,092.36	5,069.93	18.52	18.26	157.53	203.14	363.28	738.22	702.53	35.69	20.686		
5,250.00	5,222.83	5,140.70	5,117.71	18.71	18.46	157.68	205.43	370.21	752.68	716.64	36.04	20.883		
5,300.00	5,272.23	5,189.04	5,165.50	18.90	18.65	157.84	207.63	377.13	767.12	730.72	36.40	21.075		
5,350.00	5,321.64	5,236.78	5,212.71	19.08	18.84	157.99	209.71	383.96	781.55	744.80	36.75	21.266		
5,400.00	5,371.04	5,284.43	5,259.82	19.27	19.03	158.14	211.69	390.80	795.99	758.89	37.10	21.454		
5,450.00	5,420.45	5,336.39	5,311.22	19.46	19.24	158.31	213.69	398.18	810.34	772.84	37.49	21.613		
5,500.00	5,469.85	5,388.85	5,363.15	19.65	19.45	158.49	215.47	405.37	824.42	786.53	37.89	21.760		
5,550.00	5,519.25	5,439.92	5,413.73	19.83	19.65	158.66	217.14	412.15	838.29	800.03	38.27	21.906		
5,600.00	5,568.66	5,490.86	5,464.23	20.02	19.85	158.82	218.84	418.72	851.99	813.34	38.65	22.046		
5,650.00	5,618.06	5,540.92	5,513.86	20.21	20.05	158.96	220.63	425.01	865.55	826.54	39.02	22.184		
5,700.00	5,667.46	5,590.14	5,562.66	20.40	20.24	159.09	222.52	431.08	879.03	839.65	39.38	22.321		
5,750.00	5,716.87	5,638.20	5,610.32	20.58	20.43	159.20	224.37	436.99	892.49	852.75	39.73	22.461		
5,800.00	5,766.27	5,687.01	5,658.73	20.77	20.62	159.32	226.22	442.98	905.95	865.85	40.09	22.595		
5,850.00	5,815.67	5,736.64	5,707.96	20.96	20.82	159.44	228.01	449.02	919.34	878.88	40.46	22.721		
5,900.00	5,865.08	5,785.80	5,756.73	21.15	21.01	159.56	229.69	454.95	932.67	891.84	40.82	22.846		
5,950.00	5,914.48	5,834.65	5,805.20	21.34	21.20	159.69	231.28	460.81	945.96	904.78	41.19	22.968		
6,000.00	5,963.89	5,883.60	5,853.78	21.52	21.40	159.81	232.80	466.66	959.22	917.67	41.55	23.088		
6,050.00	6,013.29	5,932.61	5,902.42	21.71	21.59	159.93	234.29	472.48	972.44	930.54	41.91	23.204		
6,100.00	6,062.69	5,981.60	5,951.04	21.90	21.78	160.05	235.74	478.26	985.63	943.36	42.27	23.317		
6,150.00	6,112.10	6,030.59	5,999.67	22.09	21.97	160.17	237.12	484.01	998.78	956.15	42.63	23.428		
6,200.00	6,161.50	6,078.12	6,046.86	22.28	22.16	160.29	238.42	489.58	1,011.93	968.95	42.98	23.543		
6,250.00	6,210.90	6,125.37	6,093.76	22.47	22.34	160.41	239.70	495.17	1,025.12	981.79	43.33	23.658		
6,300.00	6,260.31	6,170.81	6,138.86	22.65	22.52	160.51	240.99	500.61	1,038.40	994.74	43.66	23.781		
6,350.00	6,309.71	6,215.91	6,183.59	22.84	22.70	160.60	242.48	506.11	1,051.82	1,007.82	44.00	23.907		
6,400.00	6,359.11	6,264.94	6,232.22	23.03	22.89	160.69	244.23	512.15	1,065.31	1,020.95	44.36	24.015		
6,450.00	6,408.52	6,315.02	6,281.89	23.22	23.09	160.78	245.98	518.23	1,078.72	1,033.99	44.73	24.116		
6,500.00	6,457.92	6,364.85	6,331.33	23.41	23.29	160.87	247.65	524.20	1,092.05	1,046.95	45.10	24.214		
6,550.00	6,507.32	6,414.69	6,380.80	23.60	23.48	160.97	249.18	530.13	1,105.31	1,059.85	45.47	24.309		
6,600.00	6,556.73	6,463.76	6,429.51	23.79	23.68	161.06	250.60	535.91	1,118.52	1,072.69	45.83	24.405		
6,650.00	6,606.13	6,513.13	6,478.52	23.98	23.87	161.16	251.98	541.70	1,131.70	1,085.50	46.20	24.497		
6,700.00	6,655.54	6,564.37	6,529.40	24.16	24.07	161.26	253.31	547.61	1,144.78	1,098.20	46.58	24.578		
6,750.00	6,704.94	6,615.38	6,580.06	24.35	24.27	161.37	254.50	553.39	1,157.74	1,110.78	46.95	24.656		
6,800.00	6,754.34	6,665.71	6,630.07	24.54	24.47	161.47	255.56	559.00	1,170.60	1,123.27	47.33	24.735		
6,850.00	6,803.75	6,716.09	6,680.14	24.73	24.66	161.58	256.51	564.54	1,183.39	1,135.69	47.70	24.810		
6,900.00	6,853.15	6,766.52	6,730.26	24.92	24.86	161.69	257.36	570.01	1,196.09	1,148.02	48.07	24.882		
6,950.00	6,902.55	6,818.43	6,781.87	25.11	25.06	161.81	258.13	575.54	1,208.69	1,160.24	48.45	24.945		
7,000.00	6,951.96	6,871.58	6,834.73	25.30	25.26	161.93	258.79	581.02	1,221.12	1,172.28	48.84	25.000		
7,050.00	7,001.36	6,923.83	6,886.72	25.49	25.46	162.06	259.32	586.23	1,233.38	1,184.15	49.23	25.054		
7,100.00	7,050.76	6,975.89	6,938.53	25.68	25.66	162.18	259.73	591.28	1,245.50	1,195.89	49.61	25.106		
7,150.00	7,100.17	7,029.47	6,991.87	25.87	25.86	162.31	260.02	596.31	1,257.46	1,207.45	50.00	25.149		
7,200.00	7,149.57	7,083.20	7,045.39	26.06	26.07	162.44	260.17	601.14	1,269.22	1,218.83	50.39	25.187		
7,250.00	7,198.98	7,135.53	7,097.52	26.25	26.26	162.58	260.18	605.69	1,280.82	1,230.05	50.77	25.226		
7,300.00	7,248.38	7,189.02	7,150.82	26.44	26.47	162.72	260.04	610.17	1,292.27	1,241.11	51.16	25.258		
7,350.00	7,297.78	7,243.85	7,205.48	26.62	26.67	162.87	259.69	614.54	1,303.50	1,251.95	51.56	25.282		
7,400.00	7,347.19	7,298.00	7,259.47	26.81	26.87	163.02	259.12	618.63	1,314.52	1,262.58	51.95	25.305		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 714H - Original Hole - NTL												Offset Site Error:	5.00 ft
Survey Program: 188-MWD+HDGM												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
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	Warning
7,450.00	7,396.59	7,351.83	7,313.16	27.00	27.07	163.17	258.39	622.50	1,325.36	1,273.02	52.34	25.325	
7,500.00	7,445.99	7,407.02	7,368.21	27.19	27.27	163.34	257.49	626.23	1,335.99	1,283.26	52.73	25.337	
7,550.00	7,495.40	7,462.49	7,423.56	27.38	27.47	163.50	256.49	629.73	1,346.39	1,293.27	53.12	25.345	
7,600.00	7,544.80	7,518.37	7,479.34	27.57	27.67	163.67	255.36	632.97	1,356.55	1,303.04	53.52	25.348	
7,650.00	7,594.20	7,573.16	7,534.04	27.76	27.87	163.83	254.16	635.89	1,366.48	1,312.57	53.91	25.349	
7,700.00	7,643.61	7,627.02	7,587.81	27.95	28.06	163.99	252.94	638.55	1,376.23	1,321.94	54.29	25.351	
7,750.00	7,693.01	7,678.46	7,639.19	28.14	28.24	164.14	251.74	640.95	1,385.84	1,331.19	54.66	25.355	
7,800.00	7,742.43	7,729.25	7,689.91	28.33	28.42	164.31	250.53	643.25	1,395.28	1,340.26	55.02	25.359	
7,850.00	7,791.94	7,782.25	7,742.84	28.52	28.60	164.49	249.28	645.55	1,404.06	1,348.66	55.40	25.345	
7,900.00	7,841.54	7,835.64	7,796.18	28.71	28.79	164.65	248.05	647.70	1,412.07	1,356.30	55.77	25.318	
7,950.00	7,891.22	7,887.00	7,847.48	28.89	28.97	164.79	246.86	649.67	1,419.37	1,363.23	56.14	25.284	
8,000.00	7,940.97	7,938.53	7,898.96	29.08	29.15	164.93	245.64	651.56	1,425.97	1,369.47	56.50	25.237	
8,050.00	7,990.77	7,989.66	7,950.05	29.26	29.33	165.06	244.35	653.39	1,431.89	1,375.02	56.86	25.181	
8,100.00	8,040.63	8,042.44	8,002.77	29.44	29.51	165.18	242.97	655.20	1,437.11	1,379.88	57.23	25.110	
8,150.00	8,090.54	8,097.24	8,057.53	29.62	29.70	165.29	241.54	656.92	1,441.56	1,383.95	57.61	25.023	
8,200.00	8,140.48	8,149.73	8,109.98	29.79	29.88	165.39	240.17	658.40	1,445.23	1,387.26	57.97	24.929	
8,250.00	8,190.45	8,201.39	8,161.60	29.97	30.06	165.48	238.77	659.80	1,448.21	1,389.88	58.33	24.827	
8,300.00	8,240.44	8,250.85	8,211.04	30.15	30.23	165.54	237.70	661.11	1,450.53	1,391.85	58.68	24.718	
8,350.00	8,290.43	8,300.39	8,260.55	30.32	30.40	165.57	237.23	662.39	1,452.24	1,393.21	59.03	24.602	
8,400.00	8,340.43	8,339.10	8,299.25	30.49	30.54	165.81	237.22	663.55	1,453.74	1,394.41	59.33	24.504	
8,450.00	8,390.43	8,378.67	8,338.79	30.66	30.68	165.80	237.49	664.99	1,455.58	1,395.96	59.63	24.412	
8,500.00	8,440.43	8,435.78	8,395.85	30.83	30.88	165.77	238.41	667.20	1,457.57	1,397.56	60.01	24.289	
8,550.00	8,490.43	8,499.94	8,459.96	31.00	31.11	165.70	240.26	669.07	1,459.10	1,398.67	60.43	24.147	
8,600.00	8,540.43	8,547.45	8,507.43	31.17	31.28	165.65	241.71	670.32	1,460.50	1,399.74	60.76	24.036	
8,650.00	8,590.43	8,601.44	8,561.38	31.34	31.46	165.59	243.27	671.68	1,461.84	1,400.71	61.13	23.914	
8,700.00	8,640.42	8,660.88	8,620.78	31.51	31.67	-93.08	244.86	672.86	1,462.96	1,401.44	61.52	23.782	
8,750.00	8,690.19	8,724.07	8,683.95	31.67	31.88	-93.28	246.42	673.65	1,463.92	1,402.02	61.90	23.648	
8,800.00	8,739.36	8,785.65	8,745.51	31.83	32.09	-93.68	247.82	673.84	1,464.71	1,402.43	62.28	23.519	
8,850.00	8,787.57	8,842.35	8,802.20	31.97	32.28	-94.22	248.79	673.64	1,465.54	1,402.91	62.63	23.402	
8,900.00	8,834.43	8,896.42	8,856.27	32.12	32.45	-94.86	249.30	673.18	1,466.60	1,403.65	62.96	23.296	
8,950.00	8,879.61	8,948.36	8,908.21	32.25	32.61	-95.58	249.30	672.54	1,468.08	1,404.81	63.27	23.203	
9,000.00	8,922.75	8,993.48	8,953.32	32.37	32.75	-96.25	248.99	671.88	1,470.21	1,406.85	63.56	23.131	
9,050.00	8,963.52	9,035.70	8,995.54	32.48	32.89	-96.88	248.60	671.24	1,473.26	1,409.43	63.84	23.078	
9,100.00	9,001.62	9,073.14	9,032.97	32.59	33.00	-97.39	248.23	670.65	1,477.44	1,413.34	64.10	23.051	
9,150.00	9,036.75	9,106.48	9,066.30	32.67	33.11	-97.75	248.03	670.16	1,482.97	1,418.63	64.34	23.050	
9,200.00	9,068.66	9,136.50	9,096.32	32.75	33.20	-97.94	247.97	669.73	1,490.02	1,425.46	64.56	23.079	
9,250.00	9,097.08	9,162.98	9,122.80	32.81	33.28	-97.90	247.99	669.37	1,498.73	1,433.95	64.77	23.139	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.16	3.16	0.50	0.50	89.73	6.53	1,384.72	1,384.74					
50.00	50.00	57.73	57.73	0.50	0.51	89.73	6.61	1,384.62	1,384.65	1,383.64	1.01	1,371.832		
100.00	100.00	112.29	112.29	0.52	0.53	89.72	6.82	1,384.34	1,384.39	1,383.34	1.05	1,324.629		
150.00	150.00	166.46	166.45	0.59	0.59	89.70	7.16	1,383.89	1,383.97	1,382.79	1.18	1,175.358		
200.00	200.00	218.30	218.29	0.70	0.70	89.69	7.57	1,383.32	1,383.43	1,382.02	1.40	984.838		
250.00	250.00	267.73	267.71	0.84	0.84	89.67	7.99	1,382.78	1,382.88	1,381.21	1.67	825.997		
300.00	300.00	317.85	317.83	0.99	0.99	89.65	8.45	1,382.25	1,382.35	1,380.38	1.97	700.415		
350.00	350.00	368.97	368.95	1.15	1.15	89.63	8.93	1,381.67	1,381.79	1,379.50	2.29	602.484		
400.00	400.00	420.10	420.07	1.31	1.32	89.61	9.41	1,381.05	1,381.19	1,378.57	2.62	526.280		
450.00	450.00	470.19	470.15	1.48	1.48	89.59	9.88	1,380.43	1,380.57	1,377.61	2.96	466.521		
500.00	500.00	520.35	520.31	1.65	1.66	89.57	10.35	1,379.79	1,379.94	1,376.64	3.30	418.236		
550.00	550.00	570.74	570.70	1.82	1.83	89.55	10.81	1,379.15	1,379.30	1,375.66	3.64	378.515		
600.00	600.00	621.05	621.00	1.99	2.00	89.53	11.25	1,378.49	1,378.65	1,374.66	3.99	345.445		
650.00	650.00	671.23	671.17	2.16	2.18	89.51	11.67	1,377.82	1,377.99	1,373.65	4.34	317.547		
700.00	700.00	720.34	720.28	2.34	2.35	89.50	12.05	1,377.18	1,377.34	1,372.65	4.69	293.938		
750.00	750.00	769.09	769.02	2.51	2.52	89.49	12.34	1,376.58	1,376.73	1,371.70	5.03	273.595		
800.00	800.00	816.68	816.61	2.69	2.69	89.48	12.55	1,376.06	1,376.18	1,370.81	5.38	256.030		
850.00	850.00	863.65	863.58	2.87	2.85	89.47	12.77	1,375.64	1,375.74	1,370.02	5.72	240.646		
900.00	900.00	912.71	912.63	3.04	3.03	89.46	12.98	1,375.28	1,375.38	1,369.31	6.07	226.728		
950.00	950.00	962.59	962.51	3.22	3.20	89.46	13.07	1,374.93	1,375.03	1,368.61	6.42	214.217		
1,000.00	1,000.00	1,012.58	1,012.49	3.40	3.38	89.45	13.08	1,374.58	1,374.68	1,367.91	6.77	202.997		
1,050.00	1,050.00	1,062.58	1,062.49	3.58	3.55	89.45	13.08	1,374.23	1,374.33	1,367.21	7.13	192.879		
1,100.00	1,100.00	1,111.15	1,111.07	3.75	3.73	89.45	13.09	1,373.92	1,374.01	1,366.53	7.47	183.825		
1,150.00	1,150.00	1,160.51	1,160.43	3.93	3.90	89.45	13.13	1,373.65	1,373.73	1,365.91	7.83	175.513		
1,200.00	1,200.00	1,212.61	1,212.52	4.11	4.09	89.45	13.23	1,373.32	1,373.42	1,365.23	8.19	167.700		
1,250.00	1,250.00	1,264.07	1,263.99	4.29	4.27	89.44	13.39	1,372.93	1,373.04	1,364.49	8.55	160.580		
1,300.00	1,300.00	1,314.73	1,314.64	4.46	4.45	89.44	13.48	1,372.51	1,372.62	1,363.71	8.91	154.082		
1,350.00	1,350.00	1,364.05	1,363.96	4.64	4.62	89.44	13.50	1,372.09	1,372.20	1,362.94	9.26	148.157		
1,400.00	1,400.00	1,412.61	1,412.52	4.82	4.80	89.43	13.54	1,371.72	1,371.82	1,362.21	9.61	142.711		
1,450.00	1,450.00	1,462.39	1,462.30	5.00	4.97	89.43	13.61	1,371.38	1,371.48	1,361.51	9.97	137.589		
1,500.00	1,500.00	1,512.55	1,512.45	5.18	5.15	89.43	13.65	1,371.03	1,371.13	1,360.81	10.32	132.800		
1,550.00	1,550.00	1,559.98	1,559.88	5.36	5.32	89.43	13.71	1,370.74	1,370.83	1,360.16	10.67	128.455		
1,600.00	1,600.00	1,607.29	1,607.20	5.53	5.49	89.42	13.86	1,370.55	1,370.63	1,359.61	11.02	124.397		
1,650.00	1,650.00	1,658.13	1,658.03	5.71	5.67	89.41	14.05	1,370.37	1,370.45	1,359.08	11.38	120.453		
1,700.00	1,700.00	1,709.22	1,709.12	5.89	5.85	89.41	14.22	1,370.16	1,370.25	1,358.51	11.74	116.737		
1,750.00	1,750.00	1,761.27	1,761.17	6.07	6.04	89.40	14.32	1,369.89	1,369.99	1,357.88	12.10	113.204		
1,800.00	1,800.00	1,811.25	1,811.15	6.25	6.21	89.40	14.34	1,369.56	1,369.66	1,357.20	12.46	109.939		
1,850.00	1,850.00	1,857.72	1,857.62	6.43	6.38	89.40	14.33	1,369.34	1,369.42	1,356.62	12.80	106.969		
1,900.00	1,900.00	1,903.86	1,903.76	6.61	6.54	89.40	14.32	1,369.24	1,369.32	1,356.18	13.14	104.193		
1,909.45	1,909.45	1,912.45	1,912.35	6.64	6.57	89.40	14.32	1,369.24	1,369.31	1,356.11	13.21	103.696 CC		
1,950.00	1,950.00	1,949.31	1,949.21	6.78	6.70	89.40	14.31	1,369.29	1,369.37	1,355.89	13.47	101.624		
2,000.00	2,000.00	1,995.95	1,995.85	6.96	6.85	89.40	14.31	1,369.49	1,369.58	1,355.77	13.81	99.170		
2,050.00	2,050.00	2,046.47	2,046.37	7.14	7.02	89.40	14.36	1,369.74	1,369.83	1,355.67	14.16	96.769		
2,100.00	2,100.00	2,096.38	2,096.28	7.32	7.18	89.39	14.48	1,369.97	1,370.06	1,355.56	14.50	94.490		
2,150.00	2,150.00	2,145.18	2,145.08	7.50	7.35	89.39	14.62	1,370.23	1,370.33	1,355.48	14.84	92.332		
2,200.00	2,200.00	2,194.96	2,194.85	7.68	7.51	89.38	14.78	1,370.52	1,370.63	1,355.44	15.19	90.252		
2,250.00	2,250.00	2,246.13	2,246.03	7.86	7.68	89.38	14.93	1,370.80	1,370.90	1,355.36	15.54	88.231		
2,300.00	2,300.00	2,296.46	2,296.35	8.04	7.85	89.37	15.05	1,371.04	1,371.14	1,355.25	15.89	86.313		
2,350.00	2,350.00	2,346.10	2,345.99	8.22	8.02	89.37	15.14	1,371.28	1,371.38	1,355.15	16.23	84.489		
2,400.00	2,400.00	2,396.01	2,395.91	8.39	8.19	89.37	15.20	1,371.53	1,371.64	1,355.06	16.58	82.736		
2,450.00	2,450.00	2,446.09	2,445.98	8.57	8.36	89.36	15.26	1,371.79	1,371.89	1,354.96	16.93	81.052		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth 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		
2,500.00	2,500.00	2,493.73	2,493.62	8.75	8.52	89.36	15.35	1,372.06	1,372.17	1,354.91	17.27	79.472 ES		
2,550.00	2,550.00	2,540.51	2,540.40	8.93	8.68	168.12	15.49	1,372.43	1,372.84	1,355.24	17.60	78.002		
2,600.00	2,599.99	2,584.02	2,583.91	9.10	8.83	168.12	15.65	1,372.91	1,374.19	1,356.27	17.92	76.676		
2,650.00	2,649.97	2,626.19	2,626.07	9.28	8.97	168.12	15.79	1,373.61	1,376.36	1,358.12	18.24	75.475		
2,700.00	2,699.94	2,668.01	2,667.88	9.45	9.11	168.12	15.91	1,374.54	1,379.34	1,360.79	18.55	74.366		
2,750.00	2,749.88	2,709.42	2,709.27	9.62	9.25	168.12	16.03	1,375.71	1,383.16	1,364.30	18.86	73.345		
2,800.00	2,799.79	2,751.08	2,750.91	9.79	9.39	168.13	16.15	1,377.15	1,387.81	1,368.65	19.17	72.400		
2,850.00	2,849.66	2,794.36	2,794.15	9.97	9.54	168.13	16.32	1,378.86	1,393.26	1,373.77	19.49	71.501		
2,900.00	2,899.49	2,837.53	2,837.28	10.14	9.69	168.14	16.54	1,380.77	1,399.46	1,379.65	19.80	70.673		
2,950.00	2,949.28	2,880.71	2,880.41	10.32	9.84	168.14	16.84	1,382.87	1,406.41	1,386.29	20.12	69.908		
3,000.00	2,999.01	2,923.77	2,923.40	10.49	9.99	168.15	17.24	1,385.16	1,414.12	1,393.68	20.43	69.206		
3,050.00	3,048.68	2,963.93	2,963.50	10.67	10.12	168.14	17.70	1,387.51	1,422.61	1,401.87	20.74	68.604		
3,100.00	3,098.29	3,003.06	3,002.54	10.84	10.26	168.14	18.22	1,390.06	1,431.97	1,410.93	21.03	68.077		
3,150.00	3,147.82	3,042.84	3,042.21	11.02	10.40	168.14	18.82	1,392.93	1,442.19	1,420.85	21.33	67.599		
3,200.00	3,197.28	3,084.08	3,083.32	11.20	10.54	168.13	19.48	1,396.14	1,453.20	1,431.56	21.64	67.152		
3,250.00	3,246.69	3,125.17	3,124.26	11.37	10.68	168.15	20.17	1,399.54	1,464.81	1,442.86	21.94	66.751		
3,300.00	3,296.09	3,168.99	3,167.91	11.55	10.84	168.17	21.01	1,403.36	1,476.63	1,454.37	22.26	66.333		
3,350.00	3,345.49	3,212.75	3,211.47	11.73	10.99	168.19	22.02	1,407.31	1,488.61	1,466.03	22.58	65.934 SF		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	2.45	2.45	0.50	0.50	89.73	6.63	1,414.72	1,414.74					
50.00	50.00	46.19	46.19	0.50	0.50	89.73	6.63	1,414.83	1,414.86	1,413.85	1.01	1,405.365		
100.00	100.00	89.94	89.93	0.52	0.52	89.73	6.61	1,415.13	1,415.21	1,414.17	1.04	1,366.317		
150.00	150.00	133.67	133.67	0.59	0.54	89.73	6.60	1,415.63	1,415.77	1,414.64	1.13	1,253.930		
200.00	200.00	183.04	183.03	0.70	0.62	89.73	6.58	1,416.31	1,416.47	1,415.14	1.32	1,070.559		
250.00	250.00	233.03	233.02	0.84	0.74	89.73	6.58	1,417.01	1,417.17	1,415.59	1.58	897.686		
300.00	300.00	281.78	281.76	0.99	0.88	89.73	6.59	1,417.71	1,417.88	1,416.02	1.87	760.194		
350.00	350.00	330.92	330.89	1.15	1.03	89.73	6.60	1,418.46	1,418.65	1,416.48	2.17	652.866		
400.00	400.00	383.77	383.74	1.31	1.20	89.73	6.59	1,419.23	1,419.37	1,416.86	2.51	566.495		
450.00	450.00	435.54	435.51	1.48	1.37	89.73	6.57	1,419.88	1,420.00	1,417.16	2.84	499.382		
500.00	500.00	485.62	485.59	1.65	1.54	89.73	6.60	1,420.49	1,420.61	1,417.42	3.18	446.490		
550.00	550.00	536.40	536.36	1.82	1.71	89.73	6.68	1,421.09	1,421.20	1,417.68	3.53	403.021		
600.00	600.00	587.70	587.66	1.99	1.89	89.73	6.73	1,421.66	1,421.76	1,417.88	3.88	366.825		
650.00	650.00	637.98	637.94	2.16	2.06	89.73	6.76	1,422.19	1,422.28	1,418.06	4.22	336.702		
700.00	700.00	688.01	687.96	2.34	2.24	89.73	6.80	1,422.71	1,422.80	1,418.23	4.57	311.113		
750.00	750.00	736.71	736.66	2.51	2.41	89.73	6.83	1,423.24	1,423.35	1,418.43	4.92	289.350		
800.00	800.00	785.53	785.48	2.69	2.58	89.73	6.82	1,423.82	1,423.94	1,418.67	5.27	270.378		
850.00	850.00	836.50	836.44	2.87	2.76	89.73	6.77	1,424.41	1,424.50	1,418.87	5.63	253.057		
900.00	900.00	891.17	891.11	3.04	2.95	89.73	6.67	1,424.89	1,424.95	1,418.96	5.99	237.827		
950.00	950.00	942.33	942.26	3.22	3.13	89.73	6.59	1,425.28	1,425.34	1,418.99	6.35	224.490		
1,000.00	1,000.00	993.00	992.94	3.40	3.31	89.74	6.58	1,425.64	1,425.69	1,418.99	6.71	212.609		
1,050.00	1,050.00	1,043.15	1,043.09	3.58	3.49	89.73	6.61	1,425.99	1,426.04	1,418.97	7.06	201.967		
1,100.00	1,100.00	1,093.27	1,093.21	3.75	3.67	89.73	6.67	1,426.33	1,426.37	1,418.96	7.42	192.340		
1,150.00	1,150.00	1,143.38	1,143.31	3.93	3.84	89.73	6.64	1,426.66	1,426.71	1,418.94	7.77	183.587		
1,200.00	1,200.00	1,193.17	1,193.10	4.11	4.02	89.74	6.55	1,427.00	1,427.04	1,418.92	8.13	175.615		
1,250.00	1,250.00	1,242.95	1,242.88	4.29	4.20	89.74	6.52	1,427.34	1,427.39	1,418.91	8.48	168.308		
1,300.00	1,300.00	1,295.24	1,295.17	4.46	4.38	89.74	6.47	1,427.66	1,427.70	1,418.85	8.84	161.428		
1,350.00	1,350.00	1,347.21	1,347.13	4.64	4.57	89.75	6.33	1,427.90	1,427.92	1,418.72	9.21	155.103		
1,400.00	1,400.00	1,398.21	1,398.14	4.82	4.75	89.75	6.28	1,428.08	1,428.10	1,418.54	9.56	149.312		
1,450.00	1,450.00	1,448.58	1,448.50	5.00	4.93	89.74	6.36	1,428.23	1,428.26	1,418.33	9.92	143.963		
1,500.00	1,500.00	1,498.18	1,498.11	5.18	5.10	89.74	6.43	1,428.39	1,428.41	1,418.14	10.28	139.015		
1,550.00	1,550.00	1,549.25	1,549.18	5.36	5.28	89.74	6.49	1,428.55	1,428.57	1,417.93	10.63	134.348		
1,600.00	1,600.00	1,601.22	1,601.15	5.53	5.46	89.73	6.61	1,428.64	1,428.66	1,417.67	10.99	129.951		
1,650.00	1,650.00	1,649.86	1,649.78	5.71	5.63	89.73	6.75	1,428.72	1,428.73	1,417.39	11.34	125.957		
1,700.00	1,700.00	1,698.00	1,697.92	5.89	5.80	89.73	6.82	1,428.85	1,428.87	1,417.18	11.69	122.224		
1,750.00	1,750.00	1,748.60	1,748.53	6.07	5.98	89.72	6.87	1,429.01	1,429.03	1,416.98	12.05	118.603		
1,800.00	1,800.00	1,799.53	1,799.45	6.25	6.16	89.72	6.97	1,429.15	1,429.17	1,416.76	12.41	115.183		
1,850.00	1,850.00	1,853.38	1,853.30	6.43	6.35	89.72	7.10	1,429.20	1,429.22	1,416.45	12.77	111.913		
1,900.00	1,900.00	1,905.57	1,905.49	6.61	6.52	89.71	7.24	1,429.12	1,429.15	1,416.02	13.13	108.871		
1,950.00	1,950.00	1,954.24	1,954.16	6.78	6.69	89.71	7.28	1,429.05	1,429.07	1,415.61	13.47	106.104		
1,989.72	1,989.72	1,992.90	1,992.83	6.93	6.82	89.71	7.23	1,429.03	1,429.05	1,415.31	13.74	104.006		
2,000.00	2,000.00	2,000.83	2,000.75	6.96	6.85	89.71	7.23	1,429.04	1,429.06	1,415.26	13.81	103.515		
2,050.00	2,050.00	2,043.84	2,043.77	7.14	6.99	89.71	7.20	1,429.21	1,429.26	1,415.12	14.13	101.125		
2,100.00	2,100.00	2,086.58	2,086.51	7.32	7.14	89.71	7.22	1,429.58	1,429.70	1,415.23	14.46	98.865		
2,150.00	2,150.00	2,127.88	2,127.80	7.50	7.29	89.71	7.24	1,430.18	1,430.42	1,415.63	14.79	96.736		
2,200.00	2,200.00	2,169.17	2,169.08	7.68	7.44	89.71	7.24	1,431.03	1,431.44	1,416.33	15.11	94.723		
2,250.00	2,250.00	2,212.06	2,211.96	7.86	7.59	89.71	7.22	1,432.15	1,432.75	1,417.31	15.44	92.779		
2,300.00	2,300.00	2,255.21	2,255.09	8.04	7.75	89.71	7.22	1,433.48	1,434.29	1,418.52	15.77	90.927		
2,350.00	2,350.00	2,297.27	2,297.11	8.22	7.90	89.71	7.21	1,434.99	1,436.09	1,419.99	16.10	89.193		
2,400.00	2,400.00	2,338.74	2,338.55	8.39	8.05	89.72	7.09	1,436.72	1,438.17	1,421.75	16.43	87.560		
2,450.00	2,450.00	2,380.04	2,379.80	8.57	8.20	89.73	6.86	1,438.69	1,440.56	1,423.81	16.75	86.014		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 138-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
2,500.00	2,500.00	2,421.07	2,420.78	8.75	8.34	89.74	6.65	1,440.90	1,443.24	1,426.18	17.07	84.553	
2,550.00	2,550.00	2,462.11	2,461.74	8.93	8.49	168.51	6.48	1,443.36	1,446.51	1,429.12	17.39	83.198	
2,600.00	2,599.99	2,504.06	2,503.60	9.10	8.64	168.51	6.38	1,446.11	1,450.59	1,432.88	17.71	81.923	
2,650.00	2,649.97	2,545.92	2,545.36	9.28	8.79	168.50	6.36	1,449.09	1,455.48	1,437.45	18.02	80.756	
2,700.00	2,699.94	2,587.03	2,586.34	9.45	8.94	168.50	6.40	1,452.24	1,461.17	1,442.84	18.34	79.690	
2,750.00	2,749.88	2,627.83	2,627.00	9.62	9.09	168.50	6.48	1,455.61	1,467.70	1,449.05	18.65	78.711	
2,800.00	2,799.79	2,668.11	2,667.12	9.79	9.24	168.49	6.58	1,459.18	1,475.05	1,456.09	18.95	77.820	
2,850.00	2,849.66	2,707.77	2,706.60	9.97	9.38	168.49	6.72	1,462.95	1,483.25	1,463.99	19.26	77.014	
2,900.00	2,899.49	2,747.90	2,746.52	10.14	9.53	168.49	6.89	1,467.03	1,492.29	1,472.73	19.56	76.274 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	5.07	5.07	0.50	0.50	89.73	6.29	1,354.76	1,354.78					
50.00	50.00	57.88	57.88	0.50	0.51	89.73	6.34	1,354.70	1,354.72	1,353.71	1.01	1,342.398		
100.00	100.00	110.69	110.69	0.52	0.53	89.73	6.48	1,354.52	1,354.55	1,353.51	1.04	1,298.001		
150.00	150.00	161.43	161.43	0.59	0.58	89.72	6.70	1,354.27	1,354.30	1,353.13	1.17	1,160.906		
200.00	200.00	210.84	210.84	0.70	0.68	89.71	6.96	1,354.04	1,354.08	1,352.69	1.38	978.457		
250.00	250.00	262.43	262.43	0.84	0.82	89.70	7.20	1,353.78	1,353.82	1,352.17	1.66	817.328		
300.00	300.00	312.57	312.56	0.99	0.97	89.68	7.45	1,353.49	1,353.54	1,351.58	1.95	692.538		
350.00	350.00	362.83	362.82	1.15	1.13	89.67	7.75	1,353.20	1,353.25	1,350.98	2.27	596.011		
400.00	400.00	413.19	413.19	1.31	1.29	89.66	7.96	1,352.89	1,352.94	1,350.35	2.60	520.740		
450.00	450.00	464.34	464.33	1.48	1.46	89.65	8.16	1,352.56	1,352.61	1,349.68	2.94	460.712		
500.00	500.00	515.59	515.58	1.65	1.63	89.64	8.47	1,352.17	1,352.24	1,348.96	3.28	412.352		
550.00	550.00	564.86	564.85	1.82	1.80	89.63	8.78	1,351.79	1,351.86	1,348.24	3.62	373.462		
600.00	600.00	614.55	614.53	1.99	1.97	89.62	9.04	1,351.43	1,351.50	1,347.53	3.96	340.906		
650.00	650.00	664.85	664.83	2.16	2.15	89.60	9.34	1,351.06	1,351.13	1,346.82	4.31	313.252		
700.00	700.00	714.51	714.49	2.34	2.32	89.59	9.69	1,350.69	1,350.76	1,346.10	4.66	289.775		
750.00	750.00	763.70	763.67	2.51	2.50	89.58	10.01	1,350.35	1,350.42	1,345.41	5.01	269.587		
800.00	800.00	814.27	814.24	2.69	2.67	89.56	10.30	1,350.01	1,350.09	1,344.72	5.36	251.752		
850.00	850.00	865.59	865.57	2.87	2.85	89.55	10.51	1,349.63	1,349.71	1,343.99	5.72	235.975		
900.00	900.00	915.01	914.98	3.04	3.03	89.55	10.64	1,349.24	1,349.32	1,343.25	6.07	222.286		
950.00	950.00	964.19	964.16	3.22	3.20	89.54	10.71	1,348.88	1,348.96	1,342.54	6.42	210.107		
1,000.00	1,000.00	1,015.15	1,015.12	3.40	3.38	89.54	10.79	1,348.51	1,348.59	1,341.82	6.78	198.987		
1,050.00	1,050.00	1,065.93	1,065.90	3.58	3.56	89.54	10.92	1,348.10	1,348.19	1,341.06	7.13	188.978		
1,100.00	1,100.00	1,116.12	1,116.09	3.75	3.74	89.53	11.05	1,347.69	1,347.78	1,340.29	7.49	179.956		
1,150.00	1,150.00	1,165.68	1,165.65	3.93	3.92	89.53	11.16	1,347.27	1,347.36	1,339.52	7.84	171.793		
1,200.00	1,200.00	1,214.39	1,214.35	4.11	4.09	89.52	11.26	1,346.90	1,346.98	1,338.79	8.19	164.394		
1,250.00	1,250.00	1,263.78	1,263.74	4.29	4.26	89.52	11.36	1,346.57	1,346.64	1,338.10	8.55	157.556		
1,300.00	1,300.00	1,313.71	1,313.67	4.46	4.44	89.51	11.47	1,346.24	1,346.31	1,337.41	8.90	151.226		
1,350.00	1,350.00	1,362.24	1,362.19	4.64	4.61	89.51	11.59	1,345.93	1,346.00	1,336.75	9.25	145.459		
1,400.00	1,400.00	1,410.25	1,410.21	4.82	4.78	89.50	11.74	1,345.71	1,345.77	1,336.16	9.60	140.146		
1,450.00	1,450.00	1,457.97	1,457.92	5.00	4.95	89.49	11.91	1,345.55	1,345.61	1,335.66	9.95	135.242		
1,500.00	1,500.00	1,505.63	1,505.59	5.18	5.12	89.49	12.07	1,345.48	1,345.54	1,335.24	10.30	130.682		
1,550.00	1,550.00	1,557.57	1,557.53	5.36	5.31	89.48	12.21	1,345.42	1,345.48	1,334.82	10.66	126.244		
1,600.00	1,600.00	1,609.94	1,609.90	5.53	5.49	89.48	12.25	1,345.27	1,345.33	1,334.31	11.02	122.072		
1,650.00	1,650.00	1,660.96	1,660.91	5.71	5.67	89.48	12.27	1,345.06	1,345.13	1,333.75	11.38	118.194		
1,700.00	1,700.00	1,711.40	1,711.35	5.89	5.85	89.48	12.31	1,344.81	1,344.88	1,333.14	11.74	114.570		
1,750.00	1,750.00	1,760.19	1,760.14	6.07	6.02	89.47	12.35	1,344.59	1,344.66	1,332.57	12.09	111.212		
1,800.00	1,800.00	1,808.61	1,808.56	6.25	6.19	89.47	12.38	1,344.43	1,344.49	1,332.05	12.44	108.077		
1,850.00	1,850.00	1,856.34	1,856.29	6.43	6.36	89.47	12.33	1,344.33	1,344.39	1,331.61	12.78	105.170		
1,891.33	1,891.33	1,896.18	1,896.13	6.57	6.49	89.48	12.21	1,344.32	1,344.37	1,331.31	13.07	102.886		
1,900.00	1,900.00	1,904.78	1,904.73	6.61	6.52	89.48	12.19	1,344.32	1,344.37	1,331.25	13.13	102.420		
1,950.00	1,950.00	1,954.37	1,954.32	6.78	6.69	89.49	12.05	1,344.33	1,344.38	1,330.91	13.47	99.810		
2,000.00	2,000.00	2,004.70	2,004.65	6.96	6.86	89.49	11.95	1,344.35	1,344.40	1,330.59	13.82	97.308		
2,050.00	2,050.00	2,055.95	2,055.90	7.14	7.03	89.50	11.73	1,344.33	1,344.38	1,330.22	14.17	94.899		
2,100.00	2,100.00	2,106.68	2,106.63	7.32	7.20	89.51	11.40	1,344.28	1,344.33	1,329.81	14.52	92.602		
2,150.00	2,150.00	2,157.04	2,156.99	7.50	7.37	89.53	11.11	1,344.20	1,344.25	1,329.38	14.87	90.412		
2,200.00	2,200.00	2,206.49	2,206.44	7.68	7.54	89.54	10.87	1,344.13	1,344.17	1,328.96	15.22	88.340		
2,250.00	2,250.00	2,255.55	2,255.50	7.86	7.71	89.55	10.67	1,344.09	1,344.13	1,328.57	15.56	86.368		
2,300.00	2,300.00	2,307.39	2,307.34	8.04	7.89	89.55	10.49	1,344.04	1,344.08	1,328.16	15.92	84.422		
2,350.00	2,350.00	2,359.97	2,359.92	8.22	8.07	89.56	10.31	1,343.89	1,343.94	1,327.66	16.28	82.541		
2,400.00	2,400.00	2,408.44	2,408.39	8.39	8.24	89.57	10.14	1,343.73	1,343.77	1,327.14	16.63	80.802		
2,450.00	2,450.00	2,456.79	2,456.74	8.57	8.41	89.57	9.98	1,343.63	1,343.67	1,326.69	16.98	79.141		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 138-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,500.00	2,500.00	2,507.49	2,507.44	8.75	8.58	89.58	9.83	1,343.55	1,343.59	1,326.25	17.33	77.509		
2,509.66	2,509.66	2,517.28	2,517.23	8.79	8.62	168.35	9.80	1,343.53	1,343.58	1,326.17	17.40	77.205 CC		
2,550.00	2,550.00	2,558.19	2,558.14	8.93	8.76	168.36	9.69	1,343.44	1,343.74	1,326.06	17.69	75.972 ES		
2,600.00	2,599.99	2,608.40	2,608.35	9.10	8.94	168.37	9.57	1,343.31	1,344.42	1,326.38	18.04	74.524		
2,650.00	2,649.97	2,658.70	2,658.65	9.28	9.12	168.38	9.46	1,343.17	1,345.62	1,327.23	18.39	73.172		
2,700.00	2,699.94	2,709.17	2,709.11	9.45	9.30	168.40	9.40	1,343.02	1,347.33	1,328.59	18.74	71.891		
2,750.00	2,749.88	2,759.41	2,759.36	9.62	9.48	168.41	9.40	1,342.85	1,349.57	1,330.47	19.09	70.685		
2,800.00	2,799.79	2,809.26	2,809.21	9.79	9.65	168.43	9.38	1,342.68	1,352.33	1,332.89	19.44	69.554		
2,850.00	2,849.66	2,858.48	2,858.43	9.97	9.83	168.45	9.35	1,342.51	1,355.64	1,335.85	19.79	68.500		
2,900.00	2,899.49	2,906.92	2,906.86	10.14	10.00	168.48	9.41	1,342.40	1,359.52	1,339.39	20.13	67.523		
2,950.00	2,949.28	2,955.66	2,955.60	10.32	10.17	168.50	9.55	1,342.33	1,363.99	1,343.51	20.48	66.607		
3,000.00	2,999.01	3,004.71	3,004.66	10.49	10.34	168.52	9.76	1,342.28	1,369.01	1,348.19	20.82	65.749		
3,050.00	3,048.68	3,054.25	3,054.19	10.67	10.51	168.54	10.02	1,342.26	1,374.59	1,353.42	21.17	64.940		
3,100.00	3,098.29	3,104.16	3,104.10	10.84	10.69	168.57	10.27	1,342.23	1,380.69	1,359.18	21.51	64.178		
3,150.00	3,147.82	3,154.47	3,154.41	11.02	10.86	168.59	10.54	1,342.18	1,387.31	1,365.45	21.86	63.457		
3,200.00	3,197.28	3,204.97	3,204.91	11.20	11.04	168.63	10.85	1,342.09	1,394.42	1,372.21	22.21	62.779		
3,250.00	3,246.69	3,254.00	3,253.94	11.37	11.21	168.67	11.16	1,342.00	1,401.87	1,379.31	22.56	62.149		
3,300.00	3,296.09	3,302.57	3,302.51	11.55	11.38	168.72	11.44	1,341.93	1,409.35	1,386.45	22.90	61.544		
3,350.00	3,345.49	3,352.37	3,352.31	11.73	11.56	168.77	11.69	1,341.87	1,416.85	1,393.60	23.25	60.945		
3,400.00	3,394.90	3,402.47	3,402.40	11.91	11.73	168.82	11.94	1,341.78	1,424.32	1,400.72	23.60	60.359		
3,450.00	3,444.30	3,446.19	3,446.12	12.09	11.88	168.86	12.18	1,341.78	1,431.87	1,407.95	23.92	59.855		
3,500.00	3,493.71	3,489.07	3,489.00	12.27	12.03	168.90	12.50	1,341.96	1,439.64	1,415.40	24.24	59.383		
3,550.00	3,543.11	3,530.50	3,530.43	12.45	12.17	168.94	12.89	1,342.35	1,447.66	1,423.10	24.56	58.951		
3,600.00	3,592.51	3,571.12	3,571.05	12.63	12.31	168.97	13.35	1,342.96	1,455.96	1,431.09	24.87	58.553		
3,650.00	3,641.92	3,610.98	3,610.89	12.81	12.45	168.99	13.88	1,343.80	1,464.56	1,439.39	25.17	58.186		
3,700.00	3,691.32	3,649.24	3,649.13	12.99	12.58	169.02	14.36	1,344.88	1,473.51	1,448.05	25.47	57.859		
3,750.00	3,740.72	3,687.38	3,687.25	13.17	12.71	169.04	14.78	1,346.24	1,482.83	1,457.07	25.76	57.557		
3,800.00	3,790.13	3,724.93	3,724.76	13.35	12.83	169.07	15.15	1,347.87	1,492.52	1,466.47	26.05	57.286 SF		

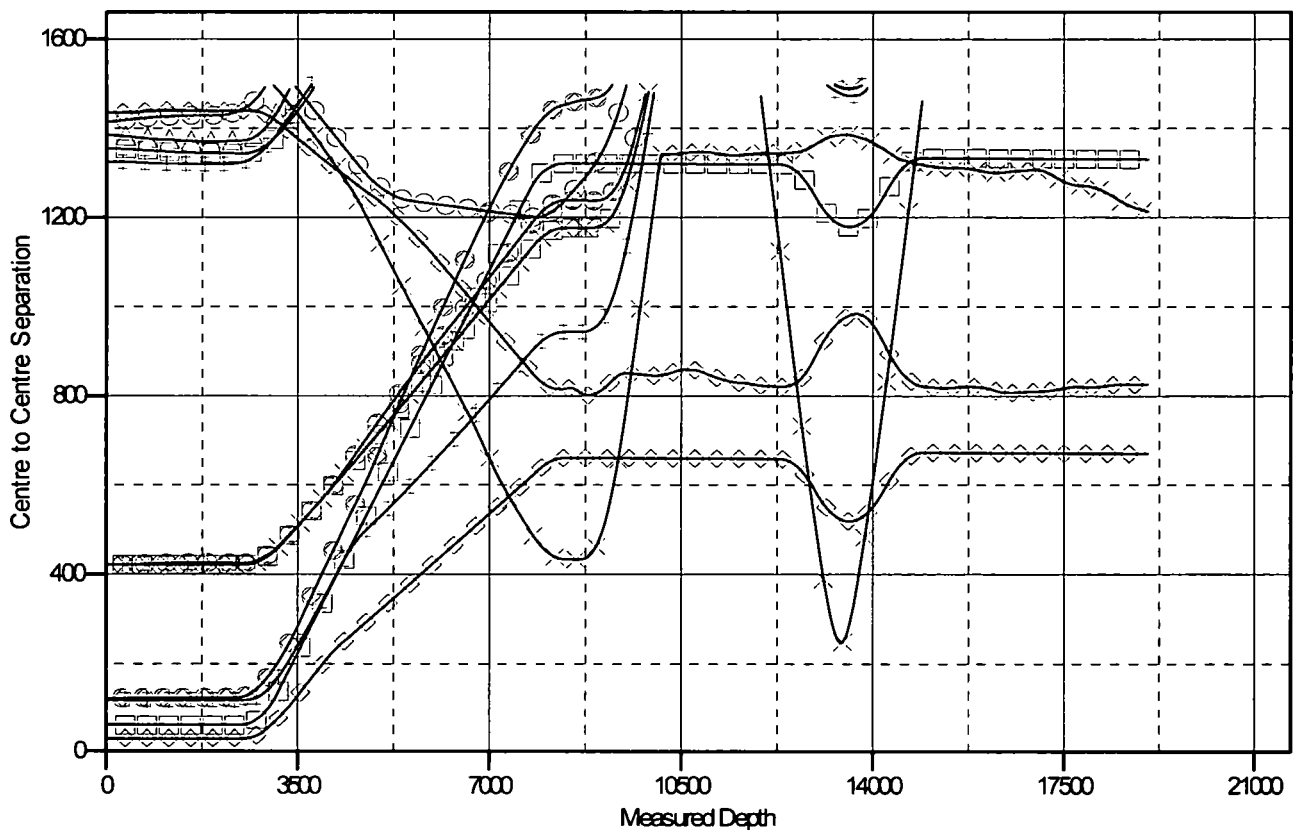
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3500.60ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 1-12 Fed 524H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.32°

Ladder Plot



LEGEND

	Tomb Raider 1-12 Fed 62H, Wellbore #1, Wellbore #1 V0		Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 1 V0		Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0
	Tomb Raider 1-12 Fed Com 234H, Wellbore #1, Wellbore #1 V0		Tomb Raider 1-12 Fed 714H, Original Hole, Actual V0		Tomb Raider 1-12 Fed Com 718H, Wellbore #1, Wellbore #1 V0
	Tomb Raider 1 Fed 1H, Original, Plan 2 V0		Tomb Raider 1-12 Fed 714H, Original Hole, NTL V0		Tomb Raider 1 Fed 1H, Original, Plan 1 v2 V0
	Tomb Raider 1 Fed 1H, Original, T&D V0		Barclay Fed #1 (P&A), Wellbore #1, Wellbore #1 V0		Tomb Raider 1-12 Fed 614H, Wellbore #1, Permit 1 V0
	Tomb Raider 1 Fed 1H, Original, PTL V0		Tomb Raider 1-12 Fed Com 528H, Wellbore #1, Wellbore #1 V0		Tomb Raider 1-12 Fed 61H, Original Hole, P1v2 V0
	Tomb Raider 1 Fed 1H, Original, Actual V0		Tomb Raider 1-12 Fed 514H, Wellbore #1, Permit Plan 1 V0		Tomb Raider 1-12 Fed 334H, Wellbore #1, Wellbore #1 V0

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well Tomb Raider 1-12 Fed 524H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3500.60ft
Reference Site:	Sec 01-T23S-R31E	MD Reference:	RKB @ 3500.60ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 1-12 Fed 524H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3500.60ft

Offset Depths are relative to Offset Datum

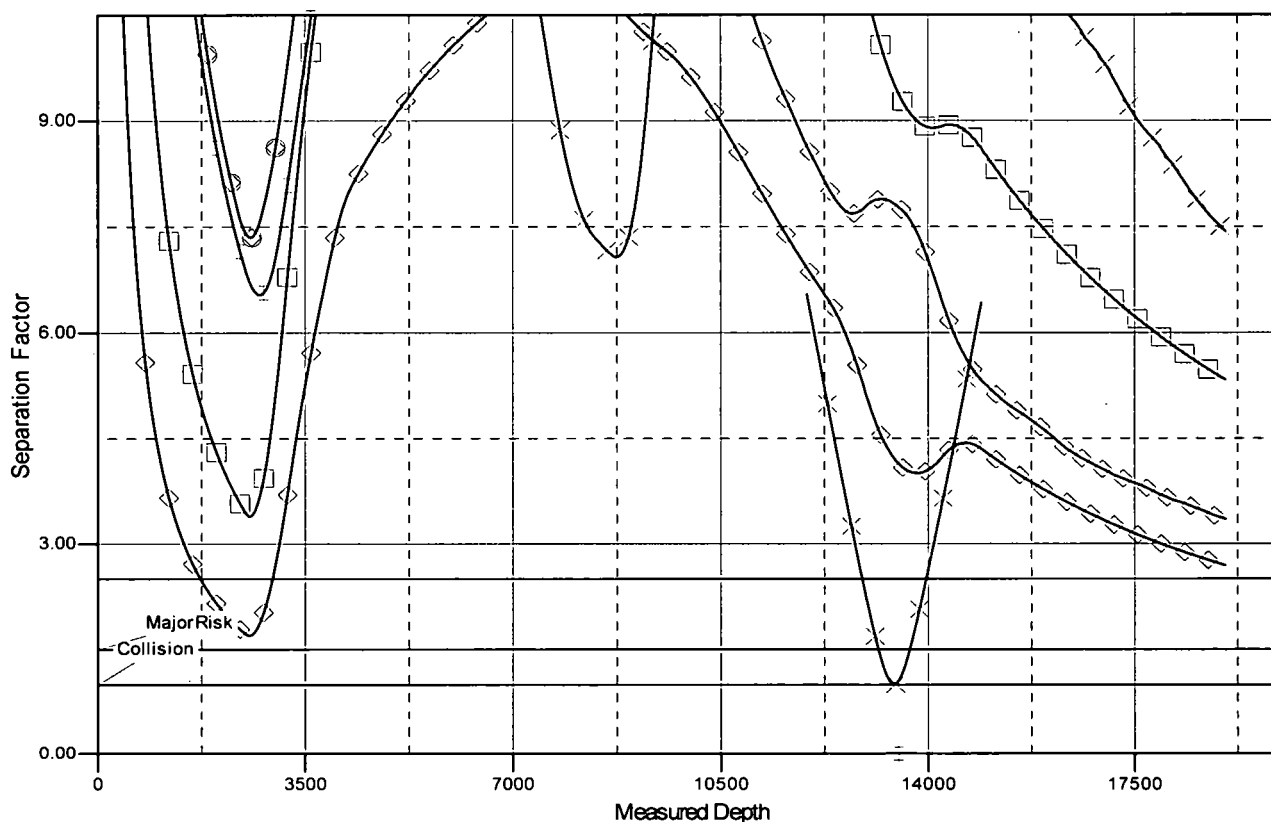
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 1-12 Fed 524H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.32°

Separation Factor Plot



LEGEND

Tomb Raider 1-12 Fed 62H, Wellbore #1, Wellbore #1 V0	Tomb Raider 1-12 Fed 525H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1-12 Fed Com 234H, Wellbore #1, Wellbore #1 V0	Tomb Raider 1-12 Fed 714H, Original H ole, Actual V0	Tomb Raider 1-12 Fed Com 718H, Wellbore #1, Wellbore #1 V0
Tomb Raider 1 Fed 1H, Original, Plan 2 V0	Tomb Raider 1-12 Fed 714H, Original H ole, NTL V0	Tomb Raider 1 Fed 1H, Original, Plan1 v2 V0
Tomb Raider 1 Fed 1H, Original, T&D V0	Barclay Fed #1 (P&A), Wellbore #1, Wellbore #1 V0	Tomb Raider 1-12 Fed 614H, Wellbore #1, Permit 1 V0
Tomb Raider 1 Fed 1H, Original, PTL V0	Tomb Raider 1-12 Fed Com 528H, Wellbore #1, Wellbore #1 V0	Tomb Raider 1-12 Fed 614H, Original H ole, P1v2 V0
Tomb Raider 1 Fed 1H, Original, Actual V0	Tomb Raider 1-12 Fed 514H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 1-12 Fed 334H, Wellbore #1, Wellbore #1 V0

Devon Energy

WELL DETAILS: Tomb Raider 1-12 Fed 524H

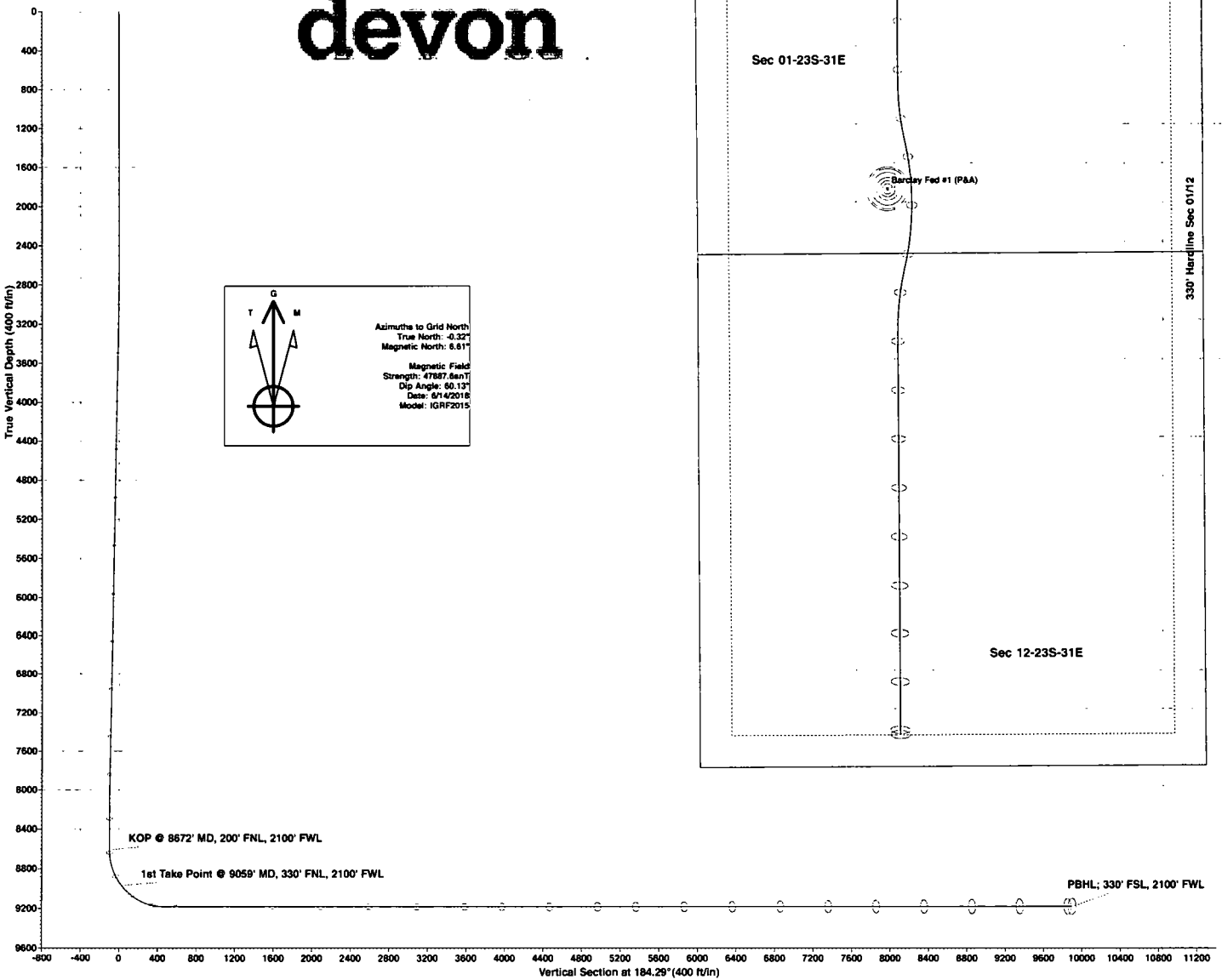
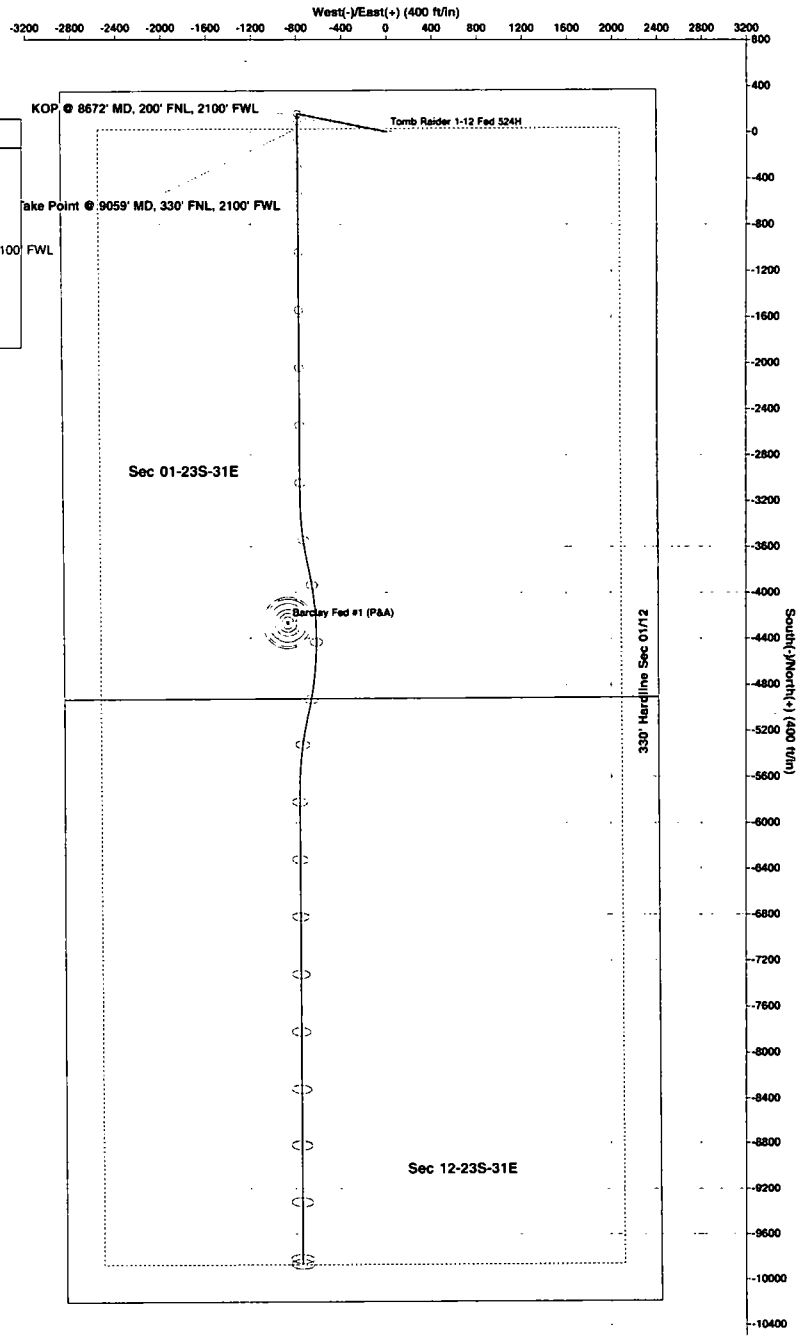
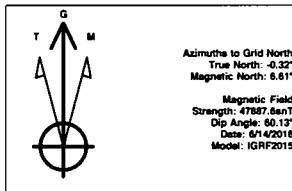
RKB @ 3500' 60ft
3475.60

Northing 487848.53 Easting 727453.32 Latitude 32.339728 Longitude -103.730709

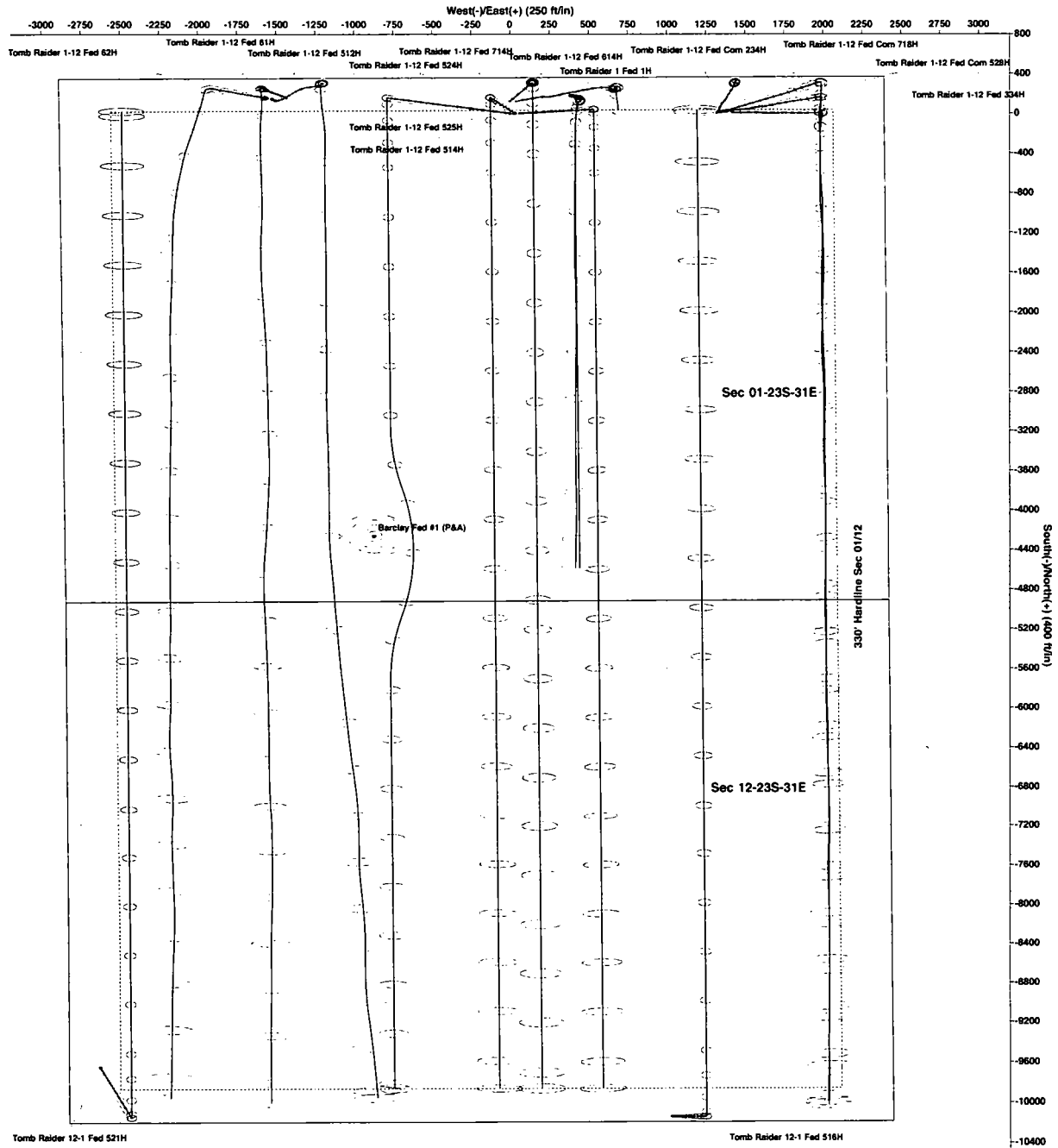
SECTION DETAILS Permit Plan 2

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	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	
3208.67	8.86	281.23	3205.85	10.65	-53.63	1.25	-6.61	
7769.01	8.86	281.23	7711.79	147.41	-742.44	0.00	-91.47	
8359.57	0.00	0.00	8300.00	156.29	-787.13	1.50	-96.98	
8671.61	0.00	0.00	8612.04	156.29	-787.13	0.00	-96.98	KOP @ 8672' MD, 200' FNL, 2100' FWL
9571.61	90.00	179.64	9185.00	-416.66	-783.52	10.00	474.10	
12306.51	90.00	179.64	9185.00	-3151.51	-766.31	0.00	3200.00	
12938.48	90.00	167.00	9185.00	-3777.92	-692.94	2.00	3819.16	
14238.48	90.00	193.00	9185.00	-5066.79	-692.94	2.00	5104.43	
14906.49	90.00	179.64	9185.00	-5729.23	-766.31	2.00	5770.50	
19047.07	90.00	179.64	9185.00	-9869.74	-740.29	0.00	9897.46	PBHL: 330' FSL, 2100' FWL

devon



Devon Energy





Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

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

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

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

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

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

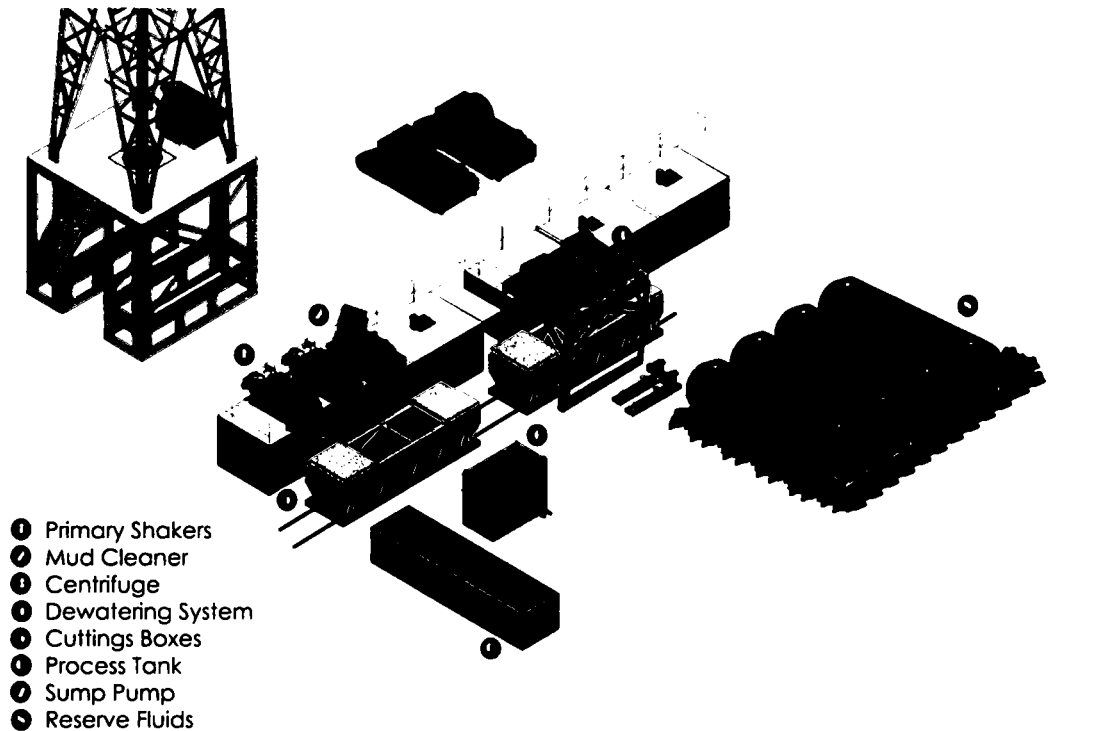
II. Operations and Maintenance Plan

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

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



Closed Loop Schematic



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

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

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

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

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

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

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

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

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

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

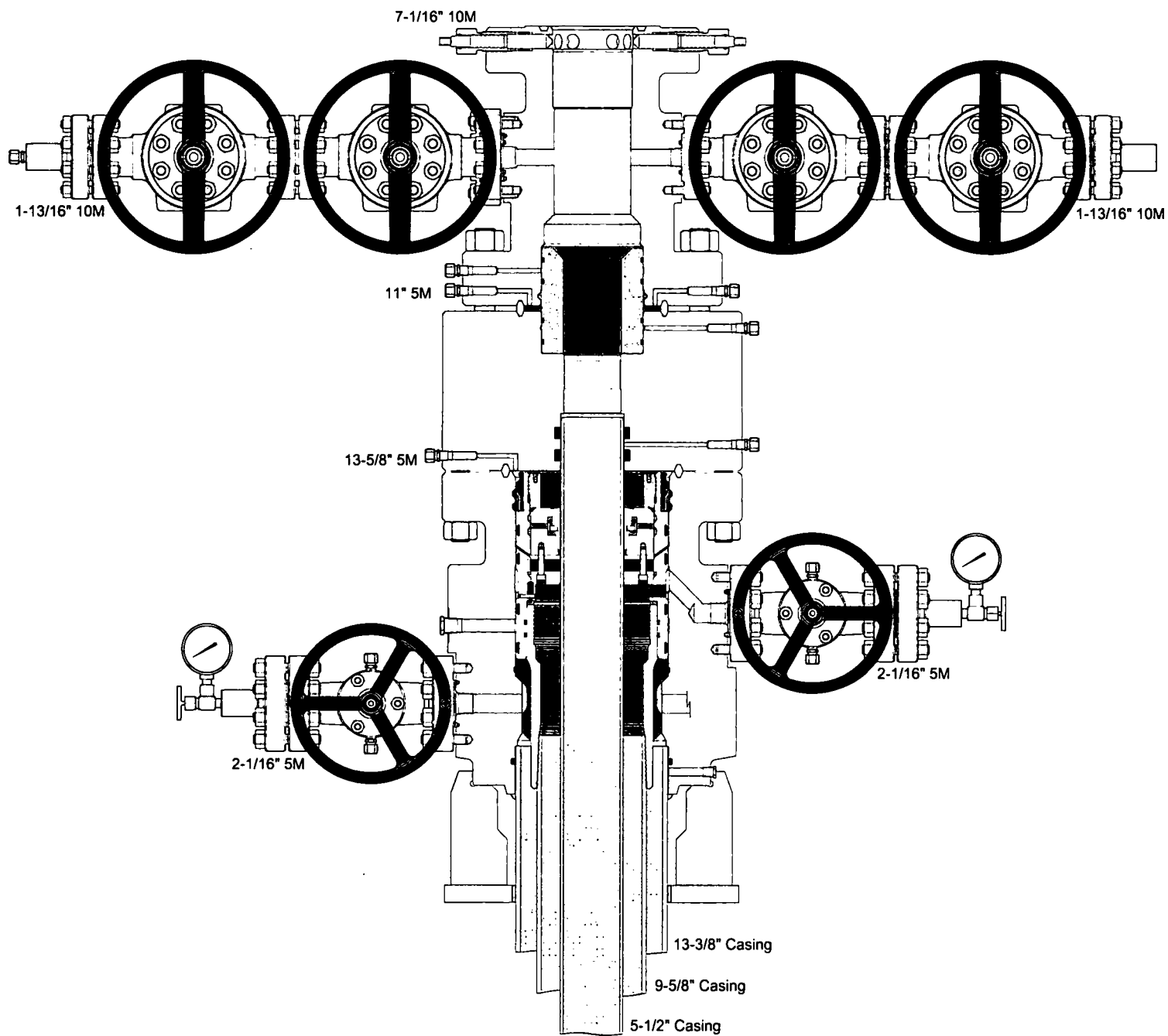
dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

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

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

III. Closure Plan

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



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

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

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

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

After running the 9-5/8" intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead.

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

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

Devon Energy, Tomb Raider 1-12 Fed 524H

1. Geologic Formations

TVD of target	9185	Pilot hole depth	N/A
MD at TD:	19047	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	697		
Salado	1156		
Delaware	4500		
L.Brushy	8074		
1st BSPG Lime	8352		
Leonard A	8490		
Leonard B	8855		
Landing Pt	9185		

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

Devon Energy, Tomb Raider 1-12 Fed 524H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (PPF)	Grade	Conn.
	From	To				
17.5"	0	750'	13.375"	48	H-40	STC
12.25"	0	6,000'	9.625"	40	J-55	BTC
8.75"	0	TD	5.5"	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing. No losses are expected in subsequent hole section.
- Int casing shoe will be selected based on drilling data, gamma, and flows experienced while drilling. Setting depth will be revised accordingly if needed.
- A variance is requested to waive the centralizer requirement for the intermediate and production casing strings if drilling conditions dictate

Devon Energy, Tomb Raider 1-12 Fed 524H

	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 rd 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 nd 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, Tomb Raider 1-12 Fed 524H

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	H ₂ O (gal/sk)	Yld (ft ³ /sack)	Slurry Description
Surface	786	Surf	13.2	6.33	1.33	Lead: Class C Cement + additives
Int	1290	Surf	9	20.6	1.94	Lead: Class C Cement + additives
	190	500' above shoe	13.2	6.42	1.33	Tail: Class H / C + additives
Production	349	Surf	9	20.6	1.94	Lead: Class H / C + additives
	1807	KOP	13.2	5.31	1.6	Tail: Class H / C + additives

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

Casing String	% Excess
Surface	100%
Intermediate	50%
Production	10%

Devon Energy, Tomb Raider 1-12 Fed 524H

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	3M	Annular	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	3M	Annular (3M)	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

Devon Energy, Tomb Raider 1-12 Fed 524H

5. Mud Program

6. Depth		Type	Weight (ppg)	Vis	Water Loss
From	To				
0	750'	FW Gel	8.5 – 9.0	28-34	N/C
750'	6000'	WBM	10 – 10.5	28-34	N/C
6,000'	TD	WBM	8.5 – 9.0	28-34	N/C

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

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

6. Logging and Testing Procedures

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	Production casing
X Mud log	KOP to TD

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4299 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S 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	H ₂ S is present
Y	H ₂ S Plan attached

Devon Energy, Tomb Raider 1-12 Fed 524H

8. Other facets of operation

Is this a walking operation? Potentially

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

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

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 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.
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

 x Directional Plan

 Other, describe



Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

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

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

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

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

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



RIG 212



QUALITY DOCUMENT

**PHOENIX RUBBER
INDUSTRIAL LTD.**

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

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

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871	
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH: 11,43 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature See attachment. (1 page)					
↑ 10 mm = 10 Min. → 10 mm = 25 MPa					
COUPLINGS					
Type	Serial N°		Quality	Heat N°	
3" coupling with 4 1/16" Flange end	720 719		AISI 4130 AISI 4130	C7626 47357	
API Spec 16 C Temperature rate: "B"					
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
Date:	Inspector		Quality Control		
29. April. 2002.			PHOENIX RUBBER Industrial Ltd. Hose Inspection and VESSEL TEST DEPT. PHOENIX RUBBER Q.C.		

14094-65

40920-0-00015 N800C

6	CN1	+0.000	PC	14:00			
	RDL	+0.000	PC	14:00			
	BL	+0.000	PC	14:00			
7	CN1	+0.000	PC	13:43	40	60	80
	RDL	+0.000	PC	13:43			
	BL	+0.000	PC	13:43			
8	CN1	+0.000	PC	13:28			
	RDL	+0.000	PC	13:28			
	BL	+0.000	PC	13:28			
5	CN1	+0.000	PC	13:00			
	RDL	+0.000	PC	13:00			
	BL	+0.000	PC	13:00			
4	CN1	+0.000	PC	13:00			
	RDL	+0.000	PC	13:00			
	BL	+0.000	PC	13:00			
3	CN1	+0.000	PC	12:28			
	RDL	+0.000	PC	12:28			
	BL	+0.000	PC	12:28			
2	CN1	+0.000	PC	12:28			
	RDL	+0.000	PC	12:28			
	BL	+0.000	PC	12:28			

[Signature]
PHOENIX RUBBER
 Industrial Ltd.
 Hose Inspection and
 Certification Dept.

VERIFIED TRUE CO.
 PHOENIX RUBBER CO.



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

SUPO Data Report

11/01/2018

APD ID: 10400031998

Submission Date: 07/13/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

TOMB_RAIDER_1_12_FED_524H_EX_ACCESS_20180711111649.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

TOMB_RAIDER_1_12_FED_524H__1Mile_map_20180711111714.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: All flowlines will be buried going to the Tomb Raider 1 CTB 3.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: STIMULATION

Water source type: RECYCLED

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: OTHER

Source land ownership: STATE

Water source transport method: PIPELINE

Source transportation land ownership: STATE

Water source volume (barrels): 270000

Source volume (acre-feet): 34.801136

Source volume (gal): 11340000

Water source and transportation map:

Tomb_Raider_1_12_Fed_524H_WATER_MAP_20180711111745.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

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

Construction Materials source location attachment:

Caliche_Map__Aleutian__Belloq__Tomb_Raider_20180711111927.pdf

Section 7 - Methods for Handling Waste

Waste type: COMPLETIONS/STIMULATION

Waste content description: Flow back water during completion operations.

Amount of waste: 3000 barrels

Waste disposal frequency : One Time Only

Safe containment description: N/A

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Various disposal locations in Lea and Eddy counties.

Waste type: PRODUCED WATER

Waste content description: Produced water during flowback operations. This amount is a daily average during flowback (BWPB).

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Various disposal locations in Lea and Eddy counties.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Waste type: FLOWBACK

Waste content description: Produced water during flowback operations. This amount is a daily average during flowback (BWPD).

Amount of waste: 1500 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Various disposal locations in Lea and Eddy counties.

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1954 barrels

Waste disposal frequency : Daily

Safe containment description: n/a

Safe containmant attachment:

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

Disposal type description:

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

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Description of cuttings location

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Tomb_Raider_1_12_Fed_524H_RIGLAYOUT_20180711112304.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: No New Surface Disturbance **Multiple Well Pad Name:** TODD-APACHE 1-1

Multiple Well Pad Number: 2

Recontouring attachment:

TOMB_RAIDER_1_12_FED_524H_RECLAMATION_20180711112337.pdf

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

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Well pad proposed disturbance (acres): 0	Well pad interim reclamation (acres):	Well pad long term disturbance (acres):
Road proposed disturbance (acres): 0	Road interim reclamation (acres):	Road long term disturbance (acres):
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 0	Pipeline interim reclamation (acres):	Pipeline long term disturbance (acres):
Other proposed disturbance (acres): 0	Other interim reclamation (acres):	Other long term disturbance (acres):
Total proposed disturbance: 0	Total interim reclamation:	Total long term disturbance:

Disturbance Comments:

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

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

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

Existing Vegetation at the well pad: Shinnery, yucca, grasses and mesquite.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at other disturbances attachment:

Non native seed used?

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project?

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

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

Weed treatment plan attachment:

Monitoring plan description: Monitor as needed.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

Section 11 - Surface Ownership

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 1-12 FED

Well Number: 524H

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

Todd_Apache_1_1_CTB_3_Plat_20180711112439.pdf

Todd_Apache_1_1_Wellpad_2_Electric_20180711112442.PDF

Todd_Apache_1_1_Wellpad_2_to_CTB_3_Pod_2_Flowlines_20180711112444.pdf

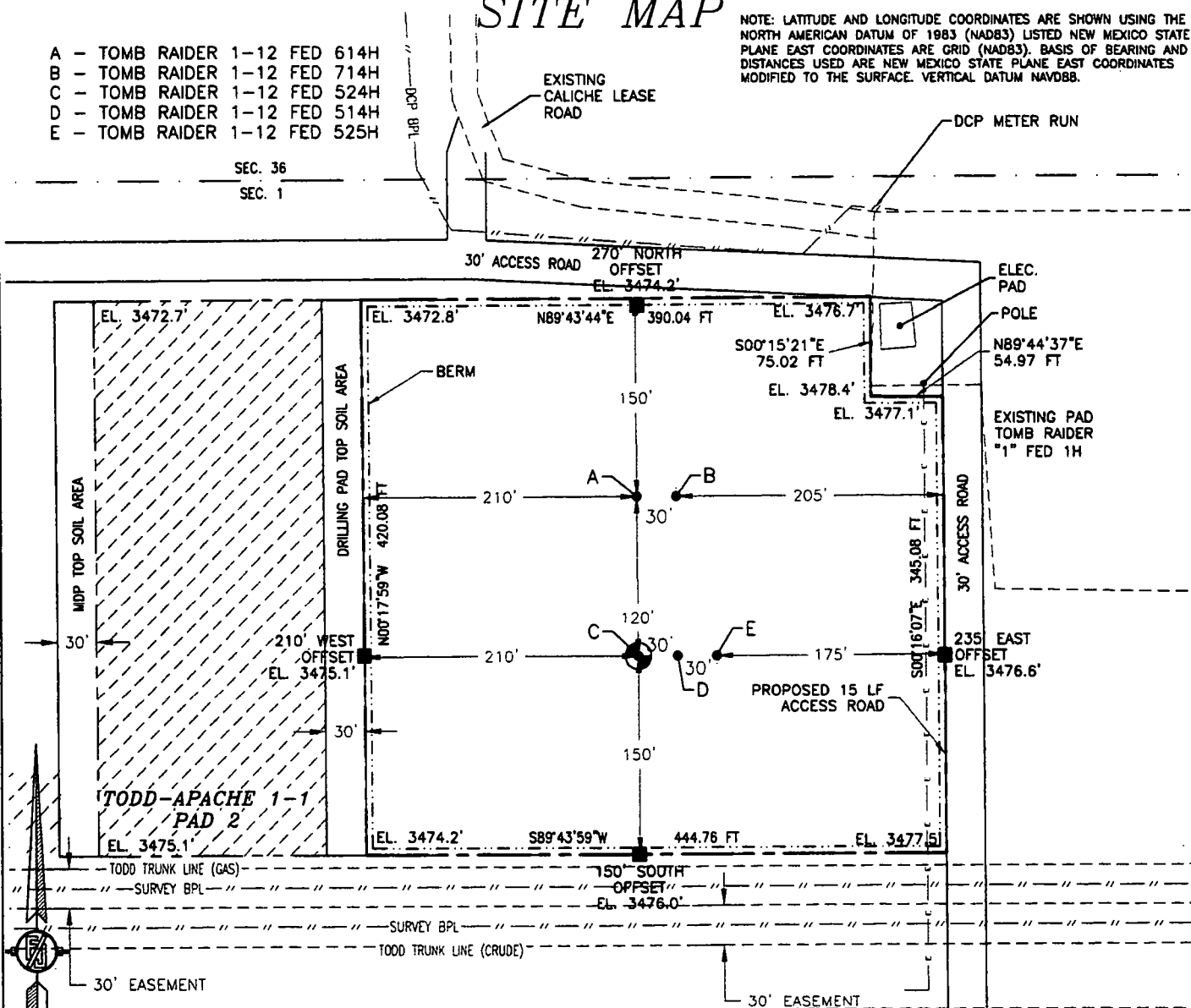
Pay.gov_Receipt_20180713102711.pdf

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

SITE MAP

- A - TOMB RAIDER 1-12 FED 614H
- B - TOMB RAIDER 1-12 FED 714H
- C - TOMB RAIDER 1-12 FED 524H
- D - TOMB RAIDER 1-12 FED 514H
- E - TOMB RAIDER 1-12 FED 525H

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



TOMB RAIDER 1-12 FED 524H

ELEV. = 3475.6'

4.196± ACRES

LAT. = 32.3397277°N (NAD83)

LONG. = 103.7307088°W

NMSP EAST (FT)

N = 487848.53

E = 727453.32

012 60 120 240
SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 6.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST 0.4 OF A MILE, BEND RIGHT AND GO SOUTH 815', BEND LEFT AND GO SOUTHEAST 944', TURN RIGHT AND GO SOUTH 583' TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS SOUTH 80', THEN EAST 379', THEN SOUTH 348', THEN WEST 15' TO THE SOUTHEAST PAD CORNER.

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 524H

LOCATED 360 FT. FROM THE NORTH LINE

AND 2395 FT. FROM THE EAST LINE OF

SECTION 1, TOWNSHIP 23 SOUTH,

RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6215A

MADRON SURVEYING, INC.

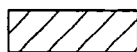
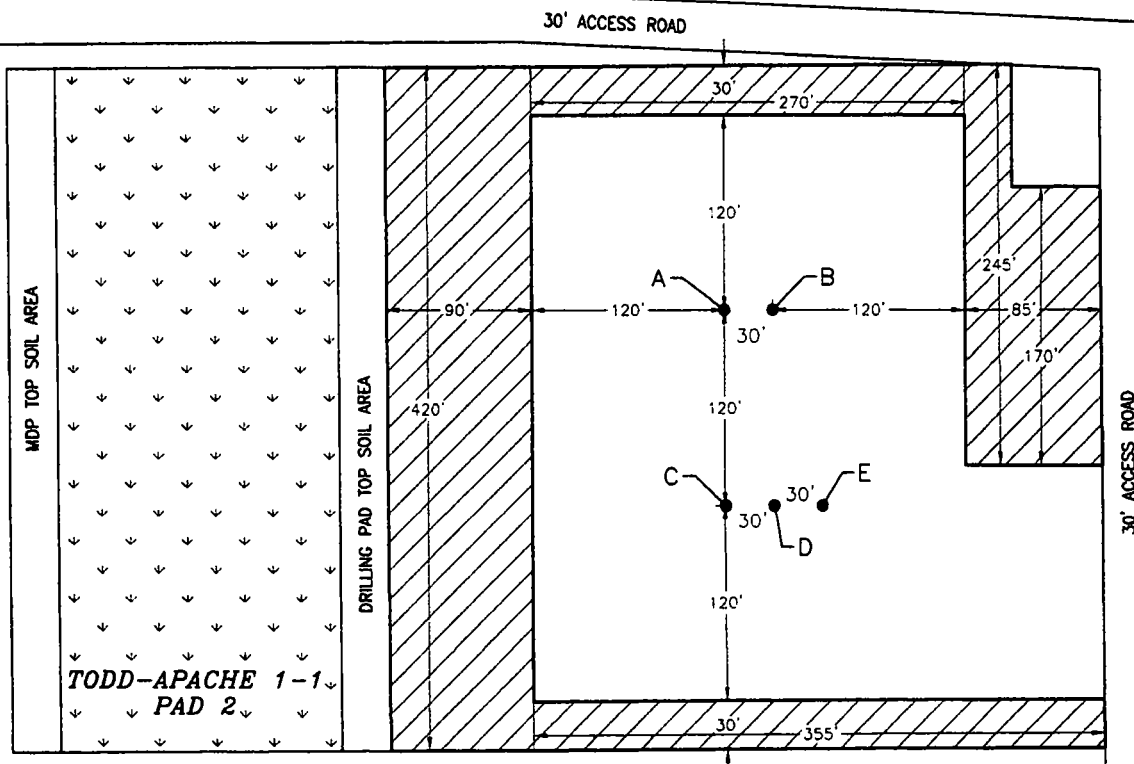
301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

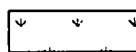
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN

- A - TOMB RAIDER 1-12 FED 614H
- B - TOMB RAIDER 1-12 FED 714H
- C - TOMB RAIDER 1-12 FED 524H
- D - TOMB RAIDER 1-12 FED 514H
- E - TOMB RAIDER 1-12 FED 525H

SEC. 36
SEC. 1



DENOTES INTERIM PAD
RECLAMATION AREA



DENOTES GRADING SITE
RECLAMATION AREA

012 60 120 240
SCALE 1" = 120'

1.680± ACRES INTERIM PAD RECLAMATION AREA
1.687± ACRES GRADING SITE RECLAMATION AREA
2.807± ACRES NON-RECLAIMED AREA
6.174± ACRES TODD-APACHE 1-1 PAD 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 524H
LOCATED 360 FT. FROM THE NORTH LINE
AND 2395 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

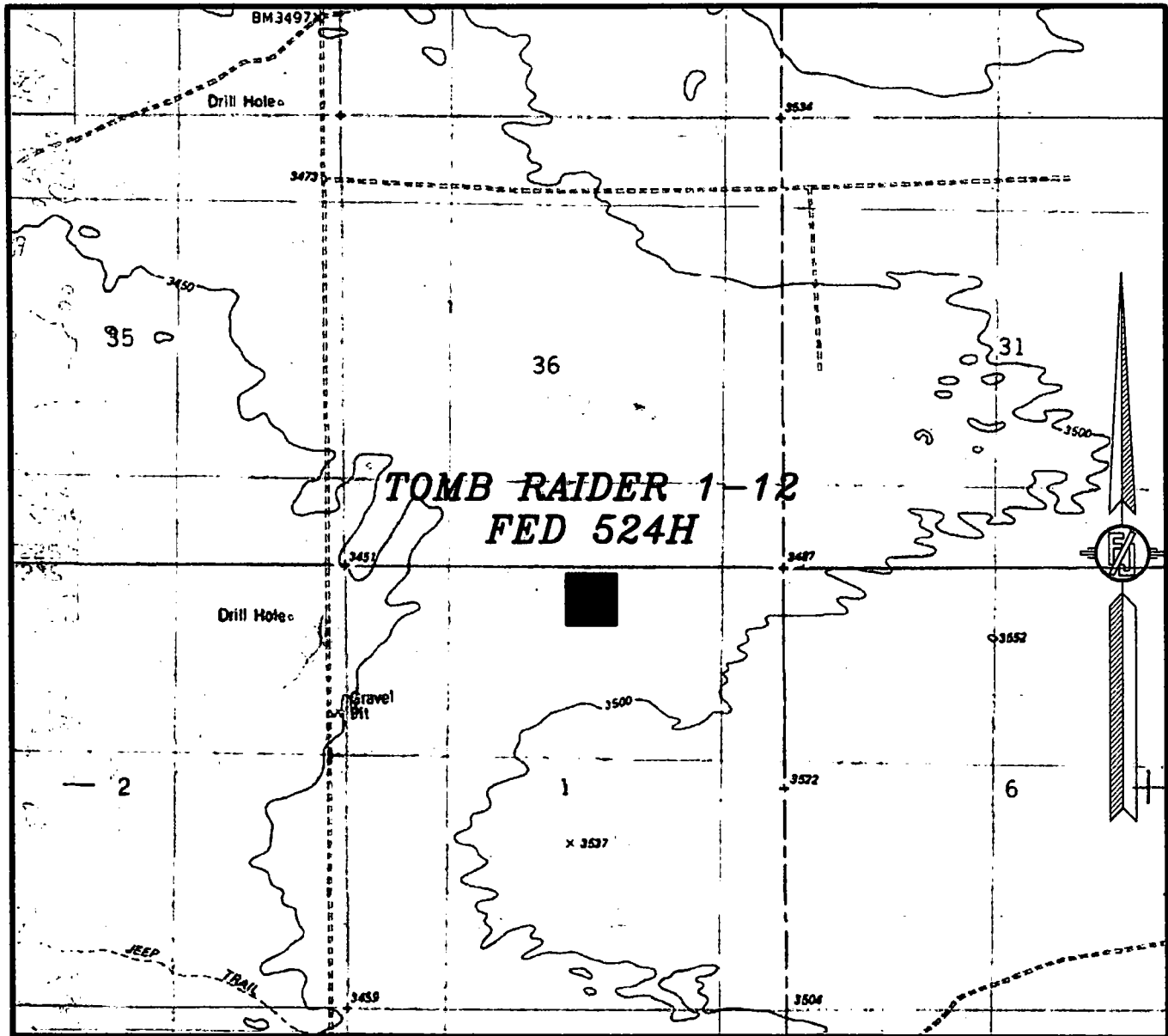
SURVEY NO. 6215A

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
BOOTLEG RIDGE

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 524H

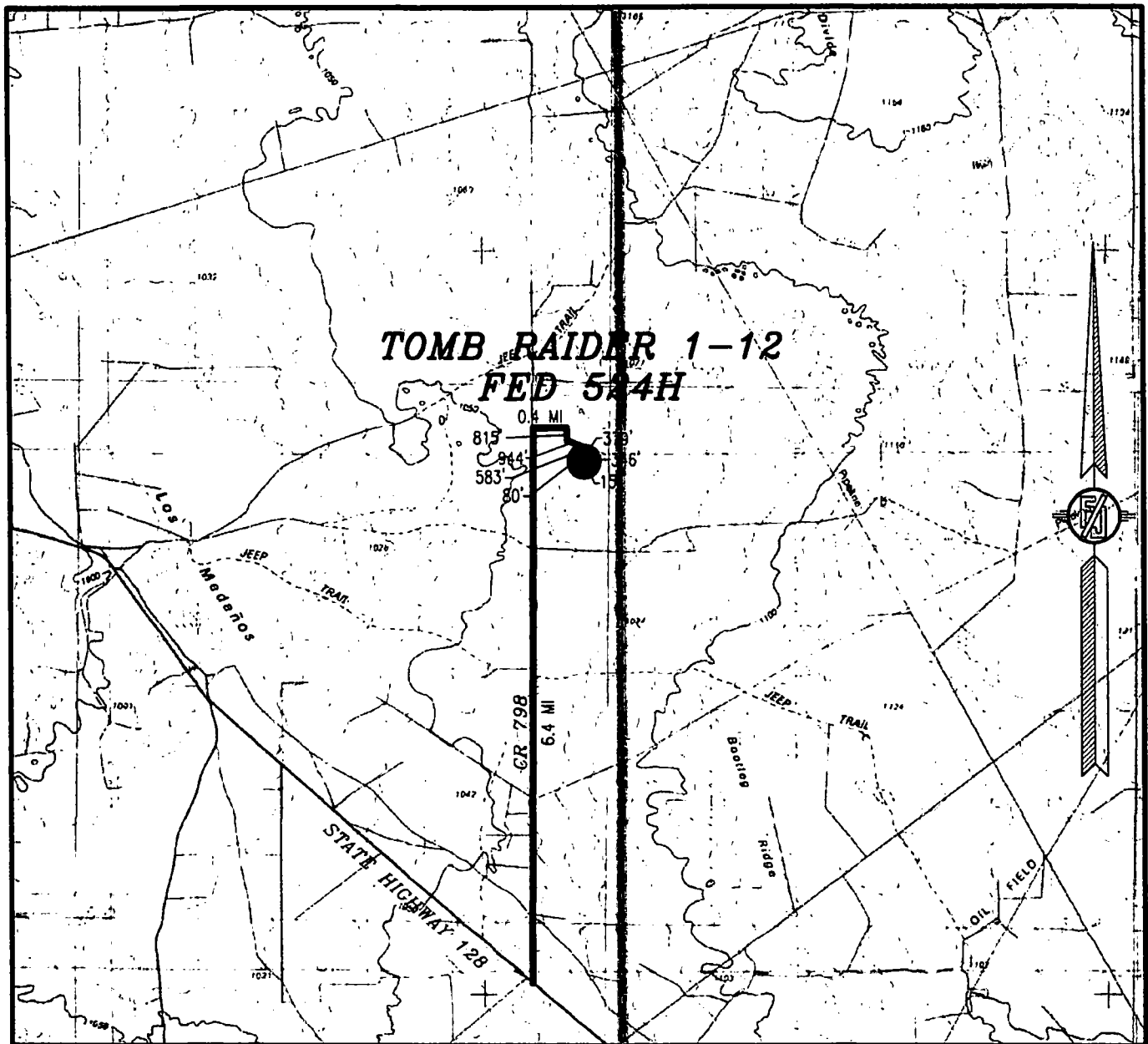
LOCATED 360 FT. FROM THE NORTH LINE
AND 2395 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6215A

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

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 524H

LOCATED 360 FT. FROM THE NORTH LINE
AND 2395 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 788 (RED ROAD) GO NORTH ON CR 788 6.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST 0.4 OF A MILE, BEND RIGHT AND GO SOUTH 815', BEND LEFT AND GO SOUTHEAST 944', TURN RIGHT AND GO SOUTH 583' TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS SOUTH 80', THEN EAST 379', THEN SOUTH 346', THEN WEST 15' TO THE SOUTHEAST PAD CORNER.

MAY 21, 2018

SURVEY NO. 6215A

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

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO

TOMB RAIDER 1-12
FED 524H

2

1

6

11

12

7

□ BOTTOM OF LAND

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEBRUARY 2017

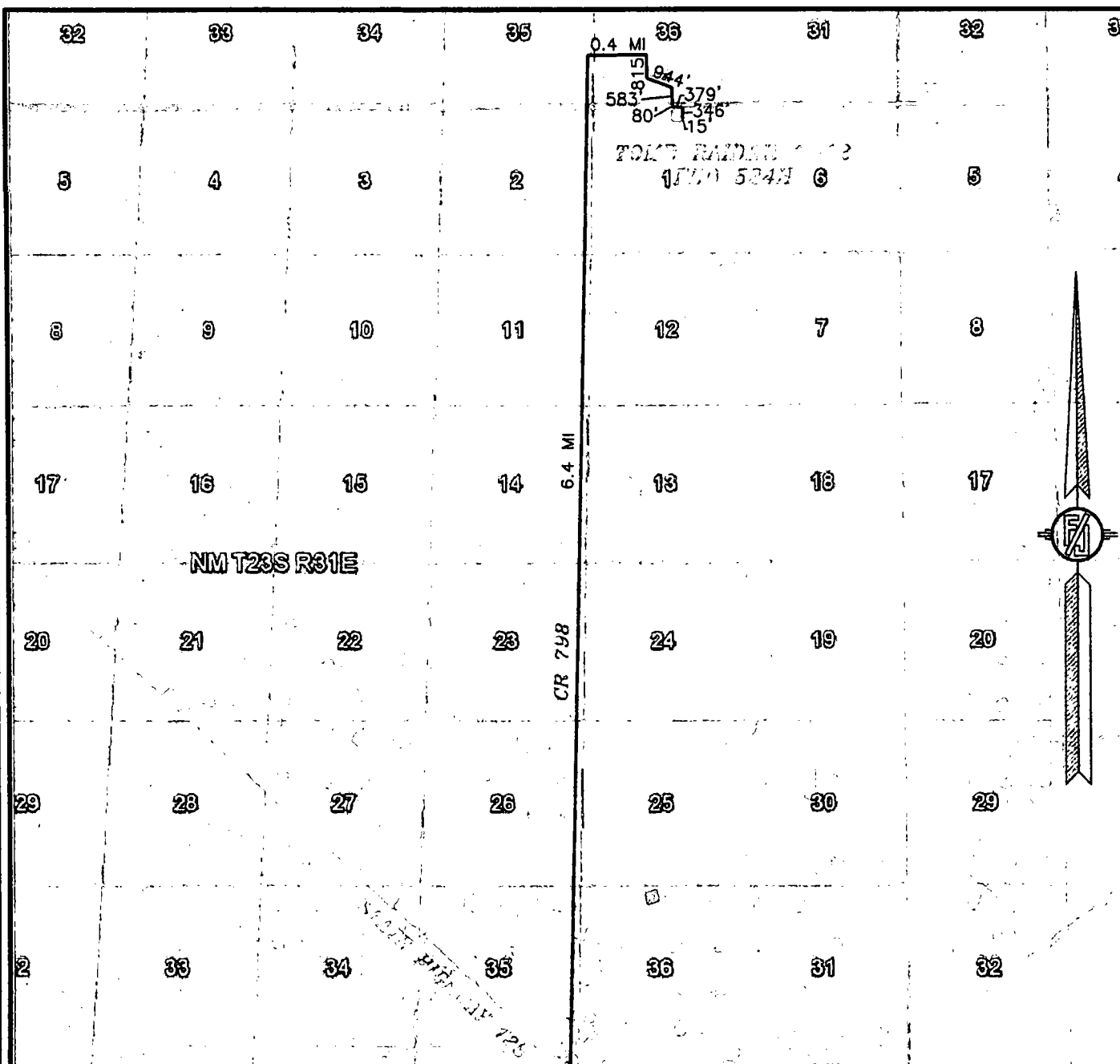
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 524H
LOCATED 360 FT. FROM THE NORTH LINE
AND 2395 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6215A

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

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEBRUARY 2017

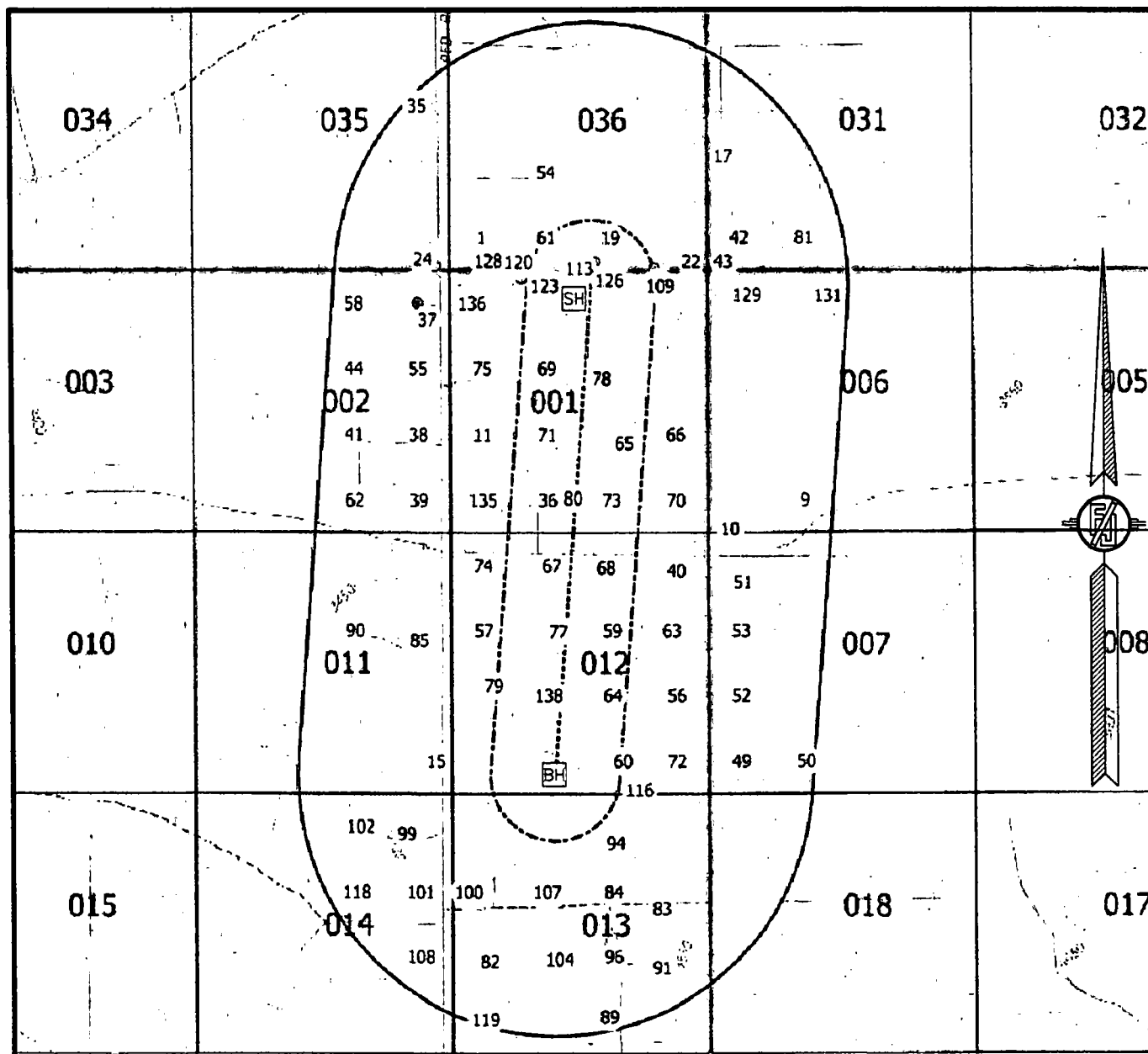
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 1-12 FED 524H
LOCATED 360 FT. FROM THE NORTH LINE
AND 2395 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6215A

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

1-MILE MAP



NOT TO SCALE

WELL DATA FROM NMOCD GIS - 5/17/18

[SH] SURFACE LOCATION

[BH] BOTTOM OF HOLE

[XX] WELLS WITHIN 1 MILE

----- WELL PATH

----- 1/4 MILE BOUNDARY

----- 1-MILE BOUNDARY

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 1-12 FED 524H

LOCATED 360 FT. FROM THE NORTH LINE
AND 2395 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

MAY 21, 2018

SURVEY NO. 6215A

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

PLAN VIEW

- A - TOMB RAIDER 1-12 FED 614H
- B - TOMB RAIDER 1-12 FED 714H
- C - TOMB RAIDER 1-12 FED 524H
- D - TOMB RAIDER 1-12 FED 514H
- E - TOMB RAIDER 1-12 FED 525M

SEC. 36
SEC. 1

30' ACCESS ROAD

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)

ELEC.
PAD
POLE

EXISTING PAD
TOMB RAIDER
"1" FED 1H

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)

ADJUST CUT SLOPE
TO REMAIN OUTSIDE
OF PIPELINE EASEMENT

TODD-APACHE 1-1 PAD 2
PROPOSED PAD
EL. 3474.0'

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
TOMB RAIDER 1-12 FED 524H
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

012 60 120 240
SCALE 1" = 120'

CUT	FILL	NET
9962 CU. YD	8348 CU. YD	1614 CU. YD (CUT)

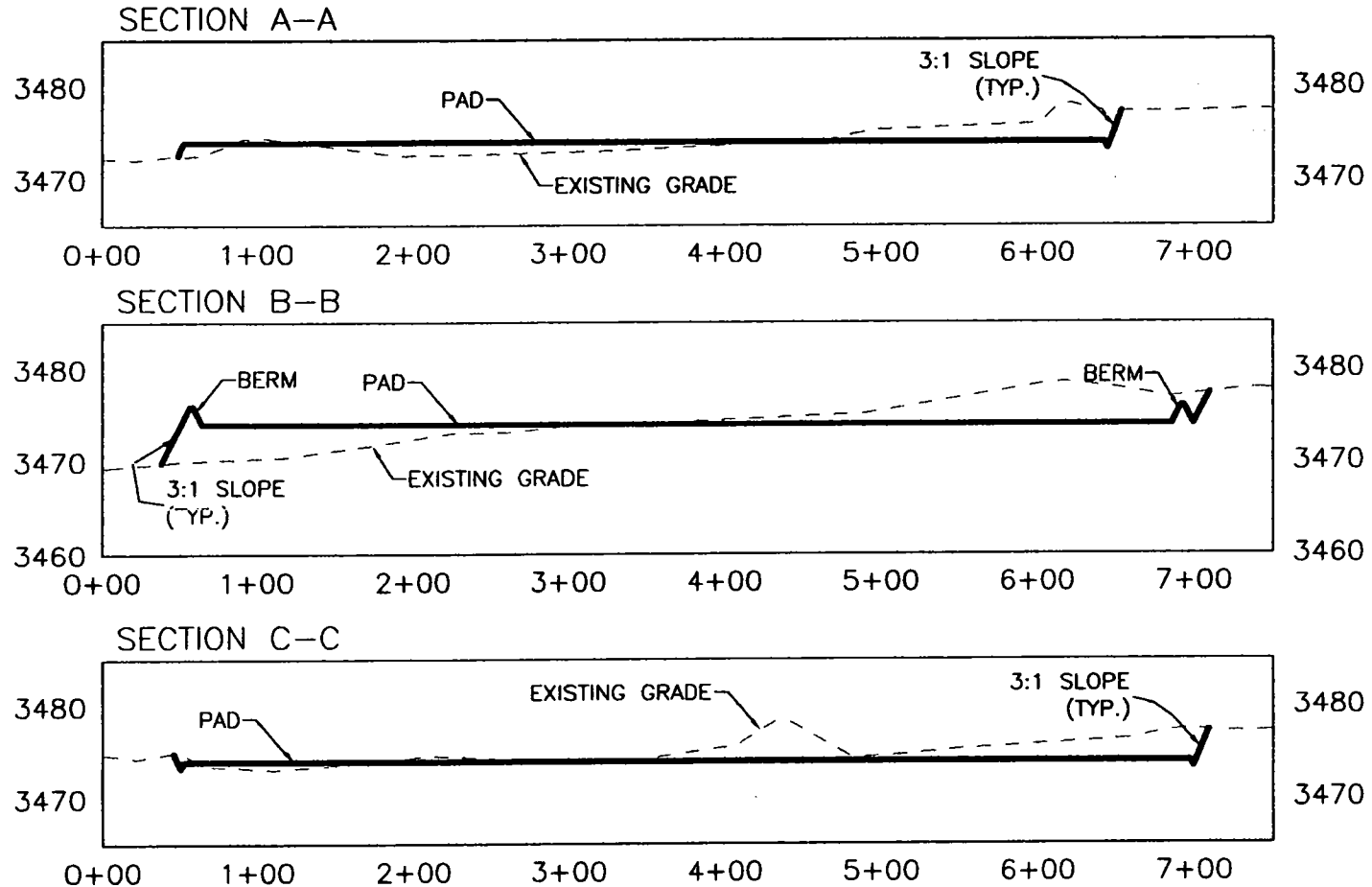
EARTHWORK QUANTITIES ARE ESTIMATED

MAY 21, 2018

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

SHEET 1-2
SURVEY NO. 6215A

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
TOMB RAIDER 1-12 FED 524H
 SECTION 1, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MAY 21, 2018

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

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

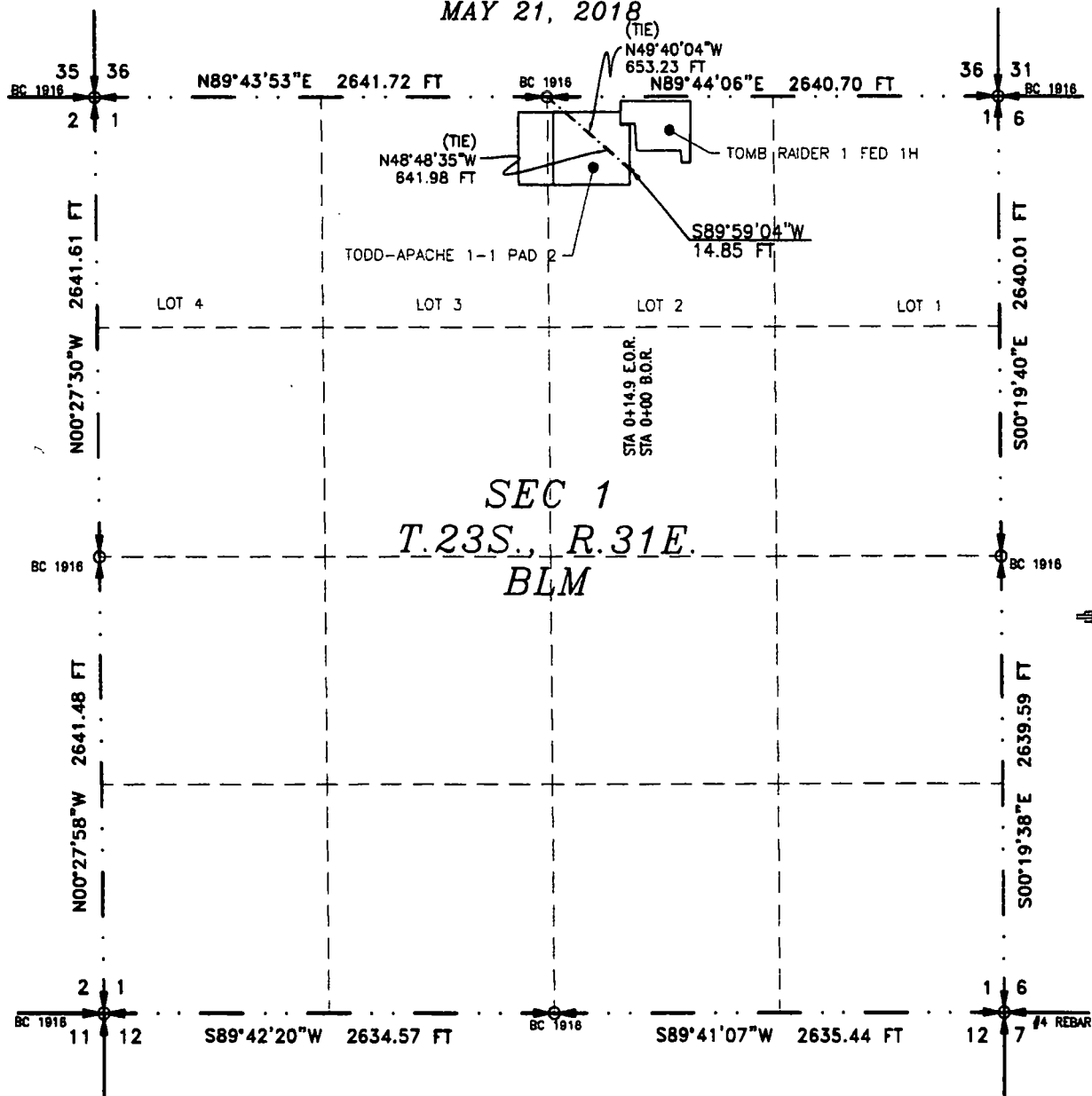
CUT	FILL	NET
9962 CU. YD	8348 CU. YD	1614 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

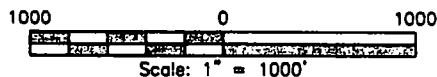
SHEET 2-2
 SURVEY NO. 6215A

ACCESS ROAD PLAT
ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 2
(TOMB RAIDER 1-12 FED 614H, 714H, 524H, 514H, & 525H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 21, 2018



SEE NEXT SHEET (2-2) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 21ST DAY OF MAY 2018

FILIMON F. JARAMILLO, SURVEYOR

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

SURVEY NO. 6215A

ACCESS ROAD PLAT
ACCESS ROAD TO THE TODD-APACHE 1-1 PAD 2
(TOMB RAIDER 1-12 FED 614H, 714H, 524H, 514H, & 525H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 21, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN LOT 2 OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N49°40'04"W A DISTANCE OF 653.23 FEET;

THENCE S89°59'04"W A DISTANCE OF 14.85 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N48°48'35"W, A DISTANCE OF 641.98 FEET;

SAID STRIP OF LAND BEING 14.85 FEET OR 0.90 RODS IN LENGTH, CONTAINING 0.010 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 2 14.85 L.F. 0.90 RODS 0.010 ACRES

GENERAL NOTES

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

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

SHEET: 2-2

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 22ND DAY OF MAY 2018

FILIMON F. JARAMILLO PLS 12797

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

SURVEY NO. 6215A

CARLSBAD, NEW MEXICO

PLAT

One Mile Radius Map

devon

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

USA Contiguous Equidistant Conic
Datum: North American 1983
Created by: FME Server
Map is current as of 6/13/2018



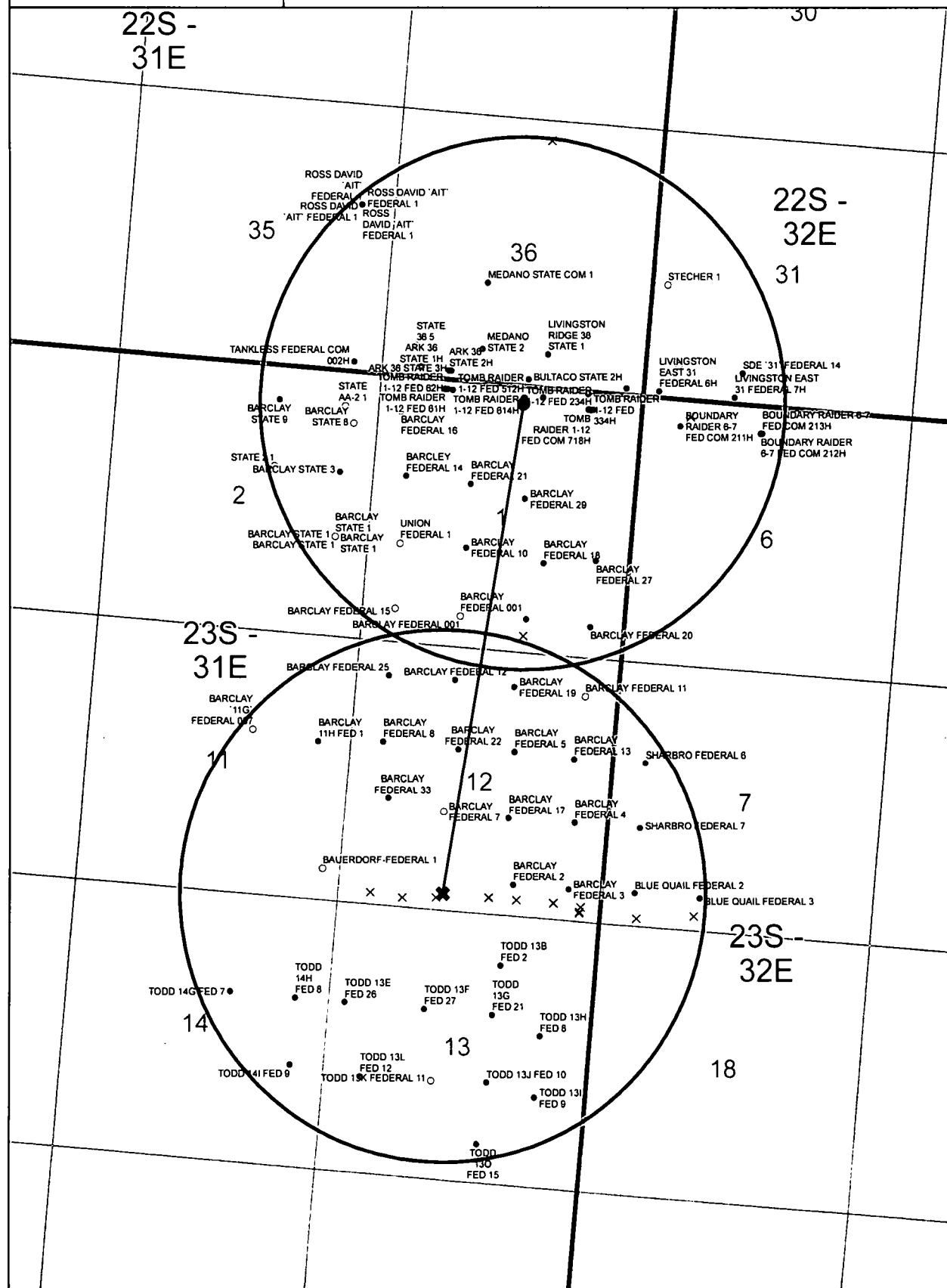
0 0.3 Miles
1 inch = 0.43 miles

TOMB RAIDER 1-12 FED 524H WA017271211

TOMB RAIDER 1-12 FED 614H
Nearest wellbore to SHL: 0 ft.

TOMB RAIDER 1-12 FED 62H
Nearest wellbore to BHL: 134 ft.

- Unknown SHL
- Active SHL
- Inactive SHL
- × BHL



TOMB RAIDER 1-12 FED 514H, TOMB RAIDER 1-12 FED 524H, TOMB RAIDER 1-12 FED 525H

devon

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

WGS_1984_Web_Mercator_Auxiliary_Sphere

Prepared by: User

Map is current as of: 17-May-2018



Miles

0 0.07 0.14 0.28 1:14,228

CROFT FW POND

**TOMB RAIDER 1-12 FED 514H
TOMB RAIDER 1-12 FED 524H
TOMB RAIDER 1-12 FED 525H**

**DEVON 30 DAYS, INSTALL DAYS PRIOR TO COMPLETION.
DEVON WILL CONTACT BLM, IF ADDITIONAL TIME IS NEEDED.
DISTURBANCE: EXISTING
CONTENTS: TREATED WATER & FRESH WATER
TYPE OF PIPE: LAYFLAT
SIZE OF PIPE: 10" OR 12"
LENGTH OF PIPE: 11,185' FOR TW & 8271' FOR FW.**

TODD TW POND

Caliche Map

Todd Area - Aleutian, Belloq, Tomb Raider

devon

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

WGS_1984_Web_Mercator_Auxiliary_Sphere

Prepared by:

Map is current as of: 02-Jul-2018



Miles

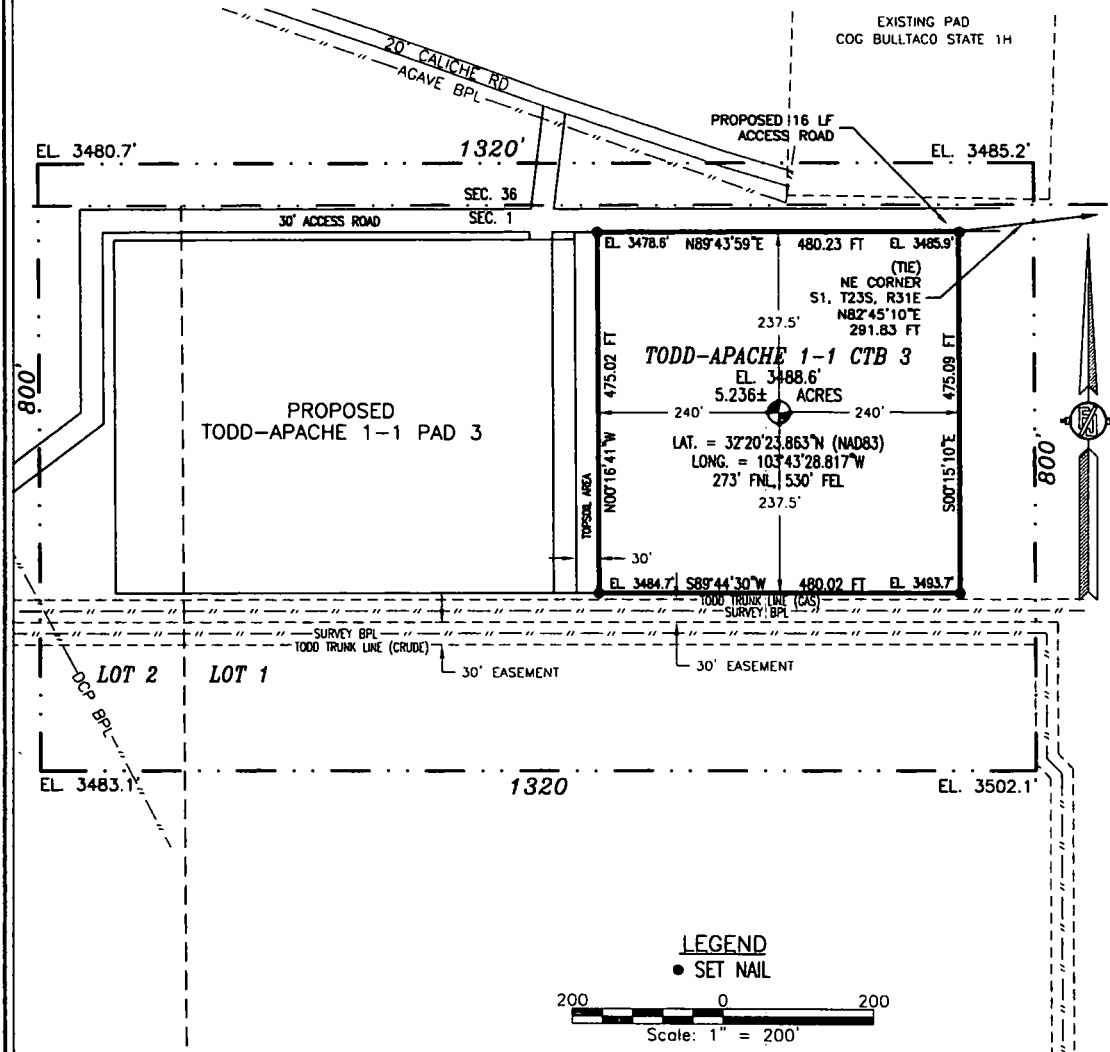
0 0.14 0.28 0.56 1:28,457



TODD-APACHE 1-1 CTB 3 (AA000056005)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN LOT 1 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 12, 2016



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN LOT 1 OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST N.M.P.M., EDDY COUNTY, NEW MEXICO.

BEGINNING AT THE NORTHEAST CORNER OF THE PARCEL, WHENCE THE NORTHEAST CORNER OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N82°45'10"E, A DISTANCE OF 291.83 FEET;
THENCE S00°15'10"E A DISTANCE OF 475.09 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE S89°44'30"W A DISTANCE OF 480.02 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;
THENCE N00°16'41"W A DISTANCE OF 475.02 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE N89°43'59"E A DISTANCE OF 480.23 FEET TO THE NORTHEAST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;
CONTAINING 5.236 ACRES MORE OR LESS.

GENERAL NOTES

- 1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL TANK BATTERY
- 2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83)

DRIVING DIRECTION: FROM STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 8.2 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST 0.4 OF A MILE, BEND RIGHT AND GO SOUTH 0.15 OF A MILE, BEND LEFT AND GO SOUTHEAST 0.5 OF A MILE TO A PROPOSED ROAD SURVEY AND FOLLOW FLAGS SOUTH 158', TURN LEFT GO EAST 541', GO SOUTH 16' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 12th DAY OF JULY 2016.

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

SHEET: 1-3

MADRON SURVEYING, INC.

FILIMON F. JARAMILLO, PROFESSIONAL SURVEYOR NO. 12797

CARLSBAD, NEW MEXICO

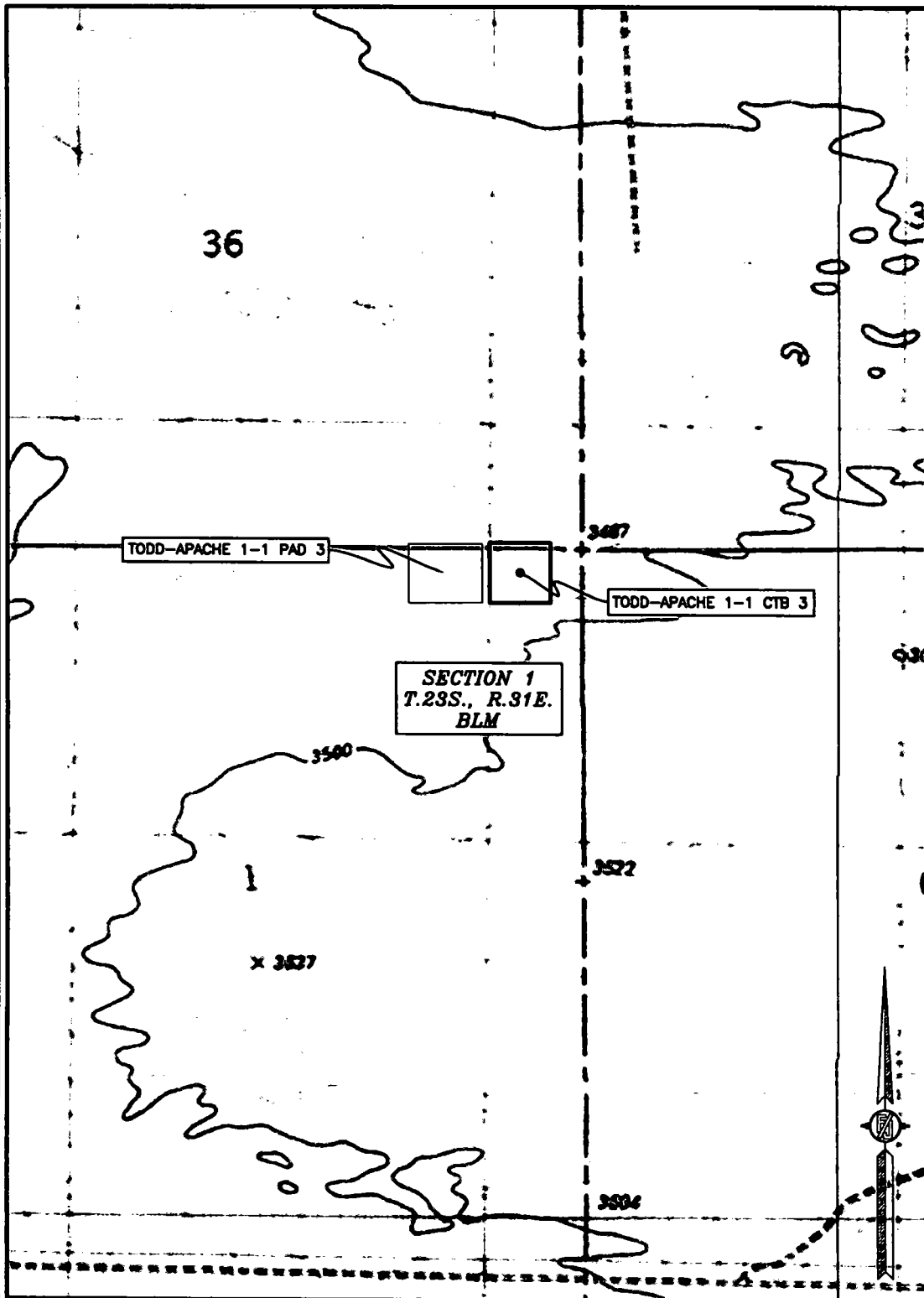
SURVEY NO. 4529B

TODD-APACHE 1-1 CTB 3 (AA000056005)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN LOT 1 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 12, 2016

QUAD MAP



SHEET: 2-3

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

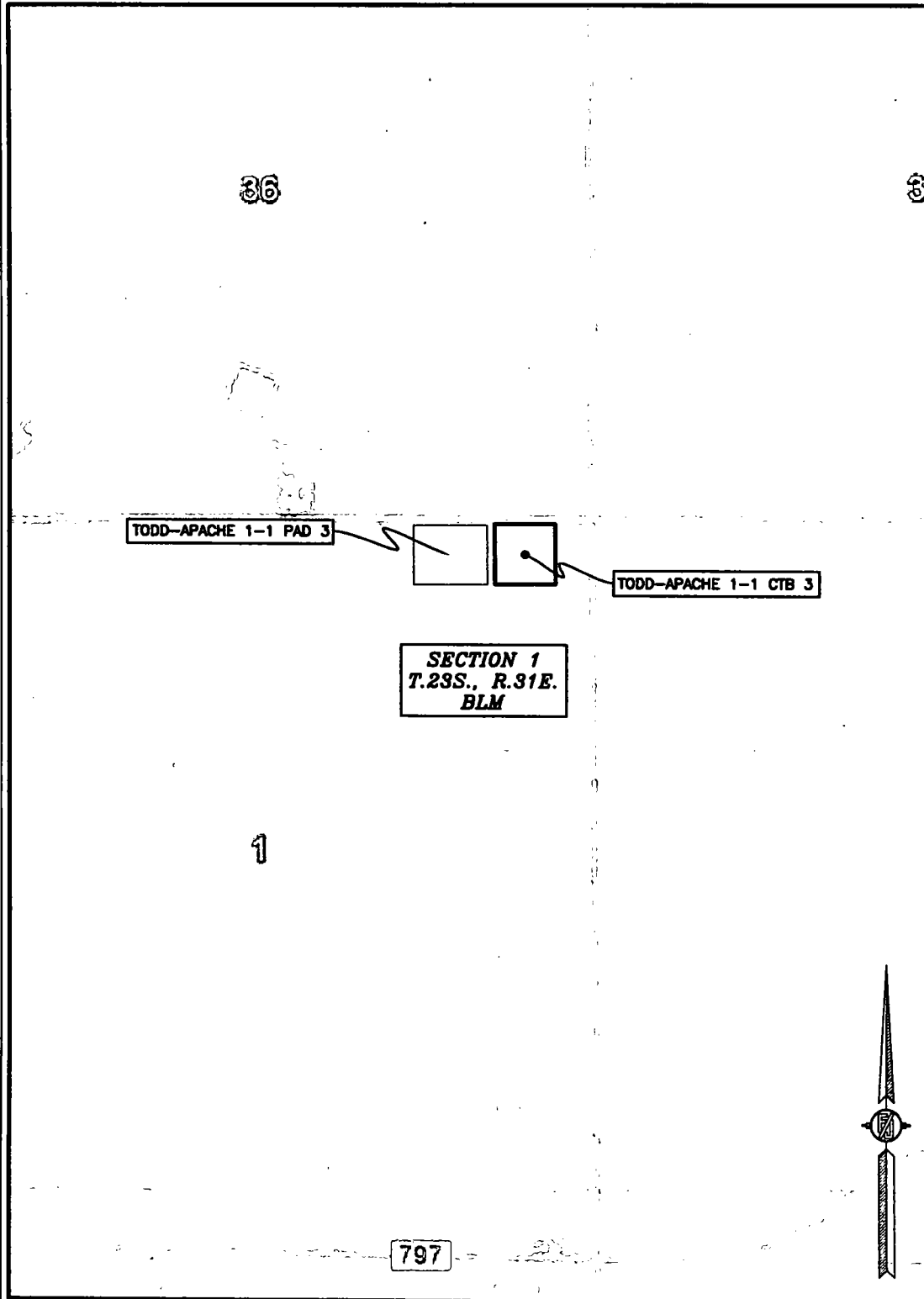
SURVEY NO. 4529B

TODD-APACHE 1-1 CTB 3 (AA000056005)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN LOT 1 OF
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 12, 2016

AERIAL PHOTO



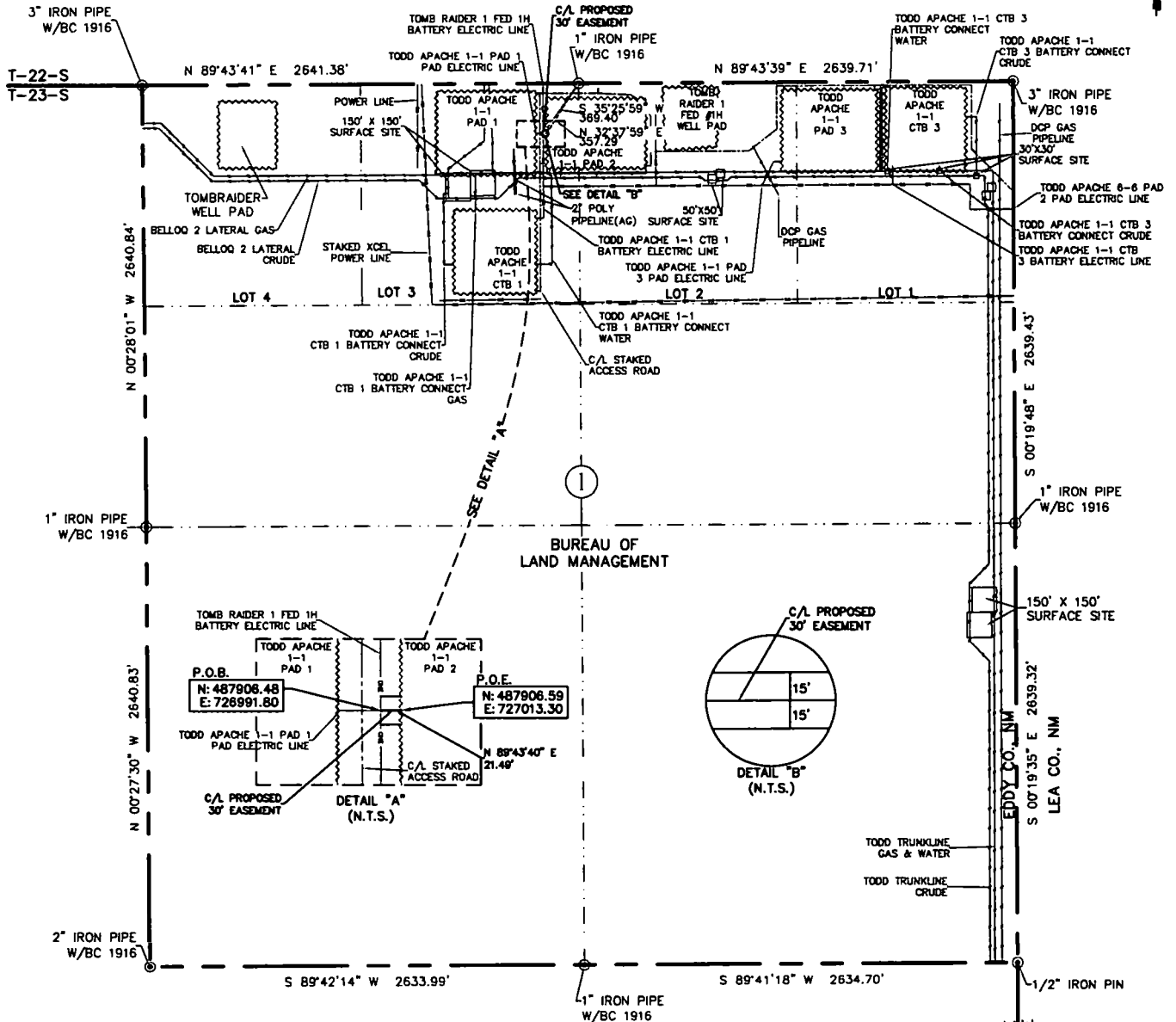
SHEET: 3-3

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

SURVEY NO. 4529B

CARLSBAD, NEW MEXICO

EXHIBIT "A"
PAGE 1 of 4
ELECTRIC LINE PLAT
SECTION 1, T23S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



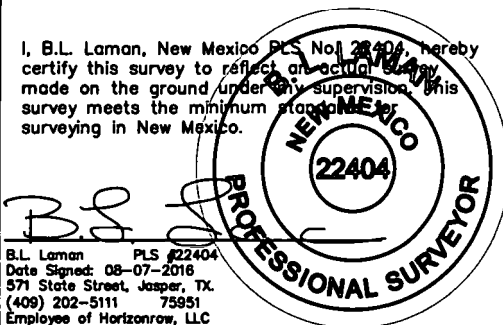
30' EASEMENT AREA = 0.015 ACRE(S)
 21.49 FEET OR 1.30 RODS

0+00.0 P.O.B./TOMB RAIDER 1 FED 1H BATTERY ELECTRIC LINE/
 TODD APACHE 1-1 PAD 1 PAD ELECTRIC LINE
 0+21.5 P.O.E./TODD APACHE 1-1 PAD 1

SEE THE ATTACHED LEGAL DESCRIPTION

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

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



B.L. Laman PLS #22404
 Date Signed: 08-07-2016
 571 State Street, Jasper, TX.
 (409) 202-5111 75951
 Employee of Horizonrow, LLC

HORIZON ROW LLC

Drawn for:

devon

Drawn by:
 CHRIS MAAS

Date: 08/05/2016

DEVON ENERGY PRODUCTION COMPANY, L.P.

TODD APACHE 1-1 PAD 2
 PAD ELECTRIC LINE

PROPOSED 30' EASEMENT
 ON THE PROPERTY OF
 BUREAU OF LAND MANAGEMENT
 SECTION 1, T23S-R31E, N.M.P.M.

LINE NUMBER:
 EL7837
 WBS NUMBER:
 XX-117880
 SCALE:
 1" = 1000'
 REVISIONS:
 SHEET:
 1 OF 4

0 1000 2000



**SECTION 1, T23S-R31E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO**

ELECTRIC LINE PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

BEING an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of Lot 3 of Section 1, Township 23 South, Range 31 East, N.M.P.M., Eddy County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/ BC 1916 for the north quarter corner of Section 1, T23S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 35°25'59" W a distance of 369.40' to the **Point of Beginning** of this easement having coordinates of Northing=487906.48, Easting=726991.80 feet, and continuing the following course;

Thence N 89°43'40" E a distance of 21.49' to the **Point of Ending** having coordinates of Northing=487906.59, Easting=727013.30 feet in Lot 3, from said point a 1" iron pipe w/ BC 1916 for the north quarter corner of Section 1, T23S-R31E bears N 32°37'59" E a distance of 357.29', covering **21.49'** or **1.30 rods** and having an area of **0.015 acres**.

NOTES:

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

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

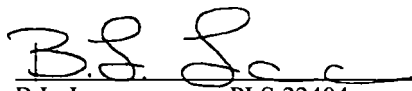
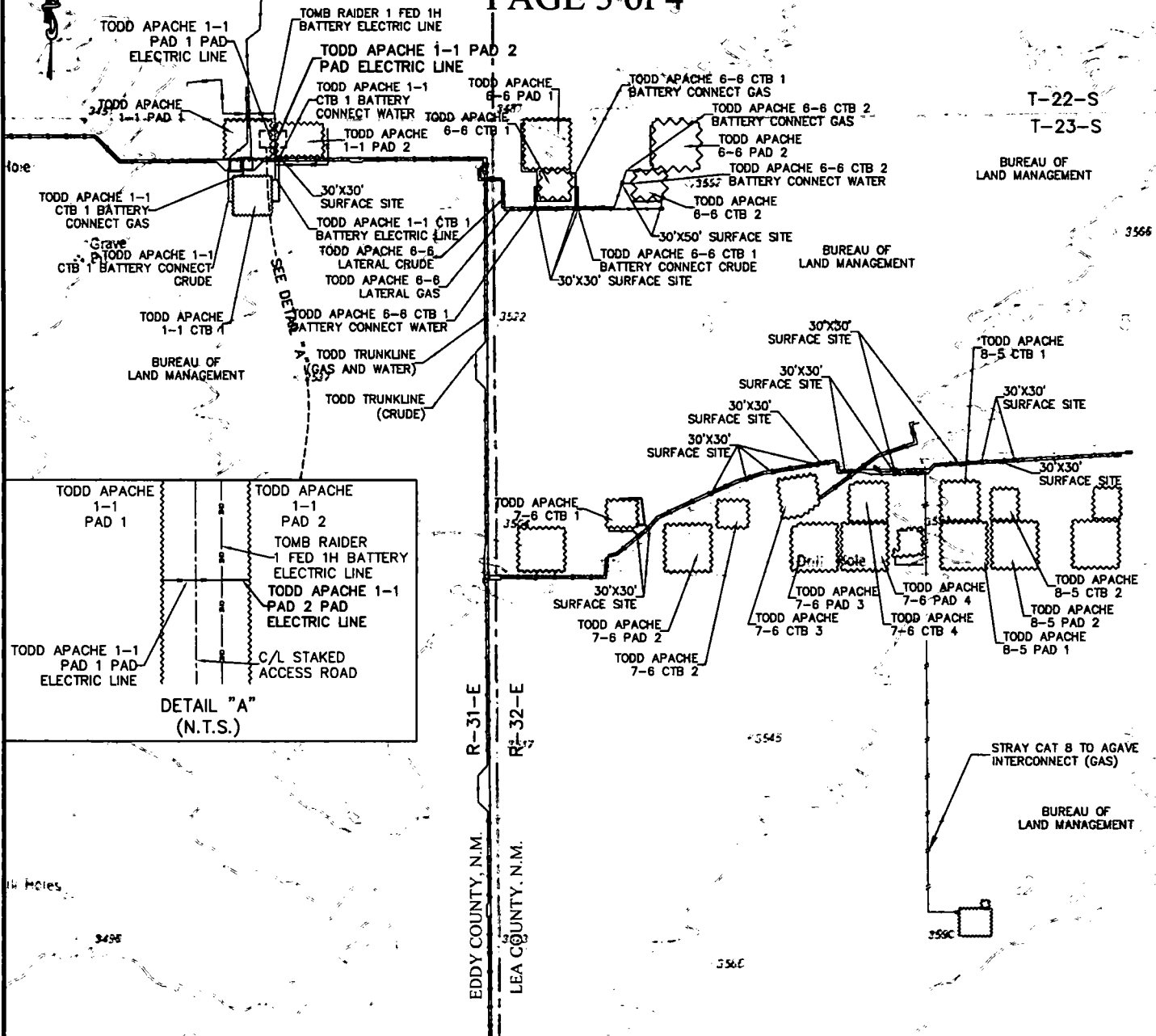

B.L. Laman PLS 22404
Date Signed: 08/07/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(409) 202-5111 75951
Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 3 of 4



QUAD MAP

SECTION 1, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:
CHRIS MAAS

Date: 08/05/2016

Drawn for:



devon

LINE NUMBER:
EL7837

WBS NUMBER:
XX-117680

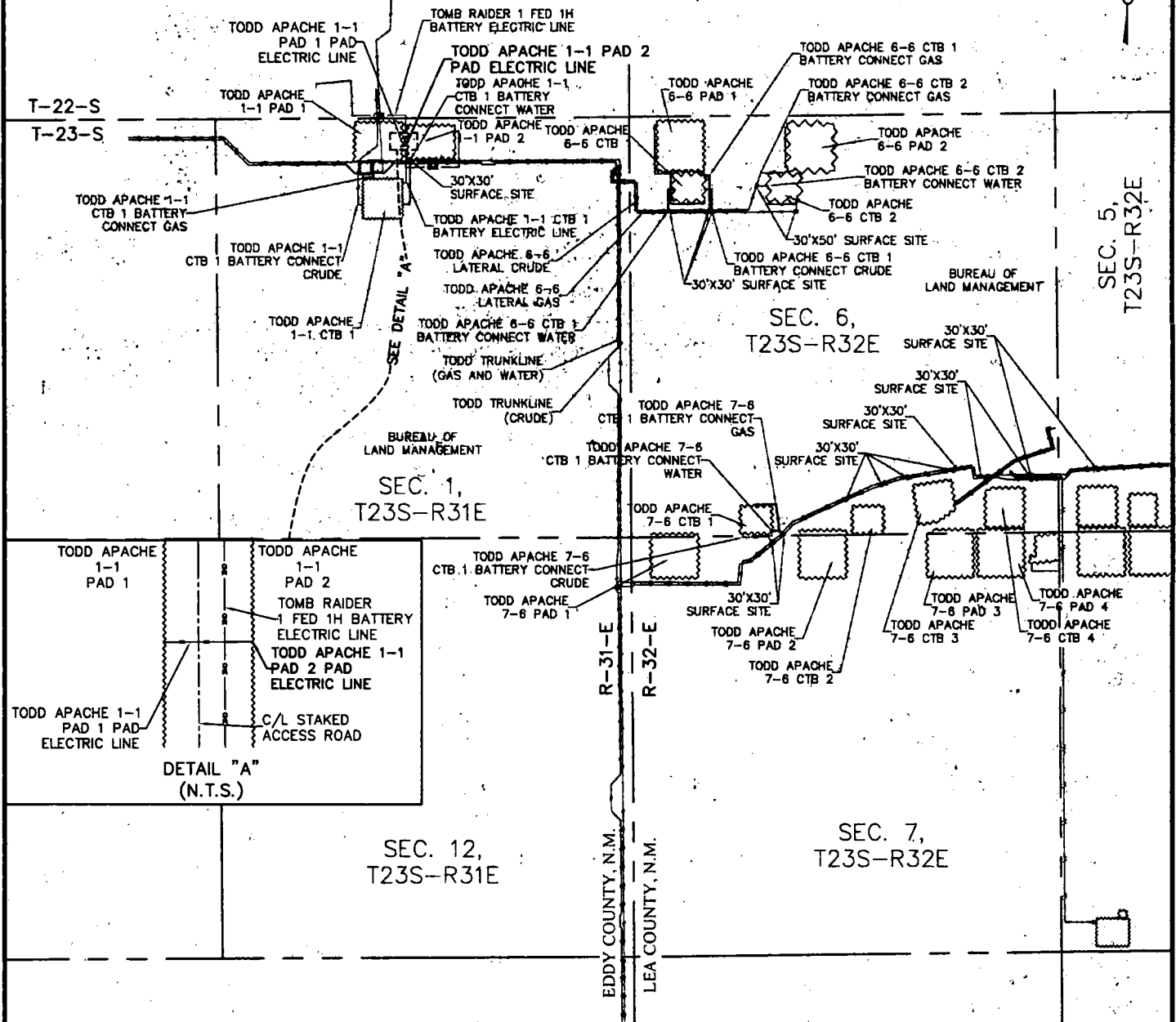
SCALE:
1" = 2000'

REVISIONS:

SHEET:
3 OF 4

EXHIBIT "A"

PAGE 4 of 4



AERIAL MAP

SECTION 1, T23S-R31E, N.M.P.M.;
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:
CHRIS MAAS

Date: 08/05/2016

Drawn for:



LINE NUMBER:
EL7837

WBS NUMBER:
XX-117680

SCALE:
1" = 2000'

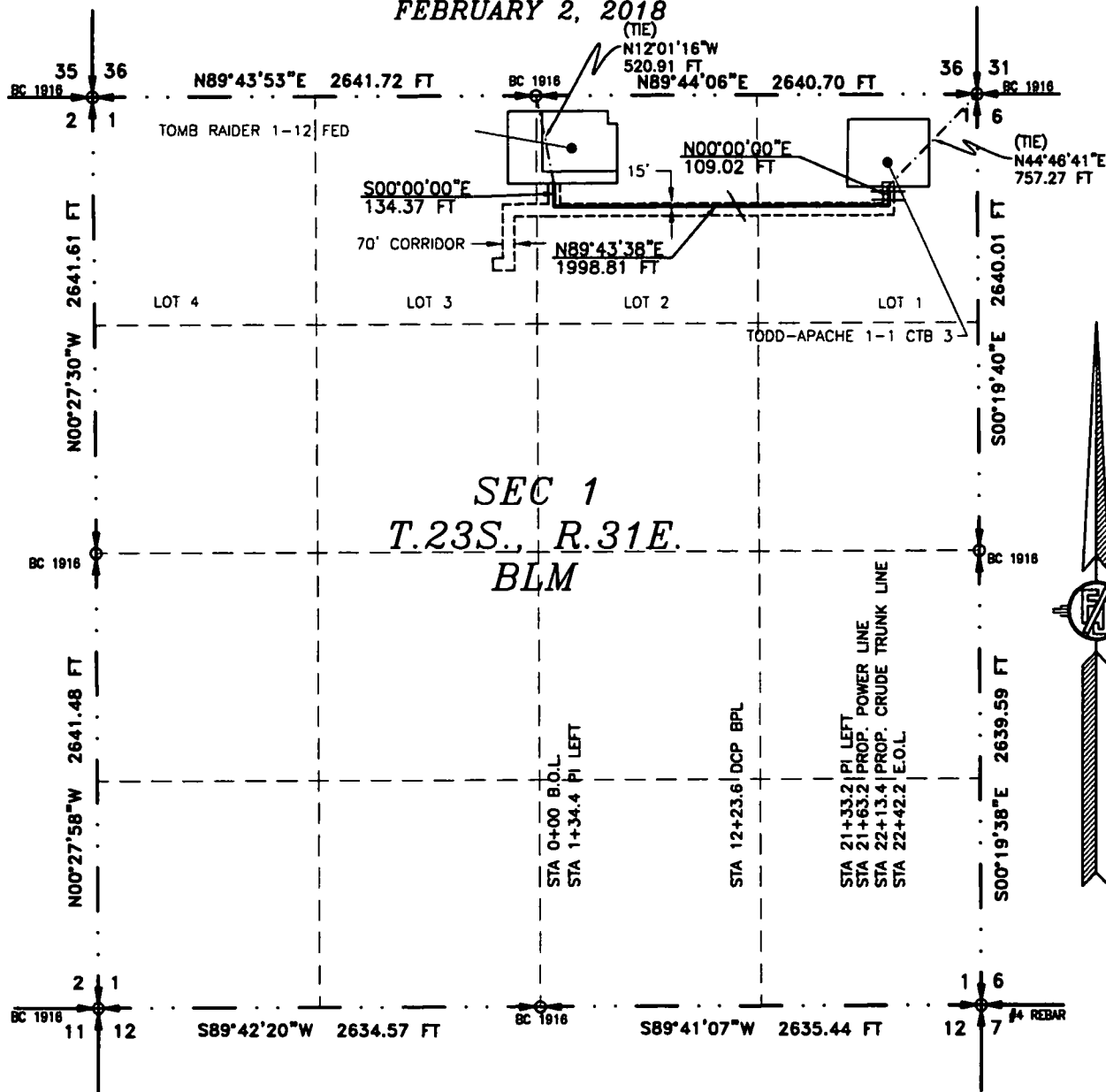
REVISIONS:

SHEET:
4 OF 4

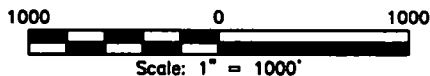
FLOWLINE PLAT

THREE 8" POLY FLOWLINES AND ONE 8" POLY GAS LIFT LINE, BURIED IN THE SAME TRENCH FROM
THE TOMB RAIDER 1-12 FED 514H, 524H, 525H TO THE TODD-APACHE 1-1 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P. **CENTERLINE SURVEY OF A PIPELINE CROSSING** **SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.** **EDDY COUNTY, STATE OF NEW MEXICO** **FEBRUARY 2, 2018**



SEE NEXT SHEET (2-4) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 2nd DAY OF FEBRUARY 2018

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

FILIMON F. JARAMILLO, PLS. 12797

SURVEY NO. 6033

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

SHEET: 1-4

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CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 2, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN LOT 2 OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N12°01'16"W, A DISTANCE OF 520.91 FEET;

THENCE S00°00'00"E A DISTANCE OF 134.37 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N89°43'38"E A DISTANCE OF 1998.81 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°00'00"E A DISTANCE OF 109.02 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N44°46'41"E, A DISTANCE OF 757.27 FEET;

SAID STRIP OF LAND BEING 2242.20 FEET OR 135.89 RODS IN LENGTH, CONTAINING 1.544 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 2 1350.23 L.F. 81.83 RODS 0.930 ACRES
LOT 1 891.97 L.F. 54.06 RODS 0.614 ACRES

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,
NEW MEXICO, THIS 2 DAY OF FEBRUARY 2018

[Signature]
FILMON F. JARAMILLO, P.E.S. 12797

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

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SHEET: 2-4

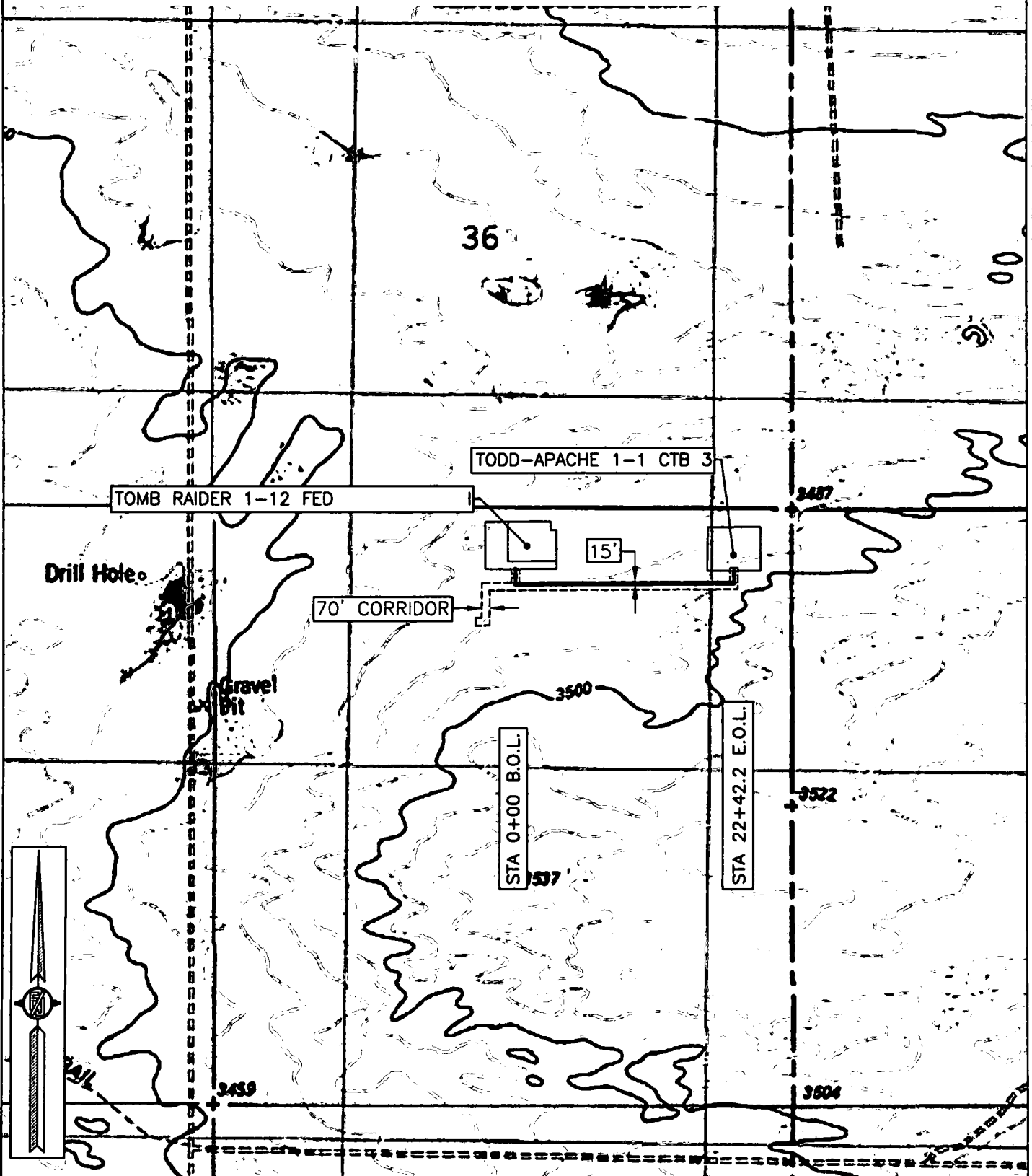
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 6033

FLOWLINE PLAT

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DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 2, 2018



SHEET: 3-4

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

SURVEY NO. 6033

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CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 2, 2018

36

TODD-APACHE 1-1 CTB 3

TOMB RAIDER 1-12 FED

15'

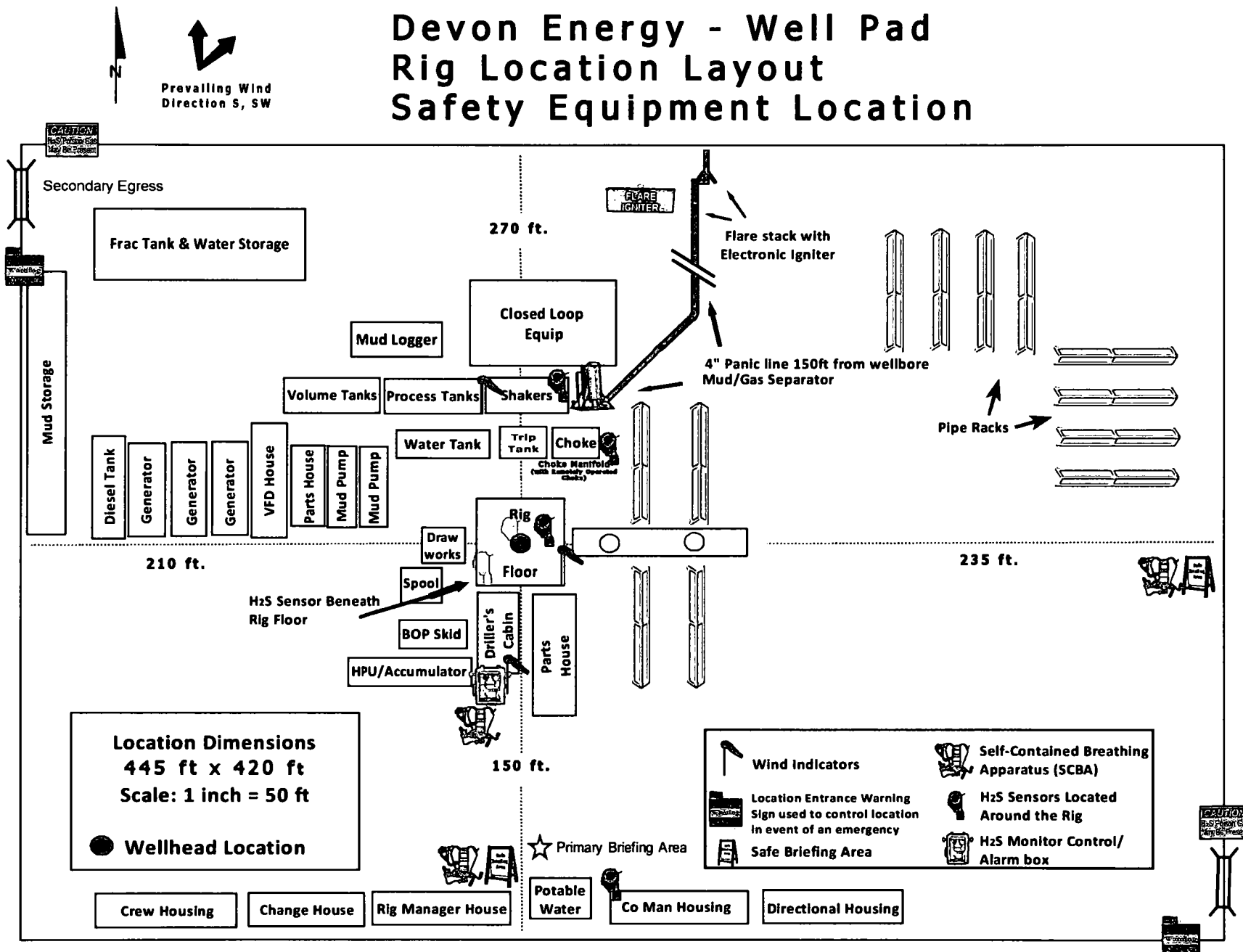
70' CORRIDOR

STA 0+00 B.O.L.

STA 22+42.2 E.O.L.



Devon Energy - Well Pad Rig Location Layout Safety Equipment Location





Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

11/01/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: CO1104

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: