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JUN 21 2019

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DISTRICT II-ARTESIA O.C.D.
BUREAU OF LAND MANAGEMENT

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. 8. Lease Name and Well No. TOMB RAIDER 12-1 FED 731H 322867
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY LP		9. API Well No. 30-015-46130
3a. Address 333 West Sheridan Avenue Oklahoma City OK 73102	3b. Phone No. (include area code) (800)583-3866	10. Field and Pool, or Exploratory WC-015 G-08-S233102C / WOLFCAMP
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWSW / 250 FSL / 290 FWL / LAT 32.312387 / LONG -103.7390887 At proposed prod. zone LOT 4 / 20 FNL / 1300 FWL / LAT 32.3406664 / LONG -103.735847		11. Sec., T. R. M. or Blk. and Survey or Area SEC 12 / T23S / R31E / NMP
14. Distance in miles and direction from nearest town or post office*		12. County or Parish EDDY
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 250 feet	16. No of acres in lease 1280	17. Spacing Unit dedicated to this well 640
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 361 feet	19. Proposed Depth 12110 feet / 22346 feet	20. BLM/BIA Bond No. in file FED: CO1104
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3488 feet	22. Approximate date work will start* 06/19/2019	23. Estimated duration 45 days
24. Attachments		
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)		
1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).		4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification. 6. Such other site specific information and/or plans as may be requested by the BLM.
25. Signature (Electronic Submission)	Name (Printed/Typed) Jenny Harms / Ph: (405)552-6560	Date 12/14/2018
Title Regulatory Compliance Professional		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 06/19/2019
Title Assistant Field Manager Lands & Minerals		
Office CARLSBAD		
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Conditions of approval, if any, are attached.		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.		

APPROVED WITH CONDITIONS
Approval Date: 06/19/2019

RyP 6-26-19

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: SWSW / 250 FSL / 290 FWL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.312387 / LONG: -103.7390887 (TVD: 0 feet, MD: 0 feet)
PPP: SWSW / 120 FSL / 1170 FWL / TWSP: 23S / RANGE: 31E / SECTION: 12 / LAT: 32.312016 / LONG: -103.736243 (TVD: 11537 feet, MD: 11581 feet)
BHL: LOT 4 / 20 FNL / 1300 FWL / TWSP: 23S / RANGE: 31E / SECTION: 1 / LAT: 32.3406664 / LONG: -103.735847 (TVD: 12110 feet, MD: 22346 feet)

BLM Point of Contact

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

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMNM022080
WELL NAME & NO.:	Tomb Raider 12-1 Fed 731H
SURFACE HOLE FOOTAGE:	250'/S & 290'/W
BOTTOM HOLE FOOTAGE:	20'/N & 1300'/W
LOCATION:	Section 12, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

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

A. HYDROGEN SULFIDE

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

Primary Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **826 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **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.

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

2. The minimum required fill of cement behind the 7-5/8 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 cave/karst or 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 cave/karst or potash.

Operator has proposed to pump down 10-3/4" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.

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

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Cement excess is less than 25%, more cement might be required.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately **826 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - e. 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.
 - f. 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)
 - g. 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.
 - h. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

5. The minimum required fill of cement behind the **8-5/8** 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 cave/karst or 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.

- c. 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.
- d. 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 cave/karst or potash.

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

Operator is approved to drill a 10.625" hole for intermediate 1 with BTC connection.

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

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Cement excess is less than 25%, more cement might be required.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

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

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties

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

☒ Eddy County

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

☒ Lea County

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

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

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

A. CASING

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

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

B. PRESSURE CONTROL

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

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

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Devon Energy Production Company LP
WELL NAME & NO.:	Tomb Raider 12-1 Fed 731H
SURFACE HOLE FOOTAGE:	250'/S & 290'/W
BOTTOM HOLE FOOTAGE:	20'/N & 1300'/W
LOCATION:	Section 12, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

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

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- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Build as you Go Pads No Grading full Proposed Pad**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Hydrology
 - Range
 - Potash
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
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 - Electric Lines
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- ☐ **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 Pads; No Grading full Proposed Pad!!

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:

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

Timing Limitation Exceptions:

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

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

Avian Power Line Protection:

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.

Hydrology

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas,

wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. 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.

Fence 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 fence(s).

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is 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 pipeline 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.

Lessees must comply with the 2012 Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Tomb Raider 12-1 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

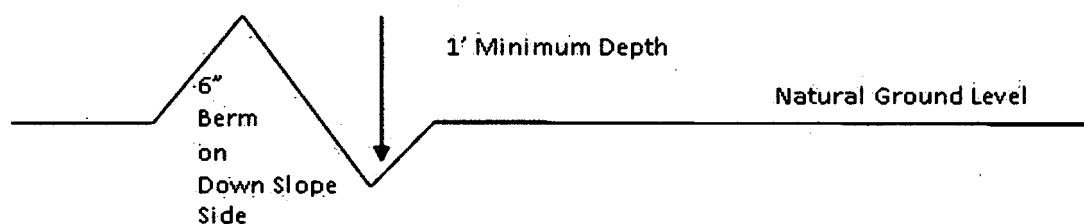
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

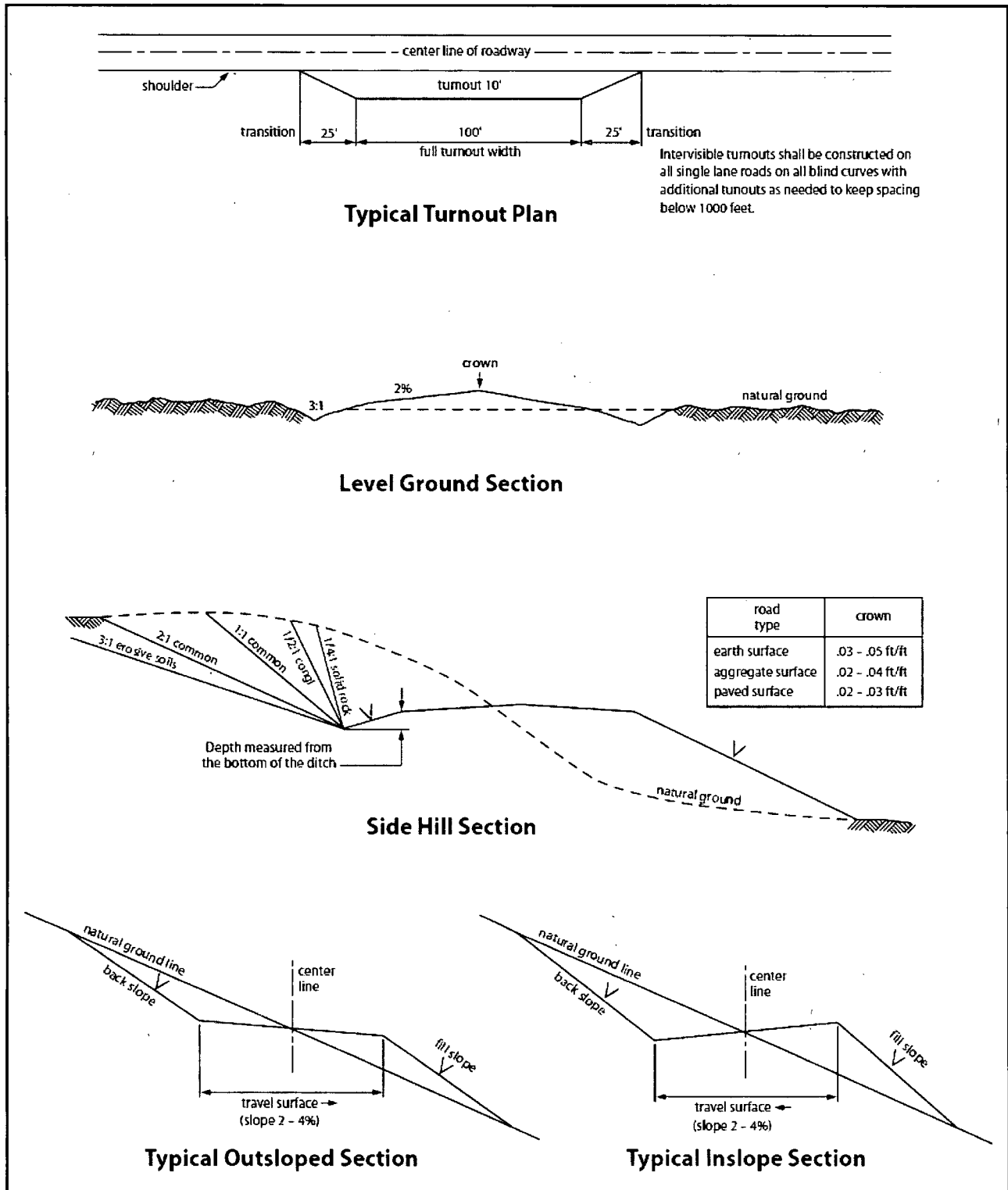


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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.

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 leaks 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.

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).

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

06/20/2019

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: 12/14/2018

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: 333 WEST SHERIDAN AVENUE

City: OKLAHOMA CITY

State: OK

Zip: 73102-5015

Phone: (405)552-4902

Email address: ray.vaz@dvn.com



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

Application Data Report

06/20/2019

APD ID: 10400037323

Submission Date: 12/14/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400037323

Tie to previous NOS?

Submission Date: 12/14/2018

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: (800)583-3866

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 12-1 FED

Well Number: 731H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-015 G-08
S233102C

Pool Name: WOLFCAMP

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

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? YES New surface disturbance? Y

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: TOMB Number: 2

RAIDER 12 PAD

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town:

Distance to nearest well: 361 FT

Distance to lease line: 250 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: TOMB_RAIDER_12_1_FED_731H_C102_5_14_2019_20190514101312.pdf

Well work start Date: 06/19/2019

Duration: 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 6671

	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	250	FSL	290	FWL	23S	31E	12	Aliquot SWS W	32.31238 7	- 103.7390 887	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	348 8	0	0
KOP Leg #1	120	FSL	117 0	FWL	23S	31E	12	Aliquot SWS W	32.31201 6	- 103.7362 43	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 804 9	115 81	115 37
PPP Leg #1	120	FSL	117 0	FWL	23S	31E	12	Aliquot SWS W	32.31201 6	- 103.7362 43	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 804 9	115 81	115 37

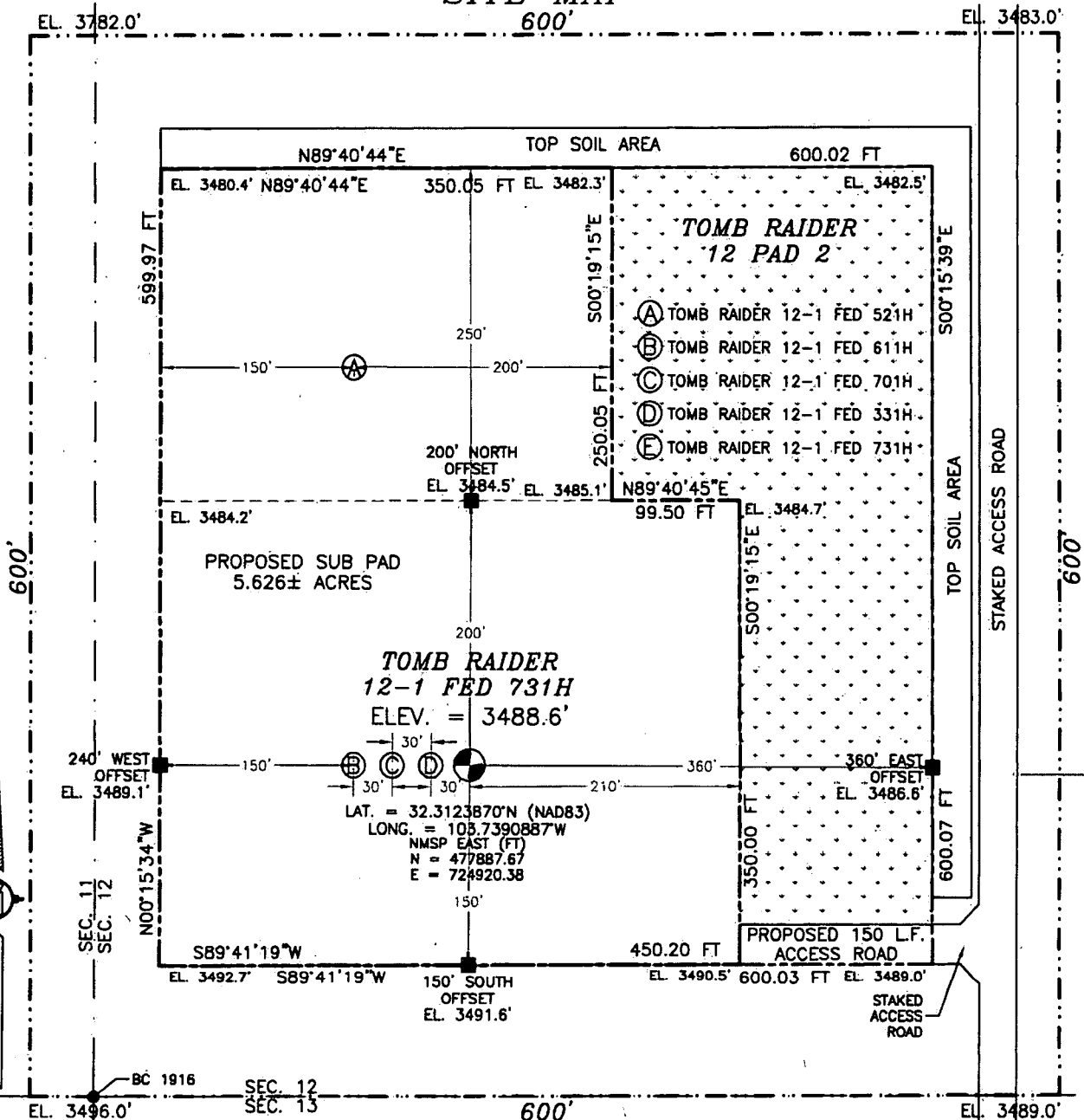
Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

	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	100	FNL	130 0	FWL	23S	31E	1	Lot 4	32.34044 7	- 103.7358 51	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 862 2	222 67	121 10
BHL Leg #1	20	FNL	130 0	FWL	23S	31E	1	Lot 4	32.34066 64	- 103.7358 47	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 022080	- 862 2	223 46	121 10

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



0 12 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 FOR APPROX. 3.68 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST APPROX. 0.21 OF A MILE, TURN LEFT GO NORTH APPROX. 0.47 OF A MILE, TURN LEFT GO WEST 200' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 12-1 FED 731H

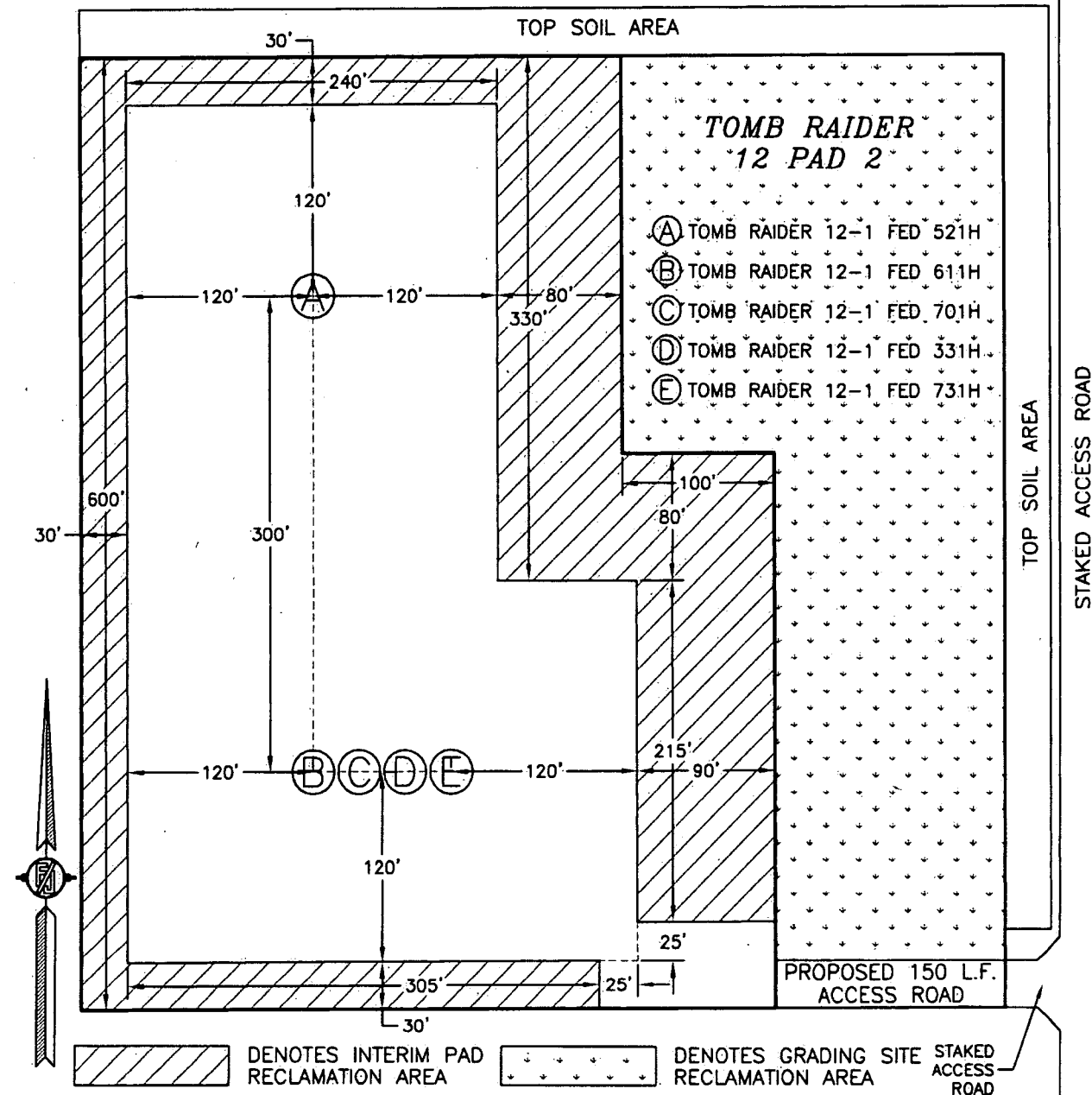
LOCATED 250 FT. FROM THE SOUTH LINE
AND 290 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6669

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

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 INTERIM SITE BUILD PLAN



0 10 50 100 200
 SCALE 1" = 100'

2.023± ACRES INTERIM PAD RECLAMATION AREA
 2.536± ACRES GRADING SITE RECLAMATION AREA
 3.706± ACRES NON-RECLAIMED AREA
 8.265± ACRES TOMB RAIDER 12 PAD 2

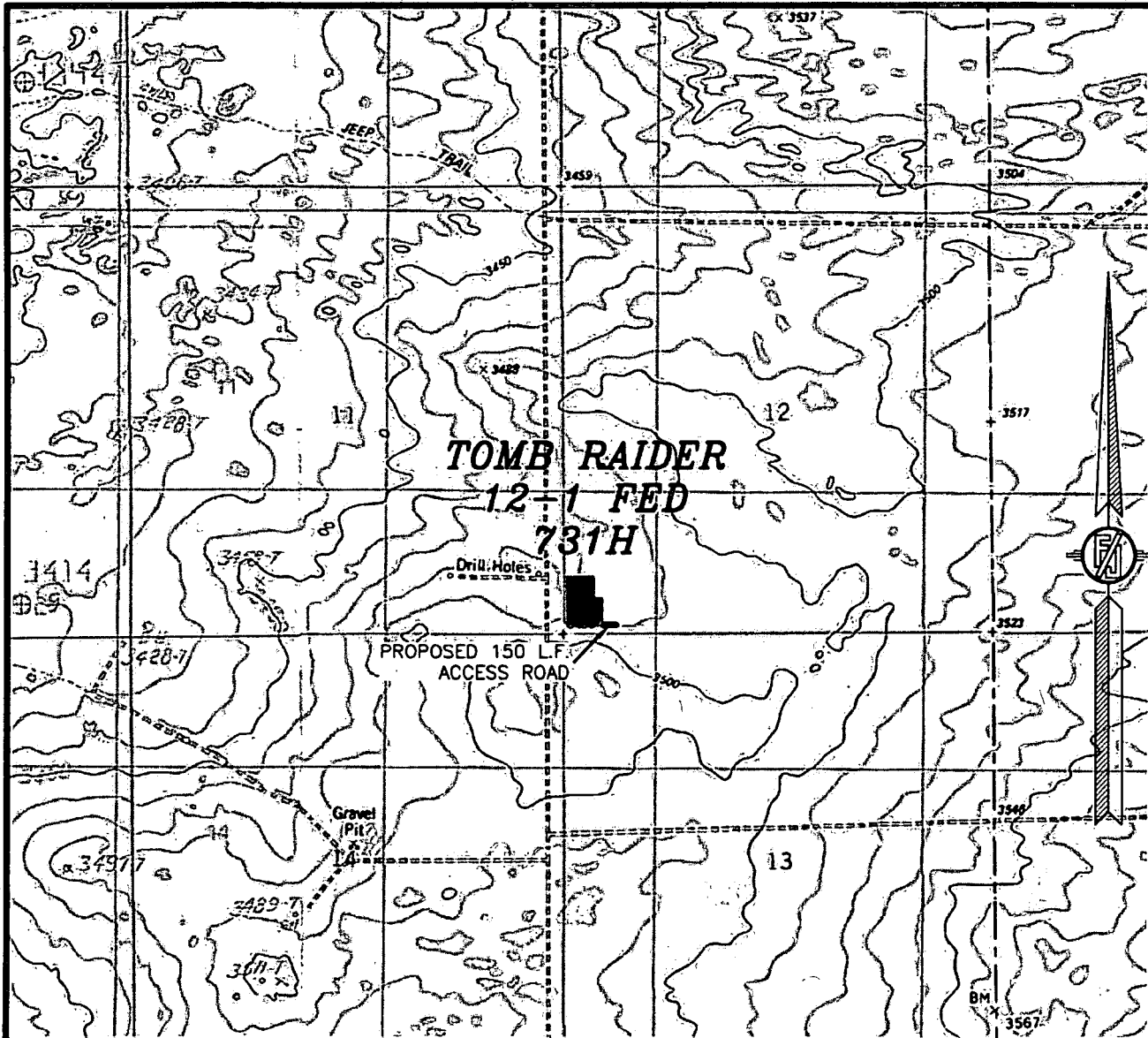
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 12-1 FED 731H
 LOCATED 250 FT. FROM THE SOUTH LINE
 AND 290 FT. FROM THE WEST LINE OF
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6669

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

SECTION 12, 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 12-1 FED 731H

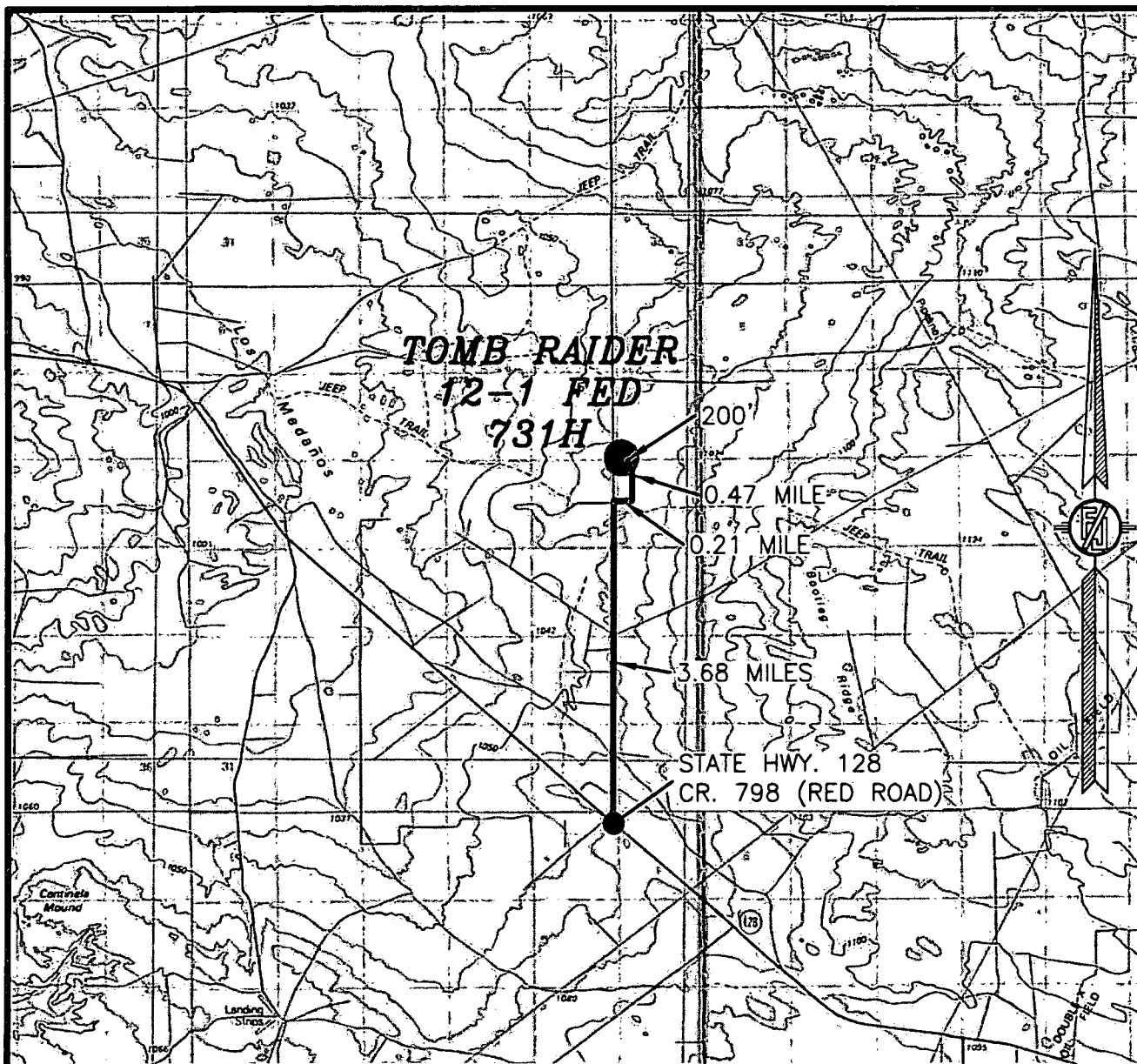
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EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6669

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

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 FOR APPROX. 3.68 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST APPROX. 0.21 OF A MILE, TURN LEFT GO NORTH APPROX. 0.47 OF A MILE, TURN LEFT GO WEST 200' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

TOMB RAIDER 12-1 FED 731H

LOCATED 250 FT. FROM THE SOUTH LINE
AND 290 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6669

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

CARLSBAD, NEW MEXICO

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

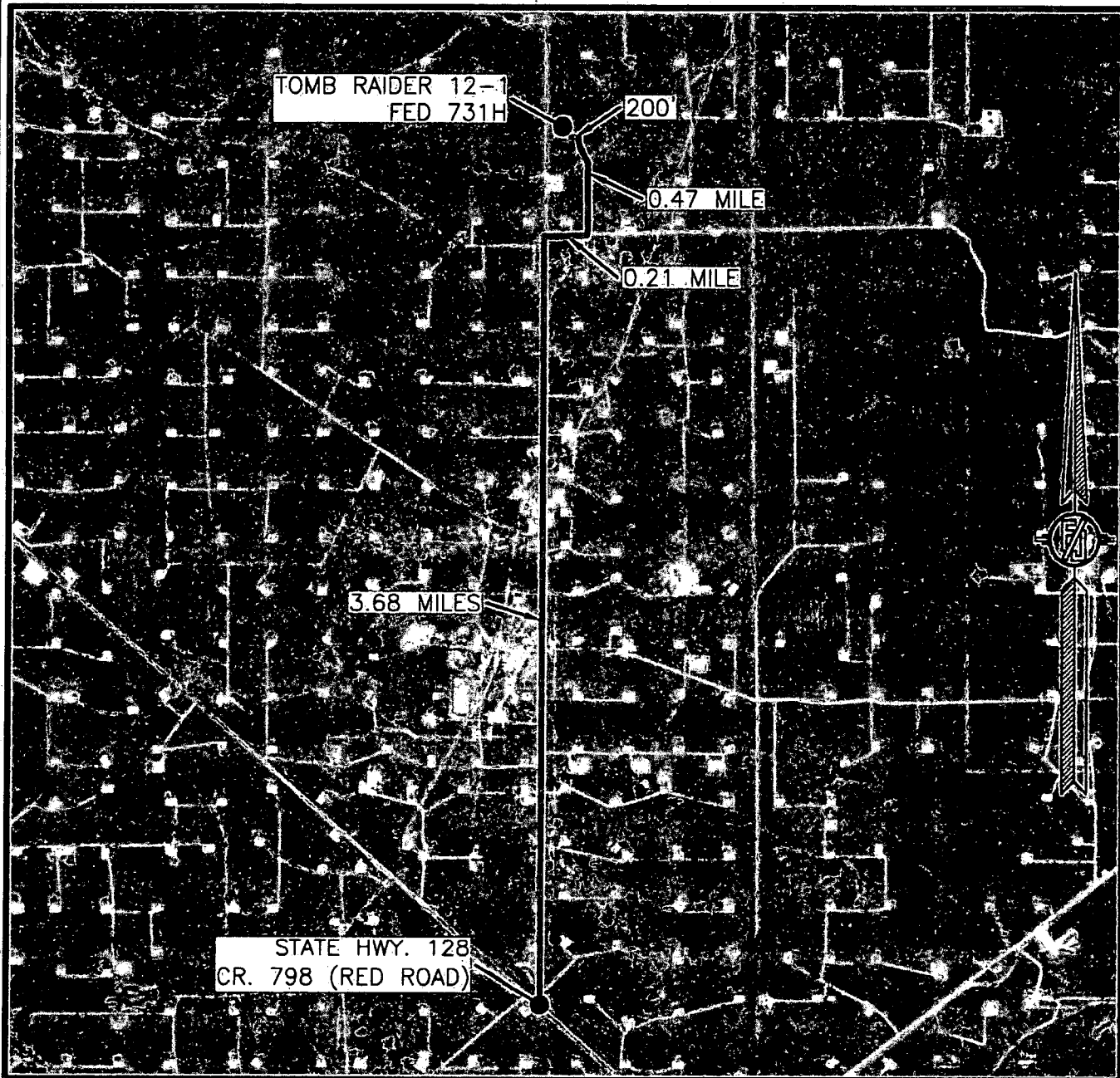
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 12-1 FED 731H
LOCATED 250 FT. FROM THE SOUTH LINE
AND 290 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6669

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

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

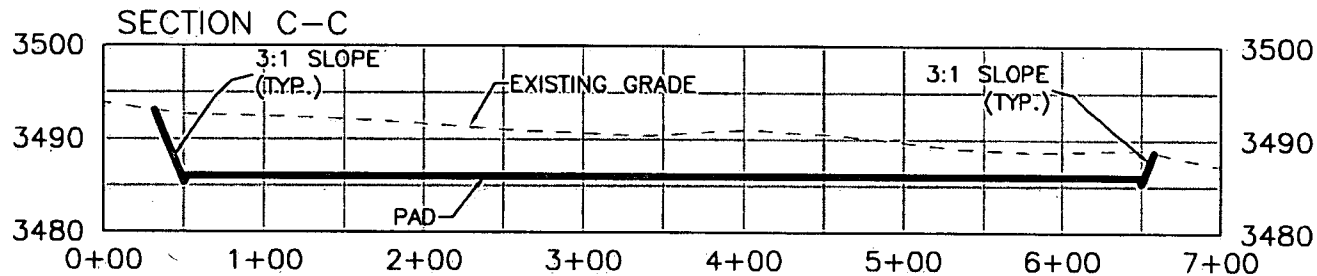
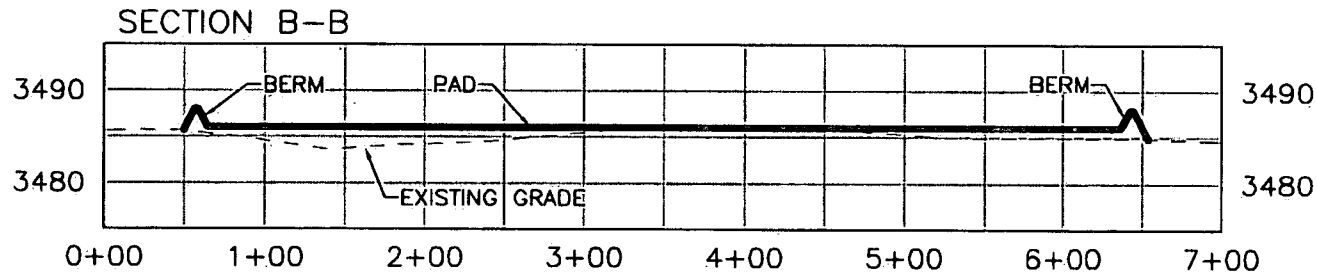
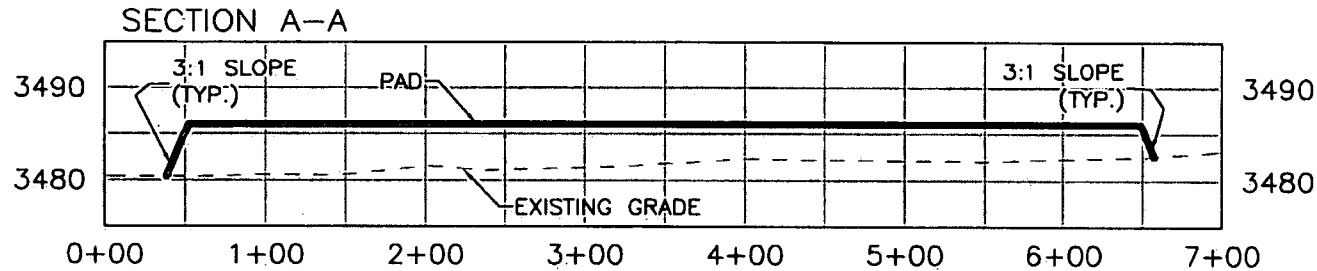
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 12-1 FED 731H
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AND 290 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6669

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

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
 FOR TOMB RAIDER 12-1 FED 731H
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

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

CUT	FILL	NET
15478 CU. YD	24601 CU. YD	9124 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

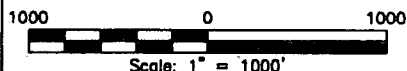
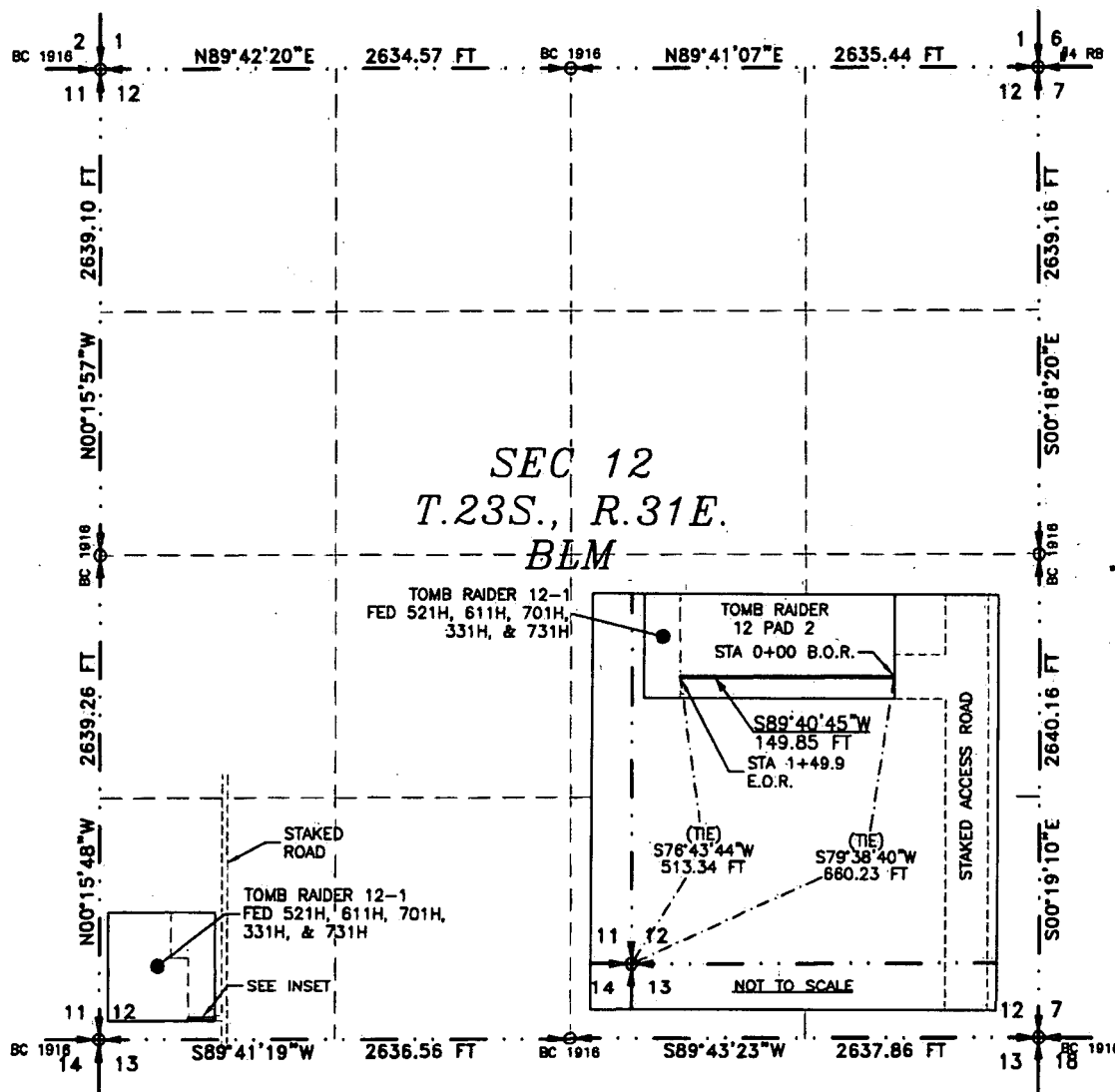
NOVEMBER 6, 2018
 MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
 (575) 234-3341

SHEET 2-2
 SURVEY NO. 6669

ACCESS ROAD PLAT

ACCESS ROAD FOR TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018



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.

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 06 DAY OF NOVEMBER 2018

FILMON F. JARAMILLO, PLS. 42797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6669

CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD FOR TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, 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 THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S79°38'40"W, A DISTANCE OF 660.23 FEET;
THENCE S89°40'45"W A DISTANCE OF 149.85 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S76°43'44"W, A DISTANCE OF 513.34 FEET;

SAID STRIP OF LAND BEING 149.85 FEET OR 9.08 RODS IN LENGTH, CONTAINING 0.103 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 149.85 L.F. 9.08 RODS 0.103 ACRES

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 12 DAY OF NOVEMBER 2018

(12797)

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

GENERAL NOTES

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

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

SHEET: 2-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 6669



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

Drilling Plan Data Report

06/20/2019

APD ID: 10400037323

Submission Date: 12/14/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

[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	3488	0	0	ALLUVIUM,OTHER	NONE	No
2	RUSTLER	2722	766	766	SALT	NONE	No
3	BASE OF SALT	-963	4451	4451	SALT	NONE	No
4	DELAWARE	-993	4481	4481	SANDSTONE	NATURAL GAS,OIL	No
5	BONE SPRING LIME	-4868	8356	8356	LIMESTONE	NATURAL GAS,OIL	No
6	WOLFCAMP	-8622	12110	22110	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 12110

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below intermediate casing, a BOP/BOPE system with the above minimum rating 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:

WLFMP_10M_BOPE_Double_Ram_and_CLS_Schematic_Remote_Kill_Line_20181214093048.pdf

BOP Diagram Attachment:

WLFMP_10M_BOPE_Double_Ram_and_CLS_Schematic_Remote_Kill_Line_20181214093104.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Pressure Rating (PSI): 5M

Rating Depth: 11231

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below surface casing, a BOP/BOPE system with the above minimum rating 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:

5M_BOPE_20180716121144_20181214075309.pdf

BOP Diagram Attachment:

5M_BOPE_20180716121144_20181214075317.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	14.75	10.75	NEW	API	N	0	791	0	791	-6768	-7557	791	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11231	0	11231	-6768	-11036	11231	P-110	29.7	OTHER - BTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	PRODUCTION	6.75	5.5	NEW	API	N	0	22346	0	12110	-6768	-16768	22346	P-110	20	OTHER - VAM SG	1.125	1.25	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surf_Csg_Ass_20181214075552.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Int_Csg_Ass_20181214075711.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Prod_Csg_Ass_20181214075915.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	791	513	1.33	13.2	683	50	C	Class C + adds

INTERMEDIATE	Lead		0	7231	1067	3.31	9	1974	30	TUNED	TUNED LIGHT
INTERMEDIATE	Tail		7231	1123 1	848	1.33	13.2	1128	30	H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
PRODUCTION	Lead		0	1073 1	331	3.31	9	1096	10	CLASS H	0.125 lbs/sack Poly-E-Flake
PRODUCTION	Tail		1073 1	2234 6	811	1.33	13.2	1079	10	CLASS H	0.125 lbs/sack Poly-E-Flake

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	791	OTHER : FW Gel	8.5	9				2			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1123 1	OTHER : DBE / Cut Brine	8.5	9				2			
1123 1	1211 0	OIL-BASED MUD	10	10.5							

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:

CALIPER,CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6612

Anticipated Surface Pressure: 3947.8

Anticipated Bottom Hole Temperature(F): 176

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Tomb_Raider_12_1_Fed_731H_H2S_20181214100400.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Tomb_Raider_12_1_Fed_731H_AC_Report_Permit_Plan_1_20181214100445.pdf

Devon_Tomb_Raider_12_1_Fed_731H_Permit_Plan_1_20181214100445.pdf

Devon_Tomb_Raider_12_1_Fed_731H_Plot_Permit_Plan_1_20181214100446.pdf

Tomb_Raider_12_1_Fed_731H_Drilling_Plan___4_23_20190524095059.pdf

Other proposed operations facets description:

DRILLING PLAN-revised 4/23/19

CLOSED LOOP DESIGN,

MB VERB MB WELLHEAD, GAS CAPTURE PLAN, SPEC SHEETS, SPUDDER RIG

Other proposed operations facets attachment:

Spudder_Rig_Info_20181214084913.pdf

8.625_32__P110EC___7.875_SD__BTC__20181214084913.pdf

Clsd_Loop_20181214085036.pdf

TODD_12_1_GasCapturePlan_12_13_2018_20181214085108.pdf

5.5_x_20_P110_EC_VAMSG_20181214084912.pdf

WLFMP_Wellhead_Schematic_10.75x7.625_x5.5_20181214094333.pdf

WLFMP_MB_Verb_10M_Alt_Design_20181214094331.pdf

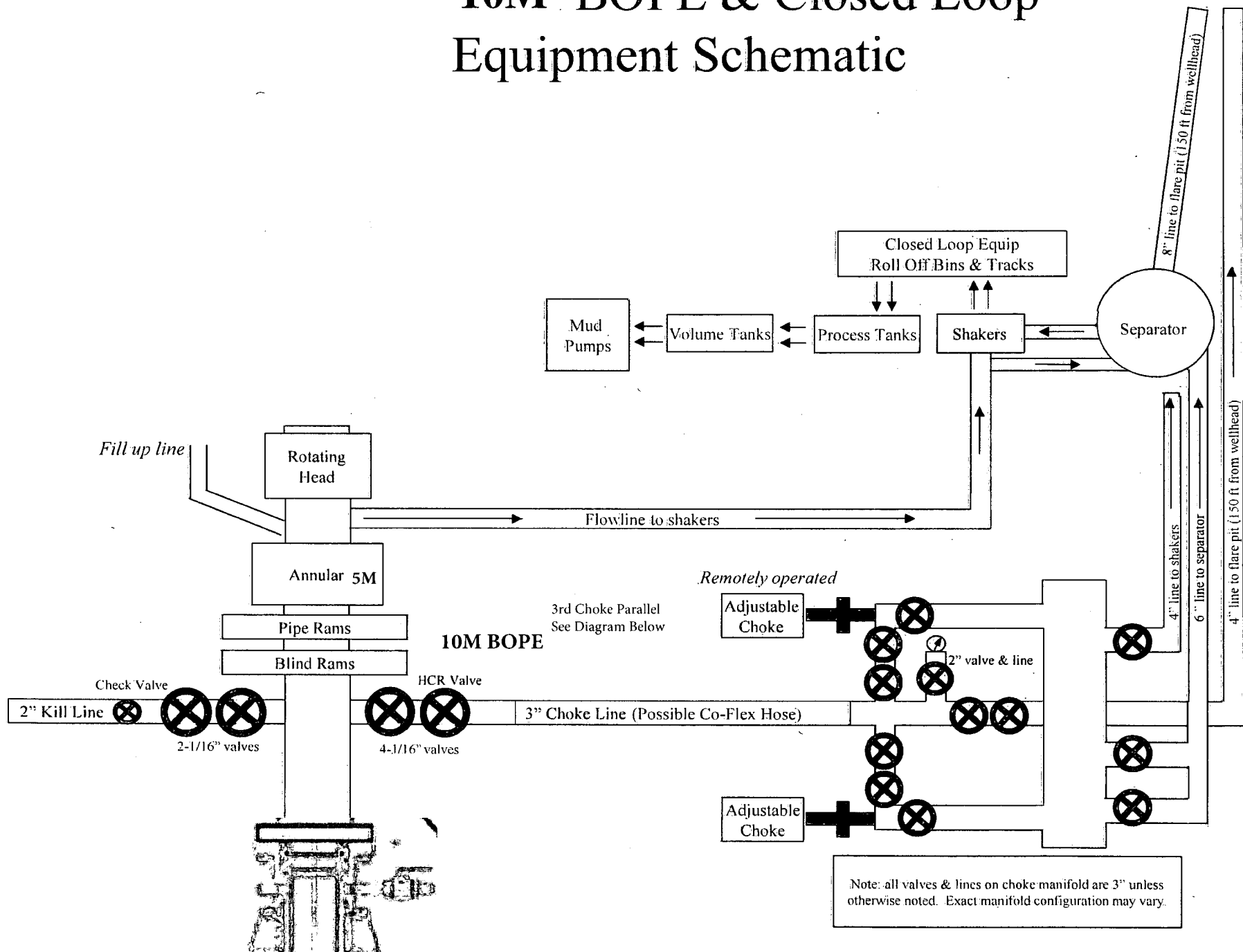
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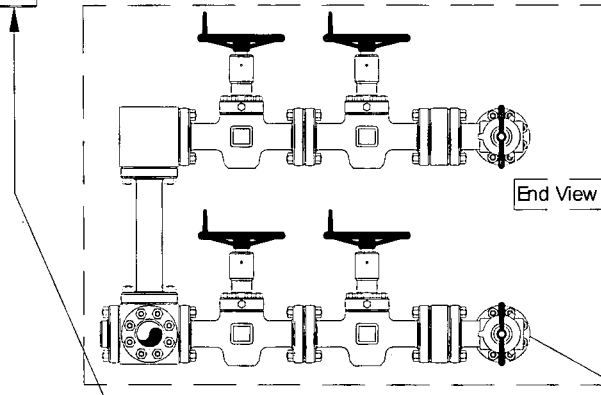
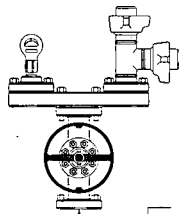
MB_Wellhd_10M_13.375_8.625_5.5_20190514095657.PDF

Other Variance attachment:

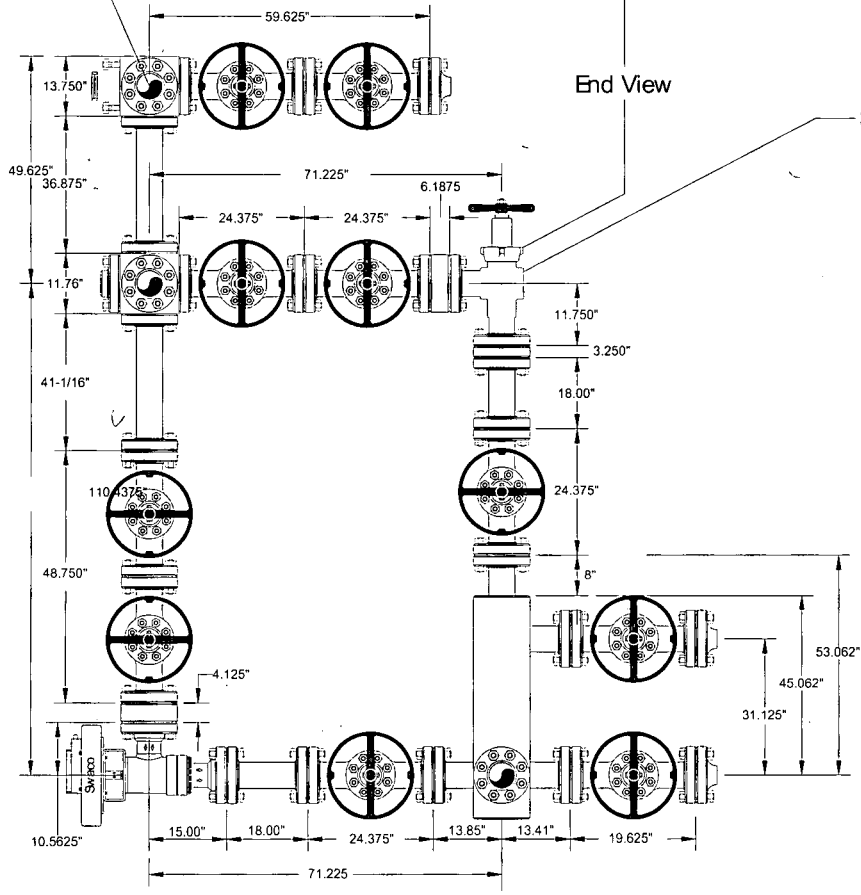
Co_flex_20181214085236.pdf

10M BOPE & Closed Loop Equipment Schematic



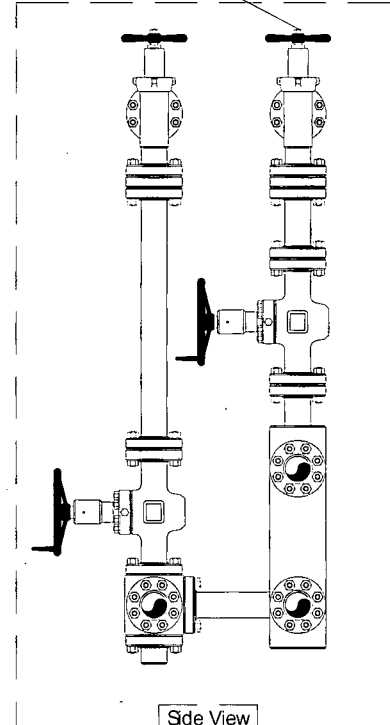


End View



End View

Side View



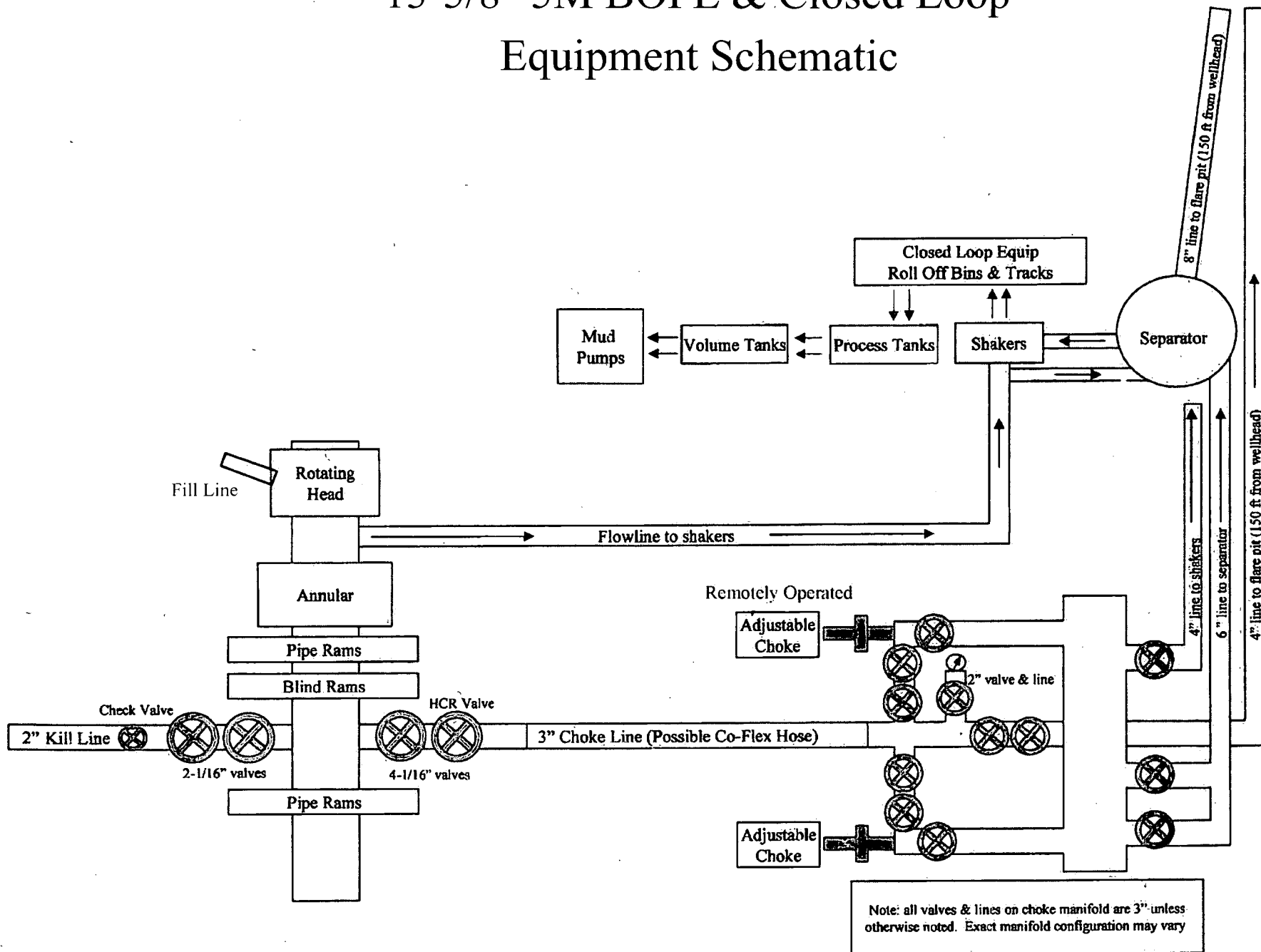
Side View

Helmerich & Payne
Rg 282

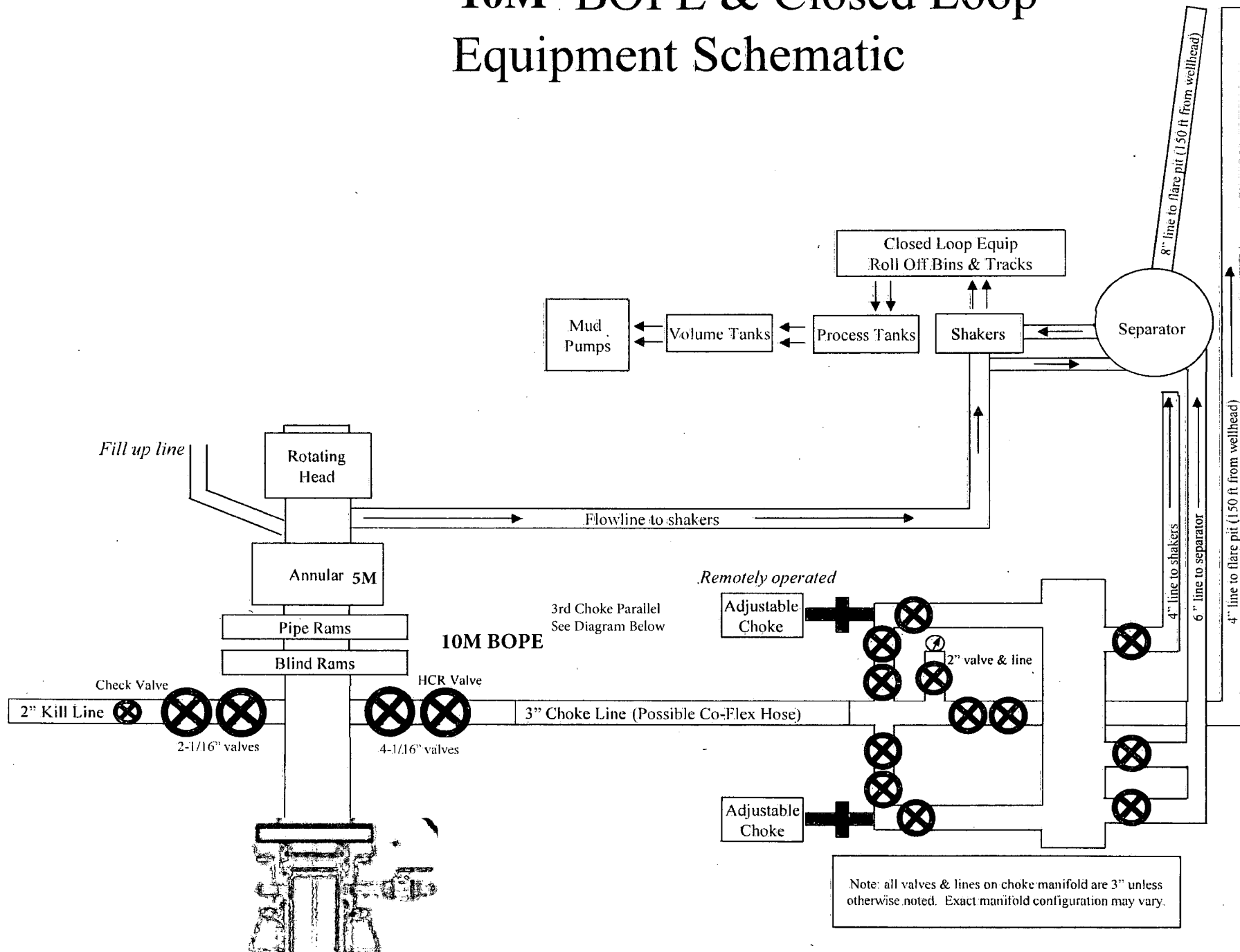


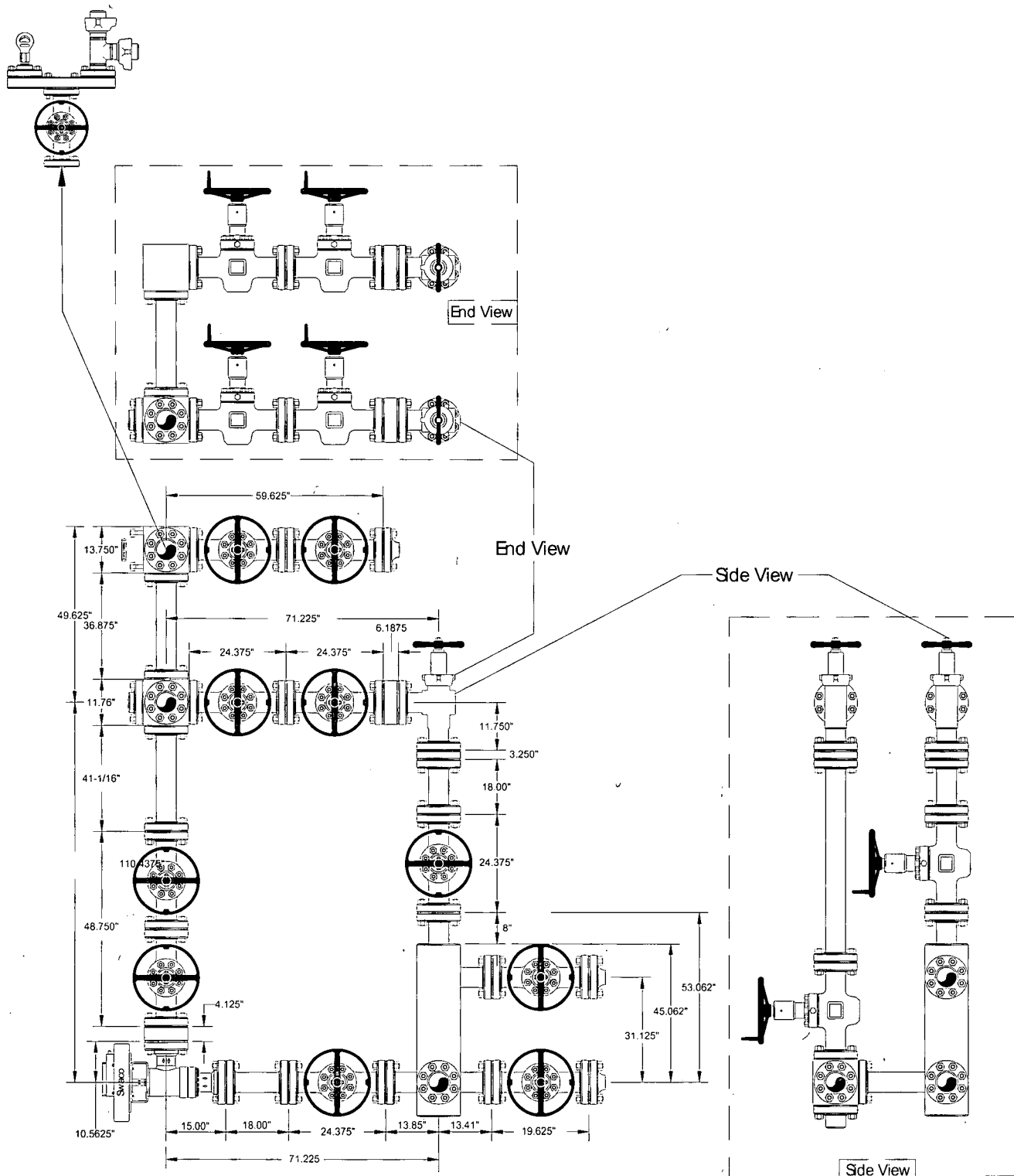
Name: Jeanette	Date: 7-19-06	Working Pressure:	# J-5132-E
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13-5/8" 5M BOPE & Closed Loop Equipment Schematic



10M BOPE & Closed Loop Equipment Schematic



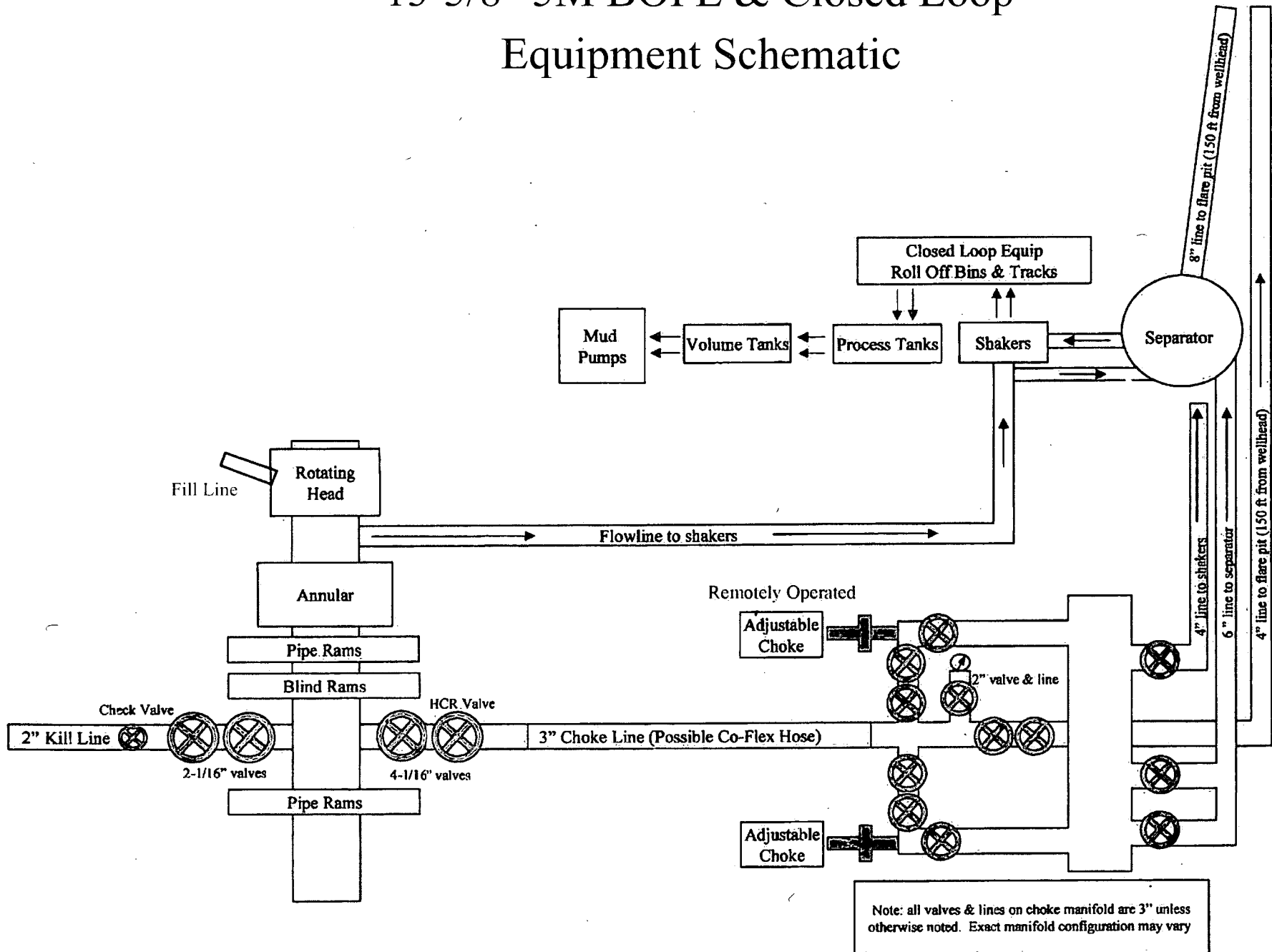


Helmerich & Payne
Rg 282

CAMERON

Name: Jeanette	Date: 7-19-06	Working Pressure:	# J-5132-E
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13-5/8" 5M BOPE & Closed Loop Equipment Schematic



Casing Assumptions and Load Cases

Surface

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

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

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

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

Casing Assumptions and Load Cases

Intermediate

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

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

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

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

Casing Assumptions and Load Cases

Production

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

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

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

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



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

Hydrogen Sulfide (H₂S) Contingency Plan

For

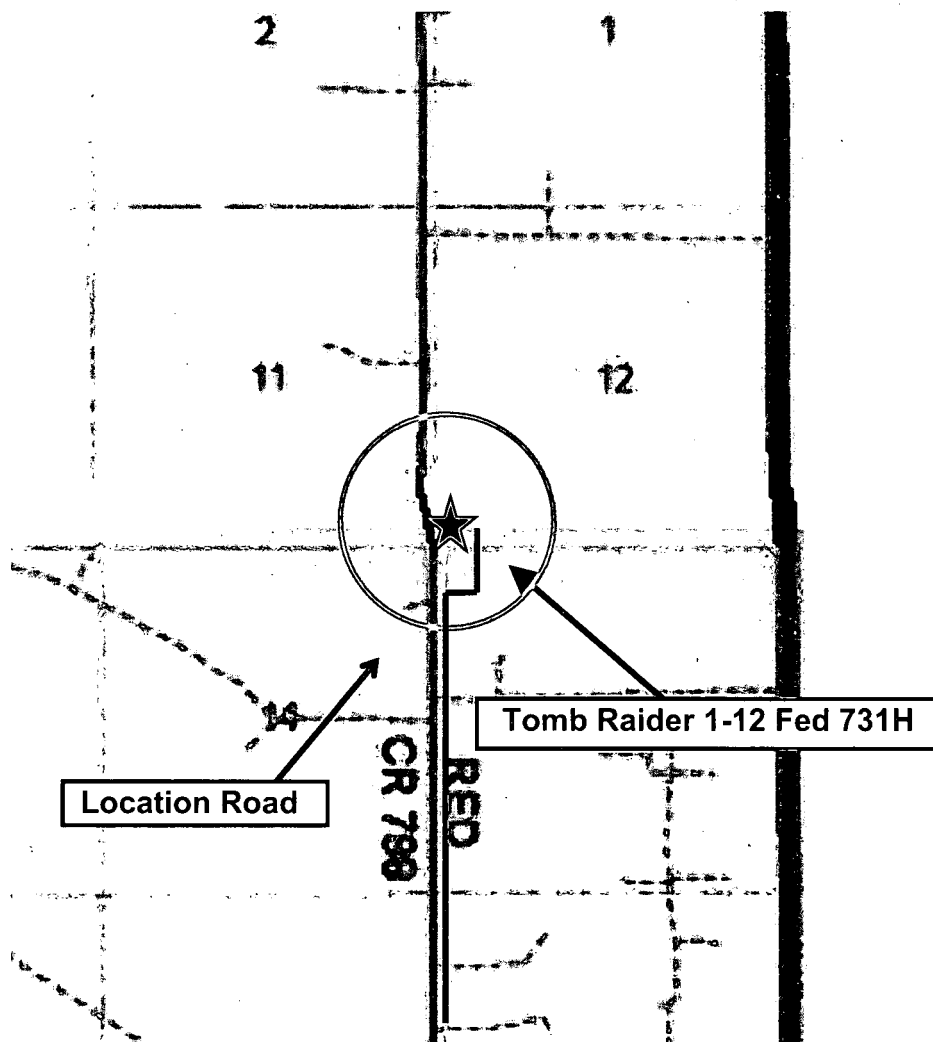
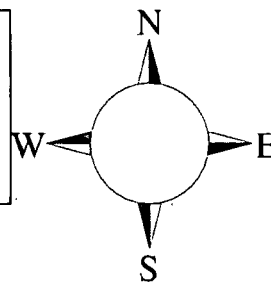
Tomb Raider 12-1 Fed 731H

**Sec-12 T-23S R-31E
250' FSL & 290' FWL
LAT. = 32.3123870' N (NAD83)
LONG = 103.7390887' W**

Eddy County NM

Tomb Raider 1-12 Fed 731H

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.

<u>Devon Energy Corp. Company Call List</u>		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
<u>Agency Call List</u>		
<u>Lea County (575)</u>	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
<u>Eddy County (575)</u>	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
<u>Give GPS position:</u>	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 12-T23S-R31E

Tomb Raider 12-1 Fed 731H

Wellbore #1

Permit Plan 1

Anticollision Report

04 December, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed.731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date 12/4/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	22,346.72	Permit Plan 1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 01-T23S-R31E						
Barclay Fed #1 (P&A) - Wellbore #1 - Wellbore #1						Out of range
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						Out of range
Tomb Raider 1 Fed 1H - Original - Plan 2						Out of range
Tomb Raider 1 Fed 1H - Original - Plan1v2						Out of range
Tomb Raider 1 Fed 1H - Original - PTL						Out of range
Tomb Raider 1 Fed 1H - Original - T&D						Out of range
Tomb Raider 1-12 Fed 332H - Wellbore #1 - Permit Plan	11,800.00	21,728.63	1,189.17	992.96	6.061	SF
Tomb Raider 1-12 Fed 332H - Wellbore #1 - Permit Plan	12,150.00	21,519.79	1,168.11	979.48	6.192	ES
Tomb Raider 1-12 Fed 332H - Wellbore #1 - Permit Plan	12,254.21	21,429.89	1,166.93	981.09	6.279	CC
Tomb Raider 1-12 Fed 334H - Wellbore #1 - Wellbore #1						Out of range
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	9,000.00	18,965.00	331.66	149.03	1.816	Minor Risk, SF
Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1	9,021.71	18,965.00	330.95	148.76	1.817	Minor Risk, CC, ES
Tomb Raider 1-12 Fed 514H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan	9,350.00	19,014.44	1,213.91	1,033.04	6.711	SF
Tomb Raider 1-12 Fed 523H - Wellbore #1 - Permit Plan	9,361.21	19,014.44	1,213.86	1,033.03	6.713	CC, ES
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	9,300.00	19,026.09	1,122.61	989.16	8.412	SF
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	9,342.36	19,026.09	1,121.81	988.52	8.416	CC, ES
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	9,300.00	19,047.07	1,106.83	973.67	8.312	SF
Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan	9,340.71	19,047.07	1,106.08	973.09	8.317	CC, ES
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 1-12 Fed 525H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Prelim 1						Out of range
Tomb Raider 1-12 Fed 614H - Wellbore #1 - T&D						Out of range
Tomb Raider 1-12 Fed 614H - Wellbore #1 - Wellbore #1						Out of range
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	10,227.01	20,215.00	453.55	269.30	2.462	Minor Risk, CC
Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole	10,250.00	20,215.00	454.13	269.28	2.457	Minor Risk, ES, SF
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	10,500.00	20,480.00	868.10	676.10	4.521	Alert, SF
Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1	10,531.27	20,480.00	867.54	675.69	4.522	Alert, CC, ES
Tomb Raider 1-12 Fed 714H - Original Hole - Actuals						Out of range
Tomb Raider 1-12 Fed 714H - Original Hole - NTL						Out of range

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 01-T23S-R31E						
Tomb Raider 1-12 Fed 714H - Original Hole - T&D						Out of range
Tomb Raider 1-12 Fed Com 234H - Wellbore #1 - Wellbo						Out of range
Tomb Raider 1-12 Fed Com 528H - Wellbore #1 - Wellbo						Out of range
Tomb Raider 1-12 Fed Com 718H - Wellbore #1 - Wellbo						Out of range
Sec 12-T23S-R31E						
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	2,000.00	2,000.20	30.00	16.07	2.154	Minor Risk, CC
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	2,050.00	2,049.80	30.22	15.94	2.116	Minor Risk, ES
Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan	10,350.00	10,354.36	102.92	27.04	1.356	Major Risk, SF
Tomb Raider 12-1 Fed 516H - Wellbore #1 - Permit Plan						Out of range
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan	2,000.00	2,008.00	313.08	299.13	22.435	CC
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan	2,100.00	2,108.01	313.46	298.80	21.381	ES
Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan	7,000.00	7,006.59	410.85	361.18	8.272	SF
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	2,000.00	2,000.30	89.95	76.02	6.458	CC
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	2,050.00	2,049.70	90.17	75.89	6.315	ES
Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan	22,346.72	21,949.31	987.47	697.11	3.401	Alert, SF
Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan	2,000.00	2,000.40	59.98	46.05	4.306	Alert, CC
Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan	2,050.00	2,049.60	60.20	45.92	4.216	Alert, ES
Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan	22,346.72	22,082.59	642.50	356.44	2.246	Minor Risk, SF

Offset Design Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 332H - 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 (°)	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)	+E/-W (ft)			
10,850.00	10,806.12	21,765.01	11,620.00	40.21	154.99	-9.45	-119.65	2,079.94	1,477.66	1,308.57	8.738
10,900.00	10,855.90	21,765.72	11,620.00	40.40	155.00	-9.31	-120.36	2,079.94	1,446.23	1,275.02	8.447
10,950.00	10,905.74	21,766.33	11,620.00	40.59	155.01	-9.19	-120.97	2,079.95	1,416.38	1,243.02	8.170
11,000.00	10,955.63	21,766.84	11,620.00	40.77	155.01	-9.09	-121.48	2,079.95	1,388.24	1,212.70	7.909
11,050.00	11,005.55	21,767.25	11,620.00	40.95	155.02	-8.99	-121.90	2,079.95	1,361.89	1,184.18	7.663
11,100.00	11,055.51	21,767.56	11,620.00	41.13	155.02	-8.91	-122.21	2,079.96	1,337.47	1,157.58	7.435
11,150.00	11,105.49	21,767.78	11,620.00	41.31	155.03	-8.84	-122.42	2,079.96	1,315.08	1,133.06	7.225
11,200.00	11,155.48	21,767.89	11,620.00	41.48	155.03	-8.79	-122.53	2,079.96	1,294.82	1,110.72	7.033
11,250.00	11,205.48	21,767.91	11,620.00	41.65	155.03	89.64	-122.55	2,079.96	1,276.77	1,090.67	6.861
11,300.00	11,255.48	21,767.91	11,620.00	41.82	155.03	89.64	-122.55	2,079.96	1,260.57	1,072.59	6.706
11,350.00	11,305.48	21,767.91	11,620.00	41.98	155.03	89.64	-122.55	2,079.96	1,246.16	1,056.43	6.568
11,400.00	11,355.48	21,767.91	11,620.00	42.15	155.03	89.64	-122.55	2,079.96	1,233.62	1,042.29	6.448
11,450.00	11,405.48	21,767.91	11,620.00	42.31	155.03	89.64	-122.55	2,079.96	1,222.99	1,030.23	6.345
11,500.00	11,455.48	21,767.91	11,620.00	42.48	155.03	89.64	-122.55	2,079.96	1,214.33	1,020.34	6.260
11,550.00	11,505.48	21,767.91	11,620.00	42.64	155.03	89.64	-122.55	2,079.96	1,207.68	1,012.66	6.193
11,600.00	11,555.48	21,767.62	11,620.00	42.81	155.03	68.28	-122.27	2,079.96	1,202.95	1,007.13	6.143
11,650.00	11,605.31	21,764.01	11,620.00	42.98	154.97	68.49	-118.65	2,079.93	1,198.96	1,002.61	6.106
11,700.00	11,654.59	21,756.25	11,620.00	43.15	154.87	68.47	-110.90	2,079.89	1,195.38	998.79	6.081
11,750.00	11,702.92	21,744.43	11,620.00	43.32	154.70	68.22	-99.07	2,079.81	1,192.14	995.61	6.066
11,800.00	11,749.92	21,728.63	11,620.00	43.48	154.48	67.79	-83.27	2,079.71	1,189.17	992.96	6.061 SF
11,850.00	11,795.20	21,708.98	11,620.00	43.64	154.20	67.18	-63.62	2,079.59	1,186.32	990.70	6.064
11,900.00	11,838.39	21,685.63	11,620.00	43.79	153.87	66.46	-40.28	2,079.45	1,183.45	988.64	6.075
11,950.00	11,879.15	21,658.79	11,620.00	43.94	153.50	65.65	-13.44	2,079.28	1,180.36	986.54	6.090
12,000.00	11,917.16	21,628.66	11,620.00	44.08	153.07	64.81	16.69	2,079.09	1,176.83	984.18	6.109
12,050.00	11,952.13	21,604.56	11,620.00	44.21	152.74	64.99	49.91	2,078.89	1,172.86	981.36	6.125

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	5.00 ft
Survey Program: 0-MVD+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		
12,100.00	11,984.13	21,559.08	11,620.00	44.33	152.10	66.09	86.27	2,078.66	1,169.91	979.89	190.02	6.157			
12,150.00	12,012.94	21,519.79	11,620.00	44.43	151.55	66.69	125.56	2,078.42	1,168.11	979.48	188.64	6.192 ES			
12,200.00	12,038.36	21,477.88	11,620.00	44.53	150.96	66.94	167.47	2,078.16	1,167.21	979.94	187.27	6.233			
12,250.00	12,060.16	21,433.70	11,620.00	44.62	150.34	66.96	211.65	2,077.88	1,166.93	980.99	185.95	6.276			
12,254.21	12,061.83	21,429.89	11,620.00	44.62	150.29	66.95	215.46	2,077.86	1,166.93	981.09	185.84	6.279 CC			
12,300.00	12,078.18	21,387.60	11,620.00	44.70	149.69	66.84	257.75	2,077.60	1,167.07	982.34	184.72	6.318			
12,350.00	12,092.27	21,339.96	11,620.00	44.77	149.03	66.67	305.39	2,077.30	1,167.39	983.78	183.62	6.358			
12,400.00	12,102.32	21,291.15	11,620.00	44.85	148.34	66.51	354.20	2,077.00	1,167.75	985.09	182.66	6.393			
12,450.00	12,108.24	21,241.57	11,620.00	44.93	147.65	66.40	403.78	2,076.69	1,168.01	986.14	181.87	6.422			
12,500.00	12,110.00	21,208.38	11,620.00	45.01	147.18	66.36	453.73	2,076.38	1,168.10	986.63	181.47	6.437			
12,550.00	12,110.00	21,141.62	11,620.00	45.10	146.25	66.36	503.73	2,076.07	1,168.11	987.39	180.73	6.463			
12,600.00	12,110.00	21,108.38	11,620.00	45.20	145.79	66.36	553.73	2,075.76	1,168.13	987.71	180.42	6.474			
12,650.00	12,110.00	21,041.62	11,620.00	45.32	144.85	66.36	603.72	2,075.45	1,168.14	988.44	179.69	6.501			
12,700.00	12,110.00	20,991.62	11,620.00	45.44	144.15	66.36	653.72	2,075.14	1,168.15	988.96	179.19	6.519			
12,750.00	12,110.00	20,941.62	11,620.00	45.58	143.46	66.36	703.72	2,074.83	1,168.16	989.46	178.71	6.537			
12,800.00	12,110.00	20,908.38	11,620.00	45.73	142.99	66.36	753.72	2,074.52	1,168.17	989.73	178.44	6.547			
12,850.00	12,110.00	20,841.62	11,620.00	45.90	142.06	66.36	803.72	2,074.21	1,168.18	990.43	177.76	6.572			
12,900.00	12,110.00	20,808.38	11,620.00	46.07	141.60	66.36	853.72	2,073.90	1,168.20	990.68	177.52	6.581			
12,950.00	12,110.00	20,741.62	11,620.00	46.26	140.67	66.36	903.72	2,073.59	1,168.21	991.35	176.85	6.606			
13,000.00	12,110.00	20,708.38	11,620.00	46.46	140.20	66.36	953.72	2,073.28	1,168.22	991.59	176.63	6.614			
13,050.00	12,110.00	20,641.62	11,620.00	46.68	139.27	66.36	1,003.72	2,072.97	1,168.23	992.24	175.99	6.638			
13,100.00	12,110.00	20,608.38	11,620.00	46.90	138.81	66.36	1,053.72	2,072.66	1,168.24	992.46	175.78	6.646			
13,150.00	12,110.00	20,541.62	11,620.00	47.13	137.88	66.36	1,103.71	2,072.35	1,168.25	993.09	175.16	6.670			
13,200.00	12,110.00	20,508.38	11,620.00	47.37	137.42	66.36	1,153.71	2,072.04	1,168.26	993.29	174.97	6.677			
13,250.00	12,110.00	20,441.62	11,620.00	47.63	136.49	66.36	1,203.71	2,071.73	1,168.28	993.91	174.37	6.700			
13,300.00	12,110.00	20,408.38	11,620.00	47.89	136.03	66.36	1,253.71	2,071.41	1,168.29	994.08	174.20	6.706			
13,350.00	12,110.00	20,341.62	11,620.00	48.17	135.10	66.36	1,303.71	2,071.10	1,168.30	994.68	173.62	6.729			
13,400.00	12,110.00	20,291.62	11,620.00	48.45	134.41	66.36	1,353.71	2,070.79	1,168.31	995.06	173.25	6.744			
13,450.00	12,110.00	20,241.62	11,620.00	48.74	133.72	66.36	1,403.71	2,070.48	1,168.32	995.42	172.90	6.757			
13,500.00	12,110.00	20,208.38	11,620.00	49.04	133.26	66.36	1,453.71	2,070.17	1,168.33	995.57	172.77	6.763			
13,550.00	12,110.00	20,141.62	11,620.00	49.36	132.33	66.36	1,503.71	2,069.86	1,168.34	996.13	172.21	6.784			
13,600.00	12,110.00	20,108.38	11,620.00	49.67	131.87	66.37	1,553.71	2,069.55	1,168.36	996.26	172.10	6.789			
13,650.00	12,110.00	20,041.62	11,620.00	50.01	130.95	66.37	1,603.70	2,069.24	1,168.37	996.81	171.56	6.810			
13,700.00	12,110.00	20,008.38	11,620.00	50.34	130.49	66.37	1,653.70	2,068.93	1,168.38	996.92	171.46	6.814			
13,750.00	12,110.00	19,941.62	11,620.00	50.69	129.57	66.37	1,703.70	2,068.62	1,168.39	997.45	170.94	6.835			
13,800.00	12,110.00	19,908.38	11,620.00	51.04	129.11	66.37	1,753.70	2,068.31	1,168.40	997.54	170.86	6.838			
13,850.00	12,110.00	19,841.62	11,620.00	51.40	128.18	66.37	1,803.70	2,068.00	1,168.41	998.06	170.35	6.859			
13,900.00	12,110.00	19,808.38	11,620.00	51.77	127.73	66.37	1,853.70	2,067.69	1,168.42	998.14	170.28	6.862			
13,950.00	12,110.00	19,741.62	11,620.00	52.15	126.81	66.37	1,903.70	2,067.38	1,168.44	998.64	169.79	6.882			
14,000.00	12,110.00	19,708.38	11,620.00	52.53	126.35	66.37	1,953.70	2,067.07	1,168.45	998.71	169.74	6.884			
14,050.00	12,110.00	19,641.62	11,620.00	52.93	125.43	66.37	2,003.70	2,066.76	1,168.46	999.20	169.26	6.903			
14,100.00	12,110.00	19,591.62	11,620.00	53.32	124.74	66.37	2,053.70	2,066.45	1,168.47	999.47	169.00	6.914			
14,150.00	12,110.00	19,541.62	11,620.00	53.73	124.05	66.37	2,103.70	2,066.14	1,168.48	999.73	168.76	6.924			
14,200.00	12,110.00	19,508.38	11,620.00	54.14	123.60	66.37	2,153.69	2,065.83	1,168.49	999.77	168.73	6.925			
14,250.00	12,110.00	19,441.62	11,620.00	54.57	122.68	66.37	2,203.69	2,065.52	1,168.51	1,000.23	168.28	6.944			
14,300.00	12,110.00	19,408.38	11,620.00	54.99	122.22	66.37	2,253.69	2,065.21	1,168.52	1,000.26	168.26	6.945			
14,350.00	12,110.00	19,341.62	11,620.00	55.42	121.31	66.37	2,303.69	2,064.90	1,168.53	1,000.70	167.82	6.963			
14,400.00	12,110.00	19,308.38	11,620.00	55.86	120.85	66.37	2,353.69	2,064.59	1,168.54	1,000.72	167.82	6.963			
14,450.00	12,110.00	19,241.62	11,620.00	56.31	119.94	66.37	2,403.69	2,064.28	1,168.55	1,001.16	167.39	6.981			
14,500.00	12,110.00	19,208.38	11,620.00	56.76	119.48	66.37	2,453.69	2,063.97	1,168.56	1,001.16	167.40	6.981			
14,550.00	12,110.00	19,141.62	11,620.00	57.21	118.57	66.37	2,503.69	2,063.66	1,168.57	1,001.59	166.99	6.998			
14,600.00	12,110.00	19,108.38	11,620.00	57.67	118.12	66.37	2,553.69	2,063.35	1,168.59	1,001.58	167.00	6.997			

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 332H - 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 (°)	Distance						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)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
14,650.00	12,110.00	19,041.62	11,620.00	58.14	117.21	66.37	2,603.69	2,063.04	1,168.60	1,002.00	166.60	7.014				
14,700.00	12,110.00	19,008.38	11,620.00	58.61	116.75	66.37	2,653.68	2,062.72	1,168.61	1,001.98	166.63	7.013				
14,750.00	12,110.00	18,941.62	11,620.00	59.09	115.84	66.37	2,703.68	2,062.41	1,168.62	1,002.38	166.24	7.030				
14,800.00	12,110.00	18,908.38	11,620.00	59.57	115.39	66.37	2,753.68	2,062.10	1,168.63	1,002.36	166.27	7.028				
14,850.00	12,110.00	18,841.62	11,620.00	60.06	114.48	66.37	2,803.68	2,061.79	1,168.64	1,002.75	165.89	7.045				
14,900.00	12,110.00	18,808.38	11,620.00	60.56	114.03	66.37	2,853.68	2,061.48	1,168.65	1,002.71	165.94	7.043				
14,950.00	12,110.00	18,741.62	11,620.00	61.06	113.13	66.37	2,903.68	2,061.17	1,168.67	1,003.10	165.57	7.059				
15,000.00	12,110.00	18,708.38	11,620.00	61.56	112.68	66.37	2,953.68	2,060.86	1,168.68	1,003.05	165.62	7.056				
15,050.00	12,110.00	18,641.62	11,620.00	62.06	111.77	66.37	3,003.68	2,060.55	1,168.69	1,003.43	165.26	7.072				
15,100.00	12,110.00	18,608.38	11,620.00	62.57	111.32	66.37	3,053.68	2,060.24	1,168.70	1,003.37	165.33	7.069				
15,150.00	12,110.00	18,541.62	11,620.00	63.09	110.42	66.37	3,103.68	2,059.93	1,168.71	1,003.74	164.97	7.084				
15,200.00	12,110.00	18,508.38	11,620.00	63.61	109.97	66.37	3,153.67	2,059.62	1,168.72	1,003.67	165.05	7.081				
15,250.00	12,110.00	18,441.62	11,620.00	64.13	109.07	66.37	3,203.67	2,059.31	1,168.73	1,004.03	164.70	7.096				
15,300.00	12,110.00	18,408.38	11,620.00	64.66	108.62	66.37	3,253.67	2,059.00	1,168.75	1,003.96	164.79	7.092				
15,350.00	12,110.00	18,341.62	11,620.00	65.19	107.72	66.37	3,303.67	2,058.69	1,168.76	1,004.31	164.45	7.107				
15,400.00	12,110.00	18,308.38	11,620.00	65.73	107.27	66.37	3,353.67	2,058.38	1,168.77	1,004.23	164.54	7.103				
15,450.00	12,110.00	18,241.62	11,620.00	66.27	106.38	66.37	3,403.67	2,058.07	1,168.78	1,004.57	164.21	7.117				
15,500.00	12,110.00	18,208.38	11,620.00	66.81	105.93	66.37	3,453.67	2,057.76	1,168.79	1,004.48	164.31	7.113				
15,550.00	12,110.00	18,141.62	11,620.00	67.36	105.04	66.37	3,503.67	2,057.45	1,168.80	1,004.81	163.99	7.127				
15,600.00	12,110.00	18,108.38	11,620.00	67.90	104.59	66.38	3,553.67	2,057.14	1,168.82	1,004.72	164.10	7.123				
15,650.00	12,110.00	18,041.62	11,620.00	68.46	103.70	66.38	3,603.67	2,056.83	1,168.83	1,005.04	163.79	7.136				
15,700.00	12,110.00	18,008.38	11,620.00	69.01	103.25	66.38	3,653.67	2,056.52	1,168.84	1,004.94	163.90	7.132				
15,750.00	12,110.00	17,941.62	11,620.00	69.57	102.36	66.38	3,703.66	2,056.21	1,168.85	1,005.26	163.59	7.145				
15,800.00	12,110.00	17,908.38	11,620.00	70.13	101.92	66.38	3,753.66	2,055.90	1,168.86	1,005.15	163.71	7.140				
15,850.00	12,110.00	17,841.62	11,620.00	70.70	101.03	66.38	3,803.66	2,055.59	1,168.87	1,005.46	163.42	7.153				
15,900.00	12,110.00	17,808.38	11,620.00	71.27	100.59	66.38	3,853.66	2,055.28	1,168.88	1,005.34	163.54	7.147				
15,950.00	12,110.00	17,741.62	11,620.00	71.84	99.70	66.38	3,903.66	2,054.97	1,168.90	1,005.64	163.25	7.160				
16,000.00	12,110.00	17,708.38	11,620.00	72.41	99.26	66.38	3,953.66	2,054.66	1,168.91	1,005.52	163.38	7.154				
16,050.00	12,110.00	17,641.62	11,620.00	72.99	98.38	66.38	4,003.66	2,054.35	1,168.92	1,005.82	163.10	7.167				
16,100.00	12,110.00	17,608.38	11,620.00	73.57	97.94	66.38	4,053.66	2,054.04	1,168.93	1,005.69	163.24	7.161				
16,150.00	12,110.00	17,541.62	11,620.00	74.15	97.06	66.38	4,103.66	2,053.72	1,168.94	1,005.97	162.97	7.173				
16,200.00	12,110.00	17,508.38	11,620.00	74.74	96.62	66.38	4,153.66	2,053.41	1,168.95	1,005.84	163.11	7.167				
16,250.00	12,110.00	17,441.62	11,620.00	75.33	95.74	66.38	4,203.65	2,053.10	1,168.96	1,006.12	162.84	7.178				
16,300.00	12,110.00	17,408.38	11,620.00	75.91	95.31	66.38	4,253.65	2,052.79	1,168.98	1,005.98	162.99	7.172				
16,350.00	12,110.00	17,341.62	11,620.00	76.51	94.43	66.38	4,303.65	2,052.48	1,168.99	1,006.26	162.73	7.184				
16,400.00	12,110.00	17,308.38	11,620.00	77.10	94.00	66.38	4,353.65	2,052.17	1,169.00	1,006.11	162.89	7.177				
16,450.00	12,110.00	17,241.62	11,620.00	77.70	93.12	66.38	4,403.65	2,051.86	1,169.01	1,006.38	162.63	7.188				
16,500.00	12,110.00	17,208.38	11,620.00	78.30	92.69	66.38	4,453.65	2,051.55	1,169.02	1,006.23	162.79	7.181				
16,550.00	12,110.00	17,141.62	11,620.00	78.90	91.82	66.38	4,503.65	2,051.24	1,169.03	1,006.49	162.55	7.192				
16,600.00	12,110.00	17,108.38	11,620.00	79.50	91.39	66.38	4,553.65	2,050.93	1,169.05	1,006.33	162.71	7.185				
16,650.00	12,110.00	17,041.62	11,620.00	80.11	90.52	66.38	4,603.65	2,050.62	1,169.06	1,006.58	162.47	7.195				
16,700.00	12,110.00	17,008.38	11,620.00	80.71	90.09	66.38	4,653.65	2,050.31	1,169.07	1,006.43	162.64	7.188				
16,750.00	12,110.00	16,941.62	11,620.00	81.32	89.23	66.38	4,703.65	2,050.00	1,169.08	1,006.67	162.41	7.198				
16,800.00	12,110.00	16,908.38	11,620.00	81.94	88.80	66.38	4,753.64	2,049.69	1,169.09	1,006.51	162.59	7.191				
16,850.00	12,110.00	16,841.62	11,620.00	82.55	87.94	66.38	4,803.64	2,049.38	1,169.10	1,006.74	162.36	7.201				
16,900.00	12,110.00	16,808.38	11,620.00	83.16	87.51	66.38	4,853.64	2,049.07	1,169.11	1,006.57	162.54	7.193				
16,950.00	12,110.00	16,741.62	11,620.00	83.78	86.66	66.38	4,903.64	2,048.76	1,169.13	1,006.80	162.32	7.203				
17,000.00	12,110.00	16,708.38	11,620.00	84.40	86.23	66.38	4,953.64	2,048.45	1,169.14	1,006.63	162.51	7.194				
17,050.00	12,110.00	16,641.62	11,620.00	85.02	85.38	66.38	5,003.64	2,048.14	1,169.15	1,006.85	162.29	7.204				
17,100.00	12,110.00	16,608.38	11,620.00	85.64	84.95	66.38	5,053.64	2,047.83	1,169.16	1,006.68	162.48	7.196				
17,150.00	12,110.00	16,541.62	11,620.00	86.27	84.11	66.38	5,103.64	2,047.52	1,169.17	1,006.89	162.28	7.205				
17,200.00	12,110.00	16,508.38	11,620.00	86.89	83.69	66.38	5,153.64	2,047.21	1,169.18	1,006.71	162.47	7.196				

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:
Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 332H - Wellbore #1 - Permit Plan 1													5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
17,250.00	12,110.00	16,441.62	11,620.00	87.52	82.84	66.38	5,203.64	2,046.90	1,169.19	1,006.92	162.27	7.205	
17,300.00	12,110.00	16,408.38	11,620.00	88.15	82.42	66.38	5,253.63	2,046.59	1,169.21	1,006.73	162.47	7.196	
17,350.00	12,110.00	16,341.62	11,620.00	88.78	81.58	66.38	5,303.63	2,046.28	1,169.22	1,006.93	162.28	7.205	
17,400.00	12,110.00	16,308.38	11,620.00	89.41	81.17	66.38	5,353.63	2,045.97	1,169.23	1,006.74	162.49	7.196	
17,450.00	12,110.00	16,241.62	11,620.00	90.04	80.33	66.38	5,403.63	2,045.66	1,169.24	1,006.94	162.30	7.204	
17,500.00	12,110.00	16,208.38	11,620.00	90.68	79.92	66.38	5,453.63	2,045.35	1,169.25	1,006.74	162.51	7.195	
17,550.00	12,110.00	16,141.62	11,620.00	91.31	79.09	66.38	5,503.63	2,045.03	1,169.26	1,006.93	162.33	7.203	
17,600.00	12,110.00	16,091.62	11,620.00	91.95	78.46	66.38	5,553.63	2,044.72	1,169.27	1,006.92	162.35	7.202	
17,650.00	12,110.00	16,041.62	11,620.00	92.59	77.85	66.39	5,603.63	2,044.41	1,169.29	1,006.91	162.38	7.201	
17,700.00	12,110.00	15,991.62	11,620.00	93.23	77.23	66.39	5,653.63	2,044.10	1,169.30	1,006.90	162.40	7.200	
17,750.00	12,110.00	15,941.62	11,620.00	93.87	76.62	66.39	5,703.63	2,043.79	1,169.31	1,006.88	162.43	7.199	
17,800.00	12,110.00	15,908.38	11,620.00	94.52	76.21	66.39	5,753.62	2,043.48	1,169.32	1,006.66	162.66	7.189	
17,850.00	12,110.00	15,841.62	11,620.00	95.16	75.40	66.39	5,803.62	2,043.17	1,169.33	1,006.83	162.50	7.196	
17,900.00	12,110.00	15,808.38	11,620.00	95.80	74.99	66.39	5,853.62	2,042.86	1,169.34	1,006.62	162.73	7.186	
17,950.00	12,110.00	15,741.62	11,620.00	96.45	74.18	66.39	5,903.62	2,042.55	1,169.36	1,006.78	162.58	7.193	
18,000.00	12,110.00	15,708.38	11,620.00	97.10	73.78	66.39	5,953.62	2,042.24	1,169.37	1,006.55	162.81	7.182	
18,050.00	12,110.00	15,641.62	11,620.00	97.75	72.98	66.39	6,003.62	2,041.93	1,169.38	1,006.71	162.67	7.189	
18,100.00	12,110.00	15,608.38	11,620.00	98.40	72.58	66.39	6,053.62	2,041.62	1,169.39	1,006.48	162.91	7.178	
18,150.00	12,110.00	15,541.62	11,620.00	99.05	71.78	66.39	6,103.62	2,041.31	1,169.40	1,006.62	162.78	7.184	
18,200.00	12,110.00	15,508.38	11,620.00	99.70	71.39	66.39	6,153.62	2,041.00	1,169.41	1,006.39	163.02	7.173	
18,250.00	12,110.00	15,441.62	11,620.00	100.35	70.60	66.39	6,203.62	2,040.69	1,169.42	1,006.53	162.90	7.179	
18,300.00	12,110.00	15,408.38	11,620.00	101.01	70.21	66.39	6,253.62	2,040.38	1,169.44	1,006.29	163.14	7.168	
18,350.00	12,110.00	15,341.62	11,620.00	101.66	69.42	66.39	6,303.61	2,040.07	1,169.45	1,006.42	163.03	7.173	
18,400.00	12,110.00	15,308.38	11,620.00	102.32	69.03	66.39	6,353.61	2,039.76	1,169.46	1,006.18	163.28	7.162	
18,450.00	12,110.00	15,241.62	11,620.00	102.98	68.26	66.39	6,403.61	2,039.45	1,169.47	1,006.30	163.17	7.167	
18,500.00	12,110.00	15,208.38	11,620.00	103.63	67.87	66.39	6,453.61	2,039.14	1,169.48	1,006.05	163.43	7.156	
18,550.00	12,110.00	15,141.62	11,620.00	104.29	67.11	66.39	6,503.61	2,038.83	1,169.49	1,006.16	163.33	7.160	
18,600.00	12,110.00	15,108.38	11,620.00	104.95	66.73	66.39	6,553.61	2,038.52	1,169.50	1,005.91	163.60	7.149	
18,650.00	12,110.00	15,041.62	11,620.00	105.61	65.97	66.39	6,603.61	2,038.21	1,169.52	1,006.01	163.51	7.153	
18,700.00	12,110.00	15,008.38	11,620.00	106.27	65.59	66.39	6,653.61	2,037.90	1,169.53	1,005.75	163.78	7.141	
18,750.00	12,110.00	14,941.62	11,620.00	106.94	64.84	66.39	6,703.61	2,037.59	1,169.54	1,005.84	163.70	7.144	
18,800.00	12,110.00	14,908.38	11,620.00	107.60	64.47	66.39	6,753.61	2,037.28	1,169.55	1,005.58	163.97	7.133	
18,850.00	12,110.00	14,841.62	11,620.00	108.27	63.73	66.39	6,803.60	2,036.97	1,169.56	1,005.66	163.90	7.136	
18,900.00	12,110.00	14,808.38	11,620.00	108.93	63.36	66.39	6,853.60	2,036.66	1,169.57	1,005.39	164.18	7.124	
18,950.00	12,110.00	14,741.62	11,620.00	109.60	62.63	66.39	6,903.60	2,036.35	1,169.58	1,005.46	164.13	7.126	
19,000.00	12,110.00	14,708.38	11,620.00	110.26	62.26	66.39	6,953.60	2,036.03	1,169.60	1,005.18	164.41	7.114	
19,050.00	12,110.00	14,641.62	11,620.00	110.93	61.54	66.39	7,003.60	2,035.72	1,169.61	1,005.24	164.36	7.116	
19,100.00	12,110.00	14,608.38	11,620.00	111.60	61.18	66.39	7,053.60	2,035.41	1,169.62	1,004.96	164.66	7.103	
19,150.00	12,110.00	14,541.62	11,620.00	112.27	60.47	66.39	7,103.60	2,035.10	1,169.63	1,005.01	164.62	7.105	
19,200.00	12,110.00	14,508.38	11,620.00	112.94	60.12	66.39	7,153.60	2,034.79	1,169.64	1,004.72	164.92	7.092	
19,250.00	12,110.00	14,441.62	11,620.00	113.61	59.42	66.39	7,203.60	2,034.48	1,169.65	1,004.76	164.89	7.093	
19,300.00	12,110.00	14,408.38	11,620.00	114.28	59.07	66.39	7,253.60	2,034.17	1,169.67	1,004.46	165.20	7.080	
19,350.00	12,110.00	14,341.62	11,620.00	114.95	58.38	66.39	7,303.59	2,033.86	1,169.68	1,004.49	165.19	7.081	
19,400.00	12,110.00	14,308.38	11,620.00	115.62	58.04	66.39	7,353.59	2,033.55	1,169.69	1,004.19	165.50	7.068	
19,450.00	12,110.00	14,241.62	11,620.00	116.30	57.37	66.39	7,403.59	2,033.24	1,169.70	1,004.20	165.50	7.068	
19,500.00	12,110.00	14,208.38	11,620.00	116.97	57.03	66.39	7,453.59	2,032.93	1,169.71	1,003.89	165.82	7.054	
19,550.00	12,110.00	14,141.62	11,620.00	117.65	56.37	66.39	7,503.59	2,032.62	1,169.72	1,003.89	165.83	7.054	
19,600.00	12,110.00	14,108.38	11,620.00	118.32	56.04	66.39	7,553.59	2,032.31	1,169.73	1,003.57	166.16	7.040	
19,650.00	12,110.00	14,041.62	11,620.00	119.00	55.39	66.39	7,603.59	2,032.00	1,169.75	1,003.56	166.19	7.039	
19,700.00	12,110.00	14,008.38	11,620.00	119.67	55.07	66.40	7,653.59	2,031.69	1,169.76	1,003.23	166.52	7.025	
19,750.00	12,110.00	13,941.62	11,620.00	120.35	54.44	66.40	7,703.59	2,031.38	1,169.77	1,003.20	166.57	7.023	
19,800.00	12,110.00	13,908.38	11,620.00	121.03	54.12	66.40	7,753.59	2,031.07	1,169.78	1,002.87	166.91	7.008	

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													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	
19,850.00	12,110.00	13,841.62	11,620.00	121.71	53.50	66.40	7,803.59	2,030.76	1,169.79	1,002.83	166.97	7.006		
19,900.00	12,110.00	13,808.38	11,620.00	122.38	53.20	66.40	7,853.58	2,030.45	1,169.80	1,002.49	167.32	6.992		
19,950.00	12,110.00	13,741.62	11,620.00	123.06	52.60	66.40	7,903.58	2,030.14	1,169.81	1,002.42	167.39	6.989		
20,000.00	12,110.00	13,691.62	11,620.00	123.74	52.15	66.40	7,953.58	2,029.83	1,169.83	1,002.22	167.61	6.979		
20,050.00	12,110.00	13,641.62	11,620.00	124.43	51.71	66.40	8,003.58	2,029.52	1,169.84	1,002.00	167.84	6.970		
20,100.00	12,110.00	13,591.62	11,620.00	125.11	51.28	66.40	8,053.58	2,029.21	1,169.85	1,001.77	168.07	6.960		
20,150.00	12,110.00	13,541.62	11,620.00	125.79	50.86	66.40	8,103.58	2,028.90	1,169.86	1,001.54	168.32	6.950		
20,200.00	12,110.00	13,508.38	11,620.00	126.47	50.57	66.40	8,153.58	2,028.59	1,169.87	1,001.18	168.70	6.935		
20,250.00	12,110.00	13,441.62	11,620.00	127.15	50.03	66.40	8,203.58	2,028.28	1,169.88	1,001.06	168.82	6.930		
20,300.00	12,110.00	13,391.62	11,620.00	127.84	49.62	66.40	8,253.58	2,027.97	1,169.89	1,000.81	169.08	6.919		
20,350.00	12,110.00	13,341.62	11,620.00	128.52	49.23	66.40	8,303.58	2,027.66	1,169.91	1,000.55	169.36	6.908		
20,400.00	12,110.00	13,308.38	11,620.00	129.20	48.96	66.40	8,353.57	2,027.34	1,169.92	1,000.16	169.75	6.892		
20,450.00	12,110.00	13,241.62	11,620.00	129.89	48.46	66.40	8,403.57	2,027.03	1,169.93	1,000.01	169.92	6.885		
20,500.00	12,110.00	13,208.38	11,620.00	130.57	48.20	66.40	8,453.57	2,026.72	1,169.94	999.61	170.33	6.869		
20,550.00	12,110.00	13,141.62	11,620.00	131.26	47.72	66.40	8,503.57	2,026.41	1,169.95	999.44	170.52	6.861		
20,600.00	12,110.00	13,108.38	11,620.00	131.95	47.48	66.40	8,553.57	2,026.10	1,169.96	999.03	170.94	6.844		
20,650.00	12,110.00	13,041.62	11,620.00	132.63	47.01	66.40	8,603.57	2,025.79	1,169.98	998.83	171.15	6.836		
20,700.00	12,110.00	13,008.38	11,620.00	133.32	46.79	66.40	8,653.57	2,025.48	1,169.99	998.41	171.58	6.819		
20,750.00	12,110.00	12,941.62	11,620.00	134.01	46.35	66.40	8,703.57	2,025.17	1,170.00	998.19	171.81	6.810		
20,800.00	12,110.00	12,908.38	11,620.00	134.69	46.13	66.40	8,753.57	2,024.86	1,170.01	997.76	172.25	6.792		
20,850.00	12,110.00	12,841.62	11,620.00	135.38	45.71	66.40	8,803.57	2,024.55	1,170.02	997.51	172.51	6.782		
20,900.00	12,110.00	12,808.38	11,620.00	136.07	45.51	66.40	8,853.57	2,024.24	1,170.03	997.07	172.96	6.765		
20,950.00	12,110.00	12,741.62	11,620.00	136.76	45.12	66.40	8,903.56	2,023.93	1,170.04	996.80	173.24	6.754		
21,000.00	12,110.00	12,708.38	11,620.00	137.45	44.93	66.40	8,953.56	2,023.62	1,170.06	996.34	173.71	6.736		
21,050.00	12,110.00	12,641.62	11,620.00	138.14	44.57	66.40	9,003.56	2,023.31	1,170.07	996.05	174.02	6.724		
21,100.00	12,110.00	12,608.38	11,620.00	138.83	44.39	66.40	9,053.56	2,023.00	1,170.08	995.58	174.50	6.705		
21,150.00	12,110.00	12,541.62	11,620.00	139.52	44.05	66.40	9,103.56	2,022.69	1,170.09	995.26	174.83	6.693		
21,200.00	12,110.00	12,508.38	11,620.00	140.21	43.89	66.40	9,153.56	2,022.38	1,170.10	994.77	175.33	6.674		
21,250.00	12,110.00	12,441.62	11,620.00	140.90	43.58	66.40	9,203.56	2,022.07	1,170.11	994.42	175.69	6.660		
21,300.00	12,110.00	12,408.38	11,620.00	141.60	43.43	66.40	9,253.56	2,021.76	1,170.12	993.93	176.20	6.641		
21,350.00	12,110.00	12,341.62	11,620.00	142.29	43.16	66.40	9,303.56	2,021.45	1,170.14	993.55	176.59	6.626		
21,400.00	12,110.00	12,308.38	11,620.00	142.98	43.02	66.40	9,353.56	2,021.14	1,170.15	993.04	177.11	6.607		
21,450.00	12,110.00	12,241.62	11,620.00	143.67	42.77	66.40	9,403.55	2,020.83	1,170.16	992.63	177.53	6.591		
21,500.00	12,110.00	12,191.62	11,620.00	144.37	42.60	66.40	9,453.55	2,020.52	1,170.17	992.16	178.01	6.573		
21,550.00	12,110.00	12,141.62	11,620.00	145.06	42.44	66.40	9,503.55	2,020.21	1,170.18	991.66	178.52	6.555		
21,600.00	12,110.00	12,108.38	11,620.00	145.76	42.33	66.40	9,553.55	2,019.90	1,170.19	991.12	179.07	6.535		
21,650.00	12,110.00	12,041.62	11,620.00	146.45	42.15	66.40	9,603.55	2,019.59	1,170.20	990.66	179.55	6.517		
21,700.00	12,110.00	12,008.38	11,620.00	147.14	42.06	66.41	9,653.55	2,019.28	1,170.22	990.10	180.12	6.497		
21,700.92	12,110.00	12,009.30	11,620.00	147.16	42.06	66.41	9,654.47	2,019.27	1,170.22	990.08	180.13	6.496		
21,750.00	12,110.00	11,950.42	11,620.00	147.84	41.92	66.41	9,694.74	2,019.02	1,170.26	989.55	180.71	6.476		
21,800.00	12,110.00	11,918.10	11,619.09	148.54	41.85	66.36	9,727.05	2,018.82	1,170.90	989.52	181.39	6.455		
21,850.00	12,110.00	11,890.78	11,616.90	149.23	41.79	66.27	9,754.28	2,018.65	1,172.53	990.52	182.02	6.442		
21,900.00	12,110.00	11,863.72	11,613.45	149.93	41.73	66.11	9,781.12	2,018.48	1,175.13	992.58	182.55	6.437		
21,950.00	12,110.00	11,837.04	11,608.82	150.62	41.67	65.91	9,807.38	2,018.32	1,178.72	995.72	183.00	6.441		
22,000.00	12,110.00	11,810.86	11,603.08	151.32	41.61	65.65	9,832.93	2,018.16	1,183.32	999.97	183.35	6.454		
22,050.00	12,110.00	11,785.25	11,596.36	152.02	41.55	65.35	9,857.63	2,018.01	1,188.95	1,005.33	183.61	6.475		
22,100.00	12,110.00	11,760.31	11,588.75	152.71	41.49	65.02	9,881.39	2,017.86	1,195.62	1,011.85	183.78	6.506		
22,150.00	12,110.00	11,736.09	11,580.37	153.41	41.44	64.65	9,904.11	2,017.72	1,203.38	1,019.53	183.85	6.546		
22,200.00	12,110.00	11,712.65	11,571.37	154.11	41.39	64.26	9,925.75	2,017.59	1,212.23	1,028.41	183.82	6.595		
22,250.00	12,110.00	11,700.00	11,566.14	154.81	41.36	64.03	9,937.26	2,017.51	1,222.28	1,038.52	183.76	6.652		
22,300.00	12,110.00	11,668.24	11,551.90	155.51	41.28	63.42	9,965.65	2,017.34	1,233.30	1,049.82	183.48	6.722		
22,346.72	12,110.00	11,650.00	11,543.03	156.16	41.24	63.05	9,981.58	2,017.24	1,244.73	1,061.53	183.20	6.794		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	5.00 ft
Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 512H - Wellbore #1 - Wellbore #1														Offset Well Error:	0.50 ft
Survey Program: 117-MWD+HDGM															
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		
7,600.00	7,572.97	18,965.00	8,921.35	27.76	151.95	-16.02	-55.92	1,003.60	1,459.72	1,354.30	105.42	13.846			
7,650.00	7,622.71	18,965.00	8,921.35	27.95	151.95	-16.02	-55.92	1,003.60	1,411.07	1,304.99	106.07	13.303			
7,700.00	7,672.46	18,965.00	8,921.35	28.15	151.95	-16.02	-55.92	1,003.60	1,362.51	1,255.74	106.77	12.761			
7,750.00	7,722.20	18,965.00	8,921.35	28.34	151.95	-16.02	-55.92	1,003.60	1,314.07	1,206.55	107.52	12.222			
7,800.00	7,771.94	18,965.00	8,921.35	28.53	151.95	-16.02	-55.92	1,003.60	1,265.74	1,157.41	108.33	11.684			
7,850.00	7,821.68	18,965.00	8,921.35	28.72	151.95	-16.02	-55.92	1,003.60	1,217.55	1,108.34	109.21	11.149			
7,900.00	7,871.42	18,965.00	8,921.35	28.91	151.95	-16.02	-55.92	1,003.60	1,169.51	1,059.35	110.17	10.616			
7,950.00	7,921.16	18,965.00	8,921.35	29.10	151.95	-16.02	-55.92	1,003.60	1,121.65	1,010.43	111.21	10.086			
8,000.00	7,970.90	18,965.00	8,921.35	29.29	151.95	-16.02	-55.92	1,003.60	1,073.97	961.61	112.36	9.558			
8,050.00	8,020.64	18,965.00	8,921.35	29.48	151.95	-16.02	-55.92	1,003.60	1,026.52	912.90	113.62	9.035			
8,100.00	8,070.38	18,965.00	8,921.35	29.67	151.95	-16.02	-55.92	1,003.60	979.32	864.31	115.01	8.515			
8,150.00	8,120.12	18,965.00	8,921.35	29.87	151.95	-16.02	-55.92	1,003.60	932.42	815.86	116.56	7.999			
8,200.00	8,169.86	18,965.00	8,921.35	30.06	151.95	-16.02	-55.92	1,003.60	885.85	767.56	118.29	7.489			
8,250.00	8,219.60	18,965.00	8,921.35	30.25	151.95	-16.02	-55.92	1,003.60	839.68	719.46	120.22	6.985			
8,300.00	8,269.34	18,965.00	8,921.35	30.44	151.95	-16.02	-55.92	1,003.60	793.97	671.58	122.39	6.487			
8,350.00	8,319.08	18,965.00	8,921.35	30.63	151.95	-16.02	-55.92	1,003.60	748.81	623.98	124.84	5.998			
8,400.00	8,368.82	18,965.00	8,921.35	30.82	151.95	-16.02	-55.92	1,003.60	704.31	576.70	127.61	5.519			
8,450.00	8,418.57	18,965.00	8,921.35	31.01	151.95	-16.02	-55.92	1,003.60	660.59	529.83	130.76	5.052			
8,500.00	8,468.31	18,965.00	8,921.35	31.20	151.95	-16.02	-55.92	1,003.60	617.82	483.49	134.33	4.599 Alert			
8,550.00	8,518.05	18,965.00	8,921.35	31.40	151.95	-16.02	-55.92	1,003.60	576.23	437.83	138.40	4.163 Alert			
8,600.00	8,567.79	18,965.00	8,921.35	31.59	151.95	-16.02	-55.92	1,003.60	536.06	393.06	143.00	3.749 Alert			
8,650.00	8,617.53	18,965.00	8,921.35	31.78	151.95	-16.02	-55.92	1,003.60	497.69	349.51	148.18	3.359 Alert			
8,700.00	8,667.27	18,965.00	8,921.35	31.97	151.95	-16.02	-55.92	1,003.60	461.54	307.64	153.91	2.999 Alert			
8,750.00	8,717.01	18,965.00	8,921.35	32.16	151.95	-16.02	-55.92	1,003.60	428.20	268.11	160.09	2.675 Alert			
8,800.00	8,766.75	18,965.00	8,921.35	32.35	151.95	-16.02	-55.92	1,003.60	398.35	231.85	166.50	2.393 Minor Risk			
8,850.00	8,816.49	18,965.00	8,921.35	32.54	151.95	-16.02	-55.92	1,003.60	372.84	200.16	172.68	2.159 Minor Risk			
8,900.00	8,866.23	18,965.00	8,921.35	32.74	151.95	-16.02	-55.92	1,003.60	352.62	174.64	177.98	1.981 Minor Risk			
8,950.00	8,915.97	18,965.00	8,921.35	32.93	151.95	-16.02	-55.92	1,003.60	338.63	157.07	181.55	1.865 Minor Risk			
9,000.00	8,965.71	18,965.00	8,921.35	33.12	151.95	-16.02	-55.92	1,003.60	331.66	149.03	182.63	1.816 Minor Risk, SF			
9,021.71	8,987.31	18,965.00	8,921.35	33.20	151.95	-16.02	-55.92	1,003.60	330.95	148.76	182.19	1.817 Minor Risk, CC, ES			
9,050.00	9,015.45	18,965.00	8,921.35	33.31	151.95	-16.02	-55.92	1,003.60	332.16	151.37	180.79	1.837 Minor Risk			
9,100.00	9,065.19	18,965.00	8,921.35	33.50	151.95	-16.02	-55.92	1,003.60	340.08	163.85	176.23	1.930 Minor Risk			
9,150.00	9,114.93	18,965.00	8,921.35	33.69	151.95	-16.02	-55.92	1,003.60	354.94	185.26	169.68	2.092 Minor Risk			
9,200.00	9,164.68	18,965.00	8,921.35	33.89	151.95	-16.02	-55.92	1,003.60	375.92	213.84	162.08	2.319 Minor Risk			
9,250.00	9,214.42	18,965.00	8,921.35	34.08	151.95	-16.02	-55.92	1,003.60	402.05	247.77	154.28	2.606 Alert			
9,300.00	9,264.16	18,965.00	8,921.35	34.27	151.95	-16.02	-55.92	1,003.60	432.40	285.54	146.87	2.944 Alert			
9,350.00	9,313.90	18,965.00	8,921.35	34.46	151.95	-16.02	-55.92	1,003.60	466.16	325.98	140.17	3.326 Alert			
9,400.00	9,363.64	18,965.00	8,921.35	34.65	151.95	-16.02	-55.92	1,003.60	502.62	368.31	134.31	3.742 Alert			
9,450.00	9,413.38	18,965.00	8,921.35	34.84	151.95	-16.02	-55.92	1,003.60	541.26	411.96	129.29	4.186 Alert			
9,500.00	9,463.12	18,965.00	8,921.35	35.03	151.95	-16.02	-55.92	1,003.60	581.63	456.58	125.05	4.651 Alert			
9,550.00	9,512.86	18,965.00	8,921.35	35.23	151.95	-16.02	-55.92	1,003.60	623.39	501.92	121.48	5.132			
9,600.00	9,562.60	18,965.00	8,921.35	35.42	151.95	-16.02	-55.92	1,003.60	666.29	547.81	118.49	5.623			
9,650.00	9,612.34	18,965.00	8,921.35	35.61	151.95	-16.02	-55.92	1,003.60	710.12	594.13	115.99	6.122			
9,700.00	9,662.08	18,965.00	8,921.35	35.80	151.95	-16.02	-55.92	1,003.60	754.72	640.81	113.91	6.626			
9,750.00	9,711.82	18,965.00	8,921.35	35.99	151.95	-16.02	-55.92	1,003.60	799.96	687.79	112.17	7.132			
9,800.00	9,761.56	18,965.00	8,921.35	36.18	151.95	-16.02	-55.92	1,003.60	845.73	735.02	110.71	7.639			
9,850.00	9,811.30	18,965.00	8,921.35	36.38	151.95	-16.02	-55.92	1,003.60	891.96	782.46	109.50	8.146			
9,900.00	9,861.04	18,965.00	8,921.35	36.57	151.95	-16.02	-55.92	1,003.60	938.57	830.09	108.48	8.652			
9,950.00	9,910.79	18,965.00	8,921.35	36.76	151.95	-16.02	-55.92	1,003.60	985.52	877.89	107.63	9.157			
10,000.00	9,960.53	18,965.00	8,921.35	36.95	151.95	-16.02	-55.92	1,003.60	1,032.75	925.84	106.92	9.659			
10,050.00	10,010.27	18,965.00	8,921.35	37.14	151.95	-16.02	-55.92	1,003.60	1,080.24	973.91	106.32	10.160			
10,100.00	10,060.01	18,965.00	8,921.35	37.33	151.95	-16.02	-55.92	1,003.60	1,127.93	1,022.11	105.83	10.658			

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM-r5000.141_Prod-US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 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 (°)	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)						
10,150.00	10,109.75	18,965.00	8,921.35	37.53	151.95	-16.02	-55.92	1,003.60	1,175.83	1,070.41	105.42	11.154				
10,200.00	10,159.49	18,965.00	8,921.35	37.72	151.95	-16.02	-55.92	1,003.60	1,223.89	1,118.80	105.08	11.647				
10,250.00	10,209.23	18,965.00	8,921.35	37.91	151.95	-16.02	-55.92	1,003.60	1,272.09	1,167.29	104.81	12.137				
10,300.00	10,258.97	18,965.00	8,921.35	38.10	151.95	-16.02	-55.92	1,003.60	1,320.44	1,215.85	104.59	12.625				
10,350.00	10,308.71	18,965.00	8,921.35	38.29	151.95	-16.02	-55.92	1,003.60	1,368.90	1,264.49	104.41	13.111				
10,400.00	10,358.45	18,965.00	8,921.35	38.49	151.95	-16.02	-55.92	1,003.60	1,417.47	1,313.19	104.27	13.594				
10,450.00	10,408.19	18,965.00	8,921.35	38.68	151.95	-16.02	-55.92	1,003.60	1,466.13	1,361.96	104.17	14.074				

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
8,500.00	8,468.31	19,014.44	9,185.00	31.20	148.49	-15.72	50.32	1,909.35	1,488.33	1,328.03	160.31	9.284		
8,550.00	8,518.05	19,014.44	9,185.00	31.40	148.49	-15.72	50.32	1,909.35	1,459.97	1,297.79	162.19	9.002		
8,600.00	8,567.79	19,014.44	9,185.00	31.59	148.49	-15.72	50.32	1,909.35	1,432.79	1,268.74	164.05	8.734		
8,650.00	8,617.53	19,014.44	9,185.00	31.78	148.49	-15.72	50.32	1,909.35	1,406.87	1,240.96	165.90	8.480		
8,700.00	8,667.27	19,014.44	9,185.00	31.97	148.49	-15.72	50.32	1,909.35	1,382.26	1,214.55	167.72	8.242		
8,750.00	8,717.01	19,014.44	9,185.00	32.16	148.49	-15.72	50.32	1,909.35	1,359.05	1,189.57	169.48	8.019		
8,800.00	8,766.75	19,014.44	9,185.00	32.35	148.49	-15.72	50.32	1,909.35	1,337.31	1,166.13	171.18	7.812		
8,850.00	8,816.49	19,014.44	9,185.00	32.54	148.49	-15.72	50.32	1,909.35	1,317.11	1,144.31	172.80	7.622		
8,900.00	8,866.23	19,014.44	9,185.00	32.74	148.49	-15.72	50.32	1,909.35	1,298.52	1,124.20	174.32	7.449		
8,950.00	8,915.97	19,014.44	9,185.00	32.93	148.49	-15.72	50.32	1,909.35	1,281.62	1,105.89	175.73	7.293		
9,000.00	8,965.71	19,014.44	9,185.00	33.12	148.49	-15.72	50.32	1,909.35	1,266.46	1,089.46	177.00	7.155		
9,050.00	9,015.45	19,014.44	9,185.00	33.31	148.49	-15.72	50.32	1,909.35	1,253.12	1,075.00	178.12	7.035		
9,100.00	9,065.19	19,014.44	9,185.00	33.50	148.49	-15.72	50.32	1,909.35	1,241.64	1,062.57	179.07	6.934		
9,150.00	9,114.93	19,014.44	9,185.00	33.69	148.49	-15.72	50.32	1,909.35	1,232.10	1,052.25	179.84	6.851		
9,200.00	9,164.68	19,014.44	9,185.00	33.89	148.49	-15.72	50.32	1,909.35	1,224.52	1,044.10	180.42	6.787		
9,250.00	9,214.42	19,014.44	9,185.00	34.08	148.49	-15.72	50.32	1,909.35	1,218.94	1,038.16	180.78	6.743		
9,300.00	9,264.16	19,014.44	9,185.00	34.27	148.49	-15.72	50.32	1,909.35	1,215.40	1,034.46	180.94	6.717		
9,350.00	9,313.90	19,014.44	9,185.00	34.46	148.49	-15.72	50.32	1,909.35	1,213.91	1,033.04	180.87	6.711 SF		
9,361.21	9,325.05	19,014.44	9,185.00	34.50	148.49	-15.72	50.32	1,909.35	1,213.86	1,033.03	180.83	6.713 CC, ES		
9,400.00	9,363.64	19,014.44	9,185.00	34.65	148.49	-15.72	50.32	1,909.35	1,214.48	1,033.89	180.59	6.725		
9,450.00	9,413.38	19,014.44	9,185.00	34.84	148.49	-15.72	50.32	1,909.35	1,217.10	1,037.01	180.09	6.758		
9,500.00	9,463.12	19,014.44	9,185.00	35.03	148.49	-15.72	50.32	1,909.35	1,221.77	1,042.38	179.38	6.811		
9,550.00	9,512.86	19,014.44	9,185.00	35.23	148.49	-15.72	50.32	1,909.35	1,228.45	1,049.97	178.48	6.883		
9,600.00	9,562.60	19,014.44	9,185.00	35.42	148.49	-15.72	50.32	1,909.35	1,237.12	1,059.73	177.39	6.974		
9,650.00	9,612.34	19,014.44	9,185.00	35.61	148.49	-15.72	50.32	1,909.35	1,247.74	1,071.60	176.13	7.084		
9,700.00	9,662.08	19,014.44	9,185.00	35.80	148.49	-15.72	50.32	1,909.35	1,260.25	1,085.53	174.72	7.213		
9,750.00	9,711.82	19,014.44	9,185.00	35.99	148.49	-15.72	50.32	1,909.35	1,274.60	1,101.42	173.18	7.360		
9,800.00	9,761.56	19,014.44	9,185.00	36.18	148.49	-15.72	50.32	1,909.35	1,290.73	1,119.21	171.52	7.525		
9,850.00	9,811.30	19,014.44	9,185.00	36.38	148.49	-15.72	50.32	1,909.35	1,308.57	1,138.81	169.77	7.708		
9,900.00	9,861.04	19,014.44	9,185.00	36.57	148.49	-15.72	50.32	1,909.35	1,328.06	1,160.12	167.94	7.908		
9,950.00	9,910.79	19,014.44	9,185.00	36.76	148.49	-15.72	50.32	1,909.35	1,349.12	1,183.06	166.05	8.125		
10,000.00	9,960.53	19,014.44	9,185.00	36.95	148.49	-15.72	50.32	1,909.35	1,371.68	1,207.55	164.13	8.357		
10,050.00	10,010.27	19,014.44	9,185.00	37.14	148.49	-15.72	50.32	1,909.35	1,395.66	1,233.48	162.18	8.606		
10,100.00	10,060.01	19,014.44	9,185.00	37.33	148.49	-15.72	50.32	1,909.35	1,421.01	1,260.78	160.23	8.869		
10,150.00	10,109.75	19,014.44	9,185.00	37.53	148.49	-15.72	50.32	1,909.35	1,447.63	1,289.36	158.27	9.146		
10,200.00	10,159.49	19,014.44	9,185.00	37.72	148.49	-15.72	50.32	1,909.35	1,475.47	1,319.13	156.34	9.438		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error: 5.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 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)				
8,350.00	8,319.08	19,026.09	9,185.00	30.63	102.23	-18.36	89.92	1,808.93	1,497.75	1,376.30	121.45	12.332		
8,400.00	8,368.82	19,026.09	9,185.00	30.82	102.23	-18.36	89.92	1,808.93	1,465.10	1,342.74	122.36	11.974		
8,450.00	8,418.57	19,026.09	9,185.00	31.01	102.23	-18.36	89.92	1,808.93	1,433.45	1,310.17	123.28	11.628		
8,500.00	8,468.31	19,026.09	9,185.00	31.20	102.23	-18.36	89.92	1,808.93	1,402.87	1,278.67	124.20	11.295		
8,550.00	8,518.05	19,026.09	9,185.00	31.40	102.23	-18.36	89.92	1,808.93	1,373.43	1,248.30	125.12	10.976		
8,600.00	8,567.79	19,026.09	9,185.00	31.59	102.23	-18.36	89.92	1,808.93	1,345.20	1,219.16	126.04	10.673		
8,650.00	8,617.53	19,026.09	9,185.00	31.78	102.23	-18.36	89.92	1,808.93	1,318.27	1,191.32	126.95	10.384		
8,700.00	8,667.27	19,026.09	9,185.00	31.97	102.23	-18.36	89.92	1,808.93	1,292.71	1,164.88	127.83	10.113		
8,750.00	8,717.01	19,026.09	9,185.00	32.16	102.23	-18.36	89.92	1,808.93	1,268.61	1,139.92	128.69	9.858		
8,800.00	8,766.75	19,026.09	9,185.00	32.35	102.23	-18.36	89.92	1,808.93	1,246.04	1,116.54	129.51	9.621		
8,850.00	8,816.49	19,026.09	9,185.00	32.54	102.23	-18.36	89.92	1,808.93	1,225.11	1,094.83	130.28	9.404		
8,900.00	8,866.23	19,026.09	9,185.00	32.74	102.23	-18.36	89.92	1,808.93	1,205.88	1,074.89	130.99	9.206		
8,950.00	8,915.97	19,026.09	9,185.00	32.93	102.23	-18.36	89.92	1,808.93	1,188.45	1,056.81	131.64	9.028		
9,000.00	8,965.71	19,026.09	9,185.00	33.12	102.23	-18.36	89.92	1,808.93	1,172.89	1,040.69	132.20	8.872		
9,050.00	9,015.45	19,026.09	9,185.00	33.31	102.23	-18.36	89.92	1,808.93	1,159.29	1,026.61	132.68	8.737		
9,100.00	9,065.19	19,026.09	9,185.00	33.50	102.23	-18.36	89.92	1,808.93	1,147.70	1,014.64	133.06	8.625		
9,150.00	9,114.93	19,026.09	9,185.00	33.69	102.23	-18.36	89.92	1,808.93	1,138.19	1,004.86	133.33	8.537		
9,200.00	9,164.68	19,026.09	9,185.00	33.89	102.23	-18.36	89.92	1,808.93	1,130.81	997.32	133.49	8.471		
9,250.00	9,214.42	19,026.09	9,185.00	34.08	102.23	-18.36	89.92	1,808.93	1,125.61	992.08	133.53	8.429		
9,300.00	9,264.16	19,026.09	9,185.00	34.27	102.23	-18.36	89.92	1,808.93	1,122.61	989.16	133.46	8.412 SF		
9,342.36	9,306.30	19,026.09	9,185.00	34.43	102.23	-18.36	89.92	1,808.93	1,121.81	988.52	133.30	8.416 CC, ES		
9,350.00	9,313.90	19,026.09	9,185.00	34.46	102.23	-18.36	89.92	1,808.93	1,121.84	988.58	133.26	8.418		
9,400.00	9,363.64	19,026.09	9,185.00	34.65	102.23	-18.36	89.92	1,808.93	1,123.29	990.35	132.95	8.449		
9,450.00	9,413.38	19,026.09	9,185.00	34.84	102.23	-18.36	89.92	1,808.93	1,126.97	994.45	132.52	8.504		
9,500.00	9,463.12	19,026.09	9,185.00	35.03	102.23	-18.36	89.92	1,808.93	1,132.84	1,000.84	131.99	8.583		
9,550.00	9,512.86	19,026.09	9,185.00	35.23	102.23	-18.36	89.92	1,808.93	1,140.87	1,009.50	131.37	8.685		
9,600.00	9,562.60	19,026.09	9,185.00	35.42	102.23	-18.36	89.92	1,808.93	1,151.02	1,020.36	130.66	8.809		
9,650.00	9,612.34	19,026.09	9,185.00	35.61	102.23	-18.36	89.92	1,808.93	1,163.23	1,033.35	129.88	8.956		
9,700.00	9,662.08	19,026.09	9,185.00	35.80	102.23	-18.36	89.92	1,808.93	1,177.44	1,048.40	129.04	9.125		
9,750.00	9,711.82	19,026.09	9,185.00	35.99	102.23	-18.36	89.92	1,808.93	1,193.58	1,065.43	128.15	9.314		
9,800.00	9,761.56	19,026.09	9,185.00	36.18	102.23	-18.36	89.92	1,808.93	1,211.57	1,084.34	127.23	9.523		
9,850.00	9,811.30	19,026.09	9,185.00	36.38	102.23	-18.36	89.92	1,808.93	1,231.33	1,105.04	126.29	9.750		
9,900.00	9,861.04	19,026.09	9,185.00	36.57	102.23	-18.36	89.92	1,808.93	1,252.77	1,127.43	125.33	9.995		
9,950.00	9,910.79	19,026.09	9,185.00	36.76	102.23	-18.36	89.92	1,808.93	1,275.81	1,151.43	124.38	10.257		
10,000.00	9,960.53	19,026.09	9,185.00	36.95	102.23	-18.36	89.92	1,808.93	1,300.37	1,176.94	123.43	10.535		
10,050.00	10,010.27	19,026.09	9,185.00	37.14	102.23	-18.36	89.92	1,808.93	1,326.36	1,203.86	122.50	10.828		
10,100.00	10,060.01	19,026.09	9,185.00	37.33	102.23	-18.36	89.92	1,808.93	1,353.69	1,232.11	121.59	11.134		
10,150.00	10,109.75	19,026.09	9,185.00	37.53	102.23	-18.36	89.92	1,808.93	1,382.30	1,261.60	120.70	11.452		
10,200.00	10,159.49	19,026.09	9,185.00	37.72	102.23	-18.36	89.92	1,808.93	1,412.09	1,292.25	119.85	11.782		
10,250.00	10,209.23	19,026.09	9,185.00	37.91	102.23	-18.36	89.92	1,808.93	1,443.01	1,323.98	119.03	12.123		
10,300.00	10,258.97	19,026.09	9,185.00	38.10	102.23	-18.36	89.92	1,808.93	1,474.97	1,356.72	118.25	12.474		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design											Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 524H - Wellbore #1 - Permit Plan 2		Offset Site Error: 5.00 ft	
Survey Program: 0-MWD+IFR1													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		
8,350.00	8,319.08	19,047.07	9,185.00	30.63	101.99	-18.56	91.14	1,792.65	1,484.89	1,363.67	121.22	12.249		
8,400.00	8,368.82	19,047.07	9,185.00	30.82	101.99	-18.56	91.14	1,792.65	1,452.01	1,329.88	122.13	11.889		
8,450.00	8,418.57	19,047.07	9,185.00	31.01	101.99	-18.56	91.14	1,792.65	1,420.13	1,297.08	123.05	11.541		
8,500.00	8,468.31	19,047.07	9,185.00	31.20	101.99	-18.56	91.14	1,792.65	1,389.31	1,265.34	123.98	11.206		
8,550.00	8,518.05	19,047.07	9,185.00	31.40	101.99	-18.56	91.14	1,792.65	1,359.64	1,234.74	124.90	10.886		
8,600.00	8,567.79	19,047.07	9,185.00	31.59	101.99	-18.56	91.14	1,792.65	1,331.18	1,205.36	125.82	10.580		
8,650.00	8,617.53	19,047.07	9,185.00	31.78	101.99	-18.56	91.14	1,792.65	1,304.02	1,177.30	126.73	10.290		
8,700.00	8,667.27	19,047.07	9,185.00	31.97	101.99	-18.56	91.14	1,792.65	1,278.25	1,150.63	127.62	10.016		
8,750.00	8,717.01	19,047.07	9,185.00	32.16	101.99	-18.56	91.14	1,792.65	1,253.93	1,125.45	128.48	9.760		
8,800.00	8,766.75	19,047.07	9,185.00	32.35	101.99	-18.56	91.14	1,792.65	1,231.17	1,101.87	129.30	9.522		
8,850.00	8,816.49	19,047.07	9,185.00	32.54	101.99	-18.56	91.14	1,792.65	1,210.04	1,079.97	130.07	9.303		
8,900.00	8,866.23	19,047.07	9,185.00	32.74	101.99	-18.56	91.14	1,792.65	1,190.64	1,059.86	130.78	9.104		
8,950.00	8,915.97	19,047.07	9,185.00	32.93	101.99	-18.56	91.14	1,792.65	1,173.05	1,041.63	131.42	8.926		
9,000.00	8,965.71	19,047.07	9,185.00	33.12	101.99	-18.56	91.14	1,792.65	1,157.36	1,025.38	131.99	8.769		
9,050.00	9,015.45	19,047.07	9,185.00	33.31	101.99	-18.56	91.14	1,792.65	1,143.64	1,011.19	132.46	8.634		
9,100.00	9,065.19	19,047.07	9,185.00	33.50	101.99	-18.56	91.14	1,792.65	1,131.97	999.14	132.83	8.522		
9,150.00	9,114.93	19,047.07	9,185.00	33.69	101.99	-18.56	91.14	1,792.65	1,122.40	989.31	133.09	8.434		
9,200.00	9,164.68	19,047.07	9,185.00	33.89	101.99	-18.56	91.14	1,792.65	1,114.99	981.76	133.23	8.369		
9,250.00	9,214.42	19,047.07	9,185.00	34.08	101.99	-18.56	91.14	1,792.65	1,109.79	976.53	133.26	8.328		
9,300.00	9,264.16	19,047.07	9,185.00	34.27	101.99	-18.56	91.14	1,792.65	1,106.83	973.67	133.16	8.312 SF		
9,340.71	9,304.65	19,047.07	9,185.00	34.42	101.99	-18.56	91.14	1,792.65	1,106.08	973.09	132.99	8.317 CC, ES		
9,350.00	9,313.90	19,047.07	9,185.00	34.46	101.99	-18.56	91.14	1,792.65	1,106.12	973.18	132.94	8.321		
9,400.00	9,363.64	19,047.07	9,185.00	34.65	101.99	-18.56	91.14	1,792.65	1,107.67	975.07	132.60	8.354		
9,450.00	9,413.38	19,047.07	9,185.00	34.84	101.99	-18.56	91.14	1,792.65	1,111.46	979.32	132.14	8.411		
9,500.00	9,463.12	19,047.07	9,185.00	35.03	101.99	-18.56	91.14	1,792.65	1,117.49	985.91	131.58	8.493		
9,550.00	9,512.86	19,047.07	9,185.00	35.23	101.99	-18.56	91.14	1,792.65	1,125.71	994.78	130.93	8.598		
9,600.00	9,562.60	19,047.07	9,185.00	35.42	101.99	-18.56	91.14	1,792.65	1,136.06	1,005.87	130.19	8.726		
9,650.00	9,612.34	19,047.07	9,185.00	35.61	101.99	-18.56	91.14	1,792.65	1,148.51	1,019.13	129.38	8.877		
9,700.00	9,662.08	19,047.07	9,185.00	35.80	101.99	-18.56	91.14	1,792.65	1,162.97	1,034.46	128.51	9.050		
9,750.00	9,711.82	19,047.07	9,185.00	35.99	101.99	-18.56	91.14	1,792.65	1,179.38	1,051.78	127.60	9.243		
9,800.00	9,761.56	19,047.07	9,185.00	36.18	101.99	-18.56	91.14	1,792.65	1,197.65	1,070.99	126.65	9.456		
9,850.00	9,811.30	19,047.07	9,185.00	36.38	101.99	-18.56	91.14	1,792.65	1,217.70	1,092.01	125.69	9.688		
9,900.00	9,861.04	19,047.07	9,185.00	36.57	101.99	-18.56	91.14	1,792.65	1,239.44	1,114.73	124.71	9.938		
9,950.00	9,910.79	19,047.07	9,185.00	36.76	101.99	-18.56	91.14	1,792.65	1,262.79	1,139.05	123.74	10.205		
10,000.00	9,960.53	19,047.07	9,185.00	36.95	101.99	-18.56	91.14	1,792.65	1,287.66	1,164.88	122.78	10.488		
10,050.00	10,010.27	19,047.07	9,185.00	37.14	101.99	-18.56	91.14	1,792.65	1,313.97	1,192.13	121.84	10.785		
10,100.00	10,060.01	19,047.07	9,185.00	37.33	101.99	-18.56	91.14	1,792.65	1,341.62	1,220.70	120.92	11.095		
10,150.00	10,109.75	19,047.07	9,185.00	37.53	101.99	-18.56	91.14	1,792.65	1,370.53	1,250.51	120.03	11.419		
10,200.00	10,159.49	19,047.07	9,185.00	37.72	101.99	-18.56	91.14	1,792.65	1,400.64	1,281.47	119.17	11.753		
10,250.00	10,209.23	19,047.07	9,185.00	37.91	101.99	-18.56	91.14	1,792.65	1,431.86	1,313.51	118.35	12.099		
10,300.00	10,258.97	19,047.07	9,185.00	38.10	101.99	-18.56	91.14	1,792.65	1,464.12	1,346.55	117.57	12.453		
10,350.00	10,308.71	19,047.07	9,185.00	38.29	101.99	-18.56	91.14	1,792.65	1,497.36	1,380.53	116.83	12.817		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error: 5.00 ft	
Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole													Offset Well Error: 0.00 ft	
Survey Program: 150-MWD+HDGM														
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)				
8,800.00	8,766.75	20,215.00	10,196.11	32.35	151.04	-174.83	-11.87	359.92	1,497.35	1,395.05	102.30	14.637		
8,850.00	8,816.49	20,215.00	10,196.11	32.54	151.04	-174.83	-11.87	359.92	1,449.78	1,346.87	102.91	14.088		
8,900.00	8,866.23	20,215.00	10,196.11	32.74	151.04	-174.83	-11.87	359.92	1,402.38	1,298.81	103.57	13.541		
8,950.00	8,915.97	20,215.00	10,196.11	32.93	151.04	-174.83	-11.87	359.92	1,355.16	1,250.87	104.29	12.994		
9,000.00	8,965.71	20,215.00	10,196.11	33.12	151.04	-174.83	-11.87	359.92	1,308.15	1,203.07	105.08	12.449		
9,050.00	9,015.45	20,215.00	10,196.11	33.31	151.04	-174.83	-11.87	359.92	1,261.37	1,155.42	105.96	11.905		
9,100.00	9,065.19	20,215.00	10,196.11	33.50	151.04	-174.83	-11.87	359.92	1,214.85	1,107.93	106.92	11.363		
9,150.00	9,114.93	20,215.00	10,196.11	33.69	151.04	-174.83	-11.87	359.92	1,168.62	1,060.63	107.98	10.822		
9,200.00	9,164.68	20,215.00	10,196.11	33.89	151.04	-174.83	-11.87	359.92	1,122.70	1,013.53	109.17	10.284		
9,250.00	9,214.42	20,215.00	10,196.11	34.08	151.04	-174.83	-11.87	359.92	1,077.15	966.66	110.49	9.749		
9,300.00	9,264.16	20,215.00	10,196.11	34.27	151.04	-174.83	-11.87	359.92	1,032.02	920.05	111.96	9.217		
9,350.00	9,313.90	20,215.00	10,196.11	34.46	151.04	-174.83	-11.87	359.92	987.35	873.73	113.62	8.690		
9,400.00	9,363.64	20,215.00	10,196.11	34.65	151.04	-174.83	-11.87	359.92	943.22	827.74	115.48	8.168		
9,450.00	9,413.38	20,215.00	10,196.11	34.84	151.04	-174.83	-11.87	359.92	899.70	782.12	117.57	7.652		
9,500.00	9,463.12	20,215.00	10,196.11	35.03	151.04	-174.83	-11.87	359.92	856.89	736.95	119.94	7.145		
9,550.00	9,512.86	20,215.00	10,196.11	35.23	151.04	-174.83	-11.87	359.92	814.89	692.29	122.60	6.647		
9,600.00	9,562.60	20,215.00	10,196.11	35.42	151.04	-174.83	-11.87	359.92	773.85	648.24	125.61	6.161		
9,650.00	9,612.34	20,215.00	10,196.11	35.61	151.04	-174.83	-11.87	359.92	733.93	604.92	129.00	5.689		
9,700.00	9,662.08	20,215.00	10,196.11	35.80	151.04	-174.83	-11.87	359.92	695.30	562.49	132.81	5.235		
9,750.00	9,711.82	20,215.00	10,196.11	35.99	151.04	-174.83	-11.87	359.92	658.21	521.14	137.07	4.802	Alert	
9,800.00	9,761.56	20,215.00	10,196.11	36.18	151.04	-174.83	-11.87	359.92	622.93	481.14	141.80	4.393	Alert	
9,850.00	9,811.30	20,215.00	10,196.11	36.38	151.04	-174.83	-11.87	359.92	589.78	442.81	146.97	4.013	Alert	
9,900.00	9,861.04	20,215.00	10,196.11	36.57	151.04	-174.83	-11.87	359.92	559.14	406.60	152.55	3.665	Alert	
9,950.00	9,910.79	20,215.00	10,196.11	36.76	151.04	-174.83	-11.87	359.92	531.45	373.04	158.41	3.355	Alert	
10,000.00	9,960.53	20,215.00	10,196.11	36.95	151.04	-174.83	-11.87	359.92	507.19	342.81	164.38	3.085	Alert	
10,050.00	10,010.27	20,215.00	10,196.11	37.14	151.04	-174.83	-11.87	359.92	486.86	316.68	170.19	2.861	Alert	
10,100.00	10,060.01	20,215.00	10,196.11	37.33	151.04	-174.83	-11.87	359.92	470.99	295.50	175.49	2.684	Alert	
10,150.00	10,109.75	20,215.00	10,196.11	37.53	151.04	-174.83	-11.87	359.92	460.04	280.12	179.92	2.557	Alert	
10,200.00	10,159.49	20,215.00	10,196.11	37.72	151.04	-174.83	-11.87	359.92	454.35	271.23	183.12	2.481	Minor Risk	
10,227.01	10,186.36	20,215.00	10,196.11	37.82	151.04	-174.83	-11.87	359.92	453.55	269.30	184.25	2.462	Minor Risk, CC	
10,250.00	10,209.23	20,215.00	10,196.11	37.91	151.04	-174.83	-11.87	359.92	454.13	269.28	184.85	2.457	Minor Risk, ES, SF	
10,300.00	10,258.97	20,215.00	10,196.11	38.10	151.04	-174.83	-11.87	359.92	459.38	274.35	185.03	2.483	Minor Risk	
10,350.00	10,308.71	20,215.00	10,196.11	38.29	151.04	-174.83	-11.87	359.92	469.92	286.16	183.76	2.557	Alert	
10,400.00	10,358.45	20,215.00	10,196.11	38.49	151.04	-174.83	-11.87	359.92	485.41	304.13	181.29	2.678	Alert	
10,450.00	10,408.19	20,215.00	10,196.11	38.68	151.04	-174.83	-11.87	359.92	505.40	327.47	177.92	2.841	Alert	
10,500.00	10,457.93	20,215.00	10,196.11	38.87	151.04	-174.83	-11.87	359.92	529.36	355.37	173.99	3.042	Alert	
10,550.00	10,507.67	20,215.00	10,196.11	39.06	151.04	-174.83	-11.87	359.92	556.80	387.01	169.79	3.279	Alert	
10,600.00	10,557.41	20,215.00	10,196.11	39.25	151.04	-174.83	-11.87	359.92	587.22	421.69	165.52	3.548	Alert	
10,650.00	10,607.16	20,215.00	10,196.11	39.44	151.04	-174.83	-11.87	359.92	620.18	458.81	161.37	3.843	Alert	
10,700.00	10,656.90	20,215.00	10,196.11	39.64	151.04	-174.83	-11.87	359.92	655.30	497.89	157.42	4.163	Alert	
10,750.00	10,706.64	20,215.00	10,196.11	39.83	151.04	-174.83	-11.87	359.92	692.26	538.53	153.73	4.503	Alert	
10,800.00	10,756.38	20,215.00	10,196.11	40.02	151.04	-174.83	-11.87	359.92	730.76	580.44	150.33	4.861	Alert	
10,850.00	10,806.12	20,215.00	10,196.11	40.21	151.04	-174.85	-11.87	359.92	770.59	623.37	147.22	5.234		
10,900.00	10,855.90	20,215.00	10,196.11	40.40	151.04	-174.94	-11.87	359.92	811.31	666.94	144.36	5.620		
10,950.00	10,905.74	20,215.00	10,196.11	40.59	151.04	-175.04	-11.87	359.92	852.66	710.94	141.72	6.016		
11,000.00	10,955.63	20,215.00	10,196.11	40.77	151.04	-175.13	-11.87	359.92	894.55	755.26	139.28	6.423		
11,050.00	11,005.55	20,215.00	10,196.11	40.95	151.04	-175.23	-11.87	359.92	936.90	799.87	137.03	6.837		
11,100.00	11,055.51	20,215.00	10,196.11	41.13	151.04	-175.34	-11.87	359.92	979.64	844.69	134.95	7.259		
11,150.00	11,105.49	20,215.00	10,196.11	41.31	151.04	-175.44	-11.87	359.92	1,022.72	889.69	133.03	7.688		
11,200.00	11,155.48	20,215.00	10,196.11	41.48	151.04	-175.54	-11.87	359.92	1,066.09	934.83	131.26	8.122		
11,250.00	11,205.48	20,215.00	10,196.11	41.65	151.04	-77.20	-11.87	359.92	1,109.73	980.11	129.62	8.562		
11,300.00	11,255.48	20,215.00	10,196.11	41.82	151.04	-77.20	-11.87	359.92	1,153.83	1,025.70	128.13	9.005		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 61H - Original Hole - Original Hole		Offset Site Error:		5.00 ft	
Survey Program: 150-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						
11,350.00	11,305.48	20,215.00	10,196.11	41.98	151.04	-77.20	-11.87	359.92	1,198.39	1,071.60	126.80	9.451						
11,400.00	11,355.48	20,215.00	10,196.11	42.15	151.04	-77.20	-11.87	359.92	1,243.37	1,117.77	125.59	9.900						
11,450.00	11,405.48	20,215.00	10,196.11	42.31	151.04	-77.20	-11.87	359.92	1,288.71	1,164.20	124.51	10.351						
11,500.00	11,455.48	20,215.00	10,196.11	42.48	151.04	-77.20	-11.87	359.92	1,334.39	1,210.86	123.53	10.802						
11,550.00	11,505.48	20,215.00	10,196.11	42.64	151.04	-77.20	-11.87	359.92	1,380.37	1,257.72	122.65	11.254						
11,600.00	11,555.48	20,215.00	10,196.11	42.81	151.04	-94.03	-11.87	359.92	1,426.63	1,304.77	121.86	11.707						
11,650.00	11,605.31	20,215.00	10,196.11	42.98	151.04	-80.93	-11.87	359.92	1,473.18	1,351.97	121.21	12.154						

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Sec 01-T23S-R31E - Tomb Raider 1-12 Fed 62H - Wellbore #1 - Wellbore #1													Offset Well Error:	0.50 ft
Survey Program: 147-MWD+HDGM														
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)				
9,350.00	9,313.90	20,480.00	10,368.45	34.46	154.90	-16.30	-2.68	1,684.14	1,465.61	1,321.95	143.67	10.201		
9,400.00	9,363.64	20,480.00	10,368.45	34.65	154.90	-16.30	-2.68	1,684.14	1,425.62	1,279.99	145.63	9.790		
9,450.00	9,413.38	20,480.00	10,368.45	34.84	154.90	-16.30	-2.68	1,684.14	1,386.28	1,238.60	147.68	9.387		
9,500.00	9,463.12	20,480.00	10,368.45	35.03	154.90	-16.30	-2.68	1,684.14	1,347.64	1,197.82	149.82	8.995		
9,550.00	9,512.86	20,480.00	10,368.45	35.23	154.90	-16.30	-2.68	1,684.14	1,309.78	1,157.72	152.06	8.614		
9,600.00	9,562.60	20,480.00	10,368.45	35.42	154.90	-16.30	-2.68	1,684.14	1,272.75	1,118.37	154.38	8.244		
9,650.00	9,612.34	20,480.00	10,368.45	35.61	154.90	-16.30	-2.68	1,684.14	1,236.63	1,079.83	156.80	7.887		
9,700.00	9,662.08	20,480.00	10,368.45	35.80	154.90	-16.30	-2.68	1,684.14	1,201.51	1,042.22	159.30	7.543		
9,750.00	9,711.82	20,480.00	10,368.45	35.99	154.90	-16.30	-2.68	1,684.14	1,167.48	1,005.61	161.87	7.212		
9,800.00	9,761.56	20,480.00	10,368.45	36.18	154.90	-16.30	-2.68	1,684.14	1,134.63	970.11	164.51	6.897		
9,850.00	9,811.30	20,480.00	10,368.45	36.38	154.90	-16.30	-2.68	1,684.14	1,103.06	935.86	167.21	6.597		
9,900.00	9,861.04	20,480.00	10,368.45	36.57	154.90	-16.30	-2.68	1,684.14	1,072.90	902.97	169.93	6.314		
9,950.00	9,910.79	20,480.00	10,368.45	36.76	154.90	-16.30	-2.68	1,684.14	1,044.27	871.60	172.67	6.048		
10,000.00	9,960.53	20,480.00	10,368.45	36.95	154.90	-16.30	-2.68	1,684.14	1,017.29	841.91	175.38	5.800		
10,050.00	10,010.27	20,480.00	10,368.45	37.14	154.90	-16.30	-2.68	1,684.14	992.09	814.05	178.04	5.572		
10,100.00	10,060.01	20,480.00	10,368.45	37.33	154.90	-16.30	-2.68	1,684.14	968.82	788.22	180.60	5.364		
10,150.00	10,109.75	20,480.00	10,368.45	37.53	154.90	-16.30	-2.68	1,684.14	947.62	764.59	183.03	5.177		
10,200.00	10,159.49	20,480.00	10,368.45	37.72	154.90	-16.30	-2.68	1,684.14	928.63	743.37	185.27	5.012		
10,250.00	10,209.23	20,480.00	10,368.45	37.91	154.90	-16.30	-2.68	1,684.14	911.99	724.73	187.26	4.870 Alert		
10,300.00	10,258.97	20,480.00	10,368.45	38.10	154.90	-16.30	-2.68	1,684.14	897.83	708.87	188.97	4.751 Alert		
10,350.00	10,308.71	20,480.00	10,368.45	38.29	154.90	-16.30	-2.68	1,684.14	886.27	695.94	190.33	4.656 Alert		
10,400.00	10,358.45	20,480.00	10,368.45	38.49	154.90	-16.30	-2.68	1,684.14	877.41	686.10	191.32	4.586 Alert		
10,450.00	10,408.19	20,480.00	10,368.45	38.68	154.90	-16.30	-2.68	1,684.14	871.34	679.46	191.88	4.541 Alert		
10,500.00	10,457.93	20,480.00	10,368.45	38.87	154.90	-16.30	-2.68	1,684.14	868.10	676.10	192.00	4.521 Alert, SF		
10,531.27	10,489.04	20,480.00	10,368.45	38.99	154.90	-16.30	-2.68	1,684.14	867.54	675.69	191.84	4.522 Alert, CC, ES		
10,550.00	10,507.67	20,480.00	10,368.45	39.06	154.90	-16.30	-2.68	1,684.14	867.74	676.07	191.67	4.527 Alert		
10,600.00	10,557.41	20,480.00	10,368.45	39.25	154.90	-16.30	-2.68	1,684.14	870.26	679.37	190.89	4.559 Alert		
10,650.00	10,607.16	20,480.00	10,368.45	39.44	154.90	-16.30	-2.68	1,684.14	875.62	685.94	189.68	4.616 Alert		
10,700.00	10,656.90	20,480.00	10,368.45	39.64	154.90	-16.30	-2.68	1,684.14	883.79	695.71	188.08	4.699 Alert		
10,750.00	10,706.64	20,480.00	10,368.45	39.83	154.90	-16.30	-2.68	1,684.14	894.69	708.56	186.13	4.807 Alert		
10,800.00	10,756.38	20,480.00	10,368.45	40.02	154.90	-16.30	-2.68	1,684.14	908.20	724.33	183.87	4.939 Alert		
10,850.00	10,806.12	20,480.00	10,368.45	40.21	154.90	-16.31	-2.68	1,684.14	924.24	742.87	181.37	5.096		
10,900.00	10,855.90	20,480.00	10,368.45	40.40	154.90	-16.40	-2.68	1,684.14	943.03	764.34	178.69	5.277		
10,950.00	10,905.74	20,480.00	10,368.45	40.59	154.90	-16.50	-2.68	1,684.14	964.61	788.71	175.90	5.484		
11,000.00	10,955.63	20,480.00	10,368.45	40.77	154.90	-16.62	-2.68	1,684.14	988.80	815.73	173.06	5.714		
11,050.00	11,005.55	20,480.00	10,368.45	40.95	154.90	-16.75	-2.68	1,684.14	1,015.39	845.18	170.22	5.965		
11,100.00	11,055.51	20,480.00	10,368.45	41.13	154.90	-16.90	-2.68	1,684.14	1,044.22	876.80	167.42	6.237		
11,150.00	11,105.49	20,480.00	10,368.45	41.31	154.90	-17.08	-2.68	1,684.14	1,075.09	910.40	164.69	6.528		
11,200.00	11,155.48	20,480.00	10,368.45	41.48	154.90	-17.27	-2.68	1,684.14	1,107.82	945.75	162.08	6.835		
11,250.00	11,205.48	20,480.00	10,368.45	41.65	154.90	81.00	-2.68	1,684.14	1,142.23	982.65	159.58	7.158		
11,300.00	11,255.48	20,480.00	10,368.45	41.82	154.90	81.00	-2.68	1,684.14	1,177.84	1,020.65	157.19	7.493		
11,350.00	11,305.48	20,480.00	10,368.45	41.98	154.90	81.00	-2.68	1,684.14	1,214.46	1,059.55	154.91	7.840		
11,400.00	11,355.48	20,480.00	10,368.45	42.15	154.90	81.00	-2.68	1,684.14	1,252.01	1,099.26	152.75	8.197		
11,450.00	11,405.48	20,480.00	10,368.45	42.31	154.90	81.00	-2.68	1,684.14	1,290.40	1,139.70	150.70	8.563		
11,500.00	11,455.48	20,480.00	10,368.45	42.48	154.90	81.00	-2.68	1,684.14	1,329.57	1,180.80	148.77	8.937		
11,550.00	11,505.48	20,480.00	10,368.45	42.64	154.90	81.00	-2.68	1,684.14	1,369.44	1,222.49	146.95	9.319		
11,600.00	11,555.48	20,480.00	10,368.45	42.81	154.90	57.27	-2.68	1,684.14	1,409.86	1,264.63	145.23	9.708		
11,650.00	11,605.31	20,480.00	10,368.45	42.98	154.90	51.74	-2.68	1,684.14	1,449.73	1,306.18	143.55	10.099		
11,700.00	11,654.59	20,480.00	10,368.45	43.15	154.90	46.93	-2.68	1,684.14	1,488.54	1,346.64	141.90	10.490		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside 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	0.20	-0.20	0.50	0.50	-90.38	-0.20	-30.00	30.00	28.99	1.01	29.808			
50.00	50.00	49.80	49.80	0.50	0.50	-90.38	-0.20	-30.00	30.00	28.97	1.04	28.967			
100.00	100.00	100.20	99.80	0.52	0.52	-90.38	-0.20	-30.00	30.00	28.82	1.18	25.422			
150.00	150.00	149.80	149.80	0.59	0.59	-90.38	-0.20	-30.00	30.00	28.60	1.40	21.357			
200.00	200.00	200.20	199.80	0.70	0.70	-90.38	-0.20	-30.00	30.00	28.33	1.67	17.912			
250.00	250.00	249.80	249.80	0.84	0.84	-90.38	-0.20	-30.00	30.00	28.03	1.98	15.188			
300.00	300.00	300.20	299.80	0.99	0.99	-90.38	-0.20	-30.00	30.00	27.71	2.29	13.099			
350.00	350.00	349.80	349.80	1.15	1.14	-90.38	-0.20	-30.00	30.00	27.38	2.62	11.456			
400.00	400.00	400.20	399.80	1.31	1.31	-90.38	-0.20	-30.00	30.00	27.05	2.95	10.163			
450.00	450.00	449.80	449.80	1.48	1.48	-90.38	-0.20	-30.00	30.00	26.71	3.29	9.111			
500.00	500.00	500.20	499.80	1.65	1.65	-90.38	-0.20	-30.00	30.00	26.37	3.63	8.254			
550.00	550.00	549.80	549.80	1.82	1.82	-90.38	-0.20	-30.00	30.00	26.02	3.98	7.534			
600.00	600.00	600.20	599.80	1.99	1.99	-90.38	-0.20	-30.00	30.00	25.67	4.33	6.931			
650.00	650.00	649.80	649.80	2.16	2.16	-90.38	-0.20	-30.00	30.00	25.32	4.68	6.411			
700.00	700.00	700.20	699.80	2.34	2.34	-90.38	-0.20	-30.00	30.00	24.97	5.03	5.966			
750.00	750.00	749.80	749.80	2.51	2.51	-90.38	-0.20	-30.00	30.00	24.62	5.38	5.574			
800.00	800.00	800.20	799.80	2.69	2.69	-90.38	-0.20	-30.00	30.00	24.27	5.73	5.233			
850.00	850.00	849.80	849.80	2.87	2.87	-90.38	-0.20	-30.00	30.00	23.91	6.09	4.928 Alert			
900.00	900.00	900.20	899.80	3.04	3.04	-90.38	-0.20	-30.00	30.00	23.56	6.44	4.658 Alert			
950.00	950.00	949.80	949.80	3.22	3.22	-90.38	-0.20	-30.00	30.00	23.20	6.80	4.414 Alert			
1,000.00	1,000.00	1,000.20	999.80	3.40	3.40	-90.38	-0.20	-30.00	30.00	22.85	7.15	4.196 Alert			
1,050.00	1,050.00	1,049.80	1,049.80	3.58	3.57	-90.38	-0.20	-30.00	30.00	22.49	7.51	3.997 Alert			
1,100.00	1,100.00	1,100.20	1,099.80	3.75	3.75	-90.38	-0.20	-30.00	30.00	22.14	7.86	3.817 Alert			
1,150.00	1,150.00	1,149.80	1,149.80	3.93	3.93	-90.38	-0.20	-30.00	30.00	21.78	8.22	3.651 Alert			
1,200.00	1,200.00	1,200.20	1,199.80	4.11	4.11	-90.38	-0.20	-30.00	30.00	21.43	8.57	3.500 Alert			
1,250.00	1,250.00	1,249.80	1,249.80	4.29	4.29	-90.38	-0.20	-30.00	30.00	21.07	8.93	3.360 Alert			
1,300.00	1,300.00	1,300.20	1,299.80	4.46	4.46	-90.38	-0.20	-30.00	30.00	20.72	9.28	3.231 Alert			
1,350.00	1,350.00	1,349.80	1,349.80	4.64	4.64	-90.38	-0.20	-30.00	30.00	20.36	9.64	3.112 Alert			
1,400.00	1,400.00	1,400.20	1,399.80	4.82	4.82	-90.38	-0.20	-30.00	30.00	20.00	10.00	3.001 Alert			
1,450.00	1,450.00	1,449.80	1,449.80	5.00	5.00	-90.38	-0.20	-30.00	30.00	19.65	10.36	2.897 Alert			
1,500.00	1,500.00	1,500.20	1,499.80	5.18	5.18	-90.38	-0.20	-30.00	30.00	19.29	10.71	2.801 Alert			
1,550.00	1,550.00	1,549.80	1,549.80	5.36	5.35	-90.38	-0.20	-30.00	30.00	18.93	11.07	2.710 Alert			
1,600.00	1,600.00	1,600.20	1,599.80	5.53	5.53	-90.38	-0.20	-30.00	30.00	18.58	11.42	2.626 Alert			
1,650.00	1,650.00	1,649.80	1,649.80	5.71	5.71	-90.38	-0.20	-30.00	30.00	18.22	11.78	2.546 Alert			
1,700.00	1,700.00	1,700.20	1,699.80	5.89	5.89	-90.38	-0.20	-30.00	30.00	17.86	12.14	2.471 Minor Risk			
1,750.00	1,750.00	1,749.80	1,749.80	6.07	6.07	-90.38	-0.20	-30.00	30.00	17.50	12.50	2.401 Minor Risk			
1,800.00	1,800.00	1,800.20	1,799.80	6.25	6.25	-90.38	-0.20	-30.00	30.00	17.15	12.85	2.334 Minor Risk			
1,850.00	1,850.00	1,849.80	1,849.80	6.43	6.43	-90.38	-0.20	-30.00	30.00	16.79	13.21	2.271 Minor Risk			
1,900.00	1,900.00	1,900.20	1,899.80	6.61	6.61	-90.38	-0.20	-30.00	30.00	16.43	13.57	2.211 Minor Risk			
1,950.00	1,950.00	1,949.80	1,949.80	6.78	6.78	-90.38	-0.20	-30.00	30.00	16.07	13.93	2.154 Minor Risk, CC			
2,000.00	2,000.00	2,000.20	1,999.80	6.96	6.96	-90.38	-0.20	-30.00	30.22	15.94	14.28	2.116 Minor Risk, ES			
2,050.00	2,050.00	2,049.80	2,049.80	7.14	7.14	171.28	-0.20	-30.00	30.86	16.23	14.63	2.109 Minor Risk			
2,100.00	2,099.99	2,100.21	2,099.79	7.31	7.32	171.46	-0.20	-30.00	31.94	16.96	14.98	2.133 Minor Risk			
2,150.00	2,149.98	2,149.78	2,149.78	7.48	7.50	171.75	-0.20	-30.00	33.45	18.13	15.33	2.182 Minor Risk			
2,200.00	2,199.96	2,200.24	2,199.76	7.65	7.68	172.12	-0.20	-30.00	35.40	19.72	15.68	2.258 Minor Risk			
2,250.00	2,249.92	2,249.72	2,249.72	7.82	7.86	172.56	-0.20	-30.00	37.78	21.75	16.03	2.357 Minor Risk			
2,300.00	2,299.86	2,300.34	2,299.66	7.99	8.04	173.02	-0.20	-30.00	40.59	24.22	16.37	2.479 Minor Risk			
2,350.00	2,349.78	2,349.58	2,349.58	8.16	8.21	173.51	-0.20	-30.00	43.85	27.12	16.72	2.622 Alert			
2,400.00	2,399.68	2,399.48	2,399.48	8.34	8.39	173.99	-0.20	-30.00	47.32	30.25	17.07	2.773 Alert			
2,450.00	2,449.54	2,449.74	2,449.74	8.51	8.57	174.40	-0.25	-29.79	50.81	33.39	17.41	2.918 Alert			
2,500.00	2,499.37	2,500.04	2,500.04	8.68	8.74	174.71	-0.41	-29.15	54.29	36.54	17.75	3.059 Alert			
2,550.00	2,549.16	2,550.37	2,550.36	8.86	8.91	174.93	-0.68	-28.09							

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Distance										
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			
2,600.00	2,598.91	2,600.74	2,600.69	9.03	9.08	175.09	-1.06	-26.59	57.76	39.67	18.09	3.193	Alert			
2,650.00	2,648.65	2,651.15	2,651.07	9.21	9.25	175.15	-1.55	-24.66	60.90	42.47	18.43	3.305	Alert			
2,700.00	2,698.39	2,701.62	2,701.48	9.39	9.42	175.14	-2.15	-22.31	63.60	44.84	18.77	3.389	Alert			
2,750.00	2,748.13	2,752.13	2,751.90	9.56	9.60	175.05	-2.85	-19.51	65.87	46.77	19.10	3.448	Alert			
2,800.00	2,797.87	2,802.67	2,802.34	9.74	9.77	174.90	-3.67	-16.29	67.71	48.27	19.44	3.483	Alert			
2,850.00	2,847.61	2,853.24	2,852.77	9.92	9.94	174.69	-4.60	-12.63	69.12	49.34	19.78	3.495	Alert			
2,900.00	2,897.35	2,903.83	2,903.19	10.10	10.12	174.42	-5.63	-8.54	70.10	49.98	20.11	3.485	Alert			
2,950.00	2,947.09	2,954.44	2,953.57	10.28	10.29	174.07	-6.78	-4.01	70.64	50.19	20.45	3.454	Alert			
3,000.00	2,996.83	3,004.94	3,003.82	10.46	10.47	173.67	-8.03	0.92	70.76	49.98	20.79	3.404	Alert			
3,050.00	3,046.57	3,054.94	3,053.55	10.64	10.64	173.23	-9.30	5.96	70.74	49.60	21.14	3.347	Alert			
3,100.00	3,096.31	3,104.94	3,103.27	10.82	10.82	172.80	-10.58	11.00	70.72	49.24	21.48	3.292	Alert			
3,150.00	3,146.05	3,154.94	3,153.00	11.00	11.00	172.37	-11.85	16.03	70.70	48.87	21.83	3.238	Alert			
3,200.00	3,195.79	3,204.93	3,202.73	11.18	11.17	171.94	-13.13	21.07	70.69	48.51	22.18	3.187	Alert			
3,250.00	3,245.54	3,254.93	3,252.45	11.37	11.35	171.51	-14.40	26.11	70.68	48.15	22.53	3.137	Alert			
3,300.00	3,295.28	3,304.93	3,302.18	11.55	11.53	171.08	-15.68	31.14	70.68	47.80	22.88	3.089	Alert			
3,321.77	3,316.93	3,326.69	3,323.83	11.63	11.61	170.89	-16.23	33.34	70.68	47.64	23.04	3.068	Alert			
3,350.00	3,345.02	3,354.92	3,351.91	11.73	11.71	170.65	-16.95	36.18	70.68	47.45	23.24	3.042	Alert			
3,400.00	3,394.76	3,404.92	3,401.63	11.92	11.88	170.22	-18.23	41.22	70.69	47.10	23.59	2.997	Alert			
3,450.00	3,444.50	3,454.92	3,451.36	12.10	12.06	169.79	-19.51	46.25	70.69	46.75	23.94	2.953	Alert			
3,500.00	3,494.24	3,504.92	3,501.09	12.28	12.24	169.35	-20.78	51.29	70.71	46.41	24.29	2.910	Alert			
3,550.00	3,543.98	3,554.91	3,550.81	12.47	12.42	168.92	-22.06	56.33	70.72	46.07	24.65	2.869	Alert			
3,600.00	3,593.72	3,604.91	3,600.54	12.65	12.60	168.49	-23.33	61.37	70.74	45.74	25.00	2.829	Alert			
3,650.00	3,643.46	3,654.91	3,650.27	12.84	12.79	168.06	-24.61	66.40	70.77	45.41	25.36	2.791	Alert			
3,700.00	3,693.20	3,704.90	3,699.99	13.02	12.97	167.63	-25.88	71.44	70.80	45.08	25.71	2.753	Alert			
3,750.00	3,742.94	3,754.90	3,749.72	13.20	13.15	167.20	-27.16	76.48	70.83	44.76	26.07	2.717	Alert			
3,800.00	3,792.68	3,804.90	3,799.45	13.39	13.33	166.77	-28.43	81.51	70.86	44.44	26.43	2.682	Alert			
3,850.00	3,842.42	3,854.90	3,849.17	13.58	13.51	166.34	-29.71	86.55	70.90	44.12	26.78	2.647	Alert			
3,900.00	3,892.16	3,904.89	3,898.90	13.76	13.69	165.92	-30.98	91.59	70.95	43.81	27.14	2.614	Alert			
3,950.00	3,941.90	3,954.89	3,948.62	13.95	13.88	165.49	-32.26	96.62	71.00	43.50	27.50	2.582	Alert			
4,000.00	3,991.65	4,004.89	3,998.35	14.13	14.06	165.06	-33.53	101.66	71.05	43.19	27.86	2.550	Alert			
4,050.00	4,041.39	4,054.89	4,048.08	14.32	14.24	164.64	-34.81	106.70	71.10	42.89	28.22	2.520	Alert			
4,100.00	4,091.13	4,104.88	4,097.80	14.50	14.43	164.21	-36.08	111.73	71.16	42.59	28.58	2.490	Minor Risk			
4,150.00	4,140.87	4,154.88	4,147.53	14.69	14.61	163.78	-37.36	116.77	71.23	42.29	28.94	2.462	Minor Risk			
4,200.00	4,190.61	4,204.88	4,197.26	14.88	14.80	163.36	-38.63	121.81	71.30	42.00	29.30	2.434	Minor Risk			
4,250.00	4,240.35	4,254.87	4,246.98	15.06	14.98	162.94	-39.91	126.84	71.37	41.71	29.66	2.406	Minor Risk			
4,300.00	4,290.09	4,304.87	4,296.71	15.25	15.16	162.51	-41.18	131.88	71.44	41.42	30.02	2.380	Minor Risk			
4,350.00	4,339.83	4,354.87	4,346.44	15.44	15.35	162.09	-42.46	136.92	71.52	41.14	30.38	2.354	Minor Risk			
4,400.00	4,389.57	4,404.87	4,396.16	15.63	15.53	161.67	-43.73	141.95	71.61	40.86	30.74	2.329	Minor Risk			
4,450.00	4,439.31	4,454.86	4,445.89	15.81	15.72	161.25	-45.01	146.99	71.69	40.59	31.11	2.305	Minor Risk			
4,500.00	4,489.05	4,504.86	4,495.62	16.00	15.91	160.83	-46.28	152.03	71.78	40.32	31.47	2.281	Minor Risk			
4,550.00	4,538.79	4,554.86	4,545.34	16.19	16.09	160.42	-47.56	157.06	71.88	40.05	31.83	2.258	Minor Risk			
4,600.00	4,588.53	4,604.85	4,595.07	16.38	16.28	160.00	-48.83	162.10	71.98	39.78	32.20	2.236	Minor Risk			
4,650.00	4,638.27	4,654.85	4,644.80	16.56	16.46	159.58	-50.11	167.14	72.08	39.52	32.56	2.214	Minor Risk			
4,700.00	4,688.01	4,704.85	4,694.52	16.75	16.65	159.17	-51.38	172.17	72.19	39.26	32.93	2.192	Minor Risk			
4,750.00	4,737.76	4,754.85	4,744.25	16.94	16.84	158.76	-52.66	177.21	72.30	39.00	33.29	2.172	Minor Risk			
4,800.00	4,787.50	4,804.84	4,793.97	17.13	17.02	158.34	-53.93	182.25	72.41	38.75	33.66	2.151	Minor Risk			
4,850.00	4,837.24	4,854.84	4,843.70	17.32	17.21	157.93	-55.21	187.28	72.53	38.50	34.02	2.132	Minor Risk			
4,900.00	4,886.98	4,904.84	4,893.43	17.50	17.39	157.53	-56.48	192.32	72.65	38.26	34.39	2.112	Minor Risk			
4,950.00	4,936.72	4,954.83	4,943.15	17.69	17.58	157.12	-57.76	197.36	72.77	38.02	34.76	2.094	Minor Risk			
5,000.00	4,986.46	5,004.83	4,992.88	17.88	17.77	156.71	-59.03	202.39	72.90	37.78	35.12	2.076	Minor Risk			
5,050.00	5,036.20	5,054.83	5,042.61	18.07	17.96	156.31	-60.31	207.43	73.03	37.54	35.49	2.058	Minor Risk			
5,100.00	5,085.94	5,104.83	5,092.33	18.26	18.14	155.90	-61.58	212.47	73.17	37.31	35.86	2.040	Minor Risk			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Highside 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)						
5,150.00	5,135.68	5,154.82	5,142.06	18.45	18.33	155.50	-62.86	217.50	73.31	37.08	36.23	2.024	Minor Risk			
5,200.00	5,185.42	5,204.82	5,191.79	18.64	18.52	155.10	-64.13	222.54	73.45	36.86	36.60	2.007	Minor Risk			
5,250.00	5,235.16	5,254.82	5,241.51	18.83	18.71	154.70	-65.41	227.58	73.60	36.63	36.97	1.991	Minor Risk			
5,300.00	5,284.90	5,304.81	5,291.24	19.01	18.89	154.31	-66.68	232.61	73.75	36.41	37.34	1.975	Minor Risk			
5,350.00	5,334.64	5,354.81	5,340.97	19.20	19.08	153.91	-67.96	237.65	73.90	36.20	37.71	1.960	Minor Risk			
5,400.00	5,384.38	5,404.81	5,390.69	19.39	19.27	153.52	-69.23	242.69	74.06	35.98	38.08	1.945	Minor Risk			
5,450.00	5,434.12	5,454.81	5,440.42	19.58	19.46	153.13	-70.51	247.72	74.22	35.77	38.45	1.930	Minor Risk			
5,500.00	5,483.87	5,504.80	5,490.15	19.77	19.65	152.74	-71.79	252.76	74.38	35.57	38.82	1.916	Minor Risk			
5,550.00	5,533.61	5,554.80	5,539.87	19.96	19.83	152.35	-73.06	257.80	74.55	35.36	39.19	1.902	Minor Risk			
5,600.00	5,583.35	5,604.80	5,589.60	20.15	20.02	151.96	-74.34	262.83	74.72	35.16	39.56	1.889	Minor Risk			
5,650.00	5,633.09	5,654.79	5,639.33	20.34	20.21	151.58	-75.61	267.87	74.90	34.96	39.93	1.876	Minor Risk			
5,700.00	5,682.83	5,704.79	5,689.05	20.53	20.40	151.19	-76.89	272.91	75.08	34.77	40.31	1.863	Minor Risk			
5,750.00	5,732.57	5,754.79	5,738.78	20.72	20.59	150.81	-78.16	277.94	75.26	34.58	40.68	1.850	Minor Risk			
5,800.00	5,782.31	5,804.79	5,788.50	20.91	20.78	150.43	-79.44	282.98	75.44	34.39	41.05	1.838	Minor Risk			
5,850.00	5,832.05	5,854.78	5,838.23	21.10	20.97	150.05	-80.71	288.02	75.63	34.20	41.43	1.826	Minor Risk			
5,900.00	5,881.79	5,904.78	5,887.96	21.29	21.16	149.68	-81.99	293.05	75.82	34.02	41.80	1.814	Minor Risk			
5,950.00	5,931.53	5,954.78	5,937.68	21.48	21.34	149.30	-83.26	298.09	76.01	33.84	42.17	1.802	Minor Risk			
6,000.00	5,981.27	6,004.77	5,987.41	21.67	21.53	148.93	-84.54	303.13	76.21	33.66	42.55	1.791	Minor Risk			
6,050.00	6,031.01	6,054.77	6,037.14	21.86	21.72	148.56	-85.81	308.17	76.41	33.49	42.92	1.780	Minor Risk			
6,100.00	6,080.75	6,104.77	6,086.86	22.05	21.91	148.19	-87.09	313.20	76.62	33.32	43.30	1.769	Minor Risk			
6,150.00	6,130.49	6,154.77	6,136.59	22.24	22.10	147.83	-88.36	318.24	76.82	33.15	43.67	1.759	Minor Risk			
6,200.00	6,180.24	6,204.76	6,186.32	22.43	22.29	147.46	-89.64	323.28	77.03	32.98	44.05	1.749	Minor Risk			
6,250.00	6,229.98	6,254.76	6,236.04	22.62	22.48	147.10	-90.91	328.31	77.25	32.82	44.43	1.739	Minor Risk			
6,300.00	6,279.72	6,304.76	6,285.77	22.81	22.67	146.74	-92.19	333.35	77.46	32.66	44.80	1.729	Minor Risk			
6,350.00	6,329.46	6,354.75	6,335.50	23.00	22.86	146.38	-93.46	338.39	77.68	32.50	45.18	1.719	Minor Risk			
6,400.00	6,379.20	6,404.75	6,385.22	23.19	23.05	146.03	-94.74	343.42	77.90	32.35	45.55	1.710	Minor Risk			
6,450.00	6,428.94	6,454.75	6,434.95	23.38	23.24	145.67	-96.01	348.46	78.13	32.20	45.93	1.701	Minor Risk			
6,500.00	6,478.68	6,504.75	6,484.68	23.57	23.43	145.32	-97.29	353.50	78.36	32.05	46.31	1.692	Minor Risk			
6,550.00	6,528.42	6,554.74	6,534.40	23.76	23.62	144.97	-98.56	358.53	78.59	31.90	46.69	1.683	Minor Risk			
6,600.00	6,578.16	6,604.74	6,584.13	23.95	23.81	144.62	-99.84	363.57	78.82	31.76	47.06	1.675	Minor Risk			
6,650.00	6,627.90	6,654.74	6,633.85	24.14	24.00	144.28	-101.11	368.61	79.06	31.62	47.44	1.666	Minor Risk			
6,700.00	6,677.64	6,704.74	6,683.58	24.33	24.19	143.93	-102.39	373.64	79.30	31.48	47.82	1.658	Minor Risk			
6,750.00	6,727.38	6,754.73	6,733.31	24.52	24.38	143.59	-103.66	378.68	79.54	31.34	48.20	1.650	Minor Risk			
6,800.00	6,777.12	6,804.73	6,783.03	24.71	24.57	143.25	-104.94	383.72	79.79	31.21	48.58	1.642	Minor Risk			
6,850.00	6,826.86	6,854.73	6,832.76	24.90	24.76	142.92	-106.21	388.75	80.03	31.08	48.96	1.635	Minor Risk			
6,900.00	6,876.60	6,904.72	6,882.49	25.09	24.95	142.58	-107.49	393.79	80.29	30.95	49.34	1.627	Minor Risk			
6,950.00	6,926.35	6,954.72	6,932.21	25.28	25.14	142.25	-108.76	398.83	80.54	30.82	49.72	1.620	Minor Risk			
7,000.00	6,976.09	7,004.72	6,981.94	25.47	25.33	141.92	-110.04	403.86	80.80	30.70	50.10	1.613	Minor Risk			
7,050.00	7,025.83	7,054.72	7,031.67	25.66	25.52	141.59	-111.31	408.90	81.06	30.58	50.48	1.606	Minor Risk			
7,100.00	7,075.57	7,104.71	7,081.39	25.85	25.71	141.26	-112.59	413.94	81.32	30.46	50.86	1.599	Minor Risk			
7,150.00	7,125.31	7,154.71	7,131.12	26.05	25.90	140.93	-113.86	418.97	81.58	30.34	51.24	1.592	Minor Risk			
7,200.00	7,175.05	7,204.71	7,180.85	26.24	26.09	140.61	-115.14	424.01	81.85	30.23	51.62	1.586	Minor Risk			
7,250.00	7,224.79	7,254.70	7,230.57	26.43	26.28	140.29	-116.41	429.05	82.12	30.12	52.00	1.579	Minor Risk			
7,300.00	7,274.53	7,304.70	7,280.30	26.62	26.47	139.97	-117.69	434.08	82.39	30.01	52.38	1.573	Minor Risk			
7,350.00	7,324.27	7,354.70	7,330.03	26.81	26.66	139.66	-118.96	439.12	82.66	29.90	52.76	1.567	Minor Risk			
7,400.00	7,374.01	7,404.70	7,379.75	27.00	26.85	139.34	-120.24	444.16	82.94	29.80	53.14	1.561	Minor Risk			
7,450.00	7,423.75	7,454.69	7,429.48	27.19	27.04	139.03	-121.51	449.19	83.22	29.70	53.53	1.555	Minor Risk			
7,500.00	7,473.49	7,504.69	7,479.20	27.38	27.23	138.72	-122.79	454.23	83.50	29.60	53.91	1.549	Minor Risk			
7,550.00	7,523.23	7,554.69	7,528.93	27.57	27.43	138.41	-124.07	459.27	83.79	29.50	54.29	1.543	Minor Risk			
7,600.00	7,572.97	7,604.68	7,578.66	27.76	27.62	138.11	-125.34	464.30	84.08	29.40	54.67	1.538	Minor Risk			
7,650.00	7,622.71	7,654.68	7,628.38	27.95	27.81	137.80	-126.62	469.34	84.36	29.31	55.05	1.532	Minor Risk			
7,700.00	7,672.46	7,704.68	7,678.11	28.15	28.00	137.50	-127.89	474.38	84.66	29.22	55.44	1.527	Minor Risk			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside 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)	+E/-W (ft)					
7,750.00	7,722.20	7,754.68	7,727.84	28.34	28.19	137.20	-129.17	479.41	84.95	29.13	55.82	1.522	Minor Risk
7,800.00	7,771.94	7,804.67	7,777.56	28.53	28.38	136.90	-130.44	484.45	85.25	29.04	56.20	1.517	Minor Risk
7,850.00	7,821.68	7,854.67	7,827.29	28.72	28.57	136.61	-131.72	489.49	85.55	28.96	56.59	1.512	Minor Risk
7,900.00	7,871.42	7,904.67	7,877.02	28.91	28.76	136.31	-132.99	494.52	85.85	28.88	56.97	1.507	Minor Risk
7,950.00	7,921.16	7,954.66	7,926.74	29.10	28.95	136.02	-134.27	499.56	86.15	28.80	57.35	1.502	Minor Risk
8,000.00	7,970.90	8,004.66	7,976.47	29.29	29.14	135.73	-135.54	504.60	86.45	28.72	57.74	1.497	Major Risk
8,050.00	8,020.64	8,054.66	8,026.20	29.48	29.33	135.45	-136.82	509.63	86.76	28.64	58.12	1.493	Major Risk
8,100.00	8,070.38	8,104.66	8,075.92	29.67	29.53	135.16	-138.09	514.67	87.07	28.57	58.50	1.488	Major Risk
8,150.00	8,120.12	8,154.65	8,125.65	29.87	29.72	134.88	-139.37	519.71	87.38	28.49	58.89	1.484	Major Risk
8,200.00	8,169.86	8,204.65	8,175.38	30.06	29.91	134.60	-140.64	524.74	87.70	28.42	59.27	1.480	Major Risk
8,250.00	8,219.60	8,254.65	8,225.10	30.25	30.10	134.32	-141.92	529.78	88.01	28.36	59.66	1.475	Major Risk
8,300.00	8,269.34	8,304.64	8,274.83	30.44	30.29	134.04	-143.19	534.82	88.33	28.29	60.04	1.471	Major Risk
8,350.00	8,319.08	8,354.64	8,324.55	30.63	30.48	133.77	-144.47	539.86	88.65	28.23	60.43	1.467	Major Risk
8,400.00	8,368.82	8,404.64	8,374.28	30.82	30.67	133.49	-145.74	544.89	88.97	28.16	60.81	1.463	Major Risk
8,450.00	8,418.57	8,454.64	8,424.01	31.01	30.86	133.22	-147.02	549.93	89.30	28.10	61.20	1.459	Major Risk
8,500.00	8,468.31	8,504.63	8,473.73	31.20	31.06	132.95	-148.29	554.97	89.62	28.04	61.58	1.455	Major Risk
8,550.00	8,518.05	8,554.63	8,523.46	31.40	31.25	132.68	-149.57	560.00	89.95	27.99	61.97	1.452	Major Risk
8,600.00	8,567.79	8,604.63	8,573.19	31.59	31.44	132.42	-150.84	565.04	90.28	27.93	62.35	1.448	Major Risk
8,650.00	8,617.53	8,654.62	8,622.91	31.78	31.63	132.16	-152.12	570.08	90.61	27.88	62.74	1.444	Major Risk
8,700.00	8,667.27	8,704.62	8,672.64	31.97	31.82	131.89	-153.39	575.11	90.95	27.83	63.12	1.441	Major Risk
8,750.00	8,717.01	8,754.62	8,722.37	32.16	32.01	131.63	-154.67	580.15	91.28	27.78	63.51	1.437	Major Risk
8,800.00	8,766.75	8,804.62	8,772.09	32.35	32.20	131.38	-155.94	585.19	91.62	27.73	63.89	1.434	Major Risk
8,850.00	8,816.49	8,854.61	8,821.82	32.54	32.40	131.12	-157.22	590.22	91.96	27.68	64.28	1.431	Major Risk
8,900.00	8,866.23	8,904.61	8,871.55	32.74	32.59	130.87	-158.49	595.26	92.30	27.64	64.66	1.427	Major Risk
8,950.00	8,915.97	8,954.61	8,921.27	32.93	32.78	130.62	-159.77	600.30	92.65	27.60	65.05	1.424	Major Risk
9,000.00	8,965.71	9,004.60	8,971.00	33.12	32.97	130.37	-161.04	605.33	92.99	27.55	65.44	1.421	Major Risk
9,050.00	9,015.45	9,054.60	9,020.73	33.31	33.16	130.12	-162.32	610.37	93.34	27.51	65.82	1.418	Major Risk
9,100.00	9,065.19	9,104.60	9,070.45	33.50	33.35	129.87	-163.59	615.41	93.69	27.48	66.21	1.415	Major Risk
9,150.00	9,114.93	9,154.60	9,120.18	33.69	33.55	129.63	-164.87	620.44	94.04	27.44	66.59	1.412	Major Risk
9,200.00	9,164.68	9,204.59	9,169.90	33.89	33.74	129.38	-166.14	625.48	94.39	27.41	66.98	1.409	Major Risk
9,250.00	9,214.42	9,254.59	9,219.63	34.08	33.93	129.14	-167.42	630.52	94.74	27.37	67.37	1.406	Major Risk
9,300.00	9,264.16	9,304.59	9,269.36	34.27	34.12	128.90	-168.69	635.55	95.10	27.34	67.75	1.404	Major Risk
9,350.00	9,313.90	9,354.59	9,319.08	34.46	34.31	128.67	-169.97	640.59	95.45	27.31	68.14	1.401	Major Risk
9,400.00	9,363.64	9,404.58	9,368.81	34.65	34.50	128.43	-171.24	645.63	95.81	27.28	68.53	1.398	Major Risk
9,450.00	9,413.38	9,454.58	9,418.54	34.84	34.70	128.20	-172.52	650.66	96.17	27.26	68.91	1.396	Major Risk
9,500.00	9,463.12	9,504.58	9,468.26	35.03	34.89	127.96	-173.79	655.70	96.53	27.23	69.30	1.393	Major Risk
9,550.00	9,512.86	9,554.57	9,517.99	35.23	35.08	127.73	-175.07	660.74	96.90	27.21	69.69	1.390	Major Risk
9,600.00	9,562.60	9,604.57	9,567.72	35.42	35.27	127.51	-176.35	665.77	97.26	27.19	70.07	1.388	Major Risk
9,650.00	9,612.34	9,654.57	9,617.44	35.61	35.46	127.28	-177.62	670.81	97.63	27.17	70.46	1.386	Major Risk
9,700.00	9,662.08	9,704.57	9,667.17	35.80	35.66	127.05	-178.90	675.85	98.00	27.15	70.85	1.383	Major Risk
9,750.00	9,711.82	9,754.56	9,716.90	35.99	35.85	126.83	-180.17	680.88	98.36	27.13	71.24	1.381	Major Risk
9,800.00	9,761.56	9,804.56	9,766.62	36.18	36.04	126.61	-181.45	685.92	98.74	27.11	71.62	1.379	Major Risk
9,850.00	9,811.30	9,854.56	9,816.35	36.38	36.23	126.39	-182.72	690.96	99.11	27.10	72.01	1.376	Major Risk
9,900.00	9,861.04	9,904.55	9,866.08	36.57	36.42	126.17	-184.00	695.99	99.48	27.08	72.40	1.374	Major Risk
9,950.00	9,910.79	9,954.55	9,915.80	36.76	36.62	125.95	-185.27	701.03	99.86	27.07	72.78	1.372	Major Risk
10,000.00	9,960.53	10,004.55	9,965.53	36.95	36.81	125.74	-186.55	706.07	100.23	27.06	73.17	1.370	Major Risk
10,050.00	10,010.27	10,054.55	10,015.25	37.14	37.00	125.52	-187.82	711.10	100.61	27.05	73.56	1.368	Major Risk
10,100.00	10,060.01	10,104.54	10,064.98	37.33	37.19	125.31	-189.10	716.14	100.99	27.04	73.95	1.366	Major Risk
10,150.00	10,109.75	10,154.54	10,114.71	37.53	37.38	125.10	-190.37	721.18	101.37	27.04	74.33	1.364	Major Risk
10,200.00	10,159.49	10,204.54	10,164.43	37.72	37.58	124.89	-191.65	726.21	101.75	27.03	74.72	1.362	Major Risk
10,250.00	10,209.23	10,254.53	10,214.16	37.91	37.77	124.68	-192.92	731.25	102.14	27.03	75.11	1.360	Major Risk
10,300.00	10,258.97	10,304.53	10,263.89	38.10	37.96	124.48	-194.20	736.29	102.52	27.03	75.50	1.358	Major Risk

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside 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)				Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)
10,350.00	10,308.71	10,354.36	10,313.44	38.29	38.15	124.29	-195.46	741.28	102.92	27.04	75.88	1,356	Major Risk, SF	
10,400.00	10,358.45	10,403.71	10,362.58	38.49	38.34	124.33	-196.60	745.78	103.54	27.28	76.26	1,358	Major Risk	
10,450.00	10,408.19	10,453.06	10,411.76	38.68	38.52	124.67	-197.58	749.66	104.48	27.86	76.62	1,364	Major Risk	
10,500.00	10,457.93	10,502.36	10,460.96	38.87	38.70	125.31	-198.41	752.92	105.74	28.77	76.96	1,374	Major Risk	
10,550.00	10,507.67	10,551.62	10,510.14	39.06	38.88	126.23	-199.08	755.57	107.33	30.05	77.29	1,389	Major Risk	
10,600.00	10,557.41	10,600.81	10,559.28	39.25	39.06	127.41	-199.59	757.59	109.29	31.69	77.60	1,408	Major Risk	
10,650.00	10,607.16	10,649.92	10,608.37	39.44	39.23	128.81	-199.95	759.00	111.64	33.76	77.89	1,433	Major Risk	
10,700.00	10,656.90	10,698.93	10,657.37	39.64	39.40	130.42	-200.15	759.80	114.43	36.27	78.16	1,464	Major Risk	
10,750.00	10,706.64	10,748.00	10,706.44	39.83	39.57	132.19	-200.20	760.00	117.67	39.26	78.42	1,501	Minor Risk	
10,800.00	10,756.38	10,802.26	10,756.18	40.02	39.75	133.97	-200.20	760.00	121.16	42.46	78.70	1,539	Minor Risk	
10,850.00	10,806.12	10,847.48	10,805.92	40.21	39.90	135.65	-200.20	760.00	124.74	45.79	78.96	1,580	Minor Risk	
10,900.00	10,855.90	10,902.74	10,855.70	40.40	40.08	137.14	-200.20	760.00	128.13	48.87	79.25	1,617	Minor Risk	
10,950.00	10,905.74	10,947.10	10,905.54	40.59	40.23	138.36	-200.20	760.00	131.10	51.57	79.52	1,649	Minor Risk	
11,000.00	10,955.63	11,003.02	10,955.43	40.77	40.41	139.33	-200.20	760.00	133.63	53.78	79.85	1,674	Minor Risk	
11,050.00	11,005.55	11,046.91	11,005.35	40.95	40.56	140.10	-200.20	760.00	135.69	55.55	80.14	1,693	Minor Risk	
11,100.00	11,055.51	11,098.02	11,056.46	41.13	40.73	140.70	-200.12	760.00	137.23	56.75	80.48	1,705	Minor Risk	
11,150.00	11,105.49	11,154.61	11,112.90	41.31	40.91	142.46	-196.40	759.98	136.69	55.87	80.81	1,691	Minor Risk	
11,200.00	11,155.48	11,209.93	11,167.47	41.48	41.09	146.04	-187.40	759.92	133.54	52.58	80.96	1,649	Minor Risk	
11,250.00	11,205.48	11,263.07	11,218.83	41.65	41.25	-110.04	-173.84	759.83	128.63	47.62	81.01	1,598	Minor Risk	
11,300.00	11,255.48	11,313.29	11,266.02	41.82	41.39	-102.52	-156.71	759.73	123.67	42.62	81.05	1,526	Minor Risk	
11,350.00	11,305.48	11,360.13	11,308.52	41.98	41.51	-93.35	-137.06	759.60	120.65	39.65	80.99	1,490	Major Risk	
11,365.17	11,320.66	11,373.63	11,320.46	42.03	41.54	-90.36	-130.76	759.56	120.44	39.52	80.92	1,488	Major Risk	
11,400.00	11,355.48	11,403.34	11,346.19	42.15	41.61	-83.33	-115.90	759.47	121.69	41.15	80.55	1,511	Minor Risk	
11,450.00	11,405.48	11,442.91	11,379.20	42.31	41.70	-73.43	-94.10	759.33	128.57	49.24	79.33	1,621	Minor Risk	
11,500.00	11,455.48	11,478.95	11,407.89	42.48	41.76	-64.47	-72.30	759.20	142.02	64.69	77.33	1,837	Minor Risk	
11,550.00	11,505.48	11,511.65	11,432.69	42.64	41.82	-56.84	-50.99	759.06	161.68	86.79	74.89	2,159	Minor Risk	
11,600.00	11,555.48	11,541.44	11,454.19	42.81	41.87	-71.01	-30.38	758.93	186.47	114.06	72.42	2,575	Alert	
11,650.00	11,605.31	11,570.24	11,473.92	42.98	41.91	-63.23	-9.41	758.80	214.22	144.01	70.21	3,051	Alert	
11,700.00	11,654.59	11,600.00	11,493.19	43.15	41.95	-56.72	13.27	758.66	243.23	174.78	68.46	3,553	Alert	
11,750.00	11,702.92	11,626.52	11,509.35	43.32	41.98	-51.68	34.29	758.53	272.58	206.03	66.55	4,096	Alert	
11,800.00	11,749.92	11,650.00	11,522.83	43.48	42.00	-47.68	53.52	758.41	301.75	237.18	64.58	4,673	Alert	
11,850.00	11,795.20	11,681.33	11,539.56	43.64	42.03	-44.18	80.00	758.24	330.24	266.61	63.63	5,190		
11,900.00	11,838.39	11,708.27	11,552.78	43.79	42.05	-41.48	103.48	758.09	357.91	295.50	62.41	5,735		
11,950.00	11,879.15	11,734.95	11,564.76	43.94	42.06	-39.30	127.31	757.94	384.54	323.19	61.35	6,268		
12,000.00	11,917.16	11,761.39	11,575.54	44.08	42.07	-37.55	151.45	757.79	409.99	349.54	60.45	6,782		
12,050.00	11,952.13	11,787.65	11,585.12	44.21	42.08	-35.68	175.90	757.64	434.10	374.38	59.72	7,269		
12,100.00	11,984.13	11,813.99	11,593.60	44.33	42.09	-33.62	200.83	757.48	456.23	397.15	59.08	7,723		
12,150.00	12,012.94	11,840.46	11,600.95	44.43	42.10	-31.95	226.26	757.32	476.20	417.70	58.50	8,140		
12,200.00	12,038.36	11,867.04	11,607.15	44.53	42.11	-30.61	252.10	757.16	493.96	435.96	58.01	8,516		
12,250.00	12,060.16	11,900.00	11,613.16	44.62	42.12	-29.54	284.50	756.96	509.55	451.78	57.77	8,820		
12,300.00	12,078.18	11,920.45	11,615.95	44.70	42.12	-28.66	304.75	756.83	522.71	465.42	57.29	9,124		
12,350.00	12,092.27	11,950.00	11,618.70	44.77	42.14	-28.00	334.18	756.65	533.64	476.53	57.11	9,344		
12,400.00	12,102.32	11,974.07	11,619.82	44.85	42.16	-27.51	358.22	756.49	542.21	485.23	56.98	9,516		
12,450.00	12,108.24	12,011.42	11,620.00	44.93	42.20	-27.18	395.57	756.26	548.21	491.22	57.00	9,618		
12,500.00	12,110.00	12,061.37	11,620.00	45.01	42.28	-27.08	445.51	755.95	550.09	493.01	57.08	9,637		
12,550.00	12,110.00	12,111.37	11,620.00	45.10	42.40	-27.07	495.51	755.63	550.08	492.90	57.18	9,620		
12,600.00	12,110.00	12,161.37	11,620.00	45.20	42.53	-27.07	545.51	755.32	550.08	492.78	57.30	9,601		
12,650.00	12,110.00	12,211.37	11,620.00	45.32	42.68	-27.07	595.51	755.01	550.07	492.64	57.43	9,578		
12,700.00	12,110.00	12,261.37	11,620.00	45.44	42.85	-27.07	645.51	754.69	550.07	492.49	57.58	9,553		
12,750.00	12,110.00	12,311.37	11,620.00	45.58	43.03	-27.07	695.51	754.38	550.07	492.32	57.74	9,526		
12,800.00	12,110.00	12,361.37	11,620.00	45.73	43.22	-27.07	745.51	754.06	550.06	492.14	57.92	9,497		
12,850.00	12,110.00	12,411.37	11,620.00	45.90	43.43	-27.07	795.51	753.75	550.06	491.94	58.12	9,464		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1											Offset Site Error: 0.00 ft		
Survey Program: 0-MWD+HDGM											Offset Well Error: 0.50 ft		
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
12,900.00	12,110.00	12,461.37	11,620.00	46.07	43.64	-27.07	845.51	753.44	550.05	491.73	58.33	9.430	
12,950.00	12,110.00	12,511.37	11,620.00	46.26	43.87	-27.07	895.50	753.12	550.05	491.49	58.56	9.394	
13,000.00	12,110.00	12,561.37	11,620.00	46.46	44.11	-27.07	945.50	752.81	550.05	491.25	58.79	9.355	
13,050.00	12,110.00	12,611.37	11,620.00	46.68	44.35	-27.07	995.50	752.49	550.04	490.99	59.05	9.315	
13,100.00	12,110.00	12,661.37	11,620.00	46.90	44.61	-27.07	1,045.50	752.18	550.04	490.72	59.32	9.273	
13,150.00	12,110.00	12,711.37	11,620.00	47.13	44.88	-27.06	1,095.50	751.87	550.03	490.43	59.60	9.228	
13,200.00	12,110.00	12,761.37	11,620.00	47.37	45.16	-27.06	1,145.50	751.55	550.03	490.13	59.90	9.182	
13,250.00	12,110.00	12,811.37	11,620.00	47.63	45.45	-27.06	1,195.50	751.24	550.03	489.81	60.21	9.134	
13,300.00	12,110.00	12,861.37	11,620.00	47.89	45.75	-27.06	1,245.50	750.93	550.02	489.48	60.54	9.085	
13,350.00	12,110.00	12,911.37	11,620.00	48.17	46.05	-27.06	1,295.50	750.61	550.02	489.14	60.88	9.035	
13,400.00	12,110.00	12,961.37	11,620.00	48.45	46.37	-27.06	1,345.50	750.30	550.01	488.78	61.23	8.983	
13,450.00	12,110.00	13,011.37	11,620.00	48.74	46.69	-27.06	1,395.49	749.98	550.01	488.41	61.60	8.929	
13,500.00	12,110.00	13,061.37	11,620.00	49.04	47.03	-27.06	1,445.49	749.67	550.00	488.03	61.97	8.875	
13,550.00	12,110.00	13,111.37	11,620.00	49.36	47.37	-27.06	1,495.49	749.36	550.00	487.63	62.37	8.819	
13,600.00	12,110.00	13,161.37	11,620.00	49.67	47.72	-27.06	1,545.49	749.04	550.00	487.23	62.77	8.762	
13,650.00	12,110.00	13,211.37	11,620.00	50.01	48.08	-27.06	1,595.49	748.73	549.99	486.81	63.18	8.705	
13,700.00	12,110.00	13,261.37	11,620.00	50.34	48.45	-27.06	1,645.49	748.42	549.99	486.38	63.61	8.646	
13,750.00	12,110.00	13,311.37	11,620.00	50.69	48.83	-27.05	1,695.49	748.10	549.98	485.93	64.05	8.587	
13,800.00	12,110.00	13,361.37	11,620.00	51.04	49.21	-27.05	1,745.49	747.79	549.98	485.48	64.50	8.527	
13,850.00	12,110.00	13,411.37	11,620.00	51.40	49.60	-27.05	1,795.49	747.47	549.98	485.01	64.96	8.466	
13,900.00	12,110.00	13,461.37	11,620.00	51.77	50.00	-27.05	1,845.49	747.16	549.97	484.54	65.43	8.405	
13,950.00	12,110.00	13,511.37	11,620.00	52.15	50.40	-27.05	1,895.48	746.85	549.97	484.05	65.92	8.343	
14,000.00	12,110.00	13,561.37	11,620.00	52.53	50.82	-27.05	1,945.48	746.53	549.96	483.56	66.41	8.282	
14,050.00	12,110.00	13,611.37	11,620.00	52.93	51.24	-27.05	1,995.48	746.22	549.96	483.05	66.91	8.219	
14,100.00	12,110.00	13,661.37	11,620.00	53.32	51.67	-27.05	2,045.48	745.90	549.96	482.53	67.42	8.157	
14,150.00	12,110.00	13,711.37	11,620.00	53.73	52.10	-27.05	2,095.48	745.59	549.95	482.00	67.95	8.094	
14,200.00	12,110.00	13,761.37	11,620.00	54.14	52.54	-27.05	2,145.48	745.28	549.95	481.47	68.48	8.031	
14,250.00	12,110.00	13,811.37	11,620.00	54.57	52.98	-27.05	2,195.48	744.96	549.94	480.92	69.02	7.967	
14,300.00	12,110.00	13,861.37	11,620.00	54.99	53.44	-27.05	2,245.48	744.65	549.94	480.37	69.57	7.904	
14,350.00	12,110.00	13,911.37	11,620.00	55.42	53.89	-27.04	2,295.48	744.34	549.93	479.80	70.13	7.841	
14,400.00	12,110.00	13,961.37	11,620.00	55.86	54.36	-27.04	2,345.48	744.02	549.93	479.23	70.70	7.778	
14,450.00	12,110.00	14,011.37	11,620.00	56.31	54.83	-27.04	2,395.48	743.71	549.93	478.65	71.28	7.715	
14,500.00	12,110.00	14,061.37	11,620.00	56.76	55.30	-27.04	2,445.47	743.39	549.92	478.06	71.86	7.652	
14,550.00	12,110.00	14,111.37	11,620.00	57.21	55.78	-27.04	2,495.47	743.08	549.92	477.46	72.46	7.590	
14,600.00	12,110.00	14,161.37	11,620.00	57.67	56.27	-27.04	2,545.47	742.77	549.91	476.86	73.06	7.527	
14,650.00	12,110.00	14,211.37	11,620.00	58.14	56.76	-27.04	2,595.47	742.45	549.91	476.24	73.67	7.465	
14,700.00	12,110.00	14,261.37	11,620.00	58.61	57.26	-27.04	2,645.47	742.14	549.91	475.62	74.28	7.403	
14,750.00	12,110.00	14,311.37	11,620.00	59.09	57.76	-27.04	2,695.47	741.82	549.90	475.00	74.91	7.341	
14,800.00	12,110.00	14,361.37	11,620.00	59.57	58.26	-27.04	2,745.47	741.51	549.90	474.36	75.54	7.280	
14,850.00	12,110.00	14,411.37	11,620.00	60.06	58.77	-27.04	2,795.47	741.20	549.89	473.72	76.17	7.219	
14,900.00	12,110.00	14,461.37	11,620.00	60.56	59.29	-27.04	2,845.47	740.88	549.89	473.07	76.82	7.158	
14,950.00	12,110.00	14,511.37	11,620.00	61.06	59.81	-27.03	2,895.47	740.57	549.89	472.42	77.47	7.098	
15,000.00	12,110.00	14,561.37	11,620.00	61.56	60.33	-27.03	2,945.46	740.26	549.88	471.76	78.13	7.038	
15,050.00	12,110.00	14,611.37	11,620.00	62.06	60.86	-27.03	2,995.46	739.94	549.88	471.09	78.79	6.979	
15,100.00	12,110.00	14,661.37	11,620.00	62.57	61.39	-27.03	3,045.46	739.63	549.87	470.41	79.46	6.920	
15,150.00	12,110.00	14,711.37	11,620.00	63.09	61.93	-27.03	3,095.46	739.31	549.87	469.73	80.13	6.862	
15,200.00	12,110.00	14,761.37	11,620.00	63.61	62.47	-27.03	3,145.46	739.00	549.86	469.05	80.81	6.804	
15,250.00	12,110.00	14,811.37	11,620.00	64.13	63.01	-27.03	3,195.46	738.69	549.86	468.36	81.50	6.747	
15,300.00	12,110.00	14,861.37	11,620.00	64.66	63.56	-27.03	3,245.46	738.37	549.86	467.66	82.19	6.690	
15,350.00	12,110.00	14,911.37	11,620.00	65.19	64.11	-27.03	3,295.46	738.06	549.85	466.96	82.89	6.633	
15,400.00	12,110.00	14,961.37	11,620.00	65.73	64.66	-27.03	3,345.46	737.74	549.85	466.25	83.59	6.578	
15,450.00	12,110.00	15,011.37	11,620.00	66.27	65.22	-27.03	3,395.46	737.43	549.84	465.54	84.30	6.522	

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1													Offset Well Error:	0.50 ft
Survey Program: 0-MWD+HDGM														
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)				
15,500.00	12,110.00	15,061.37	11,620.00	66.81	65.78	-27.03	3,445.45	737.12	549.84	464.82	85.02	6.467		
15,550.00	12,110.00	15,111.37	11,620.00	67.36	66.35	-27.02	3,495.45	736.80	549.84	464.10	85.73	6.413		
15,600.00	12,110.00	15,161.37	11,620.00	67.90	66.92	-27.02	3,545.45	736.49	549.83	463.38	86.46	6.360		
15,650.00	12,110.00	15,211.37	11,620.00	68.46	67.49	-27.02	3,595.45	736.18	549.83	462.64	87.18	6.307		
15,700.00	12,110.00	15,261.37	11,620.00	69.01	68.06	-27.02	3,645.45	735.86	549.82	461.91	87.92	6.254		
15,750.00	12,110.00	15,311.37	11,620.00	69.57	68.64	-27.02	3,695.45	735.55	549.82	461.17	88.65	6.202		
15,800.00	12,110.00	15,361.37	11,620.00	70.13	69.22	-27.02	3,745.45	735.23	549.82	460.42	89.39	6.151		
15,850.00	12,110.00	15,411.37	11,620.00	70.70	69.80	-27.02	3,795.45	734.92	549.81	459.67	90.14	6.100		
15,900.00	12,110.00	15,461.37	11,620.00	71.27	70.38	-27.02	3,845.45	734.61	549.81	458.92	90.88	6.049		
15,950.00	12,110.00	15,511.37	11,620.00	71.84	70.97	-27.02	3,895.45	734.29	549.80	458.17	91.64	6.000		
16,000.00	12,110.00	15,561.37	11,620.00	72.41	71.56	-27.02	3,945.44	733.98	549.80	457.41	92.39	5.951		
16,050.00	12,110.00	15,611.37	11,620.00	72.99	72.15	-27.02	3,995.44	733.67	549.79	456.64	93.15	5.902		
16,100.00	12,110.00	15,661.37	11,620.00	73.57	72.75	-27.02	4,045.44	733.35	549.79	455.87	93.92	5.854		
16,150.00	12,110.00	15,711.37	11,620.00	74.15	73.35	-27.01	4,095.44	733.04	549.79	455.10	94.69	5.806		
16,200.00	12,110.00	15,761.37	11,620.00	74.74	73.95	-27.01	4,145.44	732.72	549.78	454.33	95.46	5.760		
16,250.00	12,110.00	15,811.37	11,620.00	75.33	74.55	-27.01	4,195.44	732.41	549.78	453.55	96.23	5.713		
16,300.00	12,110.00	15,861.37	11,620.00	75.91	75.15	-27.01	4,245.44	732.10	549.77	452.77	97.01	5.667		
16,350.00	12,110.00	15,911.37	11,620.00	76.51	75.76	-27.01	4,295.44	731.78	549.77	451.98	97.79	5.622		
16,400.00	12,110.00	15,961.37	11,620.00	77.10	76.37	-27.01	4,345.44	731.47	549.77	451.19	98.57	5.577		
16,450.00	12,110.00	16,011.37	11,620.00	77.70	76.98	-27.01	4,395.44	731.15	549.76	450.40	99.36	5.533		
16,500.00	12,110.00	16,061.37	11,620.00	78.30	77.59	-27.01	4,445.43	730.84	549.76	449.61	100.15	5.489		
16,550.00	12,110.00	16,111.37	11,620.00	78.90	78.21	-27.01	4,495.43	730.53	549.75	448.81	100.94	5.446		
16,600.00	12,110.00	16,161.37	11,620.00	79.50	78.82	-27.01	4,545.43	730.21	549.75	448.01	101.74	5.403		
16,650.00	12,110.00	16,211.37	11,620.00	80.11	79.44	-27.01	4,595.43	729.90	549.75	447.21	102.54	5.361		
16,700.00	12,110.00	16,261.37	11,620.00	80.71	80.06	-27.01	4,645.43	729.59	549.74	446.40	103.34	5.320		
16,750.00	12,110.00	16,311.37	11,620.00	81.32	80.68	-27.00	4,695.43	729.27	549.74	445.59	104.15	5.279		
16,800.00	12,110.00	16,361.37	11,620.00	81.94	81.31	-27.00	4,745.43	728.96	549.73	444.78	104.95	5.238		
16,850.00	12,110.00	16,411.37	11,620.00	82.55	81.93	-27.00	4,795.43	728.64	549.73	443.97	105.76	5.198		
16,900.00	12,110.00	16,461.37	11,620.00	83.16	82.56	-27.00	4,845.43	728.33	549.72	443.15	106.57	5.158		
16,950.00	12,110.00	16,511.37	11,620.00	83.78	83.19	-27.00	4,895.43	728.02	549.72	442.33	107.39	5.119		
17,000.00	12,110.00	16,561.37	11,620.00	84.40	83.82	-27.00	4,945.42	727.70	549.72	441.51	108.21	5.080		
17,050.00	12,110.00	16,611.37	11,620.00	85.02	84.45	-27.00	4,995.42	727.39	549.71	440.69	109.02	5.042		
17,100.00	12,110.00	16,661.37	11,620.00	85.64	85.09	-27.00	5,045.42	727.07	549.71	439.86	109.85	5.004		
17,150.00	12,110.00	16,711.37	11,620.00	86.27	85.72	-27.00	5,095.42	726.76	549.70	439.03	110.67	4.967	Alert	
17,200.00	12,110.00	16,761.37	11,620.00	86.89	86.36	-27.00	5,145.42	726.45	549.70	438.20	111.50	4.930	Alert	
17,250.00	12,110.00	16,811.37	11,620.00	87.52	87.00	-27.00	5,195.42	726.13	549.70	437.37	112.32	4.894	Alert	
17,300.00	12,110.00	16,861.37	11,620.00	88.15	87.64	-26.99	5,245.42	725.82	549.69	436.54	113.15	4.858	Alert	
17,350.00	12,110.00	16,911.37	11,620.00	88.78	88.28	-26.99	5,295.42	725.51	549.69	435.70	113.99	4.822	Alert	
17,400.00	12,110.00	16,961.37	11,620.00	89.41	88.92	-26.99	5,345.42	725.19	549.68	434.86	114.82	4.787	Alert	
17,450.00	12,110.00	17,011.37	11,620.00	90.04	89.57	-26.99	5,395.42	724.88	549.68	434.02	115.66	4.753	Alert	
17,500.00	12,110.00	17,061.37	11,620.00	90.68	90.21	-26.99	5,445.41	724.56	549.68	433.18	116.49	4.718	Alert	
17,550.00	12,110.00	17,111.37	11,620.00	91.31	90.86	-26.99	5,495.41	724.25	549.67	432.34	117.34	4.685	Alert	
17,600.00	12,110.00	17,161.37	11,620.00	91.95	91.50	-26.99	5,545.41	723.94	549.67	431.49	118.18	4.651	Alert	
17,650.00	12,110.00	17,211.37	11,620.00	92.59	92.15	-26.99	5,595.41	723.62	549.66	430.64	119.02	4.618	Alert	
17,700.00	12,110.00	17,261.37	11,620.00	93.23	92.80	-26.99	5,645.41	723.31	549.66	429.79	119.87	4.586	Alert	
17,750.00	12,110.00	17,311.37	11,620.00	93.87	93.45	-26.99	5,695.41	722.99	549.66	428.94	120.71	4.553	Alert	
17,800.00	12,110.00	17,361.37	11,620.00	94.52	94.11	-26.99	5,745.41	722.68	549.65	428.09	121.56	4.522	Alert	
17,850.00	12,110.00	17,411.37	11,620.00	95.16	94.76	-26.99	5,795.41	722.37	549.65	427.23	122.41	4.490	Alert	
17,900.00	12,110.00	17,461.37	11,620.00	95.80	95.41	-26.98	5,845.41	722.05	549.64	426.38	123.26	4.459	Alert	
17,950.00	12,110.00	17,511.37	11,620.00	96.45	96.07	-26.98	5,895.41	721.74	549.64	425.52	124.12	4.428	Alert	
18,000.00	12,110.00	17,561.37	11,620.00	97.10	96.73	-26.98	5,945.41	721.43	549.63	424.66	124.97	4.398	Alert	
18,050.00	12,110.00	17,611.37	11,620.00	97.75	97.38	-26.98	5,995.40	721.11	549.63	423.80	125.83	4.368	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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error: 0.00 ft	
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 331H - Wellbore #1 - Permit Plan 1														Offset Well Error: 0.50 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)					
18,100.00	12,110.00	17,661.37	11,620.00	98.40	98.04	-26.98	6,045.40	720.80	549.63	422.94	126.69	4.338	Alert		
18,150.00	12,110.00	17,711.37	11,620.00	99.05	98.70	-26.98	6,095.40	720.48	549.62	422.08	127.55	4.309	Alert		
18,200.00	12,110.00	17,761.37	11,620.00	99.70	99.36	-26.98	6,145.40	720.17	549.62	421.21	128.41	4.280	Alert		
18,250.00	12,110.00	17,811.37	11,620.00	100.35	100.02	-26.98	6,195.40	719.86	549.61	420.34	129.27	4.252	Alert		
18,300.00	12,110.00	17,861.37	11,620.00	101.01	100.69	-26.98	6,245.40	719.54	549.61	419.48	130.13	4.223	Alert		
18,350.00	12,110.00	17,911.37	11,620.00	101.66	101.35	-26.98	6,295.40	719.23	549.61	418.61	131.00	4.195	Alert		
18,400.00	12,110.00	17,961.37	11,620.00	102.32	102.01	-26.98	6,345.40	718.92	549.60	417.74	131.87	4.168	Alert		
18,450.00	12,110.00	18,011.37	11,620.00	102.98	102.68	-26.98	6,395.40	718.60	549.60	416.86	132.73	4.141	Alert		
18,500.00	12,110.00	18,061.37	11,620.00	103.63	103.34	-26.97	6,445.40	718.29	549.59	415.99	133.60	4.114	Alert		
18,550.00	12,110.00	18,111.37	11,620.00	104.29	104.01	-26.97	6,495.39	717.97	549.59	415.12	134.47	4.087	Alert		
18,600.00	12,110.00	18,161.37	11,620.00	104.95	104.68	-26.97	6,545.39	717.66	549.59	414.24	135.34	4.061	Alert		
18,650.00	12,110.00	18,211.37	11,620.00	105.61	105.35	-26.97	6,595.39	717.35	549.58	413.36	136.22	4.035	Alert		
18,700.00	12,110.00	18,261.37	11,620.00	106.27	106.02	-26.97	6,645.39	717.03	549.58	412.49	137.09	4.009	Alert		
18,750.00	12,110.00	18,311.37	11,620.00	106.94	106.69	-26.97	6,695.39	716.72	549.57	411.61	137.97	3.983	Alert		
18,800.00	12,110.00	18,361.37	11,620.00	107.60	107.36	-26.97	6,745.39	716.40	549.57	410.73	138.84	3.958	Alert		
18,850.00	12,110.00	18,411.37	11,620.00	108.27	108.03	-26.97	6,795.39	716.09	549.56	409.85	139.72	3.933	Alert		
18,900.00	12,110.00	18,461.37	11,620.00	108.93	108.70	-26.97	6,845.39	715.78	549.56	408.96	140.60	3.909	Alert		
18,950.00	12,110.00	18,511.37	11,620.00	109.60	109.37	-26.97	6,895.39	715.46	549.56	408.08	141.48	3.884	Alert		
19,000.00	12,110.00	18,561.37	11,620.00	110.26	110.05	-26.97	6,945.39	715.15	549.55	407.20	142.36	3.860	Alert		
19,050.00	12,110.00	18,611.37	11,620.00	110.93	110.72	-26.97	6,995.38	714.84	549.55	406.31	143.24	3.837	Alert		
19,100.00	12,110.00	18,661.37	11,620.00	111.60	111.40	-26.96	7,045.38	714.52	549.54	405.43	144.12	3.813	Alert		
19,150.00	12,110.00	18,711.37	11,620.00	112.27	112.07	-26.96	7,095.38	714.21	549.54	404.54	145.00	3.790	Alert		
19,200.00	12,110.00	18,761.37	11,620.00	112.94	112.75	-26.96	7,145.38	713.89	549.54	403.65	145.89	3.767	Alert		
19,250.00	12,110.00	18,811.37	11,620.00	113.61	113.43	-26.96	7,195.38	713.58	549.53	402.76	146.77	3.744	Alert		
19,300.00	12,110.00	18,861.37	11,620.00	114.28	114.10	-26.96	7,245.38	713.27	549.53	401.87	147.66	3.722	Alert		
19,350.00	12,110.00	18,911.37	11,620.00	114.95	114.78	-26.96	7,295.38	712.95	549.52	400.98	148.54	3.699	Alert		
19,400.00	12,110.00	18,961.37	11,620.00	115.62	115.46	-26.96	7,345.38	712.64	549.52	400.09	149.43	3.677	Alert		
19,450.00	12,110.00	19,011.37	11,620.00	116.30	116.14	-26.96	7,395.38	712.32	549.52	399.19	150.32	3.656	Alert		
19,500.00	12,110.00	19,061.37	11,620.00	116.97	116.82	-26.96	7,445.38	712.01	549.51	398.30	151.21	3.634	Alert		
19,550.00	12,110.00	19,111.37	11,620.00	117.65	117.50	-26.96	7,495.37	711.70	549.51	397.41	152.10	3.613	Alert		
19,600.00	12,110.00	19,161.37	11,620.00	118.32	118.18	-26.96	7,545.37	711.38	549.50	396.51	152.99	3.592	Alert		
19,650.00	12,110.00	19,211.37	11,620.00	119.00	118.86	-26.96	7,595.37	711.07	549.50	395.61	153.88	3.571	Alert		
19,700.00	12,110.00	19,261.37	11,620.00	119.67	119.55	-26.95	7,645.37	710.76	549.49	394.72	154.78	3.550	Alert		
19,750.00	12,110.00	19,311.37	11,620.00	120.35	120.23	-26.95	7,695.37	710.44	549.49	393.82	155.67	3.530	Alert		
19,800.00	12,110.00	19,361.37	11,620.00	121.03	120.91	-26.95	7,745.37	710.13	549.49	392.92	156.57	3.510	Alert		
19,850.00	12,110.00	19,411.37	11,620.00	121.71	121.60	-26.95	7,795.37	709.81	549.48	392.02	157.46	3.490	Alert		
19,900.00	12,110.00	19,461.37	11,620.00	122.38	122.28	-26.95	7,845.37	709.50	549.48	391.12	158.36	3.470	Alert		
19,950.00	12,110.00	19,511.37	11,620.00	123.06	122.97	-26.95	7,895.37	709.19	549.47	390.22	159.25	3.450	Alert		
20,000.00	12,110.00	19,561.37	11,620.00	123.74	123.65	-26.95	7,945.37	708.87	549.47	389.32	160.15	3.431	Alert		
20,050.00	12,110.00	19,611.37	11,620.00	124.43	124.34	-26.95	7,995.36	708.56	549.47	388.42	161.05	3.412	Alert		
20,100.00	12,110.00	19,661.37	11,620.00	125.11	125.03	-26.95	8,045.36	708.24	549.46	387.51	161.95	3.393	Alert		
20,150.00	12,110.00	19,711.37	11,620.00	125.79	125.71	-26.95	8,095.36	707.93	549.46	386.61	162.85	3.374	Alert		
20,200.00	12,110.00	19,761.37	11,620.00	126.47	126.40	-26.95	8,145.36	707.62	549.45	385.71	163.75	3.355	Alert		
20,250.00	12,110.00	19,811.37	11,620.00	127.15	127.09	-26.95	8,195.36	707.30	549.45	384.80	164.65	3.337	Alert		
20,300.00	12,110.00	19,861.37	11,620.00	127.84	127.78	-26.94	8,245.36	706.99	549.45	383.90	165.55	3.319	Alert		
20,350.00	12,110.00	19,911.37	11,620.00	128.52	128.47	-26.94	8,295.36	706.68	549.44	382.99	166.45	3.301	Alert		
20,400.00	12,110.00	19,961.37	11,620.00	129.20	129.15	-26.94	8,345.36	706.36	549.44	382.08	167.36	3.283	Alert		
20,450.00	12,110.00	20,011.37	11,620.00	129.89	129.84	-26.94	8,395.36	706.05	549.43	381.17	168.26	3.265	Alert		
20,500.00	12,110.00	20,061.37	11,620.00	130.57	130.53	-26.94	8,445.36	705.73	549.43	380.27	169.16	3.248	Alert		
20,550.00	12,110.00	20,111.37	11,620.00	131.26	131.22	-26.94	8,495.35	705.42	549.43	379.36	170.07	3.231	Alert		
20,600.00	12,110.00	20,161.37	11,620.00	131.95	131.92	-26.94	8,545.35	705.11	549.42	378.45	170.97	3.214	Alert		
20,650.00	12,110.00	20,211.37	11,620.00	132.63	132.61	-26.94	8,595.35	704.79	549.42	377.54	171.88	3.197	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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at:	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
20,700.00	12,110.00	20,261.37	11,620.00	133.32	133.30	-26.94	8,645.35	704.48	549.41	376.63	172.78	3.180	Alert	
20,750.00	12,110.00	20,311.37	11,620.00	134.01	133.99	-26.94	8,695.35	704.17	549.41	375.72	173.69	3.163	Alert	
20,800.00	12,110.00	20,361.37	11,620.00	134.69	134.68	-26.94	8,745.35	703.85	549.40	374.81	174.60	3.147	Alert	
20,850.00	12,110.00	20,411.37	11,620.00	135.38	135.38	-26.94	8,795.35	703.54	549.40	373.89	175.51	3.130	Alert	
20,900.00	12,110.00	20,461.37	11,620.00	136.07	136.07	-26.93	8,845.35	703.22	549.40	372.98	176.41	3.114	Alert	
20,950.00	12,110.00	20,511.37	11,620.00	136.76	136.76	-26.93	8,895.35	702.91	549.39	372.07	177.32	3.098	Alert	
21,000.00	12,110.00	20,561.37	11,620.00	137.45	137.46	-26.93	8,945.35	702.60	549.39	371.15	178.23	3.082	Alert	
21,050.00	12,110.00	20,611.37	11,620.00	138.14	138.15	-26.93	8,995.35	702.28	549.38	370.24	179.14	3.067	Alert	
21,100.00	12,110.00	20,661.37	11,620.00	138.83	138.85	-26.93	9,045.34	701.97	549.38	369.33	180.05	3.051	Alert	
21,150.00	12,110.00	20,711.37	11,620.00	139.52	139.54	-26.93	9,095.34	701.65	549.38	368.41	180.97	3.036	Alert	
21,200.00	12,110.00	20,761.37	11,620.00	140.21	140.24	-26.93	9,145.34	701.34	549.37	367.50	181.88	3.021	Alert	
21,250.00	12,110.00	20,811.37	11,620.00	140.90	140.93	-26.93	9,195.34	701.03	549.37	366.58	182.79	3.005	Alert	
21,300.00	12,110.00	20,861.37	11,620.00	141.60	141.63	-26.93	9,245.34	700.71	549.36	365.66	183.70	2.991	Alert	
21,350.00	12,110.00	20,911.37	11,620.00	142.29	142.33	-26.93	9,295.34	700.40	549.36	364.75	184.61	2.976	Alert	
21,400.00	12,110.00	20,961.37	11,620.00	142.98	143.02	-26.93	9,345.34	700.09	549.36	363.83	185.53	2.961	Alert	
21,450.00	12,110.00	21,011.37	11,620.00	143.67	143.72	-26.93	9,395.34	699.77	549.35	362.91	186.44	2.947	Alert	
21,500.00	12,110.00	21,061.37	11,620.00	144.37	144.42	-26.92	9,445.34	699.46	549.35	361.99	187.36	2.932	Alert	
21,550.00	12,110.00	21,111.37	11,620.00	145.06	145.11	-26.92	9,495.34	699.14	549.34	361.07	188.27	2.918	Alert	
21,600.00	12,110.00	21,161.37	11,620.00	145.76	145.81	-26.92	9,545.33	698.83	549.34	360.15	189.19	2.904	Alert	
21,650.00	12,110.00	21,211.37	11,620.00	146.45	146.51	-26.92	9,595.33	698.52	549.33	359.23	190.10	2.890	Alert	
21,700.00	12,110.00	21,261.37	11,620.00	147.14	147.21	-26.92	9,645.33	698.20	549.33	358.31	191.02	2.876	Alert	
21,750.00	12,110.00	21,311.37	11,620.00	147.84	147.91	-26.92	9,695.33	697.89	549.33	357.39	191.93	2.862	Alert	
21,800.00	12,110.00	21,361.37	11,620.00	148.54	148.61	-26.92	9,745.33	697.57	549.32	356.47	192.85	2.848	Alert	
21,850.00	12,110.00	21,411.37	11,620.00	149.23	149.31	-26.92	9,795.33	697.26	549.32	355.55	193.77	2.835	Alert	
21,900.00	12,110.00	21,461.37	11,620.00	149.93	150.01	-26.92	9,845.33	696.95	549.31	354.63	194.68	2.822	Alert	
21,950.00	12,110.00	21,511.37	11,620.00	150.62	150.71	-26.92	9,895.33	696.63	549.31	353.71	195.60	2.808	Alert	
22,000.00	12,110.00	21,561.37	11,620.00	151.32	151.41	-26.92	9,945.33	696.32	549.31	352.78	196.52	2.795	Alert	
22,050.00	12,110.00	21,611.37	11,620.00	152.02	152.11	-26.92	9,995.33	696.01	549.30	351.86	197.44	2.782	Alert	
22,100.00	12,110.00	21,661.37	11,620.00	152.71	152.81	-26.91	10,045.32	695.69	549.30	350.94	198.36	2.769	Alert	
22,150.00	12,110.00	21,711.37	11,620.00	153.41	153.51	-26.91	10,095.32	695.38	549.29	350.02	199.28	2.756	Alert	
22,200.00	12,110.00	21,761.37	11,620.00	154.11	154.21	-26.91	10,145.32	695.06	549.29	349.09	200.20	2.744	Alert	
22,250.00	12,110.00	21,811.37	11,620.00	154.81	154.91	-26.91	10,195.32	694.75	549.29	348.17	201.12	2.731	Alert	
22,300.00	12,110.00	21,861.37	11,620.00	155.51	155.61	-26.91	10,245.32	694.44	549.28	347.24	202.04	2.719	Alert	
22,346.72	12,110.00	21,908.09	11,620.00	156.16	156.27	-26.91	10,292.04	694.14	549.28	346.38	202.90	2.707	Alert	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 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	8.00	-8.00	0.50	0.50	-16.98	299.44	-91.41	313.08						
50.00	50.00	42.00	42.00	0.50	0.50	-16.98	299.44	-91.41	313.08	312.08	1.01	311.468			
100.00	100.00	108.00	92.00	0.52	0.53	-16.98	299.44	-91.41	313.08	312.04	1.04	299.977			
150.00	150.00	142.00	142.00	0.59	0.58	-16.98	299.44	-91.41	313.08	311.92	1.17	268.566			
200.00	200.00	208.00	192.00	0.70	0.72	-16.98	299.44	-91.41	313.08	311.66	1.42	219.764			
250.00	250.00	242.00	242.00	0.84	0.81	-16.98	299.44	-91.41	313.08	311.43	1.65	189.449			
300.00	300.00	308.00	292.00	0.99	1.01	-16.98	299.44	-91.41	313.08	311.08	2.00	156.580			
350.00	350.00	342.00	342.00	1.15	1.12	-16.98	299.44	-91.41	313.08	310.82	2.27	138.211			
400.00	400.00	408.00	392.00	1.31	1.34	-16.98	299.44	-91.41	313.08	310.44	2.64	118.380			
450.00	450.00	442.00	442.00	1.48	1.45	-16.98	299.44	-91.41	313.08	310.16	2.93	107.011			
500.00	500.00	508.00	492.00	1.65	1.67	-16.98	299.44	-91.41	313.08	309.76	3.32	94.315			
550.00	550.00	542.00	542.00	1.82	1.79	-16.98	299.44	-91.41	313.08	309.47	3.61	86.780			
600.00	600.00	608.00	592.00	1.99	2.02	-16.98	299.44	-91.41	313.08	309.07	4.01	78.095			
650.00	650.00	642.00	642.00	2.16	2.14	-16.98	299.44	-91.41	313.08	308.78	4.30	72.789			
700.00	700.00	708.00	692.00	2.34	2.37	-16.98	299.44	-91.41	313.08	308.38	4.71	66.519			
750.00	750.00	742.00	742.00	2.51	2.49	-16.98	299.44	-91.41	313.08	308.08	5.00	62.600			
800.00	800.00	808.00	792.00	2.69	2.72	-16.98	299.44	-91.41	313.08	307.67	5.41	57.878			
850.00	850.00	842.00	842.00	2.87	2.84	-16.98	299.44	-91.41	313.08	307.38	5.71	54.873			
900.00	900.00	908.00	892.00	3.04	3.07	-16.98	299.44	-91.41	313.08	306.97	6.12	51.196			
950.00	950.00	942.00	942.00	3.22	3.19	-16.98	299.44	-91.41	313.08	306.67	6.41	48.823			
1,000.00	1,000.00	1,008.00	992.00	3.40	3.43	-16.98	299.44	-91.41	313.08	306.26	6.82	45.882			
1,050.00	1,050.00	1,042.00	1,042.00	3.58	3.55	-16.98	299.44	-91.41	313.08	305.96	7.12	43.962			
1,100.00	1,100.00	1,108.00	1,092.00	3.75	3.78	-16.98	299.44	-91.41	313.08	305.55	7.53	41.558			
1,150.00	1,150.00	1,142.00	1,142.00	3.93	3.90	-16.98	299.44	-91.41	313.08	305.25	7.83	39.974			
1,200.00	1,200.00	1,208.00	1,192.00	4.11	4.14	-16.98	299.44	-91.41	313.08	304.84	8.24	37.973			
1,250.00	1,250.00	1,242.00	1,242.00	4.29	4.26	-16.98	299.44	-91.41	313.08	304.54	8.54	36.645			
1,300.00	1,300.00	1,308.00	1,292.00	4.46	4.49	-16.98	299.44	-91.41	313.08	304.13	8.96	34.955			
1,350.00	1,350.00	1,342.00	1,342.00	4.64	4.61	-16.98	299.44	-91.41	313.08	303.83	9.26	33.824			
1,400.00	1,400.00	1,408.00	1,392.00	4.82	4.85	-16.98	299.44	-91.41	313.08	303.41	9.67	32.378			
1,450.00	1,450.00	1,442.00	1,442.00	5.00	4.97	-16.98	299.44	-91.41	313.08	303.11	9.97	31.405			
1,500.00	1,500.00	1,508.00	1,492.00	5.18	5.21	-16.98	299.44	-91.41	313.08	302.70	10.38	30.153			
1,550.00	1,550.00	1,542.00	1,542.00	5.36	5.33	-16.98	299.44	-91.41	313.08	302.40	10.68	29.307			
1,600.00	1,600.00	1,608.00	1,592.00	5.53	5.56	-16.98	299.44	-91.41	313.08	301.99	11.10	28.214			
1,650.00	1,650.00	1,642.00	1,642.00	5.71	5.68	-16.98	299.44	-91.41	313.08	301.69	11.40	27.471			
1,700.00	1,700.00	1,708.00	1,692.00	5.89	5.92	-16.98	299.44	-91.41	313.08	301.27	11.81	26.508			
1,750.00	1,750.00	1,742.00	1,742.00	6.07	6.04	-16.98	299.44	-91.41	313.08	300.97	12.11	25.851			
1,800.00	1,800.00	1,808.00	1,792.00	6.25	6.28	-16.98	299.44	-91.41	313.08	300.56	12.53	24.995			
1,850.00	1,850.00	1,842.00	1,842.00	6.43	6.40	-16.98	299.44	-91.41	313.08	300.26	12.83	24.410			
1,900.00	1,900.00	1,908.00	1,892.00	6.61	6.63	-16.98	299.44	-91.41	313.08	299.84	13.24	23.646			
1,950.00	1,950.00	1,942.00	1,942.00	6.78	6.76	-16.98	299.44	-91.41	313.08	299.54	13.54	23.122			
2,000.00	2,000.00	2,008.00	1,992.00	6.96	6.99	-16.98	299.44	-91.41	313.08	299.13	13.96	22.435 CC			
2,050.00	2,050.00	2,042.00	2,042.00	7.14	7.11	-115.41	299.44	-91.41	313.18	298.93	14.25	21.976			
2,100.00	2,099.99	2,108.01	2,091.99	7.31	7.35	-115.52	299.44	-91.41	313.46	298.80	14.66	21.381 ES			
2,150.00	2,149.98	2,141.98	2,141.98	7.48	7.47	-115.70	299.44	-91.41	313.93	298.98	14.95	20.997			
2,200.00	2,199.96	2,208.04	2,191.96	7.65	7.71	-115.94	299.44	-91.41	314.59	299.24	15.36	20.485			
2,250.00	2,249.92	2,241.92	2,241.92	7.82	7.83	-116.25	299.44	-91.41	315.46	299.81	15.65	20.158			
2,300.00	2,299.86	2,308.14	2,291.86	7.99	8.07	-116.63	299.44	-91.41	316.53	300.47	16.06	19.713			
2,350.00	2,349.78	2,341.78	2,341.78	8.16	8.19	-117.08	299.44	-91.41	317.81	301.46	16.35	19.439			
2,400.00	2,399.68	2,408.32	2,391.68	8.34	8.42	-117.59	299.44	-91.41	319.31	302.55	16.76	19.054			
2,450.00	2,449.54	2,441.54	2,441.54	8.51	8.54	-118.15	299.44	-91.41	321.05	304.00	17.05	18.829			
2,500.00	2,499.37	2,508.63	2,491.37	8.68	8.78	-118.78	299.44	-91.41	323.03	305.56	17.46	18.497			
2,550.00	2,549.16	2,541.16	2,541.16	8.86	8.90	-119.47	299.44	-91.41	325.26	307.51	17.75	18.321			

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 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
2,600.00	2,598.91	2,609.09	2,590.91	9.03	9.14	-120.21	299.44	-91.41	327.75	309.58	18.17	18.037	
2,650.00	2,648.65	2,640.65	2,640.65	9.21	9.26	-120.97	299.44	-91.41	330.35	311.89	18.46	17.896	
2,700.00	2,698.39	2,709.61	2,690.39	9.39	9.50	-121.72	299.44	-91.41	333.01	314.13	18.88	17.637	
2,750.00	2,748.13	2,740.13	2,740.13	9.56	9.61	-122.45	299.44	-91.41	335.72	316.55	19.17	17.516	
2,800.00	2,797.87	2,789.87	2,789.87	9.74	9.79	-123.18	299.44	-91.41	338.48	318.96	19.52	17.340	
2,850.00	2,847.61	2,839.61	2,839.61	9.92	9.97	-123.89	299.44	-91.41	341.30	321.43	19.87	17.173	
2,900.00	2,897.35	2,889.35	2,889.35	10.10	10.15	-124.59	299.44	-91.41	344.18	323.95	20.23	17.014	
2,950.00	2,947.09	2,939.09	2,939.09	10.28	10.32	-125.28	299.44	-91.41	347.10	326.51	20.58	16.862	
3,000.00	2,996.83	2,988.83	2,988.83	10.46	10.50	-125.95	299.44	-91.41	350.07	329.13	20.94	16.718	
3,050.00	3,046.57	3,041.09	3,041.09	10.64	10.68	-126.66	299.30	-91.36	352.95	331.66	21.30	16.573	
3,100.00	3,096.31	3,094.11	3,094.10	10.82	10.86	-127.37	298.72	-91.12	355.44	333.78	21.65	16.414	
3,150.00	3,146.05	3,147.16	3,147.15	11.00	11.04	-128.08	297.69	-90.71	357.51	335.51	22.00	16.248	
3,200.00	3,195.79	3,200.25	3,200.21	11.18	11.21	-128.79	296.19	-90.11	359.18	336.83	22.35	16.071	
3,250.00	3,245.54	3,253.34	3,253.26	11.37	11.38	-129.51	294.24	-89.33	360.44	337.75	22.70	15.882	
3,300.00	3,295.28	3,306.45	3,306.30	11.55	11.55	-130.24	291.83	-88.37	361.30	338.26	23.04	15.681	
3,350.00	3,345.02	3,359.55	3,359.31	11.73	11.73	-130.97	288.97	-87.22	361.76	338.37	23.38	15.470	
3,400.00	3,394.76	3,412.64	3,412.28	11.92	11.90	-131.73	285.65	-85.89	361.81	338.08	23.73	15.249	
3,450.00	3,444.50	3,465.71	3,465.20	12.10	12.08	-132.49	281.88	-84.38	361.47	337.40	24.07	15.018	
3,500.00	3,494.24	3,518.75	3,518.04	12.28	12.26	-133.28	277.65	-82.69	360.74	336.33	24.41	14.778	
3,550.00	3,543.98	3,571.76	3,570.81	12.47	12.43	-134.08	272.98	-80.82	359.62	334.87	24.75	14.530	
3,600.00	3,593.72	3,624.71	3,623.48	12.65	12.61	-134.91	267.85	-78.77	358.11	333.03	25.09	14.274	
3,650.00	3,643.46	3,676.02	3,674.46	12.84	12.78	-135.74	262.51	-76.64	356.29	330.86	25.43	14.011	
3,700.00	3,693.20	3,725.73	3,723.84	13.02	12.95	-136.55	257.27	-74.54	354.49	328.71	25.78	13.753	
3,750.00	3,742.94	3,775.44	3,773.23	13.20	13.12	-137.37	252.04	-72.45	352.75	326.63	26.12	13.504	
3,800.00	3,792.68	3,825.15	3,822.62	13.39	13.29	-138.20	246.81	-70.36	351.09	324.62	26.47	13.265	
3,850.00	3,842.42	3,874.86	3,872.01	13.58	13.46	-139.04	241.57	-68.26	349.51	322.69	26.81	13.034	
3,900.00	3,892.16	3,924.57	3,921.40	13.76	13.63	-139.88	236.34	-66.17	348.00	320.84	27.16	12.812	
3,950.00	3,941.90	3,974.28	3,970.79	13.95	13.80	-140.73	231.11	-64.08	346.57	319.06	27.51	12.598	
4,000.00	3,991.65	4,023.99	4,020.18	14.13	13.97	-141.59	225.87	-61.98	345.21	317.36	27.86	12.392	
4,050.00	4,041.39	4,073.70	4,069.57	14.32	14.14	-142.46	220.64	-59.89	343.94	315.73	28.21	12.193	
4,100.00	4,091.13	4,123.41	4,118.96	14.50	14.32	-143.33	215.41	-57.80	342.74	314.19	28.56	12.002	
4,150.00	4,140.87	4,173.12	4,168.35	14.69	14.49	-144.20	210.17	-55.70	341.63	312.72	28.91	11.819	
4,200.00	4,190.61	4,222.83	4,217.74	14.88	14.66	-145.08	204.94	-53.61	340.59	311.34	29.26	11.642	
4,250.00	4,240.35	4,272.54	4,267.13	15.06	14.84	-145.97	199.71	-51.52	339.64	310.03	29.61	11.472	
4,300.00	4,290.09	4,322.25	4,316.52	15.25	15.02	-146.86	194.47	-49.42	338.77	308.81	29.96	11.308	
4,350.00	4,339.83	4,371.96	4,365.91	15.44	15.19	-147.76	189.24	-47.33	337.99	307.68	30.31	11.151	
4,400.00	4,389.57	4,421.67	4,415.30	15.63	15.37	-148.66	184.01	-45.24	337.28	306.62	30.66	11.000	
4,450.00	4,439.31	4,471.38	4,464.69	15.81	15.54	-149.56	178.77	-43.14	336.67	305.65	31.01	10.855	
4,500.00	4,489.05	4,521.09	4,514.08	16.00	15.72	-150.47	173.54	-41.05	336.13	304.77	31.37	10.716	
4,550.00	4,538.79	4,570.80	4,563.47	16.19	15.90	-151.38	168.31	-38.96	335.69	303.97	31.72	10.583	
4,600.00	4,588.53	4,620.51	4,612.86	16.38	16.08	-152.29	163.08	-36.86	335.33	303.25	32.07	10.455	
4,650.00	4,638.27	4,670.22	4,662.24	16.56	16.26	-153.20	157.84	-34.77	335.05	302.62	32.43	10.332	
4,700.00	4,688.01	4,719.93	4,711.63	16.75	16.44	-154.11	152.61	-32.68	334.86	302.08	32.78	10.214	
4,750.00	4,737.76	4,769.64	4,761.02	16.94	16.61	-155.03	147.38	-30.58	334.76	301.62	33.14	10.102	
4,784.86	4,772.43	4,804.29	4,795.46	17.07	16.74	-155.67	143.73	-29.12	334.74	301.35	33.39	10.026	
4,800.00	4,787.50	4,819.35	4,810.41	17.13	16.79	-155.94	142.14	-28.49	334.74	301.24	33.49	9.994	
4,850.00	4,837.24	4,869.06	4,859.80	17.32	16.97	-156.86	136.91	-26.40	334.81	300.96	33.85	9.891	
4,900.00	4,886.98	4,918.77	4,909.19	17.50	17.15	-157.77	131.68	-24.30	334.96	300.76	34.21	9.792	
4,950.00	4,936.72	4,968.48	4,958.58	17.69	17.34	-158.69	126.44	-22.21	335.21	300.64	34.57	9.698	
5,000.00	4,986.46	5,018.19	5,007.97	17.88	17.52	-159.60	121.21	-20.12	335.53	300.61	34.92	9.608	
5,050.00	5,036.20	5,067.90	5,057.36	18.07	17.70	-160.51	115.98	-18.02	335.95	300.67	35.28	9.522	
5,100.00	5,085.94	5,117.61	5,106.75	18.26	17.88	-161.41	110.74	-15.93	336.45	300.81	35.64	9.440	

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 2													Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 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)				
5,150.00	5,135.68	5,167.32	5,156.14	18.45	18.06	-162.32	105.51	-13.84	337.03	301.03	36.00	9.362		
5,200.00	5,185.42	5,217.03	5,205.53	18.64	18.24	-163.22	100.28	-11.74	337.70	301.34	36.36	9.287		
5,250.00	5,235.16	5,266.74	5,254.92	18.83	18.43	-164.12	95.04	-9.65	338.45	301.73	36.72	9.217		
5,300.00	5,284.90	5,316.45	5,304.31	19.01	18.61	-165.01	89.81	-7.56	339.29	302.21	37.08	9.149		
5,350.00	5,334.64	5,366.16	5,353.70	19.20	18.79	-165.90	84.58	-5.47	340.21	302.76	37.44	9.086		
5,400.00	5,384.38	5,415.87	5,403.09	19.39	18.98	-166.78	79.34	-3.37	341.21	303.40	37.81	9.025		
5,450.00	5,434.12	5,465.58	5,452.48	19.58	19.16	-167.66	74.11	-1.28	342.29	304.12	38.17	8.968		
5,500.00	5,483.87	5,515.29	5,501.87	19.77	19.34	-168.53	68.88	0.81	343.46	304.92	38.53	8.913		
5,550.00	5,533.61	5,565.00	5,551.25	19.96	19.53	-169.40	63.64	2.91	344.70	305.80	38.90	8.862		
5,600.00	5,583.35	5,614.71	5,600.64	20.15	19.71	-170.26	58.41	5.00	346.02	306.76	39.26	8.813		
5,650.00	5,633.09	5,664.42	5,650.03	20.34	19.90	-171.11	53.18	7.09	347.43	307.80	39.63	8.767		
5,700.00	5,682.83	5,714.13	5,699.42	20.53	20.08	-171.96	47.95	9.19	348.90	308.91	39.99	8.724		
5,750.00	5,732.57	5,763.84	5,748.81	20.72	20.26	-172.80	42.71	11.28	350.46	310.10	40.36	8.683		
5,800.00	5,782.31	5,813.55	5,798.20	20.91	20.45	-173.63	37.48	13.37	352.09	311.36	40.73	8.645		
5,850.00	5,832.05	5,863.26	5,847.59	21.10	20.64	-174.46	32.25	15.47	353.79	312.70	41.09	8.609		
5,900.00	5,881.79	5,912.97	5,896.98	21.29	20.82	-175.27	27.01	17.56	355.57	314.11	41.46	8.576		
5,950.00	5,931.53	5,962.68	5,946.37	21.48	21.01	-176.08	21.78	19.65	357.42	315.59	41.83	8.544		
6,000.00	5,981.27	6,012.39	5,995.76	21.67	21.19	-176.88	16.55	21.75	359.34	317.14	42.20	8.515		
6,050.00	6,031.01	6,062.10	6,045.15	21.86	21.38	-177.67	11.31	23.84	361.33	318.76	42.57	8.488		
6,100.00	6,080.75	6,111.81	6,094.54	22.05	21.56	-178.45	6.08	25.93	363.39	320.45	42.94	8.463		
6,150.00	6,130.49	6,161.52	6,143.93	22.24	21.75	-179.23	0.85	28.03	365.52	322.21	43.31	8.440		
6,200.00	6,180.24	6,211.23	6,193.32	22.43	21.94	-179.99	-4.39	30.12	367.71	324.03	43.68	8.418		
6,250.00	6,229.98	6,260.94	6,242.71	22.62	22.12	-179.25	-9.62	32.21	369.97	325.91	44.05	8.398		
6,300.00	6,279.72	6,310.65	6,292.10	22.81	22.31	-178.51	-14.85	34.31	372.29	327.86	44.42	8.380		
6,350.00	6,329.46	6,360.36	6,341.49	23.00	22.50	-177.77	-20.09	36.40	374.67	329.88	44.80	8.364		
6,400.00	6,379.20	6,410.07	6,390.88	23.19	22.68	-177.04	-25.32	38.49	377.12	331.95	45.17	8.349		
6,450.00	6,428.94	6,459.78	6,440.26	23.38	22.87	-176.33	-30.55	40.59	379.63	334.08	45.54	8.336		
6,500.00	6,478.68	6,509.49	6,489.65	23.57	23.06	-175.62	-35.79	42.68	382.19	336.28	45.91	8.324		
6,550.00	6,528.42	6,559.20	6,539.04	23.76	23.25	-174.92	-41.02	44.77	384.82	338.53	46.29	8.313		
6,600.00	6,578.16	6,608.91	6,588.43	23.95	23.43	-174.23	-46.25	46.87	387.50	340.83	46.66	8.304		
6,650.00	6,627.90	6,658.62	6,637.82	24.14	23.62	-173.55	-51.48	48.96	390.23	343.20	47.04	8.296		
6,700.00	6,677.64	6,708.33	6,687.21	24.33	23.81	-172.88	-56.72	51.05	393.02	345.61	47.41	8.290		
6,750.00	6,727.38	6,758.04	6,736.60	24.52	24.00	-172.22	-61.95	53.15	395.87	348.08	47.79	8.284		
6,800.00	6,777.12	6,807.75	6,785.99	24.71	24.19	-171.57	-67.18	55.24	398.77	350.60	48.16	8.280		
6,850.00	6,826.86	6,857.46	6,835.38	24.90	24.37	-170.92	-72.42	57.33	401.71	353.17	48.54	8.276		
6,900.00	6,876.60	6,907.17	6,884.77	25.09	24.56	-170.29	-77.65	59.43	404.71	355.80	48.91	8.274		
6,950.00	6,926.35	6,956.88	6,934.16	25.28	24.75	-169.67	-82.88	61.52	407.76	358.47	49.29	8.272		
7,000.00	6,976.09	7,006.59	6,983.55	25.47	24.94	-169.05	-88.12	63.61	410.85	361.18	49.67	8.272 SF		
7,050.00	7,025.83	7,056.30	7,032.94	25.66	25.13	-168.45	-93.35	65.71	413.99	363.95	50.04	8.273		
7,100.00	7,075.57	7,106.01	7,082.33	25.85	25.32	-167.85	-98.58	67.80	417.18	366.76	50.42	8.274		
7,150.00	7,125.31	7,155.72	7,131.72	26.05	25.51	-167.26	-103.82	69.89	420.41	369.61	50.80	8.276		
7,200.00	7,175.05	7,205.43	7,181.11	26.24	25.70	-166.69	-109.05	71.99	423.69	372.51	51.18	8.279		
7,250.00	7,224.79	7,255.14	7,230.50	26.43	25.88	-166.12	-114.28	74.08	427.00	375.45	51.55	8.283		
7,300.00	7,274.53	7,304.85	7,279.89	26.62	26.07	-165.56	-119.52	76.17	430.36	378.43	51.93	8.287		
7,350.00	7,324.27	7,354.56	7,329.27	26.81	26.26	-165.00	-124.75	78.27	433.76	381.45	52.31	8.292		
7,400.00	7,374.01	7,404.27	7,378.66	27.00	26.45	-164.46	-129.98	80.36	437.20	384.51	52.69	8.298		
7,450.00	7,423.75	7,453.98	7,428.05	27.19	26.64	-163.93	-135.22	82.45	440.68	387.61	53.07	8.304		
7,500.00	7,473.49	7,503.69	7,477.44	27.38	26.83	-163.40	-140.45	84.55	444.20	390.75	53.45	8.311		
7,550.00	7,523.23	7,553.40	7,526.83	27.57	27.02	-162.88	-145.68	86.64	447.75	393.92	53.82	8.319		
7,600.00	7,572.97	7,603.11	7,576.22	27.76	27.21	-162.37	-150.92	88.73	451.34	397.13	54.20	8.327		
7,650.00	7,622.71	7,652.82	7,625.61	27.95	27.40	-161.87	-156.15	90.83	454.96	400.38	54.58	8.335		
7,700.00	7,672.46	7,702.53	7,675.00	28.15	27.59	-161.38	-161.38	92.92	458.62	403.66	54.96	8.344		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 2		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
7,750.00	7,722.20	7,752.24	7,724.39	28.34	27.78	160.89	-166.61	95.01	462.31	406.97	55.34	8.354				
7,800.00	7,771.94	7,801.95	7,773.78	28.53	27.97	160.41	-171.85	97.11	466.04	410.32	55.72	8.364				
7,850.00	7,821.68	7,851.66	7,823.17	28.72	28.16	159.94	-177.08	99.20	469.80	413.69	56.10	8.374				
7,900.00	7,871.42	7,900.46	7,871.68	28.91	28.35	159.51	-181.99	101.16	473.63	417.15	56.47	8.387				
7,950.00	7,921.16	7,949.20	7,920.20	29.10	28.53	159.17	-186.33	102.90	477.59	420.74	56.84	8.402				
8,000.00	7,970.90	7,997.98	7,968.81	29.29	28.71	158.90	-190.10	104.40	481.67	424.46	57.21	8.419				
8,050.00	8,020.64	8,046.80	8,017.51	29.48	28.89	158.71	-193.29	105.68	485.86	428.28	57.57	8.439				
8,100.00	8,070.38	8,095.64	8,066.26	29.67	29.07	158.60	-195.90	106.73	490.15	432.22	57.93	8.461				
8,150.00	8,120.12	8,144.47	8,115.05	29.87	29.24	158.56	-197.93	107.54	494.54	436.25	58.29	8.484				
8,200.00	8,169.86	8,193.29	8,163.84	30.06	29.42	158.59	-199.39	108.12	499.03	440.39	58.64	8.510				
8,250.00	8,219.60	8,242.08	8,212.62	30.25	29.59	158.69	-200.26	108.47	503.62	444.64	58.99	8.538				
8,300.00	8,269.34	8,292.12	8,261.34	30.44	29.76	158.85	-200.56	108.59	508.32	448.98	59.34	8.567				
8,350.00	8,319.08	8,340.54	8,311.08	30.63	29.92	159.06	-200.56	108.59	513.07	453.39	59.67	8.598				
8,400.00	8,368.82	8,409.72	8,360.82	30.82	30.14	159.26	-200.56	108.59	517.82	457.74	60.08	8.618				
8,450.00	8,418.57	8,440.02	8,410.57	31.01	30.25	159.46	-200.56	108.59	522.59	462.22	60.36	8.657				
8,500.00	8,468.31	8,489.77	8,460.31	31.20	30.41	159.65	-200.56	108.59	527.35	466.65	60.71	8.687				
8,550.00	8,518.05	8,539.51	8,510.05	31.40	30.58	159.84	-200.56	108.59	532.13	471.08	61.05	8.716				
8,600.00	8,567.79	8,589.25	8,559.79	31.59	30.74	160.03	-200.56	108.59	536.91	475.51	61.40	8.745				
8,650.00	8,617.53	8,649.18	8,619.62	31.78	30.93	160.55	-197.66	108.57	541.24	479.45	61.79	8.759				
8,700.00	8,667.27	8,708.16	8,677.89	31.97	31.11	161.68	-188.72	108.52	544.72	482.58	62.14	8.766				
8,750.00	8,717.01	8,764.56	8,732.48	32.16	31.27	163.32	-174.62	108.43	547.61	485.16	62.45	8.769				
8,800.00	8,766.75	8,817.54	8,782.27	32.35	31.40	165.34	-156.55	108.32	550.34	487.60	62.73	8.773				
8,850.00	8,816.49	8,866.60	8,826.69	32.54	31.51	167.61	-135.78	108.20	553.36	490.37	62.99	8.785				
8,900.00	8,866.23	8,911.50	8,865.66	32.74	31.61	169.99	-113.50	108.06	557.16	493.95	63.21	8.815				
8,950.00	8,915.97	8,952.27	8,899.44	32.93	31.69	172.39	-90.68	107.92	562.19	498.83	63.37	8.872				
9,000.00	8,965.71	8,989.11	8,928.50	33.12	31.76	174.74	-68.05	107.79	568.87	505.43	63.44	8.968				
9,050.00	9,015.45	9,022.29	8,953.37	33.31	31.82	176.98	-46.10	107.65	577.51	514.12	63.39	9.110				
9,100.00	9,065.19	9,052.14	8,974.63	33.50	31.87	179.08	-25.16	107.53	588.36	525.14	63.22	9.307				
9,150.00	9,114.93	9,078.99	8,992.81	33.69	31.91	-178.97	-5.39	107.41	601.58	538.68	62.90	9.564				
9,200.00	9,164.68	9,103.18	9,008.37	33.89	31.95	-177.17	13.13	107.29	617.24	554.80	62.44	9.886				
9,250.00	9,214.42	9,125.00	9,021.72	34.08	31.99	-175.53	30.38	107.19	635.34	573.50	61.84	10.274				
9,300.00	9,264.16	9,144.74	9,033.23	34.27	32.02	-174.02	46.42	107.09	655.83	594.70	61.13	10.728				
9,350.00	9,313.90	9,162.64	9,043.18	34.46	32.04	-172.65	61.29	107.00	678.63	618.30	60.33	11.248				
9,400.00	9,363.64	9,178.91	9,051.82	34.65	32.07	-171.40	75.08	106.92	703.61	644.14	59.47	11.832				
9,450.00	9,413.38	9,200.00	9,062.43	34.84	32.10	-169.77	93.31	106.81	730.67	671.99	58.68	12.451				
9,500.00	9,463.12	9,200.00	9,062.43	35.03	32.10	-169.77	93.31	106.81	759.58	702.09	57.49	13.213				
9,550.00	9,512.86	9,219.73	9,071.74	35.23	32.13	-168.25	110.70	106.70	790.14	733.44	56.70	13.935				
9,600.00	9,562.60	9,231.16	9,076.86	35.42	32.14	-167.37	120.92	106.64	822.35	766.57	55.78	14.742				
9,650.00	9,612.34	9,250.00	9,084.85	35.61	32.17	-165.93	137.98	106.54	856.08	801.03	55.05	15.552				
9,700.00	9,662.08	9,250.00	9,084.85	35.80	32.17	-165.93	137.98	106.54	890.95	836.95	54.00	16.498				
9,750.00	9,711.82	9,250.00	9,084.85	35.99	32.17	-165.93	137.98	106.54	927.21	874.20	53.02	17.489				
9,800.00	9,761.56	9,268.81	9,092.26	36.18	32.20	-164.51	155.26	106.43	964.29	911.86	52.43	18.391				
9,850.00	9,811.30	9,276.60	9,095.17	36.38	32.21	-163.92	162.49	106.39	1,002.46	950.76	51.70	19.389				
9,900.00	9,861.04	9,283.86	9,097.78	36.57	32.22	-163.38	169.27	106.35	1,041.51	990.49	51.02	20.414				
9,950.00	9,910.79	9,300.00	9,103.29	36.76	32.25	-162.18	184.44	106.25	1,081.45	1,030.92	50.53	21.401				
10,000.00	9,960.53	9,300.00	9,103.29	36.95	32.25	-162.18	184.44	106.25	1,121.92	1,072.08	49.84	22.512				
10,050.00	10,010.27	9,300.00	9,103.29	37.14	32.25	-162.18	184.44	106.25	1,163.12	1,113.93	49.20	23.642				
10,100.00	10,060.01	9,300.00	9,103.29	37.33	32.25	-162.18	184.44	106.25	1,205.00	1,156.39	48.61	24.788				
10,150.00	10,109.75	9,300.00	9,103.29	37.53	32.25	-162.18	184.44	106.25	1,247.47	1,199.39	48.08	25.947				
10,200.00	10,159.49	9,318.81	9,109.17	37.72	32.27	-160.80	202.30	106.15	1,290.08	1,242.24	47.85	26.962				
10,250.00	10,209.23	9,323.50	9,110.54	37.91	32.28	-160.46	206.79	106.12	1,333.36	1,285.91	47.46	28.095				
10,300.00	10,258.97	9,327.94	9,111.81	38.10	32.29	-160.13	211.04	106.09	1,377.05	1,329.95	47.10	29.235				

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 521H - Wellbore #1 - Permit Plan 2												Offset Site Error:		0.00 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)																
10,350.00	10,308.71	9,332.14	9,112.98	38.29	32.29	-159.83	215.08	106.07	1,421.12	1,374.34	46.78	30.378															
10,400.00	10,358.45	9,350.00	9,117.61	38.49	32.32	-158.56	232.32	105.96	1,465.74	1,419.09	46.65	31.418															

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis		Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.00	0.00	0.30	-0.30	0.50	0.50	-90.34	-0.53	-89.95	89.95						
50.00	50.00	49.70	49.70	0.50	0.50	-90.34	-0.53	-89.95	89.95	88.95	1.01	89.375			
100.00	100.00	100.30	99.70	0.52	0.52	-90.34	-0.53	-89.95	89.95	88.92	1.04	86.844			
150.00	150.00	149.70	149.70	0.59	0.59	-90.34	-0.53	-89.95	89.95	88.77	1.18	76.236			
200.00	200.00	200.30	199.70	0.70	0.70	-90.34	-0.53	-89.95	89.95	88.55	1.40	64.024			
250.00	250.00	249.70	249.70	0.84	0.84	-90.34	-0.53	-89.95	89.95	88.28	1.67	53.716			
300.00	300.00	300.30	299.70	0.99	0.99	-90.34	-0.53	-89.95	89.95	87.98	1.98	45.531			
350.00	350.00	349.70	349.70	1.15	1.14	-90.34	-0.53	-89.95	89.95	87.66	2.29	39.280			
400.00	400.00	400.30	399.70	1.31	1.31	-90.34	-0.53	-89.95	89.95	87.33	2.62	34.344			
450.00	450.00	449.70	449.70	1.48	1.48	-90.34	-0.53	-89.95	89.95	87.00	2.95	30.475			
500.00	500.00	500.30	499.70	1.65	1.65	-90.34	-0.53	-89.95	89.95	86.66	3.29	27.314			
550.00	550.00	549.70	549.70	1.82	1.82	-90.34	-0.53	-89.95	89.95	86.32	3.63	24.751			
600.00	600.00	600.30	599.70	1.99	1.99	-90.34	-0.53	-89.95	89.95	85.97	3.98	22.588			
650.00	650.00	649.70	649.70	2.16	2.16	-90.34	-0.53	-89.95	89.95	85.62	4.33	20.783			
700.00	700.00	700.30	699.70	2.34	2.34	-90.34	-0.53	-89.95	89.95	85.27	4.68	19.222			
750.00	750.00	749.70	749.70	2.51	2.51	-90.34	-0.53	-89.95	89.95	84.92	5.03	17.889			
800.00	800.00	800.30	799.70	2.69	2.69	-90.34	-0.53	-89.95	89.95	84.57	5.38	16.713			
850.00	850.00	849.70	849.70	2.87	2.87	-90.34	-0.53	-89.95	89.95	84.22	5.73	15.691			
900.00	900.00	900.30	899.70	3.04	3.04	-90.34	-0.53	-89.95	89.95	83.86	6.09	14.775			
950.00	950.00	949.70	949.70	3.22	3.22	-90.34	-0.53	-89.95	89.95	83.51	6.44	13.968			
1,000.00	1,000.00	1,000.30	999.70	3.40	3.40	-90.34	-0.53	-89.95	89.95	83.16	6.80	13.235			
1,050.00	1,050.00	1,049.70	1,049.70	3.58	3.57	-90.34	-0.53	-89.95	89.95	82.80	7.15	12.582			
1,100.00	1,100.00	1,100.30	1,099.70	3.75	3.75	-90.34	-0.53	-89.95	89.95	82.45	7.51	11.984			
1,150.00	1,150.00	1,149.70	1,149.70	3.93	3.93	-90.34	-0.53	-89.95	89.95	82.09	7.86	11.445			
1,200.00	1,200.00	1,200.30	1,199.70	4.11	4.11	-90.34	-0.53	-89.95	89.95	81.73	8.22	10.947			
1,250.00	1,250.00	1,249.70	1,249.70	4.29	4.29	-90.34	-0.53	-89.95	89.95	81.38	8.57	10.495			
1,300.00	1,300.00	1,300.30	1,299.70	4.46	4.47	-90.34	-0.53	-89.95	89.95	81.02	8.93	10.074			
1,350.00	1,350.00	1,349.70	1,349.70	4.64	4.64	-90.34	-0.53	-89.95	89.95	80.67	9.28	9.689			
1,400.00	1,400.00	1,400.30	1,399.70	4.82	4.82	-90.34	-0.53	-89.95	89.95	80.31	9.64	9.329			
1,450.00	1,450.00	1,449.70	1,449.70	5.00	5.00	-90.34	-0.53	-89.95	89.95	79.96	10.00	8.998			
1,500.00	1,500.00	1,500.30	1,499.70	5.18	5.18	-90.34	-0.53	-89.95	89.95	79.60	10.36	8.686			
1,550.00	1,550.00	1,549.70	1,549.70	5.36	5.35	-90.34	-0.53	-89.95	89.95	79.24	10.71	8.399			
1,600.00	1,600.00	1,600.30	1,599.70	5.53	5.54	-90.34	-0.53	-89.95	89.95	78.88	11.07	8.126			
1,650.00	1,650.00	1,649.70	1,649.70	5.71	5.71	-90.34	-0.53	-89.95	89.95	78.53	11.42	7.874			
1,700.00	1,700.00	1,700.30	1,699.70	5.89	5.89	-90.34	-0.53	-89.95	89.95	78.17	11.78	7.634			
1,750.00	1,750.00	1,749.70	1,749.70	6.07	6.07	-90.34	-0.53	-89.95	89.95	77.81	12.14	7.410			
1,800.00	1,800.00	1,800.30	1,799.70	6.25	6.25	-90.34	-0.53	-89.95	89.95	77.45	12.50	7.197			
1,850.00	1,850.00	1,849.70	1,849.70	6.43	6.43	-90.34	-0.53	-89.95	89.95	77.10	12.85	6.998			
1,900.00	1,900.00	1,900.30	1,899.70	6.61	6.61	-90.34	-0.53	-89.95	89.95	76.74	13.21	6.808			
1,950.00	1,950.00	1,949.70	1,949.70	6.78	6.78	-90.34	-0.53	-89.95	89.95	76.38	13.57	6.630			
2,000.00	2,000.00	2,000.30	1,999.70	6.96	6.96	-90.34	-0.53	-89.95	89.95	76.02	13.93	6.458 CC			
2,050.00	2,050.00	2,049.70	2,049.70	7.14	7.14	171.28	-0.53	-89.95	90.17	75.89	14.28	6.315 ES			
2,100.00	2,099.99	2,100.31	2,099.69	7.31	7.32	171.34	-0.53	-89.95	90.81	76.18	14.63	6.206			
2,150.00	2,149.98	2,149.68	2,149.68	7.48	7.50	171.44	-0.53	-89.95	91.89	76.91	14.98	6.135			
2,200.00	2,199.96	2,200.34	2,199.66	7.65	7.68	171.58	-0.53	-89.95	93.40	78.07	15.33	6.093			
2,250.00	2,249.92	2,249.62	2,249.62	7.82	7.86	171.75	-0.53	-89.95	95.35	79.67	15.68	6.083			
2,300.00	2,299.86	2,300.44	2,299.56	7.99	8.04	171.95	-0.53	-89.95	97.72	81.69	16.03	6.097			
2,350.00	2,349.78	2,349.48	2,349.48	8.16	8.21	172.17	-0.53	-89.95	100.53	84.15	16.37	6.140			
2,400.00	2,399.68	2,400.62	2,399.38	8.34	8.40	172.41	-0.53	-89.95	103.77	87.04	16.73	6.204			
2,450.00	2,449.54	2,449.24	2,449.24	8.51	8.57	172.67	-0.53	-89.95	107.44	90.37	17.07	6.293			
2,500.00	2,499.37	2,500.93	2,499.07	8.68	8.76	172.93	-0.53	-89.95	111.55	94.12	17.43	6.400			
2,550.00	2,549.16	2,548.86	2,548.86	8.86	8.93	173.21	-0.53	-89.95	116.09	98.32	17.77	6.532			

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM				Semi Major Axis				Distance				Offset Well Error: 0.50 ft				
Reference		Offset		Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor				
2,600.00	2,598.91	2,601.39	2,598.61	9.03	9.11	173.48	-0.53	-89.95	121.05	102.91	18.13	6.676				
2,650.00	2,648.65	2,648.35	2,648.35	9.21	9.28	173.74	-0.53	-89.95	126.10	107.63	18.47	6.826				
2,700.00	2,698.39	2,701.91	2,698.09	9.39	9.47	173.99	-0.53	-89.95	131.16	112.32	18.84	6.963				
2,750.00	2,748.13	2,747.83	2,747.83	9.56	9.64	174.21	-0.53	-89.95	136.22	117.04	19.17	7.104				
2,800.00	2,797.87	2,802.43	2,797.57	9.74	9.83	174.42	-0.53	-89.95	141.28	121.74	19.54	7.229				
2,850.00	2,847.61	2,847.31	2,847.31	9.92	10.00	174.61	-0.53	-89.95	146.34	126.46	19.88	7.363				
2,900.00	2,897.35	2,902.95	2,897.05	10.10	10.19	174.79	-0.53	-89.95	151.40	131.16	20.25	7.477				
2,950.00	2,947.09	2,946.79	2,946.79	10.28	10.35	174.96	-0.53	-89.95	156.47	135.89	20.58	7.603				
3,000.00	2,996.83	3,003.47	2,996.53	10.46	10.55	175.12	-0.53	-89.95	161.54	140.58	20.96	7.708				
3,050.00	3,046.57	3,046.27	3,046.27	10.64	10.71	175.27	-0.53	-89.95	166.61	145.32	21.28	7.828				
3,100.00	3,096.31	3,103.99	3,096.01	10.82	10.91	175.41	-0.53	-89.95	171.67	150.01	21.67	7.924				
3,150.00	3,146.05	3,145.75	3,145.75	11.00	11.06	175.54	-0.53	-89.95	176.74	154.75	21.99	8.037				
3,200.00	3,195.79	3,204.51	3,195.49	11.18	11.27	175.67	-0.53	-89.95	181.82	159.44	22.38	8.126				
3,250.00	3,245.54	3,245.24	3,245.24	11.37	11.42	175.78	-0.53	-89.95	186.89	164.19	22.70	8.234				
3,300.00	3,295.28	3,305.02	3,294.98	11.55	11.63	175.90	-0.53	-89.95	191.96	168.87	23.09	8.315				
3,350.00	3,345.02	3,344.72	3,344.72	11.73	11.78	176.00	-0.53	-89.95	197.03	173.63	23.40	8.418				
3,400.00	3,394.76	3,405.54	3,394.46	11.92	11.99	176.10	-0.53	-89.95	202.11	178.31	23.80	8.492				
3,450.00	3,444.50	3,444.20	3,444.20	12.10	12.13	176.20	-0.53	-89.95	207.18	183.07	24.11	8.592				
3,500.00	3,494.24	3,506.06	3,493.94	12.28	12.35	176.29	-0.53	-89.95	212.26	187.75	24.51	8.660				
3,550.00	3,543.98	3,543.68	3,543.68	12.47	12.49	176.38	-0.53	-89.95	217.33	192.51	24.82	8.755				
3,600.00	3,593.72	3,606.58	3,593.42	12.65	12.71	176.46	-0.53	-89.95	222.41	197.18	25.22	8.817				
3,650.00	3,643.46	3,643.16	3,643.16	12.84	12.85	176.54	-0.53	-89.95	227.48	201.95	25.53	8.910				
3,700.00	3,693.20	3,707.10	3,692.90	13.02	13.07	176.61	-0.53	-89.95	232.56	206.62	25.94	8.966				
3,750.00	3,742.94	3,742.64	3,742.64	13.20	13.20	176.69	-0.53	-89.95	237.64	211.40	26.24	9.055				
3,800.00	3,792.68	3,807.62	3,792.38	13.39	13.43	176.75	-0.53	-89.95	242.72	216.06	26.65	9.107				
3,850.00	3,842.42	3,842.12	3,842.12	13.58	13.56	176.82	-0.53	-89.95	247.79	220.84	26.95	9.193				
3,900.00	3,892.16	3,908.14	3,891.86	13.76	13.79	176.89	-0.53	-89.95	252.87	225.50	27.37	9.240				
3,950.00	3,941.90	3,941.60	3,941.60	13.95	13.91	176.95	-0.53	-89.95	257.95	230.29	27.67	9.324				
4,000.00	3,991.65	4,008.65	3,991.35	14.13	14.15	177.01	-0.53	-89.95	263.03	234.95	28.08	9.366				
4,050.00	4,041.39	4,041.09	4,041.09	14.32	14.27	177.06	-0.53	-89.95	268.11	239.73	28.38	9.448				
4,100.00	4,091.13	4,109.17	4,090.83	14.50	14.51	177.12	-0.53	-89.95	273.19	244.39	28.80	9.486				
4,150.00	4,140.87	4,140.57	4,140.57	14.69	14.63	177.17	-0.53	-89.95	278.27	249.18	29.09	9.566				
4,200.00	4,190.61	4,209.69	4,190.31	14.88	14.87	177.22	-0.53	-89.95	283.35	253.83	29.52	9.600				
4,250.00	4,240.35	4,240.05	4,240.05	15.06	14.98	177.27	-0.53	-89.95	288.43	258.62	29.80	9.678				
4,300.00	4,290.09	4,289.79	4,289.79	15.25	15.16	177.32	-0.53	-89.95	293.51	263.35	30.16	9.732				
4,350.00	4,339.83	4,339.53	4,339.53	15.44	15.34	177.36	-0.53	-89.95	298.59	268.07	30.52	9.785				
4,400.00	4,389.57	4,389.27	4,389.27	15.63	15.52	177.41	-0.53	-89.95	303.67	272.80	30.87	9.836				
4,450.00	4,439.31	4,439.01	4,439.01	15.81	15.70	177.45	-0.53	-89.95	308.75	277.52	31.23	9.887				
4,500.00	4,489.05	4,488.75	4,488.75	16.00	15.87	177.49	-0.53	-89.95	313.83	282.24	31.59	9.936				
4,550.00	4,538.79	4,540.23	4,540.23	16.19	16.05	177.52	-0.63	-89.85	318.81	286.86	31.95	9.979				
4,600.00	4,588.53	4,592.28	4,592.28	16.38	16.23	177.49	-1.06	-89.42	323.44	291.13	32.31	10.012				
4,650.00	4,638.27	4,644.39	4,644.38	16.56	16.40	177.41	-1.82	-88.66	327.72	295.06	32.66	10.035				
4,700.00	4,688.01	4,696.56	4,696.52	16.75	16.57	177.28	-2.91	-87.57	331.66	298.65	33.01	10.047				
4,750.00	4,737.76	4,748.77	4,748.69	16.94	16.75	177.11	-4.35	-86.13	335.24	301.88	33.36	10.049				
4,800.00	4,787.50	4,800.51	4,799.36	17.13	16.92	176.90	-6.00	-84.48	338.55	304.84	33.71	10.043				
4,850.00	4,837.24	4,849.37	4,849.18	17.32	17.08	176.69	-7.65	-82.83	341.84	307.79	34.05	10.039				
4,900.00	4,886.98	4,900.76	4,899.00	17.50	17.25	176.49	-9.29	-81.19	345.13	310.73	34.40	10.033				
4,950.00	4,936.72	4,949.12	4,948.83	17.69	17.41	176.30	-10.94	-79.54	348.43	313.69	34.74	10.029				
5,000.00	4,986.46	5,001.00	4,998.65	17.88	17.58	176.11	-12.58	-77.90	351.73	316.64	35.09	10.023				
5,050.00	5,036.20	5,048.88	5,048.47	18.07	17.74	175.92	-14.23	-76.25	355.04	319.61	35.43	10.020				
5,100.00	5,085.94	5,101.25	5,098.29	18.26	17.92	175.73	-15.88	-74.60	358.35	322.56	35.79	10.013				
5,150.00	5,135.68	5,148.63	5,148.12	18.45	18.08	175.55	-17.52	-72.96	361.66	325.54	36.13	10.011				

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1													0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:
													0.50 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)			
5,200.00	5,185.42	5,201.49	5,197.94	18.64	18.25	175.37	-19.17	-71.31	364.98	328.50	36.48	10.004	
5,250.00	5,235.16	5,248.38	5,247.76	18.83	18.41	175.20	-20.81	-69.67	368.30	331.48	36.82	10.003	
5,300.00	5,284.90	5,301.74	5,297.59	19.01	18.59	175.02	-22.46	-68.02	371.63	334.45	37.18	9.996	
5,350.00	5,334.64	5,348.14	5,347.41	19.20	18.75	174.86	-24.11	-66.37	374.95	337.44	37.52	9.995	
5,400.00	5,384.38	5,401.99	5,397.23	19.39	18.93	174.69	-25.75	-64.73	378.29	340.41	37.88	9.987	
5,450.00	5,434.12	5,447.89	5,447.05	19.58	19.08	174.53	-27.40	-63.08	381.62	343.41	38.21	9.987	
5,500.00	5,483.87	5,497.77	5,496.88	19.77	19.25	174.37	-29.04	-61.44	384.96	346.39	38.56	9.983	
5,550.00	5,533.61	5,547.65	5,546.70	19.96	19.42	174.21	-30.69	-59.79	388.30	349.39	38.91	9.979	
5,600.00	5,583.35	5,602.48	5,596.52	20.15	19.61	174.05	-32.34	-58.14	391.64	352.36	39.28	9.971	
5,650.00	5,633.09	5,647.40	5,646.34	20.34	19.76	173.90	-33.98	-56.50	394.98	355.37	39.61	9.972	
5,700.00	5,682.83	5,702.72	5,696.17	20.53	19.95	173.75	-35.63	-54.85	398.33	358.35	39.98	9.964	
5,750.00	5,732.57	5,747.15	5,745.99	20.72	20.10	173.60	-37.27	-53.21	401.68	361.37	40.31	9.965	
5,800.00	5,782.31	5,802.97	5,795.81	20.91	20.29	173.46	-38.92	-51.56	405.04	364.36	40.68	9.956	
5,850.00	5,832.05	5,846.91	5,845.64	21.10	20.44	173.32	-40.56	-49.92	408.39	367.38	41.01	9.958	
5,900.00	5,881.79	5,903.21	5,895.46	21.29	20.63	173.18	-42.21	-48.27	411.75	370.37	41.38	9.949	
5,950.00	5,931.53	5,946.66	5,945.28	21.48	20.78	173.04	-43.86	-46.62	415.11	373.40	41.71	9.951	
6,000.00	5,981.27	5,996.54	5,995.10	21.67	20.95	172.90	-45.50	-44.98	418.48	376.41	42.07	9.948	
6,050.00	6,031.01	6,046.42	6,044.93	21.86	21.12	172.77	-47.15	-43.33	421.84	379.42	42.42	9.945	
6,100.00	6,080.75	6,103.71	6,094.75	22.05	21.32	172.64	-48.79	-41.69	425.21	382.41	42.80	9.936	
6,150.00	6,130.49	6,146.17	6,144.57	22.24	21.46	172.51	-50.44	-40.04	428.58	385.46	43.12	9.939	
6,200.00	6,180.24	6,203.95	6,194.39	22.43	21.66	172.38	-52.09	-38.39	431.95	388.45	43.50	9.929	
6,250.00	6,229.98	6,245.92	6,244.22	22.62	21.81	172.26	-53.73	-36.75	435.33	391.50	43.83	9.933	
6,300.00	6,279.72	6,304.20	6,294.04	22.81	22.01	172.13	-55.38	-35.10	438.70	394.49	44.21	9.923	
6,350.00	6,329.46	6,345.68	6,343.86	23.00	22.15	172.01	-57.02	-33.46	442.08	397.55	44.53	9.927	
6,400.00	6,379.20	6,404.44	6,393.68	23.19	22.35	171.89	-58.67	-31.81	445.46	400.54	44.92	9.917	
6,450.00	6,428.94	6,445.43	6,443.51	23.38	22.49	171.77	-60.32	-30.16	448.84	403.60	45.24	9.921	
6,500.00	6,478.68	6,504.69	6,493.33	23.57	22.70	171.66	-61.96	-28.52	452.23	406.60	45.63	9.911	
6,550.00	6,528.42	6,545.19	6,543.15	23.76	22.84	171.54	-63.61	-26.87	455.61	409.66	45.95	9.916	
6,600.00	6,578.16	6,604.94	6,592.98	23.95	23.05	171.43	-65.25	-25.23	459.00	412.66	46.34	9.906	
6,650.00	6,627.90	6,644.94	6,642.80	24.14	23.18	171.32	-66.90	-23.58	462.39	415.73	46.66	9.910	
6,700.00	6,677.64	6,705.18	6,692.62	24.33	23.39	171.21	-68.55	-21.93	465.78	418.73	47.05	9.900	
6,750.00	6,727.38	6,744.70	6,742.44	24.52	23.53	171.10	-70.19	-20.29	469.17	421.81	47.37	9.905	
6,800.00	6,777.12	6,805.43	6,792.27	24.71	23.74	171.00	-71.84	-18.64	472.57	424.81	47.76	9.895	
6,850.00	6,826.86	6,844.45	6,842.09	24.90	23.88	170.89	-73.48	-17.00	475.96	427.89	48.08	9.900	
6,900.00	6,876.60	6,905.67	6,891.91	25.09	24.09	170.79	-75.13	-15.35	479.36	430.89	48.47	9.890	
6,950.00	6,926.35	6,944.20	6,941.73	25.28	24.22	170.69	-76.78	-13.70	482.76	433.97	48.79	9.895	
7,000.00	6,976.09	7,005.92	6,991.56	25.47	24.44	170.59	-78.42	-12.06	486.16	436.98	49.18	9.885	
7,050.00	7,025.83	7,043.96	7,041.38	25.66	24.57	170.49	-80.07	-10.41	489.56	440.07	49.50	9.891	
7,100.00	7,075.57	7,106.17	7,091.20	25.85	24.79	170.39	-81.71	-8.77	492.97	443.07	49.90	9.880	
7,150.00	7,125.31	7,143.71	7,141.03	26.05	24.92	170.29	-83.36	-7.12	496.37	446.16	50.21	9.886	
7,200.00	7,175.05	7,206.41	7,190.85	26.24	25.14	170.20	-85.00	-5.48	499.78	449.17	50.61	9.875	
7,250.00	7,224.79	7,243.47	7,240.67	26.43	25.27	170.10	-86.65	-3.83	503.18	452.26	50.92	9.882	
7,300.00	7,274.53	7,306.66	7,290.49	26.62	25.49	170.01	-88.30	-2.18	506.59	455.27	51.32	9.871	
7,350.00	7,324.27	7,343.22	7,340.32	26.81	25.62	169.92	-89.94	-0.54	510.00	458.37	51.63	9.877	
7,400.00	7,374.01	7,406.90	7,390.14	27.00	25.84	169.83	-91.59	1.11	513.42	461.38	52.04	9.866	
7,450.00	7,423.75	7,442.97	7,439.96	27.19	25.97	169.74	-93.23	2.75	516.83	464.48	52.35	9.873	
7,500.00	7,473.49	7,507.15	7,489.78	27.38	26.19	169.65	-94.88	4.40	520.24	467.49	52.75	9.862	
7,550.00	7,523.23	7,542.73	7,539.61	27.57	26.32	169.57	-96.53	6.05	523.66	470.60	53.06	9.869	
7,600.00	7,572.97	7,607.40	7,589.43	27.76	26.54	169.48	-98.17	7.69	527.07	473.60	53.47	9.857	
7,650.00	7,622.71	7,642.48	7,639.25	27.95	26.67	169.40	-99.82	9.34	530.49	476.72	53.78	9.865	
7,700.00	7,672.46	7,707.64	7,689.07	28.15	26.90	169.31	-101.46	10.98	533.91	479.72	54.19	9.853	
7,750.00	7,722.20	7,742.24	7,738.90	28.34	27.02	169.23	-103.11	12.63	537.33	482.84	54.49	9.861	

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Distance							
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
7,800.00	7,771.94	7,807.89	7,788.72	28.53	27.25	169.15	-104.76	14.28	540.75	485.85	54.90	9.849	
7,850.00	7,821.68	7,841.99	7,838.54	28.72	27.37	169.07	-106.40	15.92	544.17	488.97	55.21	9.857	
7,900.00	7,871.42	7,908.13	7,888.37	28.91	27.60	168.99	-108.05	17.57	547.60	491.97	55.62	9.845	
7,950.00	7,921.16	7,941.74	7,938.19	29.10	27.72	168.91	-109.69	19.21	551.02	495.10	55.92	9.853	
8,000.00	7,970.90	8,008.38	7,988.01	29.29	27.96	168.84	-111.34	20.86	554.44	498.11	56.34	9.841	
8,050.00	8,020.64	8,041.50	8,037.83	29.48	28.07	168.76	-112.99	22.51	557.87	501.23	56.64	9.850	
8,100.00	8,070.38	8,108.63	8,087.66	29.67	28.31	168.68	-114.63	24.15	561.30	504.24	57.06	9.838	
8,150.00	8,120.12	8,141.25	8,137.48	29.87	28.42	168.61	-116.28	25.80	564.72	507.37	57.35	9.846	
8,200.00	8,169.86	8,208.87	8,187.30	30.06	28.66	168.54	-117.92	27.44	568.15	510.38	57.77	9.834	
8,250.00	8,219.60	8,241.01	8,237.12	30.25	28.78	168.46	-119.57	29.09	571.58	513.51	58.07	9.843	
8,300.00	8,269.34	8,309.12	8,286.95	30.44	29.02	168.39	-121.22	30.74	575.01	516.52	58.49	9.830	
8,350.00	8,319.08	8,340.76	8,336.77	30.63	29.13	168.32	-122.86	32.38	578.45	519.66	58.79	9.839	
8,400.00	8,368.82	8,409.36	8,386.59	30.82	29.37	168.25	-124.51	34.03	581.88	522.66	59.21	9.827	
8,450.00	8,418.57	8,440.51	8,436.42	31.01	29.48	168.18	-126.15	35.67	585.31	525.80	59.51	9.836	
8,500.00	8,468.31	8,509.61	8,486.24	31.20	29.73	168.11	-127.80	37.32	588.74	528.81	59.93	9.823	
8,550.00	8,518.05	8,540.27	8,536.06	31.40	29.84	168.05	-129.45	38.96	592.18	531.96	60.22	9.833	
8,600.00	8,567.79	8,609.86	8,585.88	31.59	30.08	167.98	-131.09	40.61	595.62	534.96	60.65	9.820	
8,650.00	8,617.53	8,640.02	8,635.71	31.78	30.19	167.91	-132.74	42.26	599.05	538.11	60.94	9.830	
8,700.00	8,667.27	8,689.90	8,685.53	31.97	30.37	167.85	-134.38	43.90	602.49	541.19	61.30	9.828	
8,750.00	8,717.01	8,739.78	8,735.35	32.16	30.54	167.78	-136.03	45.55	605.93	544.27	61.66	9.827	
8,800.00	8,766.75	8,789.65	8,785.17	32.35	30.72	167.72	-137.67	47.19	609.37	547.35	62.02	9.825	
8,850.00	8,816.49	8,839.53	8,835.00	32.54	30.90	167.66	-139.32	48.84	612.81	550.43	62.38	9.824	
8,900.00	8,866.23	8,889.41	8,884.82	32.74	31.07	167.59	-140.97	50.49	616.25	553.51	62.74	9.822	
8,950.00	8,915.97	8,939.28	8,934.64	32.93	31.25	167.53	-142.61	52.13	619.69	556.59	63.10	9.821	
9,000.00	8,965.71	8,989.16	8,984.46	33.12	31.43	167.47	-144.26	53.78	623.13	559.67	63.46	9.819	
9,050.00	9,015.45	9,039.04	9,034.29	33.31	31.60	167.41	-145.90	55.42	626.57	562.75	63.82	9.818	
9,100.00	9,065.19	9,088.92	9,084.11	33.50	31.78	167.35	-147.55	57.07	630.01	565.83	64.18	9.816	
9,150.00	9,114.93	9,138.79	9,133.93	33.69	31.96	167.29	-149.20	58.72	633.46	568.92	64.54	9.815	
9,200.00	9,164.68	9,188.67	9,183.76	33.89	32.14	167.23	-150.84	60.36	636.90	572.00	64.90	9.814	
9,250.00	9,214.42	9,238.55	9,233.58	34.08	32.31	167.18	-152.49	62.01	640.35	575.09	65.26	9.812	
9,300.00	9,264.16	9,288.42	9,283.40	34.27	32.49	167.12	-154.13	63.65	643.79	578.17	65.62	9.811	
9,350.00	9,313.90	9,338.30	9,333.22	34.46	32.67	167.06	-155.78	65.30	647.24	581.26	65.98	9.810	
9,400.00	9,363.64	9,388.18	9,383.05	34.65	32.85	167.01	-157.43	66.95	650.69	584.35	66.34	9.808	
9,450.00	9,413.38	9,438.05	9,432.87	34.84	33.02	166.95	-159.07	68.59	654.13	587.43	66.70	9.807	
9,500.00	9,463.12	9,487.93	9,482.69	35.03	33.20	166.90	-160.72	70.24	657.58	590.52	67.06	9.806	
9,550.00	9,512.86	9,537.81	9,532.51	35.23	33.38	166.84	-162.36	71.88	661.03	593.61	67.42	9.804	
9,600.00	9,562.60	9,587.69	9,582.34	35.42	33.56	166.79	-164.01	73.53	664.48	596.70	67.78	9.803	
9,650.00	9,612.34	9,637.56	9,632.16	35.61	33.74	166.74	-165.66	75.18	667.93	599.79	68.14	9.802	
9,700.00	9,662.08	9,687.44	9,681.98	35.80	33.91	166.68	-167.30	76.82	671.38	602.88	68.50	9.801	
9,750.00	9,711.82	9,737.32	9,731.80	35.99	34.09	166.63	-168.95	78.47	674.83	605.97	68.86	9.799	
9,800.00	9,761.56	9,787.19	9,781.63	36.18	34.27	166.58	-170.59	80.11	678.28	609.06	69.23	9.798	
9,850.00	9,811.30	9,837.07	9,831.45	36.38	34.45	166.53	-172.24	81.76	681.74	612.15	69.59	9.797	
9,900.00	9,861.04	9,886.95	9,881.27	36.57	34.62	166.48	-173.89	83.40	685.19	615.24	69.95	9.796	
9,950.00	9,910.79	9,936.83	9,931.10	36.76	34.80	166.43	-175.53	85.05	688.64	618.33	70.31	9.795	
10,000.00	9,960.53	9,986.70	9,980.92	36.95	34.98	166.38	-177.18	86.70	692.09	621.42	70.67	9.793	
10,050.00	10,010.27	10,036.58	10,030.74	37.14	35.16	166.33	-178.82	88.34	695.55	624.52	71.03	9.792	
10,100.00	10,060.01	10,086.46	10,080.56	37.33	35.34	166.28	-180.47	89.99	699.00	627.61	71.39	9.791	
10,150.00	10,109.75	10,136.33	10,130.39	37.53	35.52	166.23	-182.11	91.63	702.46	630.71	71.75	9.790	
10,200.00	10,159.49	10,186.21	10,180.21	37.72	35.69	166.19	-183.76	93.28	705.91	633.80	72.11	9.789	
10,250.00	10,209.23	10,236.09	10,230.03	37.91	35.87	166.14	-185.41	94.93	709.37	636.89	72.48	9.788	
10,300.00	10,258.97	10,285.96	10,279.85	38.10	36.05	166.09	-187.05	96.57	712.83	639.99	72.84	9.787	
10,350.00	10,308.71	10,335.84	10,329.68	38.29	36.23	166.05	-188.70	98.22	716.28	643.09	73.20	9.785	

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 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	
10,400.00	10,358.45	10,385.72	10,379.50	38.49	36.41	166.00	-190.34	99.86	719.74	646.18	73.56	9.784		
10,450.00	10,408.19	10,435.60	10,429.32	38.68	36.59	165.95	-191.99	101.51	723.20	649.28	73.92	9.783		
10,500.00	10,457.93	10,485.47	10,479.15	38.87	36.76	165.91	-193.64	103.16	726.66	652.37	74.28	9.782		
10,550.00	10,507.67	10,535.35	10,528.97	39.06	36.94	165.87	-195.28	104.80	730.12	655.47	74.65	9.781		
10,600.00	10,557.41	10,585.23	10,578.79	39.25	37.12	165.82	-196.93	106.45	733.58	658.57	75.01	9.780		
10,650.00	10,607.16	10,631.85	10,625.37	39.44	37.29	165.79	-198.40	107.92	737.10	661.75	75.35	9.782		
10,700.00	10,656.90	10,676.26	10,669.76	39.64	37.45	165.78	-199.47	108.99	740.97	665.28	75.68	9.790		
10,750.00	10,706.64	10,720.62	10,714.10	39.83	37.60	165.81	-200.16	109.68	745.20	669.18	76.01	9.804		
10,800.00	10,756.38	10,764.91	10,758.39	40.02	37.76	165.86	-200.50	110.02	749.79	673.46	76.33	9.823		
10,850.00	10,806.12	10,812.34	10,805.82	40.21	37.92	165.95	-200.53	110.05	754.69	678.01	76.67	9.843		
10,900.00	10,855.90	10,862.12	10,855.60	40.40	38.09	166.06	-200.53	110.05	759.21	682.18	77.02	9.857		
10,950.00	10,905.74	10,911.96	10,905.44	40.59	38.27	166.14	-200.53	110.05	763.10	685.72	77.38	9.862		
11,000.00	10,955.63	10,961.85	10,955.33	40.77	38.44	166.21	-200.53	110.05	766.36	688.63	77.73	9.859		
11,050.00	11,005.55	11,011.78	11,005.25	40.95	38.61	166.27	-200.53	110.05	768.98	690.90	78.08	9.849		
11,100.00	11,055.51	11,061.73	11,055.21	41.13	38.78	166.32	-200.53	110.05	770.97	692.54	78.43	9.830		
11,150.00	11,105.49	11,111.71	11,105.19	41.31	38.96	166.34	-200.53	110.05	772.33	693.55	78.78	9.803		
11,200.00	11,155.48	11,165.32	11,158.78	41.48	39.14	166.43	-199.65	110.04	772.98	693.83	79.15	9.766		
11,250.00	11,205.48	11,221.14	11,214.28	41.65	39.33	-94.74	-193.85	110.01	772.69	693.17	79.52	9.717		
11,300.00	11,255.48	11,275.34	11,267.37	41.82	39.51	-93.94	-183.08	109.94	771.98	692.13	79.86	9.667		
11,350.00	11,305.48	11,327.07	11,316.89	41.98	39.67	-92.84	-168.16	109.85	771.19	691.02	80.17	9.620		
11,400.00	11,355.48	11,375.73	11,362.06	42.15	39.81	-91.50	-150.11	109.73	770.56	690.11	80.45	9.578		
11,438.26	11,393.75	11,410.64	11,393.45	42.27	39.91	-90.36	-134.83	109.64	770.38	689.73	80.65	9.552		
11,450.00	11,405.48	11,420.94	11,402.52	42.31	39.94	-90.00	-129.96	109.61	770.40	689.69	80.70	9.546		
11,500.00	11,455.48	11,462.55	11,438.25	42.48	40.05	-88.41	-108.65	109.47	771.01	690.10	80.91	9.529		
11,550.00	11,505.48	11,500.60	11,469.48	42.64	40.15	-86.80	-86.94	109.34	772.69	691.63	81.06	9.532		
11,600.00	11,555.48	11,535.38	11,496.72	42.81	40.23	-106.58	-65.32	109.20	775.80	694.66	81.14	9.561		
11,650.00	11,605.31	11,568.75	11,521.57	42.98	40.31	-104.53	-43.06	109.06	781.40	700.24	81.16	9.628		
11,700.00	11,654.59	11,601.29	11,544.52	43.15	40.38	-102.31	-19.99	108.92	789.56	708.45	81.11	9.734		
11,750.00	11,702.92	11,633.09	11,565.65	43.32	40.46	-99.94	3.77	108.77	800.06	719.06	81.01	9.876		
11,800.00	11,749.92	11,664.25	11,585.04	43.48	40.55	-97.45	28.16	108.62	812.65	731.80	80.85	10.051		
11,850.00	11,795.20	11,694.83	11,602.75	43.64	40.59	-94.86	53.08	108.46	827.06	746.40	80.66	10.253		
11,900.00	11,838.39	11,724.90	11,618.85	43.79	40.66	-92.20	78.47	108.30	843.01	762.57	80.45	10.479		
11,950.00	11,879.15	11,750.00	11,631.25	43.94	40.72	-89.62	100.29	108.16	860.26	780.09	80.17	10.730		
12,000.00	11,917.16	11,783.73	11,646.39	44.08	40.79	-86.81	130.43	107.97	878.48	798.47	80.01	10.979		
12,050.00	11,952.13	11,812.63	11,657.93	44.21	40.86	-83.31	155.92	107.81	897.30	817.48	79.81	11.242		
12,100.00	11,984.13	11,841.52	11,668.11	44.33	40.92	-79.25	183.95	107.64	914.99	835.35	79.63	11.490		
12,150.00	12,012.94	11,870.46	11,676.94	44.43	40.99	-75.87	211.51	107.47	931.06	851.60	79.46	11.717		
12,200.00	12,038.36	11,900.00	11,684.50	44.53	41.06	-73.07	240.06	107.29	945.39	866.07	79.32	11.919		
12,250.00	12,060.16	11,928.46	11,690.39	44.62	41.12	-70.78	267.91	107.11	957.88	878.69	79.19	12.096		
12,300.00	12,078.18	11,957.51	11,694.96	44.70	41.19	-68.95	296.59	106.93	968.44	889.34	79.10	12.243		
12,350.00	12,092.27	11,986.58	11,698.07	44.77	41.25	-67.52	325.48	106.75	977.00	897.96	79.04	12.361		
12,400.00	12,102.32	12,015.64	11,699.72	44.85	41.31	-66.48	354.50	106.57	983.50	904.49	79.01	12.448		
12,450.00	12,108.24	12,052.64	11,700.00	44.93	41.40	-65.77	391.49	106.34	987.81	908.77	79.05	12.496		
12,500.00	12,110.00	12,102.59	11,700.00	45.01	41.52	-65.53	441.44	106.02	989.15	909.96	79.19	12.491		
12,550.00	12,110.00	12,152.59	11,700.00	45.10	41.66	-65.53	491.44	105.71	989.14	909.75	79.40	12.458		
12,600.00	12,110.00	12,202.59	11,700.00	45.20	41.80	-65.53	541.44	105.40	989.14	909.53	79.61	12.425		
12,650.00	12,110.00	12,252.59	11,700.00	45.32	41.96	-65.53	591.44	105.08	989.13	909.27	79.86	12.386		
12,700.00	12,110.00	12,302.59	11,700.00	45.44	42.12	-65.53	641.44	104.77	989.12	909.01	80.11	12.347		
12,750.00	12,110.00	12,352.59	11,700.00	45.58	42.31	-65.53	691.44	104.46	989.11	908.70	80.41	12.301		
12,800.00	12,110.00	12,402.59	11,700.00	45.73	42.50	-65.53	741.43	104.14	989.10	908.39	80.71	12.255		
12,850.00	12,110.00	12,452.59	11,700.00	45.90	42.71	-65.53	791.43	103.83	989.09	908.05	81.05	12.204		
12,900.00	12,110.00	12,502.59	11,700.00	46.07	42.92	-65.53	841.43	103.52	989.08	907.70	81.39	12.153		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		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	
12,950.00	12,110.00	12,552.59	11,700.00	46.26	43.15	-65.53	891.43	103.20	989.08	907.30	81.77	12.095	
13,000.00	12,110.00	12,602.59	11,700.00	46.46	43.38	-65.53	941.43	102.89	989.07	906.91	82.16	12.039	
13,050.00	12,110.00	12,652.59	11,700.00	46.68	43.64	-65.53	991.43	102.58	989.06	906.48	82.58	11.977	
13,100.00	12,110.00	12,702.59	11,700.00	46.90	43.89	-65.53	1,041.43	102.26	989.05	906.04	83.01	11.915	
13,150.00	12,110.00	12,752.59	11,700.00	47.13	44.17	-65.53	1,091.43	101.95	989.04	905.57	83.47	11.849	
13,200.00	12,110.00	12,802.59	11,700.00	47.37	44.44	-65.53	1,141.43	101.64	989.03	905.10	83.94	11.783	
13,250.00	12,110.00	12,852.59	11,700.00	47.63	44.74	-65.53	1,191.43	101.32	989.03	904.58	84.44	11.713	
13,300.00	12,110.00	12,902.59	11,700.00	47.89	45.04	-65.53	1,241.42	101.01	989.02	904.07	84.94	11.643	
13,350.00	12,110.00	12,952.59	11,700.00	48.17	45.35	-65.53	1,291.42	100.70	989.01	903.52	85.49	11.569	
13,400.00	12,110.00	13,002.59	11,700.00	48.45	45.67	-65.53	1,341.42	100.38	989.00	902.97	86.03	11.496	
13,450.00	12,110.00	13,052.59	11,700.00	48.74	46.00	-65.53	1,391.42	100.07	988.99	902.39	86.60	11.420	
13,500.00	12,110.00	13,102.59	11,700.00	49.04	46.33	-65.53	1,441.42	99.75	988.98	901.80	87.18	11.344	
13,550.00	12,110.00	13,152.59	11,700.00	49.36	46.68	-65.53	1,491.42	99.44	988.97	901.18	87.79	11.265	
13,600.00	12,110.00	13,202.59	11,700.00	49.67	47.04	-65.53	1,541.42	99.13	988.97	900.56	88.41	11.187	
13,650.00	12,110.00	13,252.59	11,700.00	50.01	47.40	-65.53	1,591.42	98.81	988.96	899.91	89.05	11.106	
13,700.00	12,110.00	13,302.59	11,700.00	50.34	47.77	-65.53	1,641.42	98.50	988.95	899.25	89.70	11.026	
13,750.00	12,110.00	13,352.59	11,700.00	50.69	48.16	-65.53	1,691.42	98.19	988.94	898.57	90.37	10.943	
13,800.00	12,110.00	13,402.59	11,700.00	51.04	48.54	-65.53	1,741.41	97.87	988.93	897.88	91.05	10.861	
13,850.00	12,110.00	13,452.59	11,700.00	51.40	48.94	-65.53	1,791.41	97.56	988.92	897.17	91.76	10.778	
13,900.00	12,110.00	13,502.59	11,700.00	51.77	49.34	-65.53	1,841.41	97.25	988.91	896.45	92.47	10.695	
13,950.00	12,110.00	13,552.59	11,700.00	52.15	49.76	-65.52	1,891.41	96.93	988.91	895.70	93.20	10.610	
14,000.00	12,110.00	13,602.59	11,700.00	52.53	50.17	-65.52	1,941.41	96.62	988.90	894.96	93.94	10.527	
14,050.00	12,110.00	13,652.59	11,700.00	52.93	50.60	-65.52	1,991.41	96.31	988.89	894.19	94.70	10.442	
14,100.00	12,110.00	13,702.59	11,700.00	53.32	51.03	-65.52	2,041.41	95.99	988.88	893.41	95.47	10.358	
14,150.00	12,110.00	13,752.59	11,700.00	53.73	51.48	-65.52	2,091.41	95.68	988.87	892.61	96.26	10.273	
14,200.00	12,110.00	13,802.59	11,700.00	54.14	51.92	-65.52	2,141.41	95.37	988.86	891.82	97.05	10.189	
14,250.00	12,110.00	13,852.59	11,700.00	54.57	52.37	-65.52	2,191.41	95.05	988.85	890.99	97.86	10.104	
14,300.00	12,110.00	13,902.59	11,700.00	54.99	52.83	-65.52	2,241.40	94.74	988.85	890.17	98.68	10.021	
14,350.00	12,110.00	13,952.59	11,700.00	55.42	53.30	-65.52	2,291.40	94.43	988.84	889.32	99.52	9.936	
14,400.00	12,110.00	14,002.59	11,700.00	55.86	53.76	-65.52	2,341.40	94.11	988.83	888.47	100.36	9.853	
14,450.00	12,110.00	14,052.59	11,700.00	56.31	54.24	-65.52	2,391.40	93.80	988.82	887.60	101.22	9.769	
14,500.00	12,110.00	14,102.59	11,700.00	56.76	54.72	-65.52	2,441.40	93.49	988.81	886.73	102.08	9.686	
14,550.00	12,110.00	14,152.59	11,700.00	57.21	55.21	-65.52	2,491.40	93.17	988.80	885.84	102.97	9.603	
14,600.00	12,110.00	14,202.59	11,700.00	57.67	55.70	-65.52	2,541.40	92.86	988.79	884.94	103.85	9.521	
14,650.00	12,110.00	14,252.59	11,700.00	58.14	56.20	-65.52	2,591.40	92.54	988.79	884.03	104.75	9.439	
14,700.00	12,110.00	14,302.59	11,700.00	58.61	56.70	-65.52	2,641.40	92.23	988.78	883.12	105.66	9.358	
14,750.00	12,110.00	14,352.59	11,700.00	59.09	57.21	-65.52	2,691.40	91.92	988.77	882.19	106.58	9.277	
14,800.00	12,110.00	14,402.59	11,700.00	59.57	57.72	-65.52	2,741.40	91.60	988.76	881.25	107.51	9.197	
14,850.00	12,110.00	14,452.59	11,700.00	60.06	58.24	-65.52	2,791.39	91.29	988.75	880.30	108.45	9.117	
14,900.00	12,110.00	14,502.59	11,700.00	60.56	58.76	-65.52	2,841.39	90.98	988.74	879.35	109.39	9.039	
14,950.00	12,110.00	14,552.59	11,700.00	61.06	59.28	-65.52	2,891.39	90.66	988.73	878.38	110.35	8.960	
15,000.00	12,110.00	14,602.59	11,700.00	61.56	59.81	-65.52	2,941.39	90.35	988.73	877.42	111.31	8.883	
15,050.00	12,110.00	14,652.59	11,700.00	62.06	60.35	-65.52	2,991.39	90.04	988.72	876.43	112.29	8.805	
15,100.00	12,110.00	14,702.59	11,700.00	62.57	60.88	-65.52	3,041.39	89.72	988.71	875.45	113.26	8.729	
15,150.00	12,110.00	14,752.59	11,700.00	63.09	61.43	-65.52	3,091.39	89.41	988.70	874.44	114.26	8.653	
15,200.00	12,110.00	14,802.59	11,700.00	63.61	61.97	-65.52	3,141.39	89.10	988.69	873.44	115.25	8.579	
15,250.00	12,110.00	14,852.59	11,700.00	64.13	62.52	-65.52	3,191.39	88.78	988.68	872.43	116.26	8.504	
15,300.00	12,110.00	14,902.59	11,700.00	64.66	63.07	-65.52	3,241.39	88.47	988.67	871.41	117.26	8.431	
15,350.00	12,110.00	14,952.59	11,700.00	65.19	63.63	-65.52	3,291.38	88.16	988.67	870.38	118.28	8.358	
15,400.00	12,110.00	15,002.59	11,700.00	65.73	64.19	-65.52	3,341.38	87.84	988.66	869.35	119.31	8.287	
15,450.00	12,110.00	15,052.59	11,700.00	66.27	64.76	-65.52	3,391.38	87.53	988.65	868.31	120.34	8.215	
15,500.00	12,110.00	15,102.59	11,700.00	66.81	65.32	-65.52	3,441.38	87.22	988.64	867.26	121.38	8.145	

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis		Highside 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
15,550.00	12,110.00	15,152.59	11,700.00	67.36	65.89	-65.52	3,491.38	86.90	988.63	866.21	122.42	8.075	
15,600.00	12,110.00	15,202.59	11,700.00	67.90	66.46	-65.52	3,541.38	86.59	988.62	865.15	123.47	8.007	
15,650.00	12,110.00	15,252.59	11,700.00	68.46	67.04	-65.52	3,591.38	86.28	988.61	864.08	124.53	7.939	
15,700.00	12,110.00	15,302.59	11,700.00	69.01	67.62	-65.52	3,641.38	85.96	988.61	863.01	125.59	7.872	
15,750.00	12,110.00	15,352.59	11,700.00	69.57	68.20	-65.52	3,691.38	85.65	988.60	861.93	126.66	7.805	
15,800.00	12,110.00	15,402.59	11,700.00	70.13	68.79	-65.52	3,741.38	85.33	988.59	860.85	127.74	7.739	
15,850.00	12,110.00	15,452.59	11,700.00	70.70	69.37	-65.52	3,791.37	85.02	988.58	859.76	128.82	7.674	
15,900.00	12,110.00	15,502.59	11,700.00	71.27	69.96	-65.52	3,841.37	84.71	988.57	858.67	129.90	7.610	
15,950.00	12,110.00	15,552.59	11,700.00	71.84	70.56	-65.52	3,891.37	84.39	988.56	857.57	130.99	7.547	
16,000.00	12,110.00	15,602.59	11,700.00	72.41	71.15	-65.52	3,941.37	84.08	988.55	856.47	132.09	7.484	
16,050.00	12,110.00	15,652.59	11,700.00	72.99	71.75	-65.52	3,991.37	83.77	988.55	855.36	133.19	7.422	
16,100.00	12,110.00	15,702.59	11,700.00	73.57	72.35	-65.52	4,041.37	83.45	988.54	854.24	134.29	7.361	
16,150.00	12,110.00	15,752.59	11,700.00	74.15	72.95	-65.51	4,091.37	83.14	988.53	853.12	135.41	7.300	
16,200.00	12,110.00	15,802.59	11,700.00	74.74	73.56	-65.51	4,141.37	82.83	988.52	852.00	136.52	7.241	
16,250.00	12,110.00	15,852.59	11,700.00	75.33	74.16	-65.51	4,191.37	82.51	988.51	850.87	137.64	7.182	
16,300.00	12,110.00	15,902.59	11,700.00	75.91	74.77	-65.51	4,241.37	82.20	988.50	849.74	138.76	7.124	
16,350.00	12,110.00	15,952.59	11,700.00	76.51	75.38	-65.51	4,291.36	81.89	988.49	848.60	139.89	7.066	
16,400.00	12,110.00	16,002.59	11,700.00	77.10	76.00	-65.51	4,341.36	81.57	988.49	847.46	141.02	7.009	
16,450.00	12,110.00	16,052.59	11,700.00	77.70	76.61	-65.51	4,391.36	81.26	988.48	846.32	142.16	6.953	
16,500.00	12,110.00	16,102.59	11,700.00	78.30	77.23	-65.51	4,441.36	80.95	988.47	845.17	143.30	6.898	
16,550.00	12,110.00	16,152.59	11,700.00	78.90	77.85	-65.51	4,491.36	80.63	988.46	844.01	144.45	6.843	
16,600.00	12,110.00	16,202.59	11,700.00	79.50	78.47	-65.51	4,541.36	80.32	988.45	842.86	145.59	6.789	
16,650.00	12,110.00	16,252.59	11,700.00	80.11	79.09	-65.51	4,591.36	80.01	988.44	841.70	146.75	6.736	
16,700.00	12,110.00	16,302.59	11,700.00	80.71	79.72	-65.51	4,641.36	79.69	988.44	840.53	147.90	6.683	
16,750.00	12,110.00	16,352.59	11,700.00	81.32	80.34	-65.51	4,691.36	79.38	988.43	839.37	149.06	6.631	
16,800.00	12,110.00	16,402.59	11,700.00	81.94	80.97	-65.51	4,741.36	79.06	988.42	838.20	150.22	6.580	
16,850.00	12,110.00	16,452.59	11,700.00	82.55	81.60	-65.51	4,791.35	78.75	988.41	837.02	151.39	6.529	
16,900.00	12,110.00	16,502.59	11,700.00	83.16	82.23	-65.51	4,841.35	78.44	988.40	835.84	152.56	6.479	
16,950.00	12,110.00	16,552.59	11,700.00	83.78	82.87	-65.51	4,891.35	78.12	988.39	834.66	153.73	6.429	
17,000.00	12,110.00	16,602.59	11,700.00	84.40	83.50	-65.51	4,941.35	77.81	988.38	833.48	154.91	6.381	
17,050.00	12,110.00	16,652.59	11,700.00	85.02	84.14	-65.51	4,991.35	77.50	988.38	832.29	156.09	6.332	
17,100.00	12,110.00	16,702.59	11,700.00	85.64	84.77	-65.51	5,041.35	77.18	988.37	831.10	157.27	6.285	
17,150.00	12,110.00	16,752.59	11,700.00	86.27	85.41	-65.51	5,091.35	76.87	988.36	829.91	158.45	6.238	
17,200.00	12,110.00	16,802.59	11,700.00	86.89	86.05	-65.51	5,141.35	76.56	988.35	828.71	159.64	6.191	
17,250.00	12,110.00	16,852.59	11,700.00	87.52	86.70	-65.51	5,191.35	76.24	988.34	827.51	160.83	6.145	
17,300.00	12,110.00	16,902.59	11,700.00	88.15	87.34	-65.51	5,241.35	75.93	988.33	826.31	162.02	6.100	
17,350.00	12,110.00	16,952.59	11,700.00	88.78	87.99	-65.51	5,291.34	75.62	988.32	825.11	163.22	6.055	
17,400.00	12,110.00	17,002.59	11,700.00	89.41	88.63	-65.51	5,341.34	75.30	988.32	823.90	164.42	6.011	
17,450.00	12,110.00	17,052.59	11,700.00	90.04	89.28	-65.51	5,391.34	74.99	988.31	822.69	165.62	5.967	
17,500.00	12,110.00	17,102.59	11,700.00	90.68	89.93	-65.51	5,441.34	74.68	988.30	821.48	166.82	5.924	
17,550.00	12,110.00	17,152.59	11,700.00	91.31	90.58	-65.51	5,491.34	74.36	988.29	820.26	168.03	5.882	
17,600.00	12,110.00	17,202.59	11,700.00	91.95	91.23	-65.51	5,541.34	74.05	988.28	819.05	169.24	5.840	
17,650.00	12,110.00	17,252.59	11,700.00	92.59	91.88	-65.51	5,591.34	73.74	988.27	817.83	170.45	5.798	
17,700.00	12,110.00	17,302.59	11,700.00	93.23	92.53	-65.51	5,641.34	73.42	988.26	816.60	171.66	5.757	
17,750.00	12,110.00	17,352.59	11,700.00	93.87	93.19	-65.51	5,691.34	73.11	988.26	815.38	172.88	5.717	
17,800.00	12,110.00	17,402.59	11,700.00	94.52	93.84	-65.51	5,741.34	72.80	988.25	814.15	174.09	5.677	
17,850.00	12,110.00	17,452.59	11,700.00	95.16	94.50	-65.51	5,791.34	72.48	988.24	812.92	175.31	5.637	
17,900.00	12,110.00	17,502.59	11,700.00	95.80	95.16	-65.51	5,841.33	72.17	988.23	811.70	176.53	5.598	
17,950.00	12,110.00	17,552.59	11,700.00	96.45	95.82	-65.51	5,891.33	71.85	988.22	810.46	177.76	5.559	
18,000.00	12,110.00	17,602.59	11,700.00	97.10	96.47	-65.51	5,941.33	71.54	988.21	809.23	178.98	5.521	
18,050.00	12,110.00	17,652.59	11,700.00	97.75	97.14	-65.51	5,991.33	71.23	988.20	807.99	180.21	5.484	
18,100.00	12,110.00	17,702.59	11,700.00	98.40	97.80	-65.51	6,041.33	70.91	988.20	806.75	181.44	5.446	

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor				
18,150.00	12,110.00	17,752.59	11,700.00	99.05	98.46	-65.51	6,091.33	70.60	988.19	805.51	182.68	5.410				
18,200.00	12,110.00	17,802.59	11,700.00	99.70	99.12	-65.51	6,141.33	70.29	988.18	804.27	183.91	5.373				
18,250.00	12,110.00	17,852.59	11,700.00	100.35	99.79	-65.51	6,191.33	69.97	988.17	803.02	185.15	5.337				
18,300.00	12,110.00	17,902.59	11,700.00	101.01	100.45	-65.51	6,241.33	69.66	988.16	801.78	186.38	5.302				
18,350.00	12,110.00	17,952.59	11,700.00	101.66	101.12	-65.51	6,291.33	69.35	988.15	800.53	187.62	5.267				
18,400.00	12,110.00	18,002.59	11,700.00	102.32	101.79	-65.50	6,341.32	69.03	988.14	799.28	188.86	5.232				
18,450.00	12,110.00	18,052.59	11,700.00	102.98	102.45	-65.50	6,391.32	68.72	988.14	798.03	190.11	5.198				
18,500.00	12,110.00	18,102.59	11,700.00	103.63	103.12	-65.50	6,441.32	68.41	988.13	796.78	191.35	5.164				
18,550.00	12,110.00	18,152.59	11,700.00	104.29	103.79	-65.50	6,491.32	68.09	988.12	795.52	192.60	5.131				
18,600.00	12,110.00	18,202.59	11,700.00	104.95	104.46	-65.50	6,541.32	67.78	988.11	794.27	193.84	5.097				
18,650.00	12,110.00	18,252.59	11,700.00	105.61	105.13	-65.50	6,591.32	67.47	988.10	793.01	195.09	5.065				
18,700.00	12,110.00	18,302.59	11,700.00	106.27	105.81	-65.50	6,641.32	67.15	988.09	791.75	196.34	5.032				
18,750.00	12,110.00	18,352.59	11,700.00	106.94	106.48	-65.50	6,691.32	66.84	988.08	790.49	197.60	5.001				
18,800.00	12,110.00	18,402.59	11,700.00	107.60	107.15	-65.50	6,741.32	66.53	988.08	789.23	198.85	4.969	Alert			
18,850.00	12,110.00	18,452.59	11,700.00	108.27	107.83	-65.50	6,791.32	66.21	988.07	787.96	200.11	4.938	Alert			
18,900.00	12,110.00	18,502.59	11,700.00	108.93	108.50	-65.50	6,841.31	65.90	988.06	786.70	201.36	4.907	Alert			
18,950.00	12,110.00	18,552.59	11,700.00	109.60	109.18	-65.50	6,891.31	65.58	988.05	785.43	202.62	4.876	Alert			
19,000.00	12,110.00	18,602.59	11,700.00	110.26	109.85	-65.50	6,941.31	65.27	988.04	784.16	203.88	4.846	Alert			
19,050.00	12,110.00	18,652.59	11,700.00	110.93	110.53	-65.50	6,991.31	64.96	988.03	782.89	205.14	4.816	Alert			
19,100.00	12,110.00	18,702.59	11,700.00	111.60	111.21	-65.50	7,041.31	64.64	988.02	781.62	206.40	4.787	Alert			
19,150.00	12,110.00	18,752.59	11,700.00	112.27	111.88	-65.50	7,091.31	64.33	988.02	780.35	207.67	4.758	Alert			
19,200.00	12,110.00	18,802.59	11,700.00	112.94	112.56	-65.50	7,141.31	64.02	988.01	779.08	208.93	4.729	Alert			
19,250.00	12,110.00	18,852.59	11,700.00	113.61	113.24	-65.50	7,191.31	63.70	988.00	777.80	210.20	4.700	Alert			
19,300.00	12,110.00	18,902.59	11,700.00	114.28	113.92	-65.50	7,241.31	63.39	987.99	776.53	211.46	4.672	Alert			
19,350.00	12,110.00	18,952.59	11,700.00	114.95	114.60	-65.50	7,291.31	63.08	987.98	775.25	212.73	4.644	Alert			
19,400.00	12,110.00	19,002.59	11,700.00	115.62	115.28	-65.50	7,341.30	62.76	987.97	773.97	214.00	4.617	Alert			
19,450.00	12,110.00	19,052.59	11,700.00	116.30	115.97	-65.50	7,391.30	62.45	987.96	772.69	215.27	4.589	Alert			
19,500.00	12,110.00	19,102.59	11,700.00	116.97	116.65	-65.50	7,441.30	62.14	987.96	771.41	216.54	4.562	Alert			
19,550.00	12,110.00	19,152.59	11,700.00	117.65	117.33	-65.50	7,491.30	61.82	987.95	770.13	217.82	4.536	Alert			
19,600.00	12,110.00	19,202.59	11,700.00	118.32	118.01	-65.50	7,541.30	61.51	987.94	768.85	219.09	4.509	Alert			
19,650.00	12,110.00	19,252.59	11,700.00	119.00	118.70	-65.50	7,591.30	61.20	987.93	767.56	220.37	4.483	Alert			
19,700.00	12,110.00	19,302.59	11,700.00	119.67	119.38	-65.50	7,641.30	60.88	987.92	766.28	221.64	4.457	Alert			
19,750.00	12,110.00	19,352.59	11,700.00	120.35	120.07	-65.50	7,691.30	60.57	987.91	764.99	222.92	4.432	Alert			
19,800.00	12,110.00	19,402.59	11,700.00	121.03	120.75	-65.50	7,741.30	60.26	987.90	763.71	224.20	4.406	Alert			
19,850.00	12,110.00	19,452.59	11,700.00	121.71	121.44	-65.50	7,791.30	59.94	987.90	762.42	225.48	4.381	Alert			
19,900.00	12,110.00	19,502.59	11,700.00	122.38	122.13	-65.50	7,841.29	59.63	987.89	761.13	226.76	4.357	Alert			
19,950.00	12,110.00	19,552.59	11,700.00	123.06	122.81	-65.50	7,891.29	59.32	987.88	759.84	228.04	4.332	Alert			
20,000.00	12,110.00	19,602.59	11,700.00	123.74	123.50	-65.50	7,941.29	59.00	987.87	758.55	229.32	4.308	Alert			
20,050.00	12,110.00	19,652.59	11,700.00	124.43	124.19	-65.50	7,991.29	58.69	987.86	757.26	230.61	4.284	Alert			
20,100.00	12,110.00	19,702.59	11,700.00	125.11	124.88	-65.50	8,041.29	58.37	987.85	755.96	231.89	4.260	Alert			
20,150.00	12,110.00	19,752.59	11,700.00	125.79	125.57	-65.50	8,091.29	58.06	987.85	754.67	233.17	4.236	Alert			
20,200.00	12,110.00	19,802.59	11,700.00	126.47	126.26	-65.50	8,141.29	57.75	987.84	753.38	234.46	4.213	Alert			
20,250.00	12,110.00	19,852.59	11,700.00	127.15	126.95	-65.50	8,191.29	57.43	987.83	752.08	235.75	4.190	Alert			
20,300.00	12,110.00	19,902.59	11,700.00	127.84	127.64	-65.50	8,241.29	57.12	987.82	750.78	237.04	4.167	Alert			
20,350.00	12,110.00	19,952.59	11,700.00	128.52	128.33	-65.50	8,291.29	56.81	987.81	749.49	238.32	4.145	Alert			
20,400.00	12,110.00	20,002.59	11,700.00	129.20	129.02	-65.50	8,341.28	56.49	987.80	748.19	239.61	4.122	Alert			
20,450.00	12,110.00	20,052.59	11,700.00	129.89	129.71	-65.50	8,391.28	56.18	987.79	746.89	240.90	4.100	Alert			
20,500.00	12,110.00	20,102.59	11,700.00	130.57	130.40	-65.50	8,441.28	55.87	987.79	745.59	242.19	4.078	Alert			
20,550.00	12,110.00	20,152.59	11,700.00	131.26	131.09	-65.50	8,491.28	55.55	987.78	744.29	243.49	4.057	Alert			
20,600.00	12,110.00	20,202.59	11,700.00	131.95	131.79	-65.49	8,541.28	55.24	987.77	742.99	244.78	4.035	Alert			
20,650.00	12,110.00	20,252.59	11,700.00	132.63	132.48	-65.49	8,591.28	54.93	987.76	741.69	246.07	4.014	Alert			
20,700.00	12,110.00	20,302.59	11,700.00	133.32	133.17	-65.49	8,641.28	54.61	987.75	740.38	247.37	3.993	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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid *
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design											Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 611H - Wellbore #1 - Permit Plan 1		Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
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)			
20,750.00	12,110.00	20,352.59	11,700.00	134.01	133.87	-65.49	8,691.28	54.30	987.74	739.08	248.66	3.972	Alert	
20,800.00	12,110.00	20,402.59	11,700.00	134.69	134.56	-65.49	8,741.28	53.99	987.73	737.78	249.96	3.952	Alert	
20,850.00	12,110.00	20,452.59	11,700.00	135.38	135.26	-65.49	8,791.28	53.67	987.73	736.47	251.26	3.931	Alert	
20,900.00	12,110.00	20,502.59	11,700.00	136.07	135.95	-65.49	8,841.28	53.36	987.72	735.16	252.55	3.911	Alert	
20,950.00	12,110.00	20,552.59	11,700.00	136.76	136.65	-65.49	8,891.27	53.05	987.71	733.86	253.85	3.891	Alert	
21,000.00	12,110.00	20,602.59	11,700.00	137.45	137.34	-65.49	8,941.27	52.73	987.70	732.55	255.15	3.871	Alert	
21,050.00	12,110.00	20,652.59	11,700.00	138.14	138.04	-65.49	8,991.27	52.42	987.69	731.24	256.45	3.851	Alert	
21,100.00	12,110.00	20,702.59	11,700.00	138.83	138.73	-65.49	9,041.27	52.10	987.68	729.93	257.75	3.832	Alert	
21,150.00	12,110.00	20,752.59	11,700.00	139.52	139.43	-65.49	9,091.27	51.79	987.67	728.62	259.05	3.813	Alert	
21,200.00	12,110.00	20,802.59	11,700.00	140.21	140.13	-65.49	9,141.27	51.48	987.67	727.31	260.35	3.794	Alert	
21,250.00	12,110.00	20,852.59	11,700.00	140.90	140.83	-65.49	9,191.27	51.16	987.66	726.00	261.65	3.775	Alert	
21,300.00	12,110.00	20,902.59	11,700.00	141.60	141.52	-65.49	9,241.27	50.85	987.65	724.69	262.96	3.756	Alert	
21,350.00	12,110.00	20,952.59	11,700.00	142.29	142.22	-65.49	9,291.27	50.54	987.64	723.38	264.26	3.737	Alert	
21,400.00	12,110.00	21,002.59	11,700.00	142.98	142.92	-65.49	9,341.27	50.22	987.63	722.07	265.56	3.719	Alert	
21,450.00	12,110.00	21,052.59	11,700.00	143.67	143.62	-65.49	9,391.26	49.91	987.62	720.76	266.87	3.701	Alert	
21,500.00	12,110.00	21,102.59	11,700.00	144.37	144.32	-65.49	9,441.26	49.60	987.61	719.44	268.17	3.683	Alert	
21,550.00	12,110.00	21,152.59	11,700.00	145.06	145.02	-65.49	9,491.26	49.28	987.61	718.13	269.48	3.665	Alert	
21,600.00	12,110.00	21,202.59	11,700.00	145.76	145.72	-65.49	9,541.26	48.97	987.60	716.81	270.78	3.647	Alert	
21,650.00	12,110.00	21,252.59	11,700.00	146.45	146.41	-65.49	9,591.26	48.66	987.59	715.50	272.09	3.630	Alert	
21,700.00	12,110.00	21,302.59	11,700.00	147.14	147.11	-65.49	9,641.26	48.34	987.58	714.18	273.40	3.612	Alert	
21,750.00	12,110.00	21,352.59	11,700.00	147.84	147.82	-65.49	9,691.26	48.03	987.57	712.86	274.71	3.595	Alert	
21,800.00	12,110.00	21,402.59	11,700.00	148.54	148.52	-65.49	9,741.26	47.72	987.56	711.55	276.01	3.578	Alert	
21,850.00	12,110.00	21,452.59	11,700.00	149.23	149.22	-65.49	9,791.26	47.40	987.55	710.23	277.32	3.561	Alert	
21,900.00	12,110.00	21,502.59	11,700.00	149.93	149.92	-65.49	9,841.26	47.09	987.55	708.91	278.63	3.544	Alert	
21,950.00	12,110.00	21,552.59	11,700.00	150.62	150.62	-65.49	9,891.25	46.78	987.54	707.59	279.94	3.528	Alert	
22,000.00	12,110.00	21,602.59	11,700.00	151.32	151.32	-65.49	9,941.25	46.46	987.53	706.27	281.25	3.511	Alert	
22,050.00	12,110.00	21,652.59	11,700.00	152.02	152.02	-65.49	9,991.25	46.15	987.52	704.95	282.57	3.495	Alert	
22,100.00	12,110.00	21,702.59	11,700.00	152.71	152.72	-65.49	10,041.25	45.84	987.51	703.63	283.88	3.479	Alert	
22,150.00	12,110.00	21,752.59	11,700.00	153.41	153.43	-65.49	10,091.25	45.52	987.50	702.31	285.19	3.463	Alert	
22,200.00	12,110.00	21,802.59	11,700.00	154.11	154.13	-65.49	10,141.25	45.21	987.49	700.99	286.50	3.447	Alert	
22,250.00	12,110.00	21,852.59	11,700.00	154.81	154.83	-65.49	10,191.25	44.89	987.49	699.67	287.82	3.431	Alert	
22,300.00	12,110.00	21,902.59	11,700.00	155.51	155.54	-65.49	10,241.25	44.58	987.48	698.35	289.13	3.415	Alert	
22,346.72	12,110.00	21,949.31	11,700.00	156.16	156.19	-65.49	10,287.97	44.29	987.47	697.11	290.36	3.401	Alert, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan 1													Offset Well Error:	0.50 ft
Survey Program: 0-MWD+HDGM														
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	0.40	-0.40	0.50	0.50	-90.33	-0.35	-59.98	59.98					
50.00	50.00	49.60	49.60	0.50	0.50	-90.33	-0.35	-59.98	59.98	58.97	1.01	59.598		
100.00	100.00	100.40	99.60	0.52	0.52	-90.33	-0.35	-59.98	59.98	58.95	1.04	57.903		
150.00	150.00	149.60	149.60	0.59	0.59	-90.33	-0.35	-59.98	59.98	58.80	1.18	50.843		
200.00	200.00	200.40	199.60	0.70	0.70	-90.33	-0.35	-59.98	59.98	58.58	1.41	42.685		
250.00	250.00	249.60	249.60	0.84	0.84	-90.33	-0.35	-59.98	59.98	58.31	1.67	35.825		
300.00	300.00	300.40	299.60	0.99	0.99	-90.33	-0.35	-59.98	59.98	58.01	1.98	30.356		
350.00	350.00	349.60	349.60	1.15	1.14	-90.33	-0.35	-59.98	59.98	57.69	2.29	26.196		
400.00	400.00	400.40	399.60	1.31	1.31	-90.33	-0.35	-59.98	59.98	57.36	2.62	22.898		
450.00	450.00	449.60	449.60	1.48	1.47	-90.33	-0.35	-59.98	59.98	57.03	2.95	20.324		
500.00	500.00	500.40	499.60	1.65	1.65	-90.33	-0.35	-59.98	59.98	56.69	3.29	18.212		
550.00	550.00	549.60	549.60	1.82	1.82	-90.33	-0.35	-59.98	59.98	56.35	3.63	16.506		
600.00	600.00	600.40	599.60	1.99	1.99	-90.33	-0.35	-59.98	59.98	56.00	3.98	15.061		
650.00	650.00	649.60	649.60	2.16	2.16	-90.33	-0.35	-59.98	59.98	55.65	4.33	13.860		
700.00	700.00	700.40	699.60	2.34	2.34	-90.33	-0.35	-59.98	59.98	55.30	4.68	12.816		
750.00	750.00	749.60	749.60	2.51	2.51	-90.33	-0.35	-59.98	59.98	54.95	5.03	11.929		
800.00	800.00	800.40	799.60	2.69	2.69	-90.33	-0.35	-59.98	59.98	54.60	5.38	11.144		
850.00	850.00	849.60	849.60	2.87	2.87	-90.33	-0.35	-59.98	59.98	54.25	5.73	10.464		
900.00	900.00	900.40	899.60	3.04	3.04	-90.33	-0.35	-59.98	59.98	53.89	6.09	9.852		
950.00	950.00	949.60	949.60	3.22	3.22	-90.33	-0.35	-59.98	59.98	53.54	6.44	9.314		
1,000.00	1,000.00	1,000.40	999.60	3.40	3.40	-90.33	-0.35	-59.98	59.98	53.18	6.80	8.825		
1,050.00	1,050.00	1,049.60	1,049.60	3.58	3.57	-90.33	-0.35	-59.98	59.98	52.83	7.15	8.391		
1,100.00	1,100.00	1,100.40	1,099.60	3.75	3.75	-90.33	-0.35	-59.98	59.98	52.47	7.51	7.990		
1,150.00	1,150.00	1,149.60	1,149.60	3.93	3.93	-90.33	-0.35	-59.98	59.98	52.12	7.86	7.632		
1,200.00	1,200.00	1,200.40	1,199.60	4.11	4.11	-90.33	-0.35	-59.98	59.98	51.76	8.22	7.299		
1,250.00	1,250.00	1,249.60	1,249.60	4.29	4.28	-90.33	-0.35	-59.98	59.98	51.41	8.57	6.998		
1,300.00	1,300.00	1,300.40	1,299.60	4.46	4.47	-90.33	-0.35	-59.98	59.98	51.05	8.93	6.717		
1,350.00	1,350.00	1,349.60	1,349.60	4.64	4.64	-90.33	-0.35	-59.98	59.98	50.70	9.28	6.461		
1,400.00	1,400.00	1,400.40	1,399.60	4.82	4.82	-90.33	-0.35	-59.98	59.98	50.34	9.64	6.220		
1,450.00	1,450.00	1,449.60	1,449.60	5.00	5.00	-90.33	-0.35	-59.98	59.98	49.98	10.00	6.000		
1,500.00	1,500.00	1,500.40	1,499.60	5.18	5.18	-90.33	-0.35	-59.98	59.98	49.63	10.36	5.792		
1,550.00	1,550.00	1,549.60	1,549.60	5.36	5.35	-90.33	-0.35	-59.98	59.98	49.27	10.71	5.601		
1,600.00	1,600.00	1,600.40	1,599.60	5.53	5.54	-90.33	-0.35	-59.98	59.98	48.91	11.07	5.419		
1,650.00	1,650.00	1,649.60	1,649.60	5.71	5.71	-90.33	-0.35	-59.98	59.98	48.56	11.42	5.251		
1,700.00	1,700.00	1,700.40	1,699.60	5.89	5.89	-90.33	-0.35	-59.98	59.98	48.20	11.78	5.090		
1,750.00	1,750.00	1,749.60	1,749.60	6.07	6.07	-90.33	-0.35	-59.98	59.98	47.84	12.14	4.942 Alert		
1,800.00	1,800.00	1,800.40	1,799.60	6.25	6.25	-90.33	-0.35	-59.98	59.98	47.48	12.50	4.799 Alert		
1,850.00	1,850.00	1,849.60	1,849.60	6.43	6.43	-90.33	-0.35	-59.98	59.98	47.13	12.85	4.667 Alert		
1,900.00	1,900.00	1,900.40	1,899.60	6.61	6.61	-90.33	-0.35	-59.98	59.98	46.77	13.21	4.540 Alert		
1,950.00	1,950.00	1,949.60	1,949.60	6.78	6.78	-90.33	-0.35	-59.98	59.98	46.41	13.57	4.421 Alert		
2,000.00	2,000.00	2,000.40	1,999.60	6.96	6.96	-90.33	-0.35	-59.98	59.98	46.05	13.93	4.306 Alert, CC		
2,050.00	2,050.00	2,049.60	2,049.60	7.14	7.14	171.29	-0.35	-59.98	60.20	45.92	14.28	4.216 Alert, ES		
2,100.00	2,099.99	2,100.41	2,099.59	7.31	7.32	171.39	-0.35	-59.98	60.84	46.21	14.63	4.158 Alert		
2,150.00	2,149.98	2,149.58	2,149.58	7.48	7.50	171.54	-0.35	-59.98	61.92	46.94	14.98	4.134 Alert		
2,200.00	2,199.96	2,200.44	2,199.56	7.65	7.68	171.74	-0.35	-59.98	63.43	48.10	15.33	4.138 Alert		
2,250.00	2,249.92	2,249.52	2,249.52	7.82	7.86	171.98	-0.35	-59.98	65.38	49.70	15.67	4.171 Alert		
2,300.00	2,299.86	2,300.54	2,299.46	7.99	8.04	172.26	-0.35	-59.98	67.75	51.73	16.03	4.227 Alert		
2,350.00	2,349.78	2,349.38	2,349.38	8.16	8.21	172.57	-0.35	-59.98	70.56	54.19	16.37	4.310 Alert		
2,400.00	2,399.68	2,400.72	2,399.28	8.34	8.40	172.89	-0.35	-59.98	73.81	57.08	16.73	4.412 Alert		
2,450.00	2,449.54	2,449.14	2,449.14	8.51	8.57	173.23	-0.35	-59.98	77.48	60.41	17.07	4.539 Alert		
2,500.00	2,499.37	2,501.03	2,498.97	8.68	8.76	173.56	-0.35	-59.98	81.60	64.17	17.43	4.682 Alert		
2,550.00	2,549.16	2,548.76	2,548.76	8.86	8.93	173.90	-0.35	-59.98	86.15	68.37	17.77	4.847 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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan 1		Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM															Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance									
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)					
2,600.00	2,598.91	2,601.49	2,598.51	9.03	9.12	174.23	-0.35	-59.98	91.11	72.97	18.13	5.024				
2,650.00	2,648.65	2,648.25	2,648.25	9.21	9.28	174.53	-0.35	-59.98	96.17	77.70	18.47	5.206				
2,700.00	2,698.39	2,702.01	2,697.99	9.39	9.48	174.81	-0.35	-59.98	101.23	82.40	18.84	5.374				
2,750.00	2,748.13	2,747.73	2,747.73	9.56	9.64	175.06	-0.35	-59.98	106.30	87.12	19.17	5.544				
2,800.00	2,797.87	2,798.36	2,798.36	9.74	9.81	175.25	-0.43	-59.79	111.18	91.65	19.52	5.695				
2,850.00	2,847.61	2,849.11	2,849.11	9.92	9.98	175.36	-0.67	-59.19	115.64	95.77	19.86	5.821				
2,900.00	2,897.35	2,899.94	2,899.93	10.10	10.15	175.40	-1.08	-58.16	119.68	99.47	20.21	5.923				
2,950.00	2,947.09	2,950.84	2,950.80	10.28	10.32	175.37	-1.67	-56.72	123.30	102.75	20.55	6.001				
3,000.00	2,996.83	3,001.79	3,001.71	10.46	10.50	175.27	-2.42	-54.85	126.50	105.61	20.89	6.056				
3,050.00	3,046.57	3,052.79	3,052.65	10.64	10.67	175.12	-3.35	-52.56	129.28	108.05	21.23	6.089				
3,100.00	3,096.31	3,103.83	3,103.61	10.82	10.84	174.90	-4.44	-49.85	131.64	110.07	21.57	6.102				
3,150.00	3,146.05	3,154.59	3,154.26	11.00	11.01	174.64	-5.69	-46.76	133.59	111.68	21.91	6.096				
3,200.00	3,195.79	3,204.56	3,204.11	11.18	11.19	174.38	-6.97	-43.60	135.44	113.18	22.26	6.085				
3,250.00	3,245.54	3,254.52	3,253.95	11.37	11.36	174.12	-8.24	-40.45	137.30	114.69	22.60	6.074				
3,300.00	3,295.28	3,304.48	3,303.80	11.55	11.53	173.86	-9.52	-37.29	139.15	116.20	22.95	6.063				
3,350.00	3,345.02	3,354.44	3,353.64	11.73	11.70	173.62	-10.79	-34.14	141.01	117.71	23.30	6.052				
3,400.00	3,394.76	3,404.40	3,403.49	11.92	11.87	173.38	-12.07	-30.98	142.87	119.23	23.65	6.042				
3,450.00	3,444.50	3,454.37	3,453.33	12.10	12.04	173.14	-13.34	-27.83	144.73	120.74	23.99	6.032				
3,500.00	3,494.24	3,504.33	3,503.18	12.28	12.22	172.92	-14.61	-24.67	146.60	122.26	24.34	6.022				
3,550.00	3,543.98	3,554.29	3,553.03	12.47	12.39	172.70	-15.89	-21.52	148.47	123.78	24.69	6.013				
3,600.00	3,593.72	3,604.25	3,602.87	12.65	12.56	172.48	-17.16	-18.37	150.34	125.30	25.04	6.004				
3,650.00	3,643.46	3,654.21	3,652.72	12.84	12.74	172.27	-18.44	-15.21	152.21	126.82	25.39	5.994				
3,700.00	3,693.20	3,704.17	3,702.56	13.02	12.91	172.06	-19.71	-12.06	154.08	128.34	25.74	5.986				
3,750.00	3,742.94	3,754.14	3,752.41	13.20	13.09	171.86	-20.99	-8.90	155.96	129.87	26.09	5.977				
3,800.00	3,792.68	3,804.10	3,802.26	13.39	13.26	171.67	-22.26	-5.75	157.84	131.39	26.44	5.969				
3,850.00	3,842.42	3,854.06	3,852.10	13.58	13.44	171.47	-23.54	-2.59	159.72	132.92	26.80	5.960				
3,900.00	3,892.16	3,904.02	3,901.95	13.76	13.61	171.29	-24.81	0.56	161.60	134.45	27.15	5.952				
3,950.00	3,941.90	3,953.98	3,951.79	13.95	13.79	171.10	-26.09	3.72	163.48	135.98	27.50	5.945				
4,000.00	3,991.65	4,003.95	4,001.64	14.13	13.96	170.93	-27.36	6.87	165.37	137.51	27.85	5.937				
4,050.00	4,041.39	4,053.91	4,051.49	14.32	14.14	170.75	-28.64	10.03	167.25	139.05	28.21	5.929				
4,100.00	4,091.13	4,103.87	4,101.33	14.50	14.32	170.58	-29.91	13.18	169.14	140.58	28.56	5.922				
4,150.00	4,140.87	4,153.83	4,151.18	14.69	14.49	170.41	-31.18	16.34	171.03	142.12	28.92	5.915				
4,200.00	4,190.61	4,203.79	4,201.02	14.88	14.67	170.25	-32.46	19.49	172.92	143.65	29.27	5.908				
4,250.00	4,240.35	4,253.76	4,250.87	15.06	14.85	170.09	-33.73	22.64	174.82	145.19	29.62	5.901				
4,300.00	4,290.09	4,303.72	4,300.71	15.25	15.03	169.93	-35.01	25.80	176.71	146.73	29.98	5.894				
4,350.00	4,339.83	4,353.68	4,350.56	15.44	15.20	169.78	-36.28	28.95	178.60	148.27	30.33	5.888				
4,400.00	4,389.57	4,403.64	4,400.41	15.63	15.38	169.63	-37.56	32.11	180.50	149.81	30.69	5.881				
4,450.00	4,439.31	4,453.60	4,450.25	15.81	15.56	169.49	-38.83	35.26	182.40	151.35	31.05	5.875				
4,500.00	4,489.05	4,503.56	4,500.10	16.00	15.74	169.34	-40.11	38.42	184.30	152.89	31.40	5.869				
4,550.00	4,538.79	4,553.53	4,549.94	16.19	15.91	169.20	-41.38	41.57	186.19	154.44	31.76	5.863				
4,600.00	4,588.53	4,603.49	4,599.79	16.38	16.09	169.06	-42.66	44.73	188.10	155.98	32.11	5.857				
4,650.00	4,638.27	4,653.45	4,649.64	16.56	16.27	168.93	-43.93	47.88	190.00	157.53	32.47	5.851				
4,700.00	4,688.01	4,703.41	4,699.48	16.75	16.45	168.80	-45.21	51.04	191.90	159.07	32.83	5.846				
4,750.00	4,737.76	4,753.37	4,749.33	16.94	16.63	168.67	-46.48	54.19	193.80	160.62	33.18	5.840				
4,800.00	4,787.50	4,803.34	4,799.17	17.13	16.81	168.54	-47.75	57.35	195.71	162.17	33.54	5.835				
4,850.00	4,837.24	4,853.30	4,849.02	17.32	16.99	168.41	-49.03	60.50	197.61	163.71	33.90	5.829				
4,900.00	4,886.98	4,903.26	4,898.86	17.50	17.17	168.29	-50.30	63.65	199.52	165.26	34.26	5.824				
4,950.00	4,936.72	4,953.22	4,948.71	17.69	17.35	168.17	-51.58	66.81	201.43	166.81	34.61	5.819				
5,000.00	4,986.46	5,003.18	4,998.56	17.88	17.53	168.05	-52.85	69.96	203.34	168.36	34.97	5.814				
5,050.00	5,036.20	5,053.14	5,048.40	18.07	17.70	167.94	-54.13	73.12	205.25	169.91	35.33	5.809				
5,100.00	5,085.94	5,103.11	5,098.25	18.26	17.88	167.82	-55.40	76.27	207.16	171.47	35.69	5.804				
5,150.00	5,135.68	5,153.07	5,148.09	18.45	18.06	167.71	-56.68	79.43	209.07	173.02	36.05	5.800				

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 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)				
5,200.00	5,185.42	5,203.03	5,197.94	18.64	18.24	167.60	-57.95	82.58	210.98	174.57	36.41	5.795		
5,250.00	5,235.16	5,252.99	5,247.79	18.83	18.42	167.50	-59.23	85.74	212.89	176.12	36.77	5.790		
5,300.00	5,284.90	5,302.95	5,297.63	19.01	18.60	167.39	-60.50	88.89	214.80	177.68	37.13	5.786		
5,350.00	5,334.64	5,352.92	5,347.48	19.20	18.78	167.29	-61.77	92.05	216.72	179.23	37.48	5.781		
5,400.00	5,384.38	5,402.88	5,397.32	19.39	18.97	167.18	-63.05	95.20	218.63	180.79	37.84	5.777		
5,450.00	5,434.12	5,452.84	5,447.17	19.58	19.15	167.08	-64.32	98.36	220.55	182.34	38.20	5.773		
5,500.00	5,483.87	5,502.80	5,497.01	19.77	19.33	166.99	-65.60	101.51	222.46	183.90	38.56	5.769		
5,550.00	5,533.61	5,552.76	5,546.86	19.96	19.51	166.89	-66.87	104.66	224.38	185.46	38.92	5.765		
5,600.00	5,583.35	5,602.72	5,596.71	20.15	19.69	166.79	-68.15	107.82	226.30	187.01	39.28	5.761		
5,650.00	5,633.09	5,652.69	5,646.55	20.34	19.87	166.70	-69.42	110.97	228.21	188.57	39.64	5.757		
5,700.00	5,682.83	5,702.65	5,696.40	20.53	20.05	166.61	-70.70	114.13	230.13	190.13	40.00	5.753		
5,750.00	5,732.57	5,752.61	5,746.24	20.72	20.23	166.52	-71.97	117.28	232.05	191.69	40.36	5.749		
5,800.00	5,782.31	5,802.57	5,796.09	20.91	20.41	166.43	-73.25	120.44	233.97	193.25	40.73	5.745		
5,850.00	5,832.05	5,852.53	5,845.94	21.10	20.59	166.34	-74.52	123.59	235.89	194.81	41.09	5.741		
5,900.00	5,881.79	5,902.50	5,895.78	21.29	20.77	166.26	-75.80	126.75	237.81	196.37	41.45	5.738		
5,950.00	5,931.53	5,952.46	5,945.63	21.48	20.96	166.17	-77.07	129.90	239.73	197.93	41.81	5.734		
6,000.00	5,981.27	6,002.42	5,995.47	21.67	21.14	166.09	-78.34	133.06	241.65	199.49	42.17	5.731		
6,050.00	6,031.01	6,052.38	6,045.32	21.86	21.32	166.01	-79.62	136.21	243.58	201.05	42.53	5.727		
6,100.00	6,080.75	6,102.34	6,095.17	22.05	21.50	165.93	-80.89	139.37	245.50	202.61	42.89	5.724		
6,150.00	6,130.49	6,152.30	6,145.01	22.24	21.68	165.85	-82.17	142.52	247.42	204.17	43.25	5.720		
6,200.00	6,180.24	6,202.27	6,194.86	22.43	21.86	165.77	-83.44	145.67	249.35	205.73	43.61	5.717		
6,250.00	6,229.98	6,252.23	6,244.70	22.62	22.04	165.69	-84.72	148.83	251.27	207.29	43.98	5.714		
6,300.00	6,279.72	6,302.19	6,294.55	22.81	22.23	165.61	-85.99	151.98	253.19	208.86	44.34	5.711		
6,350.00	6,329.46	6,352.15	6,344.39	23.00	22.41	165.54	-87.27	155.14	255.12	210.42	44.70	5.707		
6,400.00	6,379.20	6,402.11	6,394.24	23.19	22.59	165.47	-88.54	158.29	257.04	211.98	45.06	5.704		
6,450.00	6,428.94	6,452.08	6,444.09	23.38	22.77	165.39	-89.82	161.45	258.97	213.55	45.42	5.701		
6,500.00	6,478.68	6,502.04	6,493.93	23.57	22.95	165.32	-91.09	164.60	260.90	215.11	45.78	5.698		
6,550.00	6,528.42	6,552.00	6,543.78	23.76	23.14	165.25	-92.36	167.76	262.82	216.68	46.15	5.695		
6,600.00	6,578.16	6,601.96	6,593.62	23.95	23.32	165.18	-93.64	170.91	264.75	218.24	46.51	5.692		
6,650.00	6,627.90	6,651.92	6,643.47	24.14	23.50	165.11	-94.91	174.07	266.68	219.81	46.87	5.690		
6,700.00	6,677.64	6,701.89	6,693.32	24.33	23.68	165.05	-96.19	177.22	268.61	221.37	47.23	5.687		
6,750.00	6,727.38	6,751.85	6,743.16	24.52	23.86	164.98	-97.46	180.38	270.53	222.94	47.60	5.684		
6,800.00	6,777.12	6,801.81	6,793.01	24.71	24.05	164.91	-98.74	183.53	272.46	224.50	47.96	5.681		
6,850.00	6,826.86	6,851.77	6,842.85	24.90	24.23	164.85	-100.01	186.68	274.39	226.07	48.32	5.678		
6,900.00	6,876.60	6,901.73	6,892.70	25.09	24.41	164.79	-101.29	189.84	276.32	227.63	48.68	5.676		
6,950.00	6,926.35	6,951.69	6,942.54	25.28	24.59	164.72	-102.56	192.99	278.25	229.20	49.05	5.673		
7,000.00	6,976.09	7,001.66	6,992.39	25.47	24.78	164.66	-103.84	196.15	280.18	230.77	49.41	5.670		
7,050.00	7,025.83	7,051.62	7,042.24	25.66	24.96	164.60	-105.11	199.30	282.11	232.34	49.77	5.668		
7,100.00	7,075.57	7,101.58	7,092.08	25.85	25.14	164.54	-106.39	202.46	284.04	233.90	50.14	5.665		
7,150.00	7,125.31	7,151.54	7,141.93	26.05	25.32	164.48	-107.66	205.61	285.97	235.47	50.50	5.663		
7,200.00	7,175.05	7,201.50	7,191.77	26.24	25.51	164.42	-108.93	208.77	287.90	237.04	50.86	5.660		
7,250.00	7,224.79	7,251.47	7,241.62	26.43	25.69	164.36	-110.21	211.92	289.83	238.61	51.23	5.658		
7,300.00	7,274.53	7,301.43	7,291.47	26.62	25.87	164.31	-111.48	215.08	291.76	240.18	51.59	5.656		
7,350.00	7,324.27	7,351.39	7,341.31	26.81	26.05	164.25	-112.76	218.23	293.70	241.74	51.95	5.653		
7,400.00	7,374.01	7,401.35	7,391.16	27.00	26.24	164.20	-114.03	221.39	295.63	243.31	52.32	5.651		
7,450.00	7,423.75	7,451.31	7,441.00	27.19	26.42	164.14	-115.31	224.54	297.56	244.88	52.68	5.649		
7,500.00	7,473.49	7,501.27	7,490.85	27.38	26.60	164.09	-116.58	227.69	299.49	246.45	53.04	5.646		
7,550.00	7,523.23	7,551.24	7,540.69	27.57	26.79	164.03	-117.86	230.85	301.43	248.02	53.41	5.644		
7,600.00	7,572.97	7,601.20	7,590.54	27.76	26.97	163.98	-119.13	234.00	303.36	249.59	53.77	5.642		
7,650.00	7,622.71	7,651.16	7,640.39	27.95	27.15	163.93	-120.41	237.16	305.29	251.16	54.13	5.640		
7,700.00	7,672.46	7,701.12	7,690.23	28.15	27.34	163.88	-121.68	240.31	307.23	252.73	54.50	5.638		
7,750.00	7,722.20	7,751.08	7,740.08	28.34	27.52	163.83	-122.96	243.47	309.16	254.30	54.86	5.635		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Highside 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)						
7,800.00	7,771.94	7,801.05	7,789.92	28.53	27.70	163.78	-124.23	246.62	311.09	255.87	55.22	5.633				
7,850.00	7,821.68	7,851.01	7,839.77	28.72	27.88	163.73	-125.50	249.78	313.03	257.44	55.59	5.631				
7,900.00	7,871.42	7,900.97	7,889.62	28.91	28.07	163.68	-126.78	252.93	314.96	259.01	55.95	5.629				
7,950.00	7,921.16	7,950.93	7,939.46	29.10	28.25	163.63	-128.05	256.09	316.90	260.58	56.32	5.627				
8,000.00	7,970.90	8,000.89	7,989.31	29.29	28.43	163.58	-129.33	259.24	318.83	262.15	56.68	5.625				
8,050.00	8,020.64	8,050.85	8,039.15	29.48	28.62	163.53	-130.60	262.40	320.77	263.72	57.04	5.623				
8,100.00	8,070.38	8,100.82	8,089.00	29.67	28.80	163.49	-131.88	265.55	322.70	265.30	57.41	5.621				
8,150.00	8,120.12	8,150.78	8,138.85	29.87	28.98	163.44	-133.15	268.70	324.64	266.87	57.77	5.619				
8,200.00	8,169.86	8,200.74	8,188.69	30.06	29.17	163.40	-134.43	271.86	326.58	268.44	58.14	5.617				
8,250.00	8,219.60	8,250.70	8,238.54	30.25	29.35	163.35	-135.70	275.01	328.51	270.01	58.50	5.615				
8,300.00	8,269.34	8,300.66	8,288.38	30.44	29.53	163.31	-136.98	278.17	330.45	271.58	58.87	5.614				
8,350.00	8,319.08	8,350.63	8,338.23	30.63	29.72	163.26	-138.25	281.32	332.39	273.16	59.23	5.612				
8,400.00	8,368.82	8,400.59	8,388.07	30.82	29.90	163.22	-139.52	284.48	334.32	274.73	59.59	5.610				
8,450.00	8,418.57	8,450.55	8,437.92	31.01	30.08	163.18	-140.80	287.63	336.26	276.30	59.96	5.608				
8,500.00	8,468.31	8,500.51	8,487.77	31.20	30.27	163.13	-142.07	290.79	338.20	277.87	60.32	5.606				
8,550.00	8,518.05	8,550.47	8,537.61	31.40	30.45	163.09	-143.35	293.94	340.13	279.45	60.69	5.605				
8,600.00	8,567.79	8,600.43	8,587.46	31.59	30.63	163.05	-144.62	297.10	342.07	281.02	61.05	5.603				
8,650.00	8,617.53	8,650.40	8,637.30	31.78	30.82	163.01	-145.90	300.25	344.01	282.59	61.42	5.601				
8,700.00	8,667.27	8,700.36	8,687.15	31.97	31.00	162.97	-147.17	303.41	345.95	284.17	61.78	5.599				
8,750.00	8,717.01	8,750.32	8,737.00	32.16	31.18	162.93	-148.45	306.56	347.89	285.74	62.15	5.598				
8,800.00	8,766.75	8,800.28	8,786.84	32.35	31.37	162.89	-149.72	309.71	349.82	287.31	62.51	5.596				
8,850.00	8,816.49	8,850.24	8,836.69	32.54	31.55	162.85	-151.00	312.87	351.76	288.89	62.88	5.595				
8,900.00	8,866.23	8,900.21	8,886.53	32.74	31.74	162.81	-152.27	316.02	353.70	290.46	63.24	5.593				
8,950.00	8,915.97	8,950.17	8,936.38	32.93	31.92	162.77	-153.55	319.18	355.64	292.03	63.61	5.591				
9,000.00	8,965.71	9,000.13	8,986.22	33.12	32.10	162.73	-154.82	322.33	357.58	293.61	63.97	5.590				
9,050.00	9,015.45	9,050.09	9,036.07	33.31	32.29	162.70	-156.09	325.49	359.52	295.18	64.34	5.588				
9,100.00	9,065.19	9,100.05	9,085.92	33.50	32.47	162.66	-157.37	328.64	361.46	296.76	64.70	5.587				
9,150.00	9,114.93	9,150.02	9,135.76	33.69	32.65	162.62	-158.64	331.80	363.40	298.33	65.07	5.585				
9,200.00	9,164.68	9,200.02	9,185.61	33.89	32.84	162.59	-159.92	334.95	365.34	299.90	65.43	5.584				
9,250.00	9,214.42	9,249.94	9,235.45	34.08	33.02	162.55	-161.19	338.11	367.27	301.48	65.80	5.582				
9,300.00	9,264.16	9,300.10	9,285.30	34.27	33.21	162.51	-162.47	341.26	369.21	303.05	66.16	5.581				
9,350.00	9,313.90	9,349.86	9,335.15	34.46	33.39	162.48	-163.74	344.42	371.15	304.63	66.53	5.579				
9,400.00	9,363.64	9,400.18	9,384.99	34.65	33.57	162.44	-165.02	347.57	373.09	306.20	66.89	5.578				
9,450.00	9,413.38	9,449.79	9,434.84	34.84	33.76	162.41	-166.29	350.72	375.03	307.78	67.26	5.576				
9,500.00	9,463.12	9,499.75	9,484.68	35.03	33.94	162.38	-167.57	353.88	376.98	309.35	67.62	5.575				
9,550.00	9,512.86	9,549.71	9,534.53	35.23	34.12	162.34	-168.84	357.03	378.92	310.93	67.99	5.573				
9,600.00	9,562.60	9,600.33	9,584.37	35.42	34.31	162.31	-170.11	360.19	380.86	312.50	68.35	5.572				
9,650.00	9,612.34	9,649.63	9,634.22	35.61	34.49	162.28	-171.39	363.34	382.80	314.08	68.72	5.571				
9,700.00	9,662.08	9,700.41	9,684.07	35.80	34.68	162.24	-172.66	366.50	384.74	315.65	69.09	5.569				
9,750.00	9,711.82	9,749.56	9,733.91	35.99	34.86	162.21	-173.94	369.65	386.68	317.23	69.45	5.568				
9,800.00	9,761.56	9,800.48	9,783.76	36.18	35.05	162.18	-175.21	372.81	388.62	318.80	69.82	5.566				
9,850.00	9,811.30	9,849.48	9,833.60	36.38	35.23	162.15	-176.49	375.96	390.56	320.38	70.18	5.565				
9,900.00	9,861.04	9,900.56	9,883.45	36.57	35.42	162.11	-177.76	379.12	392.50	321.95	70.55	5.564				
9,950.00	9,910.79	9,949.40	9,933.30	36.76	35.60	162.08	-179.04	382.27	394.44	323.53	70.91	5.563				
10,000.00	9,960.53	9,999.37	9,983.14	36.95	35.78	162.05	-180.31	385.42	396.39	325.11	71.28	5.561				
10,050.00	10,010.27	10,049.33	10,032.99	37.14	35.96	162.02	-181.59	388.58	398.33	326.69	71.64	5.560				
10,100.00	10,060.01	10,100.71	10,082.83	37.33	36.15	161.99	-182.86	391.73	400.27	328.26	72.01	5.558				
10,150.00	10,109.75	10,149.25	10,132.68	37.53	36.33	161.96	-184.14	394.89	402.21	329.84	72.37	5.558				
10,200.00	10,159.49	10,200.79	10,182.52	37.72	36.52	161.93	-185.41	398.04	404.15	331.41	72.74	5.556				
10,250.00	10,209.23	10,249.18	10,232.37	37.91	36.70	161.90	-186.68	401.20	406.09	332.99	73.10	5.555				
10,300.00	10,258.97	10,300.86	10,282.22	38.10	36.89	161.87	-187.96	404.35	408.04	334.56	73.47	5.553				
10,350.00	10,308.71	10,349.10	10,332.06	38.29	37.07	161.84	-189.23	407.51	409.98	336.14	73.83	5.553				

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis		Highside Toolface	Offset Wellbore Centre		Distance		Minimum Separation	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)				
10,400.00	10,358.45	10,399.06	10,381.91	38.49	37.25	161.82	-190.51	410.66	411.92	337.72	74.20	5.552		
10,450.00	10,408.19	10,448.02	10,431.75	38.68	37.44	161.79	-191.78	413.82	413.86	339.30	74.57	5.550		
10,500.00	10,457.93	10,498.98	10,481.60	38.87	37.62	161.76	-193.06	416.97	415.81	340.88	74.93	5.549		
10,550.00	10,507.67	10,548.95	10,531.45	39.06	37.81	161.73	-194.33	420.13	417.75	342.45	75.30	5.548		
10,600.00	10,557.41	10,598.91	10,581.29	39.25	37.99	161.70	-195.61	423.28	419.69	344.03	75.66	5.547		
10,650.00	10,607.16	10,648.87	10,631.14	39.44	38.17	161.68	-196.88	426.43	421.64	345.61	76.03	5.546		
10,700.00	10,656.90	10,695.03	10,677.20	39.64	38.34	161.67	-197.98	429.15	423.78	347.40	76.38	5.548		
10,750.00	10,706.64	10,740.65	10,722.76	39.83	38.51	161.70	-198.86	431.33	426.42	349.70	76.72	5.558		
10,800.00	10,756.38	10,786.21	10,768.28	40.02	38.67	161.76	-199.54	433.01	429.57	352.52	77.05	5.575		
10,850.00	10,806.12	10,831.70	10,813.75	40.21	38.84	161.87	-200.01	434.18	433.22	355.85	77.38	5.599		
10,900.00	10,855.90	10,877.13	10,859.19	40.40	39.00	162.01	-200.28	434.85	436.98	359.29	77.69	5.624		
10,950.00	10,905.74	10,923.29	10,905.34	40.59	39.16	162.16	-200.35	435.02	440.62	362.61	78.01	5.648		
11,000.00	10,955.63	10,973.17	10,955.23	40.77	39.33	162.31	-200.35	435.02	443.82	365.46	78.36	5.664		
11,050.00	11,005.55	11,023.10	11,005.15	40.95	39.50	162.43	-200.35	435.02	446.39	367.69	78.70	5.672		
11,100.00	11,055.51	11,073.06	11,055.11	41.13	39.66	162.52	-200.35	435.02	448.35	369.30	79.05	5.672		
11,150.00	11,105.49	11,123.04	11,105.09	41.31	39.83	162.58	-200.35	435.02	449.68	370.28	79.39	5.664		
11,200.00	11,155.48	11,173.03	11,155.08	41.48	40.00	162.61	-200.35	435.02	450.38	370.64	79.74	5.648		
11,250.00	11,205.48	11,223.03	11,205.08	41.65	40.17	-98.98	-200.35	435.02	450.51	370.42	80.08	5.626		
11,300.00	11,255.48	11,274.11	11,256.16	41.82	40.35	-98.97	-200.28	435.02	450.50	370.07	80.43	5.601		
11,350.00	11,305.48	11,330.50	11,312.41	41.98	40.53	-98.51	-196.61	435.00	450.02	369.21	80.81	5.569		
11,400.00	11,355.48	11,385.66	11,366.82	42.15	40.71	-97.39	-187.69	434.94	448.94	367.79	81.15	5.532		
11,450.00	11,405.48	11,438.64	11,418.04	42.31	40.87	-95.68	-174.24	434.86	447.52	366.08	81.44	5.495		
11,500.00	11,455.48	11,488.73	11,465.14	42.48	41.02	-93.50	-157.22	434.75	446.20	364.50	81.70	5.461		
11,550.00	11,505.48	11,535.46	11,507.58	42.64	41.14	-90.99	-137.69	434.63	445.45	363.54	81.91	5.438		
11,557.89	11,513.37	11,542.52	11,513.85	42.67	41.16	-112.08	-134.44	434.61	445.42	363.49	81.94	5.436		
11,600.00	11,555.48	11,578.75	11,545.36	42.81	41.25	-109.76	-116.56	434.49	445.92	363.86	82.05	5.434		
11,650.00	11,605.31	11,620.11	11,579.85	42.98	41.35	-106.87	-93.78	434.35	449.05	366.93	82.12	5.468		
11,700.00	11,654.59	11,660.08	11,611.56	43.15	41.43	-103.87	-69.44	434.20	455.05	372.95	82.10	5.542		
11,750.00	11,702.92	11,698.83	11,640.60	43.32	41.50	-100.80	-43.80	434.04	463.68	381.70	81.99	5.656		
11,800.00	11,749.92	11,736.48	11,667.09	43.48	41.56	-97.68	-17.06	433.87	474.68	392.90	81.78	5.805		
11,850.00	11,795.20	11,773.16	11,691.16	43.64	41.62	-94.56	10.61	433.70	487.74	406.25	81.49	5.985		
11,900.00	11,838.39	11,808.96	11,712.89	43.79	41.66	-91.46	39.04	433.52	502.56	421.40	81.16	6.192		
11,950.00	11,879.15	11,843.98	11,732.40	43.94	41.70	-88.42	68.13	433.34	518.81	438.01	80.80	6.421		
12,000.00	11,917.16	11,878.32	11,749.77	44.08	41.73	-85.47	97.75	433.15	536.20	455.76	80.44	6.666		
12,050.00	11,952.13	11,912.10	11,765.09	44.21	41.76	-81.81	127.84	432.96	554.27	474.16	80.11	6.919		
12,100.00	11,984.13	11,945.70	11,778.54	44.33	41.79	-77.63	158.62	432.77	571.31	491.52	79.80	7.160		
12,150.00	12,012.94	11,979.21	11,790.14	44.43	41.82	-74.16	190.06	432.57	586.84	507.34	79.50	7.382		
12,200.00	12,038.36	12,012.65	11,799.87	44.53	41.86	-71.28	222.05	432.37	600.73	521.50	79.23	7.582		
12,250.00	12,060.16	12,050.00	11,808.50	44.62	41.94	-68.87	258.38	432.14	612.91	533.88	79.04	7.755		
12,300.00	12,078.18	12,079.35	11,813.61	44.70	42.00	-67.01	287.28	431.96	623.25	544.46	78.79	7.911		
12,350.00	12,092.27	12,112.61	11,817.61	44.77	42.07	-65.50	320.29	431.75	631.73	553.10	78.63	8.035		
12,400.00	12,102.32	12,150.00	11,819.80	44.85	42.16	-64.33	357.61	431.52	638.29	559.77	78.53	8.128		
12,450.00	12,108.24	12,185.92	11,820.00	44.93	42.24	-63.56	393.53	431.29	642.74	564.26	78.47	8.191		
12,500.00	12,110.00	12,235.87	11,820.00	45.01	42.37	-63.28	443.48	430.98	644.13	565.54	78.59	8.196		
12,550.00	12,110.00	12,285.87	11,820.00	45.10	42.51	-63.28	493.47	430.67	644.12	565.35	78.77	8.177		
12,600.00	12,110.00	12,335.87	11,820.00	45.20	42.66	-63.28	543.47	430.35	644.11	565.15	78.97	8.157		
12,650.00	12,110.00	12,385.87	11,820.00	45.32	42.81	-63.28	593.47	430.04	644.10	564.91	79.19	8.133		
12,700.00	12,110.00	12,435.87	11,820.00	45.44	42.99	-63.28	643.47	429.73	644.09	564.66	79.44	8.108		
12,750.00	12,110.00	12,485.87	11,820.00	45.58	43.17	-63.28	693.47	429.41	644.09	564.38	79.71	8.081		
12,800.00	12,110.00	12,535.87	11,820.00	45.73	43.36	-63.28	743.47	429.10	644.08	564.08	79.99	8.052		
12,850.00	12,110.00	12,585.87	11,820.00	45.90	43.56	-63.28	793.47	428.79	644.07	563.76	80.31	8.020		
12,900.00	12,110.00	12,635.87	11,820.00	46.07	43.78	-63.28	843.47	428.47	644.06	563.42	80.64	7.987		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
12,950.00	12,110.00	12,685.87	11,820.00	46.26	44.00	-63.28	893.47	428.16	644.05	563.06	80.99	7.952		
13,000.00	12,110.00	12,735.87	11,820.00	46.46	44.24	-63.28	943.47	427.84	644.04	562.68	81.37	7.915		
13,050.00	12,110.00	12,785.87	11,820.00	46.68	44.49	-63.28	993.47	427.53	644.04	562.27	81.76	7.877		
13,100.00	12,110.00	12,835.87	11,820.00	46.90	44.74	-63.28	1,043.46	427.22	644.03	561.85	82.18	7.837		
13,150.00	12,110.00	12,885.87	11,820.00	47.13	45.01	-63.28	1,093.46	426.90	644.02	561.41	82.61	7.795		
13,200.00	12,110.00	12,935.87	11,820.00	47.37	45.29	-63.28	1,143.46	426.59	644.01	560.94	83.07	7.753		
13,250.00	12,110.00	12,985.87	11,820.00	47.63	45.57	-63.28	1,193.46	426.28	644.00	560.46	83.54	7.709		
13,300.00	12,110.00	13,035.87	11,820.00	47.89	45.87	-63.28	1,243.46	425.96	644.00	559.96	84.03	7.663		
13,350.00	12,110.00	13,085.87	11,820.00	48.17	46.17	-63.28	1,293.46	425.65	643.99	559.44	84.55	7.617		
13,400.00	12,110.00	13,135.87	11,820.00	48.45	46.49	-63.28	1,343.46	425.34	643.98	558.90	85.08	7.569		
13,450.00	12,110.00	13,185.87	11,820.00	48.74	46.81	-63.27	1,393.46	425.02	643.97	558.34	85.63	7.521		
13,500.00	12,110.00	13,235.87	11,820.00	49.04	47.14	-63.27	1,443.46	424.71	643.96	557.77	86.19	7.471		
13,550.00	12,110.00	13,285.87	11,820.00	49.36	47.48	-63.27	1,493.46	424.39	643.95	557.18	86.78	7.421		
13,600.00	12,110.00	13,335.87	11,820.00	49.67	47.83	-63.27	1,543.45	424.08	643.95	556.57	87.37	7.370		
13,650.00	12,110.00	13,385.87	11,820.00	50.01	48.19	-63.27	1,593.45	423.77	643.94	555.95	87.99	7.318		
13,700.00	12,110.00	13,435.87	11,820.00	50.34	48.56	-63.27	1,643.45	423.45	643.93	555.31	88.62	7.266		
13,750.00	12,110.00	13,485.87	11,820.00	50.69	48.93	-63.27	1,693.45	423.14	643.92	554.65	89.27	7.213		
13,800.00	12,110.00	13,535.87	11,820.00	51.04	49.31	-63.27	1,743.45	422.83	643.91	553.98	89.93	7.160		
13,850.00	12,110.00	13,585.87	11,820.00	51.40	49.70	-63.27	1,793.45	422.51	643.90	553.29	90.62	7.106		
13,900.00	12,110.00	13,635.87	11,820.00	51.77	50.10	-63.27	1,843.45	422.20	643.90	552.59	91.31	7.052		
13,950.00	12,110.00	13,685.87	11,820.00	52.15	50.50	-63.27	1,893.45	421.89	643.89	551.87	92.02	6.997		
14,000.00	12,110.00	13,735.87	11,820.00	52.53	50.92	-63.27	1,943.45	421.57	643.88	551.14	92.74	6.943		
14,050.00	12,110.00	13,785.87	11,820.00	52.93	51.33	-63.27	1,993.45	421.26	643.87	550.39	93.48	6.888		
14,100.00	12,110.00	13,835.87	11,820.00	53.32	51.76	-63.27	2,043.44	420.94	643.86	549.64	94.23	6.833		
14,150.00	12,110.00	13,885.87	11,820.00	53.73	52.19	-63.27	2,093.44	420.63	643.85	548.86	94.99	6.778		
14,200.00	12,110.00	13,935.87	11,820.00	54.14	52.63	-63.27	2,143.44	420.32	643.85	548.08	95.77	6.723		
14,250.00	12,110.00	13,985.87	11,820.00	54.57	53.08	-63.27	2,193.44	420.00	643.84	547.28	96.56	6.668		
14,300.00	12,110.00	14,035.87	11,820.00	54.99	53.53	-63.27	2,243.44	419.69	643.83	546.47	97.36	6.613		
14,350.00	12,110.00	14,085.87	11,820.00	55.42	53.99	-63.27	2,293.44	419.38	643.82	545.65	98.17	6.558		
14,400.00	12,110.00	14,135.87	11,820.00	55.86	54.45	-63.27	2,343.44	419.06	643.81	544.82	98.99	6.504		
14,450.00	12,110.00	14,185.87	11,820.00	56.31	54.92	-63.27	2,393.44	418.75	643.81	543.97	99.83	6.449		
14,500.00	12,110.00	14,235.87	11,820.00	56.76	55.39	-63.27	2,443.44	418.44	643.80	543.12	100.68	6.395		
14,550.00	12,110.00	14,285.87	11,820.00	57.21	55.87	-63.27	2,493.44	418.12	643.79	542.25	101.54	6.340		
14,600.00	12,110.00	14,335.87	11,820.00	57.67	56.36	-63.27	2,543.43	417.81	643.78	541.38	102.40	6.287		
14,650.00	12,110.00	14,385.87	11,820.00	58.14	56.85	-63.27	2,593.43	417.49	643.77	540.49	103.28	6.233		
14,700.00	12,110.00	14,435.87	11,820.00	58.61	57.34	-63.27	2,643.43	417.18	643.76	539.59	104.17	6.180		
14,750.00	12,110.00	14,485.87	11,820.00	59.09	57.84	-63.27	2,693.43	416.87	643.76	538.68	105.07	6.127		
14,800.00	12,110.00	14,535.87	11,820.00	59.57	58.35	-63.26	2,743.43	416.55	643.75	537.77	105.98	6.074		
14,850.00	12,110.00	14,585.87	11,820.00	60.06	58.86	-63.26	2,793.43	416.24	643.74	536.84	106.90	6.022		
14,900.00	12,110.00	14,635.87	11,820.00	60.56	59.37	-63.26	2,843.43	415.93	643.73	535.91	107.82	5.970		
14,950.00	12,110.00	14,685.87	11,820.00	61.06	59.89	-63.26	2,893.43	415.61	643.72	534.96	108.76	5.919		
15,000.00	12,110.00	14,735.87	11,820.00	61.56	60.42	-63.26	2,943.43	415.30	643.71	534.01	109.70	5.868		
15,050.00	12,110.00	14,785.87	11,820.00	62.06	60.94	-63.26	2,993.43	414.99	643.71	533.05	110.66	5.817		
15,100.00	12,110.00	14,835.87	11,820.00	62.57	61.48	-63.26	3,043.42	414.67	643.70	532.08	111.62	5.767		
15,150.00	12,110.00	14,885.87	11,820.00	63.09	62.01	-63.26	3,093.42	414.36	643.69	531.10	112.59	5.717		
15,200.00	12,110.00	14,935.87	11,820.00	63.61	62.55	-63.26	3,143.42	414.04	643.68	530.12	113.56	5.668		
15,250.00	12,110.00	14,985.87	11,820.00	64.13	63.09	-63.26	3,193.42	413.73	643.67	529.13	114.55	5.619		
15,300.00	12,110.00	15,035.87	11,820.00	64.66	63.64	-63.26	3,243.42	413.42	643.66	528.13	115.54	5.571		
15,350.00	12,110.00	15,085.87	11,820.00	65.19	64.19	-63.26	3,293.42	413.10	643.66	527.12	116.54	5.523		
15,400.00	12,110.00	15,135.87	11,820.00	65.73	64.74	-63.26	3,343.42	412.79	643.65	526.11	117.54	5.476		
15,450.00	12,110.00	15,185.87	11,820.00	66.27	65.30	-63.26	3,393.42	412.48	643.64	525.09	118.55	5.429		
15,500.00	12,110.00	15,235.87	11,820.00	66.81	65.86	-63.26	3,443.42	412.16	643.63	524.06	119.57	5.383		

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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
15,550.00	12,110.00	15,285.87	11,820.00	67.36	66.43	-63.26	3,493.42	411.85	643.62	523.03	120.60	5.337		
15,600.00	12,110.00	15,335.87	11,820.00	67.90	66.99	-63.26	3,543.41	411.54	643.62	521.99	121.63	5.292		
15,650.00	12,110.00	15,385.87	11,820.00	68.46	67.56	-63.26	3,593.41	411.22	643.61	520.94	122.67	5.247		
15,700.00	12,110.00	15,435.87	11,820.00	69.01	68.14	-63.26	3,643.41	410.91	643.60	519.89	123.71	5.203		
15,750.00	12,110.00	15,485.87	11,820.00	69.57	68.71	-63.26	3,693.41	410.59	643.59	518.83	124.76	5.159		
15,800.00	12,110.00	15,535.87	11,820.00	70.13	69.29	-63.26	3,743.41	410.28	643.58	517.77	125.81	5.115		
15,850.00	12,110.00	15,585.87	11,820.00	70.70	69.88	-63.26	3,793.41	409.97	643.57	516.70	126.88	5.073		
15,900.00	12,110.00	15,635.87	11,820.00	71.27	70.46	-63.26	3,843.41	409.65	643.57	515.63	127.94	5.030		
15,950.00	12,110.00	15,685.87	11,820.00	71.84	71.05	-63.26	3,893.41	409.34	643.56	514.54	129.01	4.988	Alert	
16,000.00	12,110.00	15,735.87	11,820.00	72.41	71.64	-63.26	3,943.41	409.03	643.55	513.46	130.09	4.947	Alert	
16,050.00	12,110.00	15,785.87	11,820.00	72.99	72.23	-63.26	3,993.41	408.71	643.54	512.37	131.17	4.906	Alert	
16,100.00	12,110.00	15,835.87	11,820.00	73.57	72.83	-63.26	4,043.41	408.40	643.53	511.28	132.26	4.866	Alert	
16,150.00	12,110.00	15,885.87	11,820.00	74.15	73.42	-63.25	4,093.40	408.09	643.52	510.18	133.35	4.826	Alert	
16,200.00	12,110.00	15,935.87	11,820.00	74.74	74.02	-63.25	4,143.40	407.77	643.52	509.07	134.44	4.787	Alert	
16,250.00	12,110.00	15,985.87	11,820.00	75.33	74.62	-63.25	4,193.40	407.46	643.51	507.96	135.55	4.748	Alert	
16,300.00	12,110.00	16,035.87	11,820.00	75.91	75.23	-63.25	4,243.40	407.14	643.50	506.85	136.65	4.709	Alert	
16,350.00	12,110.00	16,085.87	11,820.00	76.51	75.83	-63.25	4,293.40	406.83	643.49	505.73	137.76	4.671	Alert	
16,400.00	12,110.00	16,135.87	11,820.00	77.10	76.44	-63.25	4,343.40	406.52	643.48	504.61	138.87	4.634	Alert	
16,450.00	12,110.00	16,185.87	11,820.00	77.70	77.05	-63.25	4,393.40	406.20	643.48	503.48	139.99	4.597	Alert	
16,500.00	12,110.00	16,235.87	11,820.00	78.30	77.67	-63.25	4,443.40	405.89	643.47	502.36	141.11	4.560	Alert	
16,550.00	12,110.00	16,285.87	11,820.00	78.90	78.28	-63.25	4,493.40	405.58	643.46	501.22	142.24	4.524	Alert	
16,600.00	12,110.00	16,335.87	11,820.00	79.50	78.90	-63.25	4,543.40	405.26	643.45	500.08	143.37	4.488	Alert	
16,650.00	12,110.00	16,385.87	11,820.00	80.11	79.52	-63.25	4,593.39	404.95	643.44	498.94	144.50	4.453	Alert	
16,700.00	12,110.00	16,435.87	11,820.00	80.71	80.14	-63.25	4,643.39	404.64	643.43	497.80	145.64	4.418	Alert	
16,750.00	12,110.00	16,485.87	11,820.00	81.32	80.76	-63.25	4,693.39	404.32	643.43	496.65	146.78	4.384	Alert	
16,800.00	12,110.00	16,535.87	11,820.00	81.94	81.38	-63.25	4,743.39	404.01	643.42	495.50	147.92	4.350	Alert	
16,850.00	12,110.00	16,585.87	11,820.00	82.55	82.01	-63.25	4,793.39	403.69	643.41	494.34	149.07	4.316	Alert	
16,900.00	12,110.00	16,635.87	11,820.00	83.16	82.64	-63.25	4,843.39	403.38	643.40	493.18	150.22	4.283	Alert	
16,950.00	12,110.00	16,685.87	11,820.00	83.78	83.26	-63.25	4,893.39	403.07	643.39	492.02	151.37	4.250	Alert	
17,000.00	12,110.00	16,735.87	11,820.00	84.40	83.90	-63.25	4,943.39	402.75	643.38	490.85	152.53	4.218	Alert	
17,050.00	12,110.00	16,785.87	11,820.00	85.02	84.53	-63.25	4,993.39	402.44	643.38	489.69	153.69	4.186	Alert	
17,100.00	12,110.00	16,835.87	11,820.00	85.64	85.16	-63.25	5,043.39	402.13	643.37	488.51	154.85	4.155	Alert	
17,150.00	12,110.00	16,885.87	11,820.00	86.27	85.80	-63.25	5,093.38	401.81	643.36	487.34	156.02	4.124	Alert	
17,200.00	12,110.00	16,935.87	11,820.00	86.89	86.43	-63.25	5,143.38	401.50	643.35	486.16	157.19	4.093	Alert	
17,250.00	12,110.00	16,985.87	11,820.00	87.52	87.07	-63.25	5,193.38	401.19	643.34	484.98	158.36	4.063	Alert	
17,300.00	12,110.00	17,035.87	11,820.00	88.15	87.71	-63.25	5,243.38	400.87	643.33	483.80	159.54	4.033	Alert	
17,350.00	12,110.00	17,085.87	11,820.00	88.78	88.35	-63.25	5,293.38	400.56	643.33	482.61	160.71	4.003	Alert	
17,400.00	12,110.00	17,135.87	11,820.00	89.41	88.99	-63.25	5,343.38	400.24	643.32	481.43	161.89	3.974	Alert	
17,450.00	12,110.00	17,185.87	11,820.00	90.04	89.64	-63.25	5,393.38	399.93	643.31	480.23	163.08	3.945	Alert	
17,500.00	12,110.00	17,235.87	11,820.00	90.68	90.28	-63.24	5,443.38	399.62	643.30	479.04	164.26	3.916	Alert	
17,550.00	12,110.00	17,285.87	11,820.00	91.31	90.93	-63.24	5,493.38	399.30	643.29	477.84	165.45	3.888	Alert	
17,600.00	12,110.00	17,335.87	11,820.00	91.95	91.58	-63.24	5,543.38	398.99	643.29	476.65	166.64	3.860	Alert	
17,650.00	12,110.00	17,385.87	11,820.00	92.59	92.23	-63.24	5,593.37	398.68	643.28	475.45	167.83	3.833	Alert	
17,700.00	12,110.00	17,435.87	11,820.00	93.23	92.88	-63.24	5,643.37	398.36	643.27	474.24	169.03	3.806	Alert	
17,750.00	12,110.00	17,485.87	11,820.00	93.87	93.53	-63.24	5,693.37	398.05	643.26	473.04	170.22	3.779	Alert	
17,800.00	12,110.00	17,535.87	11,820.00	94.52	94.18	-63.24	5,743.37	397.74	643.25	471.83	171.42	3.752	Alert	
17,850.00	12,110.00	17,585.87	11,820.00	95.16	94.83	-63.24	5,793.37	397.42	643.24	470.62	172.62	3.726	Alert	
17,900.00	12,110.00	17,635.87	11,820.00	95.80	95.49	-63.24	5,843.37	397.11	643.24	469.41	173.83	3.700	Alert	
17,950.00	12,110.00	17,685.87	11,820.00	96.45	96.14	-63.24	5,893.37	396.79	643.23	468.19	175.03	3.675	Alert	
18,000.00	12,110.00	17,735.87	11,820.00	97.10	96.80	-63.24	5,943.37	396.48	643.22	466.98	176.24	3.650	Alert	
18,050.00	12,110.00	17,785.87	11,820.00	97.75	97.46	-63.24	5,993.37	396.17	643.21	465.76	177.45	3.625	Alert	
18,100.00	12,110.00	17,835.87	11,820.00	98.40	98.11	-63.24	6,043.37	395.85	643.20	464.54	178.66	3.600	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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 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)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
18,150.00	12,110.00	17,885.87	11,820.00	99.05	98.77	-63.24	6,093.36	395.54	643.19	463.32	179.88	3.576	Alert
18,200.00	12,110.00	17,935.87	11,820.00	99.70	99.43	-63.24	6,143.36	395.23	643.19	462.09	181.09	3.552	Alert
18,250.00	12,110.00	17,985.87	11,820.00	100.35	100.10	-63.24	6,193.36	394.91	643.18	460.87	182.31	3.528	Alert
18,300.00	12,110.00	18,035.87	11,820.00	101.01	100.76	-63.24	6,243.36	394.60	643.17	459.64	183.53	3.504	Alert
18,350.00	12,110.00	18,085.87	11,820.00	101.66	101.42	-63.24	6,293.36	394.29	643.16	458.41	184.75	3.481	Alert
18,400.00	12,110.00	18,135.87	11,820.00	102.32	102.09	-63.24	6,343.36	393.97	643.15	457.18	185.97	3.458	Alert
18,450.00	12,110.00	18,185.87	11,820.00	102.98	102.75	-63.24	6,393.36	393.66	643.14	455.95	187.20	3.436	Alert
18,500.00	12,110.00	18,235.87	11,820.00	103.63	103.42	-63.24	6,443.36	393.34	643.14	454.71	188.43	3.413	Alert
18,550.00	12,110.00	18,285.87	11,820.00	104.29	104.08	-63.24	6,493.36	393.03	643.13	453.47	189.65	3.391	Alert
18,600.00	12,110.00	18,335.87	11,820.00	104.95	104.75	-63.24	6,543.36	392.72	643.12	452.24	190.88	3.369	Alert
18,650.00	12,110.00	18,385.87	11,820.00	105.61	105.42	-63.24	6,593.35	392.40	643.11	451.00	192.11	3.348	Alert
18,700.00	12,110.00	18,435.87	11,820.00	106.27	106.09	-63.24	6,643.35	392.09	643.10	449.76	193.35	3.326	Alert
18,750.00	12,110.00	18,485.87	11,820.00	106.94	106.76	-63.24	6,693.35	391.78	643.10	448.51	194.58	3.305	Alert
18,800.00	12,110.00	18,535.87	11,820.00	107.60	107.43	-63.24	6,743.35	391.46	643.09	447.27	195.82	3.284	Alert
18,850.00	12,110.00	18,585.87	11,820.00	108.27	108.10	-63.23	6,793.35	391.15	643.08	446.02	197.05	3.263	Alert
18,900.00	12,110.00	18,635.87	11,820.00	108.93	108.77	-63.23	6,843.35	390.84	643.07	444.78	198.29	3.243	Alert
18,950.00	12,110.00	18,685.87	11,820.00	109.60	109.45	-63.23	6,893.35	390.52	643.06	443.53	199.53	3.223	Alert
19,000.00	12,110.00	18,735.87	11,820.00	110.26	110.12	-63.23	6,943.35	390.21	643.05	442.28	200.77	3.203	Alert
19,050.00	12,110.00	18,785.87	11,820.00	110.93	110.79	-63.23	6,993.35	389.90	643.05	441.03	202.02	3.183	Alert
19,100.00	12,110.00	18,835.87	11,820.00	111.60	111.47	-63.23	7,043.35	389.58	643.04	439.78	203.26	3.164	Alert
19,150.00	12,110.00	18,885.87	11,820.00	112.27	112.14	-63.23	7,093.35	389.27	643.03	438.52	204.51	3.144	Alert
19,200.00	12,110.00	18,935.87	11,820.00	112.94	112.82	-63.23	7,143.34	388.95	643.02	437.27	205.75	3.125	Alert
19,250.00	12,110.00	18,985.87	11,820.00	113.61	113.50	-63.23	7,193.34	388.64	643.01	436.01	207.00	3.106	Alert
19,300.00	12,110.00	19,035.87	11,820.00	114.28	114.18	-63.23	7,243.34	388.33	643.00	434.75	208.25	3.088	Alert
19,350.00	12,110.00	19,085.87	11,820.00	114.95	114.85	-63.23	7,293.34	388.01	643.00	433.50	209.50	3.069	Alert
19,400.00	12,110.00	19,135.87	11,820.00	115.62	115.53	-63.23	7,343.34	387.70	642.99	432.24	210.75	3.051	Alert
19,450.00	12,110.00	19,185.87	11,820.00	116.30	116.21	-63.23	7,393.34	387.39	642.98	430.97	212.01	3.033	Alert
19,500.00	12,110.00	19,235.87	11,820.00	116.97	116.89	-63.23	7,443.34	387.07	642.97	429.71	213.26	3.015	Alert
19,550.00	12,110.00	19,285.87	11,820.00	117.65	117.57	-63.23	7,493.34	386.76	642.96	428.45	214.51	2.997	Alert
19,600.00	12,110.00	19,335.87	11,820.00	118.32	118.25	-63.23	7,543.34	386.45	642.95	427.18	215.77	2.980	Alert
19,650.00	12,110.00	19,385.87	11,820.00	119.00	118.94	-63.23	7,593.34	386.13	642.95	425.92	217.03	2.963	Alert
19,700.00	12,110.00	19,435.87	11,820.00	119.67	119.62	-63.23	7,643.33	385.82	642.94	424.65	218.29	2.945	Alert
19,750.00	12,110.00	19,485.87	11,820.00	120.35	120.30	-63.23	7,693.33	385.50	642.93	423.38	219.55	2.928	Alert
19,800.00	12,110.00	19,535.87	11,820.00	121.03	120.99	-63.23	7,743.33	385.19	642.92	422.12	220.81	2.912	Alert
19,850.00	12,110.00	19,585.87	11,820.00	121.71	121.67	-63.23	7,793.33	384.88	642.91	420.85	222.07	2.895	Alert
19,900.00	12,110.00	19,635.87	11,820.00	122.38	122.35	-63.23	7,843.33	384.56	642.91	419.57	223.33	2.879	Alert
19,950.00	12,110.00	19,685.87	11,820.00	123.06	123.04	-63.23	7,893.33	384.25	642.90	418.30	224.59	2.862	Alert
20,000.00	12,110.00	19,735.87	11,820.00	123.74	123.72	-63.23	7,943.33	383.94	642.89	417.03	225.86	2.846	Alert
20,050.00	12,110.00	19,785.87	11,820.00	124.43	124.41	-63.23	7,993.33	383.62	642.88	415.76	227.12	2.831	Alert
20,100.00	12,110.00	19,835.87	11,820.00	125.11	125.10	-63.23	8,043.33	383.31	642.87	414.48	228.39	2.815	Alert
20,150.00	12,110.00	19,885.87	11,820.00	125.79	125.78	-63.23	8,093.33	383.00	642.86	413.21	229.66	2.799	Alert
20,200.00	12,110.00	19,935.87	11,820.00	126.47	126.47	-63.22	8,143.32	382.68	642.86	411.93	230.93	2.784	Alert
20,250.00	12,110.00	19,985.87	11,820.00	127.15	127.16	-63.22	8,193.32	382.37	642.85	410.65	232.19	2.769	Alert
20,300.00	12,110.00	20,035.87	11,820.00	127.84	127.85	-63.22	8,243.32	382.05	642.84	409.37	233.46	2.753	Alert
20,350.00	12,110.00	20,085.87	11,820.00	128.52	128.54	-63.22	8,293.32	381.74	642.83	408.10	234.74	2.739	Alert
20,400.00	12,110.00	20,135.87	11,820.00	129.20	129.23	-63.22	8,343.32	381.43	642.82	406.82	236.01	2.724	Alert
20,450.00	12,110.00	20,185.87	11,820.00	129.89	129.92	-63.22	8,393.32	381.11	642.81	405.53	237.28	2.709	Alert
20,500.00	12,110.00	20,235.87	11,820.00	130.57	130.61	-63.22	8,443.32	380.80	642.81	404.25	238.55	2.695	Alert
20,550.00	12,110.00	20,285.87	11,820.00	131.26	131.30	-63.22	8,493.32	380.49	642.80	402.97	239.83	2.680	Alert
20,600.00	12,110.00	20,335.87	11,820.00	131.95	131.99	-63.22	8,543.32	380.17	642.79	401.69	241.10	2.666	Alert
20,650.00	12,110.00	20,385.87	11,820.00	132.63	132.68	-63.22	8,593.32	379.86	642.78	400.40	242.38	2.652	Alert
20,700.00	12,110.00	20,435.87	11,820.00	133.32	133.37	-63.22	8,643.31	379.55	642.77	399.12	243.65	2.638	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 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 12-T23S-R31E - Tomb Raider 12-1 Fed 701H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor				
20,750.00	12,110.00	20,485.87	11,820.00	134.01	134.06	-63.22	8,693.31	379.23	642.76	397.83	244.93	2.624	Alert			
20,800.00	12,110.00	20,535.87	11,820.00	134.69	134.76	-63.22	8,743.31	378.92	642.76	396.55	246.21	2.611	Alert			
20,850.00	12,110.00	20,585.87	11,820.00	135.38	135.45	-63.22	8,793.31	378.60	642.75	395.26	247.49	2.597	Alert			
20,900.00	12,110.00	20,635.87	11,820.00	136.07	136.14	-63.22	8,843.31	378.29	642.74	393.97	248.77	2.584	Alert			
20,950.00	12,110.00	20,685.87	11,820.00	136.76	136.83	-63.22	8,893.31	377.98	642.73	392.68	250.05	2.570	Alert			
21,000.00	12,110.00	20,735.87	11,820.00	137.45	137.53	-63.22	8,943.31	377.66	642.72	391.39	251.33	2.557	Alert			
21,050.00	12,110.00	20,785.87	11,820.00	138.14	138.22	-63.22	8,993.31	377.35	642.72	390.10	252.61	2.544	Alert			
21,100.00	12,110.00	20,835.87	11,820.00	138.83	138.92	-63.22	9,043.31	377.04	642.71	388.81	253.89	2.531	Alert			
21,150.00	12,110.00	20,885.87	11,820.00	139.52	139.61	-63.22	9,093.31	376.72	642.70	387.52	255.18	2.519	Alert			
21,200.00	12,110.00	20,935.87	11,820.00	140.21	140.31	-63.22	9,143.30	376.41	642.69	386.23	256.46	2.506	Alert			
21,250.00	12,110.00	20,985.87	11,820.00	140.90	141.00	-63.22	9,193.30	376.10	642.68	384.94	257.74	2.493	Minor Risk			
21,300.00	12,110.00	21,035.87	11,820.00	141.60	141.70	-63.22	9,243.30	375.78	642.67	383.65	259.03	2.481	Minor Risk			
21,350.00	12,110.00	21,085.87	11,820.00	142.29	142.40	-63.22	9,293.30	375.47	642.67	382.35	260.31	2.469	Minor Risk			
21,400.00	12,110.00	21,135.87	11,820.00	142.98	143.09	-63.22	9,343.30	375.15	642.66	381.06	261.60	2.457	Minor Risk			
21,450.00	12,110.00	21,185.87	11,820.00	143.67	143.79	-63.22	9,393.30	374.84	642.65	379.76	262.89	2.445	Minor Risk			
21,500.00	12,110.00	21,235.87	11,820.00	144.37	144.49	-63.22	9,443.30	374.53	642.64	378.47	264.17	2.433	Minor Risk			
21,550.00	12,110.00	21,285.87	11,820.00	145.06	145.19	-63.21	9,493.30	374.21	642.63	377.17	265.46	2.421	Minor Risk			
21,600.00	12,110.00	21,335.87	11,820.00	145.76	145.88	-63.21	9,543.30	373.90	642.62	375.87	266.75	2.409	Minor Risk			
21,650.00	12,110.00	21,385.87	11,820.00	146.45	146.58	-63.21	9,593.30	373.59	642.62	374.58	268.04	2.397	Minor Risk			
21,700.00	12,110.00	21,435.87	11,820.00	147.14	147.28	-63.21	9,643.30	373.27	642.61	373.28	269.33	2.386	Minor Risk			
21,750.00	12,110.00	21,485.87	11,820.00	147.84	147.98	-63.21	9,693.29	372.96	642.60	371.98	270.62	2.375	Minor Risk			
21,800.00	12,110.00	21,535.87	11,820.00	148.54	148.68	-63.21	9,743.29	372.65	642.59	370.68	271.91	2.363	Minor Risk			
21,850.00	12,110.00	21,585.87	11,820.00	149.23	149.38	-63.21	9,793.29	372.33	642.58	369.38	273.20	2.352	Minor Risk			
21,900.00	12,110.00	21,635.87	11,820.00	149.93	150.08	-63.21	9,843.29	372.02	642.57	368.08	274.49	2.341	Minor Risk			
21,950.00	12,110.00	21,685.87	11,820.00	150.62	150.78	-63.21	9,893.29	371.70	642.57	366.78	275.79	2.330	Minor Risk			
22,000.00	12,110.00	21,735.87	11,820.00	151.32	151.48	-63.21	9,943.29	371.39	642.56	365.48	277.08	2.319	Minor Risk			
22,050.00	12,110.00	21,785.87	11,820.00	152.02	152.18	-63.21	9,993.29	371.08	642.55	364.18	278.37	2.308	Minor Risk			
22,100.00	12,110.00	21,835.87	11,820.00	152.71	152.88	-63.21	10,043.29	370.76	642.54	362.88	279.67	2.298	Minor Risk			
22,150.00	12,110.00	21,885.87	11,820.00	153.41	153.58	-63.21	10,093.29	370.45	642.53	361.57	280.96	2.287	Minor Risk			
22,200.00	12,110.00	21,935.87	11,820.00	154.11	154.28	-63.21	10,143.29	370.14	642.53	360.27	282.25	2.276	Minor Risk			
22,250.00	12,110.00	21,985.87	11,820.00	154.81	154.98	-63.21	10,193.28	369.82	642.52	358.97	283.55	2.266	Minor Risk			
22,300.00	12,110.00	22,035.87	11,820.00	155.51	155.69	-63.21	10,243.28	369.51	642.51	357.66	284.85	2.256	Minor Risk			
22,346.72	12,110.00	22,082.59	11,820.00	156.16	156.34	-63.21	10,290.01	369.22	642.50	356.44	286.06	2.246	Minor Risk, SF			

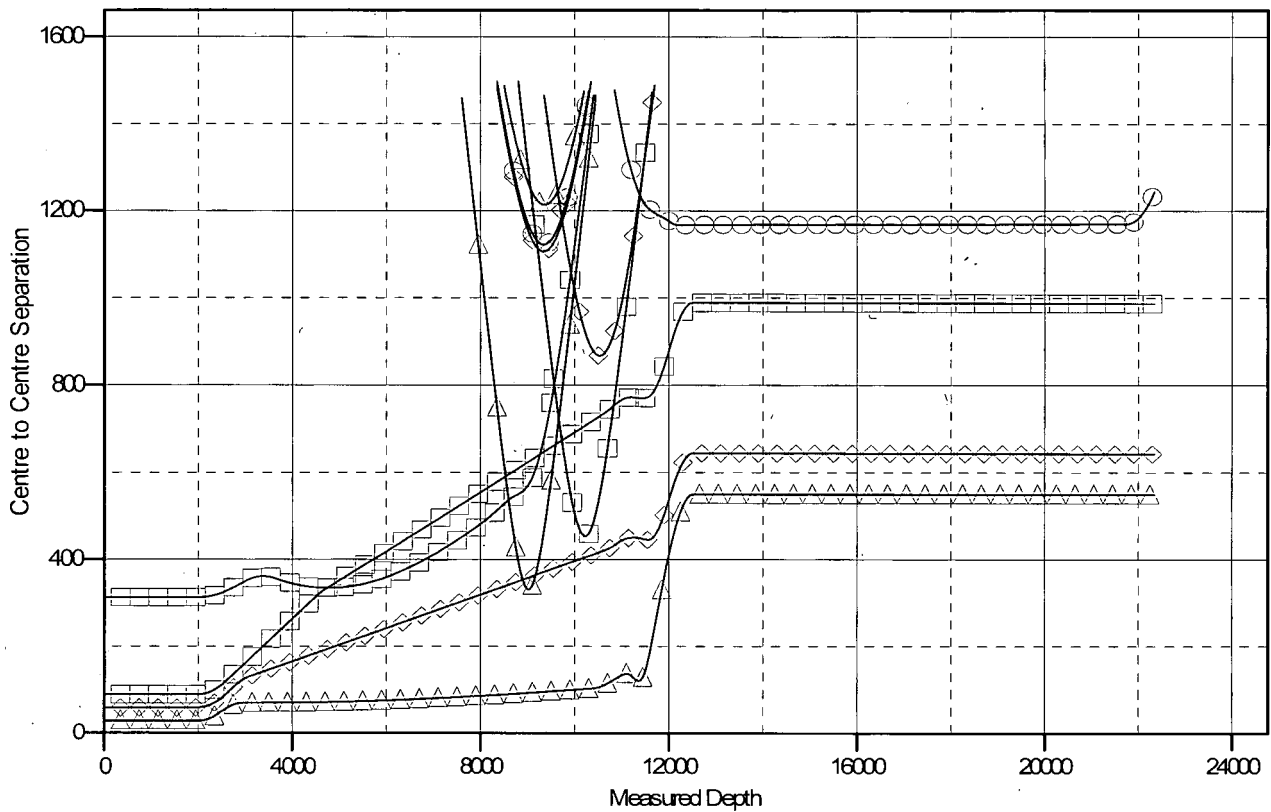
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3513.60ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 12-1 Fed 731H
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 512H, Wellbore #1, Wellbore #1 V0		Tomb Raider 12-1 Fed 331H, Wellbore #1, Permit Plan 1 V0
	Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 1 V0		Tomb Raider 1-12 Fed 61H, Original Hole, Original Hole V0		Tomb Raider 12-1 Fed 701H, Wellbore #1, Permit Plan 1 V0
	Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 2 V0		Tomb Raider 1-12 Fed 332H, Wellbore #1, Permit Plan 1 V0		Tomb Raider 12-1 Fed 611H, Wellbore #1, Permit Plan 1 V0
	Tomb Raider 1-12 Fed 523H, Wellbore #1, Permit Plan 1 V0		Tomb Raider 12-1 Fed 521H, Wellbore #1, Permit Plan 2 V0		

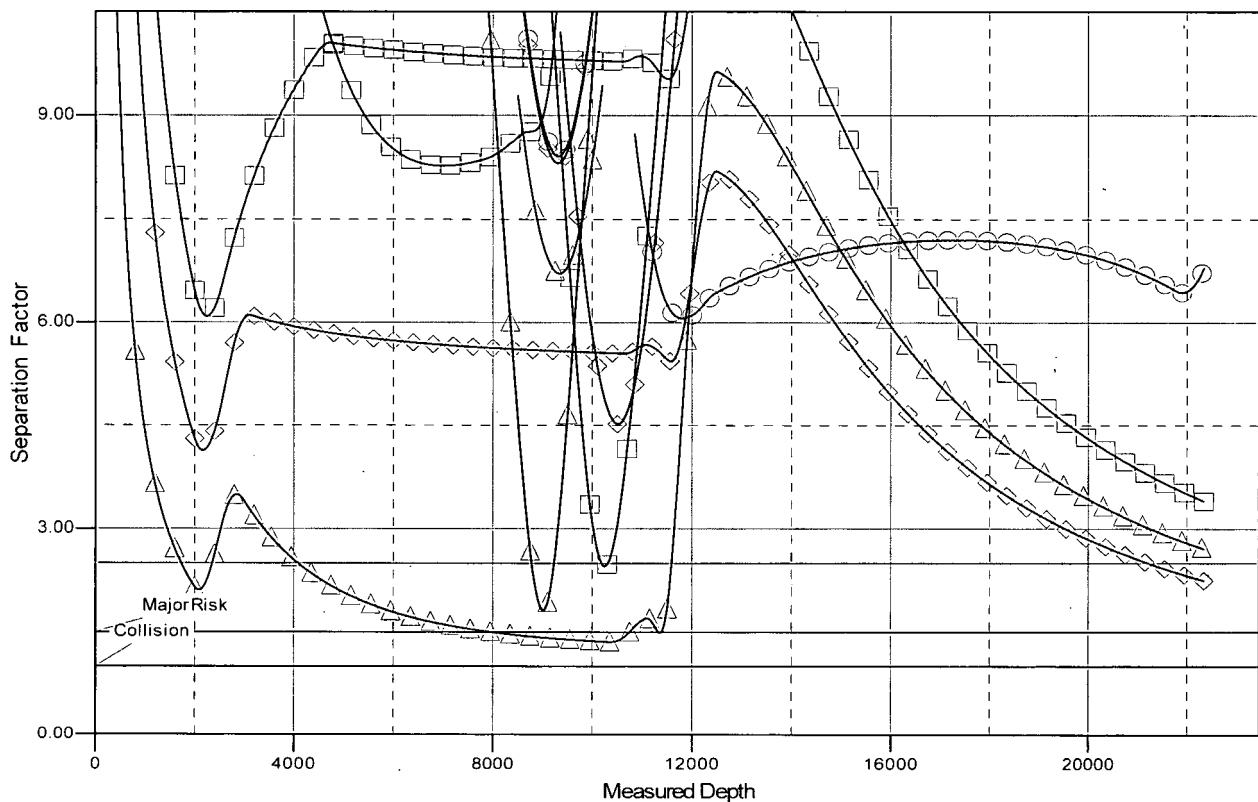
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3513.60ft
Reference Site:	Sec 12-T23S-R31E	MD Reference:	RKB @ 3513.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3513.60ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Tomb Raider 12-1 Fed 731H
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, Permit Plan 1 V0	Tomb Raider 1-12 Fed 512H, Wellbore #1, Wellbore #1 V0	Tomb Raider 12-1 Fed 331H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 1-12 Fed 61H, Original Hole, Original Hole V0	Tomb Raider 12-1 Fed 701H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 524H, Wellbore #1, Permit Plan 2 V0	Tomb Raider 1-12 Fed 332H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 12-1 Fed 611H, Wellbore #1, Permit Plan 1 V0
Tomb Raider 1-12 Fed 523H, Wellbore #1, Permit Plan 1 V0	Tomb Raider 12-1 Fed 521H, Wellbore #1, Permit Plan 2 V0	

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DISTRICT II-ARTESIA O.C.D.

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 12-T23S-R31E

Tomb Raider 12-1 Fed 731H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

04 December, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.60ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

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 12-T23S-R31E		
Site Position:	Map	Northing:	477,636.10 usft
From:		Easting:	724,631.57 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16"
		Latitude:	32.311700
		Longitude:	-103.740028
		Grid Convergence:	0.32 °

Well	Tomb Raider 12-1 Fed 731H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.50 ft	Wellhead Elevation:	Ground Level:
			3,488.60 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	11/29/2018	6.88
			Dip Angle
			(°)
			60.10
			Field Strength
			(nT)
			47,823.07221483

Design	Permit Plan 1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			5.23

Plan Survey Tool Program	Date	12/4/2018		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(ft)	(ft)			
1	0.00	22,346.72 Permit Plan 1 (Wellbore #1)	MWD+HDGM	
			OWSG MWD + HDGM	

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,583.80	5.84	98.40	2,582.79	-4.34	29.40	1.00	1.00	0.00	98.40	
10,842.32	5.84	98.40	10,798.47	-127.10	860.40	0.00	0.00	0.00	0.00	
11,231.52	0.00	0.00	11,187.00	-130.00	880.00	1.50	-1.50	0.00	180.00	
11,581.56	0.00	0.00	11,537.04	-130.00	880.00	0.00	0.00	0.00	0.00	
12,028.93	46.06	21.50	11,937.77	28.48	942.44	10.30	10.30	0.00	21.50	
12,495.87	90.00	359.63	12,110.00	442.95	1,006.35	10.30	9.41	-4.68	-30.05	
22,346.72	90.00	359.63	12,110.00	10,293.60	942.74	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 12-1 Fed 731H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.60ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
100.00	0.00	0.00	100.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
200.00	0.00	0.00	200.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
300.00	0.00	0.00	300.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
400.00	0.00	0.00	400.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
500.00	0.00	0.00	500.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
600.00	0.00	0.00	600.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
700.00	0.00	0.00	700.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
800.00	0.00	0.00	800.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
900.00	0.00	0.00	900.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,000.00	0.00	0.00	1,000.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,100.00	0.00	0.00	1,100.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,200.00	0.00	0.00	1,200.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,300.00	0.00	0.00	1,300.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,400.00	0.00	0.00	1,400.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,500.00	0.00	0.00	1,500.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,600.00	0.00	0.00	1,600.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,700.00	0.00	0.00	1,700.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,800.00	0.00	0.00	1,800.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
1,900.00	0.00	0.00	1,900.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
2,000.00	0.00	0.00	2,000.00	0.00	0.00	477,887.67	724,920.38	32.312387	-103.739089
2,100.00	1.00	98.40	2,099.99	-0.13	0.86	477,887.54	724,921.24	32.312387	-103.739086
2,200.00	2.00	98.40	2,199.96	-0.51	3.45	477,887.16	724,923.83	32.312386	-103.739078
2,300.00	3.00	98.40	2,299.86	-1.15	7.77	477,886.52	724,928.14	32.312384	-103.739064
2,400.00	4.00	98.40	2,399.68	-2.04	13.81	477,885.63	724,934.18	32.312381	-103.739044
2,500.00	5.00	98.40	2,499.37	-3.19	21.57	477,884.48	724,941.94	32.312378	-103.739019
2,583.80	5.84	98.40	2,582.79	-4.34	29.40	477,883.33	724,949.77	32.312375	-103.738994
2,600.00	5.84	98.40	2,598.91	-4.58	31.03	477,883.09	724,951.40	32.312374	-103.738989
2,700.00	5.84	98.40	2,698.39	-6.07	41.09	477,881.60	724,961.47	32.312370	-103.738956
2,800.00	5.84	98.40	2,797.87	-7.56	51.15	477,880.11	724,971.53	32.312366	-103.738924
2,900.00	5.84	98.40	2,897.35	-9.04	61.21	477,878.63	724,981.59	32.312361	-103.738891
3,000.00	5.84	98.40	2,996.83	-10.53	71.28	477,877.14	724,991.65	32.312357	-103.738858
3,100.00	5.84	98.40	3,096.31	-12.02	81.34	477,875.65	725,001.72	32.312353	-103.738826
3,200.00	5.84	98.40	3,195.79	-13.50	91.40	477,874.17	725,011.78	32.312349	-103.738793
3,300.00	5.84	98.40	3,295.28	-14.99	101.46	477,872.68	725,021.84	32.312344	-103.738761
3,400.00	5.84	98.40	3,394.76	-16.48	111.53	477,871.20	725,031.90	32.312340	-103.738728
3,500.00	5.84	98.40	3,494.24	-17.96	121.59	477,869.71	725,041.97	32.312336	-103.738696
3,600.00	5.84	98.40	3,593.72	-19.45	131.65	477,868.22	725,052.03	32.312332	-103.738663
3,700.00	5.84	98.40	3,693.20	-20.94	141.71	477,866.74	725,062.09	32.312327	-103.738631
3,800.00	5.84	98.40	3,792.68	-22.42	151.78	477,865.25	725,072.15	32.312323	-103.738598
3,900.00	5.84	98.40	3,892.16	-23.91	161.84	477,863.76	725,082.21	32.312319	-103.738566
4,000.00	5.84	98.40	3,991.65	-25.39	171.90	477,862.28	725,092.28	32.312315	-103.738533
4,100.00	5.84	98.40	4,091.13	-26.88	181.96	477,860.79	725,102.34	32.312310	-103.738500
4,200.00	5.84	98.40	4,190.61	-28.37	192.03	477,859.30	725,112.40	32.312306	-103.738468
4,300.00	5.84	98.40	4,290.09	-29.85	202.09	477,857.82	725,122.46	32.312302	-103.738435
4,400.00	5.84	98.40	4,389.57	-31.34	212.15	477,856.33	725,132.53	32.312298	-103.738403
4,500.00	5.84	98.40	4,489.05	-32.83	222.21	477,854.84	725,142.59	32.312294	-103.738370
4,600.00	5.84	98.40	4,588.53	-34.31	232.28	477,853.36	725,152.65	32.312289	-103.738338
4,700.00	5.84	98.40	4,688.01	-35.80	242.34	477,851.87	725,162.71	32.312285	-103.738305
4,800.00	5.84	98.40	4,787.50	-37.29	252.40	477,850.38	725,172.78	32.312281	-103.738273
4,900.00	5.84	98.40	4,886.98	-38.77	262.46	477,848.90	725,182.84	32.312277	-103.738240
5,000.00	5.84	98.40	4,986.46	-40.26	272.53	477,847.41	725,192.90	32.312272	-103.738208
5,100.00	5.84	98.40	5,085.94	-41.75	282.59	477,845.92	725,202.96	32.312268	-103.738175
5,200.00	5.84	98.40	5,185.42	-43.23	292.65	477,844.44	725,213.03	32.312264	-103.738142
5,300.00	5.84	98.40	5,284.90	-44.72	302.71	477,842.95	725,223.09	32.312260	-103.738110

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.60ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,400.00	5.84	98.40	5,384.38	-46.21	312.77	477,841.47	725,233.15	32.312255	-103.738077	
5,500.00	5.84	98.40	5,483.87	-47.69	322.84	477,839.98	725,243.21	32.312251	-103.738045	
5,600.00	5.84	98.40	5,583.35	-49.18	332.90	477,838.49	725,253.27	32.312247	-103.738012	
5,700.00	5.84	98.40	5,682.83	-50.66	342.96	477,837.01	725,263.34	32.312243	-103.737980	
5,800.00	5.84	98.40	5,782.31	-52.15	353.02	477,835.52	725,273.40	32.312238	-103.737947	
5,900.00	5.84	98.40	5,881.79	-53.64	363.09	477,834.03	725,283.46	32.312234	-103.737915	
6,000.00	5.84	98.40	5,981.27	-55.12	373.15	477,832.55	725,293.52	32.312230	-103.737882	
6,100.00	5.84	98.40	6,080.75	-56.61	383.21	477,831.06	725,303.59	32.312226	-103.737850	
6,200.00	5.84	98.40	6,180.24	-58.10	393.27	477,829.57	725,313.65	32.312221	-103.737817	
6,300.00	5.84	98.40	6,279.72	-59.58	403.34	477,828.09	725,323.71	32.312217	-103.737785	
6,400.00	5.84	98.40	6,379.20	-61.07	413.40	477,826.60	725,333.77	32.312213	-103.737752	
6,500.00	5.84	98.40	6,478.68	-62.56	423.46	477,825.11	725,343.84	32.312209	-103.737719	
6,600.00	5.84	98.40	6,578.16	-64.04	433.52	477,823.63	725,353.90	32.312204	-103.737687	
6,700.00	5.84	98.40	6,677.64	-65.53	443.59	477,822.14	725,363.96	32.312200	-103.737654	
6,800.00	5.84	98.40	6,777.12	-67.02	453.65	477,820.65	725,374.02	32.312196	-103.737622	
6,900.00	5.84	98.40	6,876.60	-68.50	463.71	477,819.17	725,384.09	32.312192	-103.737589	
7,000.00	5.84	98.40	6,976.09	-69.99	473.77	477,817.68	725,394.15	32.312188	-103.737557	
7,100.00	5.84	98.40	7,075.57	-71.48	483.84	477,816.20	725,404.21	32.312183	-103.737524	
7,200.00	5.84	98.40	7,175.05	-72.96	493.90	477,814.71	725,414.27	32.312179	-103.737492	
7,300.00	5.84	98.40	7,274.53	-74.45	503.96	477,813.22	725,424.34	32.312175	-103.737459	
7,400.00	5.84	98.40	7,374.01	-75.94	514.02	477,811.74	725,434.40	32.312171	-103.737427	
7,500.00	5.84	98.40	7,473.49	-77.42	524.08	477,810.25	725,444.46	32.312166	-103.737394	
7,600.00	5.84	98.40	7,572.97	-78.91	534.15	477,808.76	725,454.52	32.312162	-103.737361	
7,700.00	5.84	98.40	7,672.46	-80.39	544.21	477,807.28	725,464.58	32.312158	-103.737329	
7,800.00	5.84	98.40	7,771.94	-81.88	554.27	477,805.79	725,474.65	32.312154	-103.737296	
7,900.00	5.84	98.40	7,871.42	-83.37	564.33	477,804.30	725,484.71	32.312149	-103.737264	
8,000.00	5.84	98.40	7,970.90	-84.85	574.40	477,802.82	725,494.77	32.312145	-103.737231	
8,100.00	5.84	98.40	8,070.38	-86.34	584.46	477,801.33	725,504.83	32.312141	-103.737199	
8,200.00	5.84	98.40	8,169.86	-87.83	594.52	477,799.84	725,514.90	32.312137	-103.737166	
8,300.00	5.84	98.40	8,269.34	-89.31	604.58	477,798.36	725,524.96	32.312132	-103.737134	
8,400.00	5.84	98.40	8,368.82	-90.80	614.65	477,796.87	725,535.02	32.312128	-103.737101	
8,500.00	5.84	98.40	8,468.31	-92.29	624.71	477,795.38	725,545.08	32.312124	-103.737069	
8,600.00	5.84	98.40	8,567.79	-93.77	634.77	477,793.90	725,555.15	32.312120	-103.737036	
8,700.00	5.84	98.40	8,667.27	-95.26	644.83	477,792.41	725,565.21	32.312115	-103.737003	
8,800.00	5.84	98.40	8,766.75	-96.75	654.90	477,790.92	725,575.27	32.312111	-103.736971	
8,900.00	5.84	98.40	8,866.23	-98.23	664.96	477,789.44	725,585.33	32.312107	-103.736938	
9,000.00	5.84	98.40	8,965.71	-99.72	675.02	477,787.95	725,595.40	32.312103	-103.736906	
9,100.00	5.84	98.40	9,065.19	-101.21	685.08	477,786.47	725,605.46	32.312098	-103.736873	
9,200.00	5.84	98.40	9,164.68	-102.69	695.15	477,784.98	725,615.52	32.312094	-103.736841	
9,300.00	5.84	98.40	9,264.16	-104.18	705.21	477,783.49	725,625.58	32.312090	-103.736808	
9,400.00	5.84	98.40	9,363.64	-105.66	715.27	477,782.01	725,635.64	32.312086	-103.736776	
9,500.00	5.84	98.40	9,463.12	-107.15	725.33	477,780.52	725,645.71	32.312082	-103.736743	
9,600.00	5.84	98.40	9,562.60	-108.64	735.40	477,779.03	725,655.77	32.312077	-103.736711	
9,700.00	5.84	98.40	9,662.08	-110.12	745.46	477,777.55	725,665.83	32.312073	-103.736678	
9,800.00	5.84	98.40	9,761.56	-111.61	755.52	477,776.06	725,675.89	32.312069	-103.736646	
9,900.00	5.84	98.40	9,861.04	-113.10	765.58	477,774.57	725,685.96	32.312065	-103.736613	
10,000.00	5.84	98.40	9,960.53	-114.58	775.64	477,773.09	725,696.02	32.312060	-103.736580	
10,100.00	5.84	98.40	10,060.01	-116.07	785.71	477,771.60	725,706.08	32.312056	-103.736548	
10,200.00	5.84	98.40	10,159.49	-117.56	795.77	477,770.11	725,716.14	32.312052	-103.736515	
10,300.00	5.84	98.40	10,258.97	-119.04	805.83	477,768.63	725,726.21	32.312048	-103.736483	
10,400.00	5.84	98.40	10,358.45	-120.53	815.89	477,767.14	725,736.27	32.312043	-103.736450	
10,500.00	5.84	98.40	10,457.93	-122.02	825.96	477,765.65	725,746.33	32.312039	-103.736418	
10,600.00	5.84	98.40	10,557.41	-123.50	836.02	477,764.17	725,756.39	32.312035	-103.736385	
10,700.00	5.84	98.40	10,656.90	-124.99	846.08	477,762.68	725,766.46	32.312031	-103.736353	
10,800.00	5.84	98.40	10,756.38	-126.48	856.14	477,761.20	725,776.52	32.312026	-103.736320	

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.60ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,842.32	5.84	98.40	10,798.47	-127.10	860.40	477,760.57	725,780.78	32.312025	-103.736306
10,900.00	4.97	98.40	10,855.90	-127.90	865.78	477,759.77	725,786.15	32.312022	-103.736289
11,000.00	3.47	98.40	10,955.63	-128.97	873.06	477,758.70	725,793.44	32.312019	-103.736265
11,100.00	1.97	98.40	11,055.51	-129.67	877.76	477,758.00	725,798.13	32.312017	-103.736250
11,200.00	0.47	98.40	11,155.48	-129.98	879.87	477,757.69	725,800.25	32.312016	-103.736243
11,231.52	0.00	0.00	11,187.00	-130.00	880.00	477,757.67	725,800.37	32.312016	-103.736243
11,293.11	0.00	0.00	11,248.59	-130.00	880.00	477,757.67	725,800.37	32.312016	-103.736243
KOP @ FTP @ 11582' MD, 120' FSL, 1170' FWL									
11,300.00	0.00	0.00	11,255.48	-130.00	880.00	477,757.67	725,800.37	32.312016	-103.736243
11,400.00	0.00	0.00	11,355.48	-130.00	880.00	477,757.67	725,800.37	32.312016	-103.736243
11,500.00	0.00	0.00	11,455.48	-130.00	880.00	477,757.67	725,800.37	32.312016	-103.736243
11,581.56	0.00	0.00	11,537.04	-130.00	880.00	477,757.67	725,800.37	32.312016	-103.736243
11,600.00	1.90	21.50	11,555.48	-129.72	880.11	477,757.96	725,800.49	32.312017	-103.736243
11,700.00	12.19	21.50	11,654.59	-118.32	884.60	477,769.35	725,804.98	32.312048	-103.736228
11,800.00	22.49	21.50	11,749.92	-90.62	895.51	477,797.05	725,815.89	32.312124	-103.736192
11,900.00	32.78	21.50	11,838.39	-47.52	912.50	477,840.15	725,832.87	32.312243	-103.736136
12,000.00	43.08	21.50	11,917.16	9.59	935.00	477,897.26	725,855.37	32.312399	-103.736062
12,028.93	46.06	21.50	11,937.77	28.48	942.44	477,916.15	725,862.82	32.312451	-103.736038
12,100.00	52.49	16.89	11,984.13	79.33	960.03	477,967.00	725,880.41	32.312591	-103.735980
12,200.00	61.78	11.60	12,038.36	160.65	980.48	478,048.32	725,900.85	32.312814	-103.735912
12,300.00	71.24	7.17	12,078.18	251.03	995.29	478,138.70	725,915.66	32.313062	-103.735863
12,400.00	80.80	3.22	12,102.32	347.54	1,004.00	478,235.21	725,924.37	32.313327	-103.735833
12,495.87	90.00	359.63	12,110.00	442.95	1,006.35	478,330.62	725,926.72	32.313589	-103.735824
12,500.00	90.00	359.63	12,110.00	447.08	1,006.32	478,334.75	725,926.70	32.313601	-103.735824
12,600.00	90.00	359.63	12,110.00	547.08	1,005.68	478,434.75	725,926.05	32.313876	-103.735824
12,700.00	90.00	359.63	12,110.00	647.08	1,005.03	478,534.75	725,925.41	32.314150	-103.735824
12,800.00	90.00	359.63	12,110.00	747.08	1,004.39	478,634.75	725,924.76	32.314425	-103.735824
12,900.00	90.00	359.63	12,110.00	847.08	1,003.74	478,734.75	725,924.11	32.314700	-103.735825
13,000.00	90.00	359.63	12,110.00	947.07	1,003.09	478,834.74	725,923.47	32.314975	-103.735825
13,100.00	90.00	359.63	12,110.00	1,047.07	1,002.45	478,934.74	725,922.82	32.315250	-103.735825
13,200.00	90.00	359.63	12,110.00	1,147.07	1,001.80	479,034.74	725,922.18	32.315525	-103.735826
13,300.00	90.00	359.63	12,110.00	1,247.07	1,001.16	479,134.74	725,921.53	32.315800	-103.735826
13,400.00	90.00	359.63	12,110.00	1,347.07	1,000.51	479,234.73	725,920.89	32.316075	-103.735826
13,500.00	90.00	359.63	12,110.00	1,447.06	999.87	479,334.73	725,920.24	32.316349	-103.735826
13,600.00	90.00	359.63	12,110.00	1,547.06	999.22	479,434.73	725,919.59	32.316624	-103.735827
13,700.00	90.00	359.63	12,110.00	1,647.06	998.57	479,534.73	725,918.95	32.316899	-103.735827
13,800.00	90.00	359.63	12,110.00	1,747.06	997.93	479,634.73	725,918.30	32.317174	-103.735827
13,900.00	90.00	359.63	12,110.00	1,847.06	997.28	479,734.72	725,917.66	32.317449	-103.735828
14,000.00	90.00	359.63	12,110.00	1,947.05	996.64	479,834.72	725,917.01	32.317724	-103.735828
14,100.00	90.00	359.63	12,110.00	2,047.05	995.99	479,934.72	725,916.37	32.317999	-103.735828
14,200.00	90.00	359.63	12,110.00	2,147.05	995.35	480,034.72	725,915.72	32.318274	-103.735828
14,300.00	90.00	359.63	12,110.00	2,247.05	994.70	480,134.71	725,915.07	32.318548	-103.735829
14,400.00	90.00	359.63	12,110.00	2,347.05	994.05	480,234.71	725,914.43	32.318823	-103.735829
14,500.00	90.00	359.63	12,110.00	2,447.04	993.41	480,334.71	725,913.78	32.319098	-103.735829
14,600.00	90.00	359.63	12,110.00	2,547.04	992.76	480,434.71	725,913.14	32.319373	-103.735830
14,700.00	90.00	359.63	12,110.00	2,647.04	992.12	480,534.70	725,912.49	32.319648	-103.735830
14,800.00	90.00	359.63	12,110.00	2,747.04	991.47	480,634.70	725,911.84	32.319923	-103.735830
14,900.00	90.00	359.63	12,110.00	2,847.03	990.82	480,734.70	725,911.20	32.320198	-103.735830
15,000.00	90.00	359.63	12,110.00	2,947.03	990.18	480,834.70	725,910.55	32.320473	-103.735831
15,100.00	90.00	359.63	12,110.00	3,047.03	989.53	480,934.70	725,909.91	32.320747	-103.735831
15,200.00	90.00	359.63	12,110.00	3,147.03	988.89	481,034.69	725,909.26	32.321022	-103.735831
15,300.00	90.00	359.63	12,110.00	3,247.03	988.24	481,134.69	725,908.62	32.321297	-103.735832
15,400.00	90.00	359.63	12,110.00	3,347.02	987.60	481,234.69	725,907.97	32.321572	-103.735832
15,500.00	90.00	359.63	12,110.00	3,447.02	986.95	481,334.69	725,907.32	32.321847	-103.735832

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.60ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	90.00	359.63	12,110.00	3,547.02	986.30	481,434.68	725,906.68	32.322122	-103.735832
15,700.00	90.00	359.63	12,110.00	3,647.02	985.66	481,534.68	725,906.03	32.322397	-103.735833
15,800.00	90.00	359.63	12,110.00	3,747.02	985.01	481,634.68	725,905.39	32.322672	-103.735833
15,900.00	90.00	359.63	12,110.00	3,847.01	984.37	481,734.68	725,904.74	32.322946	-103.735833
16,000.00	90.00	359.63	12,110.00	3,947.01	983.72	481,834.67	725,904.10	32.323221	-103.735834
16,100.00	90.00	359.63	12,110.00	4,047.01	983.08	481,934.67	725,903.45	32.323496	-103.735834
16,200.00	90.00	359.63	12,110.00	4,147.01	982.43	482,034.67	725,902.80	32.323771	-103.735834
16,300.00	90.00	359.63	12,110.00	4,247.01	981.78	482,134.67	725,902.16	32.324046	-103.735834
16,400.00	90.00	359.63	12,110.00	4,347.00	981.14	482,234.67	725,901.51	32.324321	-103.735835
16,500.00	90.00	359.63	12,110.00	4,447.00	980.49	482,334.66	725,900.87	32.324596	-103.735835
16,600.00	90.00	359.63	12,110.00	4,547.00	979.85	482,434.66	725,900.22	32.324871	-103.735835
16,700.00	90.00	359.63	12,110.00	4,647.00	979.20	482,534.66	725,899.58	32.325145	-103.735836
16,800.00	90.00	359.63	12,110.00	4,747.00	978.56	482,634.66	725,898.93	32.325420	-103.735836
16,900.00	90.00	359.63	12,110.00	4,846.99	977.91	482,734.65	725,898.28	32.325695	-103.735836
17,000.00	90.00	359.63	12,110.00	4,946.99	977.26	482,834.65	725,897.64	32.325970	-103.735836
17,084.00	90.00	359.63	12,110.00	5,030.99	976.72	482,918.65	725,897.10	32.326201	-103.735837
Cross Section @ 17084' MD, 0' FSL, 1300' FWL									
17,100.00	90.00	359.63	12,110.00	5,046.99	976.62	482,934.65	725,896.99	32.326245	-103.735837
17,200.00	90.00	359.63	12,110.00	5,146.99	975.97	483,034.65	725,896.35	32.326520	-103.735837
17,300.00	90.00	359.63	12,110.00	5,246.99	975.33	483,134.65	725,895.70	32.326795	-103.735837
17,400.00	90.00	359.63	12,110.00	5,346.98	974.68	483,234.64	725,895.05	32.327070	-103.735838
17,500.00	90.00	359.63	12,110.00	5,446.98	974.03	483,334.64	725,894.41	32.327344	-103.735838
17,600.00	90.00	359.63	12,110.00	5,546.98	973.39	483,434.64	725,893.76	32.327619	-103.735838
17,700.00	90.00	359.63	12,110.00	5,646.98	972.74	483,534.64	725,893.12	32.327894	-103.735838
17,800.00	90.00	359.63	12,110.00	5,746.97	972.10	483,634.63	725,892.47	32.328169	-103.735839
17,900.00	90.00	359.63	12,110.00	5,846.97	971.45	483,734.63	725,891.83	32.328444	-103.735839
18,000.00	90.00	359.63	12,110.00	5,946.97	970.81	483,834.63	725,891.18	32.328719	-103.735839
18,100.00	90.00	359.63	12,110.00	6,046.97	970.16	483,934.63	725,890.53	32.328994	-103.735840
18,200.00	90.00	359.63	12,110.00	6,146.97	969.51	484,034.62	725,889.89	32.329269	-103.735840
18,300.00	90.00	359.63	12,110.00	6,246.96	968.87	484,134.62	725,889.24	32.329543	-103.735840
18,400.00	90.00	359.63	12,110.00	6,346.96	968.22	484,234.62	725,888.60	32.329818	-103.735840
18,500.00	90.00	359.63	12,110.00	6,446.96	967.58	484,334.62	725,887.95	32.330093	-103.735841
18,600.00	90.00	359.63	12,110.00	6,546.96	966.93	484,434.62	725,887.31	32.330368	-103.735841
18,700.00	90.00	359.63	12,110.00	6,646.96	966.29	484,534.61	725,886.66	32.330643	-103.735841
18,800.00	90.00	359.63	12,110.00	6,746.95	965.64	484,634.61	725,886.01	32.330918	-103.735842
18,900.00	90.00	359.63	12,110.00	6,846.95	964.99	484,734.61	725,885.37	32.331193	-103.735842
19,000.00	90.00	359.63	12,110.00	6,946.95	964.35	484,834.61	725,884.72	32.331468	-103.735842
19,100.00	90.00	359.63	12,110.00	7,046.95	963.70	484,934.60	725,884.08	32.331742	-103.735842
19,200.00	90.00	359.63	12,110.00	7,146.95	963.06	485,034.60	725,883.43	32.332017	-103.735843
19,300.00	90.00	359.63	12,110.00	7,246.94	962.41	485,134.60	725,882.79	32.332292	-103.735843
19,400.00	90.00	359.63	12,110.00	7,346.94	961.77	485,234.60	725,882.14	32.332567	-103.735843
19,500.00	90.00	359.63	12,110.00	7,446.94	961.12	485,334.59	725,881.49	32.332842	-103.735844
19,600.00	90.00	359.63	12,110.00	7,546.94	960.47	485,434.59	725,880.85	32.333117	-103.735844
19,700.00	90.00	359.63	12,110.00	7,646.94	959.83	485,534.59	725,880.20	32.333392	-103.735844
19,800.00	90.00	359.63	12,110.00	7,746.93	959.18	485,634.59	725,879.56	32.333667	-103.735844
19,900.00	90.00	359.63	12,110.00	7,846.93	958.54	485,734.59	725,878.91	32.333941	-103.735845
20,000.00	90.00	359.63	12,110.00	7,946.93	957.89	485,834.58	725,878.27	32.334216	-103.735845
20,100.00	90.00	359.63	12,110.00	8,046.93	957.25	485,934.58	725,877.62	32.334491	-103.735845
20,200.00	90.00	359.63	12,110.00	8,146.92	956.60	486,034.58	725,876.97	32.334766	-103.735846
20,300.00	90.00	359.63	12,110.00	8,246.92	955.95	486,134.58	725,876.33	32.335041	-103.735846
20,400.00	90.00	359.63	12,110.00	8,346.92	955.31	486,234.57	725,875.68	32.335316	-103.735846
20,500.00	90.00	359.63	12,110.00	8,446.92	954.66	486,334.57	725,875.04	32.335591	-103.735846
20,600.00	90.00	359.63	12,110.00	8,546.92	954.02	486,434.57	725,874.39	32.335866	-103.735847
20,700.00	90.00	359.63	12,110.00	8,646.91	953.37	486,534.57	725,873.74	32.336140	-103.735847

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 731H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3513.60ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3513.60ft
Site:	Sec 12-T23S-R31E	North Reference:	Grid
Well:	Tomb Raider 12-1 Fed 731H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,800.00	90.00	359.63	12,110.00	8,746.91	952.72	486,634.57	725,873.10	32.336415	-103.735847
20,900.00	90.00	359.63	12,110.00	8,846.91	952.08	486,734.56	725,872.45	32.336690	-103.735848
21,000.00	90.00	359.63	12,110.00	8,946.91	951.43	486,834.56	725,871.81	32.336965	-103.735848
21,100.00	90.00	359.63	12,110.00	9,046.91	950.79	486,934.56	725,871.16	32.337240	-103.735848
21,200.00	90.00	359.63	12,110.00	9,146.90	950.14	487,034.56	725,870.52	32.337515	-103.735848
21,300.00	90.00	359.63	12,110.00	9,246.90	949.50	487,134.55	725,869.87	32.337790	-103.735849
21,400.00	90.00	359.63	12,110.00	9,346.90	948.85	487,234.55	725,869.22	32.338065	-103.735849
21,500.00	90.00	359.63	12,110.00	9,446.90	948.20	487,334.55	725,868.58	32.338339	-103.735849
21,600.00	90.00	359.63	12,110.00	9,546.90	947.56	487,434.55	725,867.93	32.338614	-103.735850
21,700.00	90.00	359.63	12,110.00	9,646.89	946.91	487,534.54	725,867.29	32.338889	-103.735850
21,800.00	90.00	359.63	12,110.00	9,746.89	946.27	487,634.54	725,866.64	32.339164	-103.735850
21,900.00	90.00	359.63	12,110.00	9,846.89	945.62	487,734.54	725,866.00	32.339439	-103.735850
22,000.00	90.00	359.63	12,110.00	9,946.89	944.98	487,834.54	725,865.35	32.339714	-103.735851
22,100.00	90.00	359.63	12,110.00	10,046.89	944.33	487,934.54	725,864.70	32.339989	-103.735851
22,200.00	90.00	359.63	12,110.00	10,146.88	943.68	488,034.53	725,864.06	32.340264	-103.735851
22,266.72	90.00	359.63	12,110.00	10,213.60	943.25	488,101.25	725,863.63	32.340447	-103.735851
LTP @ 22267' MD, 100' FNL, 1300' FWL									
22,300.00	90.00	359.63	12,110.00	10,246.88	943.04	488,134.53	725,863.41	32.340538	-103.735852
22,346.71	90.00	359.63	12,110.00	10,293.59	942.74	488,181.24	725,863.11	32.340667	-103.735852
PBHL; 20' FNL, 1300' FWL									
22,346.72	90.00	359.63	12,110.00	10,293.60	942.74	488,181.25	725,863.11	32.340667	-103.735852

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
hit/miss target									
- Shape									
PBHL - Tomb Raider 12-	0.00	0.00	0.00	10,293.48	944.08	488,181.13	725,864.46	32.340666	-103.735847
- plan misses target center by 10336.68ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
11,293.11	11,248.59	-130.00	880.00	KOP @ FTP @ 11582' MD, 120' FSL, 1170' FWL
17,084.00	12,110.00	5,030.99	976.72	Cross Section @ 17084' MD, 0' FSL, 1300' FWL
22,266.72	12,110.00	10,213.60	943.25	LTP @ 22267' MD, 100' FNL, 1300' FWL
22,346.71	12,110.00	10,293.59	942.74	PBHL; 20' FNL, 1300' FWL

Devon Energy

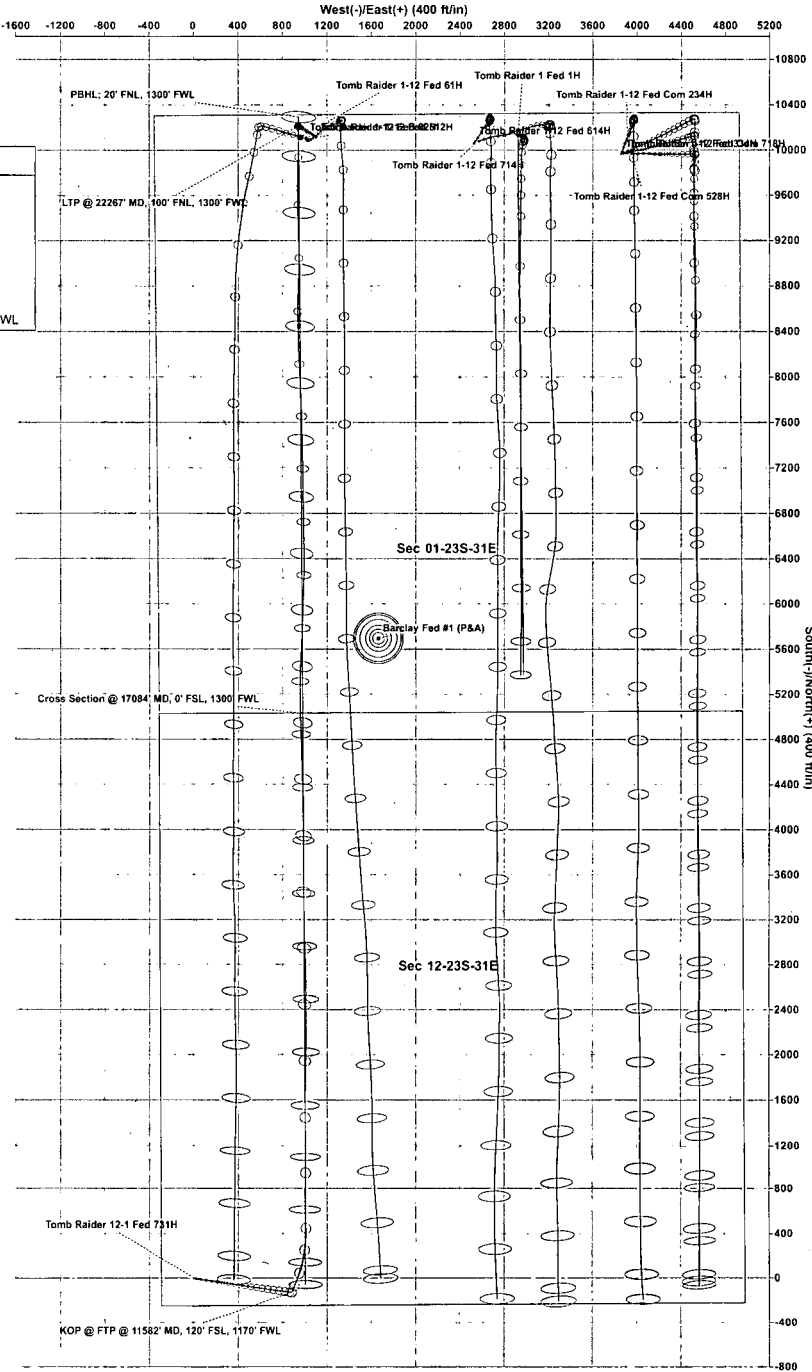
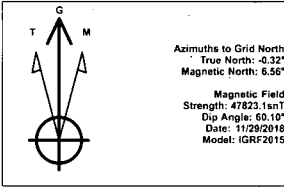
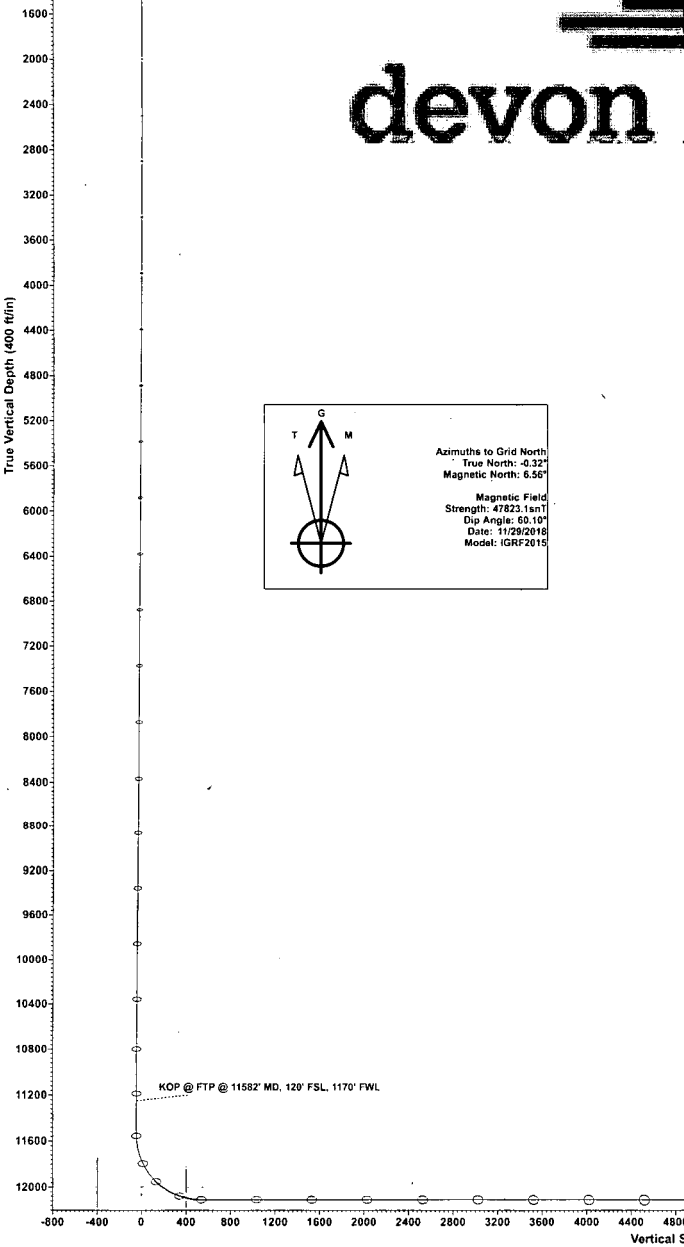
WELL DETAILS: Tomb Raider 12-1 Fed 731H

RKB @ 3513.60ft
3488.60

Northing 477887.67 Easting 724920.38 Latitude 32.312387 Longitude -103.739089

SECTION DETAILS Permit Plan 1

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSec	Annotation
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	
	2583.80	5.84	98.40	2582.79	-4.34	29.40	1.00	-1.64	
	10842.32	5.84	98.40	10798.47	-127.10	860.40	0.00	-48.10	
5	11231.52	0.00	0.00	11187.00	-130.00	880.00	1.50	-49.20	
6	11581.56	0.00	0.00	11537.04	-130.00	880.00	0.00	-49.20	
7	12028.93	46.06	21.50	11937.77	28.48	942.44	10.30	114.31	
8	12495.86	90.00	359.63	12110.00	442.95	1006.35	10.30	532.89	
9	22346.72	90.00	359.63	12110.00	10293.60	942.74	0.00	10336.68	PBHL: 20' FNL, 1300' FWL



Tomb Raider 12-1 Fed 731H

1. Geologic Formations

TVD of target	12110	Pilot hole depth	N/A
MD at TD:	22346	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	766		
Salado	1141		
Base of Salt	4451		
Delaware	4481		
L Brushy Canyon	8061		
Bone Spring	8356		
Leonard 'A'	8461		
Leonard 'B'	8976		
Leonard 'C'	9171		
1st BSPG Sand	9421		
2nd BSPG Sand	9981		
3rd BSPG Lime	10496		
3rd BSPG Sand	11206		
Wolfcamp	11651		
Wolfcamp 100	11780		
LP	11820		

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

Tomb Raider 12-1 Fed 731H

2. Casing Program (Primary Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
14.75"	0	791	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	11231	7.625"	29.7	P110	BTC	1.125	1.25	1.6
6.75"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6
BLM Minimum Safety Factor							1.125	1.00	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.
- Int casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.
- A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Wt. (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17.5"	0	Same as above	13.375"	48	H-40	STC	1.125	1.25	1.6
9.875"	0	Same as above	8.625"	32	P110EC	TLW	1.125	1.25	1.6
7.875"	0	TD	5.5"	20	P110	BTC	1.125	1.25	1.6
BLM Minimum Safety Factor							1.125	1.00	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.
- Int 1 casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.
- If 10.625" hole is drilled for intermediate 1, the 8.625" connection will change from TLW to BTC
- A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
- 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.

Tomb Raider 12-1 Fed 731H

	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?	

Tomb Raider 12-1 Fed 731H

3. Cementing Program (Primary Design)

Casing	# Sk	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	513	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	1067	Surf	9	3.31	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	540	Surf	9	3.31	1 st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1 st stage Tail: Class H / C + additives
	560	Surf	9	3.31	2 st stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2 st stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	1067	Surf	9	3.31	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	331	0	9	3.31	Lead: Class H / C Cement + additives
	811	500' tieback	13.2	1.33	Tail: Class H / C + additives

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

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

Tomb Raider 12-1 Fed 731H

Cementing Program (Alternate Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft ³ /sack)	Slurry Description
Surface	660	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	1147	Surf	9	3.31	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	580	Surf	9	3.31	1 st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1 st stage Tail: Class H / C + additives
	590	Surf	9	3.31	2 nd stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2 nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	1147	Surf	9	3.31	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	632	Surf	9	3.31	Lead: Class H / C + additives
	1645	500' tieback	13.2	1.33	Tail: Class H / C + additives

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

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

Tomb Raider 12-1 Fed 731H

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?		Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
Production	13-5/8"	10M	Annular (5M)		X	100% of rated working pressure
			Blind Ram		X	10M
			Pipe Ram			
			Double Ram		X	
			Other*			
			Annular			
			Blind Ram			
			Pipe Ram			
			Double Ram			
			Other*			
N		A variance is requested for the use of a diverter on the surface casing. See attached for schematic.				

Tomb Raider 12-1 Fed 731H

5. Mud Program (3 String Design)

Section	Type	Weight (ppg)	Vis	Water Loss
Surface	FW Gel	8.5 - 9	28-34	N/C
Intermediate	DBE / Cut Brine	9 - 10	28-34	N/C
Production	OBM	10-10.5	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	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6612 psi
Abnormal Temperature	No

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

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

Tomb Raider 12-1 Fed 731H

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 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

- ☒ Directional Plan
☐ Other, describe

Devon Energy
APD VARIANCE DATA

OPERATOR NAME: Devon Energy

1. SUMMARY OF Variance:

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

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

2. Description of Operations

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

CASING PERFORMANCE Data Sheet



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

Grade - Material Properties

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

Pipe Body Data (PE)

Geometry

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

Performance

Pipe Body Yield Strength:	1,144	kip
Collapse Resistance:	3,470	psi
Internal Yield Pressure (<i>API Historical</i>):	8,930	psi

API Connection Data

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

SC Torque (ft-lbs)

minimum: 5,950	optimum: 7,933	maximum: 9,916
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LC Torque (ft-lbs)

minimum: 6,651	optimum: 8,868	maximum: 11,085
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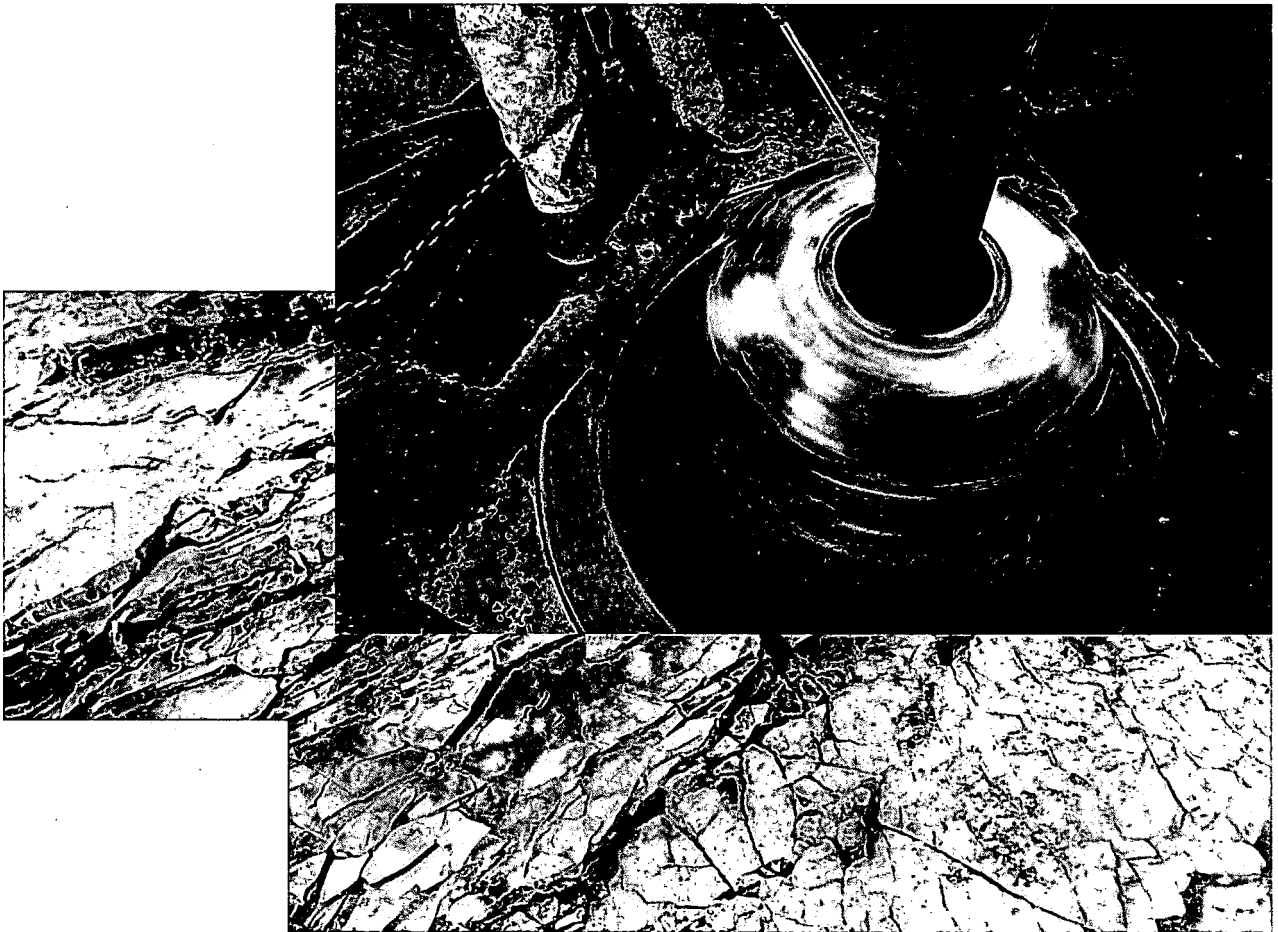
*Special drift must be ordered or API drift will be used for actual drifting of product.

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

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



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.

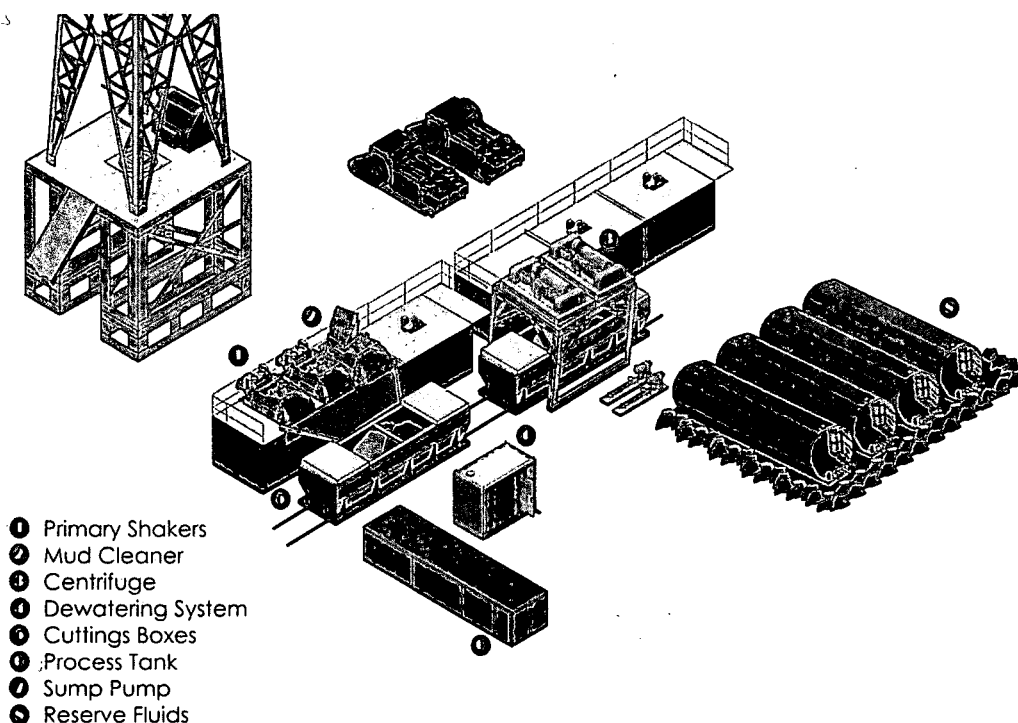
II. Operations and Maintenance Plan

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

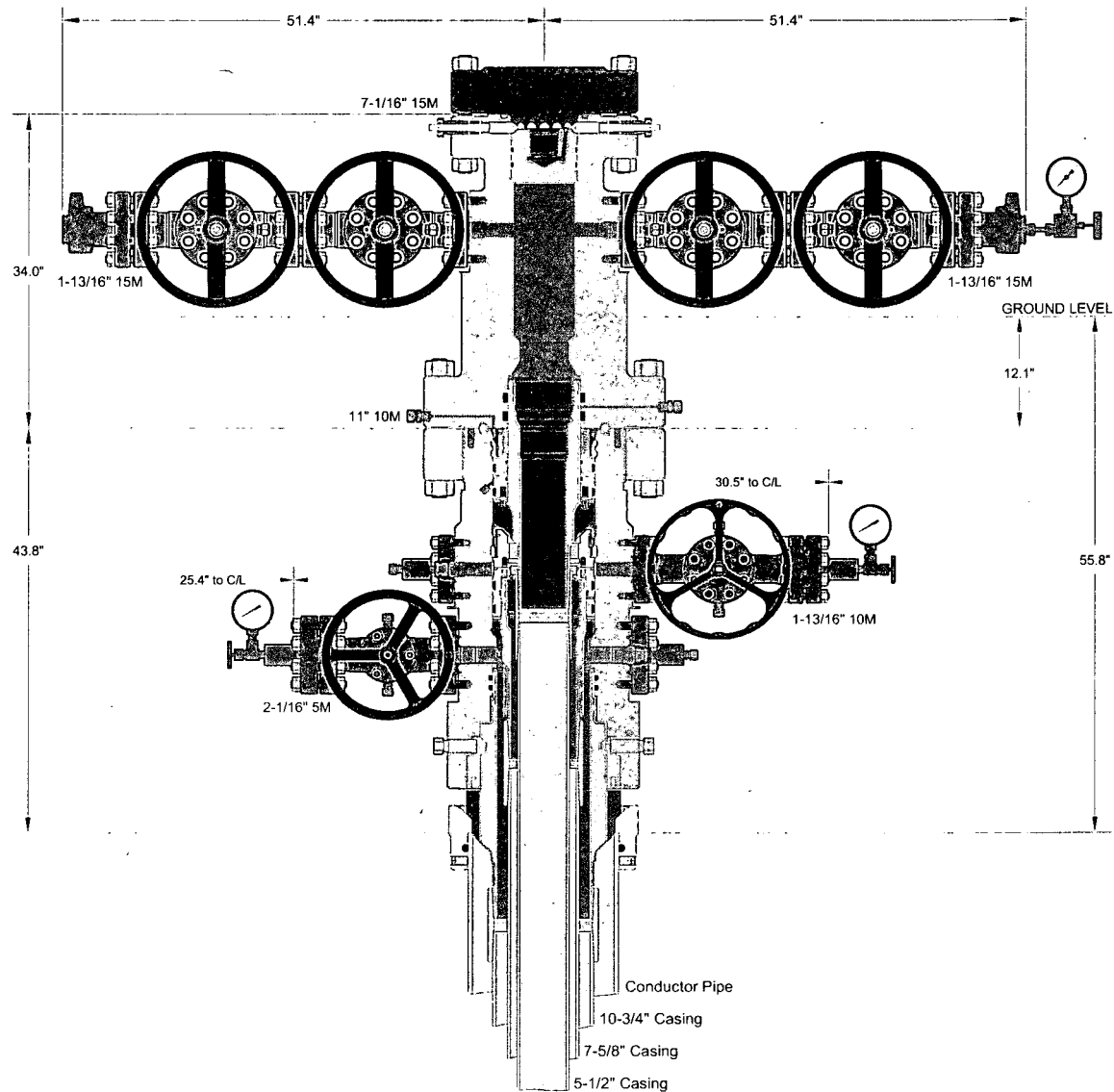
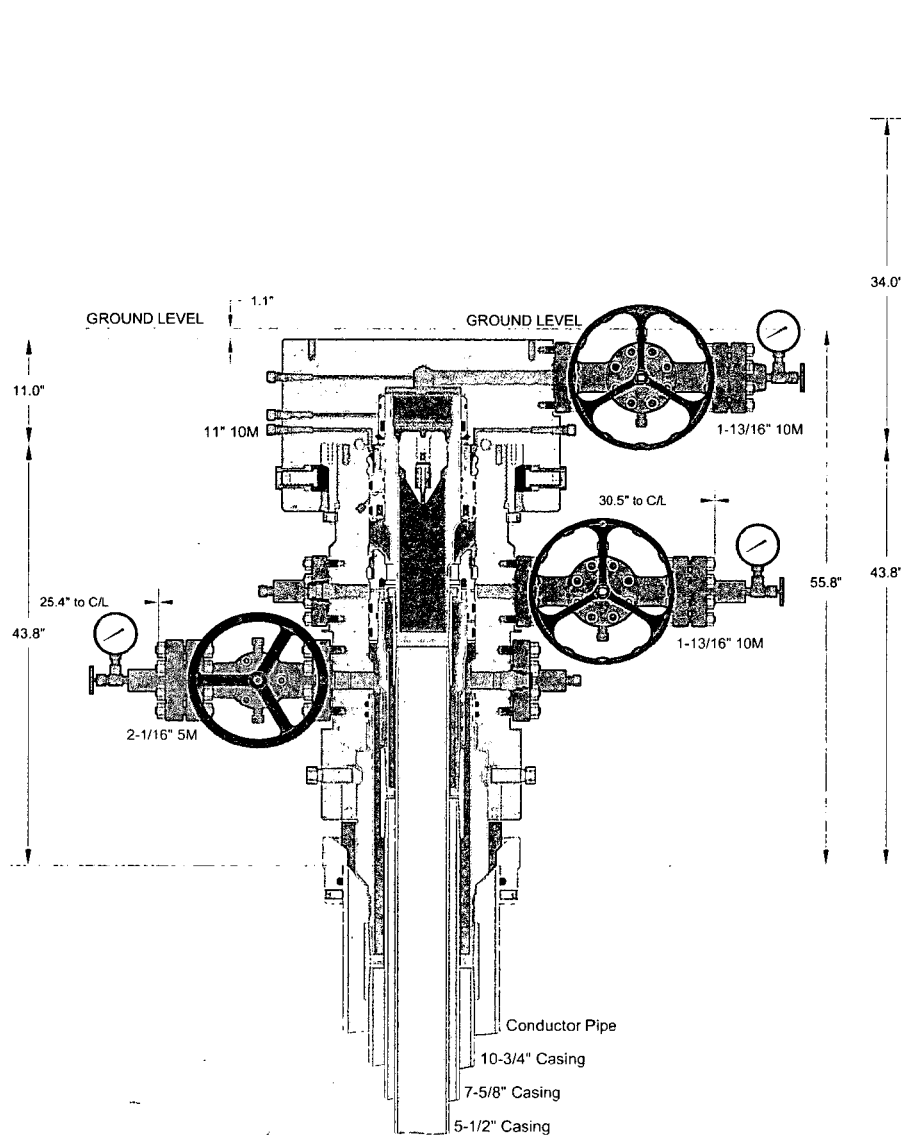
dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

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.



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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

10-3/4" x 7-5/8" x 5-1/2" 5M MBU-T-CFL-R-DBLO Wellhead System
 With 7-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers,
 13-5/8" 5M x 11" 10M DSPA & 11" 10M x 7-1/16" 15M Tubing Head

DEVON ENERGY CORPORATION

DRAWN

DLE

20NOV18

APPRV

DRAWING NO.

ODE0001804



Quotation

Quote Number : ODE0001804

ODESSA WAREHOUSE
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ODESSA TX 79765
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Page 1 of 8

Bill To: 7323

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OKLAHOMA CITY OK 73101-3198
US

Ship To: 0

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PO BOX 3198
OKLAHOMA CITY OK 73101-3198
US

	Quantity	Price	Ext Price
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MBU-T-CFL-R 10-3/4"

DEVON ENERGY

DELAWARE BASIN

MBU-T-CFL-R ASSEMBLY

10-3/4" X 7-5/8" X 5-1/2"

QUOTATION SUMMARY:

- MBU-T ASSEMBLY - \$24,148.80
- MANDREL HANGERS & PACKOFFS - \$18,231.00
- TUBING HEAD ASSEMBLY - \$28,243.20
- RENTAL TOOLS = \$4,075.00 PER WELL FOR THE FIRST 45 DAYS; \$220.00 PER DAY THEREAFTER

CACTUS CONTACT:
SCOTT NORDQUIST
MOBILE: 832.803.5055
EMAIL: scott.nordquist@cactuswellhead.com

NOTE: PRICES ARE F.O.B. CACTUS BOSSIER CITY, LA. THE FOLLOWING QUOTATION DOES NOT INCLUDE PRO RATA FREIGHT AND OTHER APPLICABLE MILEAGE AND SERVICES THAT WILL BE CHARGED AT TIME OF INVOICING.



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		Quantity	Price	Ext Price
MBU-T-CFL-R ASSEMBLY				
1	125867 HSG,CW,MBU-T-CFL-R-DBLO-SF,10-3/4,11 10M,W/2 1-13/16 10M FP UPR & 2 2-1/16 5M FP LWR,RND BAR,W/O 11 10M THD FLG,6A-PU-EE-NL-1-2	1.00		
2	103030 FLG,THD,11 10M W/17.375-2 STUB ACME-2G L.H. THD,4130 75K & 1/T -75 DEG F,PSL2	1.00		
3	101970 LANDING RING,CW,CTF,16 CSG X 20 OD X 15.25 ID,W/1/2-13UNC-2B LIFT HOLE	1.00		
4	117696 CSGHGR,CW,MBU-T-CFL-R,10-3/4,10-3/4 (45.5#) BC PIN BTM X 11.250-4 STUB ACME-2G LEFT HAND PIN TOP,9.945 MIN BORE,4140 110K,6A-U-AA-1-2	1.00		
5	125819 CSGHGR,CW,MBU-T-CFL-R,10-3/4,10-3/4 (45.5#) BC PIN BTM X 11.250-4 STUB ACME-2G LEFT HAND PIN TOP,9.945 MIN BORE,4130 75K,6A-PU-DD-NL-1-2	0.00		
6	VR2 VR PLUG,CW,1-1/2 (1.900) SHARP VEE X 1-1/4 HEX,API 6A-DD-NL	1.00		
7	610003N VLV,CW1,2-1/16 3/5M FE AA/DD-NL (API 6A LU AA/DD-NL PSL1 PR2) NON-MONOGRAMMED	1.00		
8	200002 FLG,COMP,CW,2-1/16 5M X 2 LP,6A-KU-EE-NL-1	2.00		
9	BP2T BULL PLUG,CW,2 LP X 1/2 LP,API 6A DD-NL	2.00		
10	FTG1 FTG,GRS,VENTED CAP,1/2 NPT,ALLOY NON-NACE	1.00		
11	R24 RING GASKET,R24,2-1/16 3/5M	3.00		
12	780067 STUD,ALL-THD W/2 NUTS,BLK,7/8-9UNC X 6-1/2,A193 GR B7/A194 GR 2H,NO PLATING	8.00		
13	NVA NEEDLE VALVE,MFA,1/2 10M	1.00		
14	PG5M PRESSURE GAUGE,5M,4-1/2 FACE,LIQUID FILLED,1/2 NPT	1.00		
15	VR1 VR PLUG,CW,1-1/4 (1.660) LP X 1-1/4 HEX,API 6A-DD-NL	1.00		
16	FTG1 FTG,GRS,VENTED CAP,1/2 NPT,ALLOY NON-NACE	1.00		
17	107412 VLV,CW,SB100,1-13/16 10M FE BB/EE-0,5 (API 6A LU BB/EE-0,5 PSL3 PR2) QPQ TRIM, API 6A PR2 ANNEX F	1.00		



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		Quantity	Price	Ext Price
18	200010 FLG,COMP,1-13/16 10M X 2 LP,5000 PSI MAX WP,4130 60K,6A-KU-EE-NL-1	2.00	74.33	148.66
19	BX151 RING GASKET,BX151,1-13/16 10/15/20M	3.00		
20	780080 STUD,ALL-THD W/2 NUTS,BLK,3/4-10UNC X 5-1/2,A193 GR B7/A194 GR 2H,NO PLATING	8.00		
21	BP2T BULL PLUG,CW,2 LP X 1/2 LP,API 6A DD-NL	2.00		
22	NVA NEEDLE VALVE,MFA,1/2 10M	1.00		
23	PG5M PRESSURE GAUGE,5M,4-1/2 FACE,LIQUID FILLED,1/2 NPT	1.00		

CASING HANGERS & PACKOFFS

24	120272 CSGHGR,CW,MBU-LR2-TP6,FLUTED,11 X 7-5/8 (29.7#) BC PIN BTM X 7.750-4 STUB ACME-2G RIGHT HAND BOX TOP,6A-U-AA-1-1	1.00		
25	108908T PACKOFF,CW,MBU-LR,MANDREL,11 10M NOM,W/7.500-4 STUB ACME-2G LH BOX TOP,A/F LANDING HGR NECK,6A-U-AA-1-1	1.00		
26	121451 CSGHGR,CW,MBU-LR-UPR-TP8,SN,FLUTED,7-5/8,11 X 5-1/2 (20#) VAM TOP HT PIN BTM X 6.125 4 STUB ACME-2G RIGHT HAND BOX TOP,W/5 HBPV THD,SPEC FOR ROTATING CASING STRING,,6A-U-AA-1-2	1.00		
27	120079 PACKOFF,CW,CTF-MBU-3T,11,A/F 7.75 SEAL PREP,W/8.750-4 STUB ACME-2G LH BOX TOP,10000 PSI MAX WP,A/F LANDING ON 45 DEG SHOULDER ON HANGER,6A-U-AA-2-2	1.00		
28	BPV5T BPV,H,5 ONE WAY,4130,HYDRO TESTED & API 6A MONOGRAM	0.00		

NOTE:

OPTIONAL SALE ITEM; PRICE NOT INCLUDED IN TOTAL

OPTIONAL RENTAL RATE = \$90.00 PER DAY

RENTAL TOOLS

29	RNM MBU-T RENTAL TOOLS = \$4,075.00 PER WELL FOR THE FIRST 45 DAYS; \$220.00 PER DAY THEREAFTER.	Rental Charge Minimum	1.00	
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RENTAL TOOLS INCLUDE THE FOLLOWING ITEMS:

PN 119126 - LIFT RING,CSGHGR,CFL-R,W/14.000-2 STUB ACME-2G LEFT HAND THDS,4140 110K (\$200.00; \$10.00)

PN 120868: RUN TOOL,CW,CSGHGR,MBU-T-CFL-10-7/8,11.250-4 STUB ACME-2G LH BOX BTM X 10-3/4 BC BOX



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	Quantity	Price	Ext Price
TOP,W/10.00 MIN BORE,MAX LOAD CAPACITY 1500K (\$200.00; \$10.00)			
PN 117695: TORQUE COLLAR,CW,CSGHGR,CFL,F/13-3/8 NECK,4140 110K (\$100.00; \$5.00)			
PN 800001: COMB TEST PLUG/RET TOOL,CW,11 X 4-1/2 IF (NC50) BOX BTM & TOP,W/1-1/4 LP BYPASS & SPRING LOADED DOGS (\$250.00; \$15.00)			
PN 102332: WBUSH,CW,MBU-LR,LWR,11 X 10.00 ID X 25.00 LG (\$250.00; \$15.00)			
PN 120274: RUN TOOL,CW,CSGHGR,TP6,7.750-4 STUB ACME-2G RIGHT HAND PIN BTM X 7-5/8 BC BOX TOP,W/6.535 MIN BORE & MAXIMUM TORQUE 25000 LBS-FT SPEC FOR ROTATING CASING STRING (\$575.00;\$30.00)			
PN 117945: TORQUE COLLAR,CW,F/USE W RUN TOOL,TP,7.750-4 STUB ACME-2G RIGHT HAND PIN BTM AND A/F 9.00 OD X 5.00 LG BOX CSGHGR NECK,MAXIMUM TORQUE 25000 LBF-FT (\$200.00; \$10.00)			
PN 103066: WASH TOOL,CW,CSGHGR,MBU-LR/MBS(2),FLUTED,11 X 4-1/2 IF (NC50) BOX TOP THDS,FAB (\$400.00; \$20.00)			
PN 102479: RUN TOOL,CW,PACKOFF,MBU-LR-LWR,11 X 4-1/2 IF (NC50) BTM & TOP,W/7.500-4 STUB ACME-2G LH PIN BTM (\$300.00; \$15.00)			
PN 102172: WBUSH,CW,CTH/MBS2-UPR,11 X 7.0 ID X 13.5 LG (\$250.00; \$15.00)			
PN 118739: RUN TOOL,CW,CSGHGR,TP8,6.125-4 STUB ACME-2G RIGHT HAND PIN BTM X 5-1/2 (20#) VAM TOP HT BOX TOP,W/4.696 MIN BORE & MAX LOAD CAPACITY 500K,MAX TORQUE 23000 FT-LBS,SPEC FOR ROTATING CASING STRING,4140 110K (\$550.00; \$30.00)			
PN 103164: WASH TOOL,CW,CSGHGR,MBU-2LR/MBS2-R (3T),FLUTED,11 X 4-1/2 IF (NC50) BOX TOP THDS,FAB (\$250.00; \$15.00)			
PN 115167: RUN TOOL,CW,PACKOFF,CTF-SN,7-5/8,W/8.750-4 STUB ACME-2G LEFT HAND PIN BTM X 4-1/2 IF (NC50) BOX TOP,W/BALL BEARINGS (\$275.00; \$15.00)			
PN 102045: RUN TOOL,PACKOFF,CW,CTF,11 X 4-1/2 IF (NC50),W/5 HBPV MALE THD (\$275.00; \$15.00)			
NOTE: CUSTOMER RESPONSIBLE FOR REPAIRS AND LOST, DAMAGED, OR BEYOND REPAIR TOOLS. RENTAL CHARGES MAY NOT BE APPLIED TO THE PURCHASE PRICE OF EQUIPMENT.			
30	RNM	Rental Charge Minimum	0.00
11 10M TA CAP RENTAL = \$1,500.00 PER WELL FOR THE FIRST 45 DAYS; \$65.00 PER DAY THEREAFTER.			
RENTAL CONSISTS OF THE FOLLOWING ITEMS:			
PN 121517: TA CAP,CW,DBLHPS,7-5/8,11 10M FLG,W/2 LP OUTLET,F/5.75 CUTOFF,5000 PSI MAX WP,6A-PU-EE-NL-1-1			

NOTE: CUSTOMER RESPONSIBLE FOR LOST, DAMAGED OR BEYOND REPAIR RENTAL TOOLS. RENTAL CHARGES MAY NOT BE APPLIED TO THE PURCHASE PRICE OF EQUIPMENT.



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		Quantity	Price	Ext Price
TUBING HEAD ASSEMBLY				
31	123779	1.00		
	TBGHD,CW,CTH-DBLHPS-SB,7-5/8,11 10M X 7-1/16 15M,W/2 1-13/16 15M FP,ACME VR THD,5.13 MIN BORE & 17-4PH LDS,34.0 LG,RND BAR,6A-PU-EE-0,5-1-2			
32	104700	4.00		
	VLV,DSG-22,1-13/16 15M FE EE-0,5 (6A PU EE-0,5 PSL3 PR1),QPQ TRIM			
33	100203	2.00		
	ADPT,TS,FH,1-13/16 15M X 2 FIG 1502 X 9/16 AUTOCLAVE,NON-NACE (INCLUDES SEAL RING) FH25099462-3			
34	100048	1.00		
	FTG,GRS,VENTED CAP,1/2 NPT,4140 -50F W/ELECTROLESS NICKEL COATING NACE,K-MONEL BALL,INCONEL X-750 SPRING			
35	BX151	6.00		
	RING GASKET,BX151,1-13/16 10/15/20M			
36	105477	32.00		
	STUD,ALL-THD W/2 NUTS,BLK,7/8-9UNC X 6,A193 GR B7/A194 GR 2H,NO PLATING			
37	BX158	1.00		
	RING GASKET,BX158,11 10/15/20M			
38	780083	16.00		
	STUD,ALL-THD W/2 NUTS,BLK,1-3/4-8UN X 15-1/4,A193 GR B7/A194 GR 2H,NO PLATING			
39	810023	1.00		
	NEEDLE VALVE,2 WAY ANGLE,9/16,20KSI,SOUR SERVICE,W/O COLLARS & GLANDS			
40	106012	1.00		
	ADPT,AUTOCLAVE,HIGH PRESSURE, 9/16 MALE TO 9/16 MALE,316SS			
41	PG15M	1.00		
	PRESSURE GAUGE,15M,9/16 AUTOCLAVE,LIQUID FILLED			
CONTINGENCY EQUIPMENT				
EMERGENCY EQUIPMENT; INVOICED AS REQUIRED				
42	102470	0.00		
	CSGHGR,CW,MBU-LR,11 X 7-5/8,6A-PU-DD-3-1			
43	102472	0.00		
	PACKOFF,CW,MBU-LR,EMERG,11 10M X 7-5/8,W/7.500-4 STUB ACME-2G LH BOX TOP,6A-U-AA-1-1			
44	102474	0.00		
	CSGHGR,CW,MBU-LR,UPR,11 X 5-1/2,6A-PU-DD-3-1			
45	115873	0.00		
	PACKOFF,CW,CTF-SN,7-5/8,11 X 5-1/2,EMERG,W/5 HBPV BOX THD & 4.93 MIN BORE,10000 PSI MAX WP,4140 80K,6A-U-DD-NL-2-2 (REF115873)			



Quotation

ODESSA WAREHOUSE
8001 GROENING STREET
ODESSA TX 79765
Phone: 432-653-0306

Quote Number : ODE0001804

Date: 10/19/2018

Valid For 30 Days

Page 6 of 8

Quantity	Price	Ext Price
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NOTE: MUST USE RX RING GASKET

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For Acceptance of this Quotation
Please Contact Ph: 713-626-8800
sales@cactuswellhead.com

Matl:
Labor:
Misc:
Sales Tax: _____
Total: _____



Quotation

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8001 GROENING STREET
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Page 7 of 8

CACTUS WELLHEAD, LLC PURCHASE TERMS AND CONDITIONS

1. **ACCEPTANCE:** Acceptance of Cactus Wellhead, LLC (herein: Company) Purchase Terms and Conditions (herein: CACTUS Purchase Terms) shall be deemed effective upon shipment of the goods and/or rendering of services which are the subject of an order by Customer (defined as the party purchasing CACTUS goods and/or services referred to on the invoice). Any proposal made by Customer for additional or different terms and conditions or any attempt by Purchaser to vary in any degree any of the terms and conditions of CACTUS Purchase Terms is hereby rejected. **TO THE EXTENT A PART OF A PROVISION EXPLICITLY APPLIES TO GOODS OR SERVICES AND THESE TERMS DOES NOT REQUEST OR CONTEMPLATE SUCH, THE PROVISION DOES NOT APPLY.**
2. **Pricing.** Each Product and Service shall be invoiced at (and Customer shall pay) the respective price shown on the reverse side hereof, or if no price is shown on the reverse side hereof, at the price shown in the current price list of Company. In addition, Customer shall pay any and all additional charges for mileage, transportation, freight, packing and other related charges, as well as any federal, state or local tax, excise, or charge applicable on the sale, transportation, or use of Products and Services, unless otherwise specified.
3. **Terms of Payment.** Customer agrees to pay Company any and all payments due on or before thirty (30) days from invoice date at the designated address of Company. Amounts unpaid after such thirty (30) day period shall bear interest at the lesser of (i) one and one-half percent (1½%) per month or (ii) the maximum rate allowed by law. Customer shall also pay any and all of Company's attorney's fees and court costs if any amounts hereunder are collected by an attorney or through legal proceedings. Company reserves the right, among other remedies, either to terminate this agreement or to suspend further deliveries upon failure of Customer to make any payment as provided herein.
4. **Limited Warranty.** COMPANY MAKES NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE MERCHANTABILITY, FITNESS FOR PURPOSE, DESCRIPTION, QUALITY, PRODUCTIVENESS, ACCURACY OR ANY OTHER MATTER WITH RESPECT TO PRODUCTS OR SERVICES, ALL SUCH WARRANTIES BEING HEREBY SPECIFICALLY AND EXPRESSLY DISCLAIMED BY COMPANY. COMPANY MAY OFFER TECHNICAL ADVICE OR ASSISTANCE WITH REGARD TO THE PRODUCTS AND SERVICES BASED ON LABORATORY AND/OR FIELD EXPERIENCE AND CUSTOMER UNDERSTANDS AND AGREES THAT SUCH ADVICE REPRESENTS ONLY GOOD FAITH OPINIONS AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE. THE SOLE AND EXPRESS WARRANTY PROVIDED BY COMPANY IS TO WARRANT THAT THE PRODUCTS SOLD AS LISTED ON THE REVERSE SIDE HEREOF COMPLIES WITH COMPANY'S SOLE SPECIFICATION AT THE DATE AND TIME OF MANUFACTURE. COMPANY MAKES NO WARRANTY THAT SUCH PRODUCTS SHALL MEET SUCH SPECIFICATION AT ANY TIME AFTER SHIPMENT OF PRODUCTS. USE OF SUCH PRODUCTS IS SPECIFICALLY NOT WARRANTED.
5. **Remedy.** The exclusive remedy for this warranty for products shall be limited to, in Company's sole discretion and judgment, the replacement of defective part(s), F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer), or repair of defective part(s). The exclusive remedy for this warranty for service shall be limited to, in Company's sole discretion and judgment, the repeat of services performed. F.O.B. Company's plant (transportation, redesign, dismantling, disposal of material and installation are not included and shall be borne and paid for by Customer). Any such repeat of services or replacement or repair of goods shall not include any materials not sold by Company hereunder, and specifically excludes any obligation by Company related to other property of the Customer or any property of third parties. Provided, however, Company may in its sole discretion, decide to instead give Customer credit memorandum for the amounts already paid by Customer to Company for such product or service. **IN ANY EVENT AND NOTWITHSTANDING THE LANGUAGE TO THE CONTRARY HEREIN, CUSTOMER ACKNOWLEDGES THAT ANY CLAIM IT MAY HAVE ARISING OUT OF OR IN CONNECTION WITH ANY ORIGINAL PRODUCTS AND SERVICES, ANY REPLACEMENT PRODUCTS OR REPEAT OF SERVICES AND THESE TERMS AND CONDITIONS SHALL BE LIMITED TO AND NOT EXCEED THE AMOUNT CUSTOMER HAS ACTUALLY PAID TO COMPANY FOR SUCH PRODUCTS AND/OR SERVICES PURSUANT HERETO.** If Customer fails to make any such claim within thirty (30) days after completion of Service or delivery of Product, Customer hereby waives (to the extent permitted by applicable law) any and all claims it may or does have with respect to such Products and Services. **Unless Customer is an authorized reseller of Company, Company's liability in connection with Products and Services shall extend only to Customer. CUSTOMER HEREBY INDEMNIFIES AND HOLDS COMPANY (AND ITS AGENTS, REPRESENTATIVES, OFFICERS DIRECTORS AND EMPLOYEES) HARMLESS FOR ANY LOSS, EXPENSE OR DAMAGE (WHETHER OF CUSTOMER OR OF ANY THIRD PARTY) ARISING FROM OR IN CONNECTION WITH PRODUCTS AND SERVICES, INCLUDING WITHOUT LIMITATION ANY FAILURE OF SUCH PRODUCTS AND SERVICES TO CONFORM TO CUSTOMER'S ORDER OR SPECIFICATION OR: ANY OTHER STANDARD, OR ANY NEGLIGENCE OR BREACH OF WARRANTY BY COMPANY WITH RESPECT TO ANYTHING DONE OR FAILED TO HAVE BEEN DONE BY COMPANY, IF AND TO THE EXTENT THAT SUCH LOSS, EXPENSE OR DAMAGE EXCEEDS THE AMOUNT CUSTOMER HAS ACTUALLY PAID COMPANY PURSUANT HERETO FOR SUCH PRODUCTS OR SERVICES.**
6. **Inspection.** The results of any inspection or testing reported by the Company to Customer represents only good faith opinions and are not to be construed as warranties or guarantees of the quality, classification, merchantability, fitness for purpose, condition, or liability of any equipment or material that has been inspected or tested by the Company.
7. **Insurance.** Each party agrees to maintain comprehensive general liability insurance in the amount of \$1,000,000 each occurrence, \$2,000,000 general aggregate, and Workers Compensation insurance per statutory requirements providing coverage for the indemnity obligations in this agreement. The Company (and such of its affiliates as it shall designate) including their officers, directors, members, shareholders, partners, joint ventures, employees, agents and representatives shall be named as additional insureds under the policies of Customer on a primary basis to the extent of its indemnification obligations set forth in these Terms and Conditions, and the policies shall also provide a waiver of subrogation rights in favor of the Company (and such of its affiliates as it shall designate) and their officers, directors, members, shareholders, employees, agents and representatives. The provisions of this Section 6 shall apply and the obligation to maintain insurance of each party in the coverages and amounts set forth herein shall remain in force regardless and independent of the validity or enforceability of the indemnity provisions of Section 7, below; the obligation to obtain insurance is a separate and independent obligation. If the insurance required herein is more or less than allowed by prevailing law, the indemnity obligations in Section 7 below shall be effective only to the maximum extent permitted under applicable law.
8. **Indemnification.** The following indemnifications and releases of liability will apply to any goods or Services provided under this contract. **COMPANY AND CUSTOMER EXPRESSLY AGREE THAT, TO THE EXTENT REQUIRED BY APPLICABLE LAW TO BE EFFECTIVE, THE INDEMNITIES AND DISCLAIMERS OF WARRANTIES CONTAINED HEREIN ARE "CONSPICUOUS."**
- A. **Customer Indemnity Obligations.** Customer hereby releases Company from any liability for, and shall protect, defend, indemnify, and hold harmless Company, its parents, affiliates, subsidiaries, partners, joint owners, joint venturers, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, insurers, and consultants (specifically excluding any member of Customer Group) of all of the foregoing, and its and their respective successors, heirs and assigns ("Company Group") from and against all costs (including the payment of reasonable attorneys' fees), losses, liabilities, demands, causes of action, damages, or claims of every type and character ("Claims"), arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of Customer its parents, affiliates, subsidiaries, partners, joint owners, joint venturers, and its contractors and subcontractors of any tier, and the officers, directors, agents, representatives, employees, customers, insurers, invitees and consultants of all of the foregoing, and its and their respective successors, heirs and assigns ("Customer Group"), or (ii) loss of or damage to any property of any member of Customer Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.
- B. **Company Indemnity Obligations.** Company hereby releases Customer from any liability for, and shall protect, defend, indemnify, and hold harmless Customer from and against all Claims arising out of or resulting from or related, directly or indirectly, to (i) injury to, illness or death of any member of Company Group, or (ii) loss of or damage to any property of any member of Company Group, REGARDLESS OF THE CAUSE OF SUCH CLAIMS, INCLUDING THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF CUSTOMER GROUP.
- C. **Third Party Claims.** Notwithstanding the foregoing, to the extent of its negligence, Company and Customer shall each indemnify, defend and hold harmless Claims, of every type and character, which are asserted by third parties for bodily injury, death or loss or destruction of property or interests in property in any manner caused by, directly or indirectly resulting from, incident to, connected with or arising out of the work to be performed, Services to be rendered or materials to be furnished by Customer. When personal injury, death or loss of or damage to property is the result of joint or concurrent negligence of Customer or Company, the indemnitor's duty of indemnification shall be in proportion to its allocable share of such negligence.
- D. **Pollution.** Company agrees that it shall be totally responsible for, and shall protect, defend and indemnify, Customer for all losses, damages, claims, demands, costs, charges, and other expenses, including attorneys' fees, for any and all waste and/or hazardous substances which are in Company Group's exclusive possession and control and directly associated with Company Group's equipment and facilities, **EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF CUSTOMER GROUP.** Customer shall assume all responsibility for, including control and removal of, and shall protect, defend and indemnify Company Group from and against all Claims arising directly or indirectly from all other pollution or contamination which may occur during the conduct of operations hereunder, including, but not limited to, that which may result from fire, blowout, cratering, seepage or any other uncontrolled flow of oil, gas, water or other substance, **EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF COMPANY GROUP.**
- E. **Wild Well.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group for any damages, expenses, losses, fines, penalties, costs, expert fees and attorneys' fees arising out of a fire, blow out, cratering, seepage or wild well, including regaining control thereof, debris removal and property restoration and remediation. **THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.**
- F. **Underground Damage.** Customer shall release Company Group of any liability for, and shall protect, defend and indemnify Company Group from and against any and all claims, liability and expenses resulting from operations related to the work under this agreement on account of injury to, destruction of, or loss or impairment of any property right in or to oil, gas or other mineral substance or water, if at the time of the act or omission causing such injury, destruction, loss or impairment said substance and not been reduced to physical possession above the surface of the earth, and for any loss or damage to any formation, strata, or reservoir beneath the surface of the earth. **THIS INDEMNITY APPLIES EVEN IF THE LOSSES, DAMAGES, CLAIMS, DEMANDS, COSTS, FEES, AND EXPENSES ARE CAUSED NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE, ORDINARY OR GROSS) STRICT LIABILITY, OR ANY OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY MEMBER OF COMPANY GROUP.**
- G. **Compliance With Laws, Rules And Regulations.** Customer expressly agrees to comply with and abide by all of the laws of the United States and of the state in which goods are delivered or services are performed, including, but not limited to, OSHA, EPA and all rules and regulations now existing or that may be hereafter promulgated under and in accordance with any such law or laws, and Customer hereby agrees to indemnify and hold Company Group harmless from any and all claims, demands, or damages incurred by Company Group arising from Customer Group's failure to comply with all laws and governmental regulations.
- H. The foregoing indemnities set forth in these Terms and Conditions are intended to be enforceable against the parties hereto in accordance with the express terms and scope hereof notwithstanding Texas' Express Negligence Rule or any similar directive that would prohibit or otherwise limit indemnities because of the negligence (whether sole, concurrent, active or passive, ordinary or gross) or other fault or strict liability of Company or Customer.
- I. If a claim is asserted against one of the parties to this agreement which may give rise to a claim for indemnity against the other party hereto, the party against whom the claim is first asserted must notify the potential indemnitor in writing and give the potential indemnitor the right to defend or assist in the defense of the claim.
7. **Risk Of Loss.** a. Title and risk of loss shall pass to Customer upon delivery as specified in Article 9. Customer's receipt of any material delivered hereunder shall be an unqualified acceptance of, and a waiver by Customer of any and all claims with respect to, such material unless Customer gives Company written notice of claim within thirty (30) days after such receipt. Notwithstanding the foregoing, installation or use of materials or equipment shall unequivocally constitute irrevocable acceptance of said materials. Customer assumes all risk and liability for the results obtained by the use of any material or products delivered



Quotation

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hereunder in work performed by on behalf of Customer or in combination with other substances or products. No claim of any kind, whether as to material delivered or for non-delivery of material, and whether or not based on negligence, shall be greater in amount than the purchase price of the material in respect of which such claim is made. **In no event shall Company be liable for special, indirect or consequential damages, whether or not caused by or resulting from the negligence of Company.** b. For services, Company shall not be liable for loss or deterioration of any equipment and material of Customer under Company's control or stored on Company's premises after Company has completed its work if such loss or deterioration results from atmospheric condition, Act of God or other occurrence not within the reasonable control of Company.

8. **Termination.** Company reserves the right to terminate the order at issue, or any part hereof, solely for its convenience at any time without cause with notice to Customer. Company shall have the right to cancel any unfilled order without notice to Customer in the event that Customer becomes insolvent, adjudicated bankrupt, petitions for or consents to any relief under any bankruptcy reorganization statute, violates a term of these Terms and Conditions, or is unable to meet its financial obligations in the normal course of business. In the event of such termination, Company shall immediately stop all work hereunder. Prior to delivery, Customer may terminate this order without cause upon thirty (30) day notice in writing to Company. In the event of such termination, Company at its sole option shall cease work up to thirty (30) days after such notice. Upon the cessation of work, Customer agrees to pay Company a reasonable termination charge consisting of a percentage of the Invoice price, such percentage to reflect the value of the goods, services or work in progress completed upon the cessation of work. Customer shall also pay promptly to Company any costs incurred due to paying and settling claims of Company's vendors or subcontractors arising out of the termination of the order by Customer.

9. **Delivery.** Unless different terms are provided on the face of this order, all items are sold FOB Company's manufacturing facility in Bossier City, LA., and Customer shall bear the cost of transportation to any other named destination. Upon notification of Company of delivery, Customer shall become liable and shall bear all risk of loss associated with the goods at issues regardless of whether the goods are at a location controlled by Company and whether or not caused by the negligence of Company. In the case of Customer pick-up, the truck furnished by Customer is the destination and Company's obligations regarding shipments are fulfilled when the goods are loaded on the truck. Items to be shipped to any other destination outside of the United States are sold FOB port of shipment (Customer will deliver and bear the cost of transportation to the named port and will bear the cost of transportation thereafter to the final destination). The means of shipment and carrier to the point at which Company's liability for transportation costs ceases shall be chosen by Company. Excess packing, marking, shipping, and transportation charges resulting from compliance with Customer's request shall be for Customer's account. Unless otherwise agreed in writing, delivery time is not of the essence.

10. **Returns/Refund.** Within ninety (90) days of delivery, Customer has the option to return any non-defective goods (any goods found to be defective will be subject to the warranty and remedies expressed in paragraphs three (3) and four (4) above). Customer shall bear all costs of shipment and/or transportation for such return and risk of loss for the returned goods shall remain with Customer until re-delivered to Company's Yard. Customer shall receive a full refund for any returns, less a twenty percent (20%) restocking fee. Company at all times reserves the right to designate certain goods as non-refundable in Company's Sales Quote or Sales Order. In addition, any made-to-order, special order, and/or product manufactured to Customer specifications goods are NOT returnable.

11. **Delays.** If a specific shipping date is either not given or is estimated only, and is not promised on the face of this order or in a separate writing signed by Company, Company will not be responsible for delays in filling this order nor liable for any loss or damages resulting from such delays. If a specific shipping date is promised, Company will not be liable for delays resulting from causes beyond Company's control, including without limitation accidents to machinery, fire, flood, act of God or other casualty, vendor delays, labor disputes, labor shortages, lack of transportation facilities, priorities required by, requested by, or granted for the benefit of any governmental agency, or restrictions imposed by law or governmental regulation.

12. **Limitation Of Damages.** Notwithstanding any other provision contained herein, Company shall not be liable to Customer Group of any third party for consequential (whether direct or indirect damages), indirect, incidental, special or punitive damages, howsoever arising, including, but not limited to loss of profits (whether direct or indirect damages), revenues, production or business opportunities, WHETHER OR NOT SUCH LOSSES ARE THE RESULT IN WHOLE OR IN PART FROM THE NEGLIGENCE (WHETHER SOLE, JOINT, CONCURRENT OR COMPARATIVE, ACTIVE OR PASSIVE, ORDINARY OR GROSS) OF COMPANY GROUP, OR ANY DEFECT IN THE PREMISES, PRE-EXISTING CONDITIONS, PATENT OR LATENT, BREACH OF STATUTORY DUTY, STRICT LIABILITY OR ANY OTHER THEORY OF LEGAL LIABILITY OF COMPANY GROUP (EXCLUDING ONLY LOSSES CAUSED BY THE WILLFUL MISCONDUCT OF COMPANY GROUP).

13. **Security Interest.** Customer grants Company, and Company reserves, a security interest, covering all Customer's obligations under these terms (including any liability for breach of Customer's obligations), and applying to all of Customer's right, title, and interest in the Leased Equipment, together with all accessions thereto and any proceeds that may arise in connection with the sale or disposition thereof. Customer shall cooperate with Company in the filing of Financing Statements to perfect such security interest. Furthermore, Customer authorizes Company to execute and file Financing Statements without Customer's signature in any jurisdiction in which such procedure is authorized. Customer warrants, covenants and agrees that it will not, without prior written consent of Company, sell, contract to sell, lease, encumber, or dispose of the Leased Equipment or any interest in it until all obligations secured by this security interest have been fully satisfied.

14. **Patent And Intellectual Property.** Company Retains its Intellectual Property. The sale of any products hereunder does not convey any license by implication, estoppel or otherwise covering combinations of the products with other equipment data or programs. Company retains the copyright in all documents, catalogs and plans supplied to Customer pursuant to or ancillary to the contract. Unless otherwise agreed in writing, Customer shall obtain no interest in any tooling used in the production of any Company product.

15. **Taxes.** Unless otherwise specifically provided for herein, Customer shall be liable for all federal, state, or local taxes or import duties assessed by any governmental entity of any jurisdiction in connection with the goods or services furnished hereunder.

16. **Deceptive Trade Practices.** Customer acknowledges the application of Section 17.45(4) of the Texas Deceptive Trade Practices Act (Texas Business Commission Code §17.41 et. seq.) (the "Act") to any transaction contemplated hereby and represents that it is not a "consumer" for the purposes of the Act.

17. **No Waiver.** Failure to enforce any or all of the provisions in these Terms and Conditions in any particular instance shall not constitute or be deemed to constitute a waiver of or preclude subsequent enforcement of the same provision or any other provision of these Terms and Conditions. Should any provision of these Terms and Conditions be declared invalid or unenforceable all other provisions of these Terms and Conditions shall remain in full force and effect.

18. **Choice Of Law.** THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND SHALL BE PERFORMABLE IN HARRIS COUNTY, TEXAS. WITHOUT REGARD TO CONFLICTS OF LAW PRINCIPALS AND WAIVER OF SAME, EACH PARTY HERETO SUBMITS TO THE JURISDICTION OF THE COURTS OF THE STATE OF TEXAS IN HARRIS COUNTY, TEXAS AND THE FEDERAL COURTS IN AND FOR THE SOUTHERN DISTRICT OF TEXAS SITTING IN HOUSTON, TEXAS IN CONNECTION WITH ANY DISPUTE ARISING UNDER THIS AGREEMENT OR ANY DOCUMENT OR INSTRUMENT ENTERED INTO IN CONNECTION HEREWITH.

19. **Authority.** Customer warrants and represents that the individual receiving this order at issue on behalf of Customer has the authority to enter into these Terms and Conditions on behalf of Customer, and that upon receipt these Terms and Conditions shall be binding upon Customer.

20. **Force Majeure.** If Company is unable to carry out its obligations hereunder by reason of force majeure, then upon Company's giving of notice and reasonably full particulars of such force majeure in writing to Customer, Company's obligations that are affected by force majeure shall be suspended during the continuance of the force majeure and Company shall not be liable to Customer for any damages incurred by the Customer as a result thereof.

21. **Confidentiality.** Customer acknowledges the highly secret and valuable nature of all proprietary inventions, methods, processes, designs, know-how, and trade secrets embodied in the Company's equipment, products and services and its components (hereinafter referred to as "Confidential Data"). Accordingly, Customer agrees not to disclose or use any Confidential Data. Customer further agrees to take any and all necessary precautions to prevent disclosure of the Confidential Data associated with the Company's equipment, products and services and components thereof to persons other than those employees of Customer for whom such disclosure is necessary for performance of the work hereunder.

22. **Compliance.** Customer expressly agrees to comply with and abide by, all of the laws of the United States and of the State of Texas, including, but not limited to, OSHA, EPA and all rules and regulations now existing or that may be hereafter promulgated under and in accordance with any such law or laws, and hereby agrees to indemnify and hold Company harmless from any and all claims, demands, or damages incurred by Company arising from Customer's failure to comply with all laws and governmental regulations. The indemnities in this paragraph shall be in addition to any other indemnity obligations between Customer and Company, including any other indemnity obligations contained herein.

MB Verb 5M WLFMP Alt Design

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

Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.

- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial BOP test.
- Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.
- If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.
- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

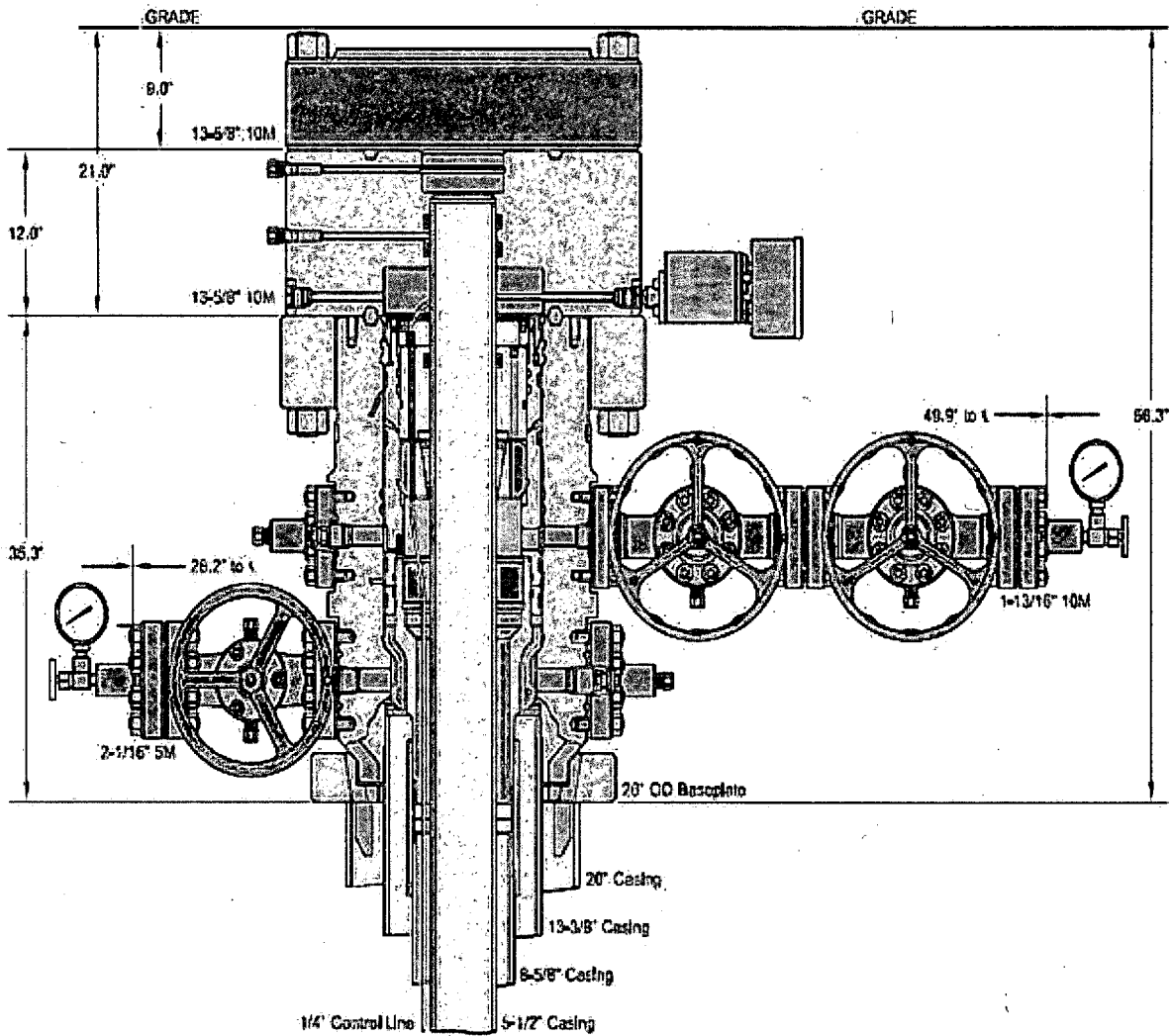
After running the surface casing, a BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days,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

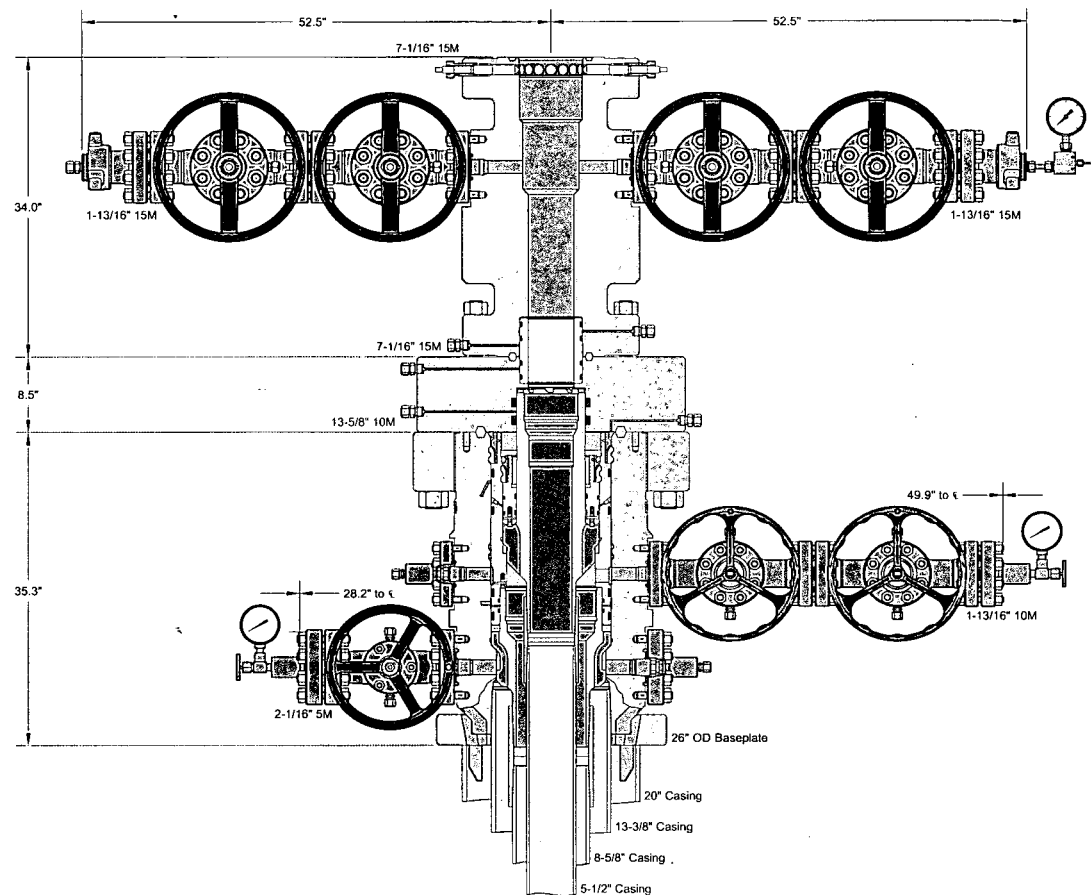
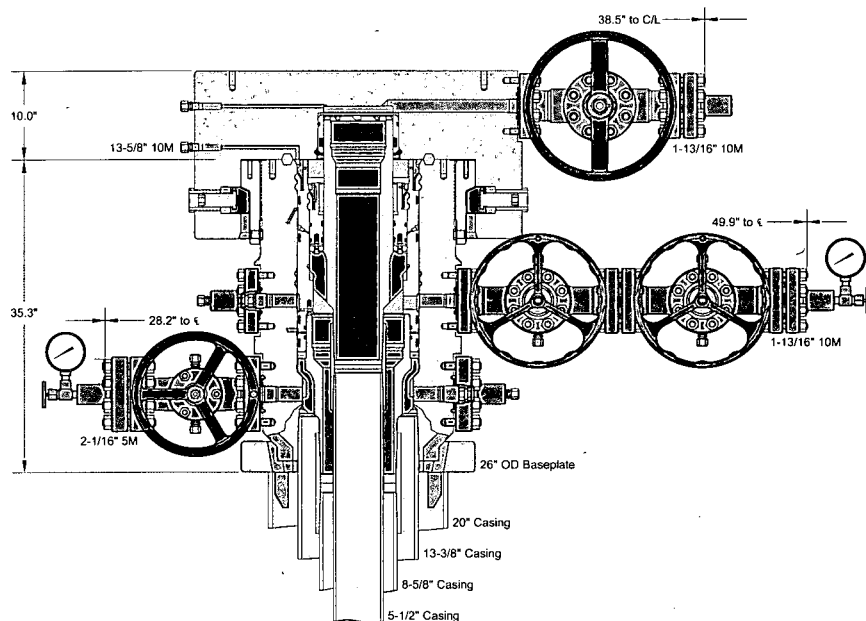
After running the intermediate casing with a mandrel hanger, the BOP/BOPE system with a minimum rating of 10M will already be installed on the wellhead.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

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

MB Verb 5M WLFMP Alt Design





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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATION
DELAWARE BASIN

13-3/8" x 8-5/8" x 5-1/2" 10M MBU-3T Wellhead System
With 8-5/8" And 5-1/2" Mandrel Casing Hangers
And 7-1/16" 15M x 7-1/16" 15M CTH-EN Tubing Head

DRAWN

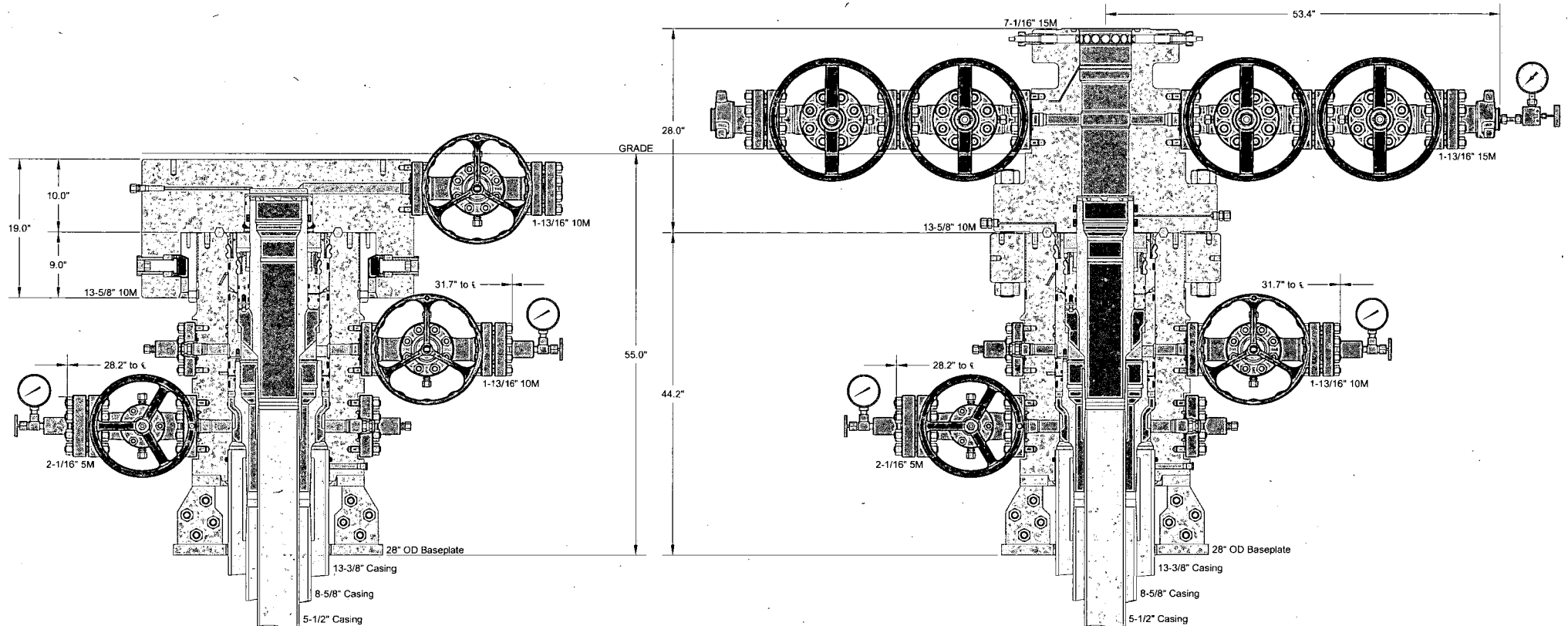
DLE

01NOV18

APPRV

DRAWING NO.

HBE0000013



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

CACTUS WELLHEAD LLC

13-3/8" x 8-5/8" x 5-1/2" 5M MBU-3T Wellhead System
With 8-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers
And 13-5/8" 10M x 7-1/16" 15M CTH-P-DBLHPS Tubing Head

DEVON ENERGY CORPORATION

DRAWN

DLE

10MAY18

APPRV

DRAWING NO.

ODE0002309



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.

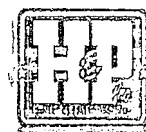
Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

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) 556-737 • 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.taurusermerge.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	C7626	
			AISI 4130	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 VERIFIED TRUE COPY PHOENIX RUBBER Q.C.		

14094-65

40920-0-00015 NB000

8	GN	+0.000	PC	14.00		
	RD	+0.000	PC	14.00		
	BL	+0.000	PC	14.00		
7	GN	+0.000	PC	13.40	40	160
	RD	+0.000	PC	13.40		
	BL	+0.000	PC	13.40		
6	GN	+0.000	PC	13.20		
	RD	+0.000	PC	13.20		
	BL	+0.000	PC	13.20		
5	GN	+0.000	PC	13.00		
	RD	+0.000	PC	13.00		
	BL	+0.000	PC	13.00		
4	GN	+0.000	PC	12.80		
	RD	+0.000	PC	12.80		
	BL	+0.000	PC	12.80		
3	GN	+0.000	PC	12.60		
	RD	+0.000	PC	12.60		
	BL	+0.000	PC	12.60		
2	GN	+0.000	PC	12.40		
	RD	+0.000	PC	12.40		
	BL	+0.000	PC	12.40		

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

VERIFIED TRUE CO.
 PHOENIX RUBBER CO.



APD ID: 10400037323

Submission Date: 12/14/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

[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_12_1_FED_731H_EX_RD_20181214100541.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? YES

New Road Map:

TOMB_RAIDER_12_1_FED_731H_ACCESS_RD_20181214100557.pdf

New road type: COLLECTOR,RESOURCE

Length: 4150

Feet

Width (ft.): 30

Max slope (%): 6

Max grade (%): 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: Water Drainage Ditch

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Access surfacing type: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: See attached Interim reclamation diagram.

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: CULVERT,OTHER

Drainage Control comments: na

Road Drainage Control Structures (DCS) description: na

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

TOMB_RAIDER_12_1_FED_731H_OneMileBuffer_WA017301228_20181214100616.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: All flowlines will be buried going to the TOMB RAIDER 12 CTB 2. Please attached CTB.

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

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: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 500000

Source volume (acre-feet): 64.44655

Source volume (gal): 21000000

Water source and transportation map:

TOMB_RAIDER_12_1_FED_331H_611H_701H_731H_watermap_20181214090123.pdf

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

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Section 6 - Construction Materials

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

Construction Materials source location attachment:

Tomb_Raider_12_Pad_2_Caliche_Map_20181214090214.pdf

Section 7 - Methods for Handling Waste

Waste type: PRODUCED WATER

Waste content description: Average produced BWPD over the first year of production

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:** PRIVATE

Disposal type description:

Disposal location description: Multiple methods for handling waste will be utilized. Via trucking, Dvn owned disposal system and or third party pipeline take away.

Waste type: COMPLETIONS/STIMULATION

Waste content description: Flow back water during completion operations.

Amount of waste: 3000 barrels

Waste disposal frequency : One Time Only

Safe containment description: N/A

Safe containmant attachment:

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

Disposal type description:

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

Waste type: FLOWBACK

Waste content description: Average produced BWPD over the flowback period (first 30 days of production).

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Disposal type description:

Disposal location description: Produced water during flowback will be disposed of at various disposals in Lea and Eddy County.

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1638.9 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

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

RIGLAYOUT_20181214100710.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: TOMB RAIDER 12 PAD

Multiple Well Pad Number: 2

Recontouring attachment:

TOMB_RAIDER_12_1_FED_731H_RECLAMATION_20181214100725.pdf

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

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

Well pad proposed disturbance (acres): 5.626

Road proposed disturbance (acres): 2.86

Powerline proposed disturbance (acres): 1.172

Pipeline proposed disturbance (acres): 0.138

Other proposed disturbance (acres): 5.74

Total proposed disturbance: 15.536

Well pad interim reclamation (acres): 2.536

Road interim reclamation (acres): 0

Powerline interim reclamation (acres): 0

Pipeline interim reclamation (acres): 0

Other interim reclamation (acres): 0

Total interim reclamation: 2.536

Well pad long term disturbance (acres): 3.09

Road long term disturbance (acres): 2.86

Powerline long term disturbance (acres): 1.172

Pipeline long term disturbance (acres): 0.138

Other long term disturbance (acres): 5.74

Total long term disturbance: 13

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.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

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? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary	
Seed Type	Pounds/Acre

Total pounds/Acre:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: JACOB

Last Name: OCHOA

Phone: (575)748-9934

Email: JACOB.OCHOA@DVN.COM

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

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

Weed treatment plan attachment:

Monitoring plan description: Monitor as needed.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

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:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: TOMB RAIDER 12-1 FED

Well Number: 731H

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: 5/4/2017; UBER NORTH, TOMB RAIDER 12 -1 FED 521H

Other SUPO Attachment

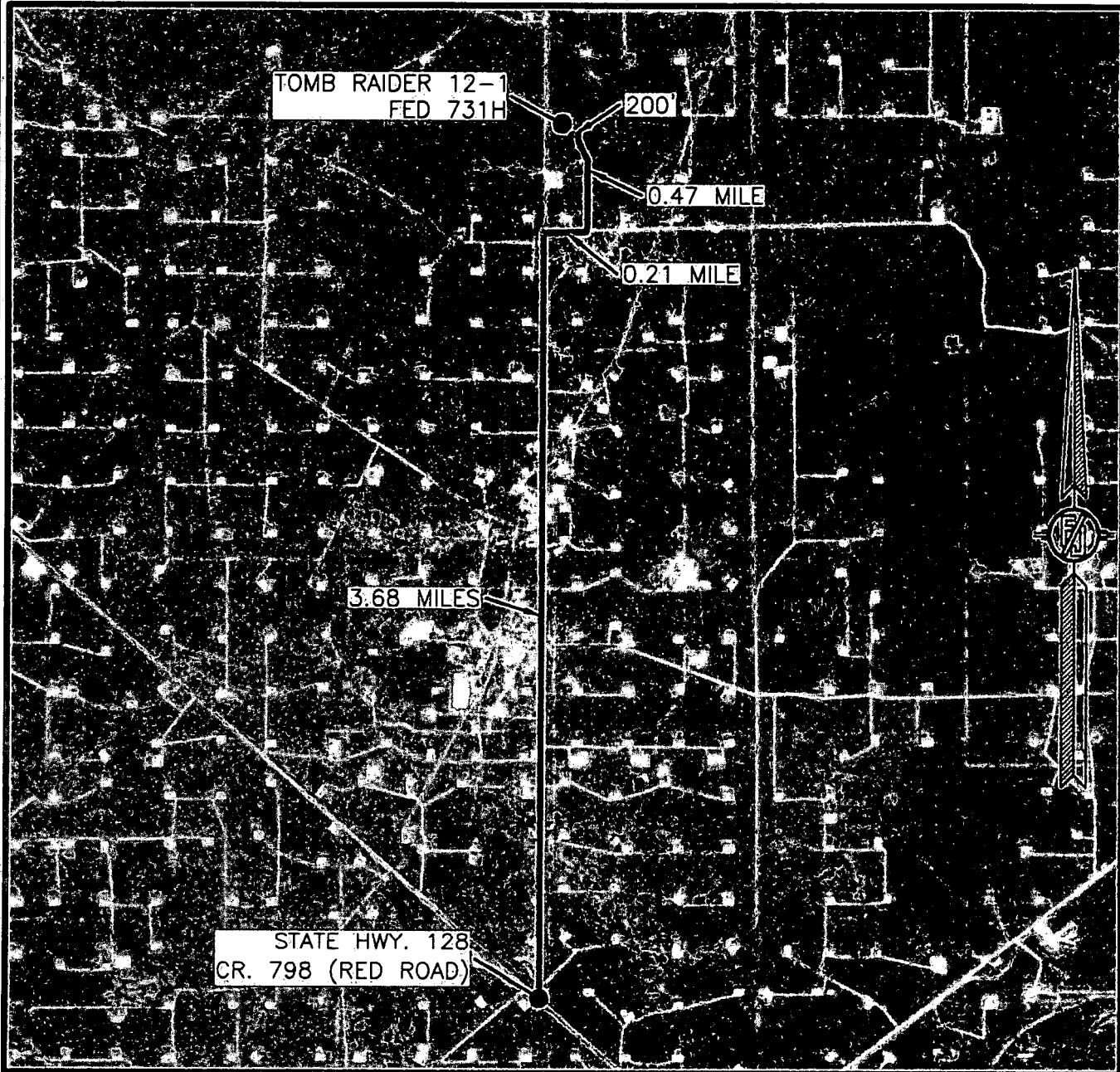
AA000226609_TOMB_RAIDER_12_CTB_2_PAD_P_R1_20181214090844.pdf

ELECTRIC__Tomb_Raider_12_Wellpad_2__CTB_2_20181214090846.pdf

Pay.gov__Receipt_331H_701H_731H_611H_20181214123631.pdf

7660154F_5FL_1GL_TR_12_WP_2_TR_12_CTB_2_P_BURIED_20190514095523.pdf

SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2017

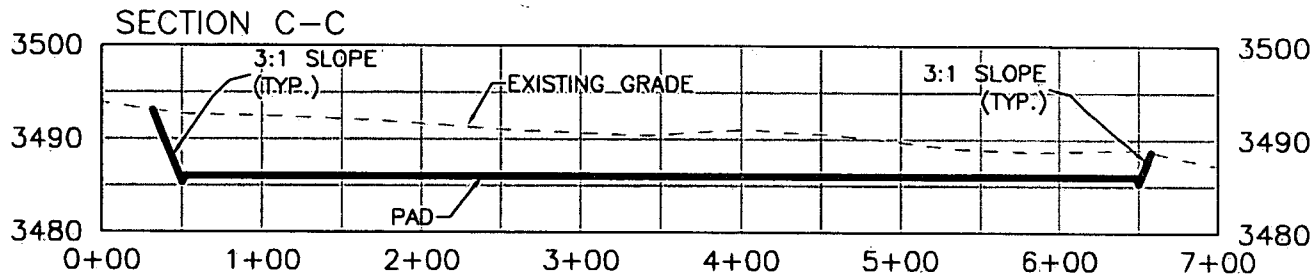
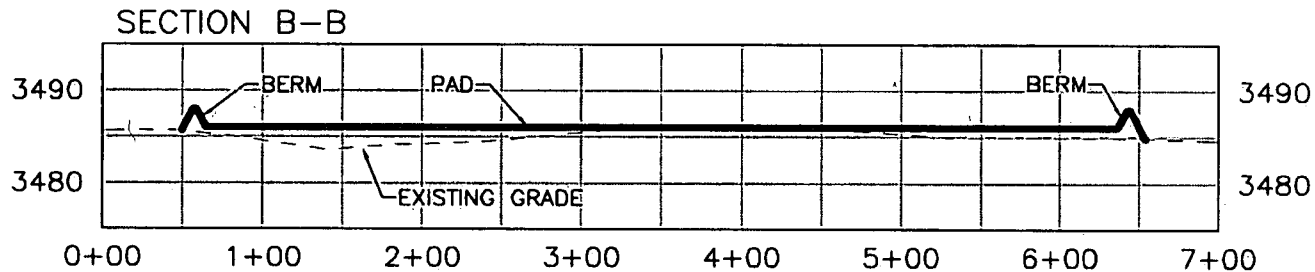
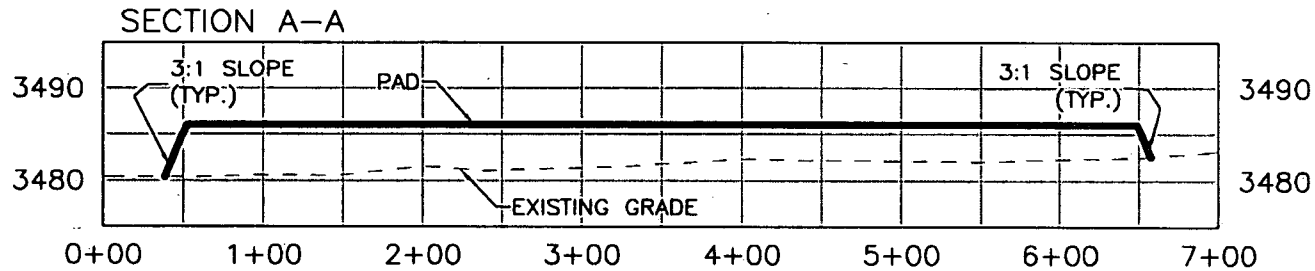
DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 12-1 FED 731H
LOCATED 250 FT. FROM THE SOUTH LINE
AND 290 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 6669

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

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
 FOR TOMB RAIDER 12-1 FED 731H
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

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

CUT	FILL	NET
15478 CU. YD	24601 CU. YD	9124 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

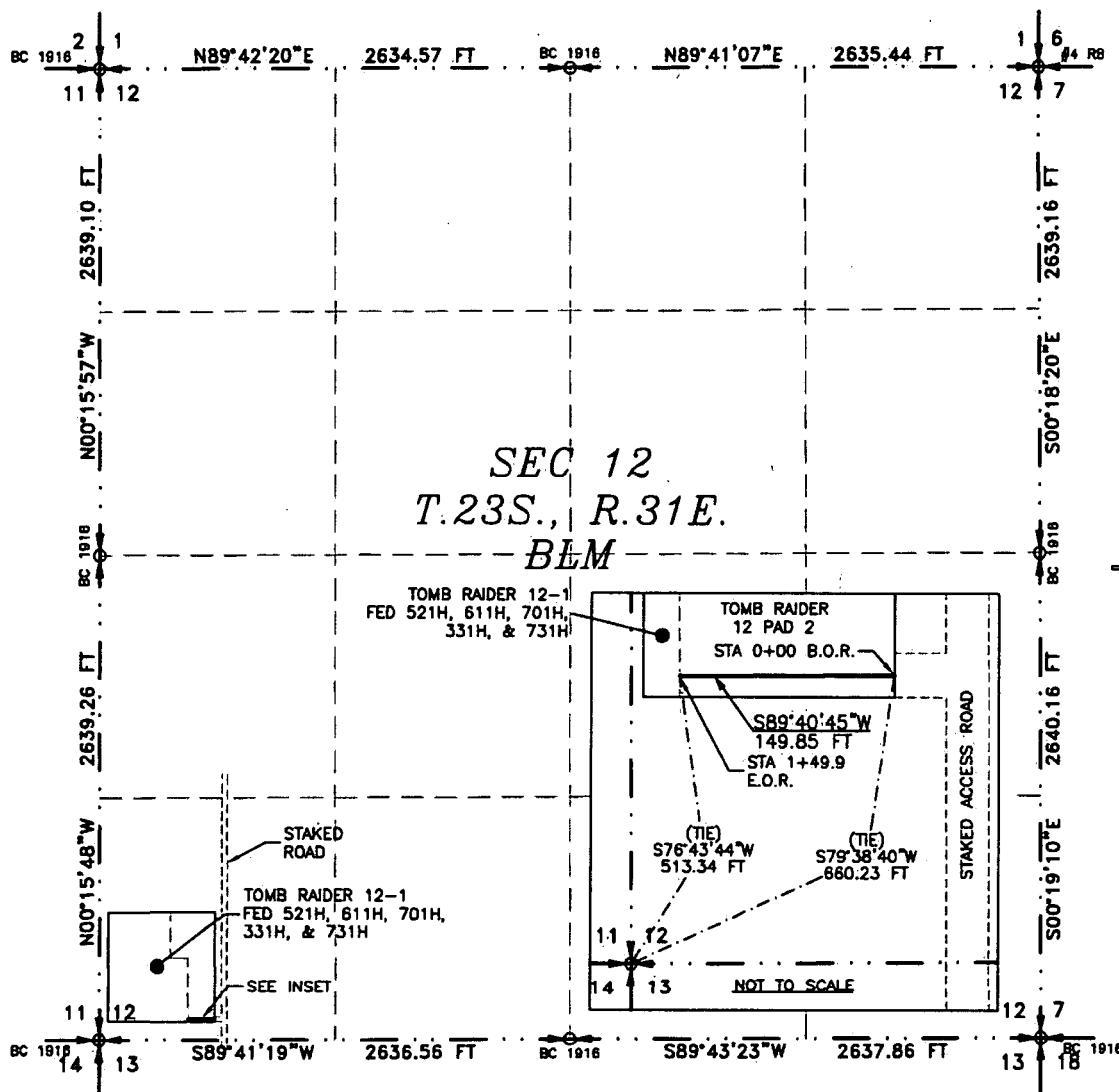
NOVEMBER 6, 2018
 MADRON SURVEYING, INC. 301 SOUTH CANAL
 (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 2-2
 SURVEY NO. 6669

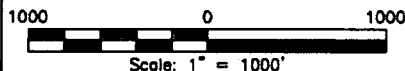
ACCESS ROAD PLAT

ACCESS ROAD FOR TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 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, 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 06 DAY OF NOVEMBER 2018

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

SURVEY NO. 6669

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

PLAT
One Mile Radius Map



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 12/12/2018



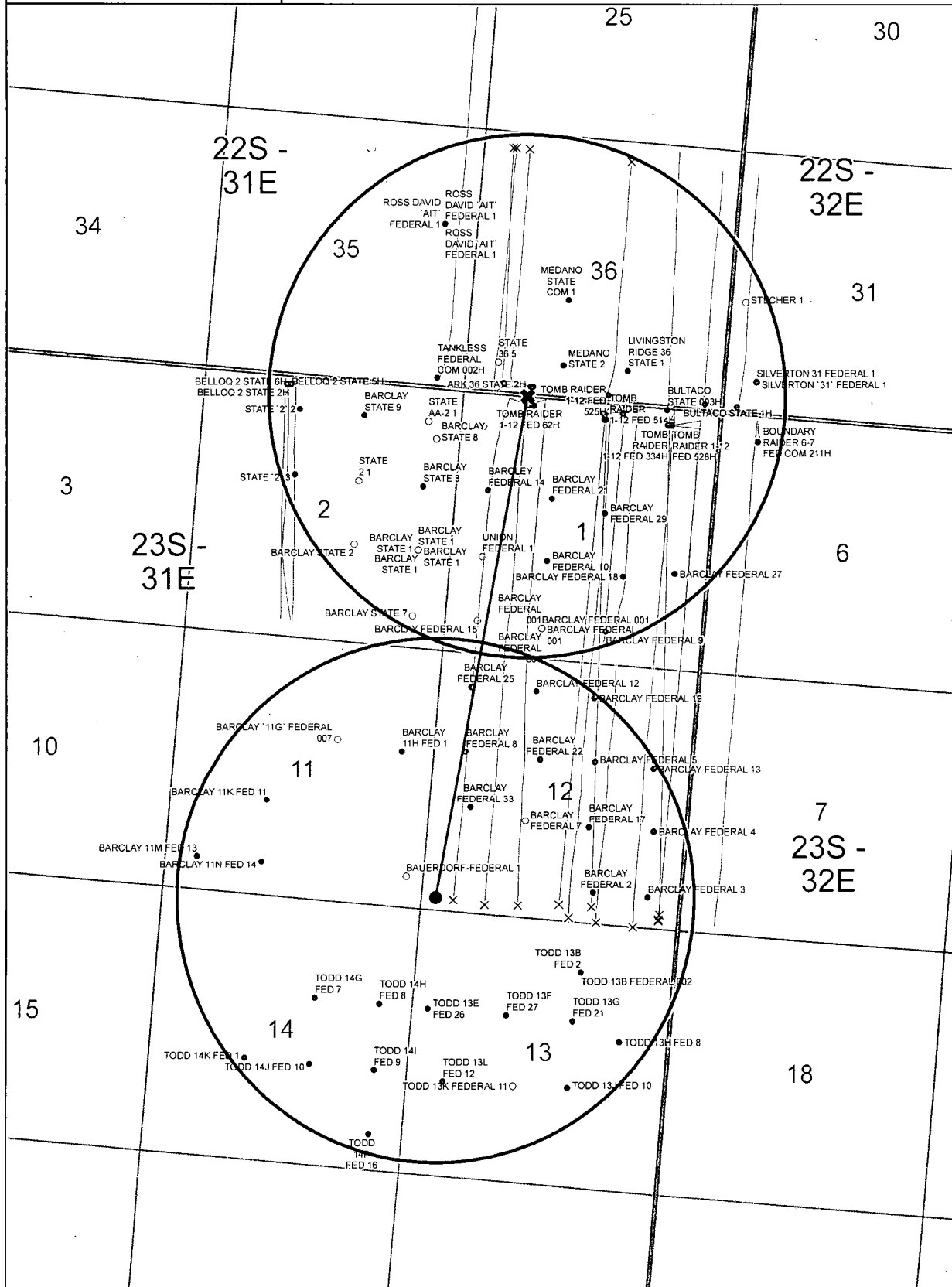
0 0.3 1 inch = 0.44 miles

TOMB RAIDER 12-1 FED 731H
WA017301228

TOMB RAIDER 1-12 FED 61H
Nearest wellbore to SHL: 361 ft.

TOMB RAIDER 1-12 FED 512H
Nearest wellbore to BHL: 79 ft.

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



TOMB RAIDER 12-1 FED

331H/611H/701H/731H

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: 07-Dec-2018



Miles

0 0.07 0.14 0.28 1:14,228

TODD 2-TW POND

DURATION: 30 DAY INSTALL PRIOR TO COMPLETION
DEVON WILL CONTACT BLM IF ADDITIONAL TIME IS NEEDED
DISTURBANCE: EXISTING
CONTENTS: TREATED WATER
TYPE OF PIPE: LAYFLAT
SIZE OF PIPE: 10" OR 12"
LENGTH OF PIPE: 7,210'

TOMB RAIDER 12-1 FED
331H/611H/701H/731H

Tomb Raider 12 Pad 2 Caliche Map

Tomb Raider 12 Pad 2

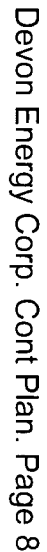
T23S R31E

Distance= 2.62 Miles

© 2013 Google

Caliche Pit

Prevailing Wind
Direction S, SW



TOP SOIL AREA

**TOMB RAIDER
12 PAD 2**

- Ⓐ TOMB RAIDER 12-1 FED 521H
- Ⓑ TOMB RAIDER 12-1 FED 611H
- Ⓒ TOMB RAIDER 12-1 FED 701H
- Ⓓ TOMB RAIDER 12-1 FED 331H
- Ⓔ TOMB RAIDER 12-1 FED 731H

600'

300'

120'

240'

30'

120'

120'

80'

330'

100'

80'

215'

90'

120'

120'

120'

305'

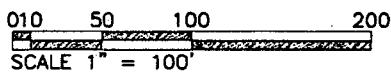
25'

25'

TOP SOIL AREA

PROPOSED 150 L.F. ACCESS ROAD

 DENOTES GRADING SITE
RECLAMATION AREA



DEVON ENERGY PRODUCTION COMPANY, L.P.
TOMB RAIDER 12-1 FED 731H
LOCATED 250 FT. FROM THE SOUTH LINE
AND 290 FT. FROM THE WEST LINE OF
SECTION 12, TOWNSHIP 23 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

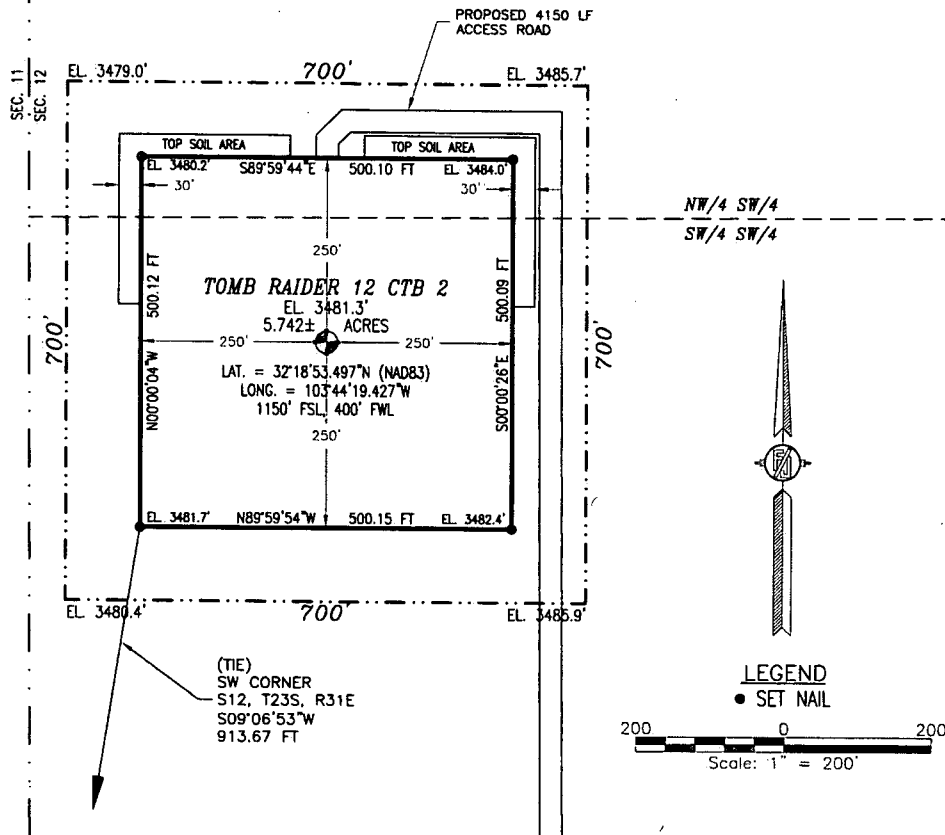
SURVEY NO. 6669

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

TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SW/4 SW/4 & NW/4 SW/4 OF
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 13, 2018



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN THE SW/4 SW/4 & NW/4 SW/4 OF SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHWEST CORNER OF THE PARCEL, WHENCE THE SOUTHWEST CORNER OF SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S09°06'53"W, A DISTANCE OF 913.67 FEET;
THENCE N00°00'04"W A DISTANCE OF 500.12 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE S89°59'44"E A DISTANCE OF 500.10 FEET TO THE NORTHEAST CORNER OF THE PARCEL;
THENCE S00°00'26"E A DISTANCE OF 500.09 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE N89°59'54"W A DISTANCE OF 500.15 FEET TO THE SOUTHWEST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;
CONTAINING 4.818 ACRES IN THE SW/4 SW/4 & 0.924 ACRES IN THE NW/4 SW/4 FOR A TOTAL OF 5.742 ACRES MORE OR LESS.

GENERAL NOTES

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

DRIVING DIRECTIONS: FROM THE INTERSECTION OF STATE HIGHWAY 128 AND CR 798 (RED ROAD) GO NORTH ON CR 798 FOR APPROX. 3.68 MILES, TURN RIGHT ON CALICHE ROAD AND GO EAST APPROX. 0.21 OF A MILE, TURN LEFT GO NORTH APPROX. 0.72 OF A MILE, TURN LEFT GO WEST-SOUTH 336' (TOTAL 4150') TO THE NORTH EDGE OF PAD FOR THIS LOCATION.

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 13TH DAY OF DECEMBER, 2018

FILMON F. JARAMILLO, SURVEYOR
12797
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
(575) 234-3341

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

SURVEY NO. 6128A

SHEET: 1-3

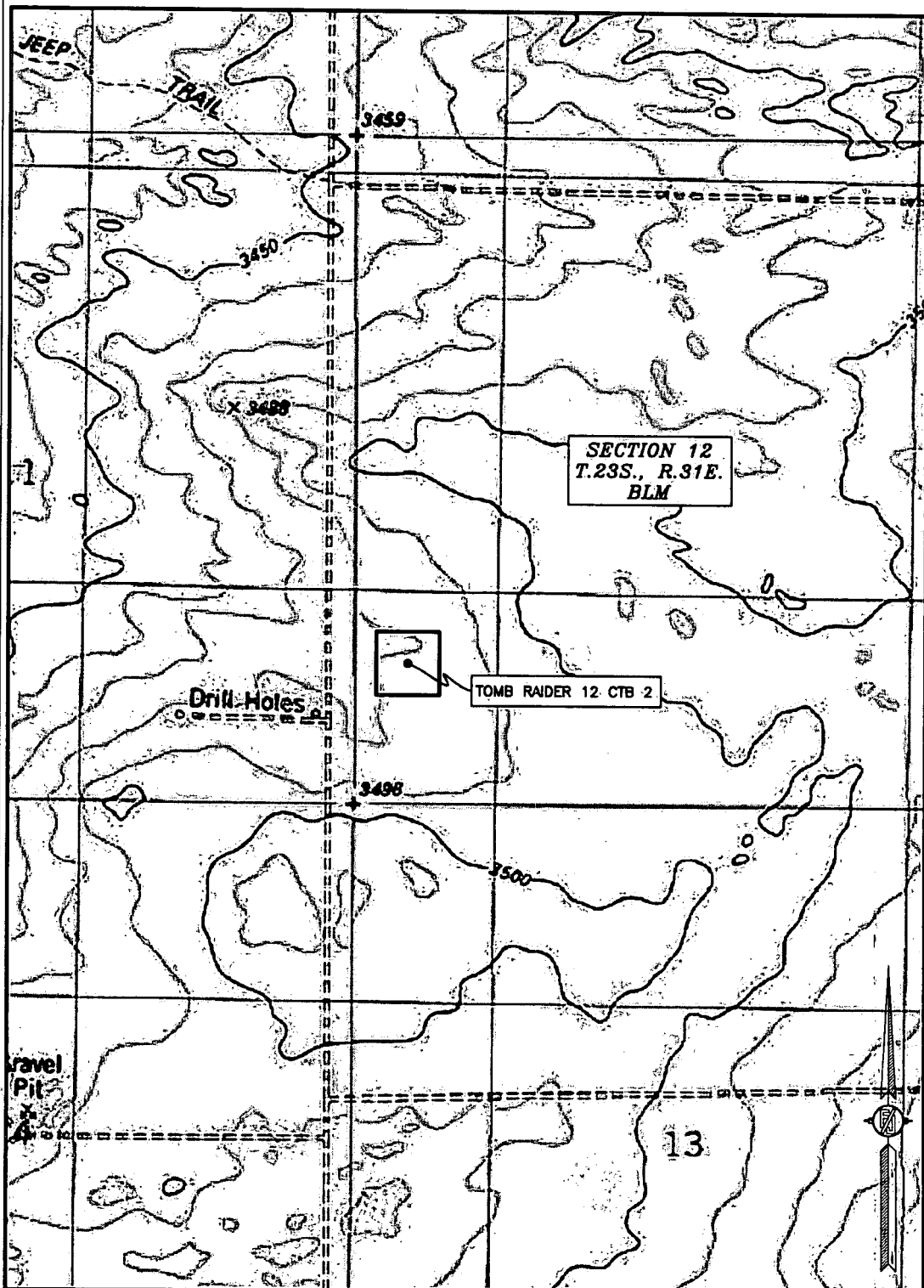
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SW/4 SW/4 & NW/4 SW/4 OF
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 13, 2018

QUAD MAP



SHEET: 2-3

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 734-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 6128A

TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE SW/4 SW/4 & NW/4 SW/4 OF
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 13, 2018

AERIAL PHOTO

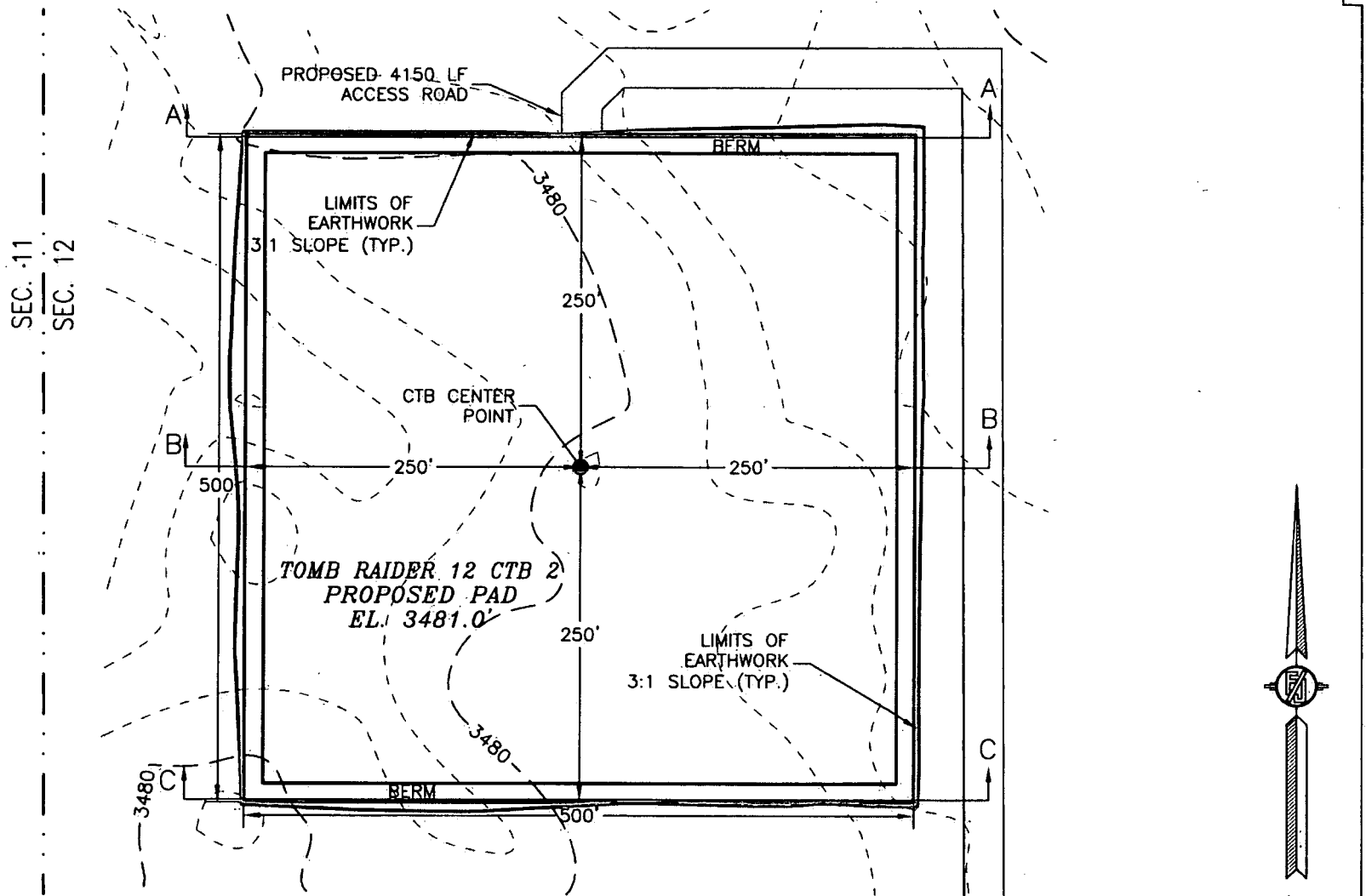


SHEET: 3-3

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

SURVEY NO. 6128A

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
 FOR TOMB RAIDER 12 CTB 2
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

012 60 120 240
 SCALE 1" = 120'

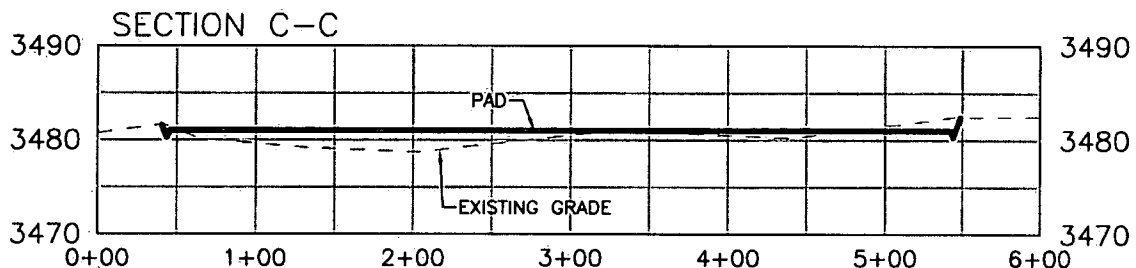
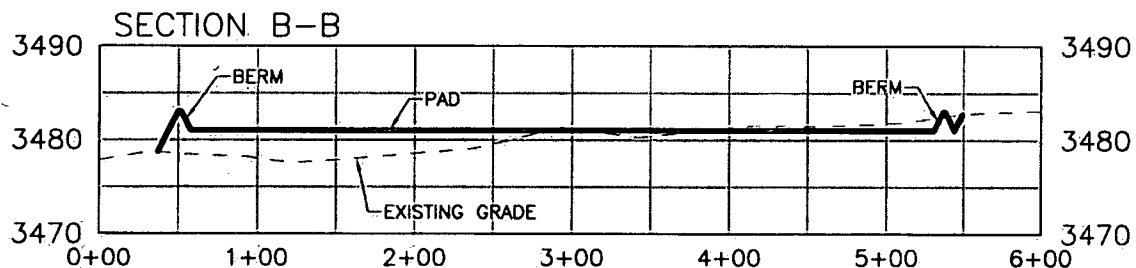
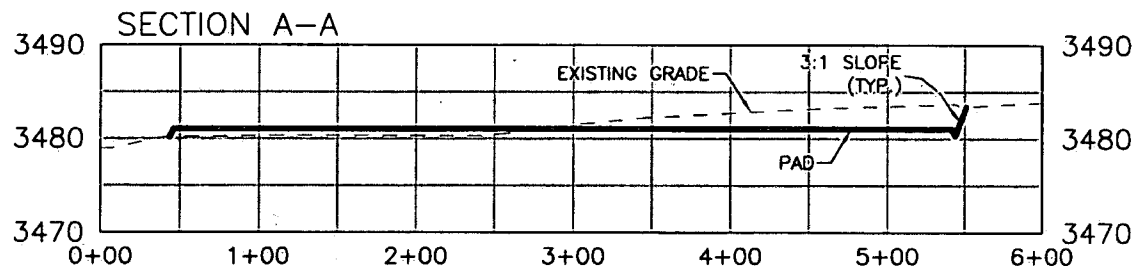
CUT	FILL	NET
2591 CU. YD	9976 CU. YD	7386 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

DECEMBER 13, 2018
 MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 1-2
 SURVEY NO. 6128A

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
FOR TOMB RAIDER 12 CTB 2
 SECTION 12, TOWNSHIP 23 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

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

CUT	FILL	NET
2591 CU. YD	9976 CU. YD	7386 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

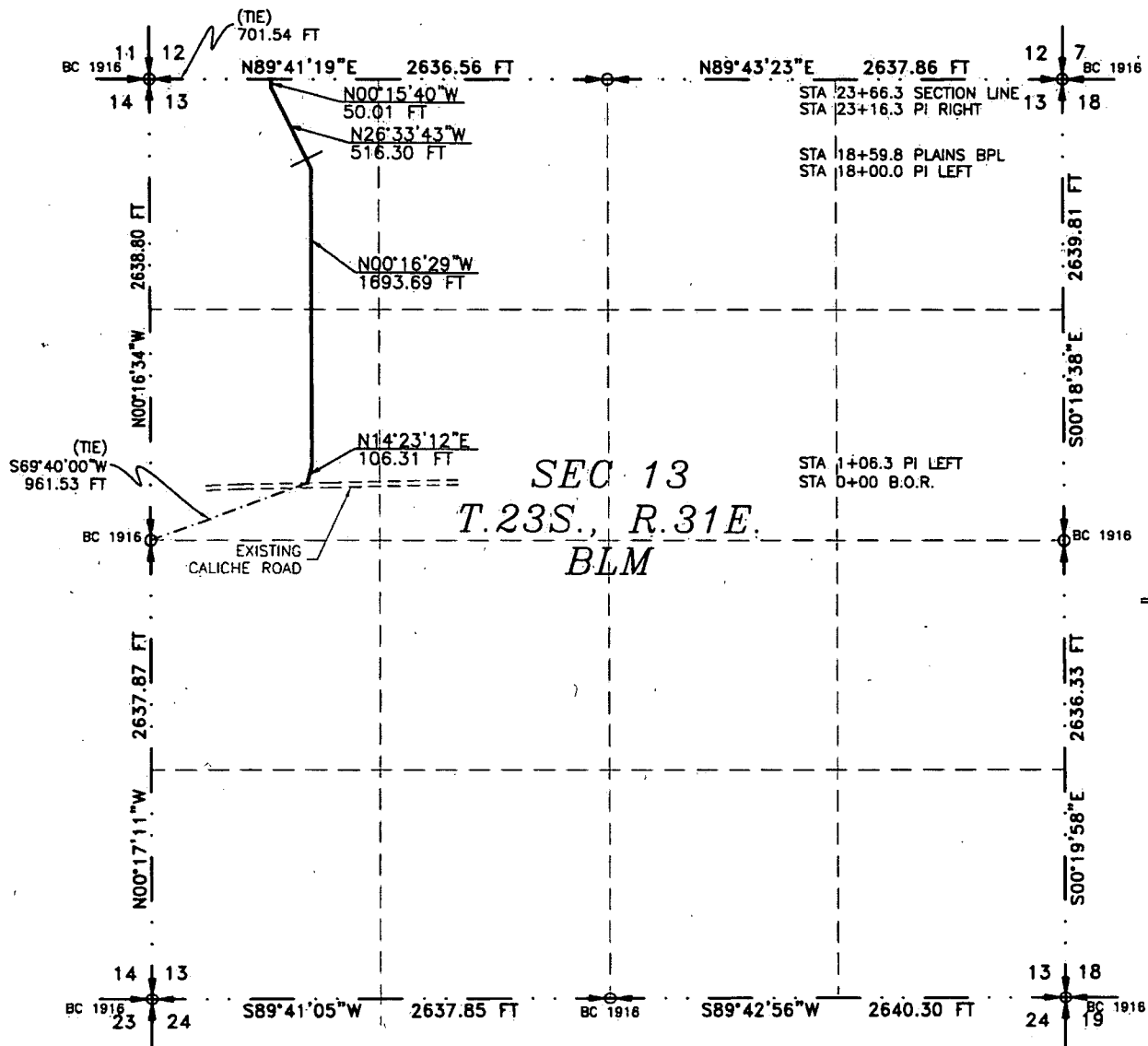
DECEMBER 13, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

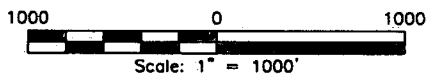
SHEET 2-2
 SURVEY NO. 6128A

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 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.

SHEET: 1-4

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

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 13 DAY OF DECEMBER 2018

FILMON F. JARAMILLO, PLS. 12797
(575) 234-3341

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

SURVEY NO. 6128A

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 13, 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 THE SW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S69°40'00"W, A DISTANCE OF 961.53 FEET;

THENCE N14°23'12"E A DISTANCE OF 106.31 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°16'29"W A DISTANCE OF 1693.69 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N26°33'43"W A DISTANCE OF 516.30 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°15'40"W A DISTANCE OF 50.01 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 701.54 FEET;

SAID STRIP OF LAND BEING 2366.31 FEET OR 143.41 RODS IN LENGTH, CONTAINING 1.630 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	993.30 L.F.	60.20 RODS	0.684 ACRES
NW/4 NW/4	1373.01 L.F.	83.21 RODS	0.946 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 13 DAY OF DECEMBER, 2018

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: 2-4

MADRON SURVEYING INC.

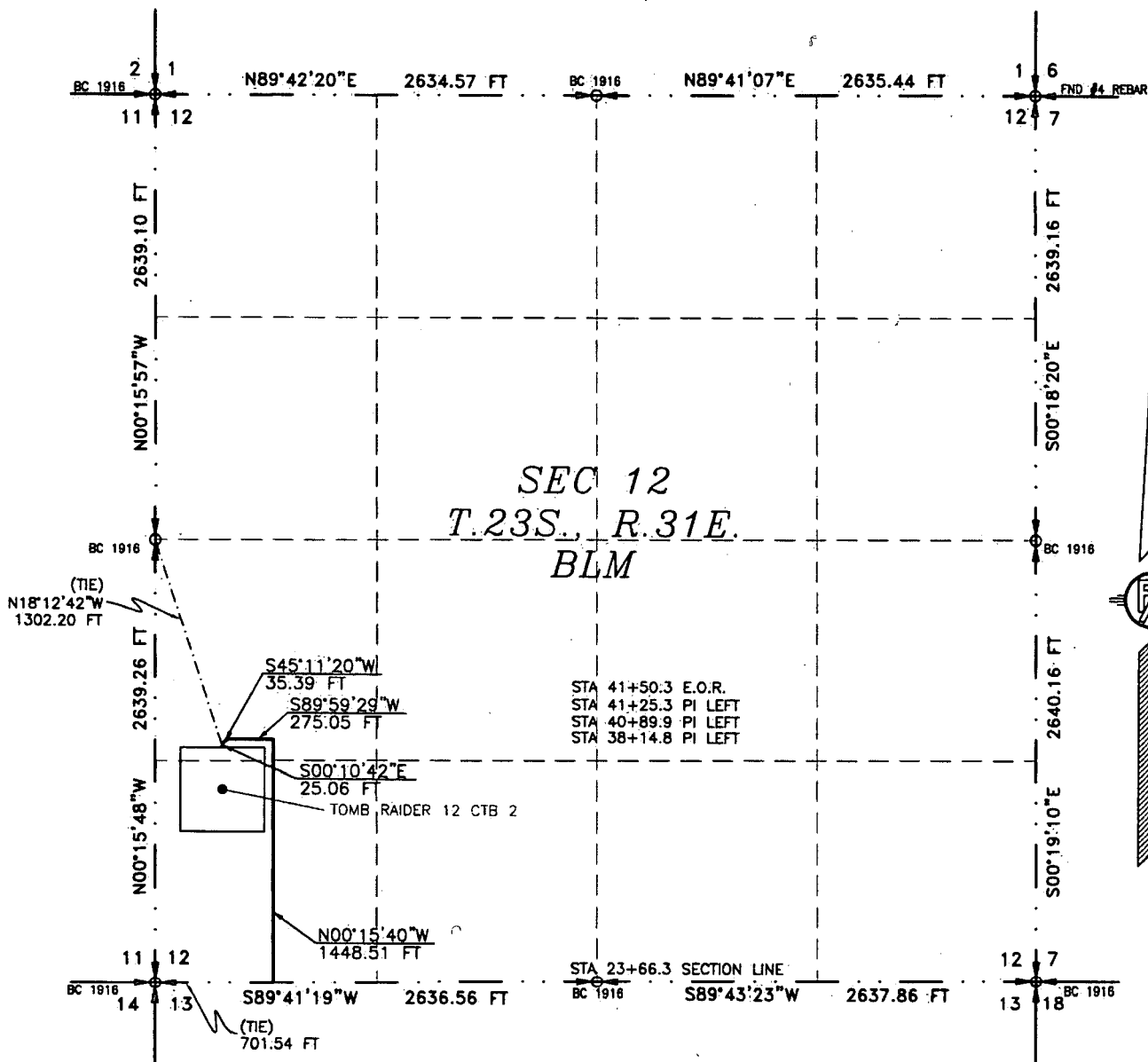
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6128A

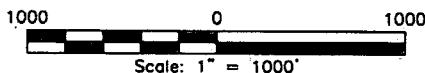
CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 2018



SEE NEXT SHEET (4-4) 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.

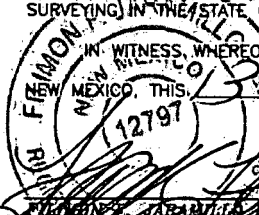
SHEET: 3-4

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 13 DAY OF DECEMBER 2018



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

SURVEY NO. 6128A

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT
ACCESS ROAD TO THE TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 13, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, 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 THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 701.54 FEET;

THENCE N00°15'40"W A DISTANCE OF 1448.51 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°59'29"W A DISTANCE OF 275.05 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S45°11'20"W A DISTANCE OF 35.39 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S00°10'42"E A DISTANCE OF 25.06 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N18°12'42"W, A DISTANCE OF 1302.20 FEET;

SAID STRIP OF LAND BEING 1784.01 FEET OR 108.12 RODS IN LENGTH, CONTAINING 1.229 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4	1319.48 L.F.	79.97 RODS	0.909 ACRES
NW/4 SW/4	464.53 L.F.	28.15 RODS	0.320 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: 4-4

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

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 13 DAY OF DECEMBER 2018.

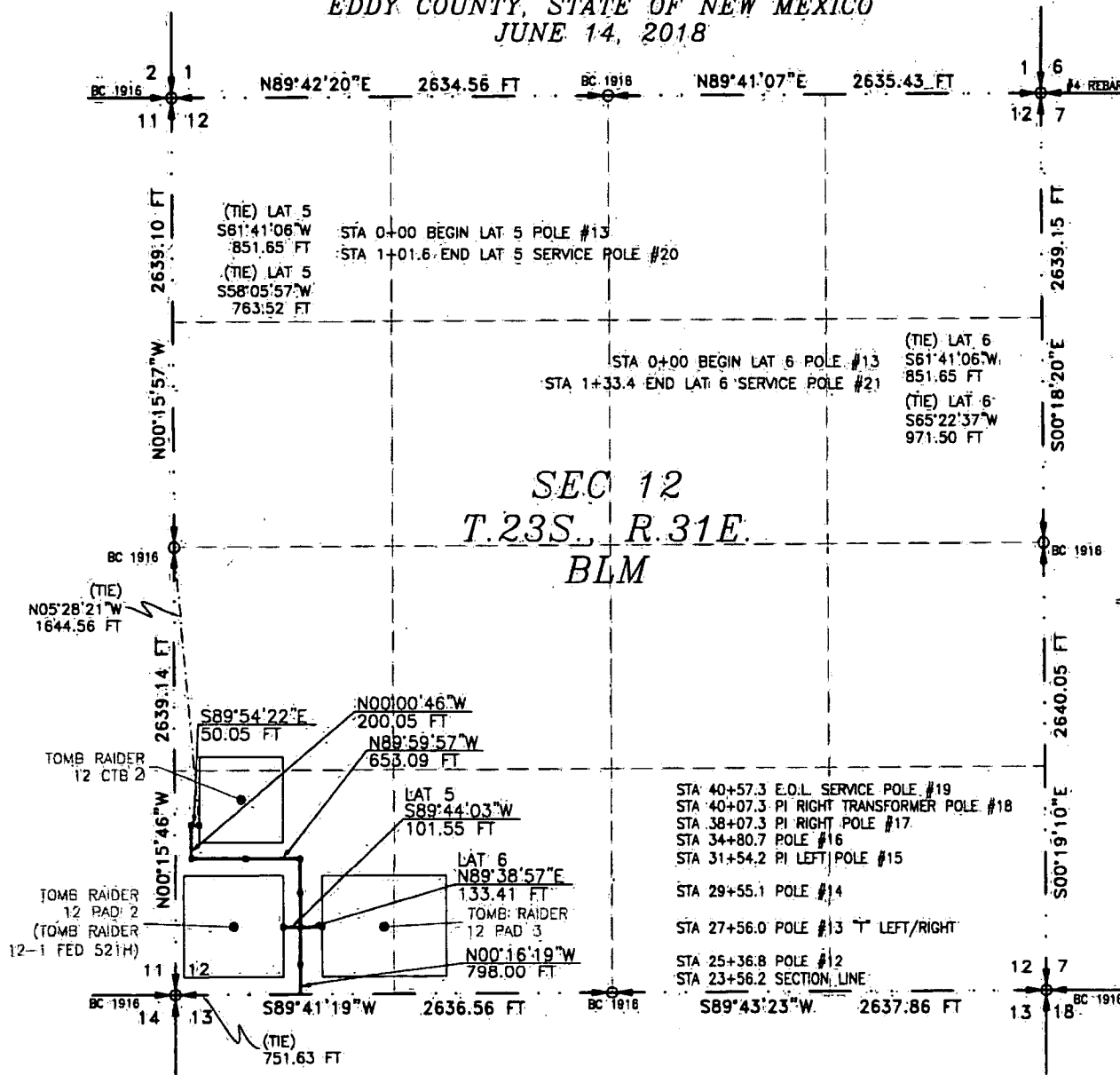
FILMON F. JARAMILLO, PLS. 12797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6128A

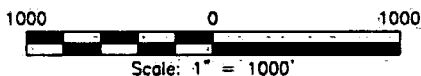
ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018



SEE NEXT SHEET (5-7) 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: 4-7

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

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 14th DAY OF JUNE 2018

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

FILMON F. JARAMILLO PLS 12797

SURVEY NO. 6298

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 21, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, 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:

MAIN TO TOMB RAIDER 12 CTB 1

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 751.63 FEET;

THENCE N00°16'19"W A DISTANCE OF 798.00 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N89°59'57"W A DISTANCE OF 653.09 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°00'46"W A DISTANCE OF 200.05 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°54'22"E A DISTANCE OF 50.05 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N05°28'21"W, A DISTANCE OF 1644.56 FEET;

SAID STRIP OF LAND BEING 1701.19 FEET OR 103.10 RODS IN LENGTH, CONTAINING 1.172 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 1701.19 L.F. 103.10 RODS 1.172 ACRES

LATERAL 5 TO TOMB RAIDER 12 PAD 2

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S61°41'06"W, A DISTANCE OF 851.65 FEET;

THENCE S89°44'03"W A DISTANCE OF 101.55 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S58°05'57"W, A DISTANCE OF 763.52 FEET;

SAID STRIP OF LAND BEING 101.55 FEET OR 6.15 RODS IN LENGTH, CONTAINING 0.070 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 101.55 L.F. 6.15 RODS 0.070 ACRES

LATERAL 6 TO TOMB RAIDER 12 PAD 3

BEGINNING AT A POINT WITHIN THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S61°41'06"W, A DISTANCE OF 851.65 FEET;

THENCE N89°38'57"E A DISTANCE OF 133.41 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S65°22'37"W, A DISTANCE OF 971.50 FEET;

SAID STRIP OF LAND BEING 133.41 FEET OR 8.09 RODS IN LENGTH, CONTAINING 0.092 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 133.41 L.F. 8.09 RODS 0.092 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 27 DAY OF JUNE 2018

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

GENERAL NOTES

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

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

SHEET: 5-7

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 6298

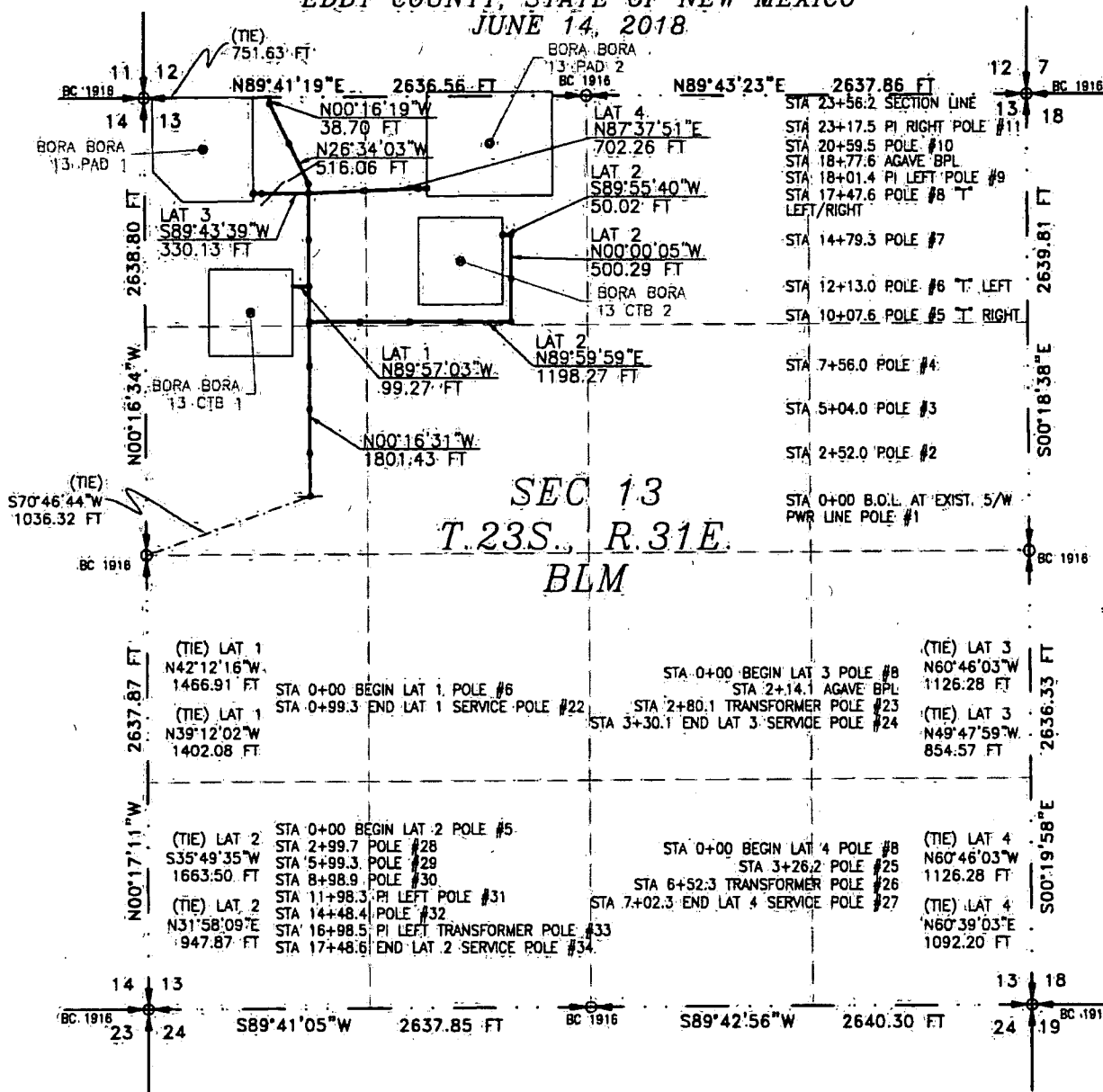
FILMON F. JARAMILLO, PLS. 12797

301 SOUTH CANAL
(575) 234-3341

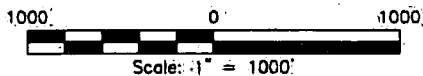
ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2 TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018



SEE NEXT SHEETS (2-7 & 3-7) 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: 1-7

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

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 21 DAY OF JUNE, 2018

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

SURVEY NO. 6298

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 13, 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:

MAIN TO TOMB RAIDER 12 CTB 1

BEGINNING AT A POINT WITHIN THE SW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S70°46'44"W, A DISTANCE OF 1036.32 FEET;

THENCE N00°16'31"W A DISTANCE OF 1801.43 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N26°34'03"W A DISTANCE OF 516.06 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°16'19"W A DISTANCE OF 38.70 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°41'19"W, A DISTANCE OF 751.63 FEET;

SAID STRIP OF LAND BEING 2356.19 FEET OR 142.79 RODS IN LENGTH, CONTAINING 1.623 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4 983.31 L.F. 59.59 RODS 0.677 ACRES

NW/4 NW/4 1372.88 L.F. 83.20 RODS 0.946 ACRES

LATERAL 1 TO BORA BORA 13 CTB 1

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N42°12'16"W, A DISTANCE OF 1466.91 FEET;

THENCE N89°57'03"W A DISTANCE OF 99.27 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N39°12'02"W, A DISTANCE OF 1402.08 FEET;

SAID STRIP OF LAND BEING 99.27 FEET OR 6.02 RODS IN LENGTH, CONTAINING 0.068 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 99.27 L.F. 6.02 RODS 0.068 ACRES

LATERAL 2 TO BORA BORA 13 CTB 2

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S35°49'35"W, A DISTANCE OF 1663.50 FEET;

THENCE N89°59'59"E A DISTANCE OF 1198.27 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N00°00'05"W A DISTANCE OF 500.29 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°55'40"W A DISTANCE OF 50.02 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N31°58'09"E, A DISTANCE OF 947.87 FEET;

SAID STRIP OF LAND BEING 1748.58 FEET OR 105.97 RODS IN LENGTH, CONTAINING 1.204 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 338.32 L.F. 20.50 RODS 0.233 ACRES

NE/4 NW/4 1410.26 L.F. 85.47 RODS 0.971 ACRES

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 24 DAY OF JUNE 2018

FILIMON F. JARAMILLO, S.S. 12797

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

SURVEY NO. 6298

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: 2-7

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 13, 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:

LATERAL 3 TO BORA BORA 13 PAD 1

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N60°46'03"W, A DISTANCE OF 1126.28 FEET;

THENCE S89°43'39"W A DISTANCE OF 330.13 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N49°47'59"W, A DISTANCE OF 854.57 FEET;

SAID STRIP OF LAND BEING 330.13 FEET OR 20.01 RODS IN LENGTH, CONTAINING 0.227 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 330.13 L.F. 20.01 RODS 0.227 ACRES

LATERAL 4 TO BORA BORA 13 PAD 2

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N60°46'03"W, A DISTANCE OF 1126.28 FEET;

THENCE N87°37'51"E A DISTANCE OF 702.26 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 13, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N60°39'03"E, A DISTANCE OF 1092.20 FEET;

SAID STRIP OF LAND BEING 702.26 FEET OR 42.56 RODS IN LENGTH, CONTAINING 0.484 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 338.42 L.F. 20.51 RODS 0.233 ACRES.

NE/4 NW/4 363.84 L.F. 22.05 RODS 0.251 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 21 DAY OF JUNE 2018.

Filmon F. Jaramillo
FILMON F. JARAMILLO PLS. 12797

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

SURVEY NO. 6298

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.

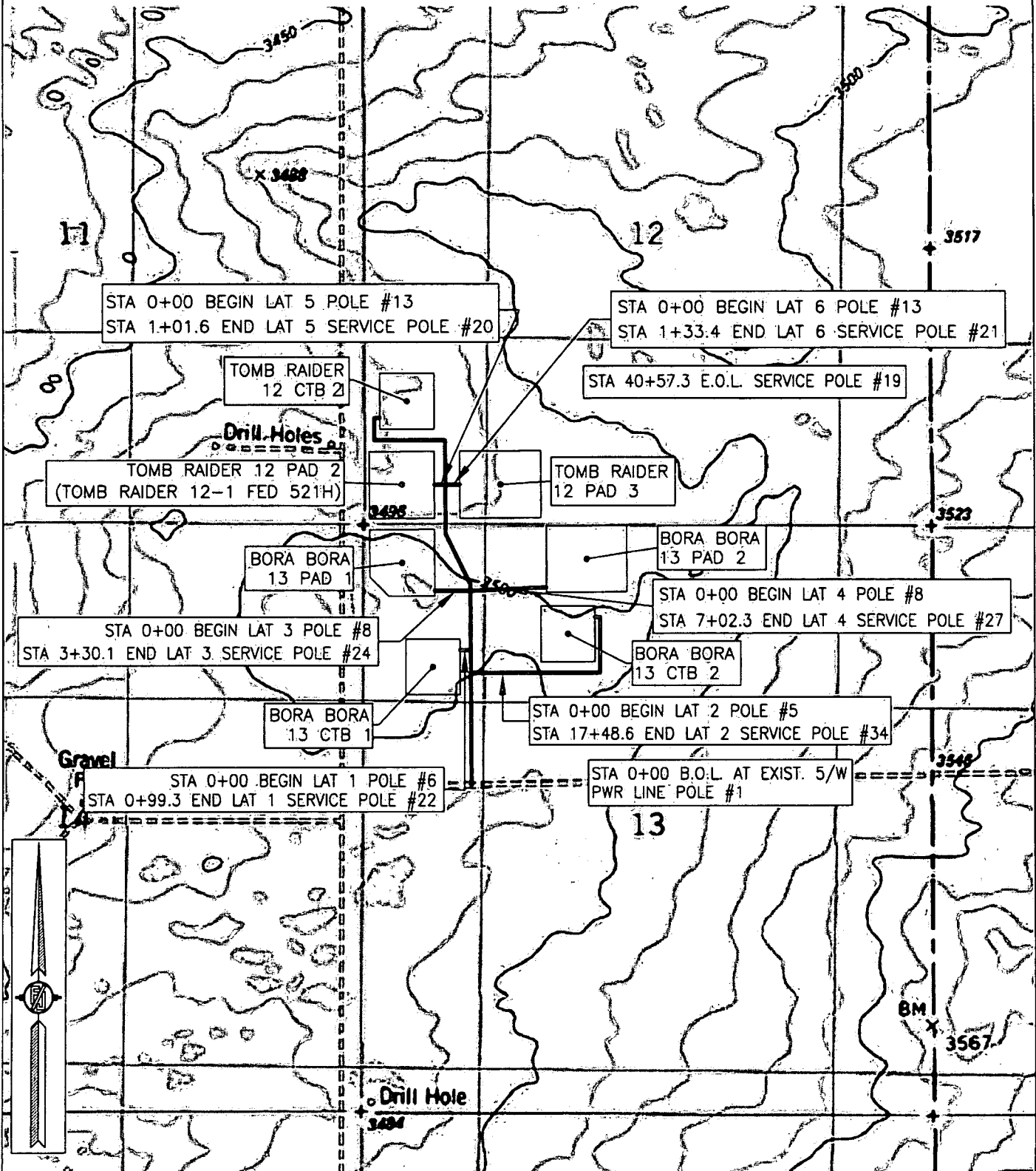
SHEET: 3-7

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

ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

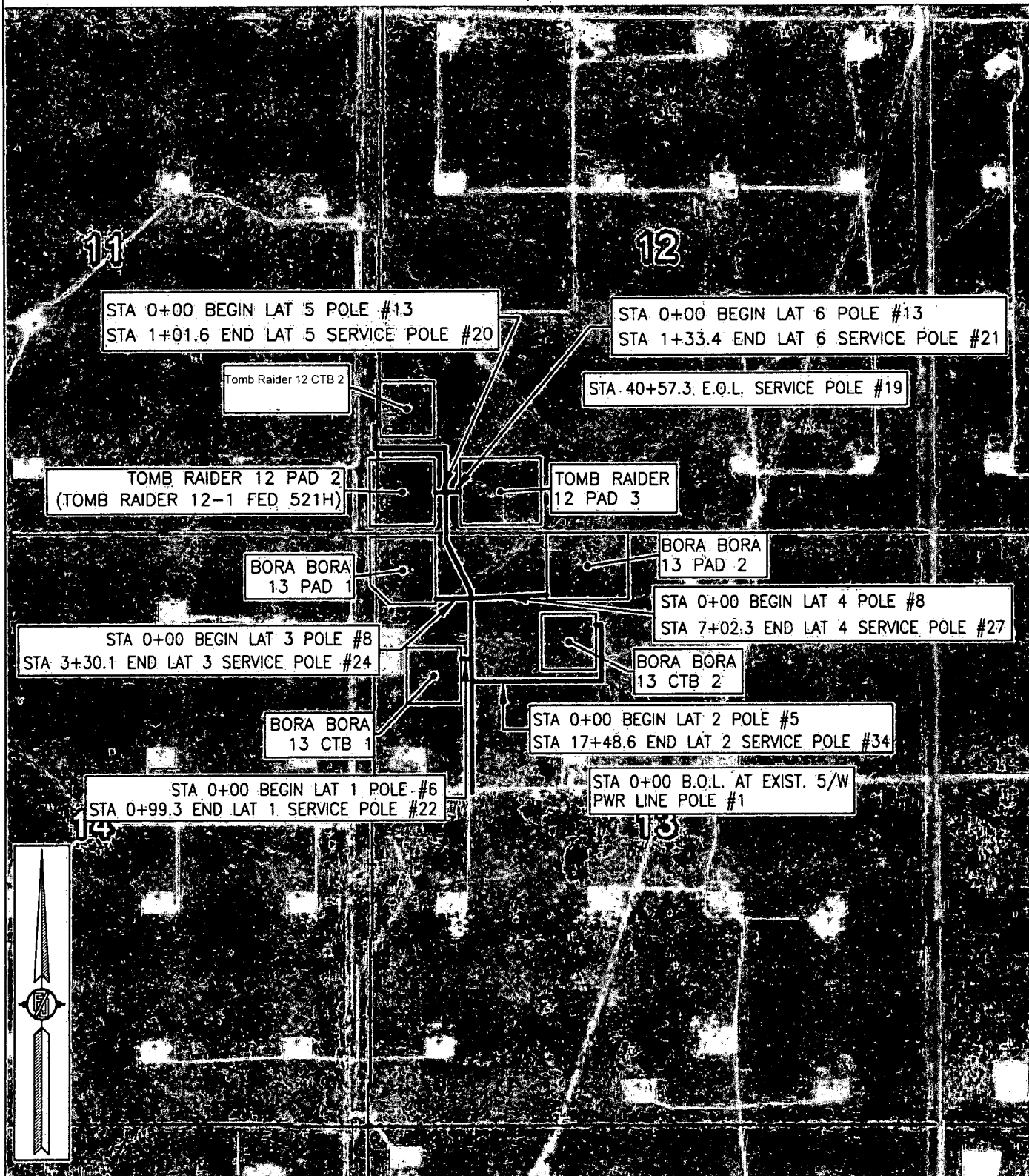
DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTIONS 13, 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018



ELECTRIC LINE PLAT

ELECTRIC LINES TO CONNECT THE TOMB RAIDER 12 CTB 2, TOMB RAIDER 12 PAD 2,
(TOMB RAIDER 12-1 FED 521H), TOMB RAIDER 12 PAD 3,
BORA BORA 13 PAD 1 & 2, BORA BORA 13 CTB 1 & 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ELECTRIC LINE CROSSING
SECTIONS 13, 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JUNE 14, 2018





Receipt

Tracking Information

Pay.gov Tracking ID: 26E449UE

Agency Tracking ID: 75636050260

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

Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Bank account (ACH)

Payment Amount: \$40,200.00

Transaction Date: 12/14/2018 02:25:59 PM EST

Payment Date: 12/17/2018

Company: DEVON ENERGY PRODUCTION CO., L.P.

APD IDs: 10400037332, 10400037323, 10400037318, 10400037314

Lease Numbers: NMNM022080, NMNM022080, NMNM022080, NMNM022080

Well Numbers: 611H, 731H, 701H, 331H

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

Account Information

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

Routing Number: 061000052

Account Number: *****9892

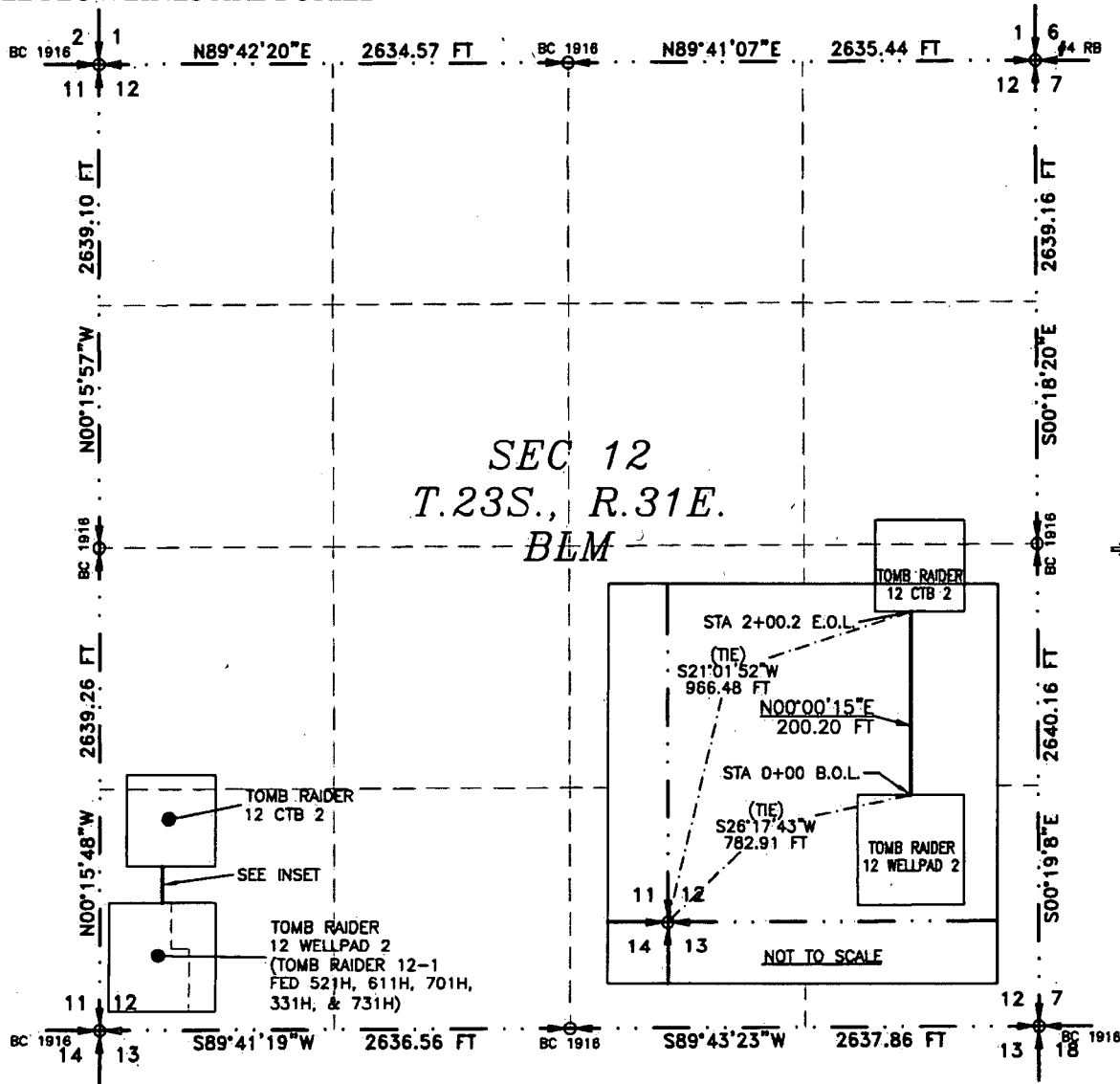
FLOWLINE PLAT

**FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB
RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H)
TO TOMB RAIDER 12 CTB 2**

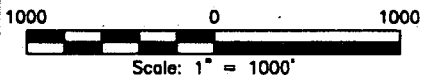
**DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO**

NOVEMBER 6, 2018

ALL FLOWLINES ARE BURIED



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.

SHEET: 1-4

MADRON SURVEYING, INC.

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 15 DAY OF NOVEMBER, 2018

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

SURVEY NO. 6673

FILMON F. JARAMILLO, 12797
301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB
RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H)
TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOWLINES ARE BURIED

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 12, 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 THE SW/4 SW/4 OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S26°17'43"W, A DISTANCE OF 782.91 FEET;
THENCE N00°00'15"E A DISTANCE OF 200.20 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S21°01'52"W, A DISTANCE OF 966.48 FEET;

SAID STRIP OF LAND BEING 200.20 FEET OR 12.13 RODS IN LENGTH, CONTAINING 0.138 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 200.20 L.F. 12.13 RODS 0.138 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 7TH DAY OF NOVEMBER 2018

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

GENERAL NOTES

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

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

SHEET: 2-4

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

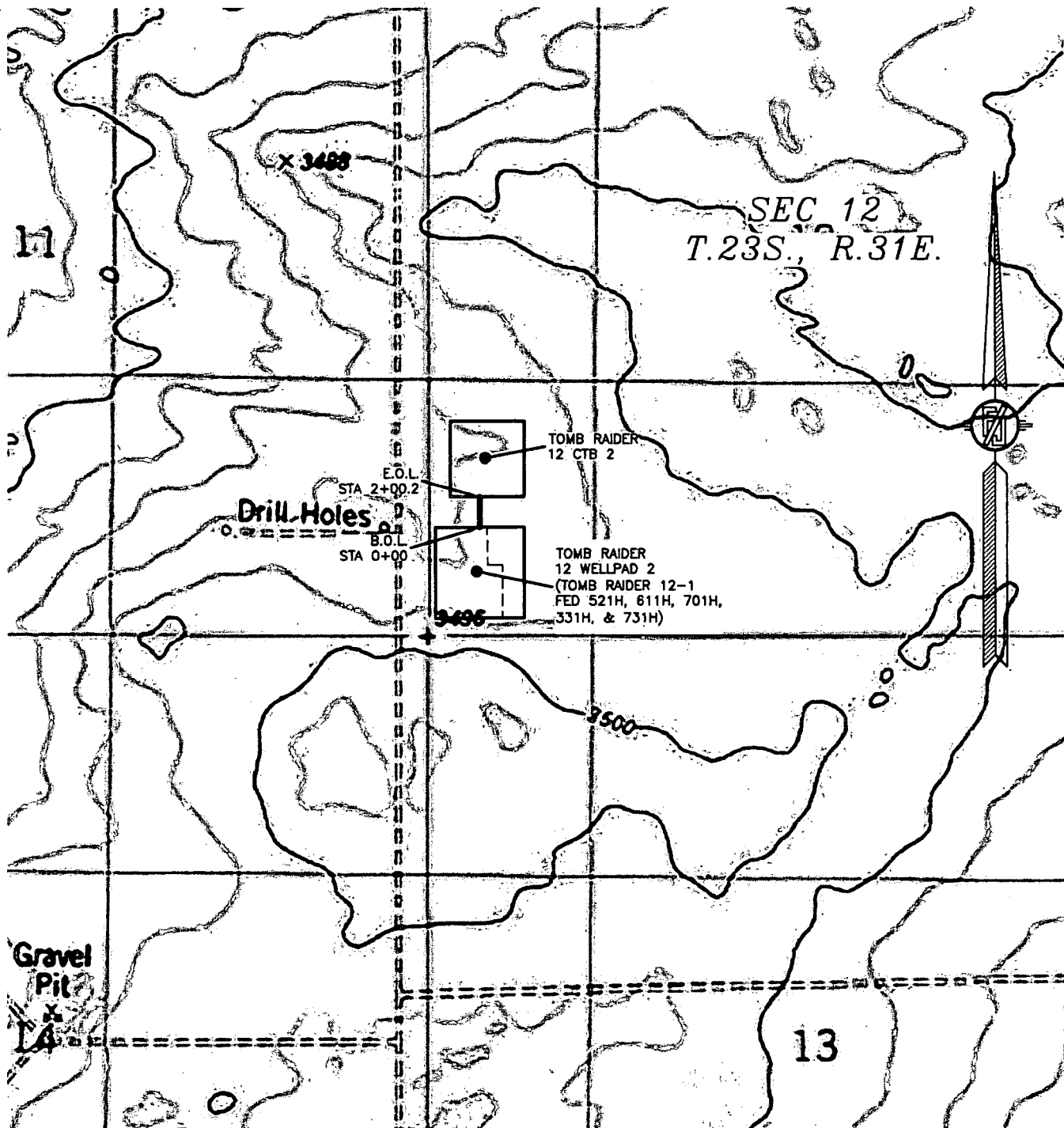
SURVEY NO. 6673
CARLSBAD, NEW MEXICO

FLOWLINE PLAT

FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB
RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H)
TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

ALL FLOWLINES ARE BURIED NOVEMBER 6, 2018

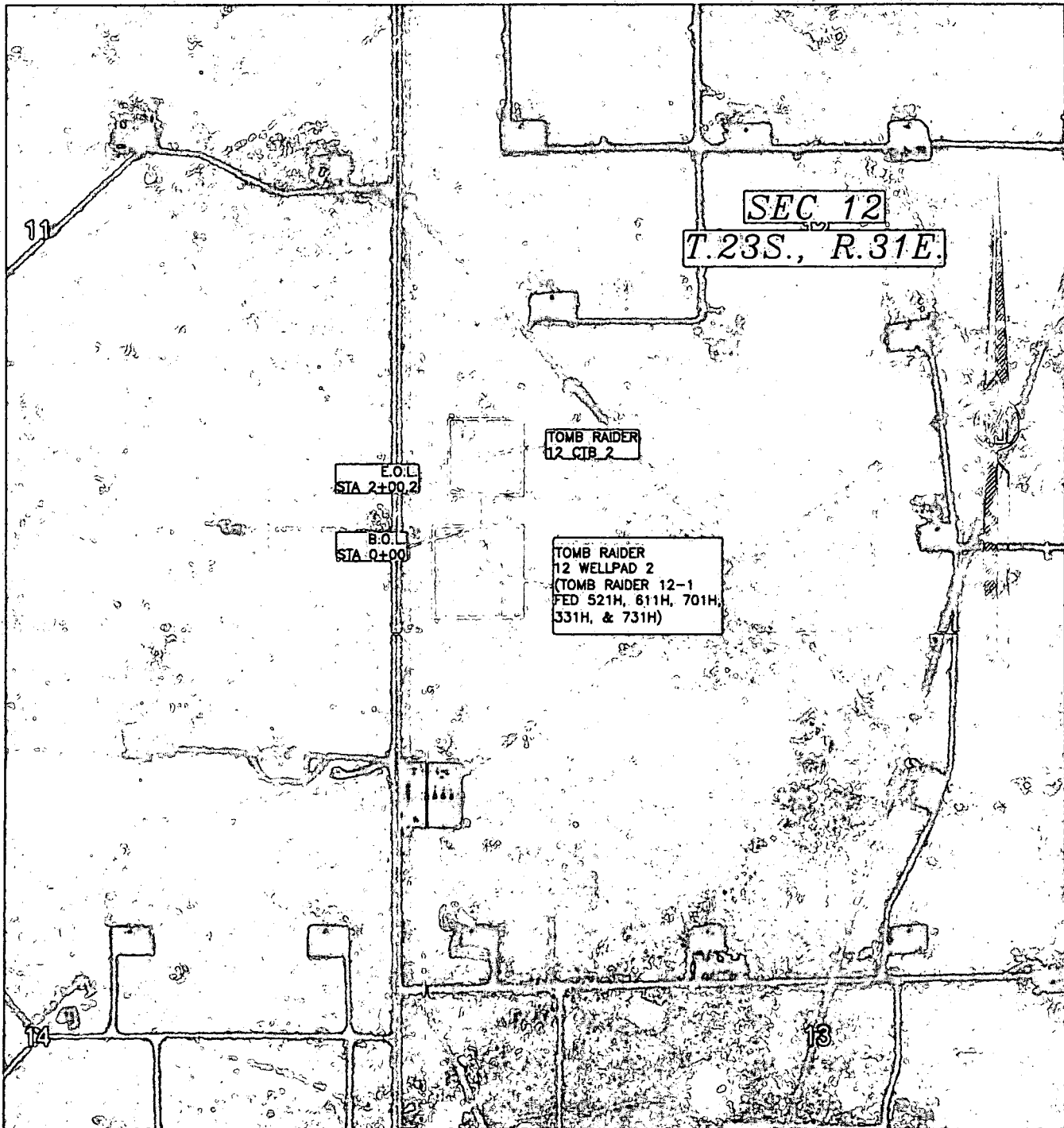


FLOWLINE PLAT

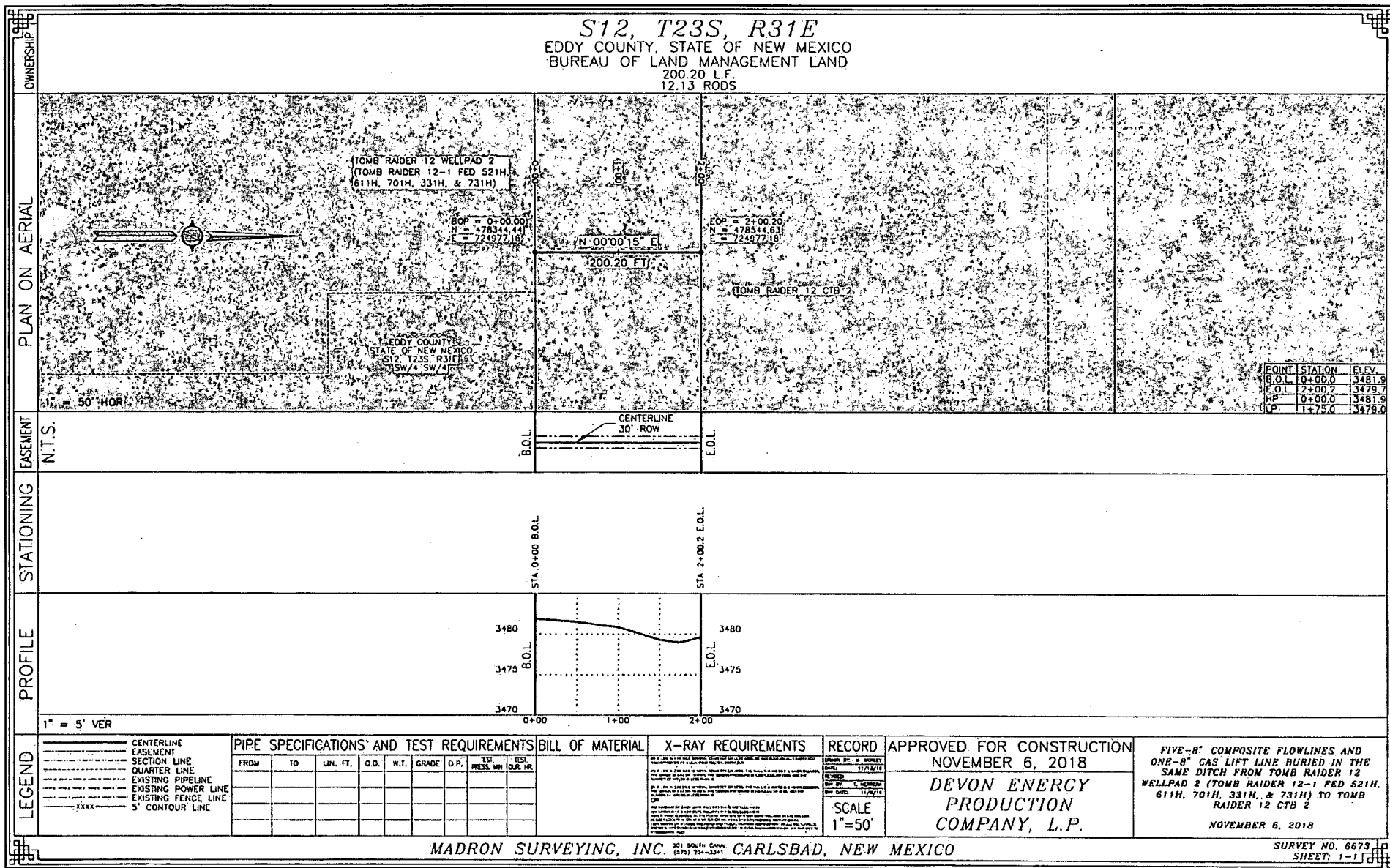
FIVE-8" COMPOSITE FLOWLINES AND ONE-8" GAS LIFT LINE BURIED IN THE SAME DITCH FROM TOMB
RAIDER 12 WELLPAD 2 (TOMB RAIDER 12-1 FED 521H, 611H, 701H, 331H, & 731H)
TO TOMB RAIDER 12 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

ALL FLOWLINES ARE BURIED



ALL FLOWLINES ARE BURIED





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

06/20/2019

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: