

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

<b>Well Name:</b> KANGAROO 12 FEDERAL COM	<b>Well Location:</b> T20S / R28E / SEC 12 / SENW / 32.591758 / -104.131584	<b>County or Parish/State:</b> EDDY / NM
<b>Well Number:</b> 132H	<b>Type of Well:</b> OIL WELL	<b>Allottee or Tribe Name:</b>
<b>Lease Number:</b> NMNM2377	<b>Unit or CA Name:</b>	<b>Unit or CA Number:</b>
<b>US Well Number:</b> 3001547595	<b>Operator:</b> PERMIAN RESOURCES OPERATING LLC	

**Notice of Intent**

**Sundry ID:** 2790682

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 05/15/2024

**Time Sundry Submitted:** 04:58

**Date proposed operation will begin:** 07/22/2024

**Procedure Description:** Permian Resources Respectfully requests permission to make the following changes to the original APD: KANGAROO 12 FED COM 132H API# 30-015-47595 No Additional Surface Disturbance SHL: From: 1390' FNL & 2355' FWL, Sec. 12-T20S-R28E TO: 1418' FNL & 2463' FWL, Sec. 12-T20S-R28E KOP: From: 330' FNL & 2615' FWL, Sec. 12-T20S-R28E TO: 1418' FNL & 2463' FWL, Sec. 12-T20S-R28E FTP: From: 330' FNL & 2565' FWL, Sec. 12-T20S-R28E TO: 2310' FNL & 2540' FWL, Sec. 12-T20S-R28E PPP: From: did not note on original TO: 2312' FNL & 0' FWL, Sec. 11-T20S-R28E LTP: From: 330' FNL & 100' FWL, Sec 10-T20S-R28E TO: 2310' FNL & 100' FWL, Sec. 11-T20S-R28E BHL: From: 330' FNL & 20' FWL, Sec 10-T20S-R28E TO: 2310' FNL & 100' FWL, Sec. 11-T20S-R28E Casing/Cement design per the attached Drilling Program. Permian Resources also requests the following variances: BOP Break Test Procedure OLCV Batch Flexhose Variance Attachments: C102 Layout Drilling Program Spec Sheet – Inter & Prod Csg Directional Plan Multibowl Diagram 5MBOP/5MCM BOP Break Test Procedure OLCV Batch Flexhose Variance

**NOI Attachments**

**Procedure Description**

KANGAROO\_12\_FED\_COM\_132H\_Sundry\_Attachments\_20240710135144.pdf

**Well Name:** KANGAROO 12 FEDERAL COM

**Well Location:** T20S / R28E / SEC 12 / SENW / 32.591758 / -104.131584

**County or Parish/State:** EDDY / NM

**Well Number:** 132H

**Type of Well:** OIL WELL

**Allottee or Tribe Name:**

**Lease Number:** NMNM2377

**Unit or CA Name:**

**Unit or CA Number:**

**US Well Number:** 3001547595

**Operator:** PERMIAN RESOURCES OPERATING LLC

### Conditions of Approval

#### Additional

Sec\_12\_20S\_28E\_NMP\_Sundry\_2790682\_Kangaroo\_12\_Federal\_Com\_132H\_COAs\_20240724094028.pdf

### Operator

*I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a*

**Operator Electronic Signature:** CASSIE EVANS

**Signed on:** JUL 17, 2024 07:54 AM

**Name:** PERMIAN RESOURCES OPERATING LLC

**Title:** Regulatory Specialist

**Street Address:** 300 N MARIENFELD ST STE 1000

**City:** MIDLAND

**State:** TX

**Phone:** (432) 260-4388

**Email address:** CASSIE.EVANS@PERMIANRES.COM

### Field

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**

### BLM Point of Contact

**BLM POC Name:** CHRISTOPHER WALLS

**BLM POC Title:** Petroleum Engineer

**BLM POC Phone:** 5752342234

**BLM POC Email Address:** cwalls@blm.gov

**Disposition:** Approved

**Disposition Date:** 08/02/2024

**Signature:** Chris Walls

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2021

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

5. Lease Serial No. **NMNM2377**

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE** - Other instructions on page 2

1. Type of Well  
 Oil Well     Gas Well     Other

2. Name of Operator **PERMIAN RESOURCES OPERATING LLC**

3a. Address **300 N MARIENFELD ST SUITE 1000, MIDLAND**    3b. Phone No. (include area code)  
**(432) 695-4222**

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)  
**SEC 12/T20S/R28E/NMP**

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

8. Well Name and No. **KANGAROO 12 FEDERAL COM/13:**

9. API Well No. **3001547595**

10. Field and Pool or Exploratory Area  
**OLD MILLMAN RANCH/BS (ASSOC)**

11. Country or Parish, State  
**EDDY/NM**

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

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

Permian Resources Respectfully requests permission to make the following changes to the original APD:

KANGAROO 12 FED COM 132H API# 30-015-47595

No Additional Surface Disturbance

SHL: From: 1390 FNL & 2355 FWL, Sec. 12-T20S-R28E TO: 1418 FNL & 2463 FWL, Sec. 12-T20S-R28E

KOP: From: 330 FNL & 2615 FWL, Sec. 12-T20S-R28E TO: 1418 FNL & 2463 FWL, Sec. 12-T20S-R28E

FTP: From: 330 FNL & 2565 FWL, Sec. 12-T20S-R28E TO: 2310 FNL & 2540 FWL, Sec. 12-T20S-R28E

PPP: From: did not note on original TO: 2312 FNL & 0 FWL, Sec. 11-T20S-R28E

LTP: From: 330 FNL & 100 FWL, Sec 10-T20S-R28E TO: 2310 FNL & 100 FWL, Sec. 11-T20S-R28E

BHL: From: 330 FNL & 20 FWL, Sec 10-T20S-R28E TO: 2310 FNL & 100 FWL, Sec. 11-T20S-R28E

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)  
**CASSIE EVANS / Ph: (432) 260-4388**

Regulatory Specialist  
Title

(Electronic Submission)  
Signature

Date **07/17/2024**

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

Approved by  
**CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved**

Petroleum Engineer  
Title

Date **08/02/2024**

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

Office **CARLSBAD**

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

(Instructions on page 2)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

*Item 4* - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

*Item 13*: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

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

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

## Additional Information

### Additional Remarks

Casing/Cement design per the attached Drilling Program.

Permian Resources also requests the following variances:

BOP Break Test Procedure

OLCV

Batch

Flexhose Variance

Attachments:

C102

Layout

Drilling Program

Spec Sheet Inter & Prod Csg

Directional Plan

Multibowl Diagram

5MBOP/5MCM

BOP Break Test Procedure

OLCV

Batch

Flexhose Variance

### Location of Well

0. SHL: SENW / 1596 FNL / 2318 FWL / TWSP: 20S / RANGE: 28E / SECTION: 12 / LAT: 32.591758 / LONG: -104.131584 ( TVD: 0 feet, MD: 0 feet )

PPP: NENE / 1650 FNL / 2450 FWL / TWSP: 20S / RANGE: 28E / SECTION: 11 / LAT: 32.594645 / LONG: -104.139182 ( TVD: 8861 feet, MD: 11994 feet )

PPP: NENW / 330 FNL / 2565 FWL / TWSP: 20S / RANGE: 28E / SECTION: 12 / LAT: 32.594672 / LONG: -104.130855 ( TVD: 8908 feet, MD: 9428 feet )

BHL: NWNW / 1650 FNL / 100 FWL / TWSP: 20S / RANGE: 28E / SECTION: 10 / LAT: 32.594541 / LONG: -104.173347 ( TVD: 8858 feet, MD: 16419 feet )

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b> Permian Resources Operating LLC
<b>WELL NAME &amp; NO.:</b> Kangaroo 12 Federal Com 132H
<b>LOCATION:</b> Sec 12-20S-28E-NMP
<b>COUNTY:</b> <span style="border: 1px solid black; padding: 2px;">Eddy County, New Mexico</span>

*Changes approved through engineering via **Sundry 2790682** on 07/23/2024. Any previous COAs not addressed within the updated COAs still apply.*

COA

H <sub>2</sub> S	<input checked="" type="radio"/> No		<input type="radio"/> Yes	
<b>Potash / WIPP</b>	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-Q	<input type="checkbox"/> Open Annulus <input type="checkbox"/> WIPP
<b>Cave / Karst</b>	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High	<input type="radio"/> Critical
<b>Wellhead</b>	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both	<input type="radio"/> Diverter
<b>Cementing</b>	<input type="checkbox"/> Primary Squeeze	<input type="checkbox"/> Cont. Squeeze	<input type="checkbox"/> EchoMeter	<input type="checkbox"/> DV Tool
<b>Special Req</b>	<input checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
<b>Waste Prev.</b>	<input type="radio"/> Self-Certification	<input type="radio"/> Waste Min. Plan	<input checked="" type="radio"/> APD Submitted prior to 06/10/2024	
<b>Additional Language</b>	<input checked="" type="checkbox"/> Flex Hose	<input type="checkbox"/> Casing Clearance	<input type="checkbox"/> Pilot Hole	<input checked="" type="checkbox"/> Break Testing
	<input checked="" type="checkbox"/> Four-String	<input checked="" type="checkbox"/> Offline Cementing	<input type="checkbox"/> Fluid-Filled	

**Language Inconsistency within Submittal:** Break testing must be performed at 21-day intervals per API Standard. If you are testing the BOP every 30 days, you are not approved for break testing.

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **178** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout

will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **10-3/4** inch intermediate casing is:
- 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, Capitan Reef, or potash.**
  - ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
  - ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
  - ❖ **Special Capitan Reef requirements.** Freshwater based mud must be used across the Capitan interval.
3. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:
- Cement should tie-back at least **50 feet** on top of Capitan Reef top or **200 feet** into the previous casing, whichever is greater. 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, Capitan Reef, or potash.**
4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

## 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. Operator has proposed a multi-bowl wellhead assembly. 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 43 CFR 3172 must be followed.

#### D. SPECIAL REQUIREMENT (S)

##### Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

##### BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-361-2822 Eddy County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.

- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

**Offline Cementing**

Contact the BLM prior to the commencement of any offline cementing procedure.

## 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)

### Contact Eddy County Petroleum Engineering Inspection Staff:

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220;

**BLM NM CFO DrillingNotifications@BLM.GOV**; (575) 361-2822

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
    - i. Notify the BLM when moving in and removing the Spudder Rig.
    - ii. Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2<sup>nd</sup> 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. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

### 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 of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
  4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
  5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
  6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
  7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
  8. Whenever a casing string is cemented in the R-111-Q 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 **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - ii. 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.
  - iii. Manufacturer representative shall install the test plug for the initial BOP test.
  - iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
  - v. 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.
  - i. 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 cement), 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).
  - ii. 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
  - iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** 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 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- iv. 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.
- v. The results of the test shall be reported to the appropriate BLM office.
- vi. 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.
- vii. 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.
- viii. 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 **43 CFR 3172**.

### **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.

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (505) 748-1283 Fax: (505) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015-47595	<sup>2</sup> Pool Code 48035	<sup>3</sup> Pool Name Old Millman Ranch; BS (ASSOC)
<sup>4</sup> Property Code	<sup>5</sup> Property Name KANGAROO 12 FED COM	<sup>6</sup> Well Number 132H
<sup>7</sup> OGRID No. 372165	<sup>8</sup> Operator Name PERMIAN RESOURCES OPERATING, LLC	<sup>9</sup> Elevation 3270.8'

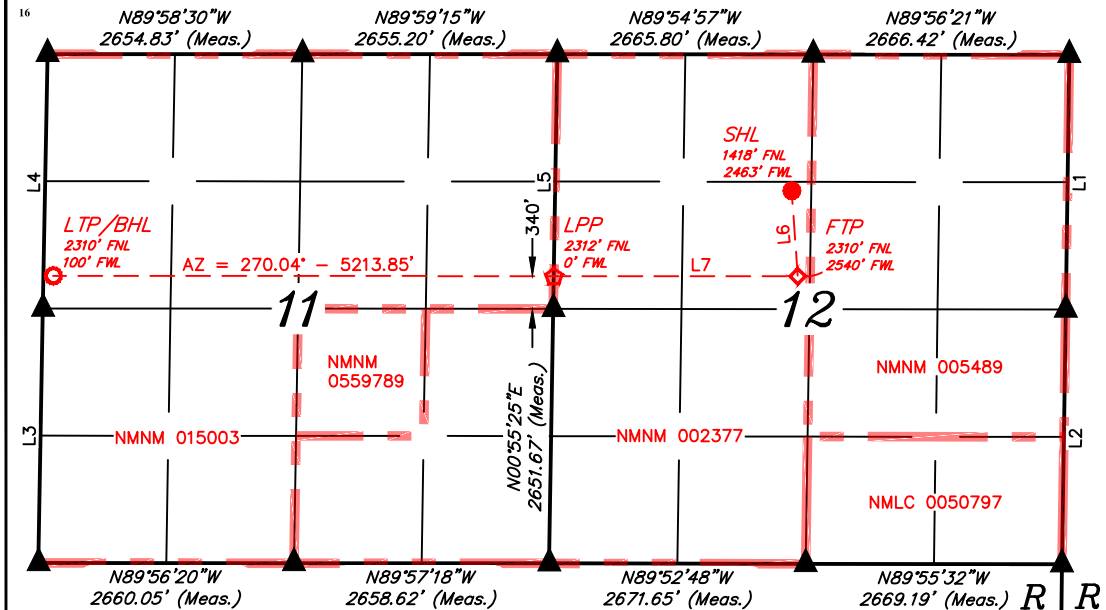
<sup>10</sup> Surface Location

UL or lot no. F	Section 12	Township 20S	Range 28E	Lot Idn	Feet from the 1418	North/South line NORTH	Feet from the 2463	East/West line WEST	County EDDY
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no. E	Section 11	Township 20S	Range 28E	Lot Idn	Feet from the 2310	North/South line NORTH	Feet from the 100	East/West line WEST	County EDDY
<sup>12</sup> Dedicated Acres 240	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



<sup>17</sup> OPERATOR CERTIFICATION  
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  
Cassie Evans 5/14/24  
Signature Date  
Cassie Evans  
Printed Name  
Cassie.Evans@permiانres.com  
E-mail Address

LINE	DIRECTION	LENGTH
L1	N00°49'26"E	2653.32'
L2	N00°49'43"E	2653.28'
L3	N01°00'57"E	2650.30'
L4	N01°00'41"E	2651.06'
L5	N00°54'56"E	2652.73'

LINE	DIRECTION	LENGTH
L6	AZ = 175.98°	894.02'
L7	AZ = 270.04°	2540.30'

- = SURFACE HOLE LOCATION.
- ◆ = FIRST TAKE POINT.
- ◇ = LEASE PENETRATION POINT.
- = LAST TAKE POINT/BOTTOM HOLE LOCATION.
- ▲ = SECTION CORNER LOCATED.
- = LEASE LINE.



SCALE  
DRAWN BY: N.D.T. 05-15-23  
REV: 3 N.R. 04-24-24  
(SHL MOVE)

NOTE:  
• Distances referenced on plat to section lines are perpendicular.  
• Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

<b>NAD 83 (SURFACE HOLE LOCATION)</b> LATITUDE = 32°35'30.05" (32.591681°) LONGITUDE = -104°07'52.45" (-104.131236°)
<b>NAD 27 (SURFACE HOLE LOCATION)</b> LATITUDE = 32°35'29.63" (32.591563°) LONGITUDE = -104°07'50.63" (-104.130730°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 579043.37' E: 603579.72'
<b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 578981.75' E: 562399.52'
<b>NAD 83 (FIRST TAKE POINT)</b> LATITUDE = 32°35'21.23" (32.589231°) LONGITUDE = -104°07'51.69" (-104.131026°)
<b>NAD 27 (FIRST TAKE POINT)</b> LATITUDE = 32°35'20.81" (32.589113°) LONGITUDE = -104°07'49.87" (-104.130520°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 578152.03' E: 603646.18'
<b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 578090.43' E: 562465.97'

<b>NAD 83 (LPP)</b> LATITUDE = 32°35'21.19" (32.589219°) LONGITUDE = -104°08'21.38" (-104.139272°)
<b>NAD 27 (LPP)</b> LATITUDE = 32°35'20.76" (32.589101°) LONGITUDE = -104°08'19.56" (-104.138765°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 578143.05' E: 601106.47'
<b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 578081.47' E: 559926.26'

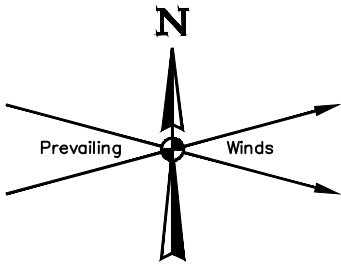
<b>NAD 83 (LTP/BHL)</b> LATITUDE = 32°35'21.10" (32.589193°) LONGITUDE = -104°09'22.31" (-104.156196°)
<b>NAD 27 (LTP/BHL)</b> LATITUDE = 32°35'20.67" (32.589076°) LONGITUDE = -104°09'20.48" (-104.155690°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b> N: 578124.62' E: 595893.84'
<b>STATE PLANE NAD 27 (N.M. EAST)</b> N: 578063.08' E: 554713.65'

<sup>18</sup> SURVEYOR CERTIFICATION  
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  
April 18, 2024

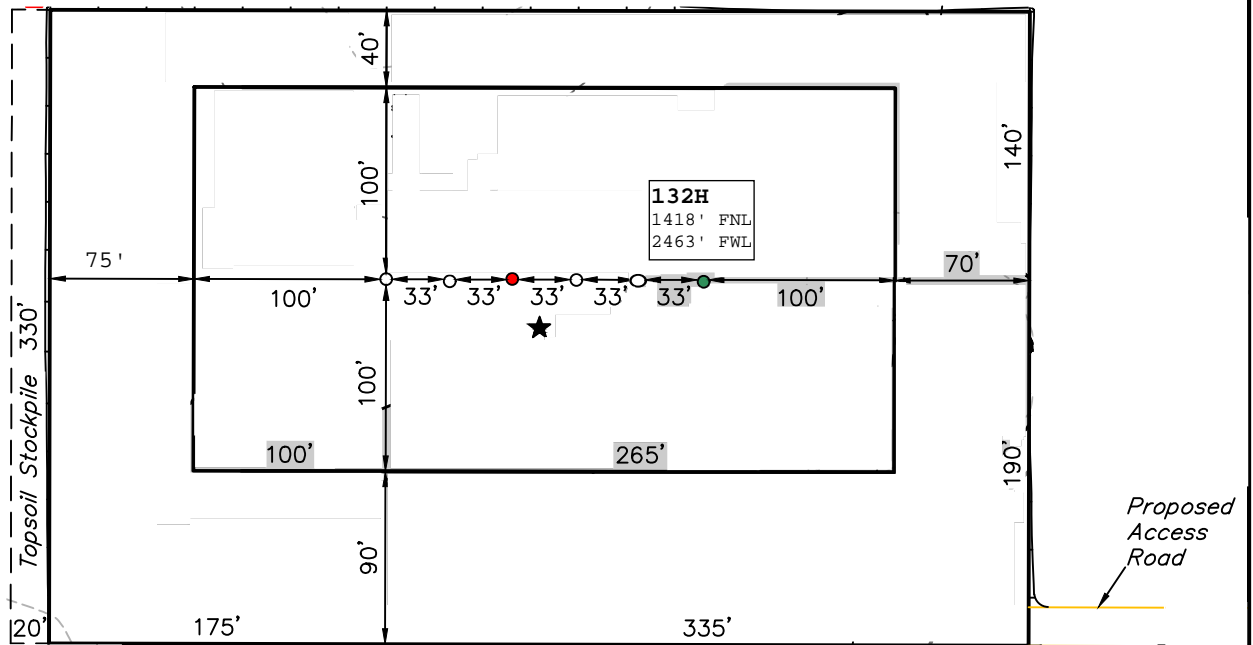
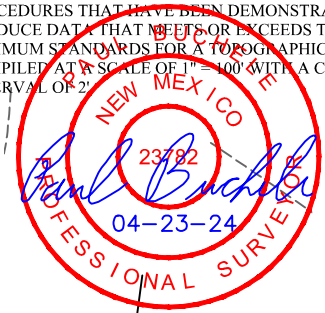
Date of Survey  
Signature and Seal of Professional Surveyor:



Certificate Number:



**CERTIFICATE**  
 THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1" = 100' WITH A CONTOUR INTERVAL OF 2'



● Old Original APD Location

● New Sundry Location

NOTE: Earthwork Calculations Require a Fill @ Some of the Location Stakes For Balance. All Fill is to be Compacted to a Minimum of 95% of the Maximum Dry Density Obtained by AASHTO Method t-99.

REV: 2 4-24-24 Z.L. (PAD MOVE)

**NOTES:**

- Contours shown at 2' intervals.
- Cut/Fill Slopes 2:1 (Typ.)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

**PERMIAN RESOURCES OPERATING, LLC**

**KANGAROO 12-11 FEDERAL COM NESW 1  
 NE 1/4 SW 1/4, SECTION 12, T20S, R28E, N.M.P.M.  
 EDDY COUNTY, NEW MEXICO**

SURVEYED BY	A.V.	04-18-24	SCALE
DRAWN BY	D.J.S.	05-31-23	1" = 100'

**LOCATION LAYOUT**



**UELS, LLC**  
 Corporate Office \* 85 South 200 East  
 Vernal, UT 84078 \* (435) 789-1017

### Permian Resources - Kangaroo 12 Fed Com 132H

**1. Geologic Formations**

Formation	Lithology	Elevation	TVD	Target
Rustler	Sandstone	3147	153	No
Top of Salt	Salt	2947	353	No
Tansill	Sandstone	2522	778	No
Yates	Anhydrite/Shale	2397	903	No
Seven Rivers	Limestone	2022	1278	No
Capitan	Sandstone	1957	1343	No
Delaware Sands	Sandstone	47	3253	No
Brushy Canyon	Sandstone	-523	3823	No
Bone Spring Lime	Limestone/Shale	-1903	5203	No
1st Bone Spring Sand	Sandstone/Limestone/Shale	-3478	6778	No
2nd Bone Spring Sand	Sandstone/Limestone/Shale	-4128	7428	No
3rd Bone Spring Sand	Sandstone/Limestone/Shale	-5303	8603	Yes
Wolfcamp	Shale	-5703	9003	No

**2. Blowout Prevention**

BOP installed and tested before drilling	Size?	Min. Required WP	Type	x	Tested to:
12.25	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
9.875	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
7.875	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		

**Equipment:** BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing;

**Requesting Variance? YES**

**Variance request:** Break testing, flex hose, and offline cement variances, see attachments in section 8.

**Testing Procedure:** BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order II requirements. The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

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

Choke Diagram Attachment: 5M Choke Manifold

BOP Diagram Attachment: BOP Schematics

**3. Casing**

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	178	0	178	178	J55	54.5	BTC	12.85	8.12	Dry	8.29	Dry	7.78
Intermediate 1	12.25	10.75	0	803	0	803	803	J55	45.5	BTC	11.74	4.57	Dry	7.79	Dry	7.62
Intermediate 2	9.875	8.625	0	3203	0	3203	3203	P110 HS	32	MO-FXL	5.78	2.52	Dry	3.90	Dry	5.65
Production	7.875	5.5	0	9207	0	8862	9207	P110RY	17	GeoConn	2.41	2.52	Dry	2.56	Dry	2.56
Production	7.875	5.5	9207	16583	8862	8862	7376	P110RY	17	GeoConn	2.41	2.52	Dry	2.56	Dry	2.56
BLM Min Safety Factor											1.125	1	1.6	1.6		

Non API casing spec sheets and casing design assumptions attached.

**4. Cement**

String	Lead/Tail	Top MD	Bottom MD	Quantity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	178	150	1.34	14.8	190	50%	Class C	Accelerator
Intermediate 1	Lead	0	640	100	1.88	12.9	180	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 1	Tail	640	803	40	1.34	14.8	50	50%	Class C	Retarder
Intermediate 2	Lead	0	2560	240	1.88	12.9	450	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 2	Tail	2560	3203	90	1.33	14.8	110	25%	Class C	Salt
Production	Lead	2703	8457	570	2.41	11.5	1370	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	8457	16583	1020	1.73	12.5	1760	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

If losses are encountered while drilling intermediate 2 a stage tool will be added and cement will be adjusted accordingly.

**5. Circulating Medium**

**Mud System Type:** Closed

**Will an air or gas system be used:** No

**Describe what will be on location to control well or mitigate other conditions:** Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

**Describe the mud monitoring system utilized:** Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

**Cuttings Volume:** 6620 Cu Ft

**Circulating Medium Table**

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	178	Spud Mud	8.6	9.5
178	803	Salt Saturated	10	10
803	3203	Water Base Mud	8.6	9.5
3203	9207	Brine	9	10
9207	16583	OBM	9	10

**6. Test, Logging, Coring**

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

Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.

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

DIRECTIONAL SURVEY, GAMMA RAY LOG,

**Coring operation description for the well:**

N/A

**7. Pressure**

Anticipated Bottom Hole Pressure	4610	psi
Anticipated Surface Pressure	2659	psi
Anticipated Bottom Hole Temperature	145	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

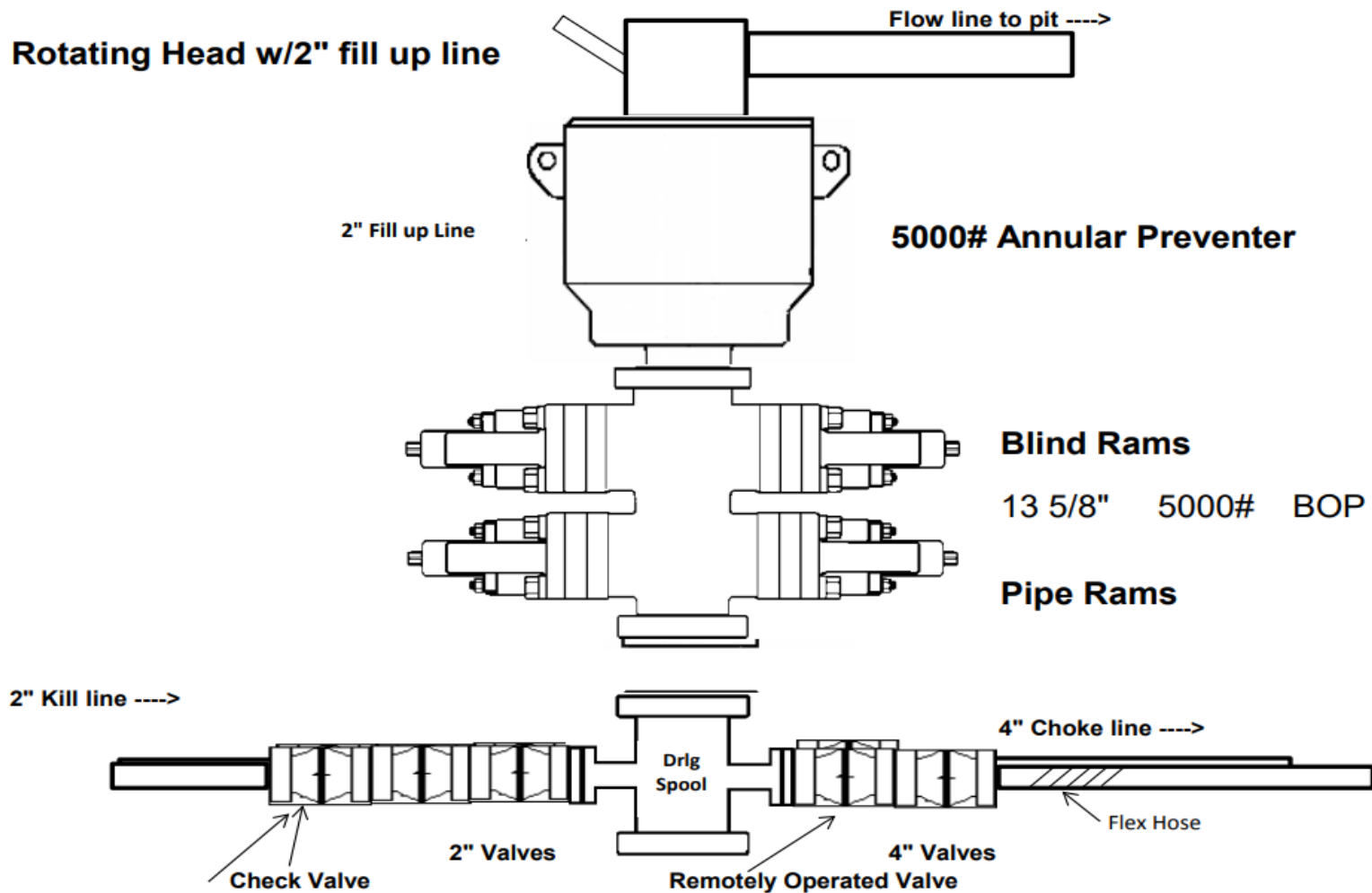
**8. Waste Management**

<b>Waste Type:</b>	<b>Drilling</b>
Waste content description:	Fresh water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Weekly (after drilling all surfaces)
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
<b>Waste Type:</b>	<b>Grey Water &amp; Human Waste</b>
Waste content description:	Grey Water/Human Waste
Amount of waste:	5000 gallons
Waste disposal frequency:	Weekly
Safe containment description:	Approved waste storage tanks with containment
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
<b>Waste Type:</b>	<b>Garbage</b>
Waste content description:	General trash/garbage
Amount of waste:	5000 lbs
Waste disposal frequency:	Weekly
Safe containment description:	Enclosed trash trailer
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
<b>Waste Type:</b>	<b>Drilling</b>
Waste content description:	Drill Cuttings
Amount of waste:	6620 Cu Ft
Waste disposal frequency:	Per well
Safe containment description:	Steel tanks
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
<b>Waste Type:</b>	<b>Drilling</b>
Waste content description:	Brine water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Monthly
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial

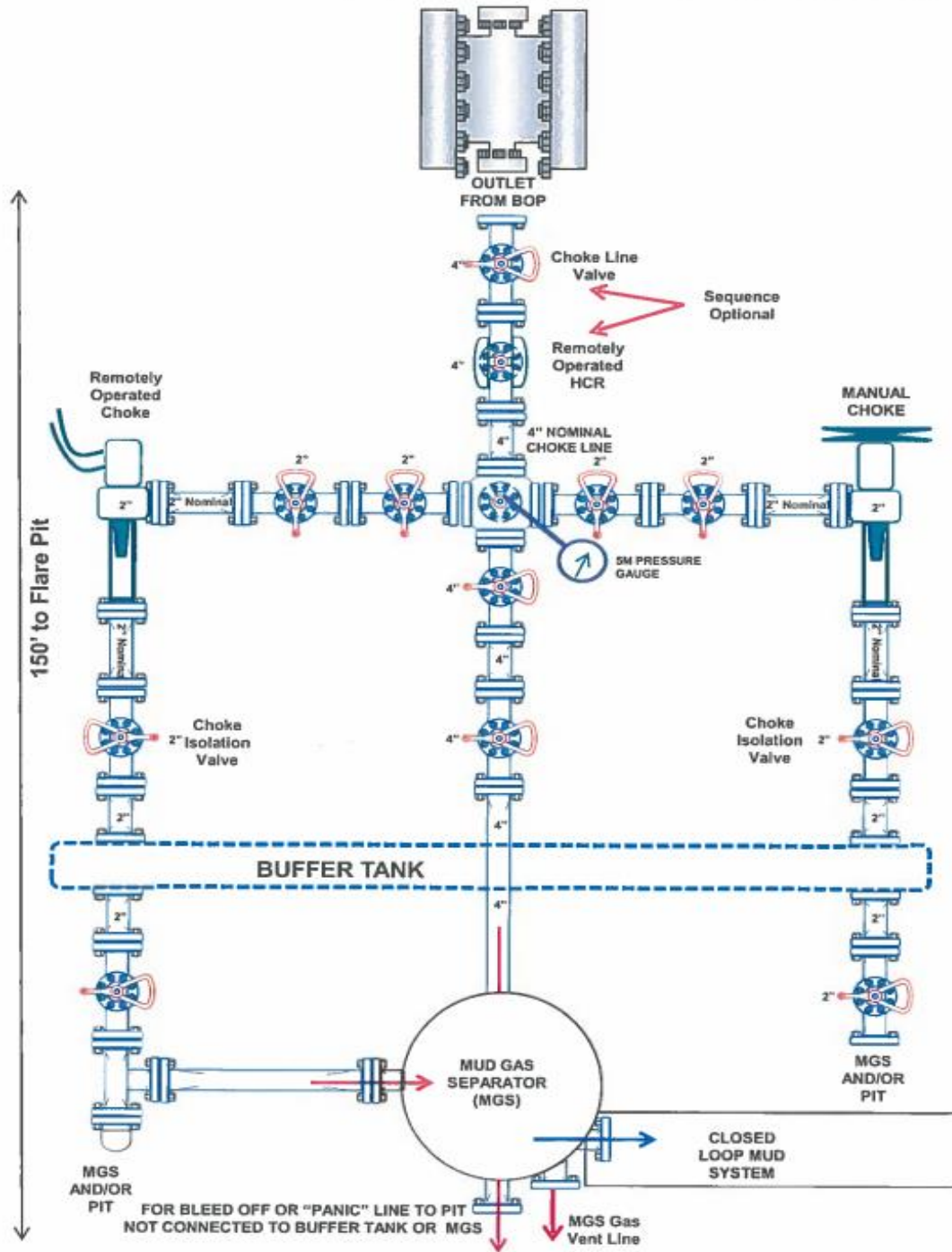
**9. Other Information**

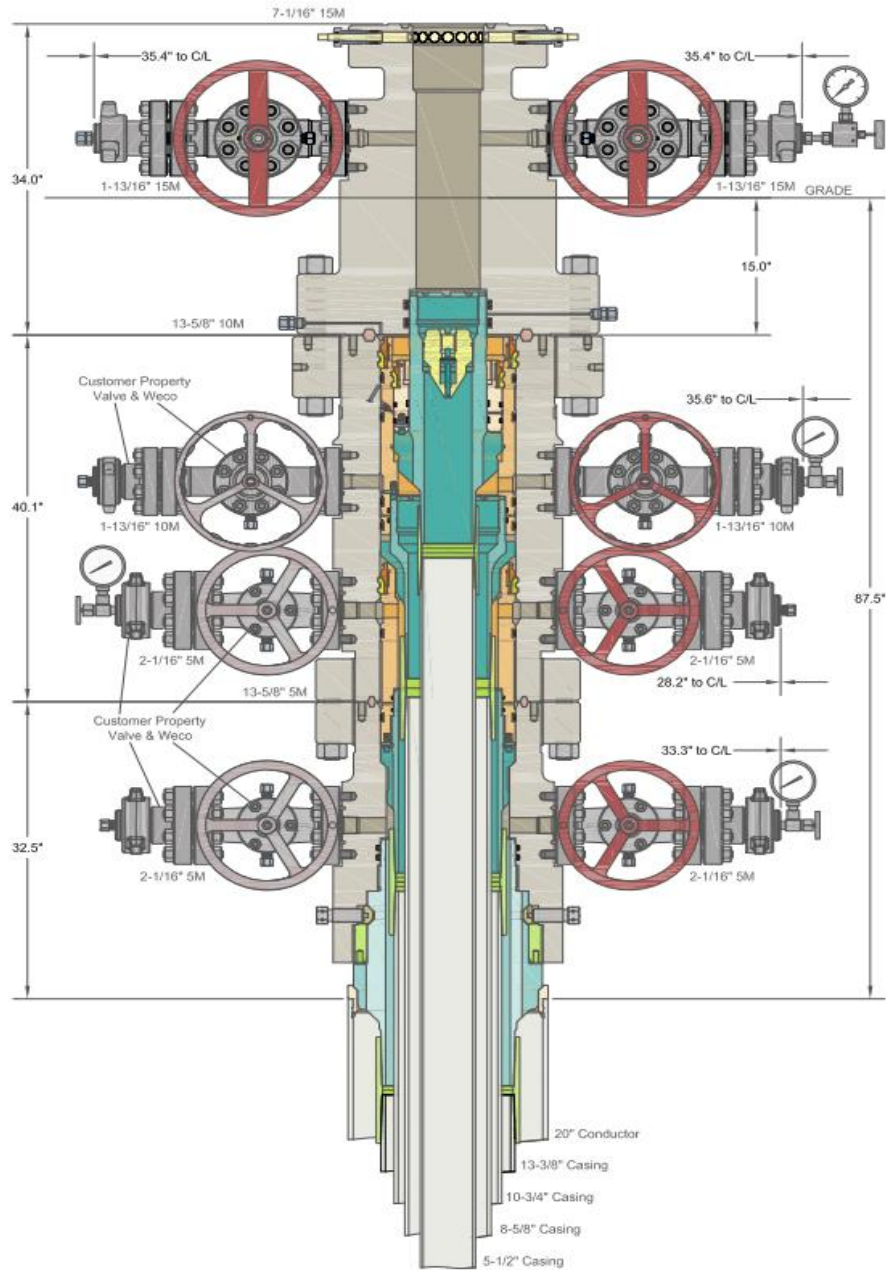
Well Plan and AC Report: attached  
Batching Drilling Procedure: attached  
WBD: attached  
Flex Hose Specs: attached  
Offline Cementing Procedure: attached  
Break Testing Procedure: attached

# 5,000 psi BOP Schematic



### 5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)





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.

ALL DIMENSIONS APPROXIMATE

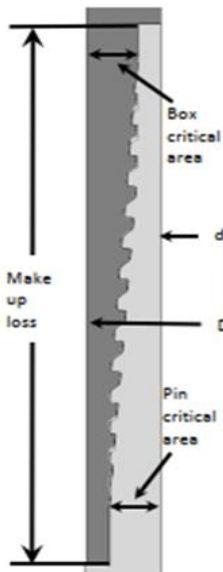
**CACTUS WELLHEAD LLC**


**PERMIAN RESOURCES  
NEW MEXICO**

20" x 13-3/8" x 10-3/4" x 8-5/8" x 5-1/2" MBU-4T-CFL-R-DBLO Sys.  
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head  
And 10-3/4" & 7-5/8" & 5-1/2" Fluted Mandrel Casing Hangers

DRAWN	DLE	26OCT23
APPRV		
DRAWING NO.	HBE0001038	

<b>Metal One Corp.</b>  <b>Metal One</b>	<b>MO-FXL</b> *1 Pipe Body: BMP P110HSCY MinYS125ksi Min95%WT <b>Connection Data Sheet</b>		CDS#  Date	MO-FXL 8-5/8 32.0 P110HSCY MinYS125ksi Min95%WT 8-Sep-21		
<b>MO-FXL</b>	<b>Geometry</b>		<b>Imperial</b>	<b>S.I.</b>		
	<b>Pipe Body</b>					
	Grade *1	P110HSCY		P110HSCY		
	MinYS *1	125	ksi	125	ksi	
	Pipe OD ( D )	8 5/8	in	219.08	mm	
	Weight	32.00	lb/ft	47.68	kg/m	
	Actual weight	31.10		46.34	kg/m	
	Wall Thickness ( t )	0.352	in	8.94	mm	
	Pipe ID ( d )	7.921	in	201.19	mm	
	Pipe body cross section	9.149	in <sup>2</sup>	5,902	mm <sup>2</sup>	
Drift Dia.	7.796	in	198.02	mm		
-	-	-	-	-	-	
<b>Connection</b>						
Box OD ( W )	8.625	in	219.08	mm		
PIN ID	7.921	in	201.19	mm		
Make up Loss	3.847	in	97.71	mm		
Box Critical Area	5.853	in <sup>2</sup>	3686	mm <sup>2</sup>		
Joint load efficiency	69	%	69	%		
Thread Taper	1 / 10 ( 1.2" per ft )					
Number of Threads	5 TPI					
<b>Performance</b>						
<b>Performance Properties for Pipe Body</b>						
S.M.Y.S. *1	1,144	kips	5,087	kN		
M.I.Y.P. *1	9,690	psi	66.83	MPa		
Collapse Strength *1	4,300	psi	29.66	MPa		
Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body *1: BMP P110HSCY: MinYS125ksi, Min95%WT, Collapse Strength 4,300psi						
<b>Performance Properties for Connection</b>						
Tensile Yield load	789 kips ( 69% of S.M.Y.S. )					
Min. Compression Yield	789 kips ( 69% of S.M.Y.S. )					
Internal Pressure	6,780 psi ( 70% of M.I.Y.P. )					
External Pressure	100% of Collapse Strength					
Max. DLS ( deg. /100ft)	29					
<b>Recommended Torque</b>						
Min.	13,600	ft-lb	18,400	N-m		
Opti.	14,900	ft-lb	20,200	N-m		
Max.	16,200	ft-lb	21,900	N-m		
Operational Max.	28,400	ft-lb	38,500	N-m		
Note : Operational Max. torque can be applied for high torque application						



<b>Metal One Corp.</b>  	<b>GEOCONN-SC</b> Pipe Body: SeAH P110RY (SMYS110ksi) & 95%RBW *1 Coupling: P110CY (SMYS110ksi) <b>Connection Data Sheet</b>		Page	MAI GC 5.5 20 SeAH PRY 95%RW
			Date	29-Sep-21
		Rev.	0	

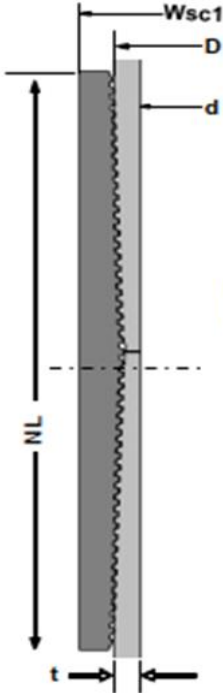
  

Geometry	Imperial		S.I.	
	<b>Pipe Body</b>			
Grade *1	SeAH P110RY	-	SeAH P110RY	
SMYS	110	ksi	110	ksi
Pipe OD ( D )	5.500	in	139.70	mm
Weight	20.00	lb/ft	29.80	kg/m
Wall Thickness ( t )	0.361	in	9.17	mm
Pipe ID ( d )	4.778	in	121.36	mm
Drift Dia.	4.653	in	118.19	mm
<b>Connection</b>				
Coupling SMYS	110	ksi	110	ksi
Coupling OD ( Wsc1 )	6.050	in	153.67	mm
Coupling Length ( NL )	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	5.83	in <sup>2</sup>	3,760	mm <sup>2</sup>
Box Critical Area	6.00	in <sup>2</sup>	3,874	mm <sup>2</sup>
Thread Taper	1 / 16 ( 3/4" per ft )			
Number of Threads	5 TPI			

Performance	Imperial		S.I.	
	<b>Performance Properties for Pipe Body</b>			
S.M.Y.S.	641	kips	2,852	kN
M.I.Y.P. *1	13,720	psi	94.62	MPa
Collapse Strength	11,100	psi	76.55	MPa
Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body *1 Pipe: SeAH P110RY (SMYS110ksi), Min Wall Thickness of Pipe Body: 95% of Nom wall				
<b>Performance Properties for Connection</b>				
Min. Connection Joint Strength	100%		of S.M.Y.S.	
Min. Compression Yield	100%		of S.M.Y.S.	
Internal Pressure	100%		of M.I.Y.P.	
External Pressure	100%		of Collapse Strength	
Max. DLS ( deg. /100ft)			>90	
<b>Recommended Torque</b>				
Min.	14,600	ft-lb	19,700	N-m
Opti.	16,200	ft-lb	21,900	N-m
Max.	17,800	ft-lb	24,100	N-m
Operational Max.	19,500	ft-lb	26,400	N-m
Note : Operational Max. torque can be applied for high torque application				



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The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to <http://www.m1o.com>.

www.m1o.com/images/tp/WebsiteTerms\_Active\_202312267\_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.

# **NEW MEXICO**

**(SP) EDDY**

**KANGAROO 12 FED**

**KANGAROO 12 FED COM 132H**

**OWB**

**Plan: PWP0**

## **Standard Planning Report - Geographic**

**09 May, 2024**

Planning Report - Geographic

<b>Database:</b>	Compass_17	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Company:</b>	NEW MEXICO	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Project:</b>	(SP) EDDY	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site:</b>	KANGAROO 12 FED	<b>North Reference:</b>	Grid
<b>Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PWP0		

<b>Project</b>	(SP) EDDY		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	KANGAROO 12 FED		
<b>Site Position:</b>		<b>Northing:</b>	603,366.31 usft
<b>From:</b>	Map	<b>Easting:</b>	578,865.12 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	32° 39' 31.109 N
		<b>Longitude:</b>	104° 12' 41.012 W

<b>Well</b>	KANGAROO 12 FED COM 132H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	579,043.37 usft	<b>Latitude:</b>	32° 35' 30.051 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	603,579.72 usft	<b>Longitude:</b>	104° 7' 52.449 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	3,270.8 usft
<b>Grid Convergence:</b>	0.11 °					

<b>Wellbore</b>	OWB					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>	
			(°)	(°)	(nT)	
	IGRF200510	12/31/2009	8.03	60.48	48,953.07593455	

<b>Design</b>	PWP0					
<b>Audit Notes:</b>						
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE		<b>Tie On Depth:</b>	0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>		
	(usft)	(usft)	(usft)	(°)		
	0.0	0.0	0.0	263.18		

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/7/2024				
<b>Depth From</b>	<b>Depth To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>		
(usft)	(usft)					
1	0.0	16,583.1 PWP0 (OWB)	MWD			
			OWSG_Rev2_ MWD - Stand			

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,600.0	12.00	166.99	2,595.6	-61.0	14.1	2.00	2.00	0.00	166.99	
5,521.5	12.00	166.99	5,453.3	-652.8	150.8	0.00	0.00	0.00	0.00	
6,121.5	0.00	0.00	6,049.0	-713.8	164.9	2.00	-2.00	0.00	180.00	
8,457.1	0.00	0.00	8,384.5	-713.8	164.9	0.00	0.00	0.00	0.00	
9,207.1	90.00	268.50	8,862.0	-726.3	-312.4	12.00	12.00	-12.20	268.50	
16,583.1	90.00	268.50	8,862.0	-918.7	-7,685.9	0.00	0.00	0.00	0.00	BHL-KANGAROO 12

Planning Report - Geographic

<b>Database:</b>	Compass_17	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Company:</b>	NEW MEXICO	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Project:</b>	(SP) EDDY	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site:</b>	KANGAROO 12 FED	<b>North Reference:</b>	Grid
<b>Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
100.0	0.00	0.00	100.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
200.0	0.00	0.00	200.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
300.0	0.00	0.00	300.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
400.0	0.00	0.00	400.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
500.0	0.00	0.00	500.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
600.0	0.00	0.00	600.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
700.0	0.00	0.00	700.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
800.0	0.00	0.00	800.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
900.0	0.00	0.00	900.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	579,043.37	603,579.72	32° 35' 30.051 N	104° 7' 52.449 W	
<b>Start Build 2.00</b>										
2,100.0	2.00	166.99	2,100.0	-1.7	0.4	579,041.67	603,580.12	32° 35' 30.034 N	104° 7' 52.444 W	
2,200.0	4.00	166.99	2,199.8	-6.8	1.6	579,036.57	603,581.29	32° 35' 29.984 N	104° 7' 52.431 W	
2,300.0	6.00	166.99	2,299.5	-15.3	3.5	579,028.08	603,583.26	32° 35' 29.900 N	104° 7' 52.408 W	
2,400.0	8.00	166.99	2,398.7	-27.2	6.3	579,016.21	603,586.00	32° 35' 29.782 N	104° 7' 52.376 W	
2,500.0	10.00	166.99	2,497.5	-42.4	9.8	579,000.97	603,589.52	32° 35' 29.632 N	104° 7' 52.335 W	
2,600.0	12.00	166.99	2,595.6	-61.0	14.1	578,982.38	603,593.81	32° 35' 29.447 N	104° 7' 52.286 W	
<b>Start 2921.5 hold at 2600.0 MD</b>										
2,700.0	12.00	166.99	2,693.4	-81.3	18.8	578,962.12	603,598.49	32° 35' 29.247 N	104° 7' 52.231 W	
2,800.0	12.00	166.99	2,791.3	-101.5	23.4	578,941.86	603,603.17	32° 35' 29.046 N	104° 7' 52.177 W	
2,900.0	12.00	166.99	2,889.1	-121.8	28.1	578,921.60	603,607.85	32° 35' 28.846 N	104° 7' 52.123 W	
3,000.0	12.00	166.99	2,986.9	-142.0	32.8	578,901.35	603,612.53	32° 35' 28.645 N	104° 7' 52.069 W	
3,100.0	12.00	166.99	3,084.7	-162.3	37.5	578,881.09	603,617.21	32° 35' 28.445 N	104° 7' 52.014 W	
3,200.0	12.00	166.99	3,182.5	-182.5	42.2	578,860.83	603,621.89	32° 35' 28.244 N	104° 7' 51.960 W	
3,300.0	12.00	166.99	3,280.3	-202.8	46.8	578,840.57	603,626.57	32° 35' 28.044 N	104° 7' 51.906 W	
3,400.0	12.00	166.99	3,378.1	-223.1	51.5	578,820.32	603,631.25	32° 35' 27.843 N	104° 7' 51.852 W	
3,500.0	12.00	166.99	3,476.0	-243.3	56.2	578,800.06	603,635.93	32° 35' 27.643 N	104° 7' 51.797 W	
3,600.0	12.00	166.99	3,573.8	-263.6	60.9	578,779.80	603,640.61	32° 35' 27.442 N	104° 7' 51.743 W	
3,700.0	12.00	166.99	3,671.6	-283.8	65.6	578,759.54	603,645.29	32° 35' 27.241 N	104° 7' 51.689 W	
3,800.0	12.00	166.99	3,769.4	-304.1	70.2	578,739.28	603,649.97	32° 35' 27.041 N	104° 7' 51.635 W	
3,900.0	12.00	166.99	3,867.2	-324.3	74.9	578,719.03	603,654.65	32° 35' 26.840 N	104° 7' 51.580 W	
4,000.0	12.00	166.99	3,965.0	-344.6	79.6	578,698.77	603,659.33	32° 35' 26.640 N	104° 7' 51.526 W	
4,100.0	12.00	166.99	4,062.8	-364.9	84.3	578,678.51	603,664.01	32° 35' 26.439 N	104° 7' 51.472 W	
4,200.0	12.00	166.99	4,160.7	-385.1	89.0	578,658.25	603,668.69	32° 35' 26.239 N	104° 7' 51.418 W	
4,300.0	12.00	166.99	4,258.5	-405.4	93.6	578,638.00	603,673.37	32° 35' 26.038 N	104° 7' 51.363 W	
4,400.0	12.00	166.99	4,356.3	-425.6	98.3	578,617.74	603,678.05	32° 35' 25.838 N	104° 7' 51.309 W	
4,500.0	12.00	166.99	4,454.1	-445.9	103.0	578,597.48	603,682.73	32° 35' 25.637 N	104° 7' 51.255 W	
4,600.0	12.00	166.99	4,551.9	-466.1	107.7	578,577.22	603,687.41	32° 35' 25.437 N	104° 7' 51.201 W	
4,700.0	12.00	166.99	4,649.7	-486.4	112.4	578,556.97	603,692.09	32° 35' 25.236 N	104° 7' 51.146 W	
4,800.0	12.00	166.99	4,747.5	-506.7	117.0	578,536.71	603,696.77	32° 35' 25.035 N	104° 7' 51.092 W	
4,900.0	12.00	166.99	4,845.4	-526.9	121.7	578,516.45	603,701.45	32° 35' 24.835 N	104° 7' 51.038 W	
5,000.0	12.00	166.99	4,943.2	-547.2	126.4	578,496.19	603,706.13	32° 35' 24.634 N	104° 7' 50.984 W	

Planning Report - Geographic

<b>Database:</b>	Compass_17	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Company:</b>	NEW MEXICO	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Project:</b>	(SP) EDDY	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site:</b>	KANGAROO 12 FED	<b>North Reference:</b>	Grid
<b>Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,100.0	12.00	166.99	5,041.0	-567.4	131.1	578,475.93	603,710.81	32° 35' 24.434 N	104° 7' 50.929 W	
5,200.0	12.00	166.99	5,138.8	-587.7	135.8	578,455.68	603,715.49	32° 35' 24.233 N	104° 7' 50.875 W	
5,300.0	12.00	166.99	5,236.6	-608.0	140.4	578,435.42	603,720.17	32° 35' 24.033 N	104° 7' 50.821 W	
5,400.0	12.00	166.99	5,334.4	-628.2	145.1	578,415.16	603,724.84	32° 35' 23.832 N	104° 7' 50.767 W	
5,500.0	12.00	166.99	5,432.3	-648.5	149.8	578,394.90	603,729.52	32° 35' 23.632 N	104° 7' 50.712 W	
5,521.5	12.00	166.99	5,453.3	-652.8	150.8	578,390.54	603,730.53	32° 35' 23.588 N	104° 7' 50.701 W	
<b>Start Drop -2.00</b>										
5,600.0	10.43	166.99	5,530.3	-667.7	154.2	578,375.67	603,733.97	32° 35' 23.441 N	104° 7' 50.661 W	
5,700.0	8.43	166.99	5,628.9	-683.7	157.9	578,359.71	603,737.66	32° 35' 23.283 N	104° 7' 50.618 W	
5,800.0	6.43	166.99	5,728.1	-696.3	160.8	578,347.11	603,740.57	32° 35' 23.158 N	104° 7' 50.584 W	
5,900.0	4.43	166.99	5,827.6	-705.5	163.0	578,337.89	603,742.70	32° 35' 23.067 N	104° 7' 50.560 W	
6,000.0	2.43	166.99	5,927.4	-711.3	164.3	578,332.05	603,744.04	32° 35' 23.009 N	104° 7' 50.544 W	
6,100.0	0.43	166.99	6,027.4	-713.8	164.9	578,329.62	603,744.61	32° 35' 22.985 N	104° 7' 50.538 W	
6,121.5	0.00	0.00	6,049.0	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
<b>Start 2335.5 hold at 6121.5 MD</b>										
6,200.0	0.00	0.00	6,127.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
6,300.0	0.00	0.00	6,227.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
6,400.0	0.00	0.00	6,327.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
6,500.0	0.00	0.00	6,427.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
6,600.0	0.00	0.00	6,527.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
6,700.0	0.00	0.00	6,627.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
6,800.0	0.00	0.00	6,727.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
6,900.0	0.00	0.00	6,827.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,000.0	0.00	0.00	6,927.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,100.0	0.00	0.00	7,027.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,200.0	0.00	0.00	7,127.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,300.0	0.00	0.00	7,227.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,400.0	0.00	0.00	7,327.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,500.0	0.00	0.00	7,427.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,600.0	0.00	0.00	7,527.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,700.0	0.00	0.00	7,627.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,800.0	0.00	0.00	7,727.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
7,900.0	0.00	0.00	7,827.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
8,000.0	0.00	0.00	7,927.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
8,100.0	0.00	0.00	8,027.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
8,200.0	0.00	0.00	8,127.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
8,300.0	0.00	0.00	8,227.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
8,400.0	0.00	0.00	8,327.4	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
8,457.1	0.00	0.00	8,384.5	-713.8	164.9	578,329.54	603,744.62	32° 35' 22.985 N	104° 7' 50.537 W	
<b>Start DLS 12.00 TFO 268.50</b>										
8,475.0	2.15	268.50	8,402.4	-713.8	164.6	578,329.53	603,744.29	32° 35' 22.984 N	104° 7' 50.541 W	
8,500.0	5.15	268.50	8,427.3	-713.9	163.0	578,329.49	603,742.70	32° 35' 22.984 N	104° 7' 50.560 W	
8,525.0	8.15	268.50	8,452.2	-714.0	160.1	578,329.42	603,739.80	32° 35' 22.983 N	104° 7' 50.594 W	
8,550.0	11.15	268.50	8,476.8	-714.1	155.9	578,329.31	603,735.62	32° 35' 22.982 N	104° 7' 50.643 W	
8,575.0	14.15	268.50	8,501.2	-714.2	150.4	578,329.17	603,730.14	32° 35' 22.981 N	104° 7' 50.707 W	
8,600.0	17.15	268.50	8,525.3	-714.4	143.7	578,328.99	603,723.40	32° 35' 22.979 N	104° 7' 50.785 W	
8,625.0	20.15	268.50	8,549.0	-714.6	135.7	578,328.78	603,715.41	32° 35' 22.978 N	104° 7' 50.879 W	
8,650.0	23.15	268.50	8,572.2	-714.8	126.5	578,328.54	603,706.20	32° 35' 22.975 N	104° 7' 50.987 W	
8,675.0	26.15	268.50	8,594.9	-715.1	116.1	578,328.27	603,695.77	32° 35' 22.973 N	104° 7' 51.108 W	
8,700.0	29.15	268.50	8,617.1	-715.4	104.5	578,327.97	603,684.18	32° 35' 22.970 N	104° 7' 51.244 W	
8,725.0	32.15	268.50	8,638.6	-715.7	91.7	578,327.63	603,671.44	32° 35' 22.967 N	104° 7' 51.393 W	
8,750.0	35.15	268.50	8,659.4	-716.1	77.9	578,327.27	603,657.59	32° 35' 22.964 N	104° 7' 51.555 W	
8,775.0	38.15	268.50	8,679.4	-716.5	63.0	578,326.88	603,642.68	32° 35' 22.960 N	104° 7' 51.729 W	

Planning Report - Geographic

<b>Database:</b>	Compass_17	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Company:</b>	NEW MEXICO	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Project:</b>	(SP) EDDY	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site:</b>	KANGAROO 12 FED	<b>North Reference:</b>	Grid
<b>Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,800.0	41.15	268.50	8,698.7	-716.9	47.0	578,326.47	603,626.73	32° 35' 22.956 N	104° 7' 51.915 W	
8,825.0	44.15	268.50	8,717.1	-717.3	30.1	578,326.02	603,609.80	32° 35' 22.952 N	104° 7' 52.113 W	
8,850.0	47.15	268.50	8,734.5	-717.8	12.2	578,325.56	603,591.94	32° 35' 22.948 N	104° 7' 52.322 W	
8,875.0	50.15	268.50	8,751.1	-718.3	-6.5	578,325.07	603,573.18	32° 35' 22.944 N	104° 7' 52.541 W	
8,900.0	53.15	268.50	8,766.6	-718.8	-26.1	578,324.56	603,553.58	32° 35' 22.939 N	104° 7' 52.771 W	
8,925.0	56.15	268.50	8,781.0	-719.3	-46.5	578,324.02	603,533.20	32° 35' 22.934 N	104° 7' 53.009 W	
8,950.0	59.15	268.50	8,794.4	-719.9	-67.6	578,323.47	603,512.09	32° 35' 22.929 N	104° 7' 53.256 W	
8,975.0	62.15	268.50	8,806.7	-720.5	-89.4	578,322.90	603,490.31	32° 35' 22.924 N	104° 7' 53.510 W	
9,000.0	65.15	268.50	8,817.8	-721.1	-111.8	578,322.32	603,467.92	32° 35' 22.918 N	104° 7' 53.772 W	
9,025.0	68.15	268.50	8,827.7	-721.7	-134.7	578,321.72	603,444.97	32° 35' 22.913 N	104° 7' 54.040 W	
9,050.0	71.15	268.50	8,836.4	-722.3	-158.2	578,321.11	603,421.55	32° 35' 22.907 N	104° 7' 54.314 W	
9,075.0	74.15	268.50	8,843.8	-722.9	-182.0	578,320.49	603,397.69	32° 35' 22.901 N	104° 7' 54.593 W	
9,100.0	77.15	268.50	8,850.0	-723.5	-206.2	578,319.86	603,373.49	32° 35' 22.896 N	104° 7' 54.876 W	
9,125.0	80.15	268.50	8,854.9	-724.2	-230.7	578,319.22	603,348.99	32° 35' 22.890 N	104° 7' 55.162 W	
9,150.0	83.15	268.50	8,858.6	-724.8	-255.5	578,318.57	603,324.26	32° 35' 22.884 N	104° 7' 55.451 W	
9,175.0	86.15	268.50	8,860.9	-725.5	-280.3	578,317.92	603,299.38	32° 35' 22.878 N	104° 7' 55.742 W	
9,200.0	89.15	268.50	8,861.9	-726.1	-305.3	578,317.27	603,274.42	32° 35' 22.872 N	104° 7' 56.034 W	
9,207.1	90.00	268.50	8,862.0	-726.3	-312.4	578,317.08	603,267.32	32° 35' 22.870 N	104° 7' 56.117 W	
<b>Start 7376.0 hold at 9207.1 MD</b>										
9,300.0	90.00	268.50	8,862.0	-728.7	-405.3	578,314.66	603,174.45	32° 35' 22.848 N	104° 7' 57.202 W	
9,400.0	90.00	268.50	8,862.0	-731.3	-505.2	578,312.05	603,074.48	32° 35' 22.824 N	104° 7' 58.371 W	
9,500.0	90.00	268.50	8,862.0	-733.9	-605.2	578,309.44	602,974.52	32° 35' 22.800 N	104° 7' 59.539 W	
9,600.0	90.00	268.50	8,862.0	-736.5	-705.2	578,306.83	602,874.55	32° 35' 22.776 N	104° 8' 0.708 W	
9,700.0	90.00	268.50	8,862.0	-739.1	-805.1	578,304.22	602,774.59	32° 35' 22.752 N	104° 8' 1.876 W	
9,800.0	90.00	268.50	8,862.0	-741.8	-905.1	578,301.61	602,674.62	32° 35' 22.728 N	104° 8' 3.045 W	
9,900.0	90.00	268.50	8,862.0	-744.4	-1,005.1	578,299.00	602,574.65	32° 35' 22.704 N	104° 8' 4.214 W	
10,000.0	90.00	268.50	8,862.0	-747.0	-1,105.0	578,296.40	602,474.69	32° 35' 22.680 N	104° 8' 5.382 W	
10,100.0	90.00	268.50	8,862.0	-749.6	-1,205.0	578,293.79	602,374.72	32° 35' 22.656 N	104° 8' 6.551 W	
10,200.0	90.00	268.50	8,862.0	-752.2	-1,305.0	578,291.18	602,274.76	32° 35' 22.632 N	104° 8' 7.719 W	
10,300.0	90.00	268.50	8,862.0	-754.8	-1,404.9	578,288.57	602,174.79	32° 35' 22.608 N	104° 8' 8.888 W	
10,400.0	90.00	268.50	8,862.0	-757.4	-1,504.9	578,285.96	602,074.82	32° 35' 22.584 N	104° 8' 10.056 W	
10,500.0	90.00	268.50	8,862.0	-760.0	-1,604.9	578,283.35	601,974.86	32° 35' 22.560 N	104° 8' 11.225 W	
10,600.0	90.00	268.50	8,862.0	-762.6	-1,704.8	578,280.74	601,874.89	32° 35' 22.536 N	104° 8' 12.393 W	
10,700.0	90.00	268.50	8,862.0	-765.2	-1,804.8	578,278.13	601,774.93	32° 35' 22.512 N	104° 8' 13.562 W	
10,800.0	90.00	268.50	8,862.0	-767.9	-1,904.8	578,275.52	601,674.96	32° 35' 22.488 N	104° 8' 14.730 W	
10,900.0	90.00	268.50	8,862.0	-770.5	-2,004.7	578,272.91	601,574.99	32° 35' 22.464 N	104° 8' 15.899 W	
11,000.0	90.00	268.50	8,862.0	-773.1	-2,104.7	578,270.30	601,475.03	32° 35' 22.440 N	104° 8' 17.067 W	
11,100.0	90.00	268.50	8,862.0	-775.7	-2,204.7	578,267.69	601,375.06	32° 35' 22.416 N	104° 8' 18.236 W	
11,200.0	90.00	268.50	8,862.0	-778.3	-2,304.6	578,265.08	601,275.10	32° 35' 22.392 N	104° 8' 19.404 W	
11,300.0	90.00	268.50	8,862.0	-780.9	-2,404.6	578,262.47	601,175.13	32° 35' 22.368 N	104° 8' 20.573 W	
11,368.0	90.00	268.50	8,862.0	-782.7	-2,472.5	578,260.70	601,107.18	32° 35' 22.352 N	104° 8' 21.367 W	
<b>NMNM 002377 Exit at 11368.0 MD</b>										
11,400.0	90.00	268.50	8,862.0	-783.5	-2,504.6	578,259.87	601,075.16	32° 35' 22.344 N	104° 8' 21.741 W	
11,500.0	90.00	268.50	8,862.0	-786.1	-2,604.5	578,257.26	600,975.20	32° 35' 22.320 N	104° 8' 22.910 W	
11,600.0	90.00	268.50	8,862.0	-788.7	-2,704.5	578,254.65	600,875.23	32° 35' 22.296 N	104° 8' 24.078 W	
11,700.0	90.00	268.50	8,862.0	-791.3	-2,804.5	578,252.04	600,775.27	32° 35' 22.272 N	104° 8' 25.247 W	
11,800.0	90.00	268.50	8,862.0	-793.9	-2,904.4	578,249.43	600,675.30	32° 35' 22.248 N	104° 8' 26.416 W	
11,900.0	90.00	268.50	8,862.0	-796.6	-3,004.4	578,246.82	600,575.33	32° 35' 22.224 N	104° 8' 27.584 W	
12,000.0	90.00	268.50	8,862.0	-799.2	-3,104.4	578,244.21	600,475.37	32° 35' 22.200 N	104° 8' 28.753 W	
12,100.0	90.00	268.50	8,862.0	-801.8	-3,204.3	578,241.60	600,375.40	32° 35' 22.176 N	104° 8' 29.921 W	
12,200.0	90.00	268.50	8,862.0	-804.4	-3,304.3	578,238.99	600,275.44	32° 35' 22.152 N	104° 8' 31.090 W	
12,300.0	90.00	268.50	8,862.0	-807.0	-3,404.3	578,236.38	600,175.47	32° 35' 22.128 N	104° 8' 32.258 W	
12,400.0	90.00	268.50	8,862.0	-809.6	-3,504.2	578,233.77	600,075.50	32° 35' 22.104 N	104° 8' 33.427 W	

Planning Report - Geographic

<b>Database:</b>	Compass_17	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Company:</b>	NEW MEXICO	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Project:</b>	(SP) EDDY	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site:</b>	KANGAROO 12 FED	<b>North Reference:</b>	Grid
<b>Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
12,500.0	90.00	268.50	8,862.0	-812.2	-3,604.2	578,231.16	599,975.54	32° 35' 22.080 N	104° 8' 34.595 W	
12,600.0	90.00	268.50	8,862.0	-814.8	-3,704.2	578,228.55	599,875.57	32° 35' 22.056 N	104° 8' 35.764 W	
12,700.0	90.00	268.50	8,862.0	-817.4	-3,804.1	578,225.94	599,775.61	32° 35' 22.032 N	104° 8' 36.932 W	
12,800.0	90.00	268.50	8,862.0	-820.0	-3,904.1	578,223.33	599,675.64	32° 35' 22.008 N	104° 8' 38.101 W	
12,900.0	90.00	268.50	8,862.0	-822.6	-4,004.0	578,220.73	599,575.68	32° 35' 21.984 N	104° 8' 39.269 W	
13,000.0	90.00	268.50	8,862.0	-825.3	-4,104.0	578,218.12	599,475.71	32° 35' 21.960 N	104° 8' 40.438 W	
13,100.0	90.00	268.50	8,862.0	-827.9	-4,204.0	578,215.51	599,375.74	32° 35' 21.936 N	104° 8' 41.606 W	
13,200.0	90.00	268.50	8,862.0	-830.5	-4,303.9	578,212.90	599,275.78	32° 35' 21.912 N	104° 8' 42.775 W	
13,300.0	90.00	268.50	8,862.0	-833.1	-4,403.9	578,210.29	599,175.81	32° 35' 21.887 N	104° 8' 43.943 W	
13,400.0	90.00	268.50	8,862.0	-835.7	-4,503.9	578,207.68	599,075.85	32° 35' 21.863 N	104° 8' 45.112 W	
13,500.0	90.00	268.50	8,862.0	-838.3	-4,603.8	578,205.07	598,975.88	32° 35' 21.839 N	104° 8' 46.280 W	
13,600.0	90.00	268.50	8,862.0	-840.9	-4,703.8	578,202.46	598,875.91	32° 35' 21.815 N	104° 8' 47.449 W	
13,700.0	90.00	268.50	8,862.0	-843.5	-4,803.8	578,199.85	598,775.95	32° 35' 21.791 N	104° 8' 48.618 W	
13,800.0	90.00	268.50	8,862.0	-846.1	-4,903.7	578,197.24	598,675.98	32° 35' 21.767 N	104° 8' 49.786 W	
13,900.0	90.00	268.50	8,862.0	-848.7	-5,003.7	578,194.63	598,576.02	32° 35' 21.743 N	104° 8' 50.955 W	
14,000.0	90.00	268.50	8,862.0	-851.3	-5,103.7	578,192.02	598,476.05	32° 35' 21.719 N	104° 8' 52.123 W	
14,100.0	90.00	268.50	8,862.0	-854.0	-5,203.6	578,189.41	598,376.08	32° 35' 21.695 N	104° 8' 53.292 W	
14,200.0	90.00	268.50	8,862.0	-856.6	-5,303.6	578,186.80	598,276.12	32° 35' 21.671 N	104° 8' 54.460 W	
14,300.0	90.00	268.50	8,862.0	-859.2	-5,403.6	578,184.20	598,176.15	32° 35' 21.647 N	104° 8' 55.629 W	
14,400.0	90.00	268.50	8,862.0	-861.8	-5,503.5	578,181.59	598,076.19	32° 35' 21.622 N	104° 8' 56.797 W	
14,500.0	90.00	268.50	8,862.0	-864.4	-5,603.5	578,178.98	597,976.22	32° 35' 21.598 N	104° 8' 57.966 W	
14,600.0	90.00	268.50	8,862.0	-867.0	-5,703.5	578,176.37	597,876.25	32° 35' 21.574 N	104° 8' 59.134 W	
14,700.0	90.00	268.50	8,862.0	-869.6	-5,803.4	578,173.76	597,776.29	32° 35' 21.550 N	104° 9' 0.303 W	
14,800.0	90.00	268.50	8,862.0	-872.2	-5,903.4	578,171.15	597,676.32	32° 35' 21.526 N	104° 9' 1.471 W	
14,900.0	90.00	268.50	8,862.0	-874.8	-6,003.4	578,168.54	597,576.36	32° 35' 21.502 N	104° 9' 2.640 W	
15,000.0	90.00	268.50	8,862.0	-877.4	-6,103.3	578,165.93	597,476.39	32° 35' 21.478 N	104° 9' 3.808 W	
15,100.0	90.00	268.50	8,862.0	-880.1	-6,203.3	578,163.32	597,376.42	32° 35' 21.454 N	104° 9' 4.977 W	
15,200.0	90.00	268.50	8,862.0	-882.7	-6,303.3	578,160.71	597,276.46	32° 35' 21.430 N	104° 9' 6.145 W	
15,300.0	90.00	268.50	8,862.0	-885.3	-6,403.2	578,158.10	597,176.49	32° 35' 21.405 N	104° 9' 7.314 W	
15,400.0	90.00	268.50	8,862.0	-887.9	-6,503.2	578,155.49	597,076.53	32° 35' 21.381 N	104° 9' 8.482 W	
15,500.0	90.00	268.50	8,862.0	-890.5	-6,603.2	578,152.88	596,976.56	32° 35' 21.357 N	104° 9' 9.651 W	
15,600.0	90.00	268.50	8,862.0	-893.1	-6,703.1	578,150.27	596,876.59	32° 35' 21.333 N	104° 9' 10.819 W	
15,700.0	90.00	268.50	8,862.0	-895.7	-6,803.1	578,147.67	596,776.63	32° 35' 21.309 N	104° 9' 11.988 W	
15,800.0	90.00	268.50	8,862.0	-898.3	-6,903.1	578,145.06	596,676.66	32° 35' 21.285 N	104° 9' 13.156 W	
15,900.0	90.00	268.50	8,862.0	-900.9	-7,003.0	578,142.45	596,576.70	32° 35' 21.261 N	104° 9' 14.325 W	
16,000.0	90.00	268.50	8,862.0	-903.5	-7,103.0	578,139.84	596,476.73	32° 35' 21.236 N	104° 9' 15.494 W	
16,100.0	90.00	268.50	8,862.0	-906.1	-7,203.0	578,137.23	596,376.76	32° 35' 21.212 N	104° 9' 16.662 W	
16,200.0	90.00	268.50	8,862.0	-908.8	-7,302.9	578,134.62	596,276.80	32° 35' 21.188 N	104° 9' 17.831 W	
16,300.0	90.00	268.50	8,862.0	-911.4	-7,402.9	578,132.01	596,176.83	32° 35' 21.164 N	104° 9' 18.999 W	
16,400.0	90.00	268.50	8,862.0	-914.0	-7,502.9	578,129.40	596,076.87	32° 35' 21.140 N	104° 9' 20.168 W	
16,500.0	90.00	268.50	8,862.0	-916.6	-7,602.8	578,126.79	595,976.90	32° 35' 21.116 N	104° 9' 21.336 W	
16,583.1	90.00	268.50	8,862.0	-918.7	-7,685.9	578,124.62	595,893.84	32° 35' 21.095 N	104° 9' 22.307 W	
<b>TD at 16583.1</b>										

Planning Report - Geographic

<b>Database:</b>	Compass_17	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Company:</b>	NEW MEXICO	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Project:</b>	(SP) EDDY	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site:</b>	KANGAROO 12 FED	<b>North Reference:</b>	Grid
<b>Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PWPO		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
BHL-KANGAROO 12 FE - plan hits target center - Point	0.00	0.00	8,862.0	-918.7	-7,685.9	578,124.62	595,893.84	32° 35' 21.095 N	104° 9' 22.307 W
FTP-KANGAROO 12 FE - plan misses target center by 217.5usft at 8890.2usft MD (8760.6 TVD, -718.6 N, -18.3 E) - Point	0.00	0.00	8,862.0	-891.3	66.5	578,152.03	603,646.18	32° 35' 21.230 N	104° 7' 51.692 W

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	Start Build 2.00
2,600.0	2,595.6	-61.0	14.1	Start 2921.5 hold at 2600.0 MD
5,521.5	5,453.3	-652.8	150.8	Start Drop -2.00
6,121.5	6,049.0	-713.8	164.9	Start 2335.5 hold at 6121.5 MD
8,457.1	8,384.5	-713.8	164.9	Start DLS 12.00 TFO 268.50
9,207.1	8,862.0	-726.3	-312.4	Start 7376.0 hold at 9207.1 MD
11,368.0	8,862.0	-782.7	-2,472.5	NMNM 002377 Exit at 11368.0 MD
16,583.1	8,862.0	-918.7	-7,685.9	TD at 16583.1

# **NEW MEXICO**

**(SP) EDDY**

**KANGAROO 12 FED**

**KANGAROO 12 FED COM 132H**

**OWB**

**PWP0**

## **Anticollision Report**

**09 May, 2024**

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PWP0		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum centre distance of 1,000.0usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	5/7/2024		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	16,583.1	PWP0 (OWB)	MWD	OWSG_Rev2_MWD - Standard

Summary						
Site Name	Reference Measure	Offset Measure	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation	Warning
<b>Offset Well - Wellbore - Design</b>						
KANGAROO 12 FED						
KANGAROO 12 FED COM 121H - OWB - PWP0	2,000.0	1,998.7	165.0	150.9	11.684	CC
KANGAROO 12 FED COM 121H - OWB - PWP0	2,100.0	2,098.7	165.4	150.5	11.160	ES
KANGAROO 12 FED COM 122H - OWB - PWP0	2,500.0	2,497.4	178.5	161.0	10.164	SF
KANGAROO 12 FED COM 122H - OWB - PWP0	3,185.5	3,195.4	86.7	64.6	3.921	CC
KANGAROO 12 FED COM 122H - OWB - PWP0	3,200.0	3,209.8	86.7	64.5	3.904	ES
KANGAROO 12 FED COM 122H - OWB - PWP0	3,400.0	3,408.8	89.4	65.8	3.788	SF
KANGAROO 12 FED COM 131H - OWB - PWP0	2,075.8	2,075.7	32.9	18.3	2.249	CC
KANGAROO 12 FED COM 131H - OWB - PWP0	2,100.0	2,100.0	33.0	18.2	2.225	ES, SF
KANGAROO 12 FED COM 201H - OWB - PWP0	2,000.0	1,999.1	99.0	84.9	7.010	CC
KANGAROO 12 FED COM 201H - OWB - PWP0	2,100.0	2,099.8	99.0	84.2	6.683	ES
KANGAROO 12 FED COM 201H - OWB - PWP0	2,300.0	2,298.3	103.6	87.4	6.401	SF
KANGAROO 12 FED COM 202H - OWB - PWP0	2,405.6	2,409.1	53.3	36.4	3.168	CC, ES
KANGAROO 12 FED COM 202H - OWB - PWP0	16,554.6	16,797.2	711.0	359.8	2.025	SF

Offset Design													KANGAROO 12 FED - KANGAROO 12 FED COM 121H - OWB - PWP0		Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Rule Assigned:		Offset Well Error:	0.0 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Offset Depth (usft)	Vertical Offset Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
0.0	0.0	0.0	0.0	0.0	0.0	-90.16	-0.4	-165.0	165.0							
100.0	100.0	98.7	98.7	0.3	0.2	-90.16	-0.4	-165.0	165.0	164.5	0.50	330.868				
200.0	200.0	198.7	198.7	0.6	0.6	-90.16	-0.4	-165.0	165.0	163.8	1.21	135.874				
300.0	300.0	298.7	298.7	1.0	1.0	-90.16	-0.4	-165.0	165.0	163.0	1.93	85.429				
400.0	400.0	398.7	398.7	1.3	1.3	-90.16	-0.4	-165.0	165.0	162.3	2.65	62.299				
500.0	500.0	498.7	498.7	1.7	1.7	-90.16	-0.4	-165.0	165.0	161.6	3.36	49.026				
600.0	600.0	598.7	598.7	2.0	2.0	-90.16	-0.4	-165.0	165.0	160.9	4.08	40.415				
700.0	700.0	698.7	698.7	2.4	2.4	-90.16	-0.4	-165.0	165.0	160.2	4.80	34.377				
800.0	800.0	798.7	798.7	2.8	2.8	-90.16	-0.4	-165.0	165.0	159.5	5.52	29.909				
900.0	900.0	898.7	898.7	3.1	3.1	-90.16	-0.4	-165.0	165.0	158.7	6.23	26.468				
1,000.0	1,000.0	998.7	998.7	3.5	3.5	-90.16	-0.4	-165.0	165.0	158.0	6.95	23.738				
1,100.0	1,100.0	1,098.7	1,098.7	3.8	3.8	-90.16	-0.4	-165.0	165.0	157.3	7.67	21.518				
1,200.0	1,200.0	1,198.7	1,198.7	4.2	4.2	-90.16	-0.4	-165.0	165.0	156.6	8.38	19.678				
1,300.0	1,300.0	1,298.7	1,298.7	4.6	4.5	-90.16	-0.4	-165.0	165.0	155.9	9.10	18.128				

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 121H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
1,400.0	1,400.0	1,398.7	1,398.7	4.9	4.9	-90.16	-0.4	-165.0	165.0	155.2	9.82	16.804		
1,500.0	1,500.0	1,498.7	1,498.7	5.3	5.3	-90.16	-0.4	-165.0	165.0	154.4	10.53	15.660		
1,600.0	1,600.0	1,598.7	1,598.7	5.6	5.6	-90.16	-0.4	-165.0	165.0	153.7	11.25	14.662		
1,700.0	1,700.0	1,698.7	1,698.7	6.0	6.0	-90.16	-0.4	-165.0	165.0	153.0	11.97	13.784		
1,800.0	1,800.0	1,798.7	1,798.7	6.3	6.3	-90.16	-0.4	-165.0	165.0	152.3	12.69	13.005		
1,900.0	1,900.0	1,898.7	1,898.7	6.7	6.7	-90.16	-0.4	-165.0	165.0	151.6	13.40	12.309		
2,000.0	2,000.0	1,998.7	1,998.7	7.1	7.1	-90.16	-0.4	-165.0	165.0	150.9	14.12	11.684	CC	
2,100.0	2,100.0	2,098.7	2,098.7	7.4	7.4	103.43	-0.4	-165.0	165.4	150.5	14.82	11.160	ES	
2,200.0	2,199.8	2,198.5	2,198.5	7.7	7.8	105.16	-0.4	-165.0	166.7	151.2	15.50	10.753		
2,300.0	2,299.5	2,299.7	2,299.7	8.1	8.1	108.56	1.2	-164.4	168.7	152.5	16.19	10.422		
2,400.0	2,398.7	2,399.5	2,399.3	8.4	8.5	114.01	6.1	-162.5	172.1	155.2	16.88	10.196		
2,500.0	2,497.5	2,497.4	2,496.8	8.7	8.8	121.07	14.0	-159.6	178.5	161.0	17.56	10.164	SF	
2,600.0	2,595.6	2,592.6	2,591.4	9.1	9.2	129.05	24.7	-155.6	190.1	171.9	18.25	10.419		
2,700.0	2,693.4	2,685.5	2,683.1	9.5	9.5	137.16	38.0	-150.6	207.4	188.5	18.91	10.965		
2,800.0	2,791.3	2,776.2	2,772.3	9.8	9.9	144.56	53.7	-144.8	229.6	210.0	19.55	11.745		
2,900.0	2,889.1	2,864.7	2,858.7	10.2	10.2	151.10	71.5	-138.2	256.6	236.5	20.14	12.739		
3,000.0	2,986.9	2,950.9	2,942.3	10.6	10.5	156.79	91.2	-130.8	288.2	267.5	20.70	13.920		
3,100.0	3,084.7	3,040.9	3,029.2	11.0	10.9	161.82	113.1	-122.7	323.1	301.8	21.32	15.158		
3,200.0	3,182.5	3,130.9	3,116.2	11.4	11.3	165.90	134.9	-114.5	359.9	338.0	21.94	16.406		
3,300.0	3,280.3	3,220.9	3,203.1	11.9	11.6	169.26	156.7	-106.4	398.1	375.6	22.57	17.638		
3,400.0	3,378.1	3,310.9	3,290.0	12.3	12.0	172.05	178.5	-98.3	437.3	414.1	23.21	18.839		
3,500.0	3,476.0	3,400.8	3,376.9	12.7	12.4	174.39	200.4	-90.1	477.3	453.4	23.86	20.002		
3,600.0	3,573.8	3,490.8	3,463.9	13.1	12.8	176.37	222.2	-82.0	517.9	493.3	24.52	21.120		
3,700.0	3,671.6	3,580.8	3,550.8	13.6	13.2	178.08	244.0	-73.9	558.9	533.7	25.18	22.193		
3,800.0	3,769.4	3,670.8	3,637.7	14.0	13.6	179.56	265.8	-65.7	600.3	574.4	25.85	23.220		
3,900.0	3,867.2	3,760.8	3,724.6	14.5	14.1	-179.15	287.7	-57.6	641.9	615.4	26.52	24.202		
4,000.0	3,965.0	3,850.8	3,811.6	14.9	14.5	-178.02	309.5	-49.5	683.9	656.7	27.20	25.140		
4,100.0	4,062.8	3,940.8	3,898.5	15.4	14.9	-177.01	331.3	-41.3	726.0	698.1	27.88	26.036		
4,200.0	4,160.7	4,030.8	3,985.4	15.8	15.3	-176.12	353.1	-33.2	768.3	739.7	28.57	26.892		
4,300.0	4,258.5	4,120.8	4,072.3	16.3	15.8	-175.31	375.0	-25.1	810.7	781.4	29.26	27.710		
4,400.0	4,356.3	4,210.8	4,159.3	16.7	16.2	-174.59	396.8	-16.9	853.2	823.3	29.95	28.491		
4,500.0	4,454.1	4,300.8	4,246.2	17.2	16.6	-173.93	418.6	-8.8	895.9	865.2	30.64	29.238		
4,600.0	4,551.9	4,390.8	4,333.1	17.6	17.1	-173.33	440.4	-0.7	938.6	907.3	31.34	29.952		
4,700.0	4,649.7	4,480.7	4,420.1	18.1	17.5	-172.79	462.3	7.5	981.4	949.4	32.03	30.636		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 122H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	-90.16	-0.4	-132.0	132.0					
100.0	100.0	99.0	99.0	0.3	0.2	-90.16	-0.4	-132.0	132.0	131.5	0.50	264.284		
200.0	200.0	199.0	199.0	0.6	0.6	-90.16	-0.4	-132.0	132.0	130.8	1.22	108.598		
300.0	300.0	299.0	299.0	1.0	1.0	-90.16	-0.4	-132.0	132.0	130.0	1.93	68.302		
400.0	400.0	399.0	399.0	1.3	1.3	-90.16	-0.4	-132.0	132.0	129.3	2.65	49.817		
500.0	500.0	499.0	499.0	1.7	1.7	-90.16	-0.4	-132.0	132.0	128.6	3.37	39.206		
600.0	600.0	599.0	599.0	2.0	2.0	-90.16	-0.4	-132.0	132.0	127.9	4.08	32.322		
700.0	700.0	699.0	699.0	2.4	2.4	-90.16	-0.4	-132.0	132.0	127.2	4.80	27.494		
800.0	800.0	799.0	799.0	2.8	2.8	-90.16	-0.4	-132.0	132.0	126.5	5.52	23.921		
900.0	900.0	899.0	899.0	3.1	3.1	-90.16	-0.4	-132.0	132.0	125.7	6.23	21.170		
1,000.0	1,000.0	999.0	999.0	3.5	3.5	-90.16	-0.4	-132.0	132.0	125.0	6.95	18.986		
1,100.0	1,100.0	1,099.0	1,099.0	3.8	3.8	-90.16	-0.4	-132.0	132.0	124.3	7.67	17.211		
1,200.0	1,200.0	1,199.0	1,199.0	4.2	4.2	-90.16	-0.4	-132.0	132.0	123.6	8.38	15.740		
1,300.0	1,300.0	1,299.0	1,299.0	4.6	4.5	-90.16	-0.4	-132.0	132.0	122.9	9.10	14.500		
1,400.0	1,400.0	1,399.0	1,399.0	4.9	4.9	-90.16	-0.4	-132.0	132.0	122.2	9.82	13.441		
1,500.0	1,500.0	1,499.0	1,499.0	5.3	5.3	-90.16	-0.4	-132.0	132.0	121.4	10.54	12.526		
1,600.0	1,600.0	1,599.0	1,599.0	5.6	5.6	-90.16	-0.4	-132.0	132.0	120.7	11.25	11.728		
1,700.0	1,700.0	1,699.0	1,699.0	6.0	6.0	-90.16	-0.4	-132.0	132.0	120.0	11.97	11.026		
1,800.0	1,800.0	1,799.0	1,799.0	6.3	6.3	-90.16	-0.4	-132.0	132.0	119.3	12.69	10.403		
1,900.0	1,900.0	1,899.0	1,899.0	6.7	6.7	-90.16	-0.4	-132.0	132.0	118.6	13.40	9.846		
2,000.0	2,000.0	1,999.0	1,999.0	7.1	7.1	-90.16	-0.4	-132.0	132.0	117.9	14.12	9.346		
2,100.0	2,100.0	2,102.2	2,102.1	7.4	7.4	103.04	-1.7	-130.7	131.2	116.4	14.81	8.857		
2,200.0	2,199.8	2,205.3	2,205.1	7.7	7.8	103.62	-5.8	-127.0	128.7	113.3	15.46	8.327		
2,300.0	2,299.5	2,308.3	2,307.7	8.1	8.1	104.60	-12.6	-120.8	124.7	108.6	16.11	7.741		
2,400.0	2,398.7	2,411.2	2,409.8	8.4	8.4	106.09	-22.1	-112.1	119.1	102.3	16.76	7.108		
2,500.0	2,497.5	2,513.4	2,510.7	8.7	8.8	108.20	-34.2	-101.0	112.1	94.7	17.40	6.438		
2,600.0	2,595.6	2,613.0	2,608.8	9.1	9.2	111.80	-47.0	-89.4	105.4	87.3	18.09	5.827		
2,700.0	2,693.4	2,712.5	2,706.7	9.5	9.5	116.63	-59.7	-77.7	99.9	81.1	18.77	5.322		
2,800.0	2,791.3	2,812.0	2,804.7	9.8	9.9	121.96	-72.5	-66.1	95.2	75.8	19.46	4.893		
2,900.0	2,889.1	2,911.4	2,902.6	10.2	10.3	127.79	-85.3	-54.4	91.5	71.3	20.15	4.539		
3,000.0	2,986.9	3,010.9	3,000.6	10.6	10.7	134.04	-98.0	-42.8	88.7	67.9	20.83	4.258		
3,100.0	3,084.7	3,110.4	3,098.6	11.0	11.1	140.60	-110.8	-31.2	87.1	65.6	21.52	4.048		
3,185.5	3,168.3	3,195.4	3,182.3	11.4	11.4	146.33	-121.7	-21.2	86.7	64.6	22.10	3.921 CC		
3,200.0	3,182.5	3,209.8	3,196.5	11.4	11.5	147.31	-123.5	-19.5	86.7	64.5	22.20	3.904 ES		
3,300.0	3,280.3	3,309.3	3,294.5	11.9	11.9	154.00	-136.3	-7.9	87.5	64.6	22.89	3.820		
3,400.0	3,378.1	3,408.8	3,392.5	12.3	12.3	160.49	-149.0	3.8	89.4	65.8	23.60	3.788 SF		
3,500.0	3,476.0	3,508.3	3,490.4	12.7	12.7	166.62	-161.8	15.4	92.5	68.1	24.32	3.801		
3,600.0	3,573.8	3,607.7	3,588.4	13.1	13.1	172.31	-174.5	27.1	96.5	71.4	25.07	3.849		
3,700.0	3,671.6	3,707.2	3,686.3	13.6	13.5	177.50	-187.3	38.7	101.4	75.6	25.84	3.925		
3,800.0	3,769.4	3,806.7	3,784.3	14.0	13.9	-177.82	-200.1	50.4	107.1	80.5	26.63	4.022		
3,900.0	3,867.2	3,906.2	3,882.3	14.5	14.3	-173.64	-212.8	62.0	113.4	86.0	27.43	4.134		
4,000.0	3,965.0	4,005.6	3,980.2	14.9	14.7	-169.91	-225.6	73.7	120.3	92.0	28.25	4.257		
4,100.0	4,062.8	4,105.1	4,078.2	15.4	15.2	-166.60	-238.3	85.3	127.6	98.5	29.09	4.387		
4,200.0	4,160.7	4,204.6	4,176.2	15.8	15.6	-163.65	-251.1	97.0	135.3	105.4	29.93	4.520		
4,300.0	4,258.5	4,304.1	4,274.1	16.3	16.0	-161.02	-263.8	108.6	143.3	112.5	30.78	4.656		
4,400.0	4,356.3	4,403.5	4,372.1	16.7	16.4	-158.68	-276.6	120.3	151.6	119.9	31.63	4.792		
4,500.0	4,454.1	4,503.0	4,470.0	17.2	16.9	-156.58	-289.3	131.9	160.1	127.6	32.49	4.927		
4,600.0	4,551.9	4,602.5	4,568.0	17.6	17.3	-154.69	-302.1	143.6	168.8	135.4	33.36	5.060		
4,700.0	4,649.7	4,702.0	4,666.0	18.1	17.7	-152.99	-314.9	155.2	177.7	143.4	34.23	5.190		
4,800.0	4,747.5	4,801.4	4,763.9	18.6	18.2	-151.45	-327.6	166.9	186.7	151.6	35.10	5.318		
4,900.0	4,845.4	4,900.9	4,861.9	19.0	18.6	-150.06	-340.4	178.5	195.8	159.8	35.97	5.443		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 122H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,000.0	4,943.2	5,000.0	4,959.5	19.5	19.0	-148.80	-353.1	190.1	205.0	168.2	36.85	5.565		
5,100.0	5,041.0	5,095.9	5,054.3	20.0	19.4	-148.15	-363.9	200.0	215.4	177.7	37.67	5.717		
5,200.0	5,138.8	5,191.6	5,149.3	20.4	19.8	-148.27	-372.4	207.7	227.3	188.9	38.43	5.916		
5,300.0	5,236.6	5,286.8	5,244.1	20.9	20.2	-149.05	-378.5	213.3	240.9	201.8	39.12	6.158		
5,400.0	5,334.4	5,381.2	5,338.4	21.4	20.5	-150.35	-382.2	216.7	256.3	216.5	39.75	6.446		
5,500.0	5,432.3	5,474.8	5,431.9	21.8	20.8	-152.04	-383.6	218.0	273.5	233.2	40.32	6.783		
5,521.5	5,453.3	5,495.2	5,452.3	21.9	20.9	-152.46	-383.7	218.0	277.4	237.0	40.44	6.861		
5,600.0	5,530.3	5,572.1	5,529.3	22.3	21.1	-153.96	-383.7	218.0	291.1	250.2	40.91	7.116		
5,700.0	5,628.9	5,670.8	5,627.9	22.7	21.5	-155.43	-383.7	218.0	306.0	264.4	41.53	7.368		
5,800.0	5,728.1	5,769.9	5,727.1	23.2	21.8	-156.49	-383.7	218.0	317.8	275.6	42.16	7.537		
5,900.0	5,827.6	5,869.5	5,826.6	23.5	22.1	-157.22	-383.7	218.0	326.5	283.7	42.81	7.626		
6,000.0	5,927.4	5,969.3	5,926.4	23.9	22.4	-157.67	-383.7	218.0	332.0	288.6	43.47	7.638		
6,100.0	6,027.4	6,069.3	6,026.4	24.2	22.7	-157.85	-383.7	218.0	334.3	290.2	44.13	7.576		
6,121.5	6,049.0	6,090.8	6,048.0	24.3	22.8	9.14	-383.7	218.0	334.4	290.1	44.27	7.553		
6,200.0	6,127.4	6,169.3	6,126.4	24.5	23.1	9.14	-383.7	218.0	334.4	289.6	44.79	7.467		
6,300.0	6,227.4	6,269.3	6,226.4	24.8	23.4	9.14	-383.7	218.0	334.4	289.0	45.45	7.359		
6,400.0	6,327.4	6,369.3	6,326.4	25.1	23.7	9.14	-383.7	218.0	334.4	288.3	46.11	7.253		
6,500.0	6,427.4	6,469.3	6,426.4	25.4	24.0	9.14	-383.7	218.0	334.4	287.7	46.77	7.151		
6,600.0	6,527.4	6,569.3	6,526.4	25.7	24.4	9.14	-383.7	218.0	334.4	287.0	47.43	7.051		
6,700.0	6,627.4	6,669.3	6,626.4	26.0	24.7	9.14	-383.7	218.0	334.4	286.3	48.09	6.954		
6,800.0	6,727.4	6,769.3	6,726.4	26.3	25.0	9.14	-383.7	218.0	334.4	285.7	48.76	6.859		
6,900.0	6,827.4	6,869.3	6,826.4	26.6	25.3	9.14	-383.7	218.0	334.4	285.0	49.43	6.766		
7,000.0	6,927.4	6,969.3	6,926.4	26.9	25.7	9.14	-383.7	218.0	334.4	284.3	50.09	6.676		
7,100.0	7,027.4	7,069.3	7,026.4	27.2	26.0	9.14	-383.7	218.0	334.4	283.7	50.76	6.588		
7,200.0	7,127.4	7,169.3	7,126.4	27.6	26.3	9.14	-383.7	218.0	334.4	283.0	51.44	6.502		
7,300.0	7,227.4	7,274.6	7,231.7	27.9	26.7	8.83	-383.7	216.2	334.1	282.0	52.14	6.408		
7,400.0	7,327.4	7,384.2	7,338.8	28.2	27.0	5.06	-384.3	194.1	331.1	278.4	52.64	6.290		
7,497.8	7,425.2	7,477.8	7,424.2	28.5	27.2	-1.49	-385.3	156.4	328.7	275.8	52.83	6.221		
7,500.0	7,427.4	7,479.6	7,425.9	28.5	27.2	-1.65	-385.3	155.4	328.7	275.9	52.83	6.221		
7,600.0	7,527.4	7,557.5	7,490.1	28.8	27.3	-9.25	-386.4	111.6	333.7	281.2	52.51	6.355		
7,700.0	7,627.4	7,619.2	7,535.4	29.1	27.4	-16.25	-387.5	69.8	351.9	300.7	51.20	6.873		
7,800.0	7,727.4	7,667.7	7,567.0	29.4	27.4	-22.07	-388.5	33.0	385.6	336.8	48.82	7.898		
7,900.0	7,827.4	7,706.2	7,589.3	29.7	27.5	-26.70	-389.3	1.6	433.8	387.9	45.87	9.458		
8,000.0	7,927.4	7,737.1	7,605.3	30.1	27.5	-30.35	-390.0	-24.7	493.9	451.0	42.93	11.506		
8,100.0	8,027.4	7,762.2	7,617.1	30.4	27.5	-33.23	-390.5	-46.9	562.9	522.6	40.32	13.961		
8,200.0	8,127.4	7,782.9	7,625.9	30.7	27.6	-35.54	-391.0	-65.7	638.6	600.5	38.17	16.732		
8,300.0	8,227.4	7,800.0	7,632.6	31.0	27.6	-37.38	-391.4	-81.4	719.2	682.7	36.44	19.734		
8,400.0	8,327.4	7,815.0	7,637.9	31.3	27.6	-38.94	-391.8	-95.3	803.4	768.3	35.12	22.878		
8,457.1	8,384.5	7,825.0	7,641.3	31.5	27.7	-39.97	-392.0	-104.8	852.8	818.2	34.57	24.671		
8,475.0	8,402.4	7,825.0	7,641.3	31.6	27.7	48.66	-392.0	-104.8	868.3	834.0	34.32	25.298		
8,500.0	8,427.3	7,825.0	7,641.3	31.7	27.7	45.00	-392.0	-104.8	889.7	855.8	33.98	26.181		
8,525.0	8,452.2	7,825.0	7,641.3	31.7	27.7	41.73	-392.0	-104.8	910.9	877.3	33.65	27.073		
8,550.0	8,476.8	7,836.1	7,644.7	31.8	27.7	38.15	-392.3	-115.4	931.5	898.0	33.57	27.746		
8,575.0	8,501.2	7,840.5	7,646.0	31.9	27.7	35.41	-392.4	-119.5	951.8	918.5	33.34	28.554		
8,600.0	8,525.3	7,850.0	7,648.7	32.0	27.7	32.79	-392.7	-128.6	971.7	938.5	33.21	29.262		
8,625.0	8,549.0	7,850.0	7,648.7	32.0	27.7	30.87	-392.7	-128.6	991.0	958.2	32.87	30.151		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 131H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	-90.16	-0.1	-33.0	33.0					
100.0	100.0	99.7	99.7	0.3	0.3	-90.16	-0.1	-33.0	33.0	32.5	0.50	65.854		
200.0	200.0	199.7	199.7	0.6	0.6	-90.16	-0.1	-33.0	33.0	31.8	1.22	27.100		
300.0	300.0	299.7	299.7	1.0	1.0	-90.16	-0.1	-33.0	33.0	31.1	1.93	17.057		
400.0	400.0	399.7	399.7	1.3	1.3	-90.16	-0.1	-33.0	33.0	30.3	2.65	12.445		
500.0	500.0	499.7	499.7	1.7	1.7	-90.16	-0.1	-33.0	33.0	29.6	3.37	9.797		
600.0	600.0	599.7	599.7	2.0	2.0	-90.16	-0.1	-33.0	33.0	28.9	4.09	8.077		
700.0	700.0	699.7	699.7	2.4	2.4	-90.16	-0.1	-33.0	33.0	28.2	4.80	6.872		
800.0	800.0	799.7	799.7	2.8	2.8	-90.16	-0.1	-33.0	33.0	27.5	5.52	5.979		
900.0	900.0	899.7	899.7	3.1	3.1	-90.16	-0.1	-33.0	33.0	26.8	6.24	5.292		
1,000.0	1,000.0	999.7	999.7	3.5	3.5	-90.16	-0.1	-33.0	33.0	26.0	6.95	4.746		
1,100.0	1,100.0	1,099.7	1,099.7	3.8	3.8	-90.16	-0.1	-33.0	33.0	25.3	7.67	4.302		
1,200.0	1,200.0	1,199.7	1,199.7	4.2	4.2	-90.16	-0.1	-33.0	33.0	24.6	8.39	3.935		
1,300.0	1,300.0	1,299.7	1,299.7	4.6	4.6	-90.16	-0.1	-33.0	33.0	23.9	9.10	3.625		
1,400.0	1,400.0	1,399.7	1,399.7	4.9	4.9	-90.16	-0.1	-33.0	33.0	23.2	9.82	3.360		
1,500.0	1,500.0	1,499.7	1,499.7	5.3	5.3	-90.16	-0.1	-33.0	33.0	22.5	10.54	3.132		
1,600.0	1,600.0	1,599.7	1,599.7	5.6	5.6	-90.16	-0.1	-33.0	33.0	21.7	11.25	2.932		
1,700.0	1,700.0	1,699.7	1,699.7	6.0	6.0	-90.16	-0.1	-33.0	33.0	21.0	11.97	2.756		
1,800.0	1,800.0	1,799.7	1,799.7	6.3	6.3	-90.16	-0.1	-33.0	33.0	20.3	12.69	2.601		
1,900.0	1,900.0	1,899.7	1,899.7	6.7	6.7	-90.16	-0.1	-33.0	33.0	19.6	13.41	2.462		
2,000.0	2,000.0	1,999.7	1,999.7	7.1	7.1	-90.16	-0.1	-33.0	33.0	18.9	14.12	2.337		
2,075.8	2,075.8	2,075.7	2,075.7	7.3	7.3	106.20	0.9	-32.7	32.9	18.3	14.65	2.249	CC	
2,100.0	2,100.0	2,100.0	2,100.0	7.4	7.4	108.68	1.6	-32.4	33.0	18.2	14.82	2.225	ES, SF	
2,200.0	2,199.8	2,199.6	2,199.4	7.7	7.8	125.28	6.5	-30.7	34.9	19.4	15.50	2.250		
2,300.0	2,299.5	2,297.8	2,297.3	8.1	8.1	146.22	14.5	-27.9	43.3	27.2	16.17	2.679		
2,400.0	2,398.7	2,394.2	2,392.9	8.4	8.5	162.71	25.4	-24.0	61.0	44.1	16.80	3.627		
2,500.0	2,497.5	2,488.0	2,485.6	8.7	8.8	173.12	39.0	-19.2	87.2	69.8	17.40	5.012		
2,600.0	2,595.6	2,581.6	2,577.8	9.1	9.2	179.36	54.3	-13.8	119.9	101.9	18.04	6.650		
2,700.0	2,693.4	2,674.8	2,669.6	9.5	9.5	-177.07	69.6	-8.5	155.1	136.4	18.68	8.300		
2,800.0	2,791.3	2,768.1	2,761.5	9.8	9.9	-174.81	84.9	-3.1	190.6	171.2	19.34	9.854		
2,900.0	2,889.1	2,861.4	2,853.4	10.2	10.2	-173.26	100.2	2.3	226.2	206.2	20.00	11.310		
3,000.0	2,986.9	2,954.7	2,945.2	10.6	10.6	-172.14	115.4	7.7	262.0	241.3	20.67	12.675		
3,100.0	3,084.7	3,048.0	3,037.1	11.0	11.0	-171.28	130.7	13.1	297.8	276.5	21.34	13.955		
3,200.0	3,182.5	3,141.2	3,129.0	11.4	11.3	-170.61	146.0	18.4	333.7	311.6	22.02	15.155		
3,300.0	3,280.3	3,234.5	3,220.8	11.9	11.7	-170.07	161.3	23.8	369.6	346.9	22.70	16.283		
3,400.0	3,378.1	3,327.8	3,312.7	12.3	12.1	-169.62	176.5	29.2	405.5	382.1	23.38	17.343		
3,500.0	3,476.0	3,421.1	3,404.6	12.7	12.5	-169.25	191.8	34.6	441.4	417.4	24.07	18.342		
3,600.0	3,573.8	3,514.4	3,496.4	13.1	12.9	-168.93	207.1	40.0	477.4	452.6	24.76	19.283		
3,700.0	3,671.6	3,607.6	3,588.3	13.6	13.2	-168.66	222.4	45.3	513.4	487.9	25.45	20.172		
3,800.0	3,769.4	3,700.9	3,680.1	14.0	13.6	-168.42	237.7	50.7	549.4	523.2	26.14	21.013		
3,900.0	3,867.2	3,794.2	3,772.0	14.5	14.0	-168.21	252.9	56.1	585.3	558.5	26.84	21.808		
4,000.0	3,965.0	3,887.5	3,863.9	14.9	14.4	-168.03	268.2	61.5	621.3	593.8	27.54	22.562		
4,100.0	4,062.8	3,980.8	3,955.7	15.4	14.8	-167.86	283.5	66.9	657.3	629.1	28.24	23.277		
4,200.0	4,160.7	4,074.0	4,047.6	15.8	15.2	-167.72	298.8	72.2	693.3	664.4	28.94	23.956		
4,300.0	4,258.5	4,167.3	4,139.5	16.3	15.6	-167.58	314.1	77.6	729.3	699.7	29.65	24.602		
4,400.0	4,356.3	4,260.6	4,231.3	16.7	16.0	-167.46	329.3	83.0	765.3	735.0	30.35	25.216		
4,500.0	4,454.1	4,353.9	4,323.2	17.2	16.4	-167.35	344.6	88.4	801.4	770.3	31.06	25.802		
4,600.0	4,551.9	4,447.2	4,415.0	17.6	16.8	-167.25	359.9	93.8	837.4	805.6	31.77	26.360		
4,700.0	4,649.7	4,540.4	4,506.9	18.1	17.2	-167.16	375.2	99.1	873.4	840.9	32.48	26.894		
4,800.0	4,747.5	4,633.7	4,598.8	18.6	17.6	-167.08	390.4	104.5	909.4	876.2	33.19	27.403		
4,900.0	4,845.4	4,727.0	4,690.6	19.0	18.0	-167.00	405.7	109.9	945.4	911.5	33.90	27.890		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>	KANGAROO 12 FED - KANGAROO 12 FED COM 131H - OWB - PWP0											<b>Offset Site Error:</b>	0.0 usft
<b>Survey Program:</b>	0-MWD											<b>Offset Well Error:</b>	0.0 usft
<b>Reference</b>	<b>Rule Assigned:</b>											<b>Warning</b>	
<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Offset Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Semi Major Axis</b>		<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre</b>		<b>Distance</b>		<b>Minimum Separation (usft)</b>	<b>Separation Factor</b>	
				<b>Reference (usft)</b>	<b>Offset (usft)</b>		<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Between Centres (usft)</b>	<b>Between Ellipses (usft)</b>			
5,000.0	4,943.2	4,820.3	4,782.5	19.5	18.4	-166.93	421.0	115.3	981.4	946.8	34.61	28.357	

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 201H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference	Vertical	Offset	Vertical	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Depth (usft)	Measured Depth (usft)	Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	-90.16	-0.3	-99.0	99.0					
100.0	100.0	99.1	99.1	0.3	0.2	-90.16	-0.3	-99.0	99.0	98.5	0.50	198.118		
200.0	200.0	199.1	199.1	0.6	0.6	-90.16	-0.3	-99.0	99.0	97.8	1.22	81.427		
300.0	300.0	299.1	299.1	1.0	1.0	-90.16	-0.3	-99.0	99.0	97.0	1.93	51.218		
400.0	400.0	399.1	399.1	1.3	1.3	-90.16	-0.3	-99.0	99.0	96.3	2.65	37.359		
500.0	500.0	499.1	499.1	1.7	1.7	-90.16	-0.3	-99.0	99.0	95.6	3.37	29.402		
600.0	600.0	599.1	599.1	2.0	2.0	-90.16	-0.3	-99.0	99.0	94.9	4.08	24.240		
700.0	700.0	699.1	699.1	2.4	2.4	-90.16	-0.3	-99.0	99.0	94.2	4.80	20.620		
800.0	800.0	799.1	799.1	2.8	2.8	-90.16	-0.3	-99.0	99.0	93.5	5.52	17.940		
900.0	900.0	899.1	899.1	3.1	3.1	-90.16	-0.3	-99.0	99.0	92.7	6.23	15.877		
1,000.0	1,000.0	999.1	999.1	3.5	3.5	-90.16	-0.3	-99.0	99.0	92.0	6.95	14.239		
1,100.0	1,100.0	1,099.1	1,099.1	3.8	3.8	-90.16	-0.3	-99.0	99.0	91.3	7.67	12.908		
1,200.0	1,200.0	1,199.1	1,199.1	4.2	4.2	-90.16	-0.3	-99.0	99.0	90.6	8.39	11.804		
1,300.0	1,300.0	1,299.1	1,299.1	4.6	4.5	-90.16	-0.3	-99.0	99.0	89.9	9.10	10.875		
1,400.0	1,400.0	1,399.1	1,399.1	4.9	4.9	-90.16	-0.3	-99.0	99.0	89.2	9.82	10.081		
1,500.0	1,500.0	1,499.1	1,499.1	5.3	5.3	-90.16	-0.3	-99.0	99.0	88.4	10.54	9.395		
1,600.0	1,600.0	1,599.1	1,599.1	5.6	5.6	-90.16	-0.3	-99.0	99.0	87.7	11.25	8.796		
1,700.0	1,700.0	1,699.1	1,699.1	6.0	6.0	-90.16	-0.3	-99.0	99.0	87.0	11.97	8.269		
1,800.0	1,800.0	1,799.1	1,799.1	6.3	6.3	-90.16	-0.3	-99.0	99.0	86.3	12.69	7.802		
1,900.0	1,900.0	1,899.1	1,899.1	6.7	6.7	-90.16	-0.3	-99.0	99.0	85.6	13.40	7.385		
2,000.0	2,000.0	1,999.1	1,999.1	7.1	7.1	-90.16	-0.3	-99.0	99.0	84.9	14.12	7.010	CC	
2,004.4	2,004.4	2,003.6	2,003.6	7.1	7.1	102.85	-0.3	-99.0	99.0	84.8	14.15	6.994		
2,100.0	2,100.0	2,099.8	2,099.7	7.4	7.4	104.82	1.4	-98.6	99.0	84.2	14.82	6.683	ES	
2,200.0	2,199.8	2,199.7	2,199.6	7.7	7.8	110.64	6.5	-97.4	99.9	84.4	15.50	6.445		
2,300.0	2,299.5	2,298.3	2,297.8	8.1	8.1	119.76	14.9	-95.5	103.6	87.4	16.18	6.401	SF	
2,400.0	2,398.7	2,394.9	2,393.6	8.4	8.5	130.78	26.2	-93.0	112.8	95.9	16.85	6.692		
2,500.0	2,497.5	2,488.8	2,486.5	8.7	8.8	141.81	40.3	-89.8	129.8	112.3	17.49	7.422		
2,600.0	2,595.6	2,579.7	2,575.7	9.1	9.2	151.39	56.7	-86.1	155.7	137.6	18.09	8.608		
2,700.0	2,693.4	2,667.6	2,661.6	9.5	9.5	159.14	75.3	-81.9	188.6	170.0	18.64	10.118		
2,800.0	2,791.3	2,753.4	2,744.8	9.8	9.8	165.03	95.8	-77.2	226.1	207.0	19.16	11.800		
2,900.0	2,889.1	2,843.0	2,831.3	10.2	10.2	169.68	118.4	-72.1	266.4	246.6	19.77	13.473		
3,000.0	2,986.9	2,932.7	2,917.9	10.6	10.6	173.12	141.0	-66.9	307.7	287.4	20.39	15.090		
3,100.0	3,084.7	3,022.3	3,004.5	11.0	11.0	175.77	163.7	-61.8	349.8	328.8	21.03	16.637		
3,200.0	3,182.5	3,112.0	3,091.1	11.4	11.3	177.85	186.3	-56.7	392.4	370.8	21.67	18.109		
3,300.0	3,280.3	3,201.6	3,177.7	11.9	11.7	179.53	208.9	-51.6	435.4	413.1	22.32	19.505		
3,400.0	3,378.1	3,291.2	3,264.3	12.3	12.1	-179.09	231.5	-46.4	478.6	455.6	22.98	20.828		
3,500.0	3,476.0	3,380.9	3,350.8	12.7	12.5	-177.93	254.2	-41.3	521.9	498.3	23.64	22.081		
3,600.0	3,573.8	3,470.5	3,437.4	13.1	13.0	-176.95	276.8	-36.2	565.5	541.2	24.30	23.267		
3,700.0	3,671.6	3,560.1	3,524.0	13.6	13.4	-176.11	299.4	-31.0	609.1	584.1	24.97	24.390		
3,800.0	3,769.4	3,649.8	3,610.6	14.0	13.8	-175.38	322.0	-25.9	652.9	627.2	25.65	25.455		
3,900.0	3,867.2	3,739.4	3,697.2	14.5	14.2	-174.75	344.7	-20.8	696.7	670.3	26.32	26.465		
4,000.0	3,965.0	3,829.0	3,783.7	14.9	14.7	-174.18	367.3	-15.6	740.5	713.5	27.00	27.423		
4,100.0	4,062.8	3,918.7	3,870.3	15.4	15.1	-173.68	389.9	-10.5	784.5	756.8	27.69	28.333		
4,200.0	4,160.7	4,008.3	3,956.9	15.8	15.5	-173.24	412.5	-5.4	828.4	800.1	28.37	29.199		
4,300.0	4,258.5	4,098.0	4,043.5	16.3	16.0	-172.84	435.2	-0.3	872.4	843.4	29.06	30.022		
4,400.0	4,356.3	4,187.6	4,130.1	16.7	16.4	-172.47	457.8	4.9	916.5	886.7	29.75	30.806		
4,500.0	4,454.1	4,277.2	4,216.7	17.2	16.8	-172.14	480.4	10.0	960.6	930.1	30.44	31.553		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 202H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Reference Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	-90.16	-0.2	-66.0	66.0	65.5	0.50	131.887		
100.0	100.0	99.4	99.4	0.3	0.2	-90.16	-0.2	-66.0	66.0	64.8	1.22	54.239		
200.0	200.0	199.4	199.4	0.6	0.6	-90.16	-0.2	-66.0	66.0	64.1	1.93	34.128		
300.0	300.0	299.4	299.4	1.0	1.0	-90.16	-0.2	-66.0	66.0	63.3	2.65	24.897		
400.0	400.0	399.4	399.4	1.3	1.3	-90.16	-0.2	-66.0	66.0	62.6	3.37	19.596		
500.0	500.0	499.4	499.4	1.7	1.7	-90.16	-0.2	-66.0	66.0	61.9	4.08	16.157		
600.0	600.0	599.4	599.4	2.0	2.0	-90.16	-0.2	-66.0	66.0	61.2	4.80	13.744		
700.0	700.0	699.4	699.4	2.4	2.4	-90.16	-0.2	-66.0	66.0	60.5	5.52	11.958		
800.0	800.0	799.4	799.4	2.8	2.8	-90.16	-0.2	-66.0	66.0	59.8	6.24	10.583		
900.0	900.0	899.4	899.4	3.1	3.1	-90.16	-0.2	-66.0	66.0	59.0	6.95	9.492		
1,000.0	1,000.0	999.4	999.4	3.5	3.5	-90.16	-0.2	-66.0	66.0	58.3	7.67	8.605		
1,100.0	1,100.0	1,099.4	1,099.4	3.8	3.8	-90.16	-0.2	-66.0	66.0	57.6	8.39	7.869		
1,200.0	1,200.0	1,199.4	1,199.4	4.2	4.2	-90.16	-0.2	-66.0	66.0	56.9	9.10	7.249		
1,300.0	1,300.0	1,299.4	1,299.4	4.6	4.6	-90.16	-0.2	-66.0	66.0	56.2	9.82	6.720		
1,400.0	1,400.0	1,399.4	1,399.4	4.9	4.9	-90.16	-0.2	-66.0	66.0	55.5	10.54	6.263		
1,500.0	1,500.0	1,499.4	1,499.4	5.3	5.3	-90.16	-0.2	-66.0	66.0	54.7	11.25	5.864		
1,600.0	1,600.0	1,599.4	1,599.4	5.6	5.6	-90.16	-0.2	-66.0	66.0	54.0	11.97	5.513		
1,700.0	1,700.0	1,699.4	1,699.4	6.0	6.0	-90.16	-0.2	-66.0	66.0	53.3	12.69	5.201		
1,800.0	1,800.0	1,799.4	1,799.4	6.3	6.3	-90.16	-0.2	-66.0	66.0	52.6	13.40	4.923		
1,900.0	1,900.0	1,899.4	1,899.4	6.7	6.7	-90.16	-0.2	-66.0	66.0	51.9	14.12	4.673		
2,000.0	2,000.0	1,999.4	1,999.4	7.1	7.1	-90.16	-0.2	-66.0	66.0	49.9	14.81	4.368		
2,100.0	2,100.0	2,101.6	2,101.6	7.4	7.4	104.03	-0.6	-64.2	64.7	45.4	15.45	3.940		
2,200.0	2,199.8	2,203.7	2,203.5	7.7	7.8	107.82	-1.9	-59.0	60.9	39.6	16.10	3.461		
2,300.0	2,299.5	2,304.2	2,303.7	8.1	8.1	115.12	-4.0	-50.8	55.7	36.5	16.78	3.176		
2,400.0	2,398.7	2,403.6	2,402.7	8.4	8.5	126.70	-6.1	-42.4	53.3	36.4	16.81	3.168	CC, ES	
2,405.6	2,404.2	2,409.1	2,408.2	8.4	8.5	127.46	-6.2	-42.0	53.3	36.4	16.81	3.168	CC, ES	
2,500.0	2,497.5	2,502.6	2,501.3	8.7	8.8	141.05	-8.2	-34.1	55.8	46.5	18.15	3.561		
2,600.0	2,595.6	2,601.1	2,599.5	9.1	9.1	154.74	-10.3	-25.7	64.6	59.1	18.85	4.137		
2,700.0	2,693.4	2,699.4	2,697.4	9.5	9.5	165.16	-12.3	-17.4	78.0	73.5	19.54	4.764		
2,800.0	2,791.3	2,797.7	2,795.3	9.8	9.8	172.42	-14.4	-9.1	93.1	89.0	20.24	5.399		
2,900.0	2,889.1	2,895.9	2,893.2	10.2	10.2	177.61	-16.5	-0.8	109.3	105.2	20.94	6.022		
3,000.0	2,986.9	2,994.2	2,991.1	10.6	10.6	-178.56	-18.6	7.5	126.1	121.7	21.64	6.623		
3,100.0	3,084.7	3,092.5	3,088.9	11.0	10.9	-175.63	-20.7	15.8	143.3	138.5	22.35	7.197		
3,200.0	3,182.5	3,190.7	3,186.8	11.4	11.3	-173.34	-22.8	24.1	160.9	155.5	23.07	7.743		
3,300.0	3,280.3	3,289.0	3,284.7	11.9	11.6	-171.49	-24.8	32.4	178.6	172.7	23.79	8.261		
3,400.0	3,378.1	3,387.3	3,382.6	12.3	12.0	-169.98	-26.9	40.7	196.5	190.0	24.51	8.752		
3,500.0	3,476.0	3,485.5	3,480.5	12.7	12.4	-168.72	-29.0	49.0	214.5	207.3	25.23	9.218		
3,600.0	3,573.8	3,583.8	3,578.4	13.1	12.7	-167.66	-31.1	57.3	232.6	224.8	25.96	9.658		
3,700.0	3,671.6	3,682.1	3,676.3	13.6	13.1	-166.75	-33.2	65.7	250.7	242.2	26.69	10.076		
3,800.0	3,769.4	3,780.3	3,774.2	14.0	13.4	-165.96	-35.2	74.0	268.9	259.7	27.42	10.471		
3,900.0	3,867.2	3,878.6	3,872.1	14.5	13.8	-165.28	-37.3	82.3	287.2	277.3	28.16	10.847		
4,000.0	3,965.0	3,976.9	3,970.0	14.9	14.2	-164.67	-39.4	90.6	305.4	294.9	28.90	11.203		
4,100.0	4,062.8	4,075.1	4,067.9	15.4	14.5	-164.13	-41.5	98.9	323.8	312.4	29.64	11.542		
4,200.0	4,160.7	4,173.4	4,165.8	15.8	14.9	-163.65	-43.6	107.2	342.1	330.1	30.38	11.864		
4,300.0	4,258.5	4,271.7	4,263.7	16.3	15.3	-163.22	-45.7	115.5	360.4	347.7	31.12	12.170		
4,400.0	4,356.3	4,369.9	4,361.6	16.7	15.6	-162.84	-47.7	123.8	378.8	365.3	31.87	12.463		
4,500.0	4,454.1	4,468.2	4,459.5	17.2	16.0	-162.48	-49.8	132.1	397.2	383.0	32.62	12.741		
4,600.0	4,551.9	4,566.5	4,557.3	17.6	16.4	-162.16	-51.9	140.4	415.6	400.6	33.37	13.007		
4,700.0	4,649.7	4,664.7	4,655.2	18.1	16.7	-161.87	-54.0	148.7	434.0	418.3	34.12	13.261		
4,800.0	4,747.5	4,763.0	4,753.1	18.6	17.1	-161.60	-56.1	157.0	452.4	430.6	34.86	13.508		
4,900.0	4,845.4	4,860.3	4,850.1	19.0	17.5	-161.38	-58.1	165.0	470.9	436.0	34.86	13.508		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 202H - OWB - PWP0												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD											Offset Well Error:	0.0 usft		
Measured Depth (usft)	Reference Vertical Depth (usft)		Offset Vertical Depth (usft)		Semi Major Axis Reference (usft) Offset (usft)		Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft) +E/-W (usft)		Distance Between Centres (usft) Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor	Warning
	Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,000.0	4,943.2	4,956.0	4,945.7	19.5	17.8	-161.49	-59.4	170.3	489.8	454.2	35.58	13.767		
5,100.0	5,041.0	5,051.4	5,041.0	20.0	18.2	-161.96	-59.9	172.5	509.2	472.9	36.27	14.038		
5,200.0	5,138.8	5,148.6	5,138.2	20.4	18.5	-162.64	-60.0	172.6	529.0	492.1	36.97	14.311		
5,300.0	5,236.6	5,246.4	5,236.0	20.9	18.8	-163.29	-60.0	172.6	548.9	511.3	37.67	14.574		
5,400.0	5,334.4	5,344.3	5,333.8	21.4	19.2	-163.89	-60.0	172.6	568.9	530.6	38.36	14.829		
5,500.0	5,432.3	5,442.1	5,431.7	21.8	19.5	-164.45	-60.0	172.6	589.0	549.9	39.07	15.076		
5,521.5	5,453.3	5,463.2	5,452.7	21.9	19.6	-164.56	-60.0	172.6	593.3	554.1	39.22	15.128		
5,600.0	5,530.3	5,540.1	5,529.7	22.3	19.8	-165.02	-60.0	172.6	608.0	568.3	39.77	15.290		
5,700.0	5,628.9	5,638.7	5,628.3	22.7	20.2	-165.49	-60.0	172.6	623.9	583.4	40.47	15.416		
5,800.0	5,728.1	5,737.9	5,727.5	23.2	20.5	-165.85	-60.0	172.6	636.4	595.2	41.17	15.459		
5,900.0	5,827.6	5,837.4	5,827.0	23.5	20.9	-166.10	-60.0	172.6	645.6	603.7	41.87	15.420		
6,000.0	5,927.4	5,937.3	5,926.8	23.9	21.2	-166.25	-60.0	172.6	651.4	608.8	42.56	15.305		
6,100.0	6,027.4	6,037.2	6,026.8	24.2	21.6	-166.31	-60.0	172.6	653.8	610.6	43.25	15.117		
6,121.5	6,049.0	6,058.8	6,048.4	24.3	21.6	0.68	-60.0	172.6	653.9	610.5	43.40	15.067		
6,200.0	6,127.4	6,137.2	6,126.8	24.5	21.9	0.68	-60.0	172.6	653.9	610.0	43.93	14.886		
6,300.0	6,227.4	6,237.2	6,226.8	24.8	22.3	0.68	-60.0	172.6	653.9	609.3	44.61	14.660		
6,400.0	6,327.4	6,337.2	6,326.8	25.1	22.6	0.68	-60.0	172.6	653.9	608.6	45.28	14.440		
6,500.0	6,427.4	6,437.2	6,426.8	25.4	23.0	0.68	-60.0	172.6	653.9	608.0	45.96	14.227		
6,600.0	6,527.4	6,537.2	6,526.8	25.7	23.3	0.68	-60.0	172.6	653.9	607.3	46.64	14.019		
6,700.0	6,627.4	6,637.2	6,626.8	26.0	23.7	0.68	-60.0	172.6	653.9	606.6	47.33	13.817		
6,800.0	6,727.4	6,737.2	6,726.8	26.3	24.0	0.68	-60.0	172.6	653.9	605.9	48.01	13.621		
6,900.0	6,827.4	6,837.2	6,826.8	26.6	24.4	0.68	-60.0	172.6	653.9	605.2	48.69	13.429		
7,000.0	6,927.4	6,937.2	6,926.8	26.9	24.7	0.68	-60.0	172.6	653.9	604.5	49.38	13.243		
7,100.0	7,027.4	7,037.2	7,026.8	27.2	25.1	0.68	-60.0	172.6	653.9	603.9	50.06	13.062		
7,200.0	7,127.4	7,137.2	7,126.8	27.6	25.4	0.68	-60.0	172.6	653.9	603.2	50.75	12.885		
7,300.0	7,227.4	7,237.2	7,226.8	27.9	25.8	0.68	-60.0	172.6	653.9	602.5	51.44	12.713		
7,400.0	7,327.4	7,337.2	7,326.8	28.2	26.1	0.68	-60.0	172.6	653.9	601.8	52.12	12.545		
7,500.0	7,427.4	7,437.2	7,426.8	28.5	26.5	0.68	-60.0	172.6	653.9	601.1	52.81	12.382		
7,600.0	7,527.4	7,537.2	7,526.8	28.8	26.8	0.68	-60.0	172.6	653.9	600.4	53.50	12.222		
7,700.0	7,627.4	7,637.2	7,626.8	29.1	27.2	0.68	-60.0	172.6	653.9	599.7	54.19	12.067		
7,800.0	7,727.4	7,737.2	7,726.8	29.4	27.5	0.68	-60.0	172.6	653.9	599.0	54.88	11.915		
7,900.0	7,827.4	7,837.2	7,826.8	29.7	27.9	0.68	-60.0	172.6	653.9	598.3	55.58	11.766		
8,000.0	7,927.4	7,937.2	7,926.8	30.1	28.2	0.68	-60.0	172.6	653.9	597.6	56.27	11.622		
8,100.0	8,027.4	8,037.2	8,026.8	30.4	28.6	0.68	-60.0	172.6	653.9	597.0	56.96	11.480		
8,200.0	8,127.4	8,137.2	8,126.8	30.7	28.9	0.68	-60.0	172.6	653.9	596.3	57.65	11.342		
8,300.0	8,227.4	8,237.2	8,226.8	31.0	29.3	0.68	-60.0	172.6	653.9	595.6	58.35	11.207		
8,400.0	8,327.4	8,337.2	8,326.8	31.3	29.6	0.68	-60.0	172.6	653.9	594.9	59.04	11.075		
8,457.1	8,384.5	8,394.3	8,383.9	31.5	29.8	0.68	-60.0	172.6	653.9	594.5	59.44	11.002		
8,475.0	8,402.4	8,412.2	8,401.8	31.6	29.9	92.20	-60.0	172.6	653.9	594.4	59.56	10.979		
8,500.0	8,427.3	8,437.2	8,426.7	31.7	30.0	92.33	-60.0	172.6	654.0	594.3	59.74	10.948		
8,525.0	8,452.2	8,462.0	8,451.6	31.7	30.1	92.57	-60.0	172.6	654.1	594.2	59.91	10.918		
8,550.0	8,476.8	8,486.6	8,476.2	31.8	30.1	92.90	-60.0	172.6	654.3	594.2	60.08	10.890		
8,575.0	8,501.2	8,511.0	8,500.6	31.9	30.2	93.33	-60.0	172.6	654.6	594.4	60.25	10.864		
8,600.0	8,525.3	8,535.1	8,524.7	32.0	30.3	93.85	-60.0	172.6	655.1	594.6	60.42	10.841		
8,625.0	8,549.0	8,558.8	8,548.4	32.0	30.4	94.44	-60.0	172.6	655.7	595.1	60.59	10.821		
8,650.0	8,572.2	8,582.0	8,571.6	32.1	30.5	95.08	-60.0	172.6	656.5	595.7	60.76	10.804		
8,675.0	8,594.9	8,604.7	8,594.3	32.2	30.6	95.78	-60.0	172.6	657.6	596.7	60.93	10.793		
8,700.0	8,617.1	8,626.9	8,616.5	32.2	30.6	96.50	-60.0	172.6	659.0	597.9	61.09	10.787		
8,725.0	8,638.6	8,648.4	8,638.0	32.3	30.7	97.23	-60.0	172.6	660.8	599.5	61.25	10.787		
8,750.0	8,659.4	8,669.2	8,658.8	32.3	30.8	97.97	-60.0	172.6	662.9	601.5	61.41	10.795		
8,775.0	8,679.4	8,689.4	8,684.0	32.4	30.9	98.92	-60.0	172.2	665.6	604.0	61.60	10.805		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 202H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
8,800.0	8,698.7	8,722.7	8,712.2	32.4	31.0	99.97	-60.0	170.2	668.5	606.7	61.79	10.819		
8,825.0	8,717.1	8,752.3	8,741.5	32.5	31.1	101.04	-60.1	166.4	671.7	609.7	61.97	10.838		
8,850.0	8,734.5	8,783.5	8,772.2	32.5	31.2	102.13	-60.3	160.3	675.1	612.9	62.14	10.863		
8,875.0	8,751.1	8,816.6	8,804.1	32.5	31.3	103.23	-60.5	151.8	678.7	616.4	62.29	10.896		
8,900.0	8,766.6	8,851.6	8,837.2	32.6	31.4	104.34	-60.8	140.3	682.5	620.1	62.40	10.937		
8,925.0	8,781.0	8,888.8	8,871.3	32.6	31.5	105.47	-61.2	125.5	686.3	623.8	62.47	10.986		
8,950.0	8,794.4	8,928.6	8,906.4	32.6	31.6	106.61	-61.7	106.8	690.2	627.7	62.50	11.044		
8,975.0	8,806.7	8,970.9	8,941.9	32.6	31.7	107.74	-62.3	83.8	694.0	631.6	62.46	11.111		
9,000.0	8,817.8	9,016.2	8,977.5	32.7	31.8	108.85	-63.0	55.8	697.7	635.3	62.38	11.185		
9,025.0	8,827.7	9,064.5	9,012.3	32.7	31.9	109.92	-63.9	22.4	701.2	638.9	62.25	11.264		
9,050.0	8,836.4	9,115.8	9,045.3	32.7	32.1	110.90	-64.9	-16.8	704.3	642.2	62.09	11.343		
9,075.0	8,843.8	9,170.0	9,075.5	32.7	32.2	111.77	-66.1	-61.8	707.0	645.0	61.95	11.412		
9,100.0	8,850.0	9,226.9	9,101.5	32.8	32.4	112.48	-67.4	-112.3	709.1	647.2	61.87	11.462		
9,125.0	8,854.9	9,285.8	9,121.9	32.8	32.7	113.00	-68.8	-167.6	710.6	648.7	61.90	11.479		
9,150.0	8,858.6	9,346.2	9,135.5	32.9	33.0	113.27	-70.4	-226.4	711.4	649.3	62.11	11.455		
9,175.0	8,860.9	9,407.1	9,141.6	33.0	33.3	113.30	-72.0	-286.9	711.5	649.0	62.50	11.383		
9,200.0	8,861.9	9,442.6	9,142.0	33.1	33.5	113.24	-72.9	-322.4	711.2	648.3	62.89	11.309		
9,207.1	8,862.0	9,449.7	9,142.0	33.1	33.6	113.24	-73.1	-329.5	711.1	648.2	62.97	11.293		
9,300.0	8,862.0	9,542.6	9,142.0	33.6	34.2	113.24	-75.5	-422.3	711.1	646.9	64.23	11.071		
9,400.0	8,862.0	9,642.6	9,142.0	34.4	35.1	113.24	-78.1	-522.3	711.1	645.3	65.85	10.800		
9,500.0	8,862.0	9,742.6	9,142.0	35.4	36.1	113.24	-80.7	-622.3	711.1	643.4	67.72	10.501		
9,600.0	8,862.0	9,842.6	9,142.0	36.6	37.2	113.24	-83.3	-722.2	711.1	641.3	69.83	10.184		
9,700.0	8,862.0	9,942.6	9,142.0	37.8	38.4	113.24	-85.9	-822.2	711.1	639.0	72.15	9.856		
9,800.0	8,862.0	10,042.6	9,142.0	39.2	39.8	113.24	-88.6	-922.2	711.1	636.5	74.67	9.523		
9,900.0	8,862.0	10,142.6	9,142.0	40.7	41.2	113.24	-91.2	-1,022.1	711.1	633.8	77.37	9.191		
10,000.0	8,862.0	10,242.6	9,142.0	42.2	42.7	113.24	-93.8	-1,122.1	711.1	630.9	80.23	8.864		
10,100.0	8,862.0	10,342.6	9,142.0	43.9	44.4	113.24	-96.4	-1,222.1	711.1	627.9	83.23	8.544		
10,200.0	8,862.0	10,442.6	9,142.0	45.6	46.0	113.24	-99.0	-1,322.0	711.1	624.8	86.36	8.235		
10,300.0	8,862.0	10,542.6	9,142.0	47.3	47.8	113.24	-101.6	-1,422.0	711.1	621.5	89.60	7.937		
10,400.0	8,862.0	10,642.6	9,142.0	49.2	49.6	113.24	-104.2	-1,522.0	711.1	618.2	92.94	7.651		
10,500.0	8,862.0	10,742.6	9,142.0	51.0	51.4	113.24	-106.8	-1,621.9	711.1	614.7	96.38	7.378		
10,600.0	8,862.0	10,842.6	9,142.0	52.9	53.3	113.24	-109.4	-1,721.9	711.1	611.2	99.90	7.118		
10,700.0	8,862.0	10,942.6	9,142.0	54.9	55.3	113.24	-112.1	-1,821.9	711.1	607.6	103.49	6.871		
10,800.0	8,862.0	11,042.6	9,142.0	56.9	57.2	113.24	-114.7	-1,921.8	711.1	604.0	107.15	6.636		
10,900.0	8,862.0	11,142.6	9,142.0	58.9	59.2	113.24	-117.3	-2,021.8	711.1	600.2	110.87	6.414		
11,000.0	8,862.0	11,242.6	9,142.0	61.0	61.3	113.24	-119.9	-2,121.8	711.1	596.5	114.64	6.203		
11,100.0	8,862.0	11,342.6	9,142.0	63.0	63.3	113.24	-122.5	-2,221.7	711.1	592.6	118.47	6.003		
11,200.0	8,862.0	11,442.6	9,142.0	65.1	65.4	113.24	-125.1	-2,321.7	711.1	588.8	122.33	5.813		
11,300.0	8,862.0	11,542.6	9,142.0	67.2	67.5	113.24	-127.7	-2,421.7	711.1	584.9	126.24	5.633		
11,400.0	8,862.0	11,642.6	9,142.0	69.4	69.7	113.24	-130.3	-2,521.6	711.1	580.9	130.18	5.462		
11,500.0	8,862.0	11,742.6	9,142.0	71.5	71.8	113.24	-132.9	-2,621.6	711.1	576.9	134.16	5.300		
11,600.0	8,862.0	11,842.6	9,142.0	73.7	74.0	113.24	-135.6	-2,721.6	711.1	572.9	138.17	5.147		
11,700.0	8,862.0	11,942.6	9,142.0	75.9	76.1	113.24	-138.2	-2,821.5	711.1	568.9	142.20	5.001		
11,800.0	8,862.0	12,042.6	9,142.0	78.1	78.3	113.24	-140.8	-2,921.5	711.1	564.8	146.27	4.862		
11,900.0	8,862.0	12,142.6	9,142.0	80.3	80.5	113.24	-143.4	-3,021.4	711.1	560.7	150.35	4.730		
12,000.0	8,862.0	12,242.6	9,142.0	82.5	82.8	113.24	-146.0	-3,121.4	711.1	556.6	154.46	4.604		
12,100.0	8,862.0	12,342.6	9,142.0	84.8	85.0	113.24	-148.6	-3,221.4	711.1	552.5	158.58	4.484		
12,200.0	8,862.0	12,442.6	9,142.0	87.0	87.2	113.24	-151.2	-3,321.3	711.1	548.4	162.73	4.370		
12,300.0	8,862.0	12,542.6	9,142.0	89.3	89.5	113.24	-153.8	-3,421.3	711.1	544.2	166.89	4.261		
12,400.0	8,862.0	12,642.6	9,142.0	91.5	91.7	113.24	-156.4	-3,521.3	711.1	540.0	171.07	4.157		
12,500.0	8,862.0	12,742.6	9,142.0	93.8	94.0	113.24	-159.1	-3,621.2	711.1	535.8	175.26	4.057		

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

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design KANGAROO 12 FED - KANGAROO 12 FED COM 202H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Reference Depth (usft)	Measured Depth (usft)	Vertical Reference Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
12,600.0	8,862.0	12,842.6	9,142.0	96.1	96.3	113.24	-161.7	-3,721.2	711.1	531.6	179.47	3.962		
12,700.0	8,862.0	12,942.6	9,142.0	98.4	98.5	113.24	-164.3	-3,821.2	711.1	527.4	183.68	3.871		
12,800.0	8,862.0	13,042.6	9,142.0	100.6	100.8	113.24	-166.9	-3,921.1	711.1	523.2	187.92	3.784		
12,900.0	8,862.0	13,142.6	9,142.0	102.9	103.1	113.24	-169.5	-4,021.1	711.1	518.9	192.16	3.701		
13,000.0	8,862.0	13,242.6	9,142.0	105.2	105.4	113.24	-172.1	-4,121.1	711.1	514.7	196.41	3.620		
13,100.0	8,862.0	13,342.6	9,142.0	107.5	107.7	113.24	-174.7	-4,221.0	711.1	510.4	200.67	3.543		
13,200.0	8,862.0	13,442.6	9,142.0	109.8	110.0	113.24	-177.3	-4,321.0	711.1	506.1	204.94	3.470		
13,300.0	8,862.0	13,542.6	9,142.0	112.2	112.3	113.24	-179.9	-4,421.0	711.1	501.9	209.22	3.399		
13,400.0	8,862.0	13,642.6	9,142.0	114.5	114.6	113.24	-182.6	-4,520.9	711.1	497.6	213.51	3.330		
13,500.0	8,862.0	13,742.6	9,142.0	116.8	116.9	113.24	-185.2	-4,620.9	711.1	493.3	217.80	3.265		
13,600.0	8,862.0	13,842.6	9,142.0	119.1	119.3	113.24	-187.8	-4,720.9	711.1	489.0	222.11	3.201		
13,700.0	8,862.0	13,942.6	9,142.0	121.5	121.6	113.24	-190.4	-4,820.8	711.1	484.6	226.42	3.141		
13,800.0	8,862.0	14,042.6	9,142.0	123.8	123.9	113.24	-193.0	-4,920.8	711.1	480.3	230.73	3.082		
13,900.0	8,862.0	14,142.6	9,142.0	126.1	126.2	113.24	-195.6	-5,020.8	711.1	476.0	235.05	3.025		
14,000.0	8,862.0	14,242.6	9,142.0	128.5	128.6	113.24	-198.2	-5,120.7	711.1	471.7	239.38	2.970		
14,100.0	8,862.0	14,342.6	9,142.0	130.8	130.9	113.24	-200.8	-5,220.7	711.1	467.3	243.71	2.918		
14,200.0	8,862.0	14,442.6	9,142.0	133.1	133.3	113.24	-203.4	-5,320.7	711.1	463.0	248.05	2.867		
14,300.0	8,862.0	14,542.6	9,142.0	135.5	135.6	113.24	-206.1	-5,420.6	711.1	458.7	252.39	2.817		
14,400.0	8,862.0	14,642.6	9,142.0	137.8	137.9	113.24	-208.7	-5,520.6	711.1	454.3	256.74	2.770		
14,500.0	8,862.0	14,742.6	9,142.0	140.2	140.3	113.24	-211.3	-5,620.6	711.1	450.0	261.09	2.723		
14,600.0	8,862.0	14,842.6	9,142.0	142.5	142.6	113.24	-213.9	-5,720.5	711.1	445.6	265.44	2.679		
14,700.0	8,862.0	14,942.6	9,142.0	144.9	145.0	113.24	-216.5	-5,820.5	711.0	441.2	269.80	2.635		
14,800.0	8,862.0	15,042.6	9,142.0	147.2	147.3	113.24	-219.1	-5,920.5	711.0	436.9	274.17	2.593		
14,900.0	8,862.0	15,142.6	9,142.0	149.6	149.7	113.24	-221.7	-6,020.4	711.0	432.5	278.53	2.553		
15,000.0	8,862.0	15,242.6	9,142.0	152.0	152.1	113.24	-224.3	-6,120.4	711.0	428.1	282.90	2.513		
15,100.0	8,862.0	15,342.6	9,142.0	154.3	154.4	113.24	-226.9	-6,220.4	711.0	423.8	287.28	2.475		
15,200.0	8,862.0	15,442.6	9,142.0	156.7	156.8	113.24	-229.6	-6,320.3	711.0	419.4	291.65	2.438		
15,300.0	8,862.0	15,542.6	9,142.0	159.1	159.1	113.24	-232.2	-6,420.3	711.0	415.0	296.03	2.402		
15,400.0	8,862.0	15,642.6	9,142.0	161.4	161.5	113.24	-234.8	-6,520.3	711.0	410.6	300.41	2.367		
15,500.0	8,862.0	15,742.6	9,142.0	163.8	163.9	113.24	-237.4	-6,620.2	711.0	406.2	304.80	2.333		
15,600.0	8,862.0	15,842.6	9,142.0	166.2	166.2	113.24	-240.0	-6,720.2	711.0	401.8	309.19	2.300		
15,700.0	8,862.0	15,942.6	9,142.0	168.5	168.6	113.24	-242.6	-6,820.2	711.0	397.5	313.58	2.267		
15,800.0	8,862.0	16,042.6	9,142.0	170.9	171.0	113.24	-245.2	-6,920.1	711.0	393.1	317.97	2.236		
15,900.0	8,862.0	16,142.6	9,142.0	173.3	173.4	113.24	-247.8	-7,020.1	711.0	388.7	322.36	2.206		
16,000.0	8,862.0	16,242.6	9,142.0	175.6	175.7	113.24	-250.4	-7,120.0	711.0	384.3	326.76	2.176		
16,100.0	8,862.0	16,342.6	9,142.0	178.0	178.1	113.24	-253.1	-7,220.0	711.0	379.9	331.16	2.147		
16,200.0	8,862.0	16,442.6	9,142.0	180.4	180.5	113.24	-255.7	-7,320.0	711.0	375.5	335.56	2.119		
16,300.0	8,862.0	16,542.6	9,142.0	182.8	182.8	113.24	-258.3	-7,419.9	711.0	371.1	339.96	2.091		
16,400.0	8,862.0	16,642.6	9,142.0	185.2	185.2	113.24	-260.9	-7,519.9	711.0	366.7	344.37	2.065		
16,500.0	8,862.0	16,742.6	9,142.0	187.5	187.6	113.24	-263.5	-7,619.9	711.0	362.2	348.77	2.039		
16,554.6	8,862.0	16,797.2	9,142.0	188.8	188.9	113.24	-264.9	-7,674.4	711.0	359.8	351.18	2.025 SF		
16,583.1	8,862.0	16,799.9	9,142.0	189.5	189.0	113.24	-265.0	-7,677.1	711.5	360.1	351.39	2.025		

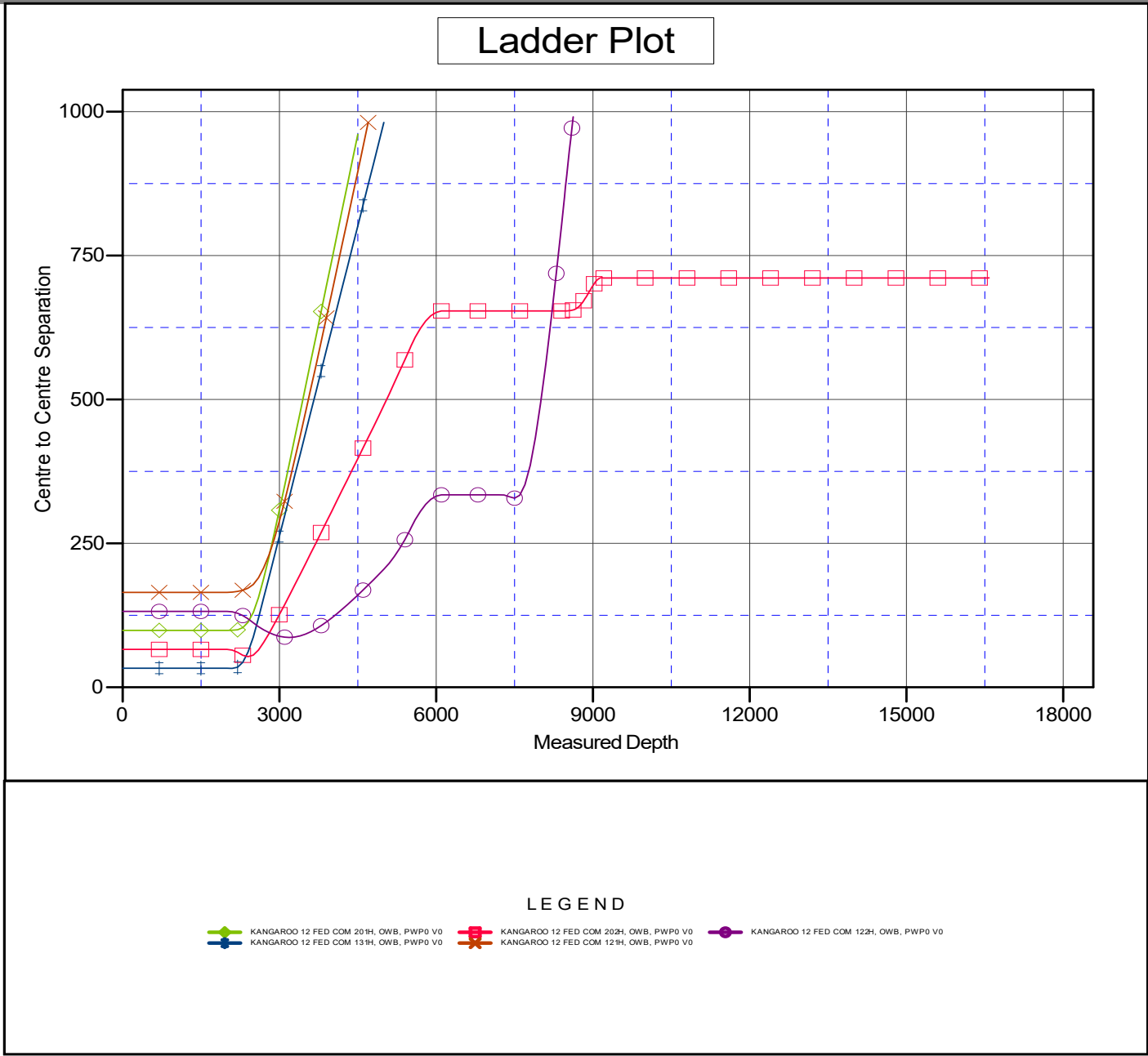
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 3300.8usft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: KANGAROO 12 FED COM 132H  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grid Convergence at Surface is: 0.11°



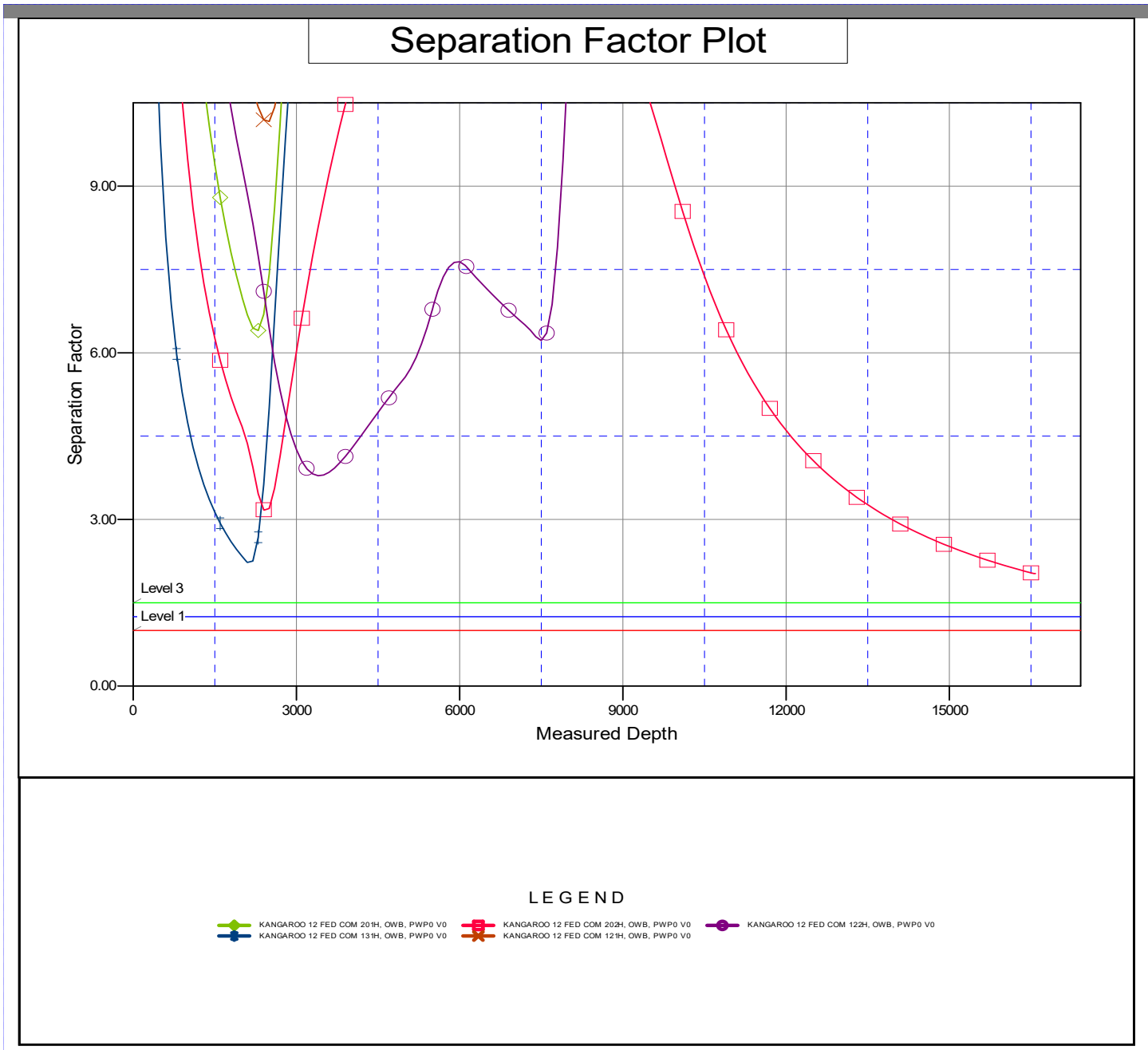
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

<b>Company:</b>	NEW MEXICO	<b>Local Co-ordinate Reference</b>	Well KANGAROO 12 FED COM 132H
<b>Project:</b>	(SP) EDDY	<b>TVD Reference:</b>	KB @ 3300.8usft
<b>Reference Site:</b>	KANGAROO 12 FED	<b>MD Reference:</b>	KB @ 3300.8usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	KANGAROO 12 FED COM 132H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	Compass_17
<b>Reference Design:</b>	PWP0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 3300.8usft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: KANGAROO 12 FED COM 132H  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grid Convergence at Surface is: 0.11°



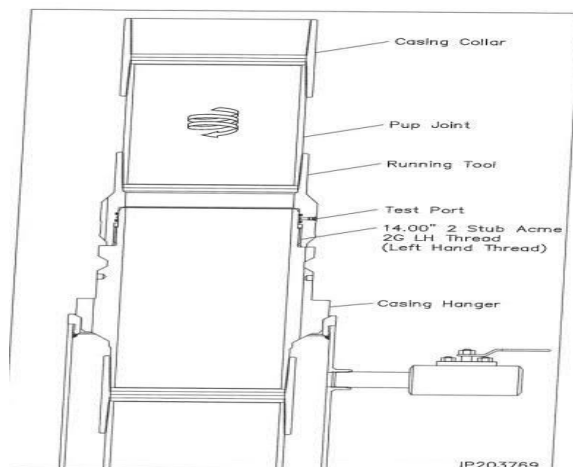
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Permian Resources

### Multi-Well Pad Batch Drilling & Off Line Cement Procedure

Surface Casing - PR intends to Batch set and offline cement all surface casing to a depth approved in the APD. Surface Holes will be batch drilled by a big rig. Appropriate notifications will be made prior to spudding the well, running, and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill Surface hole to Approved Depth with Surface Preset Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run casing with Cactus Multibowl system, with baseplate supported by Conductor.
3. Circulate 1.5 csg capacity.
4. Flow test – Confirm well is static.
5. Install cap flange.
6. Skid rig to next well on pad
7. Remove cap flange (confirm well is static before removal)
  - a) If well is not static use the casing outlet valves to kill well
  - b) Drillers method will be used in well control event
  - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
  - d) Kill mud will be circulated once influx is circulated out of hole
  - e) Confirm well is static and remove cap flange to start offline cement operations
8. Install offline cement tool.
9. Rig up cementers.
10. Circulate bottoms up with cement truck
11. Commence planned cement job, take returns through the annulus wellhead valve
12. After plug is bumped confirm floats hold and well is static
13. Perform green cement casing test.
  - a) Test Surface casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
14. Rig down cementers and equipment
15. Install night cap with pressure gauge to monitor.

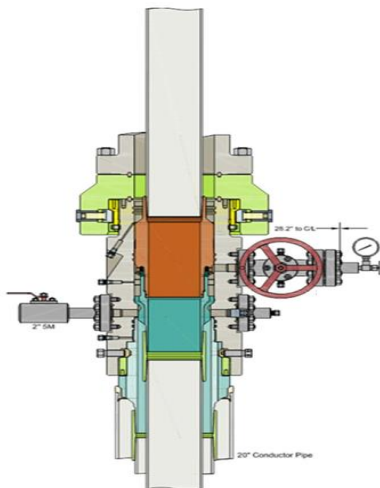


Intermediate 1 Casing – PR intends to Batch set all intermediate 1 casing strings to a depth approved in the APD, typically set into end of salts. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

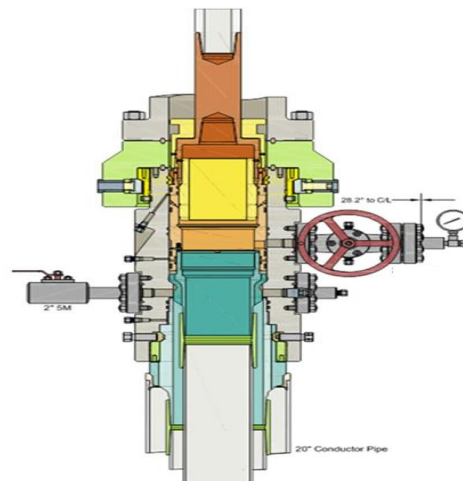
Rig will remove the nightcap and install and test BOPE (testing will be performed on the first Intermediate 1 as per requested break testing variance).

Install wear bushing then drill out 20" shoe-track.

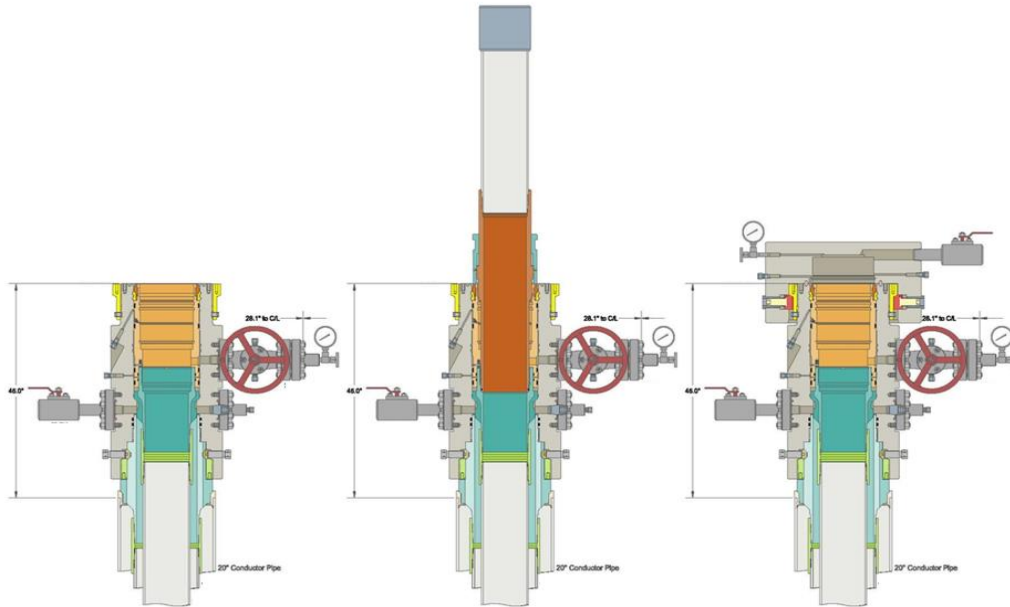
1. Drill Intermediate 1 hole to approved casing point. Trip out of hole with BHA to run Casing.
2. Remove wear bushing then run and land Intermediate 1 casing with mandrel hanger in wellhead.
3. Flow test – Confirm well is static.
4. Set Annular packoff and pressure test. Test to 5k.
5. Install BPV, Nipple down BOP and install cap flange.
6. Skid rig to next well on pad
7. Remove cap flange (confirm well is static before removal)
  - a) If well is not static use the casing outlet valves to kill well
  - b) Drillers method will be used in well control event
  - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
  - d) Kill mud will be circulated once influx is circulated out of hole
  - e) Confirm well is static and remove cap flange to start offline cement operations
8. Install offline cement tool.
9. Rig up cementers.
10. Circulate bottoms up with cement truck
11. Commence planned cement job, take returns through the annulus wellhead valve
12. After plug is bumped confirm floats hold and well is static
13. Perform green cement casing test.
  - a) Test casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
14. Rig down cementers and equipment
15. Install night cap with pressure gauge to monitor.



Run Intermediate Casing  
Land Intermediate Casing on Mandrel Hanger  
Cement Intermediate Casing  
Retrieve Running Tool



Run Packoff  
Test Upper and Lower Seals  
Engage Lockring  
Retrieve Running Tool



Intermediate 2 Casing – PR intends to Batch set all Intermediate 2 casing strings to a depth approved in the APD, typically set into Captain past losses. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE (testing will be performed on the first Intermediate 2 as per requested break testing variance).
2. Install wear bushing then drill out Intermediate 1 shoe-track.
3. Drill Intermediate 2 hole to approved casing point. Trip out of hole with BHA to run Casing.
4. Remove wear bushing then run and land Intermediate 2 casing with mandrel hanger in wellhead.
5. Flow test – Confirm well is static.
6. Set Annular packoff and pressure test. Test to 5k.
7. Install BPV, Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
  - a) If well is not static use the casing outlet valves to kill well
  - b) Drillers method will be used in well control event
  - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
  - d) Kill mud will be circulated once influx is circulated out of hole
  - e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Perform green cement casing test.
  - a) Test casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
16. Rig down cementers and equipment
17. Install night cap with pressure gauge to monitor.

Production Casing – PR intends to Batch set all Production casings. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run Production Casing.
6. Remove wear bushing then run Production casing to TD landing casing mandrel in wellhead.
7. Cement Production string to surface with floats holding.



ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 9 / 113

<b>QUALITY CONTROL INSPECTION AND TEST CERTIFICATE</b>		CERT. N°:	504
PURCHASER: ContiTech Oil & Marine Corp.		P.O. N°:	4500409659
CONTITECH RUBBER order N°: 538236	HOSE TYPE: 3" ID	Choke and Kill Hose	
HOSE SERIAL N°: 67255	NOMINAL / ACTUAL LENGTH: 10,67 m / 10,77 m		
W.P. 68,9 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 = 20 MPa			
COUPLINGS Type	Serial N°	Quality	Heat N°
3" coupling with	9251 9254	AISI 4130	A0579N
4 1/16" 10K API b.w. Flange end		AISI 4130	035608
<b>Not Designed For Well Testing</b>		<b>API Spec 16 C</b>	
		<b>Temperature rate:"B"</b>	
All metal parts are flawless			
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.			
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.			
COUNTRY OF ORIGIN HUNGARY/EU			
Date:	Inspector	Quality Control	
20. March 2014.		Contitech Rubber Industrial Kft. Quality Control Dept. 	

Contitech Rubber Industrial Kft. | Budapest (at 76. H-6728 Szeged) | H-6701 P.O.Box 152 Szeged, Hungary  
 Phone: +36 62 568 727 | Fax: +36 62 568 728 | e-mail: info@ind.contitech.hu | Internet: www.contitech-rubber.hu | www.contitech.hu  
 The Court of Company Registration of Hungary | Registry Court No: Cg-95-08-202503 | EU VAT No: HU1837209  
 Bank data: Commerzbank Zrt., Budapest | 14220158-20629003

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 501, 504, 505

Page: 1 / 1

*Abey*  
Control Dept.

GN	+21.22	PC	01:23	
RD	+21.22	PC	01:23	
BL	+1853.	bor	01:20	
GN	+21.15	PC	01:18	
RD	+21.01	PC	01:18	
BL	+1855.	bor	01:18	
GN	+21.18	PC	01:08	
RD	+21.38	PC	01:08	
BL	+1856.	bor	01:00	
GN	+21.28	PC	00:58	10 in or 10.5 mm
RD	+21.30	PC	00:58	
BL	+1857.	bor	00:58	
GN	+21.28	PC	00:48	
RD	+21.34	PC	00:48	
BL	+1858.	bor	00:48	
GN	+21.38	PC	00:38	
RD	+21.48	PC	00:38	
BL	+1861.	bor	00:38	
GN	+21.38	PC	00:28	
RD	+21.38	PC	00:28	
BL	+1864.	bor	00:28	

19-05-2014-23-58  
67252, 67255, 67256 234 53



CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014 Page: 15 / 113 ContiTech
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### Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
<b>Standard</b>	<b>API SPEC 16 C</b>
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4. 1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4. 1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St. steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

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Phone: (505) 629-6116

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<https://www.emnrd.nm.gov/oecd/contact-us>

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 370338

**CONDITIONS**

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 370338
	Action Type: [C-103A] NOI Change of Plans (C-103A)

**CONDITIONS**

Created By	Condition	Condition Date
ward.rikala	Operator performed work without OCD approval.	4/23/2026