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

Sundry Print Report

03/18/2024

Well Name: ROBIN FED

Well Location: T20S / R34E / SEC 20 / SESE /

County or Parish/State:

Well Number: 204H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM013276

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002552591

Well Status: Approved Application for Permit to Drill

Operator: COLGATE OPERATING LLC

Notice of Intent

Sundry ID: 2776507

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/24/2024

Time Sundry Submitted: 08:23

Date proposed operation will begin: 03/08/2024

Procedure Description: API# 30-025-52591 Colgate respectfully requests to make changes to the Robin Fed Com 204H APD as follows: We would like to change the TVD as follows: TVD: From: 11163 To: 11945 We also respectfully request to change our drilling plan from 3 string to 5 string as it states in our COA. COA states 4 string but we would like to request 5 string. Please see revised drilling plan, directional survey, batch drilling/OLC procedure, BOPs, Choke diagrams attached.

NOI Attachments

Procedure Description

ROBIN_FED_204H_PWP0_SVY_RPT_20240223103318.pdf

ROBIN_FED_204H_PWP0_AC_RPT_20240223103317.pdf

Robin_Fed_204H_drilling_packet_4_string_20240223103241.pdf

Well Name: ROBIN FED

Well Location: T20S / R34E / SEC 20 / SESE /

County or Parish/State:

Well Number: 204H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM013276

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002552591

Well Status: Approved Application for Permit to Drill

Operator: COLGATE OPERATING LLC

Conditions of Approval

Additional

SEC20_T20SR34E_ROBIN_FED_204H_Lea_NMNM13276_COLGATE_RESOURCES_3_18_2024_JS_20240318161554.pdf

ROBIN_FED_204H_COAs_20240318161554.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: KANICIA SCHLICHTING

Signed on: MAR 18, 2024 09:34 AM

Name: COLGATE OPERATING LLC

Title: Regulatory Specialist

Street Address: 300 N MARIENFELD ST SUITE 1000

City: MIDLAND **State:** TX

Phone: (432) 232-2875

Email address: KANICIA.SCHLICHTING@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: 03/18/2024

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.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ 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 perfonned 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 detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

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

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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand 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

Location of Well

0. SHL: SESE / 10 FSL / 1265 FEL / TWSP: 20S / RANGE: 34E / SECTION: 20 / LAT: 32.5513525 / LONG: -103.5779553 (TVD: 0 feet, MD: 0 feet)

PPP: SESE / 100 FSL / 330 FEL / TWSP: 20S / RANGE: 34E / SECTION: 20 / LAT: 32.5516516 / LONG: -103.5749213 (TVD: 11009 feet, MD: 11110 feet)

BHL: NENE / 10 FNL / 330 FEL / TWSP: 20S / RANGE: 34E / SECTION: 17 / LAT: 32.5803975 / LONG: -103.5749402 (TVD: 11163 feet, MD: 21460 feet)

ROBIN FED 204H

20		surface csg in a	26	inch hole.		**Design Factors**				Surface		
Segment	**#/ft**	**Grade**		**Coupling**	**Joint**	**Collapse**	**Burst**	**Length**	**B@s**	**a-B**	**a-C**	**Weight**
"A"	106.50		J 55	BTC	9.65	1.01	1.36	1,552	3	2.36	1.81	165,288
"B"				BTC				**0**				**0**
		w/8.4#/g mud, 30min Sfc Csg Test psig:	1,010		Tail Cmt	does not	circ to sfc.	Totals: 1,552				165,288
Comparison of Proposed to Minimum Required Cement Volumes												
Hole	**Annular**	**1 Stage**	**1 Stage**	**Min**	**1 Stage**	**Drilling**	**Calc**	**Req'd**				**Min Dist**
Size	**Volume**	**Cmt Sx**	**CuFt Cmt**	**Cu Ft**	**% Excess**	**Mud Wt**	**MASP**	**BOPE**				**Hole-Cplg**
26	1.5053	**2620**	3511	**2336**	50	**9.50**	1022	**2M**				2.50

Site plan
(pipe racks S Keep Casing Full
or E) as per

13 3/8		casing inside the	20	_		**Design Factors**				Int 1		
Segment	**#/ft**	**Grade**		**Coupling**	**Body**	**Collapse**	**Burst**	**Length**	**B@s**	**a-B**	**a-C**	**Weight**
"A"	61.00		J 55	BTC	4.62	0.87	0.9	3,412	2	1.39	1.51	208,132
"B"								**0**				**0**
		w/8.4#/g mud, 30min Sfc Csg Test psig:	674					Totals: 3,412				208,132
		The cement volume(s) are intended to achieve a top of			0	ft from surface or a		**1552**				overlap.
Hole	**Annular**	**1 Stage**	**1 Stage**	**Min**	**1 Stage**	**Drilling**	**Calc**	**Req'd**				**Min Dist**
Size	**Volume**	**Cmt Sx**	**CuFt Cmt**	**Cu Ft**	**% Excess**	**Mud Wt**	**MASP**	**BOPE**				**Hole-Cplg**
17 1/2	0.6946	**2020**	3495	**2834**	23	**10.00**	2225	**3M**				1.56
D V Tool(s):							sum of sx	Σ CuFt				Σ%excess
t by stage % :		**#VALUE!**	#VALUE!				2020	3495				23

Class 'H' tail cmt yld > 1.20

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.91, b, c, d All > 0.70, OK. Keep Casing Full, Alt Burst ok, Does not meet 25% CFO excess requirement

9 5/8		casing inside the	13 3/8	_		**Design Factors**				Int 2		
Segment	**#/ft**	**Grade**		**Coupling**	**Body**	**Collapse**	**Burst**	**Length**	**B@s**	**a-B**	**a-C**	**Weight**
"A"	40.00		J 55	BTC	2.85	0.75	0.56	5,517	1	0.86	1.15	220,680
"B"								**0**				**0**
		w/8.4#/g mud, 30min Sfc Csg Test psig:	358					Totals: 5,517				220,680
		The cement volume(s) are intended to achieve a top of			0	ft from surface or a		**3412**				overlap.
Hole	**Annular**	**1 Stage**	**1 Stage**	**Min**	**1 Stage**	**Drilling**	**Calc**	**Req'd**				**Min Dist**
Size	**Volume**	**Cmt Sx**	**CuFt Cmt**	**Cu Ft**	**% Excess**	**Mud Wt**	**MASP**	**BOPE**				**Hole-Cplg**
12 1/4	0.3132	**1230**	2125	**1850**	15	**12.00**	4577	**5M**				0.81

Class 'C' tail cmt yld > 1.35 MASP is within 10% of 5000psig, need exrta equip?

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.72, b, c, d All > 0.70, Keep Casing Full, Alt Burst ok, Does not meet 25% CFO excess requirement

7 5/8		casing inside the	9 5/8	_		**Design Factors**				Int 3		
Segment	**#/ft**	**Grade**		**Coupling**	**Joint**	**Collapse**	**Burst**	**Length**	**B@s**	**a-B**	**a-C**	**Weight**
"A"	29.70		P 110	MO-FXL	1.95	1	1.02	11,347	1	1.57	1.54	337,006
"B"								**0**				**0**
		w/8.4#/g mud, 30min Sfc Csg Test psig:	355					Totals: 11,347				337,006
		The cement volume(s) are intended to achieve a top of			0	ft from surface or a		**5517**				overlap.
Hole	**Annular**	**1 Stage**	**1 Stage**	**Min**	**1 Stage**	**Drilling**	**Calc**	**Req'd**				**Min Dist**
Size	**Volume**	**Cmt Sx**	**CuFt Cmt**	**Cu Ft**	**% Excess**	**Mud Wt**	**MASP**	**BOPE**				**Hole-Cplg**
8 3/4	0.1005	**670**	1161	**1185**	-2	**12.00**	4818	**5M**				0.56

Class 'H' tail cmt yld > 1.20 Capitan Reef est top XXXX. MASP is within 10% of 5000psig, need exrta equip?

Does not meet 25% CFO excess requirement

Tail cmt

5 1/2		casing inside the	7 5/8	_		**Design Factors**				Prod 1		
Segment	**#/ft**	**Grade**		**Coupling**	**Joint**	**Collapse**	**Burst**	**Length**	**B@s**	**a-B**	**a-C**	**Weight**
"A"	20.00		P 110	MO-FXL	2.68	1.64	1.84	10,847	2	2.85	2.54	216,940
"B"	**20.00**		**P 110**		6.10	**1.37**	**1.84**	**11,431**	**2**	**2.85**	2.31	**228,620**
		w/8.4#/g mud, 30min Sfc Csg Test psig:	2,386					Totals: 22,278				445,560
		The cement volume(s) are intended to achieve a top of			5317	ft from surface or a		**6030**				overlap.
Hole	**Annular**	**1 Stage**	**1 Stage**	**Min**	**1 Stage**	**Drilling**						**Min Dist**
Size	**Volume**	**Cmt Sx**	**CuFt Cmt**	**Cu Ft**	**% Excess**	**Mud Wt**						**Hole-Cplg**
6 3/4	0.0835	**1010**	1985	**1971**	1	**12.00**						0.35

Class 'H' tail cmt yld > 1.20

Does not meet 25% CFO excess requirement

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COLGATE OPERATING LLC
WELL NAME & NO.:	ROBIN FED 204H
SURFACE HOLE FOOTAGE:	10'/S & 1265'/E
BOTTOM HOLE FOOTAGE	10'/N & 330'/E
LOCATION:	Section 20, T.20 S., R.34 E., NMP
COUNTY:	Lea County, New Mexico

COA

H2S	(•) Yes	( ) No	
Potash	( ) None	( ) Secretary	(•) R-111-P
Cave/Karst Potential	(•) Low	( ) Medium	( ) High
Cave/Karst Potential	( ) Critical		
Variance	( ) None	(•) Flex Hose	( ) Other
Wellhead	( ) Conventional	(•) Multibowl	( ) Both
Wellhead Variance	( ) Diverter		
Other	[x] 4 String	[x] Capitan Reef	[ ] WIPP
Other	[ ] Fluid Filled	[ ] Pilot Hole	[ ] Open Annulus
Cementing	[ ] Contingency Cement Squeeze	[ ] EchoMeter	[ ] Primary Cement Squeeze
Special Requirements	[ ] Water Disposal	[x] COM	[ ] Unit
Special Requirements	[ ] Batch Sundry		
Special Requirements Variance	[x] Break Testing	[x] Offline Cementing	[x] Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet 43 CFR part 3170 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Primary Casing Design:

1. The **20** inch surface casing shall be set at approximately **1620 feet per BLM Geologist** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be **26** inch in diameter.

a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

2. The minimum required fill of cement behind the **13-3/8** inch 1st 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, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

❖ In R111 Potash Areas if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing salt string must come to surface.

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

3. The minimum required fill of cement behind the **9-5/8** inch 2nd 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, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

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

requirement.

Casing test must be conducted in accordance with 43 CFR 3170. Surface pressure applied will vary based on fluid in the casing and burst conditions.

4. The minimum required fill of cement behind the **7-5/8** inch 3rd 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, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

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

Casing test must be conducted in accordance with 43 CFR 3170. Surface pressure applied will vary based on fluid in the casing and burst conditions.

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

    - Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 500 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, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

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. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

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

D. SPECIAL REQUIREMENT (S)

(Note: For a minimum 5M BOPE or less (Utilizing a 10M BOPE system)
BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for 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 (575-689-5981 Lea 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 Onshore Oil and Gas Order No. 2.
- 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.

Casing Clearance:
Operator casing variance is approved for the utilization of
- Annular clearance to meet or exceed 0.422'' between intermediate casing ID and production casing coupling only on the first 500' overlap between both casing strings.
-Annular clearance less than 0.422'' is acceptable for the production open hole section.

Operator shall clean up cycles until wellbore is clear of cuttings and any large debris, ensure cutting sizes are adequate "coffee ground or less" before cementing.

GENERAL REQUIREMENTS

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

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

☒ Eddy County
EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
BLM_NM_CFO_DrillingNotifications@BLM.GOV
(575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area

immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the

formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

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

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the 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.)

c. 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 part 3170 Subpart 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 water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

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

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

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

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 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.

JS 3/18/2024

NEW MEXICO

(SP) LEA
ROBIN PROJECT
ROBIN FED 204H

OWB

Plan: PWP0

Standard Planning Report - Geographic

22 February, 2024

Permian Resources

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3704.0usft
Project:	(SP) LEA	**MD Reference:**	KB @ 3704.0usft
Site:	ROBIN PROJECT	**North Reference:**	Grid
Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project (SP) LEA

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site ROBIN PROJECT

Site Position:		**Northing:**	565,135.84 usft	**Latitude:**	32° 33' 4.851 N
From:	Map	**Easting:**	773,996.49 usft	**Longitude:**	103° 34' 41.691 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well ROBIN FED 204H

Well Position	**+N/-S**	0.0 usft	**Northing:**	565,138.30 usft	**Latitude:**	32° 33' 4.869 N
	+E/-W	0.0 usft	**Easting:**	774,086.48 usft	**Longitude:**	103° 34' 40.639 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,674.0 usft
Grid Convergence:		0.41 °				

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	7.78	60.54	48,988.39767248

Design PWP0

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	4.62

Plan Survey Tool Program **Date** 2/22/2024

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	22,278.3	PWP0 (OWB)	MWD OWSG_Rev2_ MWD - Star	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
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	
2,500.0	10.00	82.96	2,497.5	5.3	43.2	2.00	2.00	0.00	82.96	
7,419.0	10.00	82.96	7,341.8	110.1	890.9	0.00	0.00	0.00	0.00	
7,919.0	0.00	0.00	7,839.2	115.4	934.1	2.00	-2.00	0.00	180.00	
11,547.3	0.00	0.00	11,467.5	115.4	934.1	0.00	0.00	0.00	0.00	
12,297.3	90.00	359.56	11,945.0	592.9	930.5	12.00	12.00	-0.06	359.56	
22,278.3	90.00	359.56	11,945.0	10,573.5	853.8	0.00	0.00	0.00	0.00	BHL-ROBIN 204H

Permian Resources

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3704.0usft
Project:	(SP) LEA	**MD Reference:**	KB @ 3704.0usft
Site:	ROBIN PROJECT	**North Reference:**	Grid
Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

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	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
100.0	0.00	0.00	100.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
200.0	0.00	0.00	200.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
300.0	0.00	0.00	300.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
400.0	0.00	0.00	400.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
500.0	0.00	0.00	500.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
600.0	0.00	0.00	600.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
700.0	0.00	0.00	700.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
800.0	0.00	0.00	800.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
900.0	0.00	0.00	900.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	565,138.30	774,086.48	32° 33' 4.869 N	103° 34' 40.639 W
2,100.0	2.00	82.96	2,100.0	0.2	1.7	565,138.52	774,088.21	32° 33' 4.871 N	103° 34' 40.619 W
2,200.0	4.00	82.96	2,199.8	0.9	6.9	565,139.16	774,093.40	32° 33' 4.877 N	103° 34' 40.558 W
2,300.0	6.00	82.96	2,299.5	1.9	15.6	565,140.23	774,102.05	32° 33' 4.887 N	103° 34' 40.457 W
2,400.0	8.00	82.96	2,398.7	3.4	27.7	565,141.72	774,114.15	32° 33' 4.901 N	103° 34' 40.316 W
2,500.0	10.00	82.96	2,497.5	5.3	43.2	565,143.64	774,129.67	32° 33' 4.919 N	103° 34' 40.134 W
2,600.0	10.00	82.96	2,595.9	7.5	60.4	565,145.77	774,146.91	32° 33' 4.939 N	103° 34' 39.933 W
2,700.0	10.00	82.96	2,694.4	9.6	77.7	565,147.90	774,164.14	32° 33' 4.959 N	103° 34' 39.731 W
2,800.0	10.00	82.96	2,792.9	11.7	94.9	565,150.03	774,181.37	32° 33' 4.979 N	103° 34' 39.530 W
2,900.0	10.00	82.96	2,891.4	13.9	112.1	565,152.16	774,198.61	32° 33' 4.999 N	103° 34' 39.328 W
3,000.0	10.00	82.96	2,989.9	16.0	129.4	565,154.29	774,215.84	32° 33' 5.018 N	103° 34' 39.127 W
3,100.0	10.00	82.96	3,088.3	18.1	146.6	565,156.42	774,233.07	32° 33' 5.038 N	103° 34' 38.925 W
3,200.0	10.00	82.96	3,186.8	20.2	163.8	565,158.55	774,250.31	32° 33' 5.058 N	103° 34' 38.724 W
3,300.0	10.00	82.96	3,285.3	22.4	181.1	565,160.68	774,267.54	32° 33' 5.078 N	103° 34' 38.522 W
3,400.0	10.00	82.96	3,383.8	24.5	198.3	565,162.81	774,284.77	32° 33' 5.098 N	103° 34' 38.321 W
3,500.0	10.00	82.96	3,482.3	26.6	215.5	565,164.94	774,302.01	32° 33' 5.118 N	103° 34' 38.119 W
3,600.0	10.00	82.96	3,580.8	28.8	232.8	565,167.07	774,319.24	32° 33' 5.138 N	103° 34' 37.917 W
3,700.0	10.00	82.96	3,679.2	30.9	250.0	565,169.20	774,336.48	32° 33' 5.157 N	103° 34' 37.716 W
3,800.0	10.00	82.96	3,777.7	33.0	267.2	565,171.33	774,353.71	32° 33' 5.177 N	103° 34' 37.514 W
3,900.0	10.00	82.96	3,876.2	35.2	284.5	565,173.46	774,370.94	32° 33' 5.197 N	103° 34' 37.313 W
4,000.0	10.00	82.96	3,974.7	37.3	301.7	565,175.59	774,388.18	32° 33' 5.217 N	103° 34' 37.111 W
4,100.0	10.00	82.96	4,073.2	39.4	318.9	565,177.72	774,405.41	32° 33' 5.237 N	103° 34' 36.910 W
4,200.0	10.00	82.96	4,171.6	41.5	336.2	565,179.85	774,422.64	32° 33' 5.257 N	103° 34' 36.708 W
4,300.0	10.00	82.96	4,270.1	43.7	353.4	565,181.98	774,439.88	32° 33' 5.277 N	103° 34' 36.507 W
4,400.0	10.00	82.96	4,368.6	45.8	370.6	565,184.11	774,457.11	32° 33' 5.297 N	103° 34' 36.305 W
4,500.0	10.00	82.96	4,467.1	47.9	387.9	565,186.24	774,474.35	32° 33' 5.316 N	103° 34' 36.104 W
4,600.0	10.00	82.96	4,565.6	50.1	405.1	565,188.37	774,491.58	32° 33' 5.336 N	103° 34' 35.902 W
4,700.0	10.00	82.96	4,664.0	52.2	422.3	565,190.50	774,508.81	32° 33' 5.356 N	103° 34' 35.701 W
4,800.0	10.00	82.96	4,762.5	54.3	439.6	565,192.63	774,526.05	32° 33' 5.376 N	103° 34' 35.499 W
4,900.0	10.00	82.96	4,861.0	56.5	456.8	565,194.76	774,543.28	32° 33' 5.396 N	103° 34' 35.298 W
5,000.0	10.00	82.96	4,959.5	58.6	474.0	565,196.88	774,560.51	32° 33' 5.416 N	103° 34' 35.096 W
5,100.0	10.00	82.96	5,058.0	60.7	491.3	565,199.01	774,577.75	32° 33' 5.436 N	103° 34' 34.895 W
5,200.0	10.00	82.96	5,156.4	62.8	508.5	565,201.14	774,594.98	32° 33' 5.455 N	103° 34' 34.693 W
5,300.0	10.00	82.96	5,254.9	65.0	525.7	565,203.27	774,612.22	32° 33' 5.475 N	103° 34' 34.492 W
5,400.0	10.00	82.96	5,353.4	67.1	543.0	565,205.40	774,629.45	32° 33' 5.495 N	103° 34' 34.290 W

Permian Resources

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3704.0usft
Project:	(SP) LEA	**MD Reference:**	KB @ 3704.0usft
Site:	ROBIN PROJECT	**North Reference:**	Grid
Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,500.0	10.00	82.96	5,451.9	69.2	560.2	565,207.53	774,646.68	32° 33' 5.515 N	103° 34' 34.089 W
5,600.0	10.00	82.96	5,550.4	71.4	577.4	565,209.66	774,663.92	32° 33' 5.535 N	103° 34' 33.887 W
5,700.0	10.00	82.96	5,648.9	73.5	594.7	565,211.79	774,681.15	32° 33' 5.555 N	103° 34' 33.686 W
5,800.0	10.00	82.96	5,747.3	75.6	611.9	565,213.92	774,698.38	32° 33' 5.575 N	103° 34' 33.484 W
5,900.0	10.00	82.96	5,845.8	77.8	629.1	565,216.05	774,715.62	32° 33' 5.594 N	103° 34' 33.283 W
6,000.0	10.00	82.96	5,944.3	79.9	646.4	565,218.18	774,732.85	32° 33' 5.614 N	103° 34' 33.081 W
6,100.0	10.00	82.96	6,042.8	82.0	663.6	565,220.31	774,750.09	32° 33' 5.634 N	103° 34' 32.880 W
6,200.0	10.00	82.96	6,141.3	84.1	680.8	565,222.44	774,767.32	32° 33' 5.654 N	103° 34' 32.678 W
6,300.0	10.00	82.96	6,239.7	86.3	698.1	565,224.57	774,784.55	32° 33' 5.674 N	103° 34' 32.477 W
6,400.0	10.00	82.96	6,338.2	88.4	715.3	565,226.70	774,801.79	32° 33' 5.694 N	103° 34' 32.275 W
6,500.0	10.00	82.96	6,436.7	90.5	732.5	565,228.83	774,819.02	32° 33' 5.714 N	103° 34' 32.074 W
6,600.0	10.00	82.96	6,535.2	92.7	749.8	565,230.96	774,836.25	32° 33' 5.733 N	103° 34' 31.872 W
6,700.0	10.00	82.96	6,633.7	94.8	767.0	565,233.09	774,853.49	32° 33' 5.753 N	103° 34' 31.671 W
6,800.0	10.00	82.96	6,732.1	96.9	784.2	565,235.22	774,870.72	32° 33' 5.773 N	103° 34' 31.469 W
6,900.0	10.00	82.96	6,830.6	99.0	801.5	565,237.35	774,887.95	32° 33' 5.793 N	103° 34' 31.267 W
7,000.0	10.00	82.96	6,929.1	101.2	818.7	565,239.48	774,905.19	32° 33' 5.813 N	103° 34' 31.066 W
7,100.0	10.00	82.96	7,027.6	103.3	835.9	565,241.61	774,922.42	32° 33' 5.833 N	103° 34' 30.864 W
7,200.0	10.00	82.96	7,126.1	105.4	853.2	565,243.74	774,939.66	32° 33' 5.853 N	103° 34' 30.663 W
7,300.0	10.00	82.96	7,224.5	107.6	870.4	565,245.87	774,956.89	32° 33' 5.872 N	103° 34' 30.461 W
7,400.0	10.00	82.96	7,323.0	109.7	887.6	565,248.00	774,974.12	32° 33' 5.892 N	103° 34' 30.260 W
7,419.0	10.00	82.96	7,341.8	110.1	890.9	565,248.40	774,977.40	32° 33' 5.896 N	103° 34' 30.222 W
7,500.0	8.38	82.96	7,421.7	111.7	903.8	565,249.99	774,990.24	32° 33' 5.911 N	103° 34' 30.071 W
7,600.0	6.38	82.96	7,520.9	113.3	916.5	565,251.57	775,002.99	32° 33' 5.926 N	103° 34' 29.922 W
7,700.0	4.38	82.96	7,620.4	114.4	925.8	565,252.72	775,012.29	32° 33' 5.936 N	103° 34' 29.814 W
7,800.0	2.38	82.96	7,720.2	115.1	931.7	565,253.44	775,018.14	32° 33' 5.943 N	103° 34' 29.745 W
7,900.0	0.38	82.96	7,820.2	115.4	934.1	565,253.73	775,020.53	32° 33' 5.946 N	103° 34' 29.717 W
7,919.0	0.00	0.00	7,839.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,000.0	0.00	0.00	7,920.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,100.0	0.00	0.00	8,020.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,200.0	0.00	0.00	8,120.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,300.0	0.00	0.00	8,220.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,400.0	0.00	0.00	8,320.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,500.0	0.00	0.00	8,420.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,600.0	0.00	0.00	8,520.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,700.0	0.00	0.00	8,620.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,800.0	0.00	0.00	8,720.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
8,900.0	0.00	0.00	8,820.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,000.0	0.00	0.00	8,920.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,100.0	0.00	0.00	9,020.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,200.0	0.00	0.00	9,120.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,300.0	0.00	0.00	9,220.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,400.0	0.00	0.00	9,320.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,500.0	0.00	0.00	9,420.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,600.0	0.00	0.00	9,520.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,700.0	0.00	0.00	9,620.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,800.0	0.00	0.00	9,720.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
9,900.0	0.00	0.00	9,820.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,000.0	0.00	0.00	9,920.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,100.0	0.00	0.00	10,020.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,200.0	0.00	0.00	10,120.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,300.0	0.00	0.00	10,220.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,400.0	0.00	0.00	10,320.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,500.0	0.00	0.00	10,420.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,600.0	0.00	0.00	10,520.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,700.0	0.00	0.00	10,620.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W

Permian Resources

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3704.0usft
Project:	(SP) LEA	**MD Reference:**	KB @ 3704.0usft
Site:	ROBIN PROJECT	**North Reference:**	Grid
Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,800.0	0.00	0.00	10,720.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
10,900.0	0.00	0.00	10,820.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,000.0	0.00	0.00	10,920.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,100.0	0.00	0.00	11,020.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,200.0	0.00	0.00	11,120.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,300.0	0.00	0.00	11,220.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,400.0	0.00	0.00	11,320.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,500.0	0.00	0.00	11,420.2	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,547.3	0.00	0.00	11,467.5	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,550.0	0.32	359.56	11,470.2	115.4	934.1	565,253.75	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
11,575.0	3.32	359.56	11,495.2	116.2	934.1	565,254.55	775,020.59	32° 33' 5.954 N	103° 34' 29.716 W
11,600.0	6.32	359.56	11,520.1	118.3	934.1	565,256.65	775,020.57	32° 33' 5.975 N	103° 34' 29.716 W
11,625.0	9.32	359.56	11,544.9	121.7	934.1	565,260.05	775,020.55	32° 33' 6.008 N	103° 34' 29.717 W
11,650.0	12.32	359.56	11,569.4	126.4	934.0	565,264.74	775,020.51	32° 33' 6.055 N	103° 34' 29.717 W
11,675.0	15.32	359.56	11,593.7	132.4	934.0	565,270.72	775,020.47	32° 33' 6.114 N	103° 34' 29.717 W
11,700.0	18.32	359.56	11,617.6	139.6	933.9	565,277.95	775,020.41	32° 33' 6.185 N	103° 34' 29.717 W
11,725.0	21.32	359.56	11,641.1	148.1	933.9	565,286.43	775,020.35	32° 33' 6.269 N	103° 34' 29.717 W
11,750.0	24.32	359.56	11,664.2	157.8	933.8	565,296.13	775,020.27	32° 33' 6.365 N	103° 34' 29.717 W
11,775.0	27.32	359.56	11,686.7	168.7	933.7	565,307.01	775,020.19	32° 33' 6.473 N	103° 34' 29.717 W
11,800.0	30.32	359.56	11,708.6	180.8	933.6	565,319.07	775,020.10	32° 33' 6.592 N	103° 34' 29.717 W
11,825.0	33.32	359.56	11,729.8	193.9	933.5	565,332.25	775,019.99	32° 33' 6.723 N	103° 34' 29.717 W
11,850.0	36.32	359.56	11,750.3	208.2	933.4	565,346.52	775,019.88	32° 33' 6.864 N	103° 34' 29.717 W
11,875.0	39.32	359.56	11,770.1	223.5	933.3	565,361.85	775,019.77	32° 33' 7.016 N	103° 34' 29.717 W
11,900.0	42.32	359.56	11,789.0	239.9	933.2	565,378.19	775,019.64	32° 33' 7.177 N	103° 34' 29.717 W
11,925.0	45.32	359.56	11,807.0	257.2	933.0	565,395.50	775,019.51	32° 33' 7.349 N	103° 34' 29.717 W
11,950.0	48.32	359.56	11,824.1	275.4	932.9	565,413.73	775,019.37	32° 33' 7.529 N	103° 34' 29.718 W
11,975.0	51.32	359.56	11,840.3	294.5	932.7	565,432.83	775,019.22	32° 33' 7.718 N	103° 34' 29.718 W
12,000.0	54.32	359.56	11,855.4	314.4	932.6	565,452.74	775,019.07	32° 33' 7.915 N	103° 34' 29.718 W
12,025.0	57.32	359.56	11,869.4	335.1	932.4	565,473.42	775,018.91	32° 33' 8.120 N	103° 34' 29.718 W
12,050.0	60.32	359.56	11,882.3	356.5	932.3	565,494.81	775,018.74	32° 33' 8.331 N	103° 34' 29.718 W
12,075.0	63.32	359.56	11,894.1	378.5	932.1	565,516.84	775,018.58	32° 33' 8.549 N	103° 34' 29.718 W
12,100.0	66.32	359.56	11,904.8	401.2	931.9	565,539.47	775,018.40	32° 33' 8.773 N	103° 34' 29.718 W
12,125.0	69.32	359.56	11,914.2	424.3	931.7	565,562.61	775,018.22	32° 33' 9.002 N	103° 34' 29.719 W
12,150.0	72.32	359.56	11,922.4	447.9	931.6	565,586.22	775,018.04	32° 33' 9.236 N	103° 34' 29.719 W
12,175.0	75.32	359.56	11,929.4	471.9	931.4	565,610.23	775,017.86	32° 33' 9.473 N	103° 34' 29.719 W
12,200.0	78.32	359.56	11,935.1	496.3	931.2	565,634.57	775,017.67	32° 33' 9.714 N	103° 34' 29.719 W
12,225.0	81.32	359.56	11,939.5	520.9	931.0	565,659.17	775,017.48	32° 33' 9.958 N	103° 34' 29.719 W
12,250.0	84.32	359.56	11,942.6	545.7	930.8	565,683.97	775,017.29	32° 33' 10.203 N	103° 34' 29.719 W
12,275.0	87.32	359.56	11,944.4	570.6	930.6	565,708.90	775,017.10	32° 33' 10.450 N	103° 34' 29.719 W
12,297.3	90.00	359.56	11,945.0	592.9	930.5	565,731.19	775,016.93	32° 33' 10.670 N	103° 34' 29.720 W
12,300.0	90.00	359.56	11,945.0	595.6	930.4	565,733.89	775,016.91	32° 33' 10.697 N	103° 34' 29.720 W
12,400.0	90.00	359.56	11,945.0	695.6	929.7	565,833.89	775,016.14	32° 33' 11.687 N	103° 34' 29.720 W
12,500.0	90.00	359.56	11,945.0	795.6	928.9	565,933.89	775,015.37	32° 33' 12.676 N	103° 34' 29.721 W
12,600.0	90.00	359.56	11,945.0	895.6	928.1	566,033.88	775,014.60	32° 33' 13.666 N	103° 34' 29.722 W
12,700.0	90.00	359.56	11,945.0	995.6	927.4	566,133.88	775,013.83	32° 33' 14.655 N	103° 34' 29.722 W
12,800.0	90.00	359.56	11,945.0	1,095.6	926.6	566,233.88	775,013.07	32° 33' 15.645 N	103° 34' 29.723 W
12,900.0	90.00	359.56	11,945.0	1,195.6	925.8	566,333.88	775,012.30	32° 33' 16.634 N	103° 34' 29.724 W
13,000.0	90.00	359.56	11,945.0	1,295.6	925.1	566,433.87	775,011.53	32° 33' 17.624 N	103° 34' 29.724 W
13,100.0	90.00	359.56	11,945.0	1,395.6	924.3	566,533.87	775,010.76	32° 33' 18.613 N	103° 34' 29.725 W
13,200.0	90.00	359.56	11,945.0	1,495.6	923.5	566,633.87	775,009.99	32° 33' 19.603 N	103° 34' 29.726 W
13,300.0	90.00	359.56	11,945.0	1,595.6	922.7	566,733.86	775,009.22	32° 33' 20.592 N	103° 34' 29.726 W
13,400.0	90.00	359.56	11,945.0	1,695.6	922.0	566,833.86	775,008.46	32° 33' 21.581 N	103° 34' 29.727 W
13,500.0	90.00	359.56	11,945.0	1,795.6	921.2	566,933.86	775,007.69	32° 33' 22.571 N	103° 34' 29.727 W
13,600.0	90.00	359.56	11,945.0	1,895.6	920.4	567,033.85	775,006.92	32° 33' 23.560 N	103° 34' 29.728 W
13,700.0	90.00	359.56	11,945.0	1,995.5	919.7	567,133.85	775,006.15	32° 33' 24.550 N	103° 34' 29.729 W

Permian Resources

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3704.0usft
Project:	(SP) LEA	**MD Reference:**	KB @ 3704.0usft
Site:	ROBIN PROJECT	**North Reference:**	Grid
Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,800.0	90.00	359.56	11,945.0	2,095.5	918.9	567,233.85	775,005.38	32° 33' 25.539 N	103° 34' 29.729 W
13,900.0	90.00	359.56	11,945.0	2,195.5	918.1	567,333.85	775,004.61	32° 33' 26.529 N	103° 34' 29.730 W
14,000.0	90.00	359.56	11,945.0	2,295.5	917.4	567,433.84	775,003.85	32° 33' 27.518 N	103° 34' 29.731 W
14,100.0	90.00	359.56	11,945.0	2,395.5	916.6	567,533.84	775,003.08	32° 33' 28.508 N	103° 34' 29.731 W
14,200.0	90.00	359.56	11,945.0	2,495.5	915.8	567,633.84	775,002.31	32° 33' 29.497 N	103° 34' 29.732 W
14,300.0	90.00	359.56	11,945.0	2,595.5	915.1	567,733.83	775,001.54	32° 33' 30.487 N	103° 34' 29.733 W
14,400.0	90.00	359.56	11,945.0	2,695.5	914.3	567,833.83	775,000.77	32° 33' 31.476 N	103° 34' 29.733 W
14,500.0	90.00	359.56	11,945.0	2,795.5	913.5	567,933.83	775,000.00	32° 33' 32.466 N	103° 34' 29.734 W
14,600.0	90.00	359.56	11,945.0	2,895.5	912.8	568,033.83	774,999.24	32° 33' 33.455 N	103° 34' 29.735 W
14,700.0	90.00	359.56	11,945.0	2,995.5	912.0	568,133.82	774,998.47	32° 33' 34.445 N	103° 34' 29.735 W
14,800.0	90.00	359.56	11,945.0	3,095.5	911.2	568,233.82	774,997.70	32° 33' 35.434 N	103° 34' 29.736 W
14,900.0	90.00	359.56	11,945.0	3,195.5	910.5	568,333.82	774,996.93	32° 33' 36.424 N	103° 34' 29.737 W
15,000.0	90.00	359.56	11,945.0	3,295.5	909.7	568,433.81	774,996.16	32° 33' 37.413 N	103° 34' 29.737 W
15,100.0	90.00	359.56	11,945.0	3,395.5	908.9	568,533.81	774,995.39	32° 33' 38.403 N	103° 34' 29.738 W
15,200.0	90.00	359.56	11,945.0	3,495.5	908.1	568,633.81	774,994.62	32° 33' 39.392 N	103° 34' 29.739 W
15,300.0	90.00	359.56	11,945.0	3,595.5	907.4	568,733.80	774,993.86	32° 33' 40.382 N	103° 34' 29.739 W
15,400.0	90.00	359.56	11,945.0	3,695.5	906.6	568,833.80	774,993.09	32° 33' 41.371 N	103° 34' 29.740 W
15,500.0	90.00	359.56	11,945.0	3,795.5	905.8	568,933.80	774,992.32	32° 33' 42.361 N	103° 34' 29.741 W
15,600.0	90.00	359.56	11,945.0	3,895.5	905.1	569,033.80	774,991.55	32° 33' 43.350 N	103° 34' 29.741 W
15,700.0	90.00	359.56	11,945.0	3,995.5	904.3	569,133.79	774,990.78	32° 33' 44.340 N	103° 34' 29.742 W
15,800.0	90.00	359.56	11,945.0	4,095.5	903.5	569,233.79	774,990.01	32° 33' 45.329 N	103° 34' 29.743 W
15,900.0	90.00	359.56	11,945.0	4,195.5	902.8	569,333.79	774,989.25	32° 33' 46.319 N	103° 34' 29.743 W
16,000.0	90.00	359.56	11,945.0	4,295.5	902.0	569,433.78	774,988.48	32° 33' 47.308 N	103° 34' 29.744 W
16,100.0	90.00	359.56	11,945.0	4,395.5	901.2	569,533.78	774,987.71	32° 33' 48.298 N	103° 34' 29.744 W
16,200.0	90.00	359.56	11,945.0	4,495.5	900.5	569,633.78	774,986.94	32° 33' 49.287 N	103° 34' 29.745 W
16,300.0	90.00	359.56	11,945.0	4,595.5	899.7	569,733.77	774,986.17	32° 33' 50.277 N	103° 34' 29.746 W
16,400.0	90.00	359.56	11,945.0	4,695.5	898.9	569,833.77	774,985.40	32° 33' 51.266 N	103° 34' 29.746 W
16,500.0	90.00	359.56	11,945.0	4,795.5	898.2	569,933.77	774,984.64	32° 33' 52.256 N	103° 34' 29.747 W
16,600.0	90.00	359.56	11,945.0	4,895.5	897.4	570,033.77	774,983.87	32° 33' 53.245 N	103° 34' 29.748 W
16,700.0	90.00	359.56	11,945.0	4,995.5	896.6	570,133.76	774,983.10	32° 33' 54.235 N	103° 34' 29.748 W
16,800.0	90.00	359.56	11,945.0	5,095.5	895.9	570,233.76	774,982.33	32° 33' 55.224 N	103° 34' 29.749 W
16,900.0	90.00	359.56	11,945.0	5,195.5	895.1	570,333.76	774,981.56	32° 33' 56.214 N	103° 34' 29.750 W
17,000.0	90.00	359.56	11,945.0	5,295.5	894.3	570,433.75	774,980.79	32° 33' 57.203 N	103° 34' 29.750 W
17,100.0	90.00	359.56	11,945.0	5,395.4	893.5	570,533.75	774,980.03	32° 33' 58.193 N	103° 34' 29.751 W
17,200.0	90.00	359.56	11,945.0	5,495.4	892.8	570,633.75	774,979.26	32° 33' 59.182 N	103° 34' 29.752 W
17,300.0	90.00	359.56	11,945.0	5,595.4	892.0	570,733.75	774,978.49	32° 34' 0.172 N	103° 34' 29.752 W
17,400.0	90.00	359.56	11,945.0	5,695.4	891.2	570,833.74	774,977.72	32° 34' 1.161 N	103° 34' 29.753 W
17,500.0	90.00	359.56	11,945.0	5,795.4	890.5	570,933.74	774,976.95	32° 34' 2.151 N	103° 34' 29.754 W
17,600.0	90.00	359.56	11,945.0	5,895.4	889.7	571,033.74	774,976.18	32° 34' 3.140 N	103° 34' 29.754 W
17,700.0	90.00	359.56	11,945.0	5,995.4	888.9	571,133.73	774,975.42	32° 34' 4.130 N	103° 34' 29.755 W
17,800.0	90.00	359.56	11,945.0	6,095.4	888.2	571,233.73	774,974.65	32° 34' 5.119 N	103° 34' 29.756 W
17,900.0	90.00	359.56	11,945.0	6,195.4	887.4	571,333.73	774,973.88	32° 34' 6.109 N	103° 34' 29.756 W
18,000.0	90.00	359.56	11,945.0	6,295.4	886.6	571,433.72	774,973.11	32° 34' 7.098 N	103° 34' 29.757 W
18,100.0	90.00	359.56	11,945.0	6,395.4	885.9	571,533.72	774,972.34	32° 34' 8.088 N	103° 34' 29.758 W
18,200.0	90.00	359.56	11,945.0	6,495.4	885.1	571,633.72	774,971.57	32° 34' 9.077 N	103° 34' 29.758 W
18,300.0	90.00	359.56	11,945.0	6,595.4	884.3	571,733.72	774,970.81	32° 34' 10.067 N	103° 34' 29.759 W
18,400.0	90.00	359.56	11,945.0	6,695.4	883.6	571,833.71	774,970.04	32° 34' 11.056 N	103° 34' 29.760 W
18,500.0	90.00	359.56	11,945.0	6,795.4	882.8	571,933.71	774,969.27	32° 34' 12.046 N	103° 34' 29.760 W
18,600.0	90.00	359.56	11,945.0	6,895.4	882.0	572,033.71	774,968.50	32° 34' 13.035 N	103° 34' 29.761 W
18,700.0	90.00	359.56	11,945.0	6,995.4	881.3	572,133.70	774,967.73	32° 34' 14.025 N	103° 34' 29.761 W
18,800.0	90.00	359.56	11,945.0	7,095.4	880.5	572,233.70	774,966.96	32° 34' 15.014 N	103° 34' 29.762 W
18,900.0	90.00	359.56	11,945.0	7,195.4	879.7	572,333.70	774,966.20	32° 34' 16.004 N	103° 34' 29.763 W
19,000.0	90.00	359.56	11,945.0	7,295.4	878.9	572,433.70	774,965.43	32° 34' 16.993 N	103° 34' 29.763 W
19,100.0	90.00	359.56	11,945.0	7,395.4	878.2	572,533.69	774,964.66	32° 34' 17.982 N	103° 34' 29.764 W
19,200.0	90.00	359.56	11,945.0	7,495.4	877.4	572,633.69	774,963.89	32° 34' 18.972 N	103° 34' 29.765 W

Permian Resources

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3704.0usft
Project:	(SP) LEA	**MD Reference:**	KB @ 3704.0usft
Site:	ROBIN PROJECT	**North Reference:**	Grid
Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,300.0	90.00	359.56	11,945.0	7,595.4	876.6	572,733.69	774,963.12	32° 34' 19.961 N	103° 34' 29.765 W
19,400.0	90.00	359.56	11,945.0	7,695.4	875.9	572,833.68	774,962.35	32° 34' 20.951 N	103° 34' 29.766 W
19,500.0	90.00	359.56	11,945.0	7,795.4	875.1	572,933.68	774,961.58	32° 34' 21.940 N	103° 34' 29.767 W
19,600.0	90.00	359.56	11,945.0	7,895.4	874.3	573,033.68	774,960.82	32° 34' 22.930 N	103° 34' 29.767 W
19,700.0	90.00	359.56	11,945.0	7,995.4	873.6	573,133.67	774,960.05	32° 34' 23.919 N	103° 34' 29.768 W
19,800.0	90.00	359.56	11,945.0	8,095.4	872.8	573,233.67	774,959.28	32° 34' 24.909 N	103° 34' 29.769 W
19,900.0	90.00	359.56	11,945.0	8,195.4	872.0	573,333.67	774,958.51	32° 34' 25.898 N	103° 34' 29.769 W
20,000.0	90.00	359.56	11,945.0	8,295.4	871.3	573,433.67	774,957.74	32° 34' 26.888 N	103° 34' 29.770 W
20,100.0	90.00	359.56	11,945.0	8,395.4	870.5	573,533.66	774,956.97	32° 34' 27.877 N	103° 34' 29.771 W
20,200.0	90.00	359.56	11,945.0	8,495.4	869.7	573,633.66	774,956.21	32° 34' 28.867 N	103° 34' 29.771 W
20,300.0	90.00	359.56	11,945.0	8,595.4	869.0	573,733.66	774,955.44	32° 34' 29.856 N	103° 34' 29.772 W
20,400.0	90.00	359.56	11,945.0	8,695.4	868.2	573,833.65	774,954.67	32° 34' 30.846 N	103° 34' 29.773 W
20,500.0	90.00	359.56	11,945.0	8,795.3	867.4	573,933.65	774,953.90	32° 34' 31.835 N	103° 34' 29.773 W
20,600.0	90.00	359.56	11,945.0	8,895.3	866.7	574,033.65	774,953.13	32° 34' 32.825 N	103° 34' 29.774 W
20,700.0	90.00	359.56	11,945.0	8,995.3	865.9	574,133.65	774,952.36	32° 34' 33.814 N	103° 34' 29.774 W
20,800.0	90.00	359.56	11,945.0	9,095.3	865.1	574,233.64	774,951.60	32° 34' 34.804 N	103° 34' 29.775 W
20,900.0	90.00	359.56	11,945.0	9,195.3	864.4	574,333.64	774,950.83	32° 34' 35.793 N	103° 34' 29.776 W
21,000.0	90.00	359.56	11,945.0	9,295.3	863.6	574,433.64	774,950.06	32° 34' 36.783 N	103° 34' 29.776 W
21,100.0	90.00	359.56	11,945.0	9,395.3	862.8	574,533.63	774,949.29	32° 34' 37.772 N	103° 34' 29.777 W
21,200.0	90.00	359.56	11,945.0	9,495.3	862.0	574,633.63	774,948.52	32° 34' 38.762 N	103° 34' 29.778 W
21,300.0	90.00	359.56	11,945.0	9,595.3	861.3	574,733.63	774,947.75	32° 34' 39.751 N	103° 34' 29.778 W
21,400.0	90.00	359.56	11,945.0	9,695.3	860.5	574,833.62	774,946.99	32° 34' 40.741 N	103° 34' 29.779 W
21,500.0	90.00	359.56	11,945.0	9,795.3	859.7	574,933.62	774,946.22	32° 34' 41.730 N	103° 34' 29.780 W
21,600.0	90.00	359.56	11,945.0	9,895.3	859.0	575,033.62	774,945.45	32° 34' 42.720 N	103° 34' 29.780 W
21,700.0	90.00	359.56	11,945.0	9,995.3	858.2	575,133.62	774,944.68	32° 34' 43.709 N	103° 34' 29.781 W
21,800.0	90.00	359.56	11,945.0	10,095.3	857.4	575,233.61	774,943.91	32° 34' 44.699 N	103° 34' 29.782 W
21,900.0	90.00	359.56	11,945.0	10,195.3	856.7	575,333.61	774,943.14	32° 34' 45.688 N	103° 34' 29.782 W
22,000.0	90.00	359.56	11,945.0	10,295.3	855.9	575,433.61	774,942.38	32° 34' 46.678 N	103° 34' 29.783 W
22,100.0	90.00	359.56	11,945.0	10,395.3	855.1	575,533.60	774,941.61	32° 34' 47.667 N	103° 34' 29.784 W
22,200.0	90.00	359.56	11,945.0	10,495.3	854.4	575,633.60	774,940.84	32° 34' 48.657 N	103° 34' 29.784 W
22,278.3	90.00	359.56	11,945.0	10,573.5	853.8	575,711.85	774,940.24	32° 34' 49.431 N	103° 34' 29.785 W

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LTP-ROBIN 204H - plan hits target center - Point	0.00	0.00	11,945.0	10,483.5	854.4	575,621.85	774,940.91	32° 34' 48.540 N	103° 34' 29.784 W
FTP-ROBIN 204H - plan misses target center by 197.8usft at 11925.0usft MD (11807.0 TVD, 257.2 N, 933.0 E) - Point	0.00	0.00	11,945.0	115.4	934.1	565,253.74	775,020.60	32° 33' 5.946 N	103° 34' 29.716 W
BHL-ROBIN 204H - plan hits target center - Point	0.00	0.00	11,945.0	10,573.5	853.8	575,711.85	774,940.24	32° 34' 49.431 N	103° 34' 29.785 W

NEW MEXICO

(SP) LEA
ROBIN PROJECT
ROBIN FED 204H

OWB
PWP0

Anticollision Report

22 February, 2024

Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Reference PWP0

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 800.0usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 2/22/2024

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	22,278.3	PWP0 (OWB)	MWD	OWSG_Rev2_ MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
BANE						
BANE 4-9 FED COM 111H - OWB - PWP0						Out of range
BANE 4-9 FED COM 121H - OWB - PWP0						Out of range
BANE 4-9 FED COM 122H - OWB - PWP0						Out of range
BANE 4-9 FED COM 123H - OWB - PWP0						Out of range
BANE 4-9 FED COM 131H - OWB - PWP0						Out of range
BANE 4-9 FED COM 132H - OWB - PWP0						Out of range
BANE 4-9 FED COM 171H - OWB - PWP0						Out of range
BANE 4-9 FED COM 201H - OWB - PWP0						Out of range
JOKER						
JOKER 5-8 FED COM 114H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 125H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 126H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 127H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 128H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 133H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 134H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 173H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 174H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 203H - OWB - PWP0						Out of range
JOKER 5-8 FED COM 204H - OWB - PWP0						Out of range
ROBIN PROJECT						
ROBIN FED 133H - OWB - PWP0	2,000.0	1,997.0	90.0	75.9	6.372	CC, ES
ROBIN FED 133H - OWB - PWP0	2,100.0	2,094.0	93.3	78.5	6.301	SF
ROBIN FED 134H - OWB - PWP0	2,000.0	1,996.0	30.0	15.9	2.126	CC
ROBIN FED 134H - OWB - PWP0	2,200.0	2,197.9	30.9	15.4	1.992	ES
ROBIN FED 134H - OWB - PWP0	2,300.0	2,298.8	32.0	15.8	1.977	SF
ROBIN FED 203H - OWB - PWP0	2,000.0	1,996.0	60.0	45.9	4.249	CC, ES, SF

Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: ROBIN PROJECT - ROBIN FED 133H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical 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	-91.57	-2.5	-90.0	90.1				
100.0	100.0	97.0	97.0	0.3	0.3	-91.57	-2.5	-90.0	90.0	89.5	0.51	177.128	
200.0	200.0	197.0	197.0	0.6	0.6	-91.57	-2.5	-90.0	90.0	88.8	1.22	73.646	
300.0	300.0	297.0	297.0	1.0	1.0	-91.57	-2.5	-90.0	90.0	88.1	1.94	46.420	
400.0	400.0	397.0	397.0	1.3	1.3	-91.57	-2.5	-90.0	90.0	87.4	2.66	33.891	
500.0	500.0	497.0	497.0	1.7	1.7	-91.57	-2.5	-90.0	90.0	86.7	3.37	26.688	
600.0	600.0	597.0	597.0	2.0	2.0	-91.57	-2.5	-90.0	90.0	85.9	4.09	22.010	
700.0	700.0	697.0	697.0	2.4	2.4	-91.57	-2.5	-90.0	90.0	85.2	4.81	18.727	
800.0	800.0	797.0	797.0	2.8	2.8	-91.57	-2.5	-90.0	90.0	84.5	5.52	16.297	
900.0	900.0	897.0	897.0	3.1	3.1	-91.57	-2.5	-90.0	90.0	83.8	6.24	14.425	
1,000.0	1,000.0	997.0	997.0	3.5	3.5	-91.57	-2.5	-90.0	90.0	83.1	6.96	12.938	
1,100.0	1,100.0	1,097.0	1,097.0	3.8	3.8	-91.57	-2.5	-90.0	90.0	82.3	7.67	11.730	
1,200.0	1,200.0	1,197.0	1,197.0	4.2	4.2	-91.57	-2.5	-90.0	90.0	81.6	8.39	10.728	
1,300.0	1,300.0	1,297.0	1,297.0	4.6	4.6	-91.57	-2.5	-90.0	90.0	80.9	9.11	9.883	
1,400.0	1,400.0	1,397.0	1,397.0	4.9	4.9	-91.57	-2.5	-90.0	90.0	80.2	9.83	9.162	
1,500.0	1,500.0	1,497.0	1,497.0	5.3	5.3	-91.57	-2.5	-90.0	90.0	79.5	10.54	8.539	
1,600.0	1,600.0	1,597.0	1,597.0	5.6	5.6	-91.57	-2.5	-90.0	90.0	78.8	11.26	7.995	
1,700.0	1,700.0	1,697.0	1,697.0	6.0	6.0	-91.57	-2.5	-90.0	90.0	78.0	11.98	7.517	
1,800.0	1,800.0	1,797.0	1,797.0	6.3	6.3	-91.57	-2.5	-90.0	90.0	77.3	12.69	7.092	
1,900.0	1,900.0	1,897.0	1,897.0	6.7	6.7	-91.57	-2.5	-90.0	90.0	76.6	13.41	6.713	
2,000.0	2,000.0	1,997.0	1,997.0	7.1	7.1	-91.57	-2.5	-90.0	90.0	75.9	14.13	6.372	CC, ES
2,100.0	2,100.0	2,094.0	2,094.0	7.4	7.4	-174.48	-2.3	-91.5	93.3	78.5	14.81	6.301	SF
2,200.0	2,199.8	2,190.2	2,190.0	7.8	7.7	-174.34	-1.7	-96.3	103.4	88.0	15.47	6.688	
2,300.0	2,299.5	2,285.1	2,284.6	8.1	8.1	-174.16	-0.8	-104.1	120.3	104.2	16.10	7.468	
2,400.0	2,398.7	2,378.1	2,377.0	8.5	8.4	-173.96	0.5	-114.7	143.7	126.9	16.71	8.595	
2,500.0	2,497.5	2,468.6	2,466.5	8.8	8.7	-173.78	2.1	-128.0	173.5	156.2	17.30	10.026	
2,600.0	2,595.9	2,560.7	2,557.3	9.2	9.1	-173.65	4.0	-143.7	207.2	189.3	17.93	11.560	
2,700.0	2,694.4	2,654.8	2,649.9	9.6	9.4	-173.56	5.9	-159.9	241.2	222.6	18.59	12.977	
2,800.0	2,792.9	2,748.9	2,742.5	10.0	9.8	-173.48	7.8	-176.1	275.1	255.9	19.25	14.293	
2,900.0	2,891.4	2,842.9	2,835.2	10.4	10.1	-173.43	9.8	-192.3	309.1	289.2	19.92	15.519	
3,000.0	2,989.9	2,937.0	2,927.8	10.7	10.5	-173.38	11.7	-208.5	343.1	322.5	20.59	16.663	
3,100.0	3,088.3	3,031.0	3,020.4	11.1	10.9	-173.34	13.6	-224.8	377.0	355.8	21.26	17.732	
3,200.0	3,186.8	3,125.1	3,113.1	11.6	11.3	-173.31	15.6	-241.0	411.0	389.0	21.94	18.733	
3,300.0	3,285.3	3,219.1	3,205.7	12.0	11.7	-173.29	17.5	-257.2	444.9	422.3	22.62	19.671	
3,400.0	3,383.8	3,313.2	3,298.3	12.4	12.0	-173.26	19.4	-273.4	478.9	455.6	23.30	20.553	
3,500.0	3,482.3	3,407.3	3,390.9	12.8	12.4	-173.24	21.4	-289.6	512.9	488.9	23.98	21.383	
3,600.0	3,580.8	3,501.3	3,483.6	13.2	12.8	-173.23	23.3	-305.9	546.8	522.1	24.67	22.165	
3,700.0	3,679.2	3,595.4	3,576.2	13.6	13.2	-173.21	25.3	-322.1	580.8	555.4	25.36	22.903	
3,800.0	3,777.7	3,689.4	3,668.8	14.0	13.6	-173.20	27.2	-338.3	614.7	588.7	26.05	23.601	
3,900.0	3,876.2	3,783.5	3,761.4	14.5	14.0	-173.19	29.1	-354.5	648.7	622.0	26.74	24.261	
4,000.0	3,974.7	3,877.5	3,854.1	14.9	14.4	-173.18	31.1	-370.7	682.7	655.2	27.43	24.886	
4,100.0	4,073.2	3,971.6	3,946.7	15.3	14.8	-173.17	33.0	-386.9	716.6	688.5	28.13	25.480	
4,200.0	4,171.6	4,065.7	4,039.3	15.7	15.2	-173.16	34.9	-403.2	750.6	721.8	28.82	26.044	
4,300.0	4,270.1	4,159.7	4,132.0	16.2	15.6	-173.15	36.9	-419.4	784.5	755.0	29.52	26.580	

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

Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: ROBIN PROJECT - ROBIN FED 134H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical 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	-91.53	-0.8	-30.0	30.3				
100.0	100.0	96.0	96.0	0.3	0.3	-91.53	-0.8	-30.0	30.0	29.5	0.51	59.378	
200.0	200.0	196.0	196.0	0.6	0.6	-91.53	-0.8	-30.0	30.0	28.8	1.22	24.631	
300.0	300.0	296.0	296.0	1.0	1.0	-91.53	-0.8	-30.0	30.0	28.1	1.94	15.509	
400.0	400.0	396.0	396.0	1.3	1.3	-91.53	-0.8	-30.0	30.0	27.4	2.65	11.317	
500.0	500.0	496.0	496.0	1.7	1.7	-91.53	-0.8	-30.0	30.0	26.7	3.37	8.909	
600.0	600.0	596.0	596.0	2.0	2.0	-91.53	-0.8	-30.0	30.0	25.9	4.09	7.346	
700.0	700.0	696.0	696.0	2.4	2.4	-91.53	-0.8	-30.0	30.0	25.2	4.80	6.250	
800.0	800.0	796.0	796.0	2.8	2.8	-91.53	-0.8	-30.0	30.0	24.5	5.52	5.438	
900.0	900.0	896.0	896.0	3.1	3.1	-91.53	-0.8	-30.0	30.0	23.8	6.24	4.813	
1,000.0	1,000.0	996.0	996.0	3.5	3.5	-91.53	-0.8	-30.0	30.0	23.1	6.95	4.317	
1,100.0	1,100.0	1,096.0	1,096.0	3.8	3.8	-91.53	-0.8	-30.0	30.0	22.3	7.67	3.913	
1,200.0	1,200.0	1,196.0	1,196.0	4.2	4.2	-91.53	-0.8	-30.0	30.0	21.6	8.39	3.579	
1,300.0	1,300.0	1,296.0	1,296.0	4.6	4.6	-91.53	-0.8	-30.0	30.0	20.9	9.11	3.297	
1,400.0	1,400.0	1,396.0	1,396.0	4.9	4.9	-91.53	-0.8	-30.0	30.0	20.2	9.82	3.056	
1,500.0	1,500.0	1,496.0	1,496.0	5.3	5.3	-91.53	-0.8	-30.0	30.0	19.5	10.54	2.849	
1,600.0	1,600.0	1,596.0	1,596.0	5.6	5.6	-91.53	-0.8	-30.0	30.0	18.8	11.26	2.667	
1,700.0	1,700.0	1,696.0	1,696.0	6.0	6.0	-91.53	-0.8	-30.0	30.0	18.0	11.97	2.507	
1,800.0	1,800.0	1,796.0	1,796.0	6.3	6.3	-91.53	-0.8	-30.0	30.0	17.3	12.69	2.366	
1,900.0	1,900.0	1,896.0	1,896.0	6.7	6.7	-91.53	-0.8	-30.0	30.0	16.6	13.41	2.239	
2,000.0	2,000.0	1,996.0	1,996.0	7.1	7.1	-91.53	-0.8	-30.0	30.0	15.9	14.12	2.126	CC
2,100.0	2,100.0	2,096.9	2,096.9	7.4	7.4	-173.52	-0.1	-28.5	30.3	15.5	14.83	2.043	
2,200.0	2,199.8	2,197.9	2,197.7	7.8	7.8	-170.49	2.2	-23.9	30.9	15.4	15.50	1.992	ES
2,300.0	2,299.5	2,298.8	2,298.2	8.1	8.1	-165.62	6.0	-16.0	32.0	15.8	16.17	1.977	SF
2,400.0	2,398.7	2,399.6	2,398.3	8.5	8.5	-159.36	11.4	-5.0	33.8	17.0	16.85	2.007	
2,500.0	2,497.5	2,499.5	2,497.2	8.8	8.9	-154.26	17.5	7.5	37.9	20.3	17.56	2.158	
2,600.0	2,595.9	2,599.3	2,596.1	9.2	9.2	-151.33	23.6	20.0	43.7	25.4	18.28	2.392	
2,700.0	2,694.4	2,699.1	2,694.9	9.6	9.6	-149.10	29.7	32.5	49.6	30.6	19.01	2.612	
2,800.0	2,792.9	2,798.9	2,793.7	10.0	10.0	-147.35	35.7	45.0	55.6	35.9	19.74	2.817	
2,900.0	2,891.4	2,898.7	2,892.6	10.4	10.3	-145.93	41.8	57.4	61.6	41.2	20.48	3.010	
3,000.0	2,989.9	2,998.5	2,991.4	10.7	10.7	-144.77	47.9	69.9	67.7	46.5	21.23	3.189	
3,100.0	3,088.3	3,098.3	3,090.2	11.1	11.1	-143.80	54.0	82.4	73.8	51.8	21.98	3.356	
3,200.0	3,186.8	3,198.2	3,189.1	11.6	11.5	-142.98	60.1	94.9	79.9	57.1	22.73	3.513	
3,300.0	3,285.3	3,298.0	3,287.9	12.0	11.9	-142.27	66.2	107.4	86.0	62.5	23.49	3.659	
3,400.0	3,383.8	3,397.8	3,386.8	12.4	12.3	-141.66	72.3	119.9	92.1	67.8	24.26	3.796	
3,500.0	3,482.3	3,497.6	3,485.6	12.8	12.7	-141.13	78.3	132.4	98.2	73.2	25.03	3.924	
3,600.0	3,580.8	3,597.4	3,584.4	13.2	13.1	-140.65	84.4	144.8	104.3	78.5	25.80	4.044	
3,700.0	3,679.2	3,697.2	3,683.3	13.6	13.5	-140.23	90.5	157.3	110.5	83.9	26.58	4.157	
3,800.0	3,777.7	3,797.0	3,782.1	14.0	13.9	-139.86	96.6	169.8	116.6	89.3	27.35	4.264	
3,900.0	3,876.2	3,896.8	3,880.9	14.5	14.3	-139.52	102.7	182.3	122.8	94.6	28.13	4.364	
4,000.0	3,974.7	3,996.6	3,979.8	14.9	14.7	-139.21	108.8	194.8	128.9	100.0	28.92	4.458	
4,100.0	4,073.2	4,096.4	4,078.6	15.3	15.1	-138.94	114.9	207.3	135.1	105.4	29.70	4.548	
4,200.0	4,171.6	4,196.2	4,177.5	15.7	15.5	-138.68	120.9	219.8	141.2	110.8	30.49	4.632	
4,300.0	4,270.1	4,295.2	4,275.5	16.2	15.9	-138.57	126.8	231.8	147.6	116.3	31.28	4.719	
4,400.0	4,368.6	4,393.7	4,373.3	16.6	16.2	-138.99	132.0	242.4	154.7	122.7	32.04	4.830	
4,500.0	4,467.1	4,491.9	4,471.0	17.0	16.6	-139.87	136.4	251.5	162.8	130.0	32.78	4.965	
4,600.0	4,565.6	4,589.9	4,568.7	17.5	17.0	-141.16	140.1	259.0	171.8	138.3	33.50	5.127	
4,700.0	4,664.0	4,687.7	4,666.1	17.9	17.4	-142.75	143.0	265.0	181.8	147.6	34.20	5.315	
4,800.0	4,762.5	4,785.0	4,763.4	18.3	17.7	-144.57	145.2	269.5	192.9	158.0	34.87	5.531	
4,900.0	4,861.0	4,882.0	4,860.3	18.8	18.1	-146.56	146.7	272.5	205.2	169.7	35.53	5.777	
5,000.0	4,959.5	4,978.5	4,956.8	19.2	18.4	-148.65	147.4	274.0	218.8	182.7	36.16	6.052	
5,100.0	5,058.0	5,075.7	5,054.0	19.6	18.7	-150.79	147.5	274.2	233.7	196.9	36.80	6.352	

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

Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: ROBIN PROJECT - ROBIN FED 134H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical 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)	Rule Assigned: Distance Between Centres (usft)	Rule Assigned: Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,156.4	5,174.2	5,152.4	20.1	19.1	-152.73	147.5	274.2	249.1	211.6	37.45	6.651	
5,300.0	5,254.9	5,272.6	5,250.9	20.5	19.4	-154.45	147.5	274.2	264.7	226.6	38.12	6.944	
5,400.0	5,353.4	5,371.1	5,349.4	21.0	19.7	-155.97	147.5	274.2	280.5	241.7	38.79	7.231	
5,500.0	5,451.9	5,469.6	5,447.9	21.4	20.1	-157.34	147.5	274.2	296.5	257.0	39.47	7.513	
5,600.0	5,550.4	5,568.1	5,546.4	21.8	20.4	-158.56	147.5	274.2	312.6	272.5	40.15	7.787	
5,700.0	5,648.9	5,666.6	5,644.9	22.3	20.7	-159.67	147.5	274.2	328.9	288.0	40.83	8.054	
5,800.0	5,747.3	5,765.0	5,743.3	22.7	21.1	-160.67	147.5	274.2	345.2	303.7	41.52	8.315	
5,900.0	5,845.8	5,863.5	5,841.8	23.2	21.4	-161.57	147.5	274.2	361.7	319.5	42.21	8.568	
6,000.0	5,944.3	5,962.0	5,940.3	23.6	21.8	-162.41	147.5	274.2	378.2	335.3	42.91	8.815	
6,100.0	6,042.8	6,060.5	6,038.8	24.0	22.1	-163.17	147.5	274.2	394.8	351.2	43.61	9.055	
6,200.0	6,141.3	6,159.0	6,137.3	24.5	22.4	-163.87	147.5	274.2	411.5	367.2	44.31	9.288	
6,300.0	6,239.7	6,257.4	6,235.7	24.9	22.8	-164.51	147.5	274.2	428.2	383.2	45.01	9.515	
6,400.0	6,338.2	6,355.9	6,334.2	25.4	23.1	-165.11	147.5	274.2	445.0	399.3	45.71	9.735	
6,500.0	6,436.7	6,454.4	6,432.7	25.8	23.5	-165.66	147.5	274.2	461.8	415.4	46.42	9.950	
6,600.0	6,535.2	6,552.9	6,531.2	26.3	23.8	-166.17	147.5	274.2	478.7	431.6	47.12	10.158	
6,700.0	6,633.7	6,651.4	6,629.7	26.7	24.1	-166.65	147.5	274.2	495.6	447.8	47.83	10.361	
6,800.0	6,732.1	6,749.9	6,728.1	27.2	24.5	-167.10	147.5	274.2	512.5	464.0	48.54	10.559	
6,900.0	6,830.6	6,848.3	6,826.6	27.6	24.8	-167.52	147.5	274.2	529.5	480.2	49.25	10.751	
7,000.0	6,929.1	6,946.8	6,925.1	28.1	25.2	-167.91	147.5	274.2	546.4	496.5	49.96	10.937	
7,100.0	7,027.6	7,045.3	7,023.6	28.5	25.5	-168.28	147.5	274.2	563.4	512.8	50.67	11.119	
7,200.0	7,126.1	7,143.8	7,122.1	28.9	25.9	-168.63	147.5	274.2	580.5	529.1	51.39	11.296	
7,300.0	7,224.5	7,242.3	7,220.5	29.4	26.2	-168.96	147.5	274.2	597.5	545.4	52.10	11.469	
7,400.0	7,323.0	7,340.7	7,319.0	29.8	26.6	-169.27	147.5	274.2	614.6	561.8	52.81	11.637	
7,419.0	7,341.8	7,359.5	7,337.8	29.9	26.6	-169.33	147.5	274.2	617.8	564.9	52.95	11.668	
7,500.0	7,421.7	7,439.4	7,417.7	30.3	26.9	-169.59	147.5	274.2	630.5	577.0	53.53	11.780	
7,600.0	7,520.9	7,538.6	7,516.9	30.7	27.2	-169.84	147.5	274.2	643.2	588.9	54.24	11.858	
7,700.0	7,620.4	7,638.1	7,616.4	31.1	27.6	-170.02	147.5	274.2	652.4	597.5	54.95	11.873	
7,800.0	7,720.2	7,737.9	7,716.2	31.4	27.9	-170.13	147.5	274.2	658.2	602.6	55.66	11.827	
7,900.0	7,820.2	7,837.9	7,816.2	31.8	28.3	-170.17	147.5	274.2	660.6	604.2	56.36	11.721	
7,919.0	7,839.2	7,856.9	7,835.2	31.8	28.4	-87.22	147.5	274.2	660.7	604.2	56.49	11.695	
8,000.0	7,920.2	7,937.9	7,916.2	32.1	28.6	-87.22	147.5	274.2	660.7	603.6	57.05	11.581	
8,100.0	8,020.2	8,037.9	8,016.2	32.4	29.0	-87.22	147.5	274.2	660.7	602.9	57.74	11.442	
8,200.0	8,120.2	8,137.9	8,116.2	32.7	29.3	-87.22	147.5	274.2	660.7	602.2	58.43	11.306	
8,300.0	8,220.2	8,237.9	8,216.2	33.0	29.7	-87.22	147.5	274.2	660.7	601.5	59.12	11.174	
8,400.0	8,320.2	8,337.9	8,316.2	33.3	30.1	-87.22	147.5	274.2	660.7	600.8	59.82	11.045	
8,500.0	8,420.2	8,437.9	8,416.2	33.6	30.4	-87.22	147.5	274.2	660.7	600.1	60.51	10.918	
8,600.0	8,520.2	8,537.9	8,516.2	33.9	30.8	-87.22	147.5	274.2	660.7	599.5	61.21	10.794	
8,700.0	8,620.2	8,637.9	8,616.2	34.2	31.1	-87.22	147.5	274.2	660.7	598.8	61.90	10.673	
8,800.0	8,720.2	8,737.9	8,716.2	34.6	31.5	-87.22	147.5	274.2	660.7	598.1	62.60	10.554	
8,900.0	8,820.2	8,837.9	8,816.2	34.9	31.8	-87.22	147.5	274.2	660.7	597.4	63.29	10.438	
9,000.0	8,920.2	8,937.9	8,916.2	35.2	32.2	-87.22	147.5	274.2	660.7	596.7	63.99	10.325	
9,100.0	9,020.2	9,037.9	9,016.2	35.5	32.5	-87.22	147.5	274.2	660.7	596.0	64.68	10.214	
9,200.0	9,120.2	9,137.9	9,116.2	35.8	32.9	-87.22	147.5	274.2	660.7	595.3	65.38	10.105	
9,300.0	9,220.2	9,237.9	9,216.2	36.2	33.2	-87.22	147.5	274.2	660.7	594.6	66.08	9.998	
9,400.0	9,320.2	9,337.9	9,316.2	36.5	33.6	-87.22	147.5	274.2	660.7	593.9	66.78	9.894	
9,500.0	9,420.2	9,437.9	9,416.2	36.8	33.9	-87.22	147.5	274.2	660.7	593.2	67.47	9.791	
9,600.0	9,520.2	9,537.9	9,516.2	37.1	34.3	-87.22	147.5	274.2	660.7	592.5	68.17	9.691	
9,700.0	9,620.2	9,637.9	9,616.2	37.4	34.6	-87.22	147.5	274.2	660.7	591.8	68.87	9.593	
9,800.0	9,720.2	9,737.9	9,716.2	37.8	35.0	-87.22	147.5	274.2	660.7	591.1	69.57	9.496	
9,900.0	9,820.2	9,837.9	9,816.2	38.1	35.3	-87.22	147.5	274.2	660.7	590.4	70.27	9.402	
10,000.0	9,920.2	9,937.9	9,916.2	38.4	35.7	-87.22	147.5	274.2	660.7	589.7	70.97	9.309	
10,100.0	10,020.2	10,037.9	10,016.2	38.7	36.0	-87.22	147.5	274.2	660.7	589.0	71.67	9.218	

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

Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: ROBIN PROJECT - ROBIN FED 134H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical 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
10,200.0	10,120.2	10,137.9	10,116.2	39.1	36.4	-87.22	147.5	274.2	660.7	588.3	72.37	9.129	
10,300.0	10,220.2	10,237.9	10,216.2	39.4	36.8	-87.22	147.5	274.2	660.7	587.6	73.07	9.041	
10,400.0	10,320.2	10,337.9	10,316.2	39.7	37.1	-87.22	147.5	274.2	660.7	586.9	73.77	8.955	
10,500.0	10,420.2	10,437.9	10,416.2	40.0	37.5	-87.22	147.5	274.2	660.7	586.2	74.48	8.871	
10,600.0	10,520.2	10,537.9	10,516.2	40.4	37.8	-87.22	147.5	274.2	660.7	585.5	75.18	8.788	
10,610.0	10,530.2	10,547.9	10,526.2	40.4	37.9	-87.22	147.5	274.2	660.7	585.4	75.25	8.780	
10,700.0	10,620.2	10,634.9	10,613.1	40.7	38.2	-87.09	149.0	274.2	660.8	584.9	75.86	8.711	
10,800.0	10,720.2	10,725.0	10,701.8	41.0	38.5	-85.75	164.5	274.1	662.0	585.5	76.49	8.655	
10,900.0	10,820.2	10,806.1	10,777.8	41.4	38.8	-83.35	192.5	273.9	665.8	588.8	77.00	8.647	
11,000.0	10,920.2	10,875.0	10,837.9	41.7	39.0	-80.49	226.1	273.6	674.2	597.0	77.23	8.730	
11,100.0	11,020.2	10,935.3	10,886.1	42.0	39.2	-77.47	262.3	273.4	689.3	612.2	77.10	8.940	
11,200.0	11,120.2	10,984.0	10,921.4	42.3	39.3	-74.74	295.8	273.1	712.3	635.9	76.42	9.321	
11,300.0	11,220.2	11,025.0	10,948.3	42.7	39.5	-72.29	326.7	272.9	744.1	668.8	75.27	9.886	
11,400.0	11,320.2	11,057.3	10,967.6	43.0	39.6	-70.28	352.5	272.7	784.4	710.7	73.67	10.648	

Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: ROBIN PROJECT - ROBIN FED 203H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical 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	-91.54	-1.6	-60.0	60.1				
100.0	100.0	96.0	96.0	0.3	0.3	-91.54	-1.6	-60.0	60.0	59.5	0.51	118.696	
200.0	200.0	196.0	196.0	0.6	0.6	-91.54	-1.6	-60.0	60.0	58.8	1.22	49.238	
300.0	300.0	296.0	296.0	1.0	1.0	-91.54	-1.6	-60.0	60.0	58.1	1.94	31.002	
400.0	400.0	396.0	396.0	1.3	1.3	-91.54	-1.6	-60.0	60.0	57.4	2.65	22.623	
500.0	500.0	496.0	496.0	1.7	1.7	-91.54	-1.6	-60.0	60.0	56.6	3.37	17.810	
600.0	600.0	596.0	596.0	2.0	2.0	-91.54	-1.6	-60.0	60.0	55.9	4.09	14.685	
700.0	700.0	696.0	696.0	2.4	2.4	-91.54	-1.6	-60.0	60.0	55.2	4.80	12.493	
800.0	800.0	796.0	796.0	2.8	2.8	-91.54	-1.6	-60.0	60.0	54.5	5.52	10.871	
900.0	900.0	896.0	896.0	3.1	3.1	-91.54	-1.6	-60.0	60.0	53.8	6.24	9.621	
1,000.0	1,000.0	996.0	996.0	3.5	3.5	-91.54	-1.6	-60.0	60.0	53.1	6.95	8.629	
1,100.0	1,100.0	1,096.0	1,096.0	3.8	3.8	-91.54	-1.6	-60.0	60.0	52.3	7.67	7.823	
1,200.0	1,200.0	1,196.0	1,196.0	4.2	4.2	-91.54	-1.6	-60.0	60.0	51.6	8.39	7.154	
1,300.0	1,300.0	1,296.0	1,296.0	4.6	4.6	-91.54	-1.6	-60.0	60.0	50.9	9.11	6.591	
1,400.0	1,400.0	1,396.0	1,396.0	4.9	4.9	-91.54	-1.6	-60.0	60.0	50.2	9.82	6.110	
1,500.0	1,500.0	1,496.0	1,496.0	5.3	5.3	-91.54	-1.6	-60.0	60.0	49.5	10.54	5.694	
1,600.0	1,600.0	1,596.0	1,596.0	5.6	5.6	-91.54	-1.6	-60.0	60.0	48.8	11.26	5.332	
1,700.0	1,700.0	1,696.0	1,696.0	6.0	6.0	-91.54	-1.6	-60.0	60.0	48.0	11.97	5.012	
1,800.0	1,800.0	1,796.0	1,796.0	6.3	6.3	-91.54	-1.6	-60.0	60.0	47.3	12.69	4.729	
1,900.0	1,900.0	1,896.0	1,896.0	6.7	6.7	-91.54	-1.6	-60.0	60.0	46.6	13.41	4.476	
2,000.0	2,000.0	1,996.0	1,996.0	7.1	7.1	-91.54	-1.6	-60.0	60.0	45.9	14.12	4.249	CC, ES, SF
2,100.0	2,100.0	2,094.0	2,094.0	7.4	7.4	-174.26	-1.2	-61.5	63.3	48.5	14.81	4.271	
2,200.0	2,199.8	2,191.3	2,191.1	7.8	7.7	-173.63	-0.1	-66.2	73.3	57.8	15.47	4.735	
2,300.0	2,299.5	2,287.2	2,286.7	8.1	8.1	-172.88	1.9	-73.9	89.9	73.8	16.12	5.581	
2,400.0	2,398.7	2,382.4	2,381.3	8.5	8.4	-172.19	4.5	-84.5	113.0	96.3	16.76	6.745	
2,500.0	2,497.5	2,478.7	2,476.8	8.8	8.8	-171.84	7.3	-95.9	140.1	122.7	17.43	8.039	
2,600.0	2,595.9	2,574.4	2,571.9	9.2	9.1	-171.74	10.2	-107.2	168.9	150.8	18.10	9.330	
2,700.0	2,694.4	2,670.2	2,666.9	9.6	9.5	-171.67	13.0	-118.6	197.7	178.9	18.78	10.528	
2,800.0	2,792.9	2,766.0	2,762.0	10.0	9.8	-171.61	15.8	-129.9	226.4	207.0	19.45	11.641	
2,900.0	2,891.4	2,861.7	2,857.1	10.4	10.2	-171.57	18.6	-141.2	255.2	235.1	20.13	12.677	
3,000.0	2,989.9	2,957.5	2,952.1	10.7	10.5	-171.54	21.5	-152.5	284.0	263.2	20.81	13.643	
3,100.0	3,088.3	3,053.3	3,047.2	11.1	10.9	-171.51	24.3	-163.9	312.7	291.2	21.50	14.547	
3,200.0	3,186.8	3,149.1	3,142.2	11.6	11.3	-171.49	27.1	-175.2	341.5	319.3	22.19	15.393	
3,300.0	3,285.3	3,244.8	3,237.3	12.0	11.6	-171.47	29.9	-186.5	370.3	347.4	22.88	16.187	
3,400.0	3,383.8	3,340.6	3,332.4	12.4	12.0	-171.46	32.8	-197.9	399.1	375.5	23.57	16.933	
3,500.0	3,482.3	3,436.4	3,427.4	12.8	12.4	-171.44	35.6	-209.2	427.8	403.6	24.26	17.635	
3,600.0	3,580.8	3,532.1	3,522.5	13.2	12.7	-171.43	38.4	-220.5	456.6	431.7	24.95	18.297	
3,700.0	3,679.2	3,627.9	3,617.5	13.6	13.1	-171.42	41.2	-231.8	485.4	459.7	25.65	18.922	
3,800.0	3,777.7	3,723.7	3,712.6	14.0	13.5	-171.41	44.0	-243.2	514.1	487.8	26.35	19.513	
3,900.0	3,876.2	3,819.5	3,807.6	14.5	13.8	-171.40	46.9	-254.5	542.9	515.9	27.05	20.073	
4,000.0	3,974.7	3,915.2	3,902.7	14.9	14.2	-171.40	49.7	-265.8	571.7	543.9	27.75	20.604	
4,100.0	4,073.2	4,011.0	3,997.8	15.3	14.6	-171.39	52.5	-277.1	600.5	572.0	28.45	21.107	
4,200.0	4,171.6	4,106.8	4,092.8	15.7	15.0	-171.38	55.3	-288.5	629.2	600.1	29.15	21.586	
4,300.0	4,270.1	4,202.5	4,187.9	16.2	15.3	-171.38	58.2	-299.8	658.0	628.2	29.85	22.041	
4,400.0	4,368.6	4,298.3	4,282.9	16.6	15.7	-171.37	61.0	-311.1	686.8	656.2	30.56	22.475	
4,500.0	4,467.1	4,394.1	4,378.0	17.0	16.1	-171.37	63.8	-322.4	715.5	684.3	31.26	22.889	
4,600.0	4,565.6	4,489.9	4,473.0	17.5	16.5	-171.36	66.6	-333.8	744.3	712.4	31.97	23.283	
4,700.0	4,664.0	4,586.8	4,569.2	17.9	16.9	-171.36	69.5	-345.2	773.1	740.4	32.68	23.654	

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

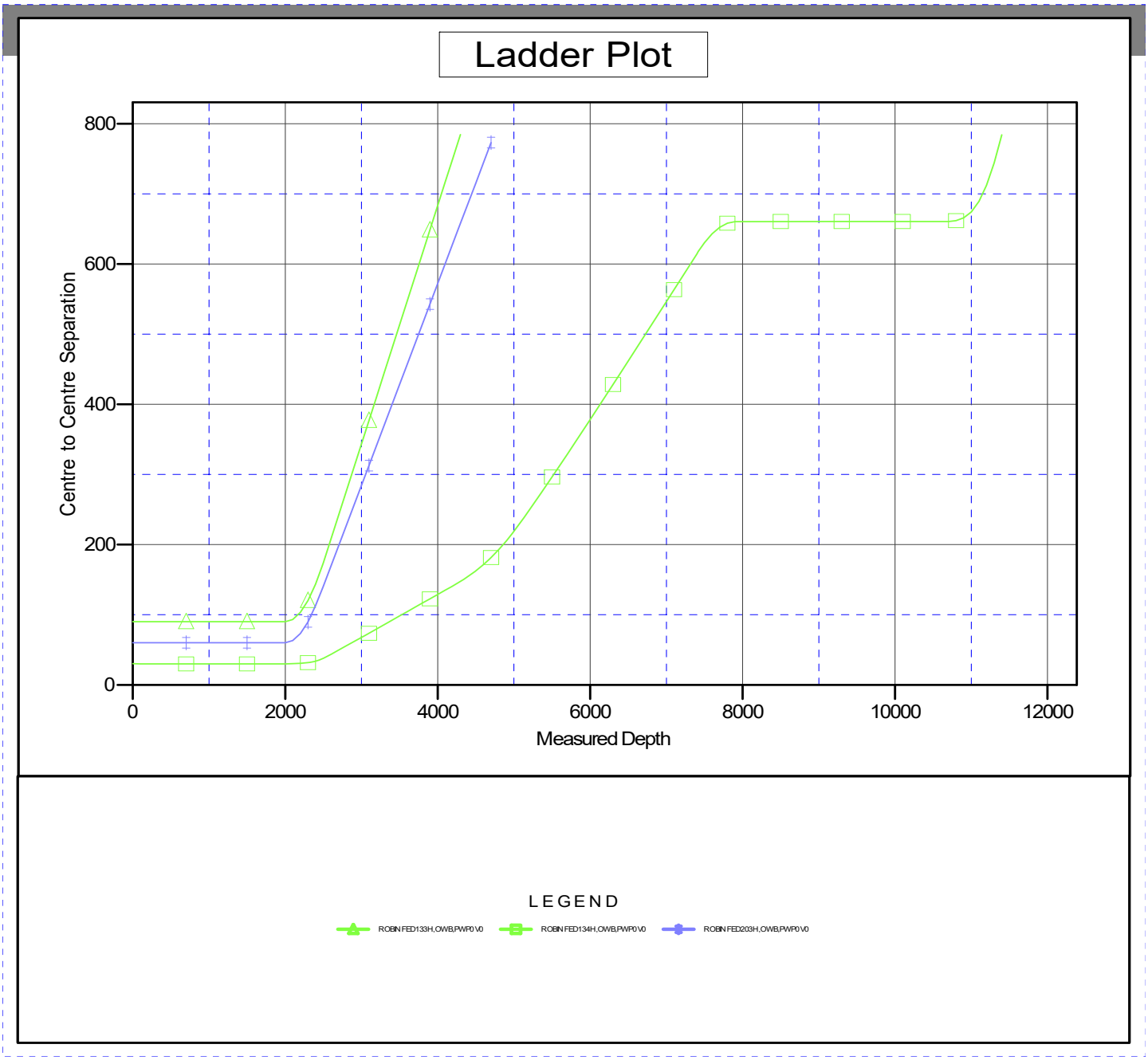
Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 3704.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: ROBIN FED 204H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.41°



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

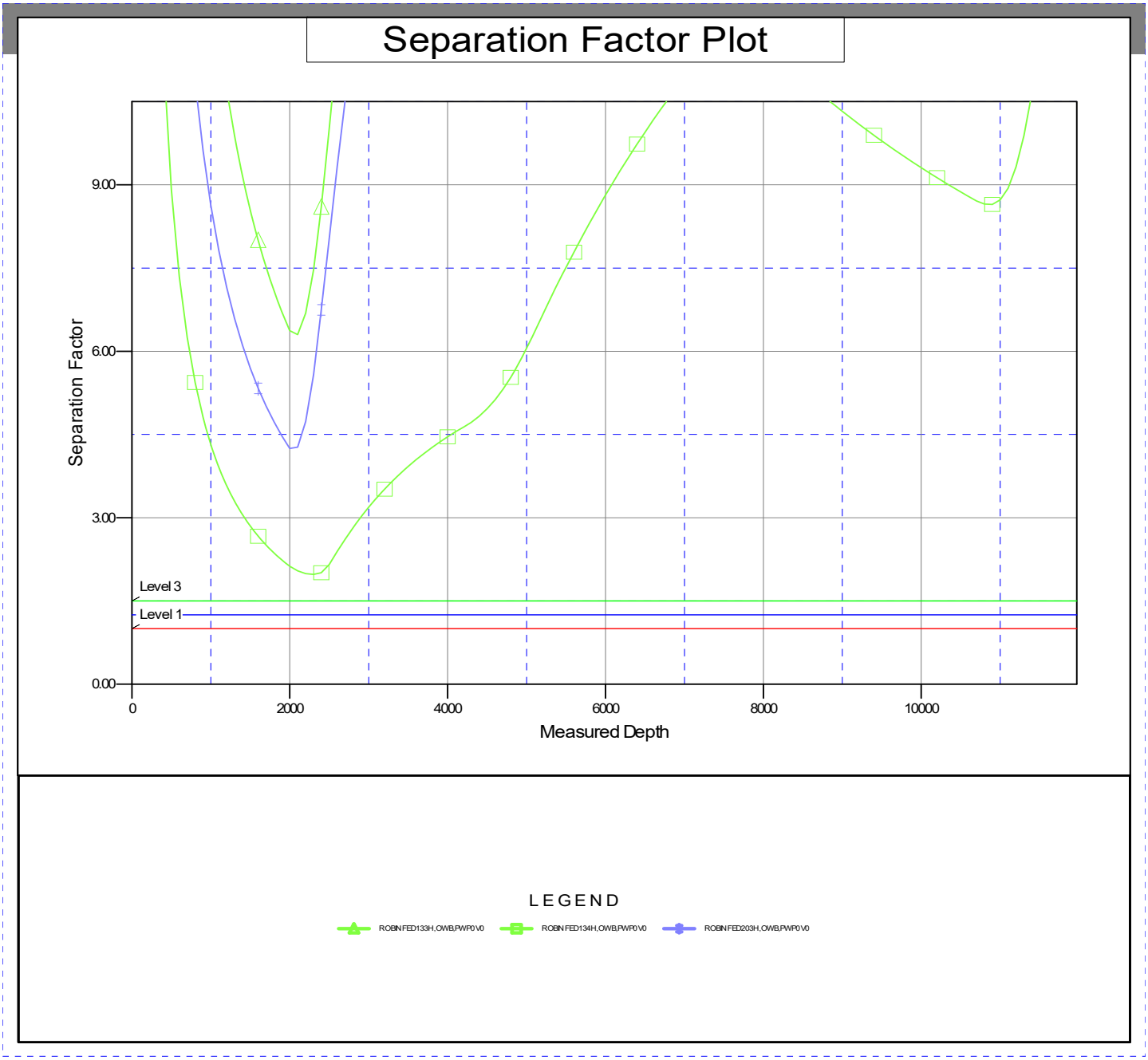
Permian Resources

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well ROBIN FED 204H
Project:	(SP) LEA	**TVD Reference:**	KB @ 3704.0usft
Reference Site:	ROBIN PROJECT	**MD Reference:**	KB @ 3704.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	ROBIN FED 204H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 3704.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: ROBIN FED 204H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.41°



Permian Resources - Robin Fed 204H

1. Geologic Formations

Formation	Lithology	Elevation	TVD	Target
Rustler	Sandstone	2176	1527	No
Top of Salt	Salt	2066	1637	No
Yates	Anhydrite/Shale	316	3387	No
Seven Rivers	Limestone	NP	NP	No
Capitan	Sandstone	81	3622	No
Delaware Sands	Sandstone	-1864	5567	No
Brushy Canyon	Sandstone	-3104	6807	No
Bone Spring Lime	Limestone/Shale	-4834	8537	No
1st Bone Spring Sand	Sandstone/Limestone/Shale	-5809	9512	No
2nd Bone Spring Sand	Sandstone/Limestone/Shale	-6384	10087	No
3rd Bone Spring Sand	Sandstone/Limestone/Shale	-7144	10847	No
Wolfcamp	Shale	-7392	11095	Yes

2. Blowout Prevention

BOP installed and tested before drilling	Size?	Min. Required WP	Type	x	Tested to:
17.5	20"	2M	Annular	x	1000 psi
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		
12.25	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
6.75	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: Diverter to drill surface hole, 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	26	20	0	1552	0	1552	1552	J55	107	BTC	1.00	1.68	Dry	4.20	Dry	6.35
Intermediate 1	17.5	13.375	0	3412	0	3412	3412	J55	61	BTC	4.25	2.77	Dry	3.33	Dry	3.12
Intermediate 2	12.25	9.625	0	5517	0	5517	5517	J55	40	BTC	1.41	1.61	Dry	1.96	Dry	1.96
Intermediate 3	8.75	7.625	0	11347	0	11347	11347	P110 HS	29.7	MO-FXL	3.96	1.05	Dry	1.71	Dry	2.44
Production	6.75	5.5	0	10847	0	11945	10847	P110RY	20	GeoConn	1.49	1.54	Dry	1.89	Dry	1.89
Production	6.75	5.5	10847	22278	11945	11945	11431	P110RY	20	Bushmas	1.49	1.54	Dry	1.89	Dry	1.89
							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	Quanity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	1552	2620	1.34	14.8	3510	50%	Class C	Accelerator
Intermediate 1	Lead	0	2720	1470	1.88	12.9	2760	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 1	Tail	2720	3412	550	1.34	14.8	730	50%	Class C	Retarder
Intermediate 2	Lead	0	4410	890	1.88	12.9	1660	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 2	Tail	4410	5517	340	1.33	14.8	440	25%	Class C	Salt
Intermediate 3	Lead	0	8670	490	1.88	12.9	910	50%	Class H	Salt
Intermediate 3	Tail	8670	10847	180	1.33	14.8	230	25%	Class H	Salt
Production	Lead	5017	11547	350	2.41	11.5	840	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	11547	22278	660	1.73	12.5	1130	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 oter 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: 15710 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	1552	Spud Mud	8.6	9.5
1552	3412	Salt Saturated	10	10
3412	5517	Water Base Mud	8.6	9.5
5517	11347	Water Base Mud	9	12
11347	22278	OBM	9	12

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	7460	psi
Anticipated Surface Pressure	4826	psi
Anticipated Bottom Hole Temperature	173	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

8. Waste Management

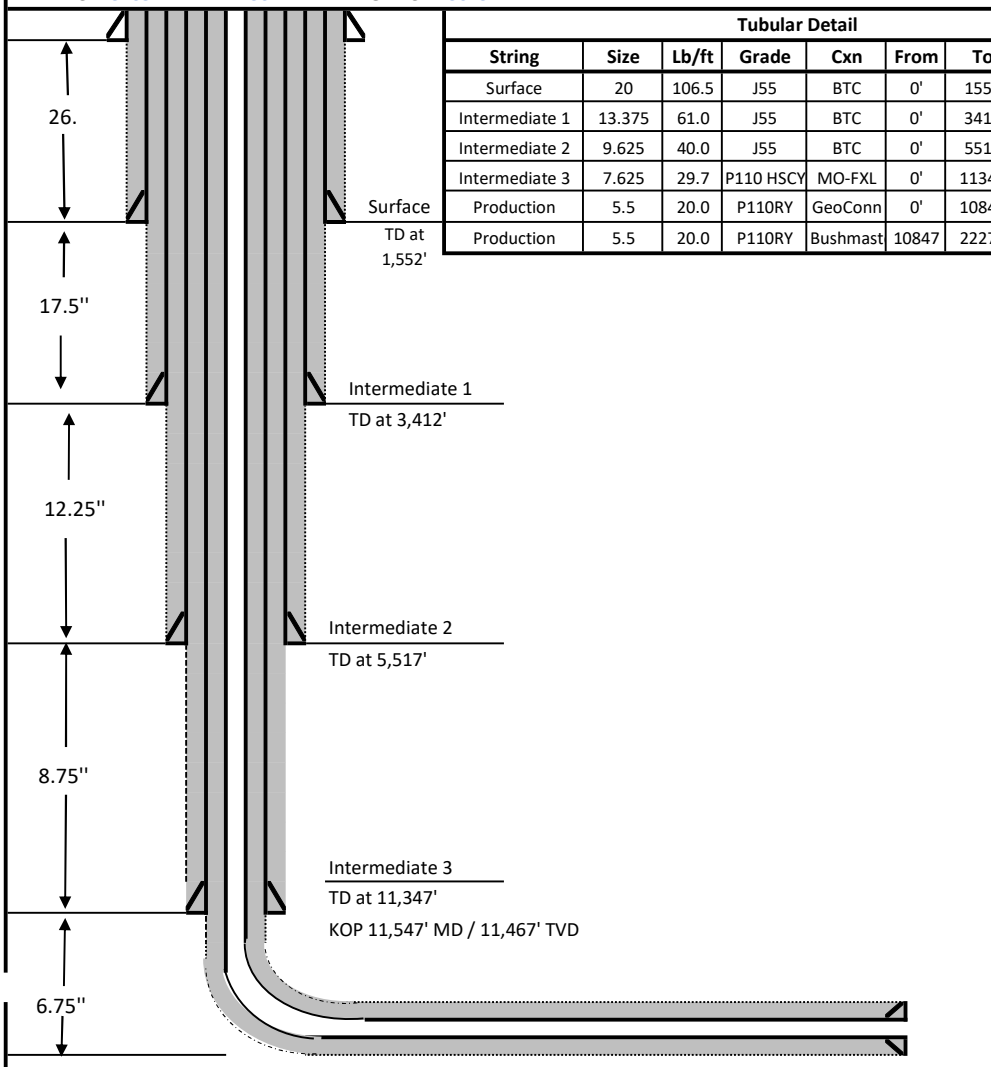
Waste Type:	**Drilling**
Waste content description:	Fresh water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Weekly (after drilling all surfaces)
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	**Grey Water & Human Waste**
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
Waste Type:	**Garbage**
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
Waste Type:	**Drilling**
Waste content description:	Drill Cuttings
Amount of waste:	15710 Cu Ft
Waste disposal frequency:	Per well
Safe containment description:	Steel tanks
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	**Drilling**
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

Permian Resources

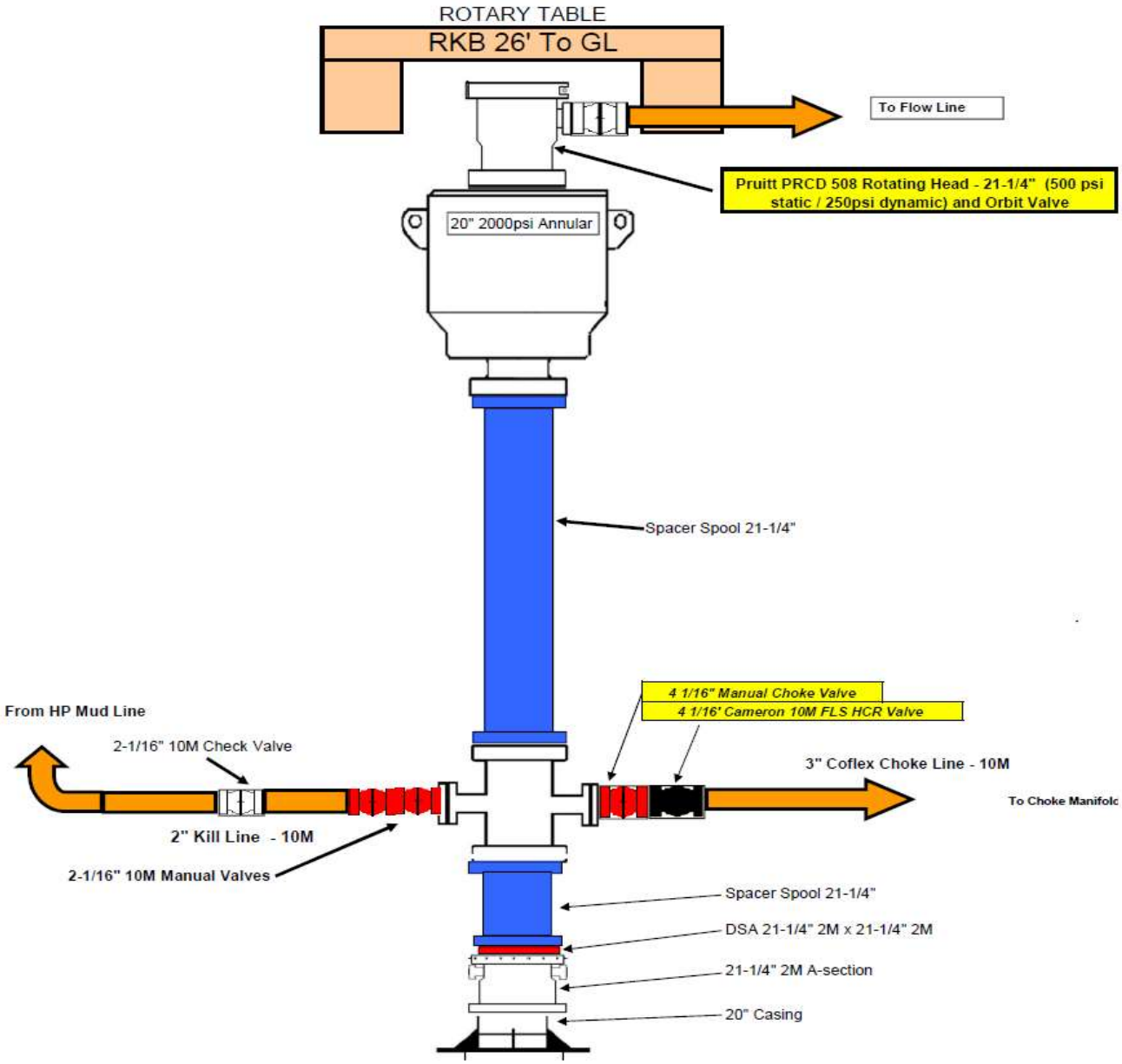
Well: Robin Fed 204H
State New Mexico **County:** Lea
FM Target: Wolfcamp
Location: Lot P, Section 20, T20S, R34E, 10' FSL, 1265' FEL
BHL: Lot A, Section 17, T20S, R34E, 10' FNL, 330' FEL
KB Elev: 3703 **KB:** 30 **GL Elev:** 3673



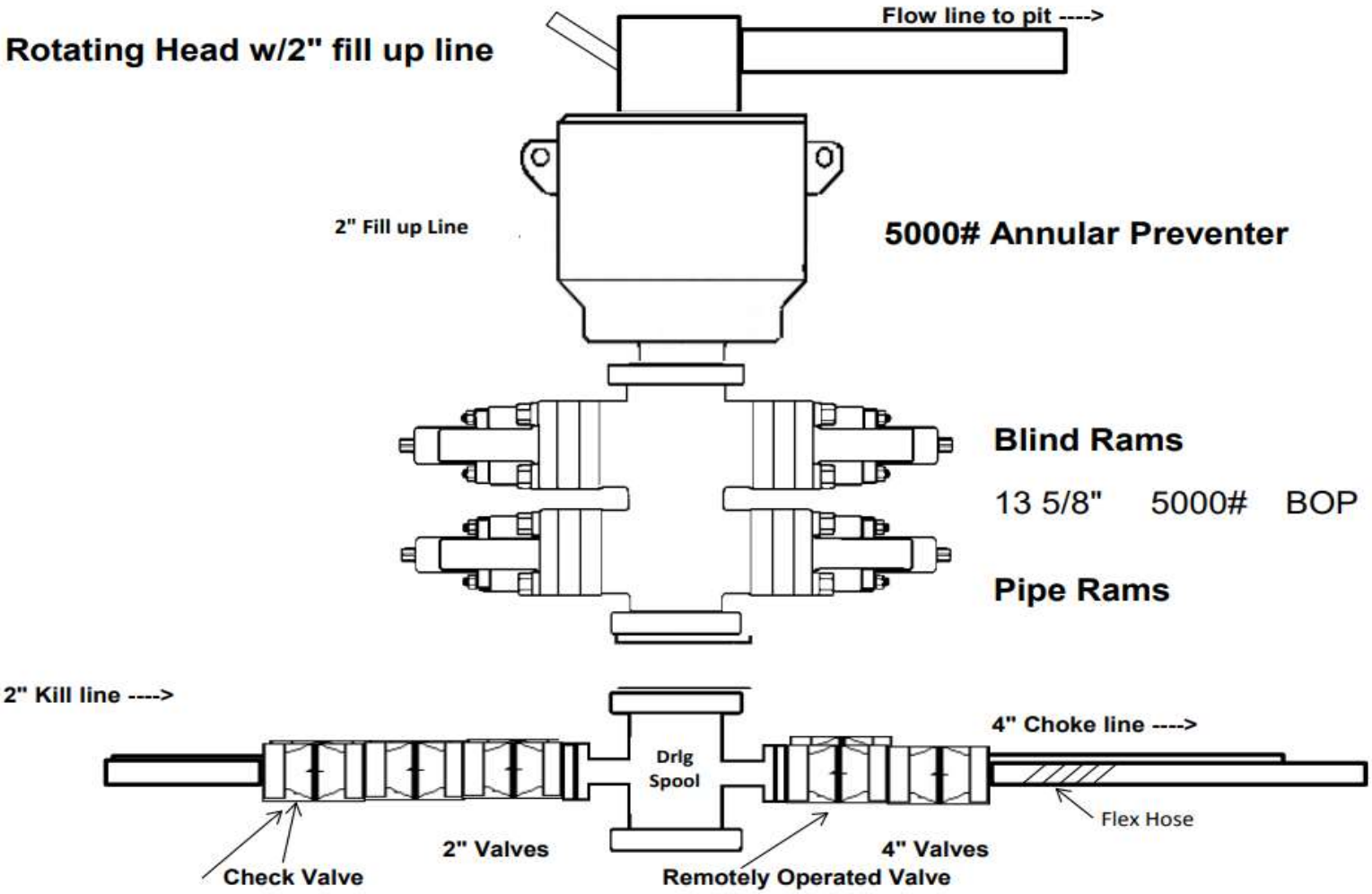
Tubular Detail

String	Size	Lb/ft	Grade	Cxn	From	To	Burst	Cllps
Surface	20	106.5	J55	BTC	0'	1552	2410	770
Intermediate 1	13.375	61.0	J55	BTC	0'	3412	3090	1,540
Intermediate 2	9.625	40.0	J55	BTC	0'	5517	3950	2,570
Intermediate 3	7.625	29.7	P110 HSCY	MO-FXL	0'	11347	11680	7,200
Production	5.5	20.0	P110RY	GeoConn	0'	10847	13720	11,100
Production	5.5	20.0	P110RY	Bushmast	10847	22278	13720	11,100

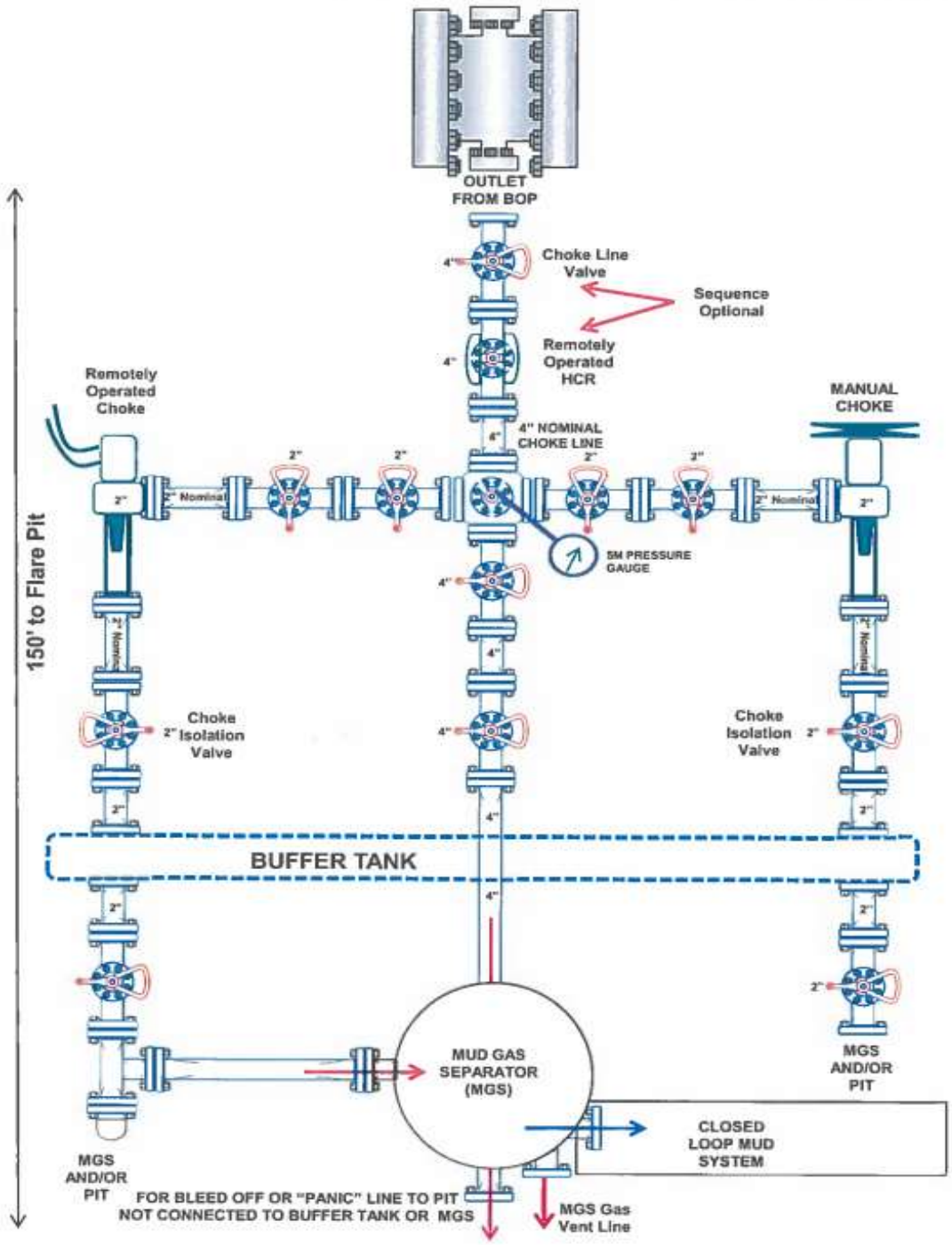
2M BOP


ROTARY TABLE
RKB 26' To GL
To Flow Line
Pruitt PRCD 508 Rotating Head - 21-1/4" (500 psi static / 250psi dynamic) and Orbit Valve
20" 2000psi Annular
Spacer Spool 21-1/4"
4 1/16" Manual Choke Valve
4 1/16' Cameron 10M FLS HCR Valve
From HP Mud Line
2-1/16" 10M Check Valve
3" Coflex Choke Line - 10M
To Choke Manifolc
2" Kill Line - 10M
2-1/16" 10M Manual Valves
Spacer Spool 21-1/4"
DSA 21-1/4" 2M x 21-1/4" 2M
21-1/4" 2M A-section
20" Casing

5,000 psi BOP Schematic



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



Continental
ContiTech

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

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE					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 tempecature

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

Not Designed For Well Testing

API Spec 16 C

Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

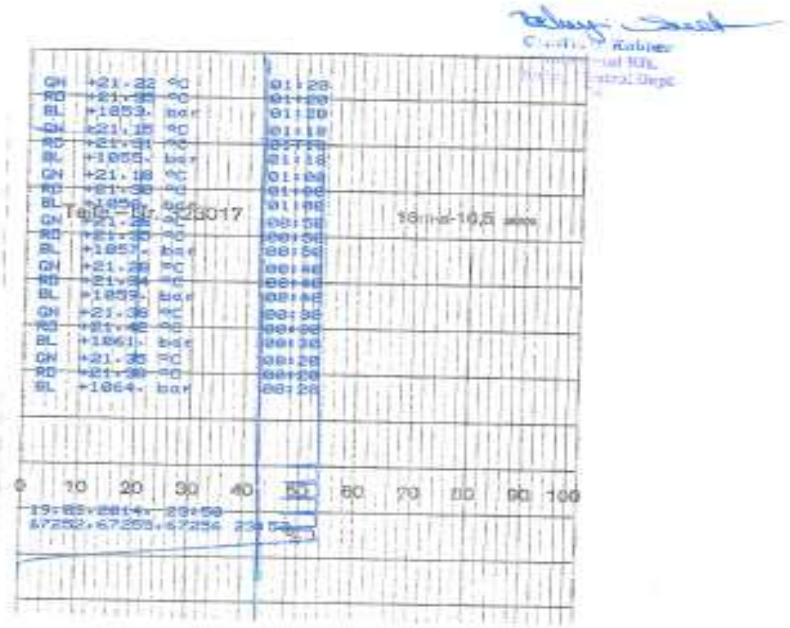
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Date:	Inspector	Quality Control
20. March 2014.		

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

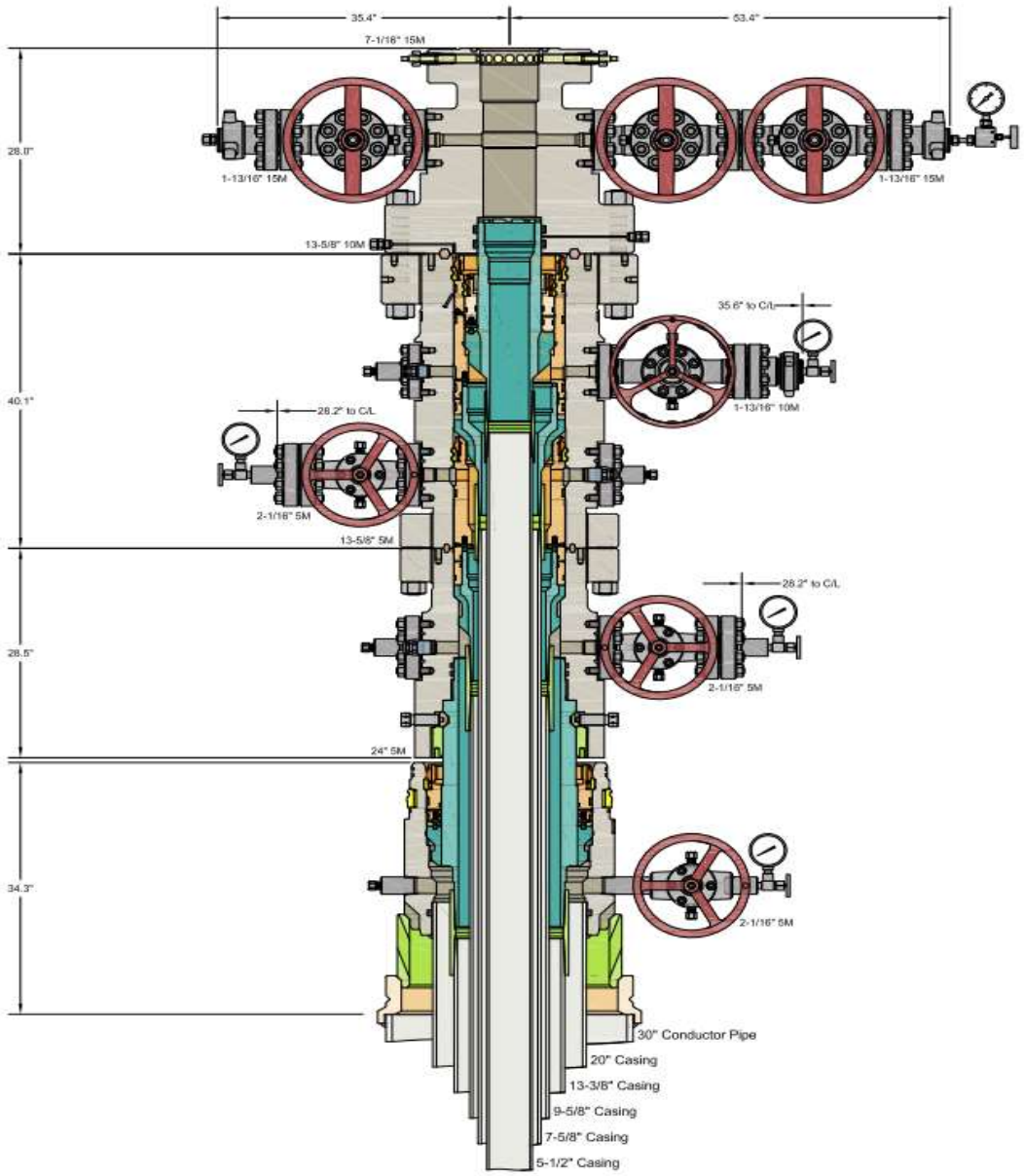
Page: 1 / 1



Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
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

Printed: TIRETECH/ICsontosG - 2014.03.10 15:22:17



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	PERMIAN RESOURCES WEST TEXAS		
30" x 20" x 13-3/8" x 9-5/8" x 7-5/8" x 5-1/2" CRC/MBU-4T-CFL With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head And 13-3/8", 9-5/8", 7-5/8" & 5-1/2" Mandrel Casing Hangers	DRAWN	DLE	05FEB24
	APPRV		
	DRAWING NO.	SDT-4506	

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

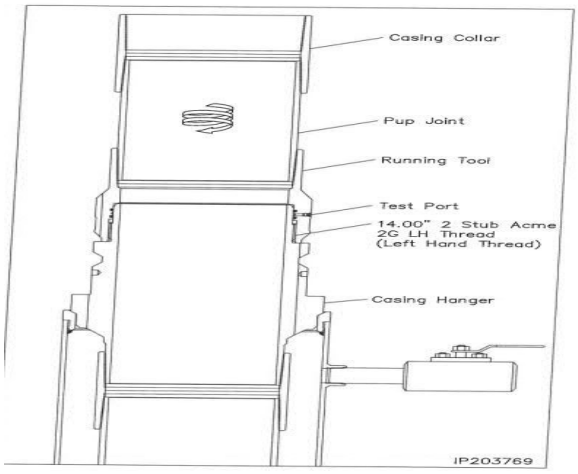
Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources
Multi-Well Pad Batch Drilling & Off Line Cement Procedure

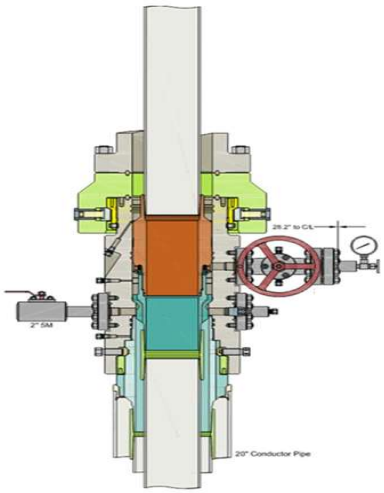
Surface Casing - PR intends to Batch set and offline cement all surface casing to a depth approved in the APD. Surface Holes will be batch drilled by a big rig. Appropriate notifications will be made prior to spudding the well, running, and cementing casing and prior to skidding to the rig to the next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

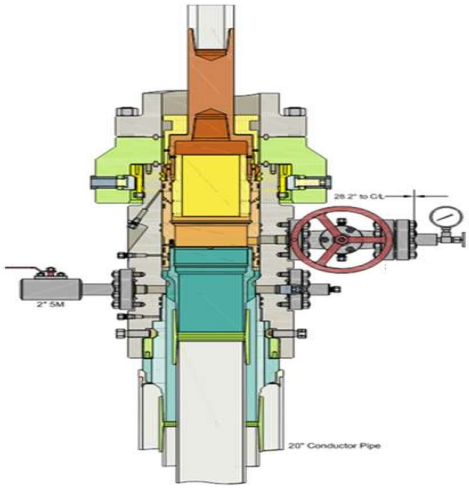


Intermediate 1 Casing – PR intends to Batch set all intermediate 1 casing strings to a depth approved in the APD, typically set into end of salts. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.
Rig will remove the nightcap and install and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

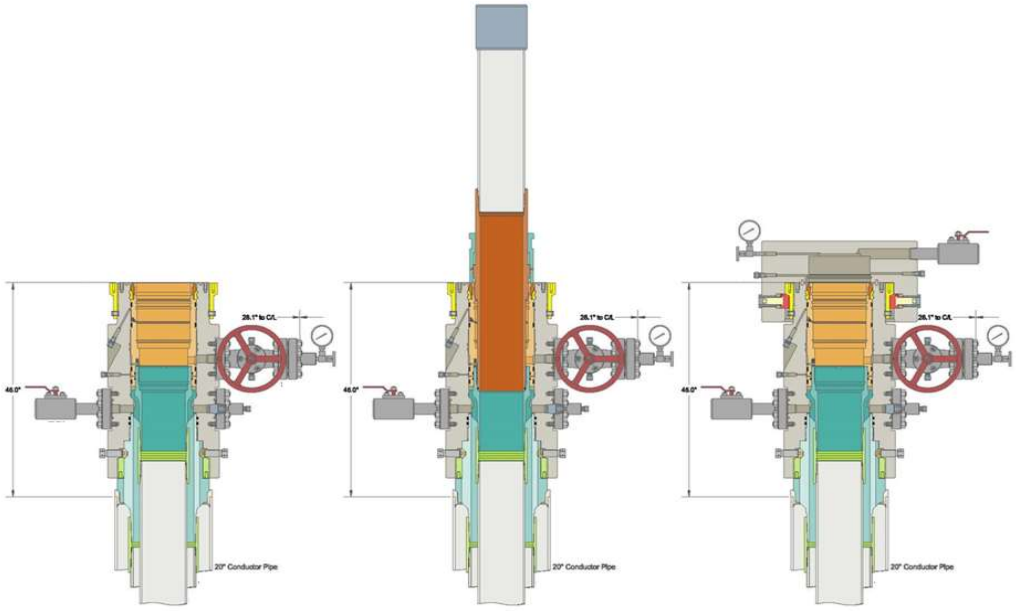
1. Drill Intermediate 1 hole to approved casing point. Trip out of hole with BHA to run Casing.
2. Remove wear bushing then run and land Intermediate 1 casing with mandrel hanger in wellhead.
3. Flow test – Confirm well is static.
4. Set Annular packoff and pressure test. Test to 5k.
5. Install BPV, 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.

Permian Resources
BOP Break Testing Variance Procedure

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE). Permian Resources requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

Background

Title 43 CFR 3172, Drilling Operations, Sections 6.b.9.iv states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. 43 CFR 3172.13, Variances from minimum standards states, "An operator may request the authorized officer to approve a variance from any of the minimum standards prescribed in §§ 3172.6 through 3172.12. All such requests shall be submitted in writing to the appropriate authorized officer and provide information as to the circumstances which warrant approval of the variance(s) requested and the proposed alternative methods by which the related minimum standard(s) are to be satisfied. The authorized officer, after considering all relevant factors, if appropriate, may approve the requested variance(s) if it is determined that the proposed alternative(s) meet or exceed the objectives of the applicable minimum standard(s).". Permian Resources feels the break testing the BOPE is such a situation. Therefore, as per 43 CFR 3172.13, Permian Resources submits this request for the variance.

Supporting Documentation

The language used in 43 CFR 3172 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time, there have been significant changes in drilling technology. The BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since 43 CFR 3172 was originally released. The Permian Resources drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

Figure 1: Winch System attached to BOP Stack

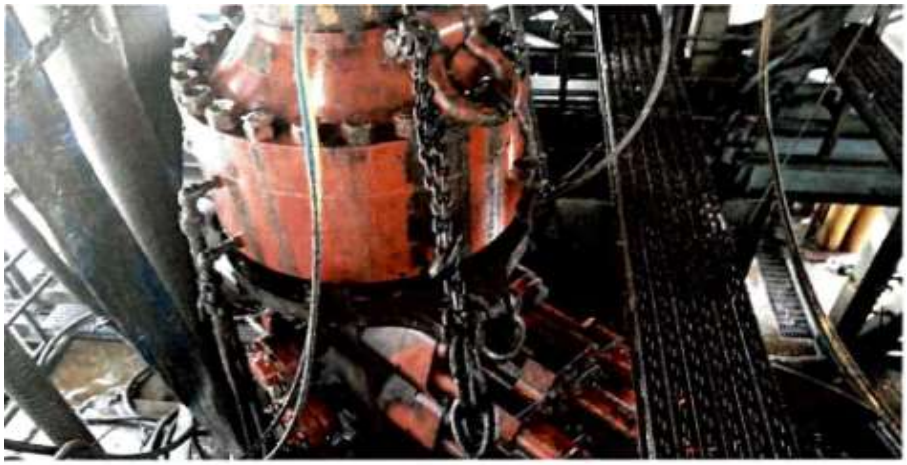


Figure 2: BOP Winch System

American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. 43 CFR 3172 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component." See Table C.4 below for reference.

Table C.4—Initial Pressure Testing, Surface BOP Stacks

Component to be Pressure Tested	Pressure Test—Low Pressure[a,c] psig (MPa)	Pressure Test—High Pressure[a,c]	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer[b]	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers[a,c]	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes*	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes*	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	

[a] Pressure test evaluation periods shall be a minimum of five minutes.
No visible leaks.
The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure.

[b] Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

[c] For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

[d] For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually.

* Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

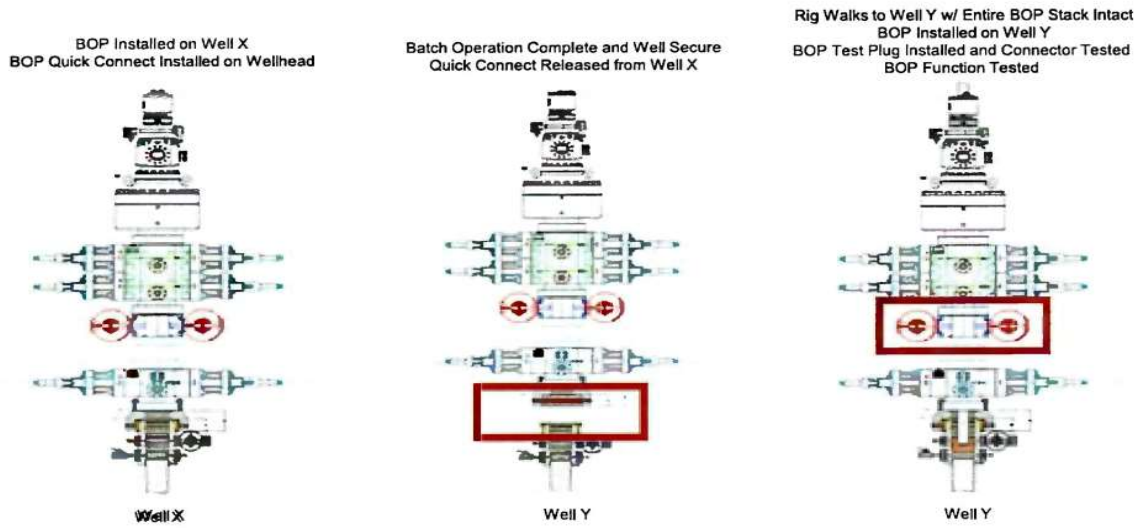
Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

Permian Resources feels break testing and our current procedures meet the intent of 43 CFR 3172 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. Permian Resources internal standards require complete BOPE tests more often than that of 43 CFR 3172 (every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, Permian Resources performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of 43 CFR 3172.

Procedures

1) Permian Resources will use this document for our break testing plan for New Mexico Delaware Basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
2) Permian Resources will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
   a)A full BOP test will be conducted on the first well on the pad.
   b)The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same formation depth or shallower.
   c) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
   d) A full BOP test will be required prior to drilling any production hole.
3) After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
   a) Between the HCV valve and choke line connection
   b)Between the BOP quick connect and the wellhead
4) The BOP is then lifted and removed from the wellhead by a hydraulic system.
5) After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
6) The connections mentioned in 3a and 3b will then be reconnected.
7) Install test plug into the wellhead using test joint or drill pipe.
8) A shell test is performed against the upper pipe rams testing the two breaks.
9) The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
10) Function tests will be performed on the following components: lower pipe rams, blind rams, and annular.
11) For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
12) A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

Note: Picture below highlights BOP components that will be tested during batch operations



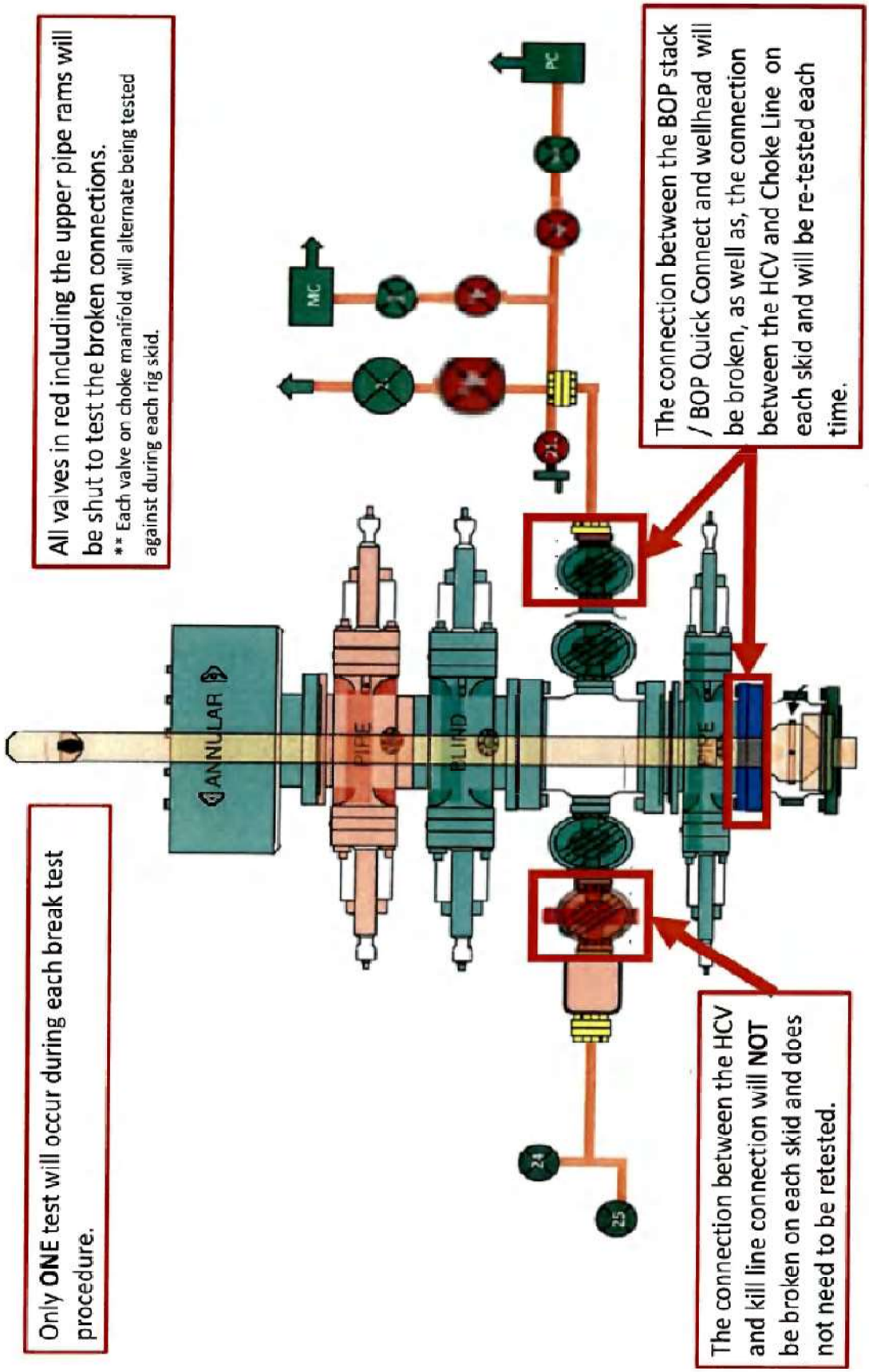
Summary

A variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operations, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control
event occurs prior to the commencement of a BOPE Break Testing operation.

Based on public data and the supporting documentation submitted herein to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

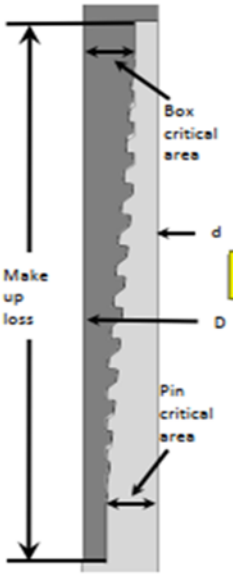
1) After a full BOP test is conducted on the first well on the pad.
2) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same depth or shallower.
3) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
4) A full BOP test will be required prior to drilling the production hole.


All valves in red including the upper pipe rams will be shut to test the broken connections.
** Each valve on choke manifold will alternate being tested against during each rig skid.
The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.
Only ONE test will occur during each break test procedure.
The connection between the HCV and kill line connection will NOT be broken on each skid and does not need to be retested.
ANNULAR
PIPE
BLIND
PIPE
MC
PC
23
24
25

Metal One Corp.	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Min95%WT Connection Data Sheet	CDS#	MO-FXL 8-5/8 32.0 P110HSCY MinYS125ksi Min95%WT
Metal One		Date	8-Sep-21

Geometry

MO-FXL



Pipe Body

	Imperial		S.I.	
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^2	5,902	mm^2
Drift Dia.	7.796	in	198.02	mm
-	-	-	-	-

Connection

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^2	3686	mm^2
Joint load efficiency	69	%	69	%
Thread Taper	1 / 10 (1.2" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

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

Performance Properties for Connection

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

Recommended Torque

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

Metal One Corp.

Metal One

GEOCONN-SC

Pipe Body: SeAH P110RY(SMYS110ksi) & 95%RBW *1

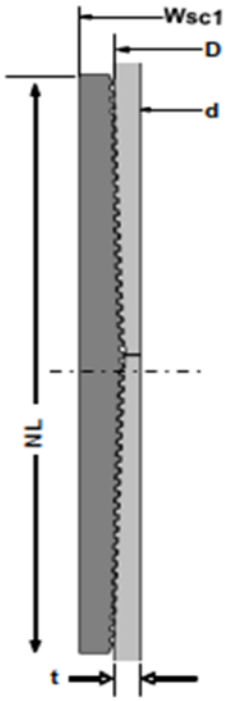
Coupling: P110CY (SMYS110ksi)

Connection Data Sheet

Page	MAI GC 5.5 20 SeAH PRY 95%RW
	SC-CplgOD 6.050 P110CY
Date	29-Sep-21
Rev.	0

Geometry

GEOCONN-SC



			Imperial		S.I.
Pipe Body					
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	
Connection					
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^2	3,760	mm^2	
Box Critical Area	6.00	in^2	3,874	mm^2	
Thread Taper	1 / 16 (3/4" per ft)				
Number of Threads	5 TPI				

Performance

			Imperial		S.I.
Performance Properties for Pipe Body					
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

Performance Properties for Connection

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

Recommended Torque

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

SeAH

5.5" 20# .361" P-110 Restricted Yield (RY)

Dimensions (Nominal)

Outside Diameter	5.500	in.
Wall	0.361	in.
Inside Diameter	4.778	in.
Drift	4.653	in.
Weight, T&C	20.000	lbs/ft
Weight, PE	19.830	lbs/ft

Performance Properties (Minimum)

Minimum Yield Strength	110000	psi
Maximum Yield Strength	125000	psi
Collapse, PE	11100	psi
Internal Yield Pressure		
PE	12630	psi
LTC	12360	psi
BTC	12360	psi
Yield Strength, Pipe Body	641	1000 lbs
Joint Strength		
LTC	548	1000 lbs
BTC	667	1000 lbs

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.

Fermata Technologies

5.500 x 20.00# P-110 RY Bushmaster® SL (95% RBW)

Pipe Body Data		
Nominal OD	5.500	Inches
Wall Thickness	0.361	Inches
Weight	20.00	lb/ft
PE Weight	19.83	lb/ft
Nominal ID	4.778	Inches
Drift	4.653	Inches
Minimum Yield Strength	110,000	PSI
Minimum Tensile Strength	125,000	PSI
RBW	95.0%	Rating

Connection Data		
Connection OD	5.900	Inches
Connection ID	4.778	Inches
Make-Up Loss	4.892	Inches
Tension Efficiency	100%	Rating
Compression Efficiency	100%	Rating
Yield Strength in Tension	641,000	LBS.
Yield Strength in Compression	641,000	LBS.
MIYP (Burst)	13,720	PSI
Collapse*	11,110	PSI
Uniaxial Bending	92	º/100 FT

Make-Up Torque		
Yield Torque	41,000	FT-LBS.
Max Operating Torque	32,800	FT-LBS.
Max Make-Up	22,000	FT-LBS.
Optimum Make-Up	20,000	FT-LBS.
Minimum Make-Up	18,000	FT-LBS.

For Technical Support please email support@fermata-tech.com or call (281) 941-5257. 9/21/2023

This document is for general information only. It is not intended to be used or relied upon as a recommendation or professional advice for any specific application and is subject to change without notice. Anyone who uses this material does so at their own right and assumes any and all liability resulting from such use.

*Collapse value based on API collapse +10-15% depending on D/t ratio and is used for example only. The actual collapse rating is 100% of pipe body and will vary depending on the mill. Verify the collapse rating of the pipe body with the manufacturer.

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:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 324457

CONDITIONS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 324457
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Must circulate cement on surface casing, Intermediate1 and intermediate2 casing strings.	3/19/2024
pkautz	IF ON ANY STRING CEMENT DOES NOT CIRCULATE, A CBL MUST BE RUN ON THAT STRING OF CASING.	3/19/2024