

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OGD

NOV 07 2019

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM138913
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator AMEREDEV OPERATING LLC (772224)		8. Lease Name and Well No. RED BUD FED COM 25 36 32 FED COM 121H (326325)
3a. Address 5707 Southwest Parkway, Building 1, Suite 275 Austin TX	3b. Phone No. (include area code) (737)300-4700	9. API Well No. 30-025-46497
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface LOT D / 230 FNL / 250 FWL / LAT 32.07894 / LONG -103.29486 At proposed prod. zone LOT D / 50 FNL / 380 FWL / LAT 32.10846 / LONG -103.29445		10. Field and Pool, or Exploratory JAL / WOLFCAMP WEST 79813
14. Distance in miles and direction from nearest town or post office* 6.5 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 5 / T26S / R36E / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 230 feet		12. County or Parish LEA
16. No of acres in lease 80		13. State NM
17. Spacing Unit dedicated to this well 640		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1015 feet		20. BLM/BIA Bond No. in file FED: NMB001478
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3008 feet		22. Approximate date work will start* 12/01/2019
		23. Estimated duration 90 days

24. Attachments

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

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

25. Signature (Electronic Submission)	Name (Printed/Typed) Christie Hanna / Ph: (737)300-4723	Date 06/20/2019
Title Senior Engineering Technician		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 11/05/2019
Title Assistant Field Manager Lands & Minerals		
Office CARLSBAD		

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

Conditions of approval, if any, are attached.

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

GP Rec 11/07/19

APPROVED WITH CONDITIONS

KZ
11/12/19

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Ameredev Operating LLC
WELL NAME & NO.:	Red Bud Fed Com 25 26 32 121H
SURFACE HOLE FOOTAGE:	230'/N & 250'/W
BOTTOM HOLE FOOTAGE:	50'/N & 380'/W
LOCATION:	Section 5, T.26 S., R.36 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input checked="" type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

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

B. CASING

Primary Casing Design:

1. The 13-3/8 inch surface casing shall be set at approximately **1246** feet (a minimum of **25 feet (Lea County)**) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:

Option 1 (Single Stage):

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

Option 2:

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

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
- ❖ In **Capitan Reef Areas** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by

0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

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

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string and at least **50 feet** on top of Capitan Reef Top. Operator shall provide method of verification.

Option 2:

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

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
 - Cement should tie-back at least **200 feet** into previous casing string and at least **50 feet** on top of Capitan Reef Top. Operator shall provide method of verification.

Alternate Casing Design:

3. The minimum required fill of cement behind the 7-5/8 inch 2nd intermediate casing is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 14% - additional cement might be required.**

In the case of lost circulation, operator has proposed to pump down 9 5/8" X 7 5/8" annulus. Operator must run a CBL from TD of the 7 5/8" casing to surface. Submit results to the BLM.

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 200' in length. Operator can set one plug from bottom of

pilot hole to kick-off point and save the WOC time for tagging the first plug. Note plug tops on subsequent drilling report.

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

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string and at least **50 feet** on top of Capitan Reef Top. Operator shall provide method of verification.

Option 2:

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

- c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- d. Second stage above DV tool:
 - Cement should tie-back at least **200 feet** into previous casing string and at least **50 feet** on top of Capitan Reef Top. Operator shall provide method of verification.

C. PRESSURE CONTROL

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

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M) psi**. Variance is approved to use a **5000 (5M) Annular which shall be tested to 5000 (5M) psi**.

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the

blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 10,000 (10M) psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 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)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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

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

Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

NMK10272019



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

Operator Certification Data Report

11/05/2019

Operator Certification

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

NAME: Christie Hanna

Signed on: 10/10/2019

Title: Senior Engineering Technician

Street Address: 5707 SOUTHWEST PKWY BLDG 1 STE 275

City: AUSTIN

State: TX

Zip: 78735

Phone: (737)300-4723

Email address: zboyd@ameredev.com

Field Representative

Representative Name: Zachary Boyd

Street Address: 5707 SOUTHWEST PARKWAY, BLDG 1, STE. 275

City: AUSTIN

State: TX

Zip: 78735

Phone: (580)940-5054

Email address: zboyd@ameredev.com



APD ID: 10400043023

Submission Date: 06/20/2019

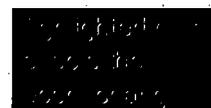
Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

Section 1 - General

APD ID: 10400043023

Tie to previous NOS? N

Submission Date: 06/20/2019

BLM Office: CARLSBAD

User: Christie Hanna

Title: Senior Engineering Technician

Federal/Indian APD: FED

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

Lease number: NMNM138913

Lease Acres: 80

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO

APD Operator: AMEREDEV OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: AMEREDEV OPERATING LLC

Operator Address: 5707 Southwest Parkway, Building 1, Suite 275

Zip: 78735

Operator PO Box:

Operator City: Austin

State: TX

Operator Phone: (737)300-4700

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: JAL

Pool Name: WOLFCAMP WEST

Is the proposed well in an area containing other mineral resources? USEABLE WATER NATURAL GAS CO2 OIL

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,CO2,OIL

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

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:
RB/HOL

Number: 1S

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 6.5 Miles

Distance to nearest well: 1015 FT

Distance to lease line: 230 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: WELLSITE_20190620165003.pdf

REDBUD_STATE_COM_25_36_32_121H__BLM_LEASE_MAP_20190620165013.pdf

REDBUD_STATE_COM_25_36_32_121H__C_102_SIG_20190620165014.pdf

REDBUD_STATE_COM_25_36_32_121H__EXH_2AB_20190620165014.pdf

REDBUD_STATE_COM_25_36_32_121H__VICINITY_MAP_20190620165015.pdf

RED_BUD_FED_COM_25_36_32_121H__GAS_CAPTURE_PLAN_20190620165027.pdf

Well work start Date: 12/01/2019

Duration: 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 18329

Reference Datum:

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce
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Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

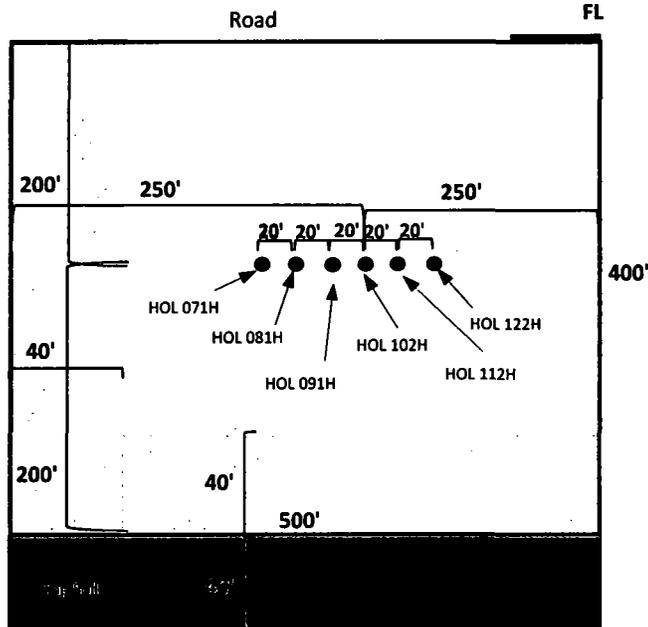
Well Number: 121H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce
SHL Leg #1	230	FNL	250	FWL	26S	36E	5	Lot D	32.07894	- 103.2948 6	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 137470	300 8	0	0	
KOP Leg #1	703	FNL	106	FWL	26S	36E	5	Aliquot NWN W	32.07765	- 103.2953 4	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 137470	- 839 2	114 25	114 00	
PPP Leg #1	0	FSL	326	FWL	25S	36E	29	Aliquot SWS W	32.09408	- 103.2944 4	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 138913	- 917 6	178 18	121 84	
PPP Leg #1	100	FSL	380	FWL	25S	36E	32	Aliquot SWS W	32.07985	- 103.2944 4	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 915 9	126 42	121 67	
EXIT Leg #1	50	FNL	380	FWL	25S	36E	29	Aliquot NWN W	32.10846	- 103.2944 5	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 917 6	230 49	121 84	
BHL Leg #1	50	FNL	380	FWL	25S	36E	29	Lot D	32.10846	- 103.2944 5	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 917 6	230 49	121 84	

Ameredev Operating, LLC
 Red Bud Fed Com 25 36 32 121H
 Section 32, Township 25S, Range 36E
 Lea County, New Mexico



Ameredev, LLC

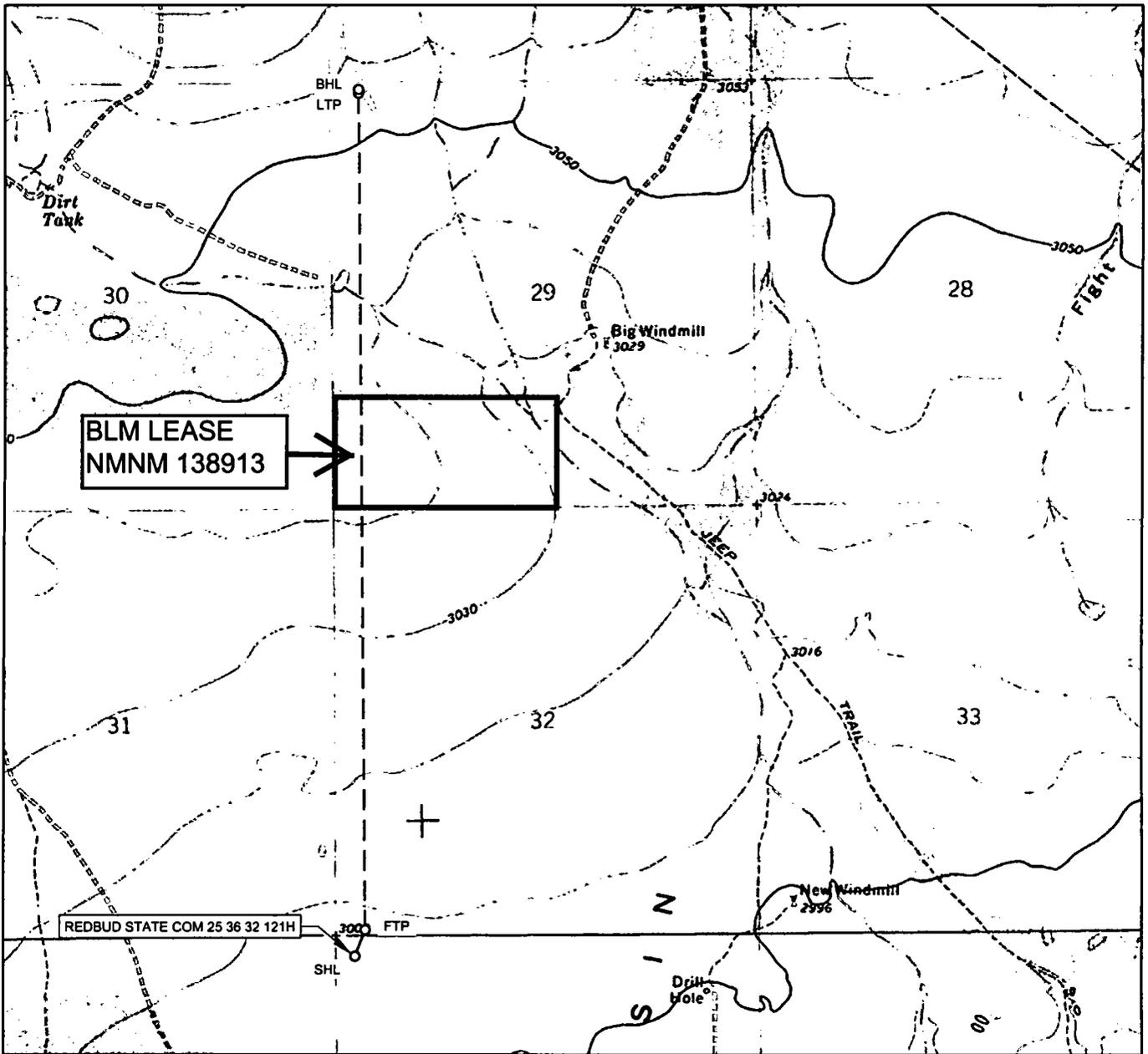


- Flowline
- Reclaimed Area
- Road
- Top Soil

Holly Fed Com 26 36 05 071H	SHL: 26S 36E 230' FNL 700' FWL
Holly Fed Com 26 36 05 081H	SHL: 26S 36E 230' FNL 720' FWL
Holly Fed Com 26 36 05 091H	SHL: 26S 36E 230' FNL 740' FWL
Holly Fed Com 26 36 05 102H	SHL: 26S 36E 230' FNL 760' FWL
Holly Fed Com 26 36 05 112H	SHL: 26S 36E 230' FNL 780' FWL
Holly Fed Com 26 36 05 122H	SHL: 26S 36E 230' FNL 800' FWL

Exhibit 3 – Well Site Diagram

LOCATION & ELEVATION VERIFICATION MAP

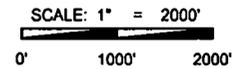


AMEREDEV OPERATING, LLC

LEASE NAME & WELL NO.: REDBUD STATE COM 25 36 32 121H

SECTION 5 TWP 26-S RGE 36-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM ELEVATION 3008'
 DESCRIPTION 230' FNL & 250' FWL

LATITUDE N 32.0789467 LONGITUDE W 103.2948670



THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AMEREDEV OPERATING LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.



1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1853 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM



APD ID: 10400043023

Submission Date: 06/20/2019

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER ANHYDRITE	3008	1121	1121	ANHYDRITE	NONE	N
2	SALADO	1429	1578	1578	SALT	NONE	N
3	TANSILL	-400	3407	3407	LIMESTONE	NONE	N
4	CAPITAN REEF	-844	3851	3851	LIMESTONE	USEABLE WATER	N
5	LAMAR	-2061	5068	5068	LIMESTONE	NONE	N
6	BELL CANYON	-2178	5185	5185	SANDSTONE	NATURAL GAS,OIL	N
7	BRUSHY CANYON	-4180	7187	7187	SANDSTONE	NATURAL GAS,OIL	N
8	BONE SPRING LIME	-5240	8247	8247	LIMESTONE	NONE	N
9	BONE SPRING 1ST	-6612	9619	9619	SANDSTONE	NATURAL GAS,OIL	N
10	BONE SPRING 2ND	-7125	10132	10132	SANDSTONE	NATURAL GAS,OIL	N
11	BONE SPRING 3RD	-7680	10687	10687	LIMESTONE	NONE	N
12	BONE SPRING 3RD	-8285	11292	11292	SANDSTONE	NATURAL GAS,OIL	N
13	WOLFCAMP	-8555	11562	11562	SHALE	NATURAL GAS,OIL	N
14	WOLFCAMP	-8876	11884	11884	SHALE	NATURAL GAS,OIL	Y

Section 2 - Blowout Prevention

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Pressure Rating (PSI): 10M

Rating Depth: 15000

Equipment: 10M BOPE SYSTEM WILL BE USED AFTER THE SURFACE CASING IS SET. A KELLY COCK WILL BE KEPT IN THE DRILL STRING AT ALL TIMES. A FULL OPENING DRILL PIPE STABBING VALVE WITH PROPER DRILL PIPE CONNECTIONS WILL BE ON THE RIG FLOOR AT ALL TIMES.

Requesting Variance? YES

Variance request: Co-Flex Choke Line, 5M Annular Preventer

Testing Procedure: See attachment

Choke Diagram Attachment:

10M_Choke_Manifold_REV_20190620165840.pdf

BOP Diagram Attachment:

5M_Annular_Preventer_Variance_and_Well_Control_Plan_20190620165852.pdf

5M_BOP_System_20190620165852.pdf

Pressure_Control_Plan_Single_Well_MB4_3String_Big_Hole_BLM_20190620165853.pdf

4_String_MB_Ameredev_Wellhead_Drawing_net_REV_20190620165904.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1246	0	1246	3008		1246	J-55	68	OTHER - BTC	7.37	0.61	DRY	10.8	DRY	12.62
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11562	0	11562			11562	HCL-80	29.7	OTHER - BTC	1.19	1.2	DRY	1.9	DRY	2.74
3	PRODUCTION	6.75	5.5	NEW	API	N	0	23049	0	12184			23049	P-110	20	OTHER - USS RYS SF	1.72	1.82	DRY	2.69	DRY	2.99

Casing Attachments

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

13.375_68.00__J55_BTC_20190620165938.pdf

Redbud_Fed_Com_25_36_32_121H__Wellbore_Diagram_and_CDA_20190620170021.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

7.625_29.70_P110HC_LIBERTY_FJM_20190620165945.pdf

Redbud_Fed_Com_25_36_32_121H__Wellbore_Diagram_and_CDA_20190620170013.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

5.50_20_USS_P110_HC_BTC_API_20190620165952.pdf

Redbud_Fed_Com_25_36_32_121H__Wellbore_Diagram_and_CDA_20190620170007.pdf

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead					1.76					
SURFACE	Tail										
INTERMEDIATE	Lead					2.47					
INTERMEDIATE	Tail										
INTERMEDIATE	Lead					2.47					
INTERMEDIATE	Tail										
PRODUCTION	Lead					1.34					

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: All necessary supplies (e.g. bentonite, cedar bark) for fluid control will be on site.

Describe the mud monitoring system utilized: An electronic pit volume totalizer (PVT) will be utilized on the circulating system to monitor pit volume, flow rate, pump pressure, and pump rate.

Circulating Medium Table

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1246	WATER-BASED MUD	8.4	8.6							
1246	1156 2	OTHER : Diesel Brine Emulsion	8.5	9.4							
1156 2	1218 4	OIL-BASED MUD	10.5	12.5							

Section 6 - Test, Logging, Coring

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

A directional survey, measurement while drilling and a mudlog/geologic lithology log will all be run from surface to TD.

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

DS,MWD,MUDLOG

Coring operation description for the well:

No coring will be done on this well.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6652

Anticipated Surface Pressure: 3971.52

Anticipated Bottom Hole Temperature(F): 165

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Plan_20190620170534.pdf

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

RB121_DR_20190620170548.pdf

RB121_LLRR_20190620170548.pdf

5M_Annular_Preventer_Variance_and_Well_Control_Plan_20190620170601.pdf

Pressure_Control_Plan_Single_Well_MB4_3String_Big_Hole_BLM_20190620170601.pdf

Other proposed operations facets description:

4-STRING CONTINGENCY PLAN ATTACHED

Other proposed operations facets attachment:

CAPITAN_PROTECTION_CONTINGENCY_PLAN_WC_PACKET_20190606_20190620170616.pdf

Other Variance attachment:

R616__CoC_for_hoses_12_18_17_20190620170631.pdf

Requested_Exceptions__3_String_Revised_01312019_20190620170632.pdf

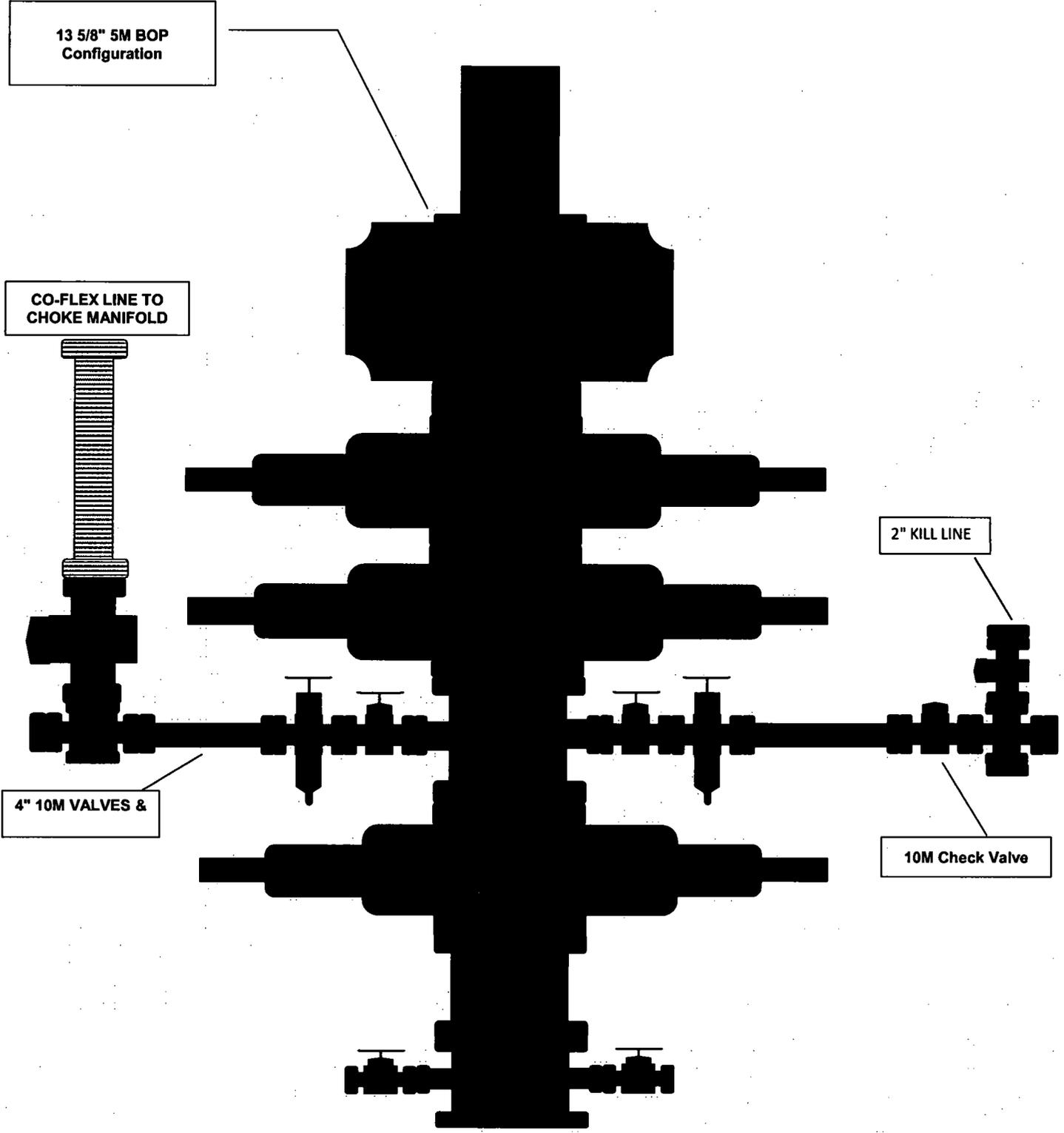
13 5/8" 5M BOP
Configuration

CO-FLEX LINE TO
CHOKE MANIFOLD

2" KILL LINE

4" 10M VALVES &

10M Check Valve



Wellbore Schematic

Well: Redbud Fed Com 25-36-32 121H
SHL: Sec. 05 26S-36E 230' FNL & 250' FWL
BHL: Sec. 29 25S-36E 50' FNL & 380' FWL
 Lea, NM
Wellhead: A - 13-5/8" 10M x 13-5/8" SOW
 B - 13-5/8" 10M x 13-5/8" 10M
 C - 13-5/8" 10M x 13-5/8" 10M
 Tubing Spool - 5-1/8" 15M x 13-3/8" 10M
Xmas Tree: 2-9/16" 10M
Tubing: 2-7/8" L-80 6.5# 8rd EUE

Co. Well ID: xxxxxx
AFE No.: xxxx-xxx
API No.: xxxxxxxxxxxx
GL: 3,008'
Field: Delaware
Objective: Wolfcamp B
TVD: 12,184'
MD: 23,049'
Rig: TBD **KB:** 27'
E-Mail: Wellsite2@amereDEV.com

Hole Size	Formation Tops	Logs Cement	Mud Weight
17.5"	Rustler 1,121'	785 Sacks TOC 0' 50% Excess	8.4-8.6 ppg WBM
	13.375" 68# J-55 BTC 1,246'		
9.875"	Salado 1,578'	462 Sacks TOC 0' 25% Excess	8.5 - 9.4 ppg Diesel Brine Emulsion
	DV Tool 3,407'		
	Tansill 3,407'		
	Capitan Reef 3,851'		
	Lamar 5,068'		
	Bell Canyon 5,185'		
	Brushy Canyon 7,187'		
	Bone Spring Lime 8,247'		
	First Bone Spring 9,619'		
	Second Bone Spring 10,132'		
	Third Bone Spring Upper 10,687'		
Third Bone Spring 11,292'	1,396 Sacks TOC 0' 25% Excess		
7.625" 29.7# L-80HC BTC 11,562'			
Wolfcamp A 11,562'	1,794 Sacks TOC 0' 25% Excess	10.5 - 12.5 ppg OBM	
Wolfcamp B 11,884'			
6.75"	5.5" 20# P-110 USS RYS SF 23,049'		
12° Build @ 11,425' MD thru 12,788' MD	Target Wolfcamp B 12184 TVD // 23049 MD		

H₂S Drilling Operation Plan

1. **All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:**
 - a. Characteristics of H₂S
 - b. Physical effects and hazards
 - c. Principal and operation of H₂S detectors, warning system and briefing areas
 - d. Evacuation procedure, routes and first aid
 - e. Proper use of safety equipment and life support systems
 - f. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

2. **Briefing Area:**
 - a. Two perpendicular areas will be designated by signs and readily accessible.
 - b. Upon location entry there will be a designated area to establish all safety compliance criteria (1.) has been met.

3. **H₂S Detection and Alarm Systems:**
 - a. H₂S sensors/detectors shall be located on the drilling rig floor, in the base of the sub structure/cellar area, and on the mud pits in the shale shaker area. Additional H₂S detectors may be placed as deemed necessary. All detectors will be set to initiate visual alarm at 10 ppm and visual with audible at 14 ppm and all equipment will be calibrated every 30 days or as needed.
 - b. An audio alarm will be installed on the derrick floor and in the top doghouse.

4. **Protective Equipment for Essential Personnel:**
 - a. **Breathing Apparatus:**
 - i. Rescue Packs (SCBA) - 1 Unit shall be placed at each briefing area.
 - ii. Two (SCBA) Units will be stored in safety trailer on location.
 - iii. Work/Escapes packs - 1 Unit will be available on rig floor in doghouse for emergency evacuation for driller.
 - b. **Auxiliary Rescue Equipment:**
 - i. Stretcher
 - ii. 2 - OSHA full body harnesses
 - iii. 100 ft. 5/8" OSHA approved rope
 - iv. 1 - 20# class ABC fire extinguisher

5. **Windsock and/or Wind Streamers:**
 - a. Windsock at mud pit area should be high enough to be visible.
 - b. Windsock on the rig floor should be high enough to be visible.

6. **Communication:**
 - a. While working under mask scripting boards will be used for communication where applicable.
 - b. Hand signals will be used when script boards are not applicable.

H₂S Drilling Operation Plan

- c. Two way radios will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at Drilling Foreman's Office.

7. **Drill Stem Testing:** - No Planned DST at this time.

8. **Mud program:**
 - a. If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

9. **Metallurgy:**
 - a. All drill strings, casing, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
 - b. Drilling Contractor supervisor will be required to be familiar with the effect H₂S has on tubular goods and other mechanical equipment provided through contractor.



H₂S Contingency Plan

Emergency Procedures

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

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

Ignition of Gas Source

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

Characteristics of H₂S and SO₂

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

Contacting Authorities

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



American Resource Development LLC

H₂S Contingency Plan

Ameredev Operating LLC – Emergency Phone 737-300-4799			
Key Personnel:			
Name	Title	Office	Mobile
Floyd Hammond	Chief Operating officer	737-300-4724	512-783-6810
Zachary Boyd	Operations Superintendent	737-300-4725	432-385-6996
Blake Estrada	Construction Foreman		432-385-5831

<u>Artesia</u>			
Ambulance			911
State Police			575-746-2703
City Police			575-746-2703
Sheriff's Office			575-746-9888
Fire Department			575-746-2701
Local Emergency Planning Committee			575-746-2122
New Mexico Oil Conservation Division			575-748-1283
<u>Carlsbad</u>			
Ambulance			911
State Police			575-885-3137
City Police			575-885-2111
Sheriff's Office			575-887-7551
Fire Department			575-887-3798
Local Emergency Planning Committee			575-887-6544
US Bureau of Land Management			575-887-6544
<u>Santa Fe</u>			
New Mexico Emergency Response Commission (Santa Fe)			505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs			505-827-9126
New Mexico State Emergency Operations Center			505-476-9635
<u>National</u>			
National Emergency Response Center (Washington, D.C.)			800-424-8802
<u>Medical</u>			
Flight for Life - 4000 24th St.; Lubbock, TX			806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX			806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM			505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM			505-842-4949

AMEREDEV

Ameredev Operating, LLC.

RB/HOL

RB/HOL #1S

Redbud 121H

Wellbore #1

Plan: Design #1

Standard Planning Report

22 February, 2019

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	RB/HOL		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	RB/HOL #1S				
Site Position:		Northing:	394,006.29 usft	Latitude:	32° 4' 44.208 N
From:	Lat/Long	Easting:	863,001.28 usft	Longitude:	103° 17' 41.289 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Redbud 121H					
Well Position	+N/-S	-0.2 usft	Northing:	394,006.14 usft	Latitude:	32° 4' 44.208 N
	+E/-W	-20.0 usft	Easting:	862,981.27 usft	Longitude:	103° 17' 41.521 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	3,008.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/13/2018	6.65	59.95	47,730.47984981

Design	Design #1				
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	0.13	

Plan Survey Tool Program	Date	12/13/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	23,049.3	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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		
2,300.0	6.00	197.00	2,299.5	-15.0	-4.6	2.00	2.00	0.00	197.00		
6,724.8	6.00	197.00	6,700.0	-457.3	-139.8	0.00	0.00	0.00	0.00		
7,024.8	0.00	0.00	6,999.5	-472.3	-144.4	2.00	-2.00	0.00	180.00		
11,425.3	0.00	0.00	11,400.0	-472.3	-144.4	0.00	0.00	0.00	0.00		
11,968.5	59.75	19.14	11,849.9	-228.1	-59.7	11.00	11.00	0.00	19.14		
12,464.4	59.75	19.14	12,099.8	176.6	80.8	0.00	0.00	0.00	0.00		
12,788.0	90.00	359.43	12,184.0	480.2	126.5	11.00	9.35	-6.09	-35.42	RB121 FTP2	
23,049.3	90.00	359.43	12,184.0	10,741.0	24.3	0.00	0.00	0.00	0.00	RB121 BHL	

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	2.00	197.00	2,100.0	-1.7	-0.5	-1.7	2.00	2.00	0.00
2,200.0	4.00	197.00	2,199.8	-6.7	-2.0	-6.7	2.00	2.00	0.00
2,300.0	6.00	197.00	2,299.5	-15.0	-4.6	-15.0	2.00	2.00	0.00
2,400.0	6.00	197.00	2,398.9	-25.0	-7.6	-25.0	0.00	0.00	0.00
2,500.0	6.00	197.00	2,498.4	-35.0	-10.7	-35.0	0.00	0.00	0.00
2,600.0	6.00	197.00	2,597.8	-45.0	-13.8	-45.0	0.00	0.00	0.00
2,700.0	6.00	197.00	2,697.3	-55.0	-16.8	-55.0	0.00	0.00	0.00
2,800.0	6.00	197.00	2,796.7	-65.0	-19.9	-65.0	0.00	0.00	0.00
2,900.0	6.00	197.00	2,896.2	-75.0	-22.9	-75.0	0.00	0.00	0.00
3,000.0	6.00	197.00	2,995.6	-85.0	-26.0	-85.0	0.00	0.00	0.00
3,100.0	6.00	197.00	3,095.1	-95.0	-29.0	-95.0	0.00	0.00	0.00
3,200.0	6.00	197.00	3,194.5	-105.0	-32.1	-105.0	0.00	0.00	0.00
3,300.0	6.00	197.00	3,294.0	-115.0	-35.1	-115.0	0.00	0.00	0.00
3,400.0	6.00	197.00	3,393.4	-125.0	-38.2	-125.1	0.00	0.00	0.00
3,500.0	6.00	197.00	3,492.9	-135.0	-41.3	-135.1	0.00	0.00	0.00
3,600.0	6.00	197.00	3,592.3	-145.0	-44.3	-145.1	0.00	0.00	0.00
3,700.0	6.00	197.00	3,691.8	-155.0	-47.4	-155.1	0.00	0.00	0.00
3,800.0	6.00	197.00	3,791.2	-164.9	-50.4	-165.1	0.00	0.00	0.00
3,900.0	6.00	197.00	3,890.7	-174.9	-53.5	-175.1	0.00	0.00	0.00
4,000.0	6.00	197.00	3,990.1	-184.9	-56.5	-185.1	0.00	0.00	0.00
4,100.0	6.00	197.00	4,089.6	-194.9	-59.6	-195.1	0.00	0.00	0.00
4,200.0	6.00	197.00	4,189.0	-204.9	-62.7	-205.1	0.00	0.00	0.00
4,300.0	6.00	197.00	4,288.5	-214.9	-65.7	-215.1	0.00	0.00	0.00
4,400.0	6.00	197.00	4,387.9	-224.9	-68.8	-225.1	0.00	0.00	0.00
4,500.0	6.00	197.00	4,487.4	-234.9	-71.8	-235.1	0.00	0.00	0.00
4,600.0	6.00	197.00	4,586.9	-244.9	-74.9	-245.1	0.00	0.00	0.00
4,700.0	6.00	197.00	4,686.3	-254.9	-77.9	-255.1	0.00	0.00	0.00
4,800.0	6.00	197.00	4,785.8	-264.9	-81.0	-265.1	0.00	0.00	0.00
4,900.0	6.00	197.00	4,885.2	-274.9	-84.0	-275.1	0.00	0.00	0.00
5,000.0	6.00	197.00	4,984.7	-284.9	-87.1	-285.1	0.00	0.00	0.00
5,100.0	6.00	197.00	5,084.1	-294.9	-90.2	-295.1	0.00	0.00	0.00
5,200.0	6.00	197.00	5,183.6	-304.9	-93.2	-305.1	0.00	0.00	0.00
5,300.0	6.00	197.00	5,283.0	-314.9	-96.3	-315.1	0.00	0.00	0.00

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	6.00	197.00	5,382.5	-324.9	-99.3	-325.1	0.00	0.00	0.00
5,500.0	6.00	197.00	5,481.9	-334.9	-102.4	-335.1	0.00	0.00	0.00
5,600.0	6.00	197.00	5,581.4	-344.9	-105.4	-345.1	0.00	0.00	0.00
5,700.0	6.00	197.00	5,680.8	-354.9	-108.5	-355.1	0.00	0.00	0.00
5,800.0	6.00	197.00	5,780.3	-364.9	-111.6	-365.1	0.00	0.00	0.00
5,900.0	6.00	197.00	5,879.7	-374.9	-114.6	-375.1	0.00	0.00	0.00
6,000.0	6.00	197.00	5,979.2	-384.9	-117.7	-385.1	0.00	0.00	0.00
6,100.0	6.00	197.00	6,078.6	-394.9	-120.7	-395.1	0.00	0.00	0.00
6,200.0	6.00	197.00	6,178.1	-404.9	-123.8	-405.1	0.00	0.00	0.00
6,300.0	6.00	197.00	6,277.5	-414.9	-126.8	-415.1	0.00	0.00	0.00
6,400.0	6.00	197.00	6,377.0	-424.8	-129.9	-425.1	0.00	0.00	0.00
6,500.0	6.00	197.00	6,476.4	-434.8	-132.9	-435.1	0.00	0.00	0.00
6,600.0	6.00	197.00	6,575.9	-444.8	-136.0	-445.1	0.00	0.00	0.00
6,700.0	6.00	197.00	6,675.3	-454.8	-139.1	-455.2	0.00	0.00	0.00
6,724.8	6.00	197.00	6,700.0	-457.3	-139.8	-457.6	0.00	0.00	0.00
6,800.0	4.50	197.00	6,774.9	-463.9	-141.8	-464.2	2.00	-2.00	0.00
6,900.0	2.50	197.00	6,874.7	-469.7	-143.6	-470.0	2.00	-2.00	0.00
7,000.0	0.50	197.00	6,974.7	-472.2	-144.4	-472.5	2.00	-2.00	0.00
7,024.8	0.00	0.00	6,999.5	-472.3	-144.4	-472.6	2.00	-2.00	0.00
7,100.0	0.00	0.00	7,074.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,174.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,300.0	0.00	0.00	7,274.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,374.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,500.0	0.00	0.00	7,474.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,574.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,700.0	0.00	0.00	7,674.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,774.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
7,900.0	0.00	0.00	7,874.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,000.0	0.00	0.00	7,974.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,100.0	0.00	0.00	8,074.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,200.0	0.00	0.00	8,174.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,300.0	0.00	0.00	8,274.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,400.0	0.00	0.00	8,374.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,500.0	0.00	0.00	8,474.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,600.0	0.00	0.00	8,574.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,700.0	0.00	0.00	8,674.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,800.0	0.00	0.00	8,774.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
8,900.0	0.00	0.00	8,874.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,000.0	0.00	0.00	8,974.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,100.0	0.00	0.00	9,074.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,200.0	0.00	0.00	9,174.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,300.0	0.00	0.00	9,274.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,400.0	0.00	0.00	9,374.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,500.0	0.00	0.00	9,474.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,600.0	0.00	0.00	9,574.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,700.0	0.00	0.00	9,674.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,800.0	0.00	0.00	9,774.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
9,900.0	0.00	0.00	9,874.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,000.0	0.00	0.00	9,974.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,100.0	0.00	0.00	10,074.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,200.0	0.00	0.00	10,174.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,300.0	0.00	0.00	10,274.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,400.0	0.00	0.00	10,374.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,500.0	0.00	0.00	10,474.7	-472.3	-144.4	-472.6	0.00	0.00	0.00

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,600.0	0.00	0.00	10,574.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,700.0	0.00	0.00	10,674.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,800.0	0.00	0.00	10,774.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
10,900.0	0.00	0.00	10,874.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
11,000.0	0.00	0.00	10,974.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
11,100.0	0.00	0.00	11,074.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
11,200.0	0.00	0.00	11,174.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
11,300.0	0.00	0.00	11,274.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
11,400.0	0.00	0.00	11,374.7	-472.3	-144.4	-472.6	0.00	0.00	0.00
11,425.3	0.00	0.00	11,400.0	-472.3	-144.4	-472.6	0.00	0.00	0.00
RB121 KOP									
11,500.0	8.21	19.14	11,474.4	-467.3	-142.7	-467.6	11.00	11.00	0.00
11,600.0	19.21	19.14	11,571.4	-444.9	-134.9	-445.2	11.00	11.00	0.00
11,700.0	30.21	19.14	11,662.1	-405.5	-121.2	-405.8	11.00	11.00	0.00
11,800.0	41.21	19.14	11,743.2	-350.4	-102.1	-350.6	11.00	11.00	0.00
11,900.0	52.21	19.14	11,811.6	-281.8	-78.3	-281.9	11.00	11.00	0.00
11,968.5	59.75	19.14	11,849.9	-228.1	-59.7	-228.3	11.00	11.00	0.00
12,000.0	59.75	19.14	11,865.8	-202.4	-50.7	-202.6	0.00	0.00	0.00
12,100.0	59.75	19.14	11,916.2	-120.8	-22.4	-120.9	0.00	0.00	0.00
12,200.0	59.75	19.14	11,966.6	-39.2	5.9	-39.2	0.00	0.00	0.00
12,300.0	59.75	19.14	12,016.9	42.4	34.2	42.5	0.00	0.00	0.00
12,400.0	59.75	19.14	12,067.3	124.0	62.5	124.1	0.00	0.00	0.00
12,464.4	59.75	19.14	12,099.8	176.6	80.8	176.7	0.00	0.00	0.00
12,500.0	62.96	16.59	12,116.8	206.3	90.4	206.5	11.00	9.03	-7.15
12,600.0	72.20	10.13	12,155.0	296.1	111.5	296.3	11.00	9.24	-6.47
12,642.4	76.19	7.60	12,166.5	336.4	117.8	336.7	11.00	9.39	-5.95
RB121 FTP									
12,700.0	81.63	4.31	12,177.6	392.6	123.6	392.9	11.00	9.46	-5.72
12,788.0	90.00	359.43	12,184.0	480.2	126.5	480.4	11.00	9.51	-5.55
RB121 FTP2									
12,800.0	90.00	359.43	12,184.0	492.2	126.4	492.5	0.00	0.00	0.00
12,900.0	90.00	359.43	12,184.0	592.2	125.4	592.5	0.00	0.00	0.00
13,000.0	90.00	359.43	12,184.0	692.2	124.4	692.5	0.00	0.00	0.00
13,100.0	90.00	359.43	12,184.0	792.2	123.4	792.5	0.00	0.00	0.00
13,200.0	90.00	359.43	12,184.0	892.2	122.4	892.5	0.00	0.00	0.00
13,300.0	90.00	359.43	12,184.0	992.2	121.4	992.4	0.00	0.00	0.00
13,400.0	90.00	359.43	12,184.0	1,092.2	120.4	1,092.4	0.00	0.00	0.00
13,500.0	90.00	359.43	12,184.0	1,192.2	119.4	1,192.4	0.00	0.00	0.00
13,600.0	90.00	359.43	12,184.0	1,292.2	118.4	1,292.4	0.00	0.00	0.00
13,700.0	90.00	359.43	12,184.0	1,392.2	117.4	1,392.4	0.00	0.00	0.00
13,800.0	90.00	359.43	12,184.0	1,492.1	116.4	1,492.4	0.00	0.00	0.00
13,900.0	90.00	359.43	12,184.0	1,592.1	115.4	1,592.4	0.00	0.00	0.00
14,000.0	90.00	359.43	12,184.0	1,692.1	114.4	1,692.4	0.00	0.00	0.00
14,100.0	90.00	359.43	12,184.0	1,792.1	113.4	1,792.4	0.00	0.00	0.00
14,200.0	90.00	359.43	12,184.0	1,892.1	112.4	1,892.4	0.00	0.00	0.00
14,300.0	90.00	359.43	12,184.0	1,992.1	111.4	1,992.4	0.00	0.00	0.00
14,400.0	90.00	359.43	12,184.0	2,092.1	110.4	2,092.4	0.00	0.00	0.00
14,500.0	90.00	359.43	12,184.0	2,192.1	109.4	2,192.4	0.00	0.00	0.00
14,600.0	90.00	359.43	12,184.0	2,292.1	108.4	2,292.3	0.00	0.00	0.00
14,700.0	90.00	359.43	12,184.0	2,392.1	107.4	2,392.3	0.00	0.00	0.00
14,800.0	90.00	359.43	12,184.0	2,492.1	106.5	2,492.3	0.00	0.00	0.00
14,900.0	90.00	359.43	12,184.0	2,592.1	105.5	2,592.3	0.00	0.00	0.00
15,000.0	90.00	359.43	12,184.0	2,692.1	104.5	2,692.3	0.00	0.00	0.00

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,100.0	90.00	359.43	12,184.0	2,792.1	103.5	2,792.3	0.00	0.00	0.00
15,200.0	90.00	359.43	12,184.0	2,892.1	102.5	2,892.3	0.00	0.00	0.00
15,300.0	90.00	359.43	12,184.0	2,992.1	101.5	2,992.3	0.00	0.00	0.00
15,400.0	90.00	359.43	12,184.0	3,092.1	100.5	3,092.3	0.00	0.00	0.00
15,500.0	90.00	359.43	12,184.0	3,192.1	99.5	3,192.3	0.00	0.00	0.00
15,600.0	90.00	359.43	12,184.0	3,292.1	98.5	3,292.3	0.00	0.00	0.00
15,700.0	90.00	359.43	12,184.0	3,392.1	97.5	3,392.3	0.00	0.00	0.00
15,800.0	90.00	359.43	12,184.0	3,492.0	96.5	3,492.3	0.00	0.00	0.00
15,900.0	90.00	359.43	12,184.0	3,592.0	95.5	3,592.2	0.00	0.00	0.00
16,000.0	90.00	359.43	12,184.0	3,692.0	94.5	3,692.2	0.00	0.00	0.00
16,100.0	90.00	359.43	12,184.0	3,792.0	93.5	3,792.2	0.00	0.00	0.00
16,200.0	90.00	359.43	12,184.0	3,892.0	92.5	3,892.2	0.00	0.00	0.00
16,300.0	90.00	359.43	12,184.0	3,992.0	91.5	3,992.2	0.00	0.00	0.00
16,400.0	90.00	359.43	12,184.0	4,092.0	90.5	4,092.2	0.00	0.00	0.00
16,500.0	90.00	359.43	12,184.0	4,192.0	89.5	4,192.2	0.00	0.00	0.00
16,600.0	90.00	359.43	12,184.0	4,292.0	88.5	4,292.2	0.00	0.00	0.00
16,700.0	90.00	359.43	12,184.0	4,392.0	87.5	4,392.2	0.00	0.00	0.00
16,800.0	90.00	359.43	12,184.0	4,492.0	86.5	4,492.2	0.00	0.00	0.00
16,900.0	90.00	359.43	12,184.0	4,592.0	85.5	4,592.2	0.00	0.00	0.00
17,000.0	90.00	359.43	12,184.0	4,692.0	84.5	4,692.2	0.00	0.00	0.00
17,100.0	90.00	359.43	12,184.0	4,792.0	83.6	4,792.2	0.00	0.00	0.00
17,200.0	90.00	359.43	12,184.0	4,892.0	82.6	4,892.2	0.00	0.00	0.00
17,300.0	90.00	359.43	12,184.0	4,992.0	81.6	4,992.1	0.00	0.00	0.00
17,400.0	90.00	359.43	12,184.0	5,092.0	80.6	5,092.1	0.00	0.00	0.00
17,500.0	90.00	359.43	12,184.0	5,192.0	79.6	5,192.1	0.00	0.00	0.00
17,600.0	90.00	359.43	12,184.0	5,292.0	78.6	5,292.1	0.00	0.00	0.00
17,700.0	90.00	359.43	12,184.0	5,392.0	77.6	5,392.1	0.00	0.00	0.00
17,800.0	90.00	359.43	12,184.0	5,491.9	76.6	5,492.1	0.00	0.00	0.00
17,818.0	90.00	359.43	12,184.0	5,509.9	76.4	5,510.1	0.00	0.00	0.00
RB121 Into NMNM138913									
17,900.0	90.00	359.43	12,184.0	5,591.9	75.6	5,592.1	0.00	0.00	0.00
18,000.0	90.00	359.43	12,184.0	5,691.9	74.6	5,692.1	0.00	0.00	0.00
18,100.0	90.00	359.43	12,184.0	5,791.9	73.6	5,792.1	0.00	0.00	0.00
18,200.0	90.00	359.43	12,184.0	5,891.9	72.6	5,892.1	0.00	0.00	0.00
18,300.0	90.00	359.43	12,184.0	5,991.9	71.6	5,992.1	0.00	0.00	0.00
18,400.0	90.00	359.43	12,184.0	6,091.9	70.6	6,092.1	0.00	0.00	0.00
18,500.0	90.00	359.43	12,184.0	6,191.9	69.6	6,192.1	0.00	0.00	0.00
18,600.0	90.00	359.43	12,184.0	6,291.9	68.6	6,292.0	0.00	0.00	0.00
18,700.0	90.00	359.43	12,184.0	6,391.9	67.6	6,392.0	0.00	0.00	0.00
18,800.0	90.00	359.43	12,184.0	6,491.9	66.6	6,492.0	0.00	0.00	0.00
18,900.0	90.00	359.43	12,184.0	6,591.9	65.6	6,592.0	0.00	0.00	0.00
19,000.0	90.00	359.43	12,184.0	6,691.9	64.6	6,692.0	0.00	0.00	0.00
19,100.0	90.00	359.43	12,184.0	6,791.9	63.6	6,792.0	0.00	0.00	0.00
19,200.0	90.00	359.43	12,184.0	6,891.9	62.6	6,892.0	0.00	0.00	0.00
19,300.0	90.00	359.43	12,184.0	6,991.9	61.7	6,992.0	0.00	0.00	0.00
19,400.0	90.00	359.43	12,184.0	7,091.9	60.7	7,092.0	0.00	0.00	0.00
19,500.0	90.00	359.43	12,184.0	7,191.9	59.7	7,192.0	0.00	0.00	0.00
19,600.0	90.00	359.43	12,184.0	7,291.9	58.7	7,292.0	0.00	0.00	0.00
19,700.0	90.00	359.43	12,184.0	7,391.9	57.7	7,392.0	0.00	0.00	0.00
19,800.0	90.00	359.43	12,184.0	7,491.8	56.7	7,492.0	0.00	0.00	0.00
19,900.0	90.00	359.43	12,184.0	7,591.8	55.7	7,592.0	0.00	0.00	0.00
20,000.0	90.00	359.43	12,184.0	7,691.8	54.7	7,691.9	0.00	0.00	0.00
20,100.0	90.00	359.43	12,184.0	7,791.8	53.7	7,791.9	0.00	0.00	0.00

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
20,200.0	90.00	359.43	12,184.0	7,891.8	52.7	7,891.9	0.00	0.00	0.00	
20,300.0	90.00	359.43	12,184.0	7,991.8	51.7	7,991.9	0.00	0.00	0.00	
20,400.0	90.00	359.43	12,184.0	8,091.8	50.7	8,091.9	0.00	0.00	0.00	
20,500.0	90.00	359.43	12,184.0	8,191.8	49.7	8,191.9	0.00	0.00	0.00	
20,600.0	90.00	359.43	12,184.0	8,291.8	48.7	8,291.9	0.00	0.00	0.00	
20,700.0	90.00	359.43	12,184.0	8,391.8	47.7	8,391.9	0.00	0.00	0.00	
20,800.0	90.00	359.43	12,184.0	8,491.8	46.7	8,491.9	0.00	0.00	0.00	
20,900.0	90.00	359.43	12,184.0	8,591.8	45.7	8,591.9	0.00	0.00	0.00	
21,000.0	90.00	359.43	12,184.0	8,691.8	44.7	8,691.9	0.00	0.00	0.00	
21,100.0	90.00	359.43	12,184.0	8,791.8	43.7	8,791.9	0.00	0.00	0.00	
21,200.0	90.00	359.43	12,184.0	8,891.8	42.7	8,891.9	0.00	0.00	0.00	
21,300.0	90.00	359.43	12,184.0	8,991.8	41.7	8,991.8	0.00	0.00	0.00	
21,400.0	90.00	359.43	12,184.0	9,091.8	40.7	9,091.8	0.00	0.00	0.00	
21,500.0	90.00	359.43	12,184.0	9,191.8	39.8	9,191.8	0.00	0.00	0.00	
21,600.0	90.00	359.43	12,184.0	9,291.8	38.8	9,291.8	0.00	0.00	0.00	
21,700.0	90.00	359.43	12,184.0	9,391.8	37.8	9,391.8	0.00	0.00	0.00	
21,800.0	90.00	359.43	12,184.0	9,491.8	36.8	9,491.8	0.00	0.00	0.00	
21,900.0	90.00	359.43	12,184.0	9,591.7	35.8	9,591.8	0.00	0.00	0.00	
22,000.0	90.00	359.43	12,184.0	9,691.7	34.8	9,691.8	0.00	0.00	0.00	
22,100.0	90.00	359.43	12,184.0	9,791.7	33.8	9,791.8	0.00	0.00	0.00	
22,200.0	90.00	359.43	12,184.0	9,891.7	32.8	9,891.8	0.00	0.00	0.00	
22,300.0	90.00	359.43	12,184.0	9,991.7	31.8	9,991.8	0.00	0.00	0.00	
22,400.0	90.00	359.43	12,184.0	10,091.7	30.8	10,091.8	0.00	0.00	0.00	
22,500.0	90.00	359.43	12,184.0	10,191.7	29.8	10,191.8	0.00	0.00	0.00	
22,600.0	90.00	359.43	12,184.0	10,291.7	28.8	10,291.7	0.00	0.00	0.00	
22,700.0	90.00	359.43	12,184.0	10,391.7	27.8	10,391.7	0.00	0.00	0.00	
22,800.0	90.00	359.43	12,184.0	10,491.7	26.8	10,491.7	0.00	0.00	0.00	
22,900.0	90.00	359.43	12,184.0	10,591.7	25.8	10,591.7	0.00	0.00	0.00	
22,999.2	90.00	359.43	12,184.0	10,690.9	24.8	10,691.0	0.00	0.00	0.00	
RB121 LTP										
23,000.0	90.00	359.43	12,184.0	10,691.7	24.8	10,691.7	0.00	0.00	0.00	
23,049.3	90.00	359.43	12,184.0	10,741.0	24.3	10,741.0	0.00	0.00	0.00	
RB121 BHL										

Database:	EDM5000	Local Co-ordinate Reference:	Well Redbud 121H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3035.0usft
Project:	RB/HOL	MD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	North Reference:	Grid
Well:	Redbud 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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
RB121 KOP - plan hits target center - Point	0.00	0.00	11,400.0	-472.3	-144.4	393,533.81	862,836.87	32° 4' 39.548 N	103° 17' 43.252 W
RB121 FTP2 - plan hits target center - Point	0.00	0.00	12,184.0	480.2	126.5	394,486.29	863,107.75	32° 4' 48.947 N	103° 17' 39.998 W
RB121 FTP - plan misses target center by 20.2usft at 12642.4usft MD (12166.5 TVD, 336.4 N, 117.8 E) - Point	0.00	0.00	12,184.0	331.2	126.5	394,337.35	863,107.75	32° 4' 47.473 N	103° 17' 40.014 W
RB121 LTP - plan hits target center - Point	0.00	0.00	12,184.0	10,690.9	24.8	404,697.08	863,006.08	32° 6' 29.989 N	103° 17' 40.036 W
RB121 BHL - plan hits target center - Point	0.00	0.00	12,184.0	10,741.0	24.3	404,747.10	863,005.60	32° 6' 30.484 N	103° 17' 40.036 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
17,818.0	12,184.0	5,509.9	76.4	RB121 into NMNM138913

AMEREDEV

Ameredev Operating, LLC.

RB/HOL

RB/HOL #1S

Redbud 121H

Wellbore #1

Plan: Design #1

Lease Penetration Section Line Foot

22 February, 2019

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Redbud 121H
Project:	RB/HOL	TVD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	MD Reference:	KB @ 3035.0usft
Well:	Redbud 121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Project	RB/HOL		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	RB/HOL #1S				
Site Position:		Northing:	394,006.29 usft	Latitude:	32° 4' 44.208 N
From:	Lat/Long	Easting:	863,001.28 usft	Longitude:	103° 17' 41.289 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.55 °

Well	Redbud 121H					
Well Position	+N/-S	0.0 usft	Northing:	394,006.14 usft	Latitude:	32° 4' 44.208 N
	+E/-W	0.0 usft	Easting:	862,981.27 usft	Longitude:	103° 17' 41.521 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,008.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/13/2018	6.65	59.95	47,730.47984980

Design	Design #1			
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	0.13

Survey Tool Program	Date	12/13/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	23,049.3	Design #1 (Wellbore #1)	MWD	OWSG MWD - Standard

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
100.0	0.00	0.00	100.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
200.0	0.00	0.00	200.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
300.0	0.00	0.00	300.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
400.0	0.00	0.00	400.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
500.0	0.00	0.00	500.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
600.0	0.00	0.00	600.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
700.0	0.00	0.00	700.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
800.0	0.00	0.00	800.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
900.0	0.00	0.00	900.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,000.0	0.00	0.00	1,000.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,100.0	0.00	0.00	1,100.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Redbud 121H
Project:	RB/HOL	TVD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	MD Reference:	KB @ 3035.0usft
Well:	Redbud 121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
1,200.0	0.00	0.00	1,200.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,300.0	0.00	0.00	1,300.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,400.0	0.00	0.00	1,400.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,500.0	0.00	0.00	1,500.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,600.0	0.00	0.00	1,600.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,700.0	0.00	0.00	1,700.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,800.0	0.00	0.00	1,800.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
1,900.0	0.00	0.00	1,900.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
2,000.0	0.00	0.00	2,000.0	-230.2	250.0	32° 4' 44.208 N	103° 17' 41.521 W
2,100.0	2.00	197.00	2,100.0	-231.8	249.5	32° 4' 44.192 N	103° 17' 41.527 W
2,200.0	4.00	197.00	2,199.8	-236.8	247.9	32° 4' 44.142 N	103° 17' 41.546 W
2,300.0	6.00	197.00	2,299.5	-245.2	245.4	32° 4' 44.060 N	103° 17' 41.576 W
2,400.0	6.00	197.00	2,398.9	-255.2	242.3	32° 4' 43.961 N	103° 17' 41.613 W
2,500.0	6.00	197.00	2,498.4	-265.2	239.3	32° 4' 43.863 N	103° 17' 41.649 W
2,600.0	6.00	197.00	2,597.8	-275.2	236.2	32° 4' 43.764 N	103° 17' 41.686 W
2,700.0	6.00	197.00	2,697.3	-285.1	233.2	32° 4' 43.666 N	103° 17' 41.723 W
2,800.0	6.00	197.00	2,796.7	-295.1	230.1	32° 4' 43.567 N	103° 17' 41.759 W
2,900.0	6.00	197.00	2,896.2	-305.1	227.1	32° 4' 43.468 N	103° 17' 41.796 W
3,000.0	6.00	197.00	2,995.6	-315.1	224.0	32° 4' 43.370 N	103° 17' 41.833 W
3,100.0	6.00	197.00	3,095.1	-325.1	221.0	32° 4' 43.271 N	103° 17' 41.869 W
3,200.0	6.00	197.00	3,194.5	-335.1	217.9	32° 4' 43.173 N	103° 17' 41.906 W
3,300.0	6.00	197.00	3,294.0	-345.1	214.8	32° 4' 43.074 N	103° 17' 41.943 W
3,400.0	6.00	197.00	3,393.4	-355.1	211.8	32° 4' 42.975 N	103° 17' 41.979 W
3,500.0	6.00	197.00	3,492.9	-365.1	208.7	32° 4' 42.877 N	103° 17' 42.016 W
3,600.0	6.00	197.00	3,592.3	-375.1	205.7	32° 4' 42.778 N	103° 17' 42.052 W
3,700.0	6.00	197.00	3,691.8	-385.1	202.6	32° 4' 42.679 N	103° 17' 42.089 W
3,800.0	6.00	197.00	3,791.2	-395.1	199.6	32° 4' 42.581 N	103° 17' 42.126 W
3,900.0	6.00	197.00	3,890.7	-405.1	196.5	32° 4' 42.482 N	103° 17' 42.162 W
4,000.0	6.00	197.00	3,990.1	-415.1	193.4	32° 4' 42.384 N	103° 17' 42.199 W
4,100.0	6.00	197.00	4,089.6	-425.1	190.4	32° 4' 42.285 N	103° 17' 42.236 W
4,200.0	6.00	197.00	4,189.0	-435.1	187.3	32° 4' 42.186 N	103° 17' 42.272 W
4,300.0	6.00	197.00	4,288.5	-445.1	184.3	32° 4' 42.088 N	103° 17' 42.309 W
4,400.0	6.00	197.00	4,387.9	-455.1	181.2	32° 4' 41.989 N	103° 17' 42.346 W
4,500.0	6.00	197.00	4,487.4	-465.1	178.2	32° 4' 41.890 N	103° 17' 42.382 W
4,600.0	6.00	197.00	4,586.9	-475.1	175.1	32° 4' 41.792 N	103° 17' 42.419 W
4,700.0	6.00	197.00	4,686.3	-485.1	172.1	32° 4' 41.693 N	103° 17' 42.455 W
4,800.0	6.00	197.00	4,785.8	-495.1	169.0	32° 4' 41.595 N	103° 17' 42.492 W
4,900.0	6.00	197.00	4,885.2	-505.1	165.9	32° 4' 41.496 N	103° 17' 42.529 W
5,000.0	6.00	197.00	4,984.7	-515.1	162.9	32° 4' 41.397 N	103° 17' 42.565 W
5,100.0	6.00	197.00	5,084.1	-525.1	159.8	32° 4' 41.299 N	103° 17' 42.602 W
5,200.0	6.00	197.00	5,183.6	-535.1	156.8	32° 4' 41.200 N	103° 17' 42.639 W
5,300.0	6.00	197.00	5,283.0	-545.0	153.7	32° 4' 41.102 N	103° 17' 42.675 W
5,400.0	6.00	197.00	5,382.5	-555.0	150.7	32° 4' 41.003 N	103° 17' 42.712 W
5,500.0	6.00	197.00	5,481.9	-565.0	147.6	32° 4' 40.904 N	103° 17' 42.749 W

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Redbud 121H
Project:	RB/HOL	TVD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	MD Reference:	KB @ 3035.0usft
Well:	Redbud 121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
5,600.0	6.00	197.00	5,581.4	-575.0	144.5	32° 4' 40.806 N	103° 17' 42.785 W
5,700.0	6.00	197.00	5,680.8	-585.0	141.5	32° 4' 40.707 N	103° 17' 42.822 W
5,800.0	6.00	197.00	5,780.3	-595.0	138.4	32° 4' 40.608 N	103° 17' 42.858 W
5,900.0	6.00	197.00	5,879.7	-605.0	135.4	32° 4' 40.510 N	103° 17' 42.895 W
6,000.0	6.00	197.00	5,979.2	-615.0	132.3	32° 4' 40.411 N	103° 17' 42.932 W
6,100.0	6.00	197.00	6,078.6	-625.0	129.3	32° 4' 40.313 N	103° 17' 42.968 W
6,200.0	6.00	197.00	6,178.1	-635.0	126.2	32° 4' 40.214 N	103° 17' 43.005 W
6,300.0	6.00	197.00	6,277.5	-645.0	123.2	32° 4' 40.115 N	103° 17' 43.042 W
6,400.0	6.00	197.00	6,377.0	-655.0	120.1	32° 4' 40.017 N	103° 17' 43.078 W
6,500.0	6.00	197.00	6,476.4	-665.0	117.0	32° 4' 39.918 N	103° 17' 43.115 W
6,600.0	6.00	197.00	6,575.9	-675.0	114.0	32° 4' 39.820 N	103° 17' 43.151 W
6,700.0	6.00	197.00	6,675.3	-685.0	110.9	32° 4' 39.721 N	103° 17' 43.188 W
6,724.8	6.00	197.00	6,700.0	-687.5	110.2	32° 4' 39.696 N	103° 17' 43.197 W
6,800.0	4.50	197.00	6,774.9	-694.0	108.2	32° 4' 39.632 N	103° 17' 43.221 W
6,900.0	2.50	197.00	6,874.7	-699.9	106.4	32° 4' 39.574 N	103° 17' 43.243 W
7,000.0	0.50	197.00	6,974.7	-702.4	105.6	32° 4' 39.549 N	103° 17' 43.252 W
7,024.8	0.00	0.00	6,999.5	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,100.0	0.00	0.00	7,074.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,200.0	0.00	0.00	7,174.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,300.0	0.00	0.00	7,274.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,400.0	0.00	0.00	7,374.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,500.0	0.00	0.00	7,474.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,600.0	0.00	0.00	7,574.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,700.0	0.00	0.00	7,674.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,800.0	0.00	0.00	7,774.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
7,900.0	0.00	0.00	7,874.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,000.0	0.00	0.00	7,974.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,100.0	0.00	0.00	8,074.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,200.0	0.00	0.00	8,174.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,300.0	0.00	0.00	8,274.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,400.0	0.00	0.00	8,374.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,500.0	0.00	0.00	8,474.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,600.0	0.00	0.00	8,574.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,700.0	0.00	0.00	8,674.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,800.0	0.00	0.00	8,774.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
8,900.0	0.00	0.00	8,874.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,000.0	0.00	0.00	8,974.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,100.0	0.00	0.00	9,074.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,200.0	0.00	0.00	9,174.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,300.0	0.00	0.00	9,274.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,400.0	0.00	0.00	9,374.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,500.0	0.00	0.00	9,474.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,600.0	0.00	0.00	9,574.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,700.0	0.00	0.00	9,674.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Redbud 121H
Project:	RB/HOL	TVD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	MD Reference:	KB @ 3035.0usft
Well:	Redbud 121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/FNL (usft)	+FWL/FEL (usft)	Latitude	Longitude
9,800.0	0.00	0.00	9,774.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
9,900.0	0.00	0.00	9,874.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,000.0	0.00	0.00	9,974.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,100.0	0.00	0.00	10,074.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,200.0	0.00	0.00	10,174.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,300.0	0.00	0.00	10,274.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,400.0	0.00	0.00	10,374.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,500.0	0.00	0.00	10,474.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,600.0	0.00	0.00	10,574.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,700.0	0.00	0.00	10,674.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,800.0	0.00	0.00	10,774.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
10,900.0	0.00	0.00	10,874.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
11,000.0	0.00	0.00	10,974.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
11,100.0	0.00	0.00	11,074.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
11,200.0	0.00	0.00	11,174.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
11,300.0	0.00	0.00	11,274.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
11,400.0	0.00	0.00	11,374.7	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
11,425.3	0.00	0.00	11,400.0	-702.5	105.6	32° 4' 39.548 N	103° 17' 43.252 W
RB121 KOP							
11,500.0	8.21	19.14	11,474.4	-697.4	107.3	32° 4' 39.598 N	103° 17' 43.231 W
11,600.0	19.21	19.14	11,571.4	-675.1	115.1	32° 4' 39.819 N	103° 17' 43.139 W
11,700.0	30.21	19.14	11,662.1	-635.6	128.8	32° 4' 40.208 N	103° 17' 42.975 W
11,800.0	41.21	19.14	11,743.2	-580.6	147.9	32° 4' 40.751 N	103° 17' 42.747 W
11,900.0	52.21	19.14	11,811.6	-511.9	171.7	32° 4' 41.428 N	103° 17' 42.462 W
11,968.5	59.75	19.14	11,849.9	-458.3	190.3	32° 4' 41.956 N	103° 17' 42.240 W
12,000.0	59.75	19.14	11,865.8	-432.6	199.2	32° 4' 42.210 N	103° 17' 42.134 W
12,100.0	59.75	19.14	11,916.2	-351.0	227.6	32° 4' 43.015 N	103° 17' 41.795 W
12,200.0	59.75	19.14	11,966.6	-269.4	255.9	32° 4' 43.819 N	103° 17' 41.457 W
12,300.0	59.75	19.14	12,016.9	-187.8	284.2	32° 4' 44.624 N	103° 17' 41.119 W
12,400.0	59.75	19.14	12,067.3	-106.2	312.5	32° 4' 45.429 N	103° 17' 40.780 W
12,464.4	59.75	19.14	12,099.8	-53.6	330.8	32° 4' 45.947 N	103° 17' 40.562 W
12,500.0	62.96	16.59	12,116.8	-23.9	340.4	32° 4' 46.240 N	103° 17' 40.448 W
12,600.0	72.20	10.13	12,155.0	65.9	361.5	32° 4' 47.127 N	103° 17' 40.192 W
12,642.4	76.19	7.60	12,166.5	106.2	367.8	32° 4' 47.525 N	103° 17' 40.115 W
RB121 FTP							
12,700.0	81.63	4.31	12,177.6	162.4	373.6	32° 4' 48.081 N	103° 17' 40.040 W
12,788.0	90.00	359.43	12,184.0	250.0	376.5	32° 4' 48.947 N	103° 17' 39.998 W
RB121 FTP2							
12,800.0	90.00	359.43	12,184.0	262.0	376.4	32° 4' 49.066 N	103° 17' 39.998 W
12,900.0	90.00	359.43	12,184.0	362.0	375.4	32° 4' 50.056 N	103° 17' 39.998 W
13,000.0	90.00	359.43	12,184.0	462.0	374.4	32° 4' 51.045 N	103° 17' 39.998 W
13,100.0	90.00	359.43	12,184.0	562.0	373.4	32° 4' 52.035 N	103° 17' 39.999 W
13,200.0	90.00	359.43	12,184.0	662.0	372.4	32° 4' 53.024 N	103° 17' 39.999 W
13,300.0	90.00	359.43	12,184.0	762.0	371.4	32° 4' 54.014 N	103° 17' 39.999 W
13,400.0	90.00	359.43	12,184.0	862.0	370.4	32° 4' 55.003 N	103° 17' 40.000 W

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Redbud 121H
Project:	RB/HOL	TVD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	MD Reference:	KB @ 3035.0usft
Well:	Redbud 121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/FNL (usft)	+FWL/FEL (usft)	Latitude	Longitude
13,500.0	90.00	359.43	12,184.0	962.0	369.4	32° 4' 55.993 N	103° 17' 40.000 W
13,600.0	90.00	359.43	12,184.0	1,062.0	368.4	32° 4' 56.982 N	103° 17' 40.001 W
13,700.0	90.00	359.43	12,184.0	1,162.0	367.4	32° 4' 57.972 N	103° 17' 40.001 W
13,800.0	90.00	359.43	12,184.0	1,262.0	366.4	32° 4' 58.961 N	103° 17' 40.001 W
13,900.0	90.00	359.43	12,184.0	1,362.0	365.4	32° 4' 59.951 N	103° 17' 40.002 W
14,000.0	90.00	359.43	12,184.0	1,462.0	364.4	32° 5' 0.940 N	103° 17' 40.002 W
14,100.0	90.00	359.43	12,184.0	1,562.0	363.4	32° 5' 1.930 N	103° 17' 40.003 W
14,200.0	90.00	359.43	12,184.0	1,662.0	362.4	32° 5' 2.919 N	103° 17' 40.003 W
14,300.0	90.00	359.43	12,184.0	1,762.0	361.4	32° 5' 3.909 N	103° 17' 40.003 W
14,400.0	90.00	359.43	12,184.0	1,862.0	360.4	32° 5' 4.898 N	103° 17' 40.004 W
14,500.0	90.00	359.43	12,184.0	1,962.0	359.4	32° 5' 5.888 N	103° 17' 40.004 W
14,600.0	90.00	359.43	12,184.0	2,062.0	358.4	32° 5' 6.877 N	103° 17' 40.004 W
14,700.0	90.00	359.43	12,184.0	2,161.9	357.4	32° 5' 7.867 N	103° 17' 40.005 W
14,800.0	90.00	359.43	12,184.0	2,261.9	356.4	32° 5' 8.856 N	103° 17' 40.005 W
14,900.0	90.00	359.43	12,184.0	2,361.9	355.4	32° 5' 9.846 N	103° 17' 40.006 W
15,000.0	90.00	359.43	12,184.0	2,461.9	354.4	32° 5' 10.835 N	103° 17' 40.006 W
15,100.0	90.00	359.43	12,184.0	2,561.9	353.5	32° 5' 11.825 N	103° 17' 40.006 W
15,200.0	90.00	359.43	12,184.0	2,661.9	352.5	32° 5' 12.814 N	103° 17' 40.007 W
15,300.0	90.00	359.43	12,184.0	2,761.9	351.5	32° 5' 13.804 N	103° 17' 40.007 W
15,400.0	90.00	359.43	12,184.0	2,861.9	350.5	32° 5' 14.793 N	103° 17' 40.007 W
15,500.0	90.00	359.43	12,184.0	2,961.9	349.5	32° 5' 15.783 N	103° 17' 40.008 W
15,600.0	90.00	359.43	12,184.0	3,061.9	348.5	32° 5' 16.773 N	103° 17' 40.008 W
15,700.0	90.00	359.43	12,184.0	3,161.9	347.5	32° 5' 17.762 N	103° 17' 40.009 W
15,800.0	90.00	359.43	12,184.0	3,261.9	346.5	32° 5' 18.752 N	103° 17' 40.009 W
15,900.0	90.00	359.43	12,184.0	3,361.9	345.5	32° 5' 19.741 N	103° 17' 40.009 W
16,000.0	90.00	359.43	12,184.0	3,461.9	344.5	32° 5' 20.731 N	103° 17' 40.010 W
16,100.0	90.00	359.43	12,184.0	3,561.9	343.5	32° 5' 21.720 N	103° 17' 40.010 W
16,200.0	90.00	359.43	12,184.0	3,661.9	342.5	32° 5' 22.710 N	103° 17' 40.010 W
16,300.0	90.00	359.43	12,184.0	3,761.9	341.5	32° 5' 23.699 N	103° 17' 40.011 W
16,400.0	90.00	359.43	12,184.0	3,861.9	340.5	32° 5' 24.689 N	103° 17' 40.011 W
16,500.0	90.00	359.43	12,184.0	3,961.9	339.5	32° 5' 25.678 N	103° 17' 40.012 W
16,600.0	90.00	359.43	12,184.0	4,061.9	338.5	32° 5' 26.668 N	103° 17' 40.012 W
16,700.0	90.00	359.43	12,184.0	4,161.8	337.5	32° 5' 27.657 N	103° 17' 40.012 W
16,800.0	90.00	359.43	12,184.0	4,261.8	336.5	32° 5' 28.647 N	103° 17' 40.013 W
16,900.0	90.00	359.43	12,184.0	4,361.8	335.5	32° 5' 29.636 N	103° 17' 40.013 W
17,000.0	90.00	359.43	12,184.0	4,461.8	334.5	32° 5' 30.626 N	103° 17' 40.013 W
17,100.0	90.00	359.43	12,184.0	4,561.8	333.5	32° 5' 31.615 N	103° 17' 40.014 W
17,200.0	90.00	359.43	12,184.0	4,661.8	332.5	32° 5' 32.605 N	103° 17' 40.014 W
17,300.0	90.00	359.43	12,184.0	4,761.8	331.6	32° 5' 33.594 N	103° 17' 40.015 W
17,400.0	90.00	359.43	12,184.0	4,861.8	330.6	32° 5' 34.584 N	103° 17' 40.015 W
17,500.0	90.00	359.43	12,184.0	4,961.8	329.6	32° 5' 35.573 N	103° 17' 40.015 W
17,600.0	90.00	359.43	12,184.0	5,061.8	328.6	32° 5' 36.563 N	103° 17' 40.016 W
17,700.0	90.00	359.43	12,184.0	5,161.8	327.6	32° 5' 37.552 N	103° 17' 40.016 W
17,800.0	90.00	359.43	12,184.0	5,261.8	326.6	32° 5' 38.542 N	103° 17' 40.016 W

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Redbud 121H
Project:	RB/HOL	TVD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	MD Reference:	KB @ 3035.0usft
Well:	Redbud 121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
17,818.0	90.00	359.43	12,184.0	5,279.8	326.4	32° 5' 38.720 N	103° 17' 40.016 W
RB121 Into NMNM138913							
17,900.0	90.00	359.43	12,184.0	5,361.8	325.6	32° 5' 39.531 N	103° 17' 40.017 W
18,000.0	90.00	359.43	12,184.0	5,461.8	324.6	32° 5' 40.521 N	103° 17' 40.017 W
18,100.0	90.00	359.43	12,184.0	5,561.8	323.6	32° 5' 41.510 N	103° 17' 40.017 W
18,200.0	90.00	359.43	12,184.0	5,661.8	322.6	32° 5' 42.500 N	103° 17' 40.018 W
18,300.0	90.00	359.43	12,184.0	5,761.8	321.6	32° 5' 43.489 N	103° 17' 40.018 W
18,400.0	90.00	359.43	12,184.0	5,861.8	320.6	32° 5' 44.479 N	103° 17' 40.019 W
18,500.0	90.00	359.43	12,184.0	5,961.8	319.6	32° 5' 45.468 N	103° 17' 40.019 W
18,600.0	90.00	359.43	12,184.0	6,061.8	318.6	32° 5' 46.458 N	103° 17' 40.019 W
18,700.0	90.00	359.43	12,184.0	6,161.7	317.6	32° 5' 47.447 N	103° 17' 40.020 W
18,800.0	90.00	359.43	12,184.0	6,261.7	316.6	32° 5' 48.437 N	103° 17' 40.020 W
18,900.0	90.00	359.43	12,184.0	6,361.7	315.6	32° 5' 49.426 N	103° 17' 40.020 W
19,000.0	90.00	359.43	12,184.0	6,461.7	314.6	32° 5' 50.416 N	103° 17' 40.021 W
19,100.0	90.00	359.43	12,184.0	6,561.7	313.6	32° 5' 51.405 N	103° 17' 40.021 W
19,200.0	90.00	359.43	12,184.0	6,661.7	312.6	32° 5' 52.395 N	103° 17' 40.022 W
19,300.0	90.00	359.43	12,184.0	6,761.7	311.6	32° 5' 53.384 N	103° 17' 40.022 W
19,400.0	90.00	359.43	12,184.0	6,861.7	310.6	32° 5' 54.374 N	103° 17' 40.022 W
19,500.0	90.00	359.43	12,184.0	6,961.7	309.7	32° 5' 55.363 N	103° 17' 40.023 W
19,600.0	90.00	359.43	12,184.0	7,061.7	308.7	32° 5' 56.353 N	103° 17' 40.023 W
19,700.0	90.00	359.43	12,184.0	7,161.7	307.7	32° 5' 57.342 N	103° 17' 40.023 W
19,800.0	90.00	359.43	12,184.0	7,261.7	306.7	32° 5' 58.332 N	103° 17' 40.024 W
19,900.0	90.00	359.43	12,184.0	7,361.7	305.7	32° 5' 59.321 N	103° 17' 40.024 W
20,000.0	90.00	359.43	12,184.0	7,461.7	304.7	32° 6' 0.311 N	103° 17' 40.025 W
20,100.0	90.00	359.43	12,184.0	7,561.7	303.7	32° 6' 1.300 N	103° 17' 40.025 W
20,200.0	90.00	359.43	12,184.0	7,661.7	302.7	32° 6' 2.290 N	103° 17' 40.025 W
20,300.0	90.00	359.43	12,184.0	7,761.7	301.7	32° 6' 3.279 N	103° 17' 40.026 W
20,400.0	90.00	359.43	12,184.0	7,861.7	300.7	32° 6' 4.269 N	103° 17' 40.026 W
20,500.0	90.00	359.43	12,184.0	7,961.7	299.7	32° 6' 5.258 N	103° 17' 40.026 W
20,600.0	90.00	359.43	12,184.0	8,061.7	298.7	32° 6' 6.248 N	103° 17' 40.027 W
20,700.0	90.00	359.43	12,184.0	8,161.6	297.7	32° 6' 7.237 N	103° 17' 40.027 W
20,800.0	90.00	359.43	12,184.0	8,261.6	296.7	32° 6' 8.227 N	103° 17' 40.028 W
20,900.0	90.00	359.43	12,184.0	8,361.6	295.7	32° 6' 9.216 N	103° 17' 40.028 W
21,000.0	90.00	359.43	12,184.0	8,461.6	294.7	32° 6' 10.206 N	103° 17' 40.028 W
21,100.0	90.00	359.43	12,184.0	8,561.6	293.7	32° 6' 11.196 N	103° 17' 40.029 W
21,200.0	90.00	359.43	12,184.0	8,661.6	292.7	32° 6' 12.185 N	103° 17' 40.029 W
21,300.0	90.00	359.43	12,184.0	8,761.6	291.7	32° 6' 13.175 N	103° 17' 40.029 W
21,400.0	90.00	359.43	12,184.0	8,861.6	290.7	32° 6' 14.164 N	103° 17' 40.030 W
21,500.0	90.00	359.43	12,184.0	8,961.6	289.7	32° 6' 15.154 N	103° 17' 40.030 W
21,600.0	90.00	359.43	12,184.0	9,061.6	288.7	32° 6' 16.143 N	103° 17' 40.030 W
21,700.0	90.00	359.43	12,184.0	9,161.6	287.7	32° 6' 17.133 N	103° 17' 40.031 W
21,800.0	90.00	359.43	12,184.0	9,261.6	286.8	32° 6' 18.122 N	103° 17' 40.031 W
21,900.0	90.00	359.43	12,184.0	9,361.6	285.8	32° 6' 19.112 N	103° 17' 40.032 W
22,000.0	90.00	359.43	12,184.0	9,461.6	284.8	32° 6' 20.101 N	103° 17' 40.032 W
22,100.0	90.00	359.43	12,184.0	9,561.6	283.8	32° 6' 21.091 N	103° 17' 40.032 W

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Redbud 121H
Project:	RB/HOL	TVD Reference:	KB @ 3035.0usft
Site:	RB/HOL #1S	MD Reference:	KB @ 3035.0usft
Well:	Redbud 121H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
22,200.0	90.00	359.43	12,184.0	9,661.6	282.8	32° 6' 22.080 N	103° 17' 40.033 W
22,300.0	90.00	359.43	12,184.0	9,761.6	281.8	32° 6' 23.070 N	103° 17' 40.033 W
22,400.0	90.00	359.43	12,184.0	9,861.6	280.8	32° 6' 24.059 N	103° 17' 40.033 W
22,500.0	90.00	359.43	12,184.0	9,961.6	279.8	32° 6' 25.049 N	103° 17' 40.034 W
22,600.0	90.00	359.43	12,184.0	10,061.6	278.8	32° 6' 26.038 N	103° 17' 40.034 W
22,700.0	90.00	359.43	12,184.0	10,161.5	277.8	32° 6' 27.028 N	103° 17' 40.035 W
22,800.0	90.00	359.43	12,184.0	10,261.5	276.8	32° 6' 28.017 N	103° 17' 40.035 W
22,900.0	90.00	359.43	12,184.0	10,361.5	275.8	32° 6' 29.007 N	103° 17' 40.035 W
22,999.2	90.00	359.43	12,184.0	10,460.8	274.8	32° 6' 29.989 N	103° 17' 40.036 W
RB121 LTP							
23,000.0	90.00	359.43	12,184.0	10,461.5	274.8	32° 6' 29.996 N	103° 17' 40.036 W
23,049.3	90.00	359.43	12,184.0	10,510.8	274.3	32° 6' 30.484 N	103° 17' 40.036 W
RB121 BHL							

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
17,818.0	12,184.0	5,509.9	76.4	RB121 into NMMN138913

Checked By: _____ Approved By: _____ Date: _____



APD ID: 10400043023

Submission Date: 06/20/2019

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres):

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

Bond Info Data Report

11/05/2019

APD ID: 10400043023

Submission Date: 06/20/2019

Operator Name: AMEREDEV OPERATING LLC

Well Name: RED BUD FED COM 25 36 32

Well Number: 121H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001478

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: