Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD
MAY 20 2019
RECEIVED

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM0006531
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other	6. If Indian, Allotee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone	7. If Unit or CA Agreement, Name and No.
	8. Lease Name and Well No. LEA UNIT (302802) 203H
2. Name of Operator LEGACY RESERVES OPERATING LP (240974)	9. API Well No. 30-025-45996
3a. Address 303 West Wall St., Ste 1800 Midland TX 79701	3b. Phone No. *(include area code)* (432)689-5287
	10. Field and Pool, or Exploratory (98247) ~~LEA~~ UPPER WOLFCAMP
4. Location of Well *(Report location clearly and in accordance with any State requirements. *)* At surface NENE / 140 FNL / 1115 FEL / LAT 32.5944936 / LONG -103.5259496 At proposed prod. zone SENE / 2535 FNL / 430 FEL / LAT 32.5733918 / LONG -103.5237207	11. Sec., T. R. M. or Blk. and Survey or Area SEC 11 / T20S / R34E / NMP
14. Distance in miles and direction from nearest town or post office* 26 miles	12. County or Parish LEA / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 140 feet	16. No of acres in lease 40 / 17. Spacing Unit dedicated to this well 2559.68
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50 feet	19. Proposed Depth 11800 feet / 19313 feet / 20. BLM/BIA Bond No. in file FED: NMB001015
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3666 feet	22. Approximate date work will start* 12/26/2018 / 23. Estimated duration 60 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Kayley Thurber / Ph: (405)289-9326	10/23/2018
Title: Permitting Specialist		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 05/09/2019
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.

GCP Rec 05/20/19

APPROVED WITH CONDITIONS

KA 05/21/19

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 05/09/2019

Summary of Stipulations:
Prior to Construction

- **APD ON LOCATION**
  A complete copy of the approved APD must be on location at the date of first surface disturbance (lease road construction, pad construction, setting conductor, etc.) through the completion of the well. Closely review all Drilling Stipulations, Pressure Control Stipulations and Conditions of Approval.

- **CONSTRUCTION NOTIFICATION**
  Verbal notification shall be given to the assigned BLM Natural Resource Specialist, at least **72 hours prior** to **PAD Construction.**

- **EROSION CONTROL**
  Install staked silt fencing, straw bales or wattles as needed for erosion control on slopes/drainages.

- **ARCHAEOLOGY**
  If any archeological materials such as chipped stone tools, pottery, bone, historic ceramics, glass, metal or building structures are exposed; stop work at that spot ***immediately*** and contact the BLM staff archeologist (505) 476-1282 and the New Mexico State Historic Preservation Office (505) 476-1275.

- **CHANGES IN COA**
  If surface owner changes any of these conditions of approval, Operator will contact the BLM Environmental Protection Specialist before implementing surface owner stipulations.

Prior to Spud

- **WELL SIGN**
  Each well shall have a well sign in legible condition from spud date to final abandonment. The sign shall be in the following format:

  Operator Name
  Well Name
  Qtr/Qtr, Section-Township-Range
  County
  BLM Lease #:
  CA #:

- **RIG LAYOUT**
  A final rig layout plat (if different then plat submitted with the APD) should be sent to Reagan Smith Energy Solutions, Inc. to be forwarded to the BLM.

- **WATER SOURCE (Drilling and Completion)**
  Ensure the proposed water source and water line route is consistent with the information in the APD. If this information has changed, please inform Reagan Smith Energy Solutions.

- **DRILLING**
  Verbal notification shall be given to the BLM Inspection and Enforcement Lead, at least **24 HOURS PRIOR TO COMMENCING THE FOLLOWING DRILLING ACTIONS:** Well Spud (including setting conductor casing), Pressure Testing (BOPE, Casing, Formation Integrity), Setting and Cementing all Casing Strings, and Drilling over lease Expiration for Lease Extension.

- **SPUD NOTIFICATION**
  No more than 24 hours after well spud, the following information shall be provided to the I&E Lead via email:

  1) BLM lease number
  2) Well name and API number
  3) Operator name
  4) Drilling Contractor's name
  5) Rig Number
  6) Date and time the well was spud

- **COMPLETION PROCEDURES**
  Prior to completion operations, Operator shall forward a copy of the Completion Procedures to Reagan Smith Energy Solutions to be submitted to the BLM for approval.

Post Drilling Operations

- **PRODUCTION STARTUP NOTIFICATION**
  Operators shall notify the BLM via Sundry Notice or letter no later than the 5th business day after any well begins production anywhere on a lease site or allocated to a lease site.

- **COMPLETION REPORT**
  A Federal Completion Report shall be filed with the BLM no later than 30 days from first production. Please forward the state completion report to Reagan Smith Energy Solutions upon submittal.

- **WATER DISPOSAL**
  A Sundry Notice shall be filed with the BLM indicating the method and location of produced water. Please contact Reagan Smith Energy Solutions for assistance in submittal.

- **SITE FACILITY DIAGRAM**
  Once the tank battery has been installed, please notify Reagan Smith Energy Solutions so that a site facility diagram can be drafted and submitted to the BLM.

Note: This is only a summary of the stipulations given by the BLM. Please carefully read the entire stipulations package provided from the BLM.

Questions please call Blayne Housh or Scott St. John at 405-286-9326, bhoush@rsenergysolutions.com or sstjohn@rsenergysolutions.com

Construction, Prior to Spud and Post Drilling Checklist

✓ Complete	Description of Action Item
	Pre-Construction
	APD On Location
	Construction Notification
	Erosion Control in Place
	Changes in COA's from Landowner?
	LPC Requirements
	Prior to Spud
	Well Sign Correct
	Drilling Notification Complete
	Spud Notification Complete
	Final Rig Layout Plats Submitted to BLM
	Water Source / Route Consistent with APD
	Completion Procedures Submitted to BLM
	Post Drilling Operations
	Production Startup Notification
	Completion Report Filed with BLM
	Water Disposal Sundry Notice
	Site Facility Diagram Submitted to BLM

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

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Additional Operator Remarks

Location of Well

1. SHL: NENE / 140 FNL / 1115 FEL / TWSP: 20S / RANGE: 34E / SECTION: 11 / LAT: 32.5944936 / LONG: -103.5259496 (TVD: 0 feet, MD: 0 feet)
   PPP: NENE / 600 FNL / 430 FEL / TWSP: 20S / RANGE: 34E / SECTION: 11 / LAT: 32.593217 / LONG: -103.523721 (TVD: 11800 feet, MD: 12118 feet)
   PPP: NENE / 1320 FNL / 430 FEL / TWSP: 20S / RANGE: 34E / SECTION: 14 / LAT: 32.591269 / LONG: -103.523725 (TVD: 11800 feet, MD: 12800 feet)
   PPP: NENE / 0 FNL / 430 FEL / TWSP: 20S / RANGE: 34E / SECTION: 14 / LAT: 32.580369 / LONG: -103.523722 (TVD: 11800 feet, MD: 16800 feet)
   PPP: NENE / 1320 FNL / 430 FEL / TWSP: 20S / RANGE: 34E / SECTION: 14 / LAT: 32.576747 / LONG: -103.523721 (TVD: 11800 feet, MD: 18100 feet)
   BHL: SENE / 2535 FNL / 430 FEL / TWSP: 20S / RANGE: 34E / SECTION: 14 / LAT: 32.5733918 / LONG: -103.5237207 (TVD: 11800 feet, MD: 19313 feet)

BLM Point of Contact

Name: Priscilla Perez
Title: Legal Instruments Examiner
Phone: 5752345934
Email: pperez@blm.gov

Review and Appeal Rights

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

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	LEGACY RESERVES OPERERATING LP
LEASE NO.:	NMNM0006531
WELL NAME & NO.:	203H – LEA UNIT
SURFACE HOLE FOOTAGE:	140'/N & 1115'/E
BOTTOM HOLE FOOTAGE	2535'/N & 430'/E
LOCATION:	SECTION 11, T20S, R34E, NMPM
COUNTY:	LEA

COA

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

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Yates-Seven Rivers** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1799 feet** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **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 **9-5/8** inch intermediate casing shall be set at approximately **5564 feet** 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 Capitan Reef.**

Option 2 (With 1 DV Tool):

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 Capitan Reef.

Option 3 (With 2 DV Tool):

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 circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with third stage cement job.

c. Third 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 Capitan Reef.

❖ **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 **7** inch intermediate liner is:

   - Cement to top of liner. Operator shall provide method of verification.

   Operator will utilize a 7" tie back casing and cement to surface.

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

   - Cement should tie-back **100 feet** into the previous casing. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **3000 (3M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7** inch intermediate casing shoe shall be **5000 (5M)** psi.

D. SPECIAL REQUIREMENT (S)

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months.

GENERAL REQUIREMENTS

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

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

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

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

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

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

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

A. CASING

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

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

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

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

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

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

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

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

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

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

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

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

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

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

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

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

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

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

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Legacy Reserves Operating
LEASE NO.:	NM006531
WELL NAME & NO.:	Lea Unit – 202H and 203HH
SURFACE HOLE FOOTAGE:	202H – 140 FNL & 1165 FEL
	203H – 140 FNL & 1115 FEL
BOTTOM HOLE FOOTAGE	202H – 2536 FNL & 1020 FEL sec. 14
	203H – 2535 FNL & 430 FEL
LOCATION:	Section 11, T. 20 S., R. 34 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

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

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult

with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

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

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

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the .

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which

creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

Ditching
Ditching shall be required on both sides of the road.

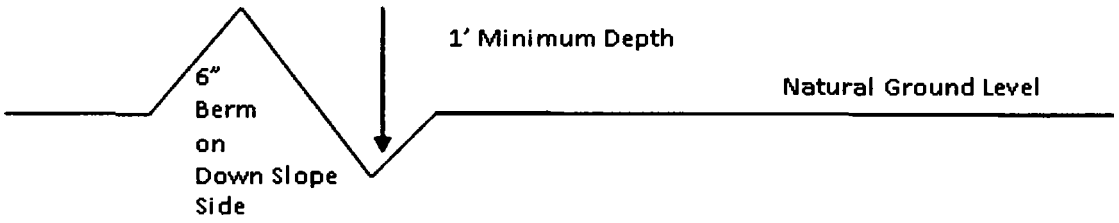
Turnouts

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

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, leadoff ditches, culvert installation, and low water crossings).

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



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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

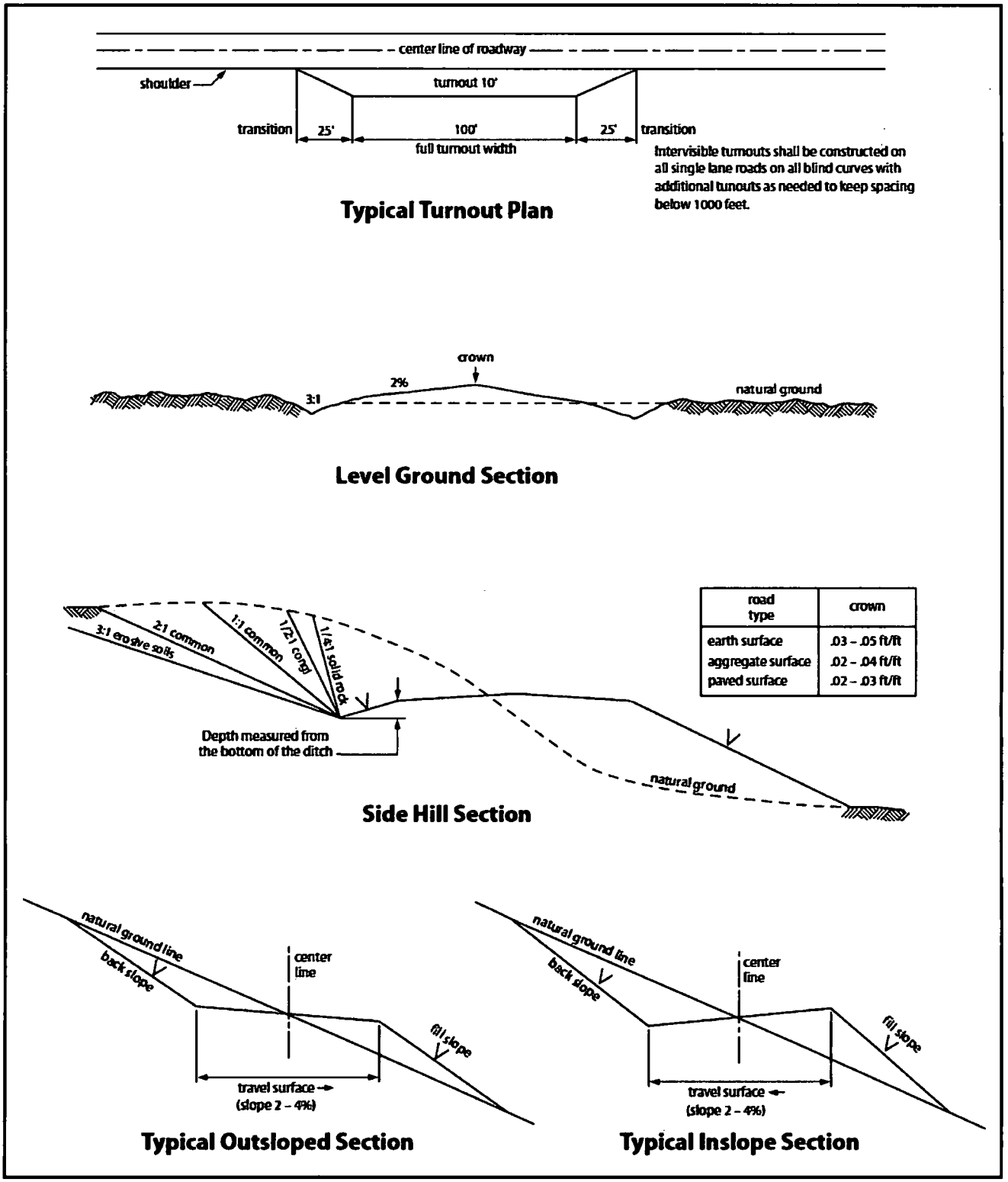


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures

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

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

B. **PIPELINES**
STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.

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

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from

the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

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

a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;

b. Activities of other parties including, but not limited to:
   (1) Land clearing
   (2) Earth-disturbing and earth-moving work
   (3) Blasting
   (4) Vandalism and sabotage;

c. Acts of God.

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

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

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

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent

this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

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

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

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

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

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

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

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

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

route is not used as a roadway.

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

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

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

18. Special Stipulations:

a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted.

C. **ELECTRIC LINES**

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

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

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

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

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

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

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

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

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

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

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to

normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

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

*Pounds of pure live seed:

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

AFMSS

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

Operator Certification Data Report

05/09/2019

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: Kayley Thurber **Signed on:** 10/16/2018

Title: Permitting Specialist

Street Address: 1219 Classen Drive

City: Oklahoma City **State:** OK **Zip:** 73103

Phone: (405)289-9326

Email address: kthurber@rsenergysolutions.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS

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

Application Data Report

05/09/2019

APD ID: 10400035223 **Submission Date:** 10/23/2018

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Well Type: OIL WELL **Well Work Type:** Drill

[redacted]

Show Final Text

Section 1 - General

APD ID: 10400035223 **Tie to previous NOS?** **Submission Date:** 10/23/2018

BLM Office: CARLSBAD **User:** Kayley Thurber **Title:** Permitting Specialist

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM0006531 **Lease Acres:** 40

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? YES **APD Operator:** LEGACY RESERVES OPERATING LP

Operator letter of designation: Authorization_Letter_for_Reagan_Smith_Lea_203H_20181016073443.pdf

Operator Info

Operator Organization Name: LEGACY RESERVES OPERATING LP

Operator Address: 303 West Wall St., Ste 1800 **Zip:** 79701

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)689-5287

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? EXISTING **Master Development Plan name:** Lea Unit Master Dev Plan

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: LEA UNIT **Well Number:** 203H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** LEA **Pool Name:** UPPER WOLFCAMP

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

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** YES **New surface disturbance?** N

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** LEA UNIT **Number:** 7

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: 26 Miles **Distance to nearest well:** 50 FT **Distance to lease line:** 140 FT

Reservoir well spacing assigned acres Measurement: 2559.68 Acres

Well plat: Lea_Unit__203H_Signed_C102_Plat_20181016073518.pdf

Agency_Lease_Plat___Lea_Unit_203H_20181023142135.pdf

Well work start Date: 12/26/2018 **Duration:** 60 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	[redacted]	FNL	1115	FEL	20S	34E	11	Aliquot NENE	32.5944936	-103.5259496	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0006531	3666	0	0
KOP Leg #1	[redacted]	FNL	430	FEL	20S	34E	11	Aliquot NENE	32.594479	-103.523721	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0006531	-7663	11375	11329
PPP Leg	[redacted]	FNL	430	FEL	20S	34E	11	Aliquot NENE	32.593217	-103.5237	LEA	NEW MEXI	NEW MEXI	F	NMNM 000653	-813	12118	11800

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

	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
PPP Leg #1		FNL	430	FEL	20S	34E	14	Aliquot NENE	32.591269	-103.523725	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 000653 1A	-8134	12800	11800
PPP Leg #1		FNL	430	FEL	20S	34E	14	Aliquot NENE	32.576747	-103.523721	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 008026 2	-8134	18100	11800
PPP Leg #1		FNL	430	FEL	20S	34E	14	Aliquot NENE	32.580369	-103.523722	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 005343 4	-8134	16800	11800
EXIT Leg #1		FNL	430	FEL	20S	34E	14	Aliquot SENE	32.573391 8	-103.523720 7	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 008026 2	-8134	19313	11800
BHL Leg #1		FNL	430	FEL	20S	34E	14	Aliquot SENE	32.573391 8	-103.523720 7	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 008026 2	-8134	19313	11800

LEGACY
RESERVES
303 W. Wall, Suite 1800 - Midland, Texas 79701
(432) 689-5200

March 20, 2018

Bureau of Land Management
Division of Oil and Gas
620 E. Greene Street
Carlsbad, NM 88220-6292
Attn: Land Law Examiner

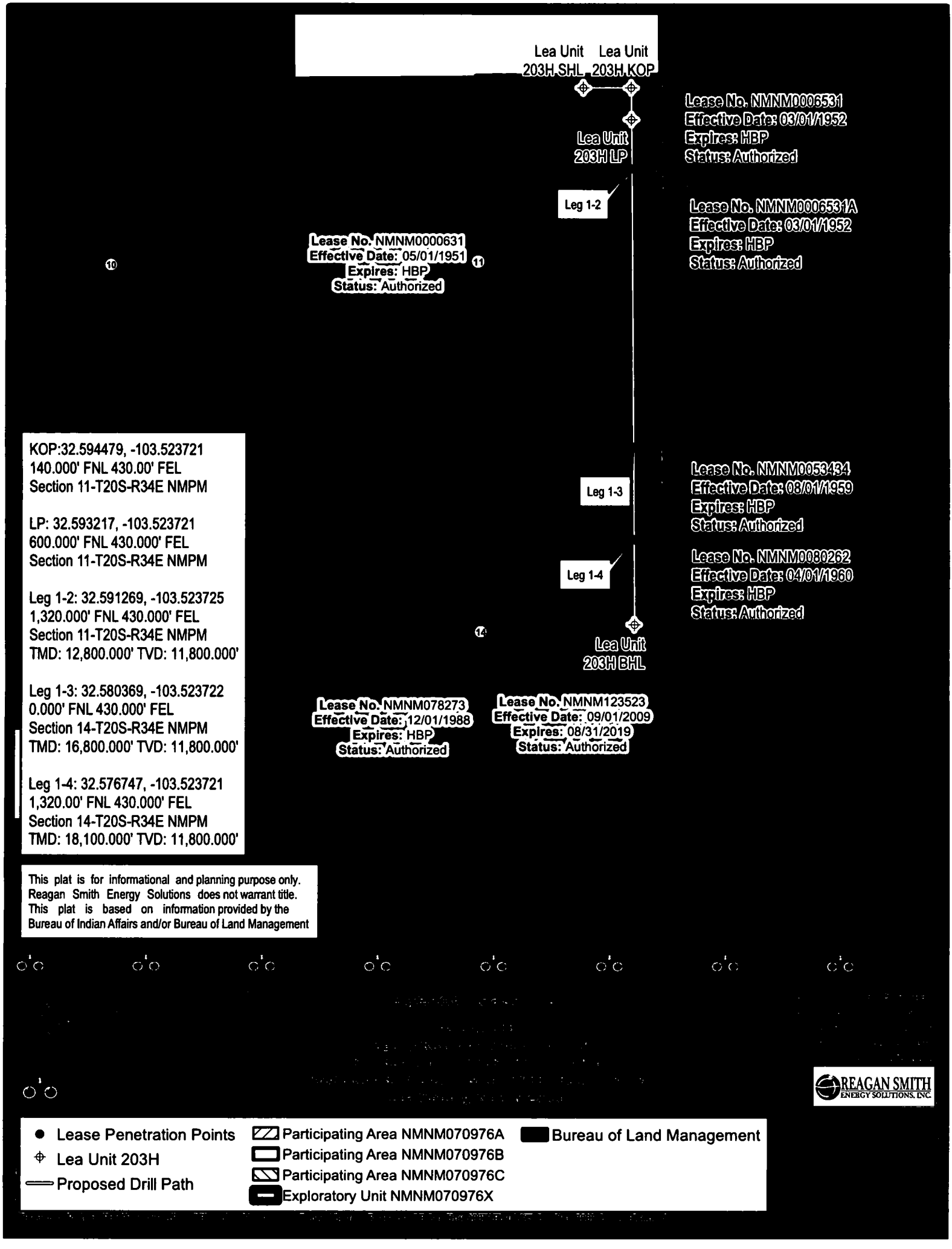
Re: Legacy Reserves Operating, L.P.
Designation of Agent
Lea Unit 203H
11-20S-34E NMPM
Lea County, NM

To whom it may concern:

Legacy Reserves Operating, L.P. has contracted with Reagan Smith Energy Solutions, Inc. to assist in regulatory compliance associated with the Lea Unit 203H. Reagan Smith Energy Solutions, Inc. has the authority to act as Legacy Reserves Operating, L.P.'s agent to maintain regulatory compliance for the Lea Unit 203H. This includes the submittal of an APD, Communitization Agreement, Designations of Operator, Sundry Notices, and any other regulatory documents on behalf of Legacy Reserves Operating, L.P. in order to maintain regulatory compliance with the Bureau of Land Management in regard to the above referenced project.

Sincerely,

Matthew Dickson
Legacy Reserves Operating, L.P.


Lea Unit
203H SHL
Lea Unit
203H KOP
Lea Unit
203H LP
Leg 1-2
Leg 1-3
Leg 1-4
Lea Unit
203H BHL
Lease No. NMNM0006531
Effective Date: 03/01/1952
Expires: HBP
Status: Authorized
Lease No. NMNM0006531A
Effective Date: 03/01/1952
Expires: HBP
Status: Authorized
Lease No. NMNM0000631
Effective Date: 05/01/1951
Expires: HBP
Status: Authorized
Lease No. NMNM0053434
Effective Date: 08/01/1959
Expires: HBP
Status: Authorized
Lease No. NMNM0080262
Effective Date: 04/01/1960
Expires: HBP
Status: Authorized
Lease No. NMNM078273
Effective Date: 12/01/1988
Expires: HBP
Status: Authorized
Lease No. NMNM123523
Effective Date: 09/01/2009
Expires: 08/31/2019
Status: Authorized
KOP:32.594479, -103.523721
140.000' FNL 430.00' FEL
Section 11-T20S-R34E NMPM
LP: 32.593217, -103.523721
600.000' FNL 430.000' FEL
Section 11-T20S-R34E NMPM
Leg 1-2: 32.591269, -103.523725
1,320.000' FNL 430.000' FEL
Section 11-T20S-R34E NMPM
TMD: 12,800.000' TVD: 11,800.000'
Leg 1-3: 32.580369, -103.523722
0.000' FNL 430.000' FEL
Section 14-T20S-R34E NMPM
TMD: 16,800.000' TVD: 11,800.000'
Leg 1-4: 32.576747, -103.523721
1,320.00' FNL 430.000' FEL
Section 14-T20S-R34E NMPM
TMD: 18,100.000' TVD: 11,800.000'
This plat is for informational and planning purpose only. Reagan Smith Energy Solutions does not warrant title. This plat is based on information provided by the Bureau of Indian Affairs and/or Bureau of Land Management
Lease Penetration Points
Lea Unit 203H
Proposed Drill Path
Participating Area NMNM070976A
Participating Area NMNM070976B
Participating Area NMNM070976C
Exploratory Unit NMNM070976X
Bureau of Land Management
REAGAN SMITH
ENERGY SOLUTIONS, INC.

AFMSS

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

Drilling Plan Data Report

05/09/2019

APD ID: 10400035223 **Submission Date:** 10/23/2018

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Well Type: OIL WELL **Well Work Type:** Drill

[redacted]

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3665	1700	1701	SANDSTONE,SILTSTONE	NONE	No
2	YATES	-1459	3424	3440	LIMESTONE,SANDSTONE,DOLOMITE,ANHYDRITE,SILTSTONE	NONE	No
3	SEVEN RIVERS	-1844	3809	3828	DOLOMITE,SALT,ANHYDRITE,GYPSUM,SILTSTONE	NONE	No
4	QUEEN	-2667	4632	4659	MUDSTONE,SANDSTONE,DOLOMITE,ANHYDRITE,GYPSUM	NONE	No
5	BELL CANYON	-3623	5588	5624	LIMESTONE,SHALE,SANDSTONE	NONE	No
6	CHERRY CANYON	-4506	6471	6515	LIMESTONE,SHALE,SANDSTONE	NONE	No
7	BRUSHY CANYON	-5142	7107	7153	LIMESTONE,SHALE,CHERT,CONGLOMERATE	NONE	No
8	BONE SPRING	-6226	8191	8237	LIMESTONE,SANDSTONE	USEABLE WATER,NATURAL GAS,OIL	No
9	UPPER AVALON SHALE	-6817	8782	8828	SHALE,SILTSTONE	USEABLE WATER,NATURAL GAS,OIL	No
10	BONE SPRING 1ST	-7539	9504	9550	LIMESTONE,DOLOMITE	USEABLE WATER,NATURAL GAS,OIL	No
11	BONE SPRING 2ND	-8076	10041	10087	SANDSTONE	USEABLE WATER,NATURAL GAS,OIL	No
12	BONE SPRING 3RD	-8734	10699	10745	SHALE,SANDSTONE	USEABLE WATER,NATURAL GAS,OIL	No
13	WOLFCAMP	-9044	11009	11055	LIMESTONE,SHALE	USEABLE WATER,NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Pressure Rating (PSI): 5M **Rating Depth:** 11800

Equipment: Ten thousand (10M) psi working pressure Blind Rams and Pipe Rams and a five thousand (5M) psi Annular Preventer will be installed on all casing. Three (3) chokes; two (2) hydraulic and one (1) manual, will be used.
Requesting Variance? YES

Variance request: A variance to the requirement of a rigid steel line connecting to the choke manifold is requested. Specifications for the flex hose are provided with BOP schematic in exhibit section.
Testing Procedure: A third party testing company will conduct pressure tests and record prior to drilling out below 13-3/8s" casing. The BOP, Choke, Choke Manifold, Top Drive Valves and Floor Safety Valves will be tested to 5000 psi prior to drilling below the 13-3/8s" surface casing shoe and to 100% of full working pressure (10,000 psi) prior to drilling below the 9-5/8s" intermediate casing shoe. The Annular Preventer will be tested to 2500 psi prior to drilling below the 13-3/8s" surface casing shoe and to 100% of working pressure (5,000 psi) prior to drilling below the 9-5/8" intermediate casing shoe. In addition, the BOP equipment will be tested after any repairs to the equipment as well as drilling out below any casing string. Pipe rams, blind rams, and annular preventer will be activated on each trip, and weekly BOP drills will be held with each crew. Floor Safety Valves that are full open and sized to fit Drill Pipe and Collars will be available on the rig floor in the open position when the Kelly is not in use.

Choke Diagram Attachment:

McVay_2_Choke_Manifold_Diagram_20181009104233.pdf

BOP Diagram Attachment:

McVay_2_BOP_Diagram_20181009104239.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	CONDUCTOR	26	20.0	NEW	API	N	0	120	0	120			120	H-40	94	N/A	1.42	3.5	DRY	4.3	DRY	4.3
2	SURFACE	17.5	13.375	NEW	API	N	0	1800	0	1799			1800	J-55	54.5	BUTT	1.42	3.5	DRY	4.3	DRY	4.3
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5600	0	5564			5600	HCL-80	47	BUTT	1.97	1.34	DRY	2.99	DRY	2.99
4	INTERMEDIATE	8.5	7.0	NEW	API	N	0	10700	0	10654			10700	HCP-110	32	BUTT	2.31	1.98	DRY	2.31	DRY	2.31
5	PRODUCTION	6	4.5	NEW	API	N	10200	19313	10154	11800			9113	P-110	13.5	BUTT	1.51	1.25	DRY	1.63	DRY	1.63

Casing Attachments

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Casing Attachments

Casing ID: 1 **String Type:** CONDUCTOR

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing ID: 2 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

UPDATED_Lea_Unit__203H_Drilling_Program_20181017140950.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

UPDATED_Lea_Unit__203H_Drilling_Program_20181017140959.pdf

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Casing Attachments

Casing ID: 4 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

UPDATED_Lea_Unit__203H_Drilling_Program_20181017141007.pdf

Casing ID: 5 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

UPDATED_Lea_Unit__203H_Drilling_Program_20181017141016.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
CONDUCTOR	Lead		0	1600	1300	1.72	13.5	2236	100	Class C cement	4%Bentonite, 0.4 pps Defoamer, 0.125 pps Cellophane, 9.102 H2O GPS
CONDUCTOR	Tail		1600	1800	200	1.32	14.8	264	60	Class C Neat	6.304 H2O GPS
SURFACE	Lead		0	1600	1300	1.72	13.5	2236	100	Class C	4%Bentonite, 0.4 pps Defoamer, 0.125 pps Cellophane, 9.102 H2O GPS

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Tail		1600	1800	200	1.32	14.8	264	60	Class C Neat	6.304 H2O GPS
INTERMEDIATE	Lead		0	5000	1700	1.94	12.6	3298	180	35:65 POZ-Class C	6% Bentonite, 0.5% Fluidloss, 0.15% Retarder, 0.4pps Defoamer, 10.542 H2O GPS
INTERMEDIATE	Tail		5000	5600	350	1.18	15.6	413	140	Class H	0.3% Fluidloss, 5.216 H2O GPS
INTERMEDIATE	Lead		0	5300	820	1.18	15.6	968	15	Class H	0.2% Retarder, 6.3 H2O GPS
INTERMEDIATE	Tail		5300	10700	550	1.62	12.6	891	30	PVL	1.3% Salt, 5% Expanding Cement, 0.5% Fluidloss, 0.3% Retarder, 0.1% Antisettling, 0.4 pps Defoamer, 8.621 H2O GPS
PRODUCTION	Lead		10200	19313	750	1.34	14.2	1005	30	50:50 Poz (fly ash) Class H	5% Salt, 2% Bentonite, 0.5% Fluidloss, 0.2% Retarder, 0.2% Dispersant, 0.4pps Defoamer, 6.088 H2O GPS

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: In the event that circulation is lost (> 50%) while drilling the 12-1/4" intermediate hole in the Capitan Reef at +/-4000', we will plan to install a DV tool and external casing packer within 200' of the top depth where lost circulation occurred and will pump a two-stage cement job with the potential to add an additional DV tool for a three-stage cement job. If there is no lost circulation a single stage cementing procedure will be followed. Legacy plans to cement to surface regardless of whether a single stage, 2-stage or 3-stage procedure is implemented.

Describe the mud monitoring system utilized: A Pason PVT system will be rigged up prior to spudding this well. A volume monitoring system that measures, calculates, and displays readings from the mud system on the rig to alert the rig crew of

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

adjusted.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
5600	10700	OTHER : Cut brine	9	9.2							
1800	5600	OTHER : Brine	10	10							
0	1800	OTHER : Fresh Water	8.5	9							
10700	11800	OIL-BASED MUD	10.5	11							

Section 6 - Test, Logging, Coring

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

Mud logging, H2S plan, BOP and choke plans all in place for testing, equipment, safety

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

CBL,GR,MWD,MUDLOG

Coring operation description for the well:

No coring planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6750 **Anticipated Surface Pressure:** 4154

Anticipated Bottom Hole Temperature(F): 205

Anticipated abnormal pressures, temperatures, or potential geologic hazards? YES

Describe:

Capitan Reef

Contingency Plans geoharzards description:

If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall 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.

Contingency Plans geohazards attachment:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Contingency_Plan_Briefing_Areas_Alarm_Loc._Legacy_Lea_Unit_203H_20181016091002.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Lea_Unit__203H_AC_Report_Plan_1_20181016091016.pdf

Lea_Unit__203H_Planning_Report_Plan_1_20181016091027.pdf

Lea_Unit__203H_Plot_Plan_1_20181016091037.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

McVay_Rig2_Schematic_20181009142438.pdf

Flex_Hose_Specs_20181009142512.pdf

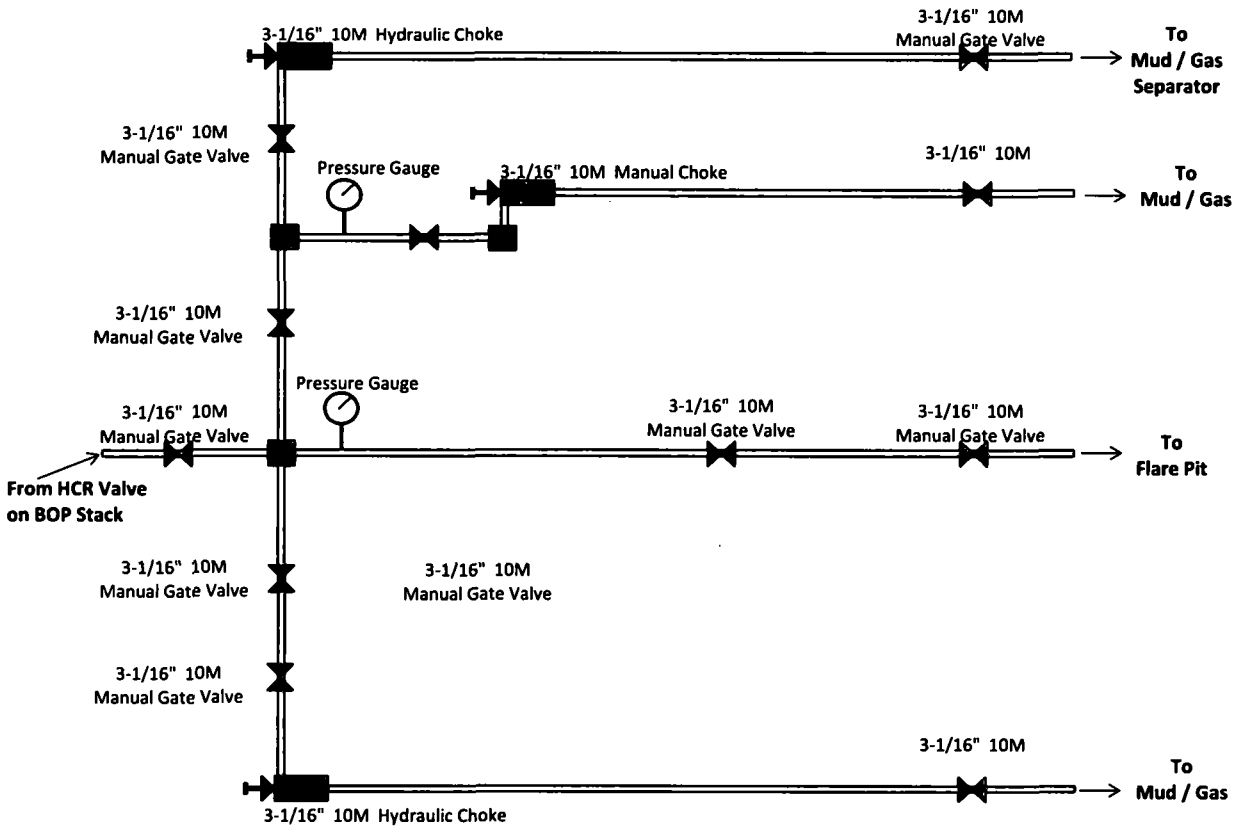
Lea_Unit__203H_Planning_Report_Plan_1_20181016091047.pdf

Lea_Unit_203H_GasCapturePlanFormAPD_20181016091109.pdf

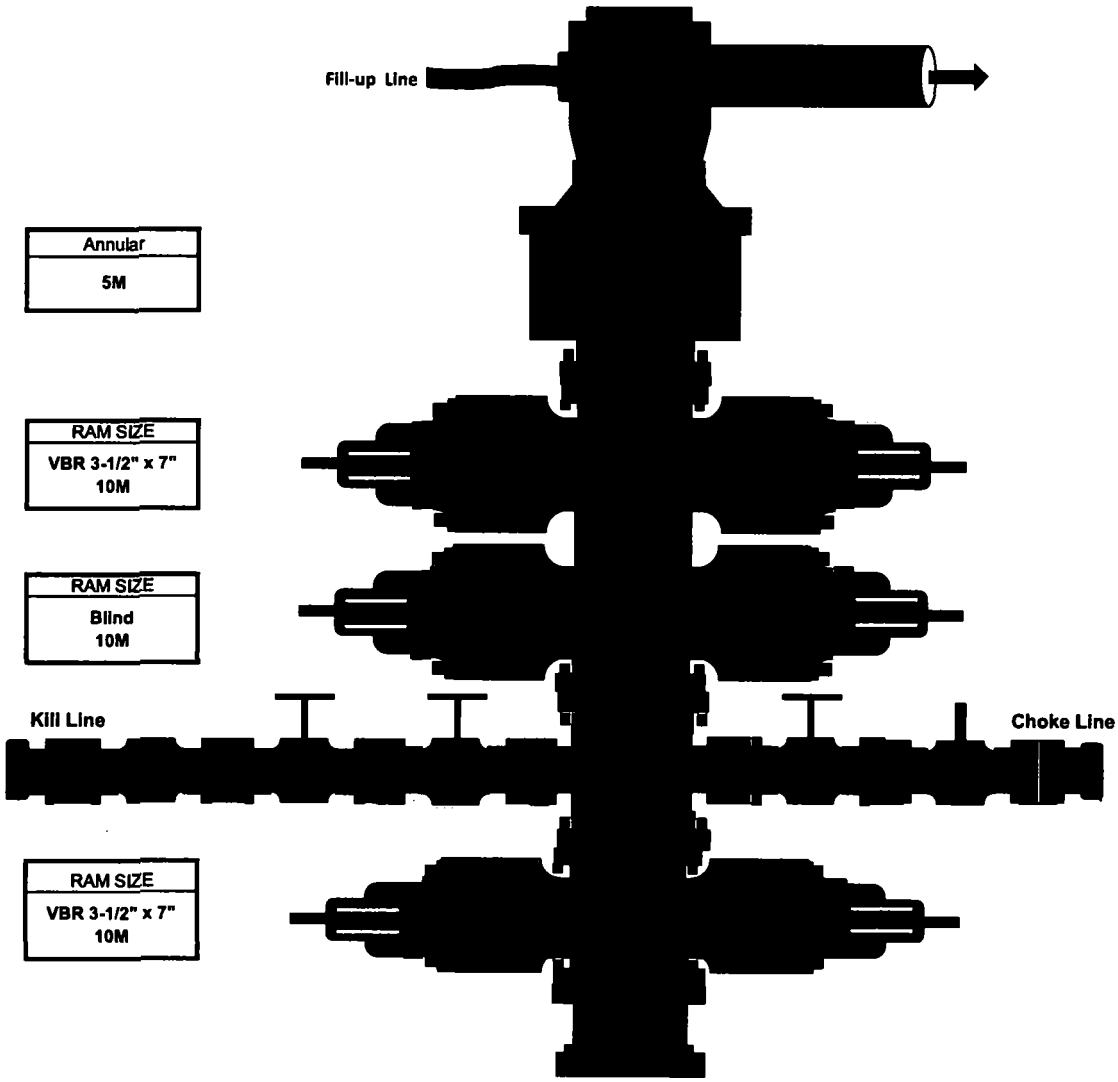
Well_Control_Plan_Lea_Unit_203H_20181023151503.pdf

Other Variance attachment:

Choke Manifold (10M)



13-5/8" BOP Stack (10M)



DRILLING PROGRAM

Operator:
LEGACY RESERVES OPERATING LP

Project Name:
LEA UNIT 203H

Project Location:
Lea County, New Mexico

Prepared By:
Matt Dickson
Drilling Engineer

Submitted To:
Bureau of Land Management
Carlsbad Field Office

Please address inquiries, questions, scheduling of meetings and deficiency statements, if any, to Scott St. John and/or Monica Smith Griffin at the address shown below:

Reagan Smith Energy Solutions, Inc.
1219 Classen Drive
Oklahoma City, OK 73103
405-286-9326

sstjohn@rsenergysolutions.com msmith@rsenergysolutions.com

1.0 Drilling Program

1.1 Estimated Formation Tops

FORMATION	*TVD @ Surface Loc*	*TVD @ KB*	*TVD @ TD*
Rustler	1,700'	1,728'	1,728'
Yates	3,424'	3,452'	3,452'
Seven Rivers	3,809'	3,837'	3,837'
Queen	4,632'	4,660'	4,660'
Bell Canyon	5,588'	5,616'	5,616'
Cherry Canyon	6,471'	6,499'	6,499'
Brushy Canyon	7,107'	7,135'	7,135'
Bone Spring	8,191'	8,219'	8,219'
Avalon Shale	8,782'	8,810'	8,810'
1st BS	9,504'	9,532'	9,532'
2nd BS	10,041'	10,069'	10,069'
3rd BS	10,699'	10,727'	10,727'
Wolfcamp	11,009'	11,037'	11,037'
Upper Wolfcamp	11,212'	11,240'	11,240'
Lower Wolfcamp	11,678'	11,698	11,800

Target Formation and Total Depth:

The total depth of the proposed well is approximately 19,313' MD located in the Upper Wolfcamp.

According to New Mexico EMNRD 19.15.15.9 NMAC a well shall be located no closer than 330' feet to a boundary of the unit.

1.2 Estimated Depths of Anticipated Fresh Water, Oil, and Gas

Substance	**Depth**
Fresh Water	0' to 250'
Base of Treatable Water	1100'
Hydrocarbons	7,000' to TD

1.2.2 State Water Protection Compliance

Bureau of Land Management requires surface casing to be set at a minimum of 25' into the Rustler Anhydrite and above the salt section. Operator proposes to set the surface casing at a depth of 1800' (measured from the surface) and use 13-3/8" casing.

Special Capitan Reef requirements
If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall 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.

1.3 Pressure Control Equipment

Ten thousand (10M) psi working pressure Blind Rams and Pipe Rams and a five thousand (5M) psi Annular Preventer will be installed on all casing. Three (3) chokes; two (2) hydraulic and one (1) manual, will be used.

A variance to the requirement of a rigid steel line connecting to the choke manifold is requested. Specifications for the flex hose are provided with BOP schematic in exhibit section.

A third party testing company will conduct pressure tests and record prior to drilling out below 13-3/8s" casing. The BOP, Choke, Choke Manifold, Top Drive Valves and Floor Safety Valves will be tested to 5000 psi prior to drilling below the 13-3/8s" surface casing shoe and to 100% of full working pressure (10,000 psi) prior to drilling below the 9-5/8s" intermediate casing shoe. The Annular Preventer will be tested to 2500 psi prior to drilling below the 13-3/8s" surface casing shoe and to 100% of working pressure (5,000 psi) prior to drilling below the 9-5/8" intermediate casing shoe.

In addition, the BOP equipment will be tested after any repairs to the equipment as well as drilling out below any casing string. Pipe rams, blind rams, and annular preventer will be activated on each trip, and weekly BOP drills will be held with each crew.

Floor Safety Valves that are full open and sized to fit Drill Pipe and Collars will be available on the rig floor in the open position when the Kelly is not in use.

1.4 Proposed Casing and Cementing Program

1.4.1 Proposed Casing Program

Interval	Depth	Size	Weight/ft	Grade	Thread	Condition	Hole size	Wash out factor	Cement Yield
Conductor	120'	20"	94.00#	H-40		New	26"		Grout
Surface	1,800'	13-3/8"	54.50#	J-55	BTC	New	17-1/2"	100	1.72/1.32 cu. Ft/sk
Intermediate	5,600'	9-5/8"	47#	HCL-80	BTC	New	12-1/4"	150	1.94/1.18 cu. Ft/sk
Intermediate Liner	10,700	7"	32.00#	P-110HC	BTC	New	8-1/2"	30	1.62 cu. Ft/sk
Production	19,313'	4-1/2"	13.5#	P-110	BTC	New	6"	30	1.34 cu. Ft/sk

Conductor: 20", H-40# line pipe to a depth of 120'.
Wall thickness of 0.250".

Surface Casing:

Top	Bottom	Size	Weight/ Ft	Grade	Thread	Collapse psi	Internal Yld psi	Body Yld Strength	Joint Strength
Surface	1,800'	13-3/8"	54.50	J-55	BTC	1130	2730	853,000	909,000

Intermediate Casing:

Top	Bottom	Size	Weight/Ft	Grade	Thread	Collapse psi	Internal Yld psi	Body Yld Strength	Joint Strength
Surface	5,600'	9-5/8"	47#	HCL-80	BTC	5,740	6,870	1,086,000	1,122,000

Intermediate Liner:

Top	Bottom	Size	Weight/Ft	Grade	Thread	Collapse psi	Internal Yld psi	Body Yld Strength	Joint Strength
Surface	10,700'	7"	32#	P-110HC	BTC	11,890	12,450	1,025,000	1,053,000

Production Casing:

Top	Bottom	Size	Weight/Ft	Grade	Thread	Collapse psi	Internal Yld psi	Body Yld Strength	Joint Strength
10,200	19,313'	4-1/2"	13.5#	P-110	BTC	10,690	12,420	422,000	443,000

1.4.2 Proposed Cement Program

Conductor: Grout to Surface (est. 8 cu. yds on backside)

13-3/8" Surface:

LEAD	
Top of MD	0
Bottom of MD	1600
Cement Type	Class C
Additives	4%Bentonite, 0.4 pps Defoamer, 0.125 pps Cellophane, 9.102 H2O GPS
# of SKS	1300
Yield (ft3/sk)	1.72
Density (lbs/gal)	13.5
Volume (ft3)	2236
Excess (%)	100%
TAIL	
Top of MD	1600
Bottom of MD	1800
Cement Type	Class C Neat
Additives	6.304 H2O GPS
# of SKS	200
Yield (ft3/sk)	1.32
Density (lbs/gal)	14.8
Volume (ft3)	264
Excess (%)	60%

9-5/8" Intermediate (No DV Tool):

LEAD	
Top of MD	0
Bottom of MD	5000
Cement Type	35:65 POZ-Class C
Additives	6% Bentonite, 0.5% Fluidloss, 0.15% Retarder, 0.4pps Defoamer, 10.542 H2O GPS
# of SKS	1700
Yield (ft3/sk)	1.94
Density (lbs/gal)	12.6
Volume (ft3)	3298
Excess (%)	180%
TAIL	
Top of MD	5000
Bottom of MD	5600
Cement Type	Class H
Additives	0.3% Fluidloss, 5.216 H2O GPS
# of SKS	350
Yield (ft3/sk)	1.18
Density (lbs/gal)	15.6
Volume (ft3)	413
Excess (%)	140%

9-5/8" Intermediate (With 1 DV Tool):

***Stage 1**	
LEAD	
Top of MD	0
Bottom of MD	5000
Cement Type	35:65 POZ-Class C
Additives	6% Bentonite, 0.5% Fluidloss, 0.15% Retarder, 0.4pps Defoamer, 10.542 H2O GPS
# of SKS	1700
Yield (ft3/sk)	1.94

Density (lbs/gal)	12.6
Volume (ft3)	3298
Excess (%)	180%
TAIL	
Top of MD	500
Bottom of MD	5600
Cement Type	Class H
Additives	0.3% Fluidloss, 5.216 H2O GPS
# of SKS	350
Yield (ft3/sk)	1.18
Density (lbs/gal)	15.6
Volume (ft3)	413
Excess (%)	140%
***Stage 2**	
Stage Tool Depth	+/- 3900'
LEAD	
Top of MD	0
Bottom of MD	3500
Cement Type	35:65 POZ-Class C
Additives	6% Bentonite, 0.5% Fluidloss, 0.15% Retarder, 0.4pps Defoamer, 10.543 H2O GPS
# of SKS	1200
Yield (ft3/sk)	1.94
Density (lbs/gal)	12.6
Volume (ft3)	2328
Excess (%)	200%
TAIL	
Top of MD	3500
Bottom of MD	3900
Cement Type	Class H
Additives	0.3% Fluidloss, 5.216 H2O GPS
# of SKS	200
Yield (ft3/sk)	1.18
Density (lbs/gal)	15.6
Volume (ft3)	236
Excess (%)	100%

9-5/8" Intermediate (With 2 DV Tools):

***Stage 1**	
LEAD	
Top of MD	0
Bottom of MD	5000
Cement Type	35:65 POZ-Class C
Additives	6% Bentonite, 0.5% Fluidloss, 0.15% Retarder, 0.4pps Defoamer, 10.542 H2O GPS
# of SKS	1700
Yield (ft3/sk)	1.94
Density (lbs/gal)	12.6
Volume (ft3)	3298
Excess (%)	180%
TAIL	
Top of MD	5000
Bottom of MD	5600
Cement Type	Class H
Additives	0.3% Fluidloss, 5.216 H2O GPS
# of SKS	350
Yield (ft3/sk)	1.18
Density (lbs/gal)	15.6
Volume (ft3)	413
Excess (%)	140%
***Stage 2**	
Stage Tool Depth	+/- 3900'
LEAD	
Top of MD	0
Bottom of MD	3500
Cement Type	35:65 POZ-Class C
Additives	6% Bentonite, 0.5% Fluidloss, 0.15% Retarder, 0.4pps Defoamer, 10.543 H2O GPS
# of SKS	1200
Yield (ft3/sk)	1.94
Density (lbs/gal)	12.6
Volume (ft3)	2328
Excess (%)	200%
TAIL	

Top of MD	3500
Bottom of MD	3900
Cement Type	Class H
Additives	0.3% Fluidloss, 5.216 H2O GPS
# of SKS	200
Yield (ft3/sk)	1.18
Density (lbs/gal)	15.6
Volume (ft3)	236
Excess (%)	100%
***Stage 3**	
Stage Tool Depth	+/- 1900'
TAIL	
Top of MD	0
Bottom of MD	1900
Cement Type	Class C Neat
Additives	6.304 H2O GPS
# of SKS	700
Yield (ft3/sk)	1.32
Density (lbs/gal)	14.8
Volume (ft3)	924
Excess (%)	30%

7" Intermediate Liner:

LEAD	
Top of MD	0
Bottom of MD	5300
Cement Type	Class H
Additives	0.2% Retarder, 6.3 H2O GPS
# of SKS	820
Yield (ft3/sk)	1.18
Density (lbs/gal)	15.6
Volume (ft3)	968
Excess (%)	15%
TAIL	
Top of MD	5300
Bottom of MD	10,700
Cement Type	PVL
Additives	1.3% Salt, 5% Expanding Cement, 0.5% Fluidloss, 0.3% Retarder, 0.1% Antisettling,

	0.4 pps Defoamer, 8.621 H2O GPS
# of SKS	550
Yield (ft3/sk)	1.62
Density (lbs/gal)	12.6
Volume (ft3)	891
Excess (%)	30%

4-1/2" Production Liner:

LEAD	
Top of MD	10,200
Bottom of MD	19,313
Cement Type	50:50 POZ-Class H
Additives	5% Salt, 2% Bentonite, 0.5% Fluidloss, 0.2% Retarder, 0.2% Dispersant, 0.4pps Defoamer, 6.088 H2O GPS
# of SKS	750
Yield (ft3/sk)	1.34
Density (lbs/gal)	14.2
Volume (ft3)	1005
Excess (%)	30%

Cement volumes are based on bringing cement to surface on all strings and TOC to ~10,200' (top of liner) on production.

Operator reserves the right to change cement designs as hole conditions may warrant.

1.5 Proposed Mud Program

Top TVD	Bottom TVD	Type	Max Mud Weight for Hole Control Design	Viscosity (sec/qt)
SURFACE	1,800	Fresh Water	9.0	28-38
1800	5,600	Brine	10.0	28-30
5,600	10,700	Cut Brine	9.2	28-30
10,700	TD	OBM	11.0	55-65

The operator must include the minimum design criteria, including casing loading assumptions and corresponding safety factors for burst, collapse, and tensions (body yield, and joint strength).

1.6 Casing Design

1.6.1 Drilling Design Analysis

Interval	Max TVD (ft)	Anticipated Mud Weight (ppg)	Estimated Max Pore Pressure (psi)	Internal Yield Strength (psi)	Collapse Strength (psi)	Joint Strength (lbs)	Body Strength (lbs)	Burst Safety Factor (Min 1.25)	Collpase Safety Factor (Min 1.25)	Tensile Safety Factor (Min 1.6)
Surface	1,800	8.5	780	2,730	1,130	909,000	853,000	3.5	1.42	4.3
Interm.	5,600	10	2,420	6,870	5,740	1,122,000	1,086,000	1.34	1.97	2.99
Tie-Back	10,700	9.0	4,730	12,450	11,890	1,053,000	1,025,000	1.98	2.31	2.31
Prod.	11,800	11.5	5,880	12,420	10,690	443,000	422,000	1.25	1.51	1.63

Surface Casing Design Notes:

- **Burst Design Assumptions: Calculations assume complete evacuation behind pipe.**
- **Collapse Design Assumptions: Calculations assume complete evacuation inside pipe.**
- **Tension Design Assumptions: Calculations include 100,000 lb. max over-pull and do not consider the effects of buoyancy, with string held in tension.**

Intermediate Casing Design Notes:

- **Burst Design Assumptions: Calculations assume a .7psi/ft shoe test, and 0.22 psi/ft gas gradient.**
- **Collapse Design Assumptions: Calculations assume complete evacuation inside pipe.**
- **Tension Design Assumptions: Calculations include 100,000 lb. max over-pull and do not consider the effects of buoyancy, with string held in tension.**

Intermediate Liner w/ Tie-Back Design Notes:

- **Burst Design Assumptions: Calculations assume a .7psi/ft shoe test, and 0.22 psi/ft gas gradient.**
- **Collapse Design Assumptions: Calculations assume complete evacuation inside pipe.**
- **Tension Design Assumptions: Calculations include 100,000 lb. max over-pull and do not consider the effects of buoyancy, with string held in tension.**

Production Design Notes:

- **Burst Design Assumptions: Calculations assume surface frac pressure of 9500 psi along with a fluid gradient of 0.49psi/ft, with an external force equivalent to 0.44 psi/ft.**
- **Collapse Design Assumptions: Calculations assume complete evacuation inside pipe.**
- **Tension Design Assumptions: Calculations include 100,000 lb. max over-pull and do not consider the effects of buoyancy, with string held in tension.**

*Notes:

1) Collapse DSF: If < 1.125 calculations are required.
2) Burst DSF: If < 1.0 calculations are required.
3) Body Tensile DSF: If < 1.6 (dry) or < 1.8 (buoyant) calculations are required.
4) Joint Tensile DSF: If < 1.6 (dry) or < 1.8 (buoyant) calculations are required.
5) Will an offset pressure variance request be requested to meet safety factors? Max. 0.22 psi/ft. Please indicate offset pressure variance requested.

Mud weight increases at shoe depths are for pressure control. Mud weight increases in the curve and lateral sections of the hole are for hole stability, not pressure control. Mud weight assumptions for casing load designs exceed anticipated maximum mud weight for balanced drilling in all hole sections. Expected mud weights in the Lower Wolfcamp Horizontal will be 0.5 to 1.0 ppg greater than formation pressure (i.e. overbalanced drilling.)

The Mud System will run as a closed loop system with PVT monitoring. All drill cuttings and liquid mud will be hauled to an approved NMOCD site for disposal or soil farm upon receiving appropriate approval.

1.7 Completion Program and Casing Design

Hydraulic fracturing will occur through the production casing. The burst design calculation assumes TOC at surface and therefore, the backside of the production casing is not evacuated. The maximum pumping pressure is 10,000 psi with a maximum proppant fluid weight of 9.5 ppg. The design safety factor for burst is 1.25.

Upon request, operator will provide proof of cement bonding by bond log. Operator is responsible for log interpretation and certification prior to frac treatment.

Upon request, operator will provide estimated fracture lengths, flowback storage, volumes of fluids and amount of sand to be used, and number of stages of frac procedure. Furthermore, a report of the annulus pressures before and after each stage of treatment may be requested by the BLM. The report may include chemical additives (other than proprietary), dissolved solids in frac fluid, and depth of perforations.

1.8 Evaluation Program

Required Testing, Logging, and Coring procedures noted below:

- Mud Logging/Gamma Ray/MWD.
- Cased hole CBL on production casing.

1.9 Downhole Conditions

Zones of possible lost circulation:	Capitan Reef
Zones of possible abnormal pressure:	Lower Wolfcamp
Maximum bottom hole temperature:	205° F
Maximum bottom hole pressure:	6,750 psi or less.

1.10 Overview of Drilling Procedure

- Drill 17.5" surface hole to 1,800'; run 13.375" casing to 1,800' and cement to surface; install 10M stack, set isolation plug and test BOPE and casing independently to regulatory requirements.
- Drill 12.25" intermediate hole to 5,600', run 9.625" casing and cement; set isolation plug and test BOPE and casing independently to regulatory requirements.
- Drill 8-1/2" intermediate hole to approximately 10,700' and run 7" liner with a tie-back sleeve, and cement to top of liner set at +/- 5,300'.

- Drill 6" production hole to +/- 19,313'; run 4.5" liner from TD to +/- 10,200' and cement per cement program and test.
- Run 7" tie-back string from +/- 5300' to surface and cement per cement program, circulate cement to surface.

1.11 Overview of Completion for Equipment Sizing

- A Sundry Notice will be submitted with the proposed completion procedure prior to the job.

LEGACY RESERVES OPERATING, L. P.
HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN
LEA UNIT 203H
Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be rigged up and in use when the company drills out from under surface casing. H_2S monitors, warning signs, wind indicators and flags will be in use.

A. All personnel shall receive proper H2S training in accordance with Onshore Order 6 III.C.3.a

B. Briefing Area: Two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:
- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun.
  b. Choke manifold with a remotely operated choke.
  c. Mud/Gas Separator.

- Protective Equipment for essential personnel.
  Breathing apparatus:
  a. Rescue Packs (SCBA) – 1 unit shall be placed at each briefing area. 2 units shall be stored in the safety trailer.
  b. Work/Escape packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
  c. Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harness
  c. 100 ft. 5/8" OSHA approved rope
  d. One 20# class ABC fire extinguisher

- H2S detection and monitoring Equipment:
  The stationary detector with three sensors will be placed in the upper doghouse, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor, Bell nipple, end of flare line or where well bore fluid is being discharged (Gas sample tubes will be stored in the safety trailer).

- Visual warning systems.
  a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  b. A colored condition flag will be on display, reflecting the current condition, at the drilling site.
  c. Two wind socks will be placed in strategic locations being visible from all angles.

- Mud Program:
  The mud program has been designated to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

- Metallurgy:
  a. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, shall be suitable for H2S service.
  b. All elastomers used for packing and seals shall be H2S trim.

- Communication:
  Communication will be via two way radio in emergency and company vehicles. Cell phones and land lines where available.

H_2S Operations

Though no H_2S is anticipated during the drilling operation, this contingency plan will provide for methods to ensure the well is kept under control in the event an H_2S reading of 100 ppm or more are encountered. Once personnel are safe and the proper protective gear is in place and on personnel, the operator and rig crew essential personnel will ensure the well is under control, suspend drilling operations and shut-in the well (unless pressure build up or other operational situations dictate suspending operations will prevent well control), increase the mud weight and circulate all gas from the hole utilizing the mud/gas separator downstream of the choke, the choke manifold and the emergency flare system located 150' from the well. Bring the mud system into compliance and the H_2S level below 10 ppm, then notify all emergency officers that drilling ahead is practical and safe.

Proceed with drilling ahead only after all provisions of Onshore Order 6, Section III.C. have been satisfied.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the

NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = I	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = I	2 ppm	N/A	1000 ppm

Contacting Authorities

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

Emergency Assistance Telephone List

PUBLIC SAFETY:	***911 or***
Lea County Sheriff or Police	**(575) 396-3611**
Fire Department	**(575) 397-9308**
Hospital	**(575) 492-5000**
Ambulance	**911**
Department of Public Safety	**(392) 392-5588**
Oil Conservation Division	**(575) 748-1823**
New Mexico Energy, Minerals & Natural Resources Department	**(575) 748-1283**

LEGACY RESERVES OPERATING LP	
Legacy Reserves Operating LP	**Office: (432) 689-5200**
Drilling Manager:	**Office: (432) 689-5200**
Daniel Breeding	**Cell: (432) 853-1680**
Drilling Engineer:	**Office: (432) 689-5200**
Matthew Dickson	**Cell: (432) 212-5698**
Operations Manager:	**Office: (432) 689-5200**
Gregg Skelton	

Legacy Company Representative: **Cell: (432) 631-8469**

DRILLING CONTRACTOR-McVAY

Tool Pusher:
Olin Vaught **Cell: (575) 631-7799**

Drilling Manager: **Office: (575) 397-3311**
Michael McVay **Cell: (575) 602-1839**

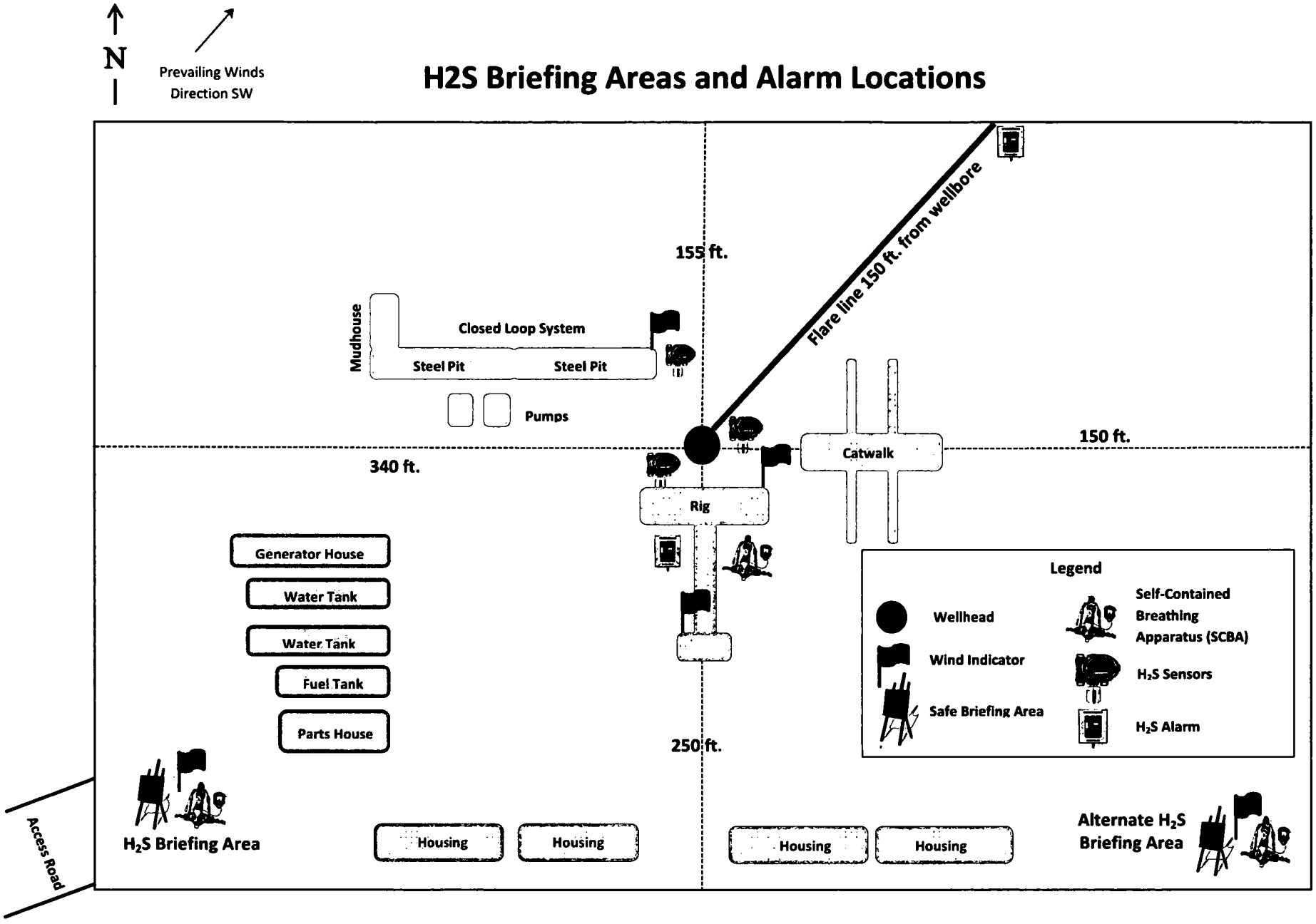
LEGACY SAFETY *Hobbs (575) 393-7233*

EHS Coordinator:
Field Operations Manager: **Office: (432) 689-5200**
Randy Williams **Cell: (432) 260-5566**

Field Safety Technician: **Office: (432) 689-5200**
Randy Turner **Cell: (432) 536-6473**

Evacuee Description:
Residents: THERE ARE NO RESIDENTS WITHIN 3000' ROE.

H2S Briefing Areas and Alarm Locations



MOTIVE
DRILLING TECHNOLOGIES

Legacy Reserves

Lea County, NM (NAD83)
Lea
Lea Unit #203H

Original Wellbore
Plan 1

Anticollision Summary Report

14 September, 2018

LEGACY
RESERVES

Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Project:	Lea County, NM (NAD83)	**TVD Reference:**	RKB @ 3693.0usft
Reference Site:	Lea	**MD Reference:**	RKB @ 3693.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Wellbore	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan 1	**Offset TVD Reference:**	Reference Datum

Reference	Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 30.0usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 10,000.0usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 9/11/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,312.8	Plan 1 (Original Wellbore)	MWD	MWD - Standard

Summary

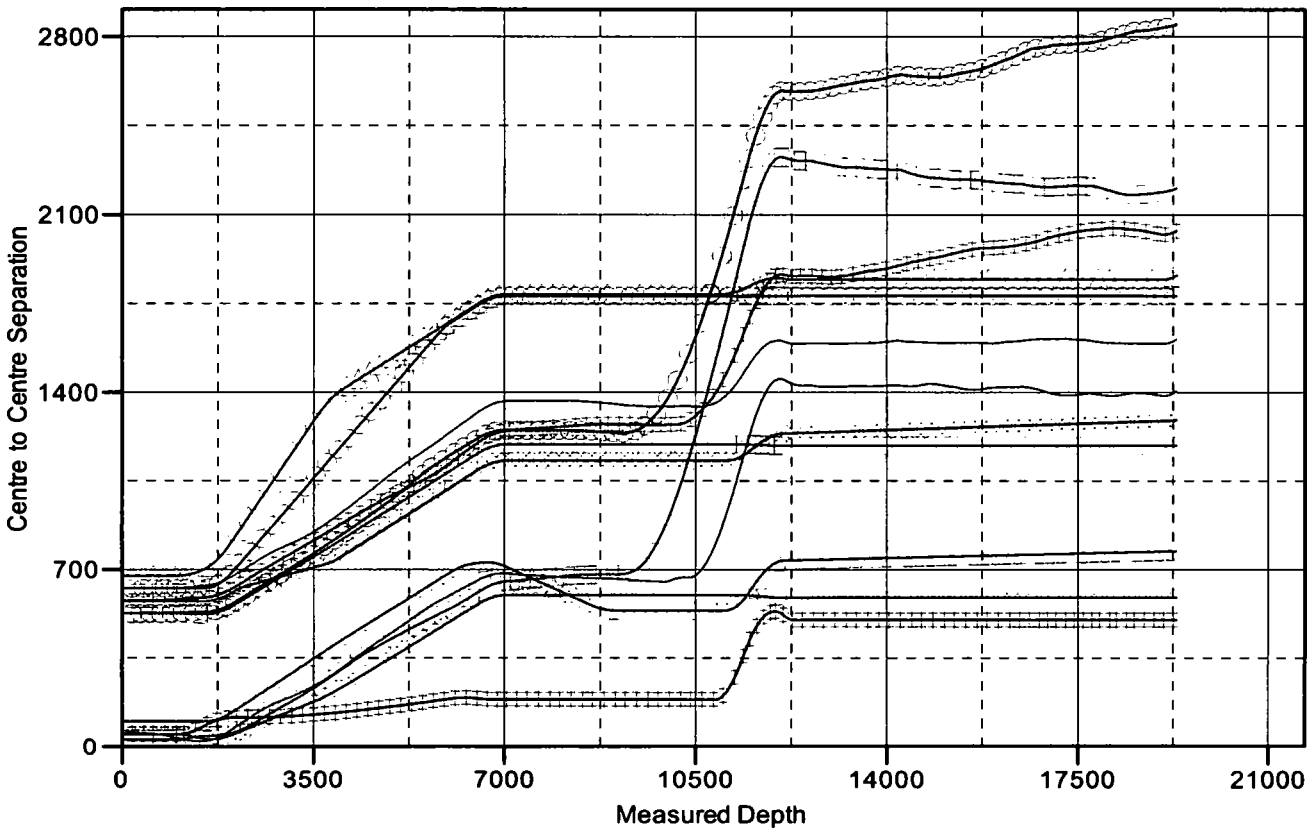
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Lea						
Lea Unit #100H - Original Wellbore - Plan 1	1,000.7	990.7	675.0	668.3	100.758	CC
Lea Unit #100H - Original Wellbore - Plan 1	1,050.0	1,034.3	675.2	668.1	96.066	ES
Lea Unit #100H - Original Wellbore - Plan 1	19,170.0	18,443.2	1,848.4	1,594.4	7.278	SF
Lea Unit #101H - Original Wellbore - Plan 1	1,500.0	1,499.0	575.0	564.7	55.851	CC
Lea Unit #101H - Original Wellbore - Plan 1	1,530.0	1,529.0	575.1	564.6	54.733	ES
Lea Unit #101H - Original Wellbore - Plan 1	19,312.8	18,764.6	1,290.4	1,040.0	5.154	SF
Lea Unit #102H - Original Wellbore - Plan 1	1,500.0	1,500.0	100.1	89.8	9.720	CC
Lea Unit #102H - Original Wellbore - Plan 1	1,530.0	1,530.0	100.2	89.7	9.534	ES
Lea Unit #102H - Original Wellbore - Plan 1	19,312.8	18,782.4	773.4	554.9	3.540	SF
Lea Unit #103H - Original Wellbore - Plan 1	991.7	991.7	49.9	43.2	7.499	CC
Lea Unit #103H - Original Wellbore - Plan 1	1,020.0	1,019.8	49.9	43.1	7.287	ES
Lea Unit #103H - Original Wellbore - Plan 1	10,890.0	10,880.8	187.9	108.4	2.366	SF
Lea Unit #200H - Original Wellbore - Plan 1	1,500.0	1,499.0	625.0	614.7	60.708	CC, ES
Lea Unit #200H - Original Wellbore - Plan 1	19,312.8	19,300.4	1,780.0	1,511.2	6.623	SF
Lea Unit #201H - Original Wellbore - Plan 1	1,523.0	1,525.5	522.0	511.5	49.856	CC
Lea Unit #201H - Original Wellbore - Plan 1	1,560.0	1,562.4	522.2	511.4	48.656	ES
Lea Unit #201H - Original Wellbore - Plan 1	19,312.8	19,373.6	1,190.0	921.0	4.423	SF
Lea Unit #202H - Original Wellbore - Plan 1	1,605.9	1,607.6	30.4	19.4	2.758	CC
Lea Unit #202H - Original Wellbore - Plan 1	1,620.0	1,621.7	30.5	19.3	2.736	ES
Lea Unit #202H - Original Wellbore - Plan 1	19,311.5	19,376.2	590.0	321.0	2.193	SF
Lea Unit #54H - Original Wellbore - Original Wellbore	30.0	15.7	625.7	625.7	10,000.000	CC
Lea Unit #54H - Original Wellbore - Original Wellbore	1,050.0	1,031.8	628.1	621.1	90.420	ES
Lea Unit #54H - Original Wellbore - Original Wellbore	19,140.0	17,971.0	1,594.6	1,369.4	7.080	SF
Lea Unit #55H - Original Wellbore - Original Wellbore	30.0	16.9	575.8	575.8	10,000.000	CC
Lea Unit #55H - Original Wellbore - Original Wellbore	540.0	524.0	577.2	574.6	218.887	ES
Lea Unit #55H - Original Wellbore - Original Wellbore	19,200.0	17,602.0	2,027.0	1,821.0	9.839	SF
Lea Unit #56H - Original Wellbore - Original Wellbore	222.8	209.8	525.5	524.5	551.226	CC
Lea Unit #56H - Original Wellbore - Original Wellbore	1,530.0	1,516.9	530.5	520.3	51.967	ES
Lea Unit #56H - Original Wellbore - Original Wellbore	19,312.8	16,740.0	2,849.4	2,660.9	15.114	SF
Lea Unit #57H - Original Wellbore - Original Wellbore	1,435.2	1,424.0	24.0	14.2	2.459	CC
Lea Unit #57H - Original Wellbore - Original Wellbore	1,500.0	1,488.6	24.2	14.0	2.377	ES
Lea Unit #57H - Original Wellbore - Original Wellbore	1,530.0	1,518.5	24.7	14.3	2.370	SF
Lea Unit #58H - Original Wellbore - Original Wellbore	30.0	18.0	30.0	30.0	854.228	CC
Lea Unit #58H - Original Wellbore - Original Wellbore	840.0	827.8	30.2	25.0	5.758	ES
Lea Unit #58H - Original Wellbore - Original Wellbore	1,900.0	1,887.7	50.3	37.5	3.941	SF

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

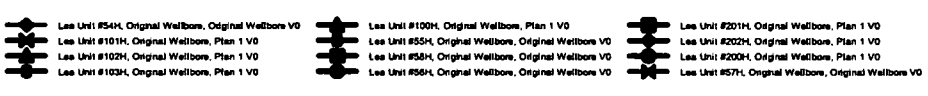
Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Project:	Lea County, NM (NAD83)	**TVD Reference:**	RKB @ 3693.0usft
Reference Site:	Lea	**MD Reference:**	RKB @ 3693.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Wellbore	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan 1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3693.0usft	Coordinates are relative to: Lea Unit #203H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W	Grid Convergence at Surface is: 0.43°

Ladder Plot



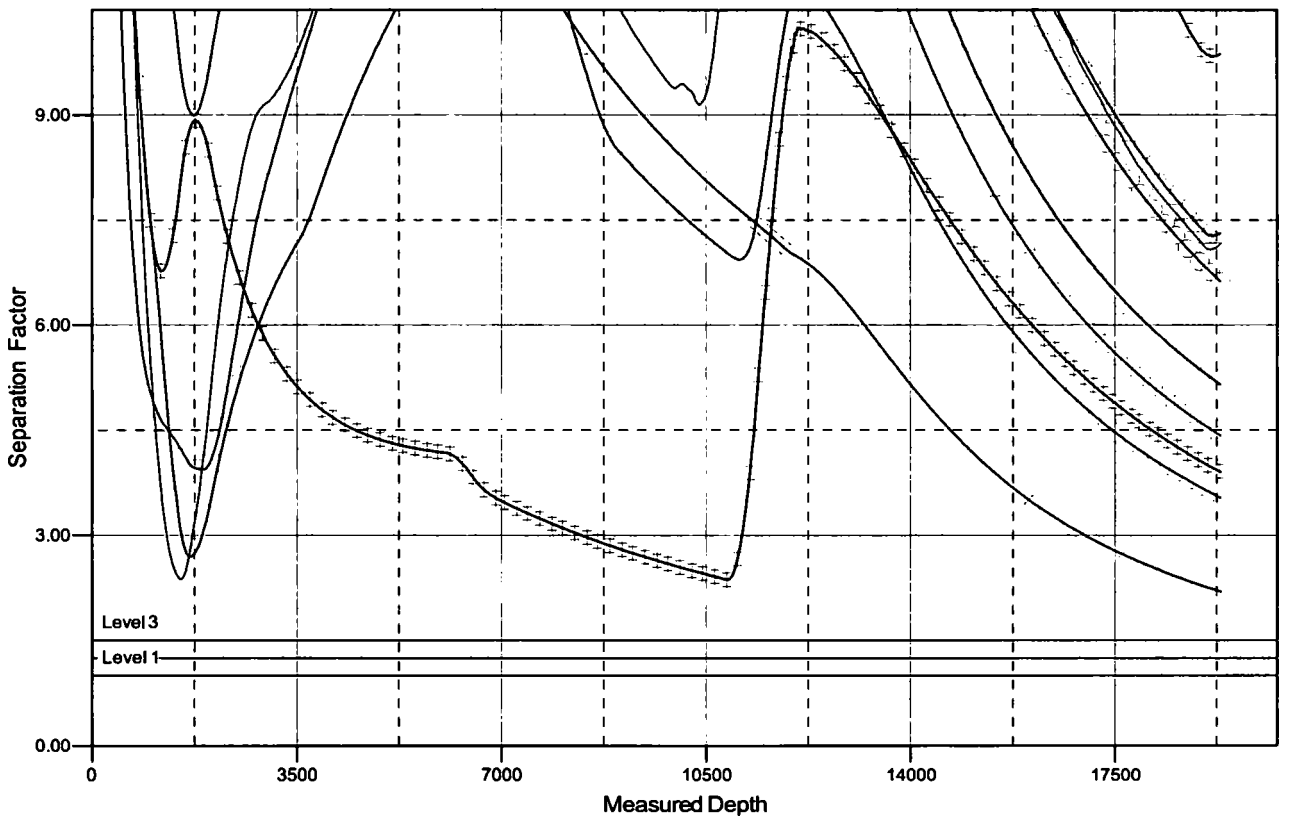
LEGEND



Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Project:	Lea County, NM (NAD83)	**TVD Reference:**	RKB @ 3693.0usft
Reference Site:	Lea	**MD Reference:**	RKB @ 3693.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Wellbore	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan 1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to RKB @ 3693.0usft	Coordinates are relative to: Lea Unit #203H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W	Grid Convergence at Surface is: 0.43°

Separation Factor Plot



LEGEND

Lea Unit #54H, Original Wellbore, Original Wellbore V0
Lea Unit #101H, Original Wellbore, Plan 1 V0
Lea Unit #102H, Original Wellbore, Plan 1 V0
Lea Unit #103H, Original Wellbore, Plan 1 V0
Lea Unit #100H, Original Wellbore, Plan 1 V0
Lea Unit #55H, Original Wellbore, Original Wellbore V0
Lea Unit #58H, Original Wellbore, Original Wellbore V0
Lea Unit #56H, Original Wellbore, Original Wellbore V0
Lea Unit #201H, Original Wellbore, Plan 1 V0
Lea Unit #202H, Original Wellbore, Plan 1 V0
Lea Unit #200H, Original Wellbore, Plan 1 V0
Lea Unit #57H, Original Wellbore, Original Wellbore V0

MOTIVE
DRILLING TECHNOLOGIES

Legacy Reserves

Lea County, NM (NAD83)
Lea
Lea Unit #203H

Original Wellbore

Plan: Plan 1

Standard Planning Report

14 September, 2018

LEGACY
RESERVES

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 1		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Lea				
Site Position:		**Northing:**	567,587.00 usft	**Latitude:**	32° 33' 27.391 N
From:	Map	**Easting:**	797,256.10 usft	**Longitude:**	103° 30' 9.733 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.45 °

Well	Lea Unit #203H					
Well Position	**+N/-S**	13,364.3 usft	**Northing:**	580,951.30 usft	**Latitude:**	32° 35' 40.177 N
	+E/-W	-7,264.1 usft	**Easting:**	789,992.00 usft	**Longitude:**	103° 31' 33.418 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,693.0 usft	**Ground Level:**	3,666.0 usft

Wellbore	Original Wellbore				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2000	2/27/2018	6.73	60.58	48,249.80000000

Design	Plan 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	174.45	

Plan Survey Tool Program **Date** 9/11/2018

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	19,312.8	Plan 1 (Original Wellbore)	MWD	
				MWD - Standard	

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,023.7	7.86	90.00	2,022.1	0.0	35.8	1.50	1.50	0.00	90.00	
6,521.7	7.86	90.00	6,477.9	0.0	650.7	0.00	0.00	0.00	0.00	
7,045.5	0.00	0.00	7,000.0	0.0	686.5	1.50	-1.50	0.00	180.00	
11,368.1	0.00	0.00	11,322.6	0.0	686.5	0.00	0.00	0.00	0.00	
12,118.1	90.00	179.56	11,800.0	-477.5	690.2	12.00	12.00	0.00	179.56	
19,312.8	90.00	179.57	11,800.0	-7,672.0	744.9	0.00	0.00	0.00	83.03	BHL-203H

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	*Original Wellbore*		
Design:	Plan 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	1.50	90.00	1,600.0	0.0	1.3	0.1	1.50	1.50	0.00
1,700.0	3.00	90.00	1,699.9	0.0	5.2	0.5	1.50	1.50	0.00
1,800.0	4.50	90.00	1,799.7	0.0	11.8	1.1	1.50	1.50	0.00
1,900.0	6.00	90.00	1,899.3	0.0	20.9	2.0	1.50	1.50	0.00
2,000.0	7.50	90.00	1,998.6	0.0	32.7	3.2	1.50	1.50	0.00
2,023.7	7.86	90.00	2,022.1	0.0	35.8	3.5	1.50	1.50	0.00
2,100.0	7.86	90.00	2,097.6	0.0	46.3	4.5	0.00	0.00	0.00
2,200.0	7.86	90.00	2,196.7	0.0	59.9	5.8	0.00	0.00	0.00
2,300.0	7.86	90.00	2,295.8	0.0	73.6	7.1	0.00	0.00	0.00
2,400.0	7.86	90.00	2,394.8	0.0	87.3	8.4	0.00	0.00	0.00
2,500.0	7.86	90.00	2,493.9	0.0	100.9	9.8	0.00	0.00	0.00
2,600.0	7.86	90.00	2,593.0	0.0	114.6	11.1	0.00	0.00	0.00
2,700.0	7.86	90.00	2,692.0	0.0	128.3	12.4	0.00	0.00	0.00
2,800.0	7.86	90.00	2,791.1	0.0	142.0	13.7	0.00	0.00	0.00
2,900.0	7.86	90.00	2,890.1	0.0	155.6	15.0	0.00	0.00	0.00
3,000.0	7.86	90.00	2,989.2	0.0	169.3	16.4	0.00	0.00	0.00
3,100.0	7.86	90.00	3,088.3	0.0	183.0	17.7	0.00	0.00	0.00
3,200.0	7.86	90.00	3,187.3	0.0	196.6	19.0	0.00	0.00	0.00
3,300.0	7.86	90.00	3,286.4	0.0	210.3	20.3	0.00	0.00	0.00
3,400.0	7.86	90.00	3,385.4	0.0	224.0	21.6	0.00	0.00	0.00
3,500.0	7.86	90.00	3,484.5	0.0	237.6	23.0	0.00	0.00	0.00
3,600.0	7.86	90.00	3,583.6	0.0	251.3	24.3	0.00	0.00	0.00
3,700.0	7.86	90.00	3,682.6	0.0	265.0	25.6	0.00	0.00	0.00
3,800.0	7.86	90.00	3,781.7	0.0	278.6	26.9	0.00	0.00	0.00
3,900.0	7.86	90.00	3,880.8	0.0	292.3	28.2	0.00	0.00	0.00
4,000.0	7.86	90.00	3,979.8	0.0	306.0	29.6	0.00	0.00	0.00
4,100.0	7.86	90.00	4,078.9	0.0	319.6	30.9	0.00	0.00	0.00
4,200.0	7.86	90.00	4,177.9	0.0	333.3	32.2	0.00	0.00	0.00
4,300.0	7.86	90.00	4,277.0	0.0	347.0	33.5	0.00	0.00	0.00
4,400.0	7.86	90.00	4,376.1	0.0	360.6	34.9	0.00	0.00	0.00
4,500.0	7.86	90.00	4,475.1	0.0	374.3	36.2	0.00	0.00	0.00
4,600.0	7.86	90.00	4,574.2	0.0	388.0	37.5	0.00	0.00	0.00
4,700.0	7.86	90.00	4,673.2	0.0	401.6	38.8	0.00	0.00	0.00
4,800.0	7.86	90.00	4,772.3	0.0	415.3	40.1	0.00	0.00	0.00
4,900.0	7.86	90.00	4,871.4	0.0	429.0	41.5	0.00	0.00	0.00
5,000.0	7.86	90.00	4,970.4	0.0	442.7	42.8	0.00	0.00	0.00
5,100.0	7.86	90.00	5,069.5	0.0	456.3	44.1	0.00	0.00	0.00
5,200.0	7.86	90.00	5,168.6	0.0	470.0	45.4	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
5,300.0	7.86	90.00	5,267.6	0.0	483.7	46.7	0.00	0.00	0.00
5,400.0	7.86	90.00	5,366.7	0.0	497.3	48.1	0.00	0.00	0.00
5,500.0	7.86	90.00	5,465.7	0.0	511.0	49.4	0.00	0.00	0.00
5,600.0	7.86	90.00	5,564.8	0.0	524.7	50.7	0.00	0.00	0.00
5,700.0	7.86	90.00	5,663.9	0.0	538.3	52.0	0.00	0.00	0.00
5,800.0	7.86	90.00	5,762.9	0.0	552.0	53.3	0.00	0.00	0.00
5,900.0	7.86	90.00	5,862.0	0.0	565.7	54.7	0.00	0.00	0.00
6,000.0	7.86	90.00	5,961.0	0.0	579.3	56.0	0.00	0.00	0.00
6,100.0	7.86	90.00	6,060.1	0.0	593.0	57.3	0.00	0.00	0.00
6,200.0	7.86	90.00	6,159.2	0.0	606.7	58.6	0.00	0.00	0.00
6,300.0	7.86	90.00	6,258.2	0.0	620.3	59.9	0.00	0.00	0.00
6,400.0	7.86	90.00	6,357.3	0.0	634.0	61.3	0.00	0.00	0.00
6,500.0	7.86	90.00	6,456.3	0.0	647.7	62.6	0.00	0.00	0.00
6,521.7	7.86	90.00	6,477.9	0.0	650.7	62.9	0.00	0.00	0.00
6,600.0	6.68	90.00	6,555.5	0.0	660.6	63.8	1.50	-1.50	0.00
6,700.0	5.18	90.00	6,655.0	0.0	670.9	64.8	1.50	-1.50	0.00
6,800.0	3.68	90.00	6,754.7	0.0	678.6	65.6	1.50	-1.50	0.00
6,900.0	2.18	90.00	6,854.5	0.0	683.7	66.1	1.50	-1.50	0.00
7,000.0	0.68	90.00	6,954.5	0.0	686.2	66.3	1.50	-1.50	0.00
7,045.5	0.00	0.00	7,000.0	0.0	686.5	66.3	1.50	-1.50	0.00
7,100.0	0.00	0.00	7,054.5	0.0	686.5	66.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,154.5	0.0	686.5	66.3	0.00	0.00	0.00
7,300.0	0.00	0.00	7,254.5	0.0	686.5	66.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,354.5	0.0	686.5	66.3	0.00	0.00	0.00
7,500.0	0.00	0.00	7,454.5	0.0	686.5	66.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,554.5	0.0	686.5	66.3	0.00	0.00	0.00
7,700.0	0.00	0.00	7,654.5	0.0	686.5	66.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,754.5	0.0	686.5	66.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,854.5	0.0	686.5	66.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,954.5	0.0	686.5	66.3	0.00	0.00	0.00
8,100.0	0.00	0.00	8,054.5	0.0	686.5	66.3	0.00	0.00	0.00
8,200.0	0.00	0.00	8,154.5	0.0	686.5	66.3	0.00	0.00	0.00
8,300.0	0.00	0.00	8,254.5	0.0	686.5	66.3	0.00	0.00	0.00
8,400.0	0.00	0.00	8,354.5	0.0	686.5	66.3	0.00	0.00	0.00
8,500.0	0.00	0.00	8,454.5	0.0	686.5	66.3	0.00	0.00	0.00
8,600.0	0.00	0.00	8,554.5	0.0	686.5	66.3	0.00	0.00	0.00
8,700.0	0.00	0.00	8,654.5	0.0	686.5	66.3	0.00	0.00	0.00
8,800.0	0.00	0.00	8,754.5	0.0	686.5	66.3	0.00	0.00	0.00
8,900.0	0.00	0.00	8,854.5	0.0	686.5	66.3	0.00	0.00	0.00
9,000.0	0.00	0.00	8,954.5	0.0	686.5	66.3	0.00	0.00	0.00
9,100.0	0.00	0.00	9,054.5	0.0	686.5	66.3	0.00	0.00	0.00
9,200.0	0.00	0.00	9,154.5	0.0	686.5	66.3	0.00	0.00	0.00
9,300.0	0.00	0.00	9,254.5	0.0	686.5	66.3	0.00	0.00	0.00
9,400.0	0.00	0.00	9,354.5	0.0	686.5	66.3	0.00	0.00	0.00
9,500.0	0.00	0.00	9,454.5	0.0	686.5	66.3	0.00	0.00	0.00
9,600.0	0.00	0.00	9,554.5	0.0	686.5	66.3	0.00	0.00	0.00
9,700.0	0.00	0.00	9,654.5	0.0	686.5	66.3	0.00	0.00	0.00
9,800.0	0.00	0.00	9,754.5	0.0	686.5	66.3	0.00	0.00	0.00
9,900.0	0.00	0.00	9,854.5	0.0	686.5	66.3	0.00	0.00	0.00
10,000.0	0.00	0.00	9,954.5	0.0	686.5	66.3	0.00	0.00	0.00
10,100.0	0.00	0.00	10,054.5	0.0	686.5	66.3	0.00	0.00	0.00
10,200.0	0.00	0.00	10,154.5	0.0	686.5	66.3	0.00	0.00	0.00
10,300.0	0.00	0.00	10,254.5	0.0	686.5	66.3	0.00	0.00	0.00
10,400.0	0.00	0.00	10,354.5	0.0	686.5	66.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
10,500.0	0.00	0.00	10,454.5	0.0	686.5	66.3	0.00	0.00	0.00
10,600.0	0.00	0.00	10,554.5	0.0	686.5	66.3	0.00	0.00	0.00
10,700.0	0.00	0.00	10,654.5	0.0	686.5	66.3	0.00	0.00	0.00
10,800.0	0.00	0.00	10,754.5	0.0	686.5	66.3	0.00	0.00	0.00
10,900.0	0.00	0.00	10,854.5	0.0	686.5	66.3	0.00	0.00	0.00
11,000.0	0.00	0.00	10,954.5	0.0	686.5	66.3	0.00	0.00	0.00
11,100.0	0.00	0.00	11,054.5	0.0	686.5	66.3	0.00	0.00	0.00
11,200.0	0.00	0.00	11,154.5	0.0	686.5	66.3	0.00	0.00	0.00
11,300.0	0.00	0.00	11,254.5	0.0	686.5	66.3	0.00	0.00	0.00
11,368.1	0.00	0.00	11,322.6	0.0	686.5	66.3	0.00	0.00	0.00
11,375.0	0.83	179.56	11,329.5	-0.1	686.5	66.4	12.00	12.00	0.00
11,400.0	3.83	179.56	11,354.5	-1.1	686.5	67.4	12.00	12.00	0.00
11,425.0	6.83	179.56	11,379.4	-3.4	686.5	69.7	12.00	12.00	0.00
11,450.0	9.83	179.56	11,404.1	-7.0	686.6	73.3	12.00	12.00	0.00
11,475.0	12.83	179.56	11,428.6	-11.9	686.6	78.2	12.00	12.00	0.00
11,500.0	15.83	179.56	11,452.8	-18.1	686.6	84.4	12.00	12.00	0.00
11,525.0	18.83	179.56	11,476.7	-25.6	686.7	91.8	12.00	12.00	0.00
11,550.0	21.83	179.56	11,500.1	-34.2	686.8	100.4	12.00	12.00	0.00
11,575.0	24.83	179.56	11,523.1	-44.1	686.8	110.3	12.00	12.00	0.00
11,600.0	27.83	179.56	11,545.5	-55.2	686.9	121.4	12.00	12.00	0.00
11,625.0	30.83	179.56	11,567.3	-67.5	687.0	133.5	12.00	12.00	0.00
11,650.0	33.83	179.56	11,588.4	-80.8	687.1	146.9	12.00	12.00	0.00
11,675.0	36.83	179.56	11,608.8	-95.3	687.2	161.3	12.00	12.00	0.00
11,700.0	39.83	179.56	11,628.4	-110.8	687.4	176.7	12.00	12.00	0.00
11,725.0	42.83	179.56	11,647.2	-127.3	687.5	193.1	12.00	12.00	0.00
11,750.0	45.83	179.56	11,665.1	-144.8	687.6	210.5	12.00	12.00	0.00
11,775.0	48.83	179.56	11,682.0	-163.2	687.8	228.9	12.00	12.00	0.00
11,800.0	51.83	179.56	11,698.0	-182.4	687.9	248.0	12.00	12.00	0.00
11,825.0	54.83	179.56	11,712.9	-202.4	688.1	268.0	12.00	12.00	0.00
11,850.0	57.83	179.56	11,726.7	-223.3	688.2	288.7	12.00	12.00	0.00
11,875.0	60.83	179.56	11,739.5	-244.8	688.4	310.1	12.00	12.00	0.00
11,900.0	63.83	179.56	11,751.1	-266.9	688.5	332.2	12.00	12.00	0.00
11,925.0	66.83	179.56	11,761.5	-289.6	688.7	354.8	12.00	12.00	0.00
11,950.0	69.83	179.56	11,770.8	-312.8	688.9	377.9	12.00	12.00	0.00
11,975.0	72.83	179.56	11,778.8	-336.5	689.1	401.5	12.00	12.00	0.00
12,000.0	75.83	179.56	11,785.5	-360.6	689.3	425.5	12.00	12.00	0.00
12,025.0	78.83	179.56	11,791.0	-385.0	689.5	449.8	12.00	12.00	0.00
12,050.0	81.83	179.56	11,795.2	-409.6	689.6	474.3	12.00	12.00	0.00
12,075.0	84.83	179.56	11,798.1	-434.4	689.8	499.1	12.00	12.00	0.00
12,100.0	87.83	179.56	11,799.7	-459.4	690.0	523.9	12.00	12.00	0.00
12,118.1	90.00	179.56	11,800.0	-477.5	690.2	541.9	12.00	12.00	0.00
12,200.0	90.00	179.56	11,800.0	-559.4	690.8	623.5	0.00	0.00	0.00
12,300.0	90.00	179.56	11,800.0	-659.4	691.6	723.1	0.00	0.00	0.00
12,400.0	90.00	179.56	11,800.0	-759.4	692.3	822.7	0.00	0.00	0.00
12,500.0	90.00	179.56	11,800.0	-859.4	693.1	922.3	0.00	0.00	0.00
12,600.0	90.00	179.56	11,800.0	-959.4	693.9	1,021.9	0.00	0.00	0.00
12,700.0	90.00	179.56	11,800.0	-1,059.4	694.6	1,121.5	0.00	0.00	0.00
12,800.0	90.00	179.56	11,800.0	-1,159.4	695.4	1,221.1	0.00	0.00	0.00
12,900.0	90.00	179.56	11,800.0	-1,259.4	696.2	1,320.7	0.00	0.00	0.00
13,000.0	90.00	179.56	11,800.0	-1,359.4	696.9	1,420.3	0.00	0.00	0.00
13,100.0	90.00	179.56	11,800.0	-1,459.4	697.7	1,519.9	0.00	0.00	0.00
13,200.0	90.00	179.56	11,800.0	-1,559.3	698.5	1,619.5	0.00	0.00	0.00
13,300.0	90.00	179.56	11,800.0	-1,659.3	699.2	1,719.2	0.00	0.00	0.00
13,400.0	90.00	179.56	11,800.0	-1,759.3	700.0	1,818.8	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
13,500.0	90.00	179.56	11,800.0	-1,859.3	700.8	1,918.4	0.00	0.00	0.00
13,600.0	90.00	179.56	11,800.0	-1,959.3	701.5	2,018.0	0.00	0.00	0.00
13,700.0	90.00	179.56	11,800.0	-2,059.3	702.3	2,117.6	0.00	0.00	0.00
13,800.0	90.00	179.56	11,800.0	-2,159.3	703.1	2,217.2	0.00	0.00	0.00
13,900.0	90.00	179.56	11,800.0	-2,259.3	703.8	2,316.8	0.00	0.00	0.00
14,000.0	90.00	179.56	11,800.0	-2,359.3	704.6	2,416.4	0.00	0.00	0.00
14,100.0	90.00	179.56	11,800.0	-2,459.3	705.3	2,516.0	0.00	0.00	0.00
14,200.0	90.00	179.56	11,800.0	-2,559.3	706.1	2,615.6	0.00	0.00	0.00
14,300.0	90.00	179.56	11,800.0	-2,659.3	706.9	2,715.2	0.00	0.00	0.00
14,400.0	90.00	179.56	11,800.0	-2,759.3	707.6	2,814.8	0.00	0.00	0.00
14,500.0	90.00	179.56	11,800.0	-2,859.3	708.4	2,914.4	0.00	0.00	0.00
14,600.0	90.00	179.56	11,800.0	-2,959.3	709.2	3,014.0	0.00	0.00	0.00
14,700.0	90.00	179.56	11,800.0	-3,059.3	709.9	3,113.6	0.00	0.00	0.00
14,800.0	90.00	179.56	11,800.0	-3,159.3	710.7	3,213.2	0.00	0.00	0.00
14,900.0	90.00	179.56	11,800.0	-3,259.3	711.4	3,312.8	0.00	0.00	0.00
15,000.0	90.00	179.56	11,800.0	-3,359.3	712.2	3,412.4	0.00	0.00	0.00
15,100.0	90.00	179.56	11,800.0	-3,459.3	713.0	3,512.0	0.00	0.00	0.00
15,200.0	90.00	179.56	11,800.0	-3,559.3	713.7	3,611.6	0.00	0.00	0.00
15,300.0	90.00	179.56	11,800.0	-3,659.3	714.5	3,711.2	0.00	0.00	0.00
15,400.0	90.00	179.56	11,800.0	-3,759.3	715.3	3,810.8	0.00	0.00	0.00
15,500.0	90.00	179.56	11,800.0	-3,859.3	716.0	3,910.4	0.00	0.00	0.00
15,600.0	90.00	179.56	11,800.0	-3,959.3	716.8	4,010.0	0.00	0.00	0.00
15,700.0	90.00	179.56	11,800.0	-4,059.3	717.5	4,109.6	0.00	0.00	0.00
15,800.0	90.00	179.56	11,800.0	-4,159.3	718.3	4,209.2	0.00	0.00	0.00
15,900.0	90.00	179.56	11,800.0	-4,259.3	719.1	4,308.8	0.00	0.00	0.00
16,000.0	90.00	179.56	11,800.0	-4,359.3	719.8	4,408.4	0.00	0.00	0.00
16,100.0	90.00	179.56	11,800.0	-4,459.3	720.6	4,508.0	0.00	0.00	0.00
16,200.0	90.00	179.56	11,800.0	-4,559.3	721.3	4,607.6	0.00	0.00	0.00
16,300.0	90.00	179.56	11,800.0	-4,659.3	722.1	4,707.2	0.00	0.00	0.00
16,400.0	90.00	179.57	11,800.0	-4,759.3	722.9	4,806.8	0.00	0.00	0.00
16,500.0	90.00	179.57	11,800.0	-4,859.3	723.6	4,906.4	0.00	0.00	0.00
16,600.0	90.00	179.57	11,800.0	-4,959.2	724.4	5,006.0	0.00	0.00	0.00
16,700.0	90.00	179.57	11,800.0	-5,059.2	725.1	5,105.6	0.00	0.00	0.00
16,800.0	90.00	179.57	11,800.0	-5,159.2	725.9	5,205.2	0.00	0.00	0.00
16,900.0	90.00	179.57	11,800.0	-5,259.2	726.7	5,304.8	0.00	0.00	0.00
17,000.0	90.00	179.57	11,800.0	-5,359.2	727.4	5,404.4	0.00	0.00	0.00
17,100.0	90.00	179.57	11,800.0	-5,459.2	728.2	5,504.1	0.00	0.00	0.00
17,200.0	90.00	179.57	11,800.0	-5,559.2	728.9	5,603.7	0.00	0.00	0.00
17,300.0	90.00	179.57	11,800.0	-5,659.2	729.7	5,703.3	0.00	0.00	0.00
17,400.0	90.00	179.57	11,800.0	-5,759.2	730.4	5,802.9	0.00	0.00	0.00
17,500.0	90.00	179.57	11,800.0	-5,859.2	731.2	5,902.5	0.00	0.00	0.00
17,600.0	90.00	179.57	11,800.0	-5,959.2	732.0	6,002.1	0.00	0.00	0.00
17,700.0	90.00	179.57	11,800.0	-6,059.2	732.7	6,101.7	0.00	0.00	0.00
17,800.0	90.00	179.57	11,800.0	-6,159.2	733.5	6,201.3	0.00	0.00	0.00
17,900.0	90.00	179.57	11,800.0	-6,259.2	734.2	6,300.9	0.00	0.00	0.00
18,000.0	90.00	179.57	11,800.0	-6,359.2	735.0	6,400.5	0.00	0.00	0.00
18,100.0	90.00	179.57	11,800.0	-6,459.2	735.7	6,500.1	0.00	0.00	0.00
18,200.0	90.00	179.57	11,800.0	-6,559.2	736.5	6,599.7	0.00	0.00	0.00
18,300.0	90.00	179.57	11,800.0	-6,659.2	737.2	6,699.3	0.00	0.00	0.00
18,400.0	90.00	179.57	11,800.0	-6,759.2	738.0	6,798.9	0.00	0.00	0.00
18,500.0	90.00	179.57	11,800.0	-6,859.2	738.8	6,898.5	0.00	0.00	0.00
18,600.0	90.00	179.57	11,800.0	-6,959.2	739.5	6,998.1	0.00	0.00	0.00
18,700.0	90.00	179.57	11,800.0	-7,059.2	740.3	7,097.7	0.00	0.00	0.00
18,800.0	90.00	179.57	11,800.0	-7,159.2	741.0	7,197.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
18,900.0	90.00	179.57	11,800.0	-7,259.2	741.8	7,296.9	0.00	0.00	0.00
19,000.0	90.00	179.57	11,800.0	-7,359.2	742.5	7,396.5	0.00	0.00	0.00
19,100.0	90.00	179.57	11,800.0	-7,459.2	743.3	7,496.1	0.00	0.00	0.00
19,200.0	90.00	179.57	11,800.0	-7,559.2	744.0	7,595.7	0.00	0.00	0.00
19,300.0	90.00	179.57	11,800.0	-7,659.2	744.8	7,695.3	0.00	0.00	0.00
19,312.8	90.00	179.57	11,800.0	-7,672.0	744.9	7,708.0	0.00	0.00	0.00

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
FTP-203H	0.00	0.00	11,700.0	-187.5	686.5	580,763.80	790,678.50	32° 35' 38.270 N	103° 31' 25.411 W
- plan misses target center by 2.1usft at 11805.3usft MD (11701.2 TVD, -186.6 N, 687.9 E)									
- Point									
BHL-203H	0.00	0.00	11,800.0	-7,672.0	744.9	573,279.33	790,736.88	32° 34' 24.211 N	103° 31' 25.394 W
- plan hits target center									
- Point									

LEGACY RESERVES

WELL DETAILS: Lea Unit #203H

RKB @ 3693.0usft — Ground Level @ 3665.0 usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	580951.30	789992.00	32° 35' 40.177 N	103° 31' 33.418 W

MOTIVE DRILLING TECHNOLOGIES

Project:	Lea County, NM
Site:	Lea
Well:	Lea Unit #203H
Geodetic Datum:	NAD 1983
Design:	Plan 1

T G M

Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.30°

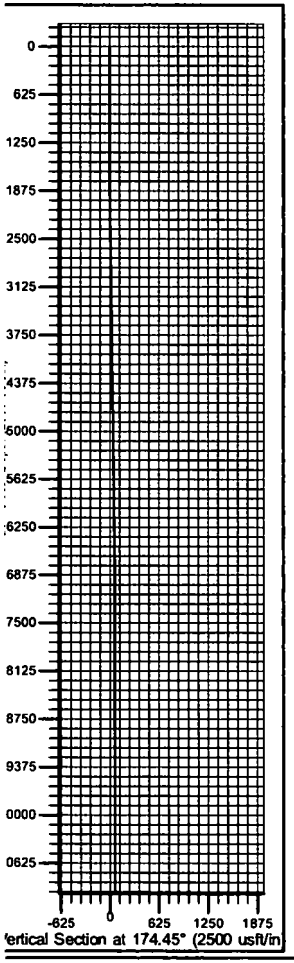
Magnetic Field
Strength: 48249.8nT
Dip Angle: 60.58°
Date: 2/27/2018
Model: IGRF2000

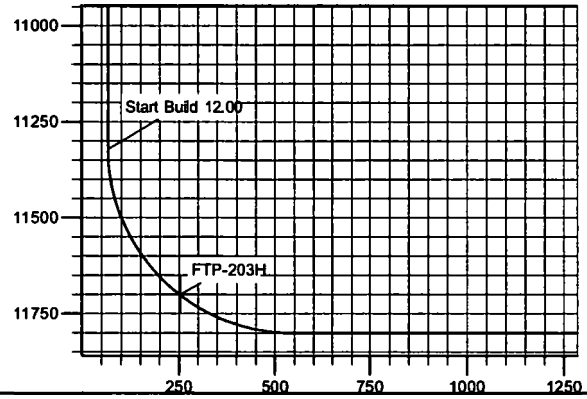
DESIGN TARGET DETAILS

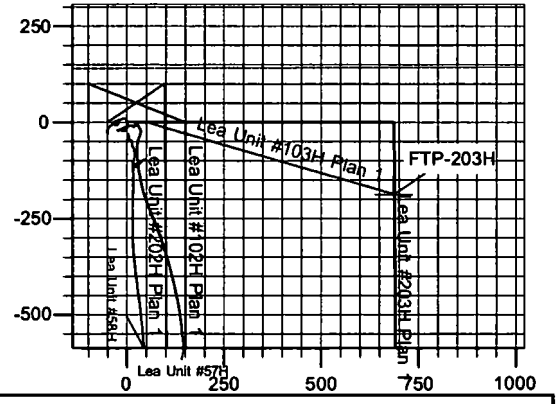
Name	TVD	+N/-S	+E/-W	Northing	Easting
FTP-203H	11700.0	-187.5	686.5	580763.80	790678.50
BHL-203H	11800.0	-7672.0	744.9	573279.33	790736.88

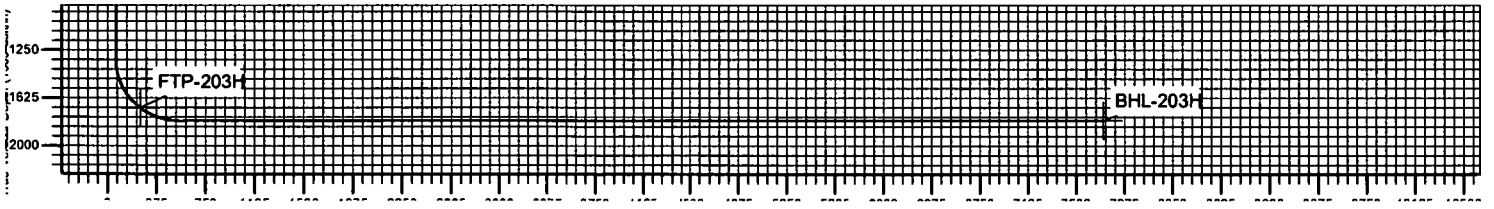
SECTION DETAILS

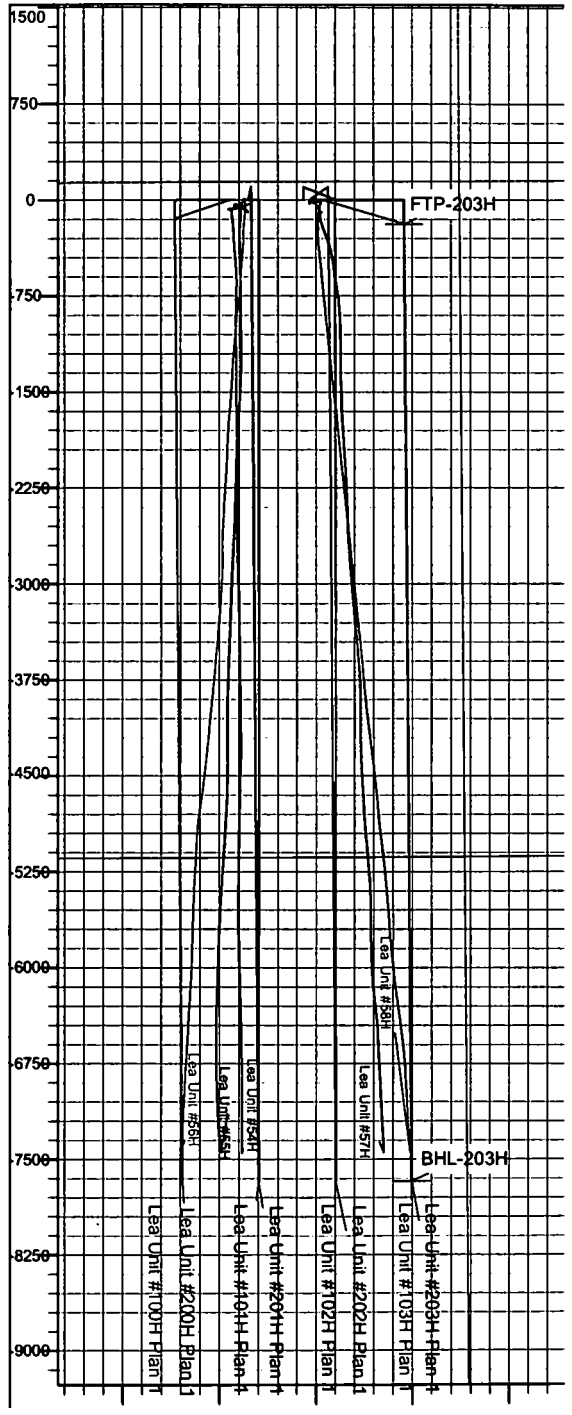
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	2023.7	7.86	90.00	2022.1	0.0	35.8	1.50	90.00	3.5	
4	6521.7	7.86	90.00	6477.9	0.0	650.7	0.00	0.00	62.9	
5	7045.5	0.00	0.00	7000.0	0.0	686.5	1.50	180.00	66.3	
6	11368.1	0.00	0.00	11322.6	0.0	686.5	0.00	0.00	66.3	
7	12118.1	90.00	179.56	11800.0	-477.5	690.2	12.00	179.56	541.9	
8	19312.8	90.00	179.57	11800.0	-7672.0	744.9	0.00	83.03	7708.0	BHL-203H







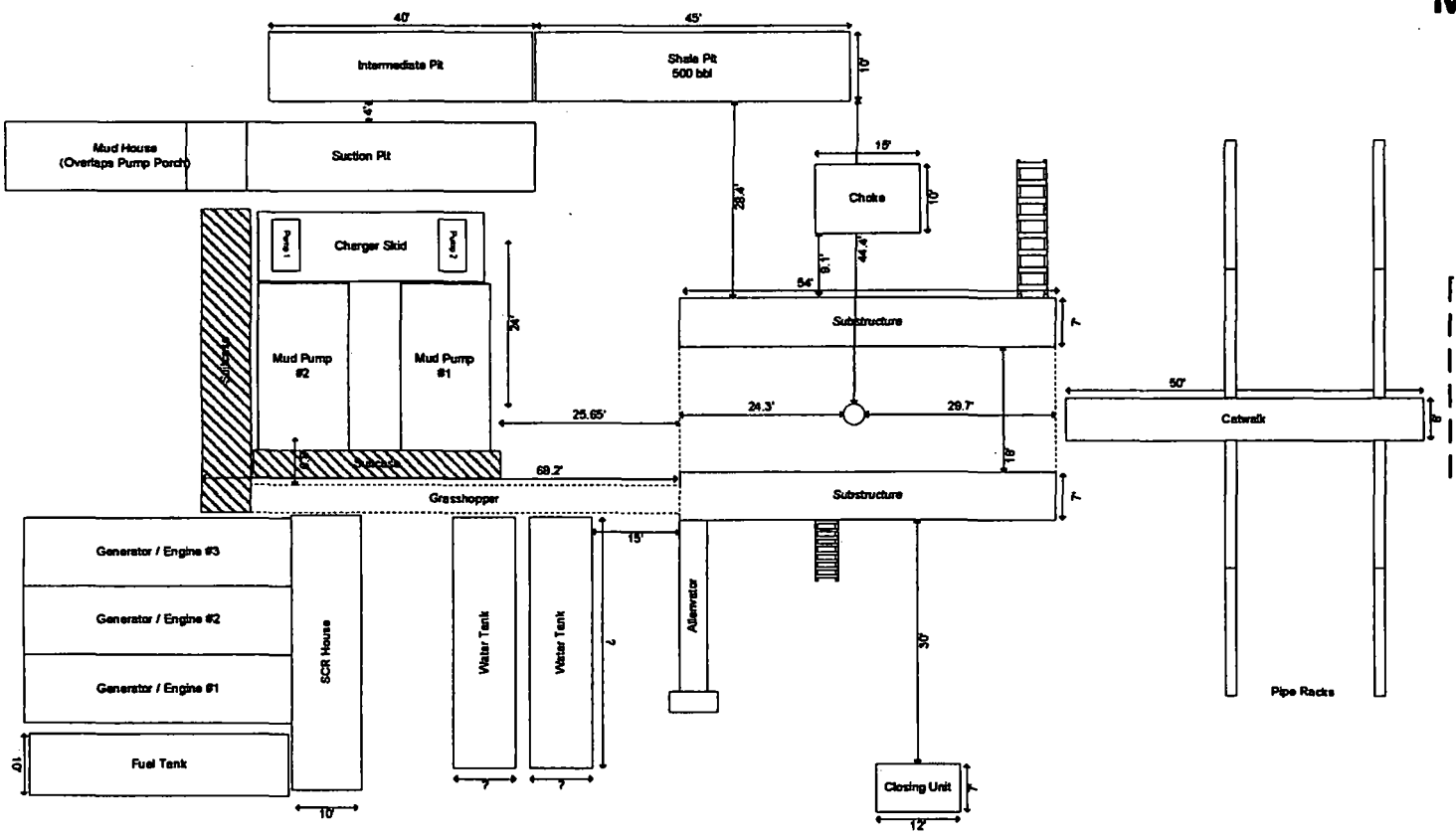


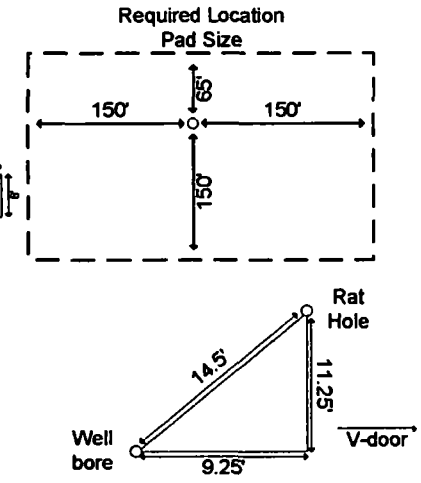


MCVAY RIG #2

General Layout

Scale: 1 inch = 30 feet





Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

February 19, 2017

Customer: Hobbs

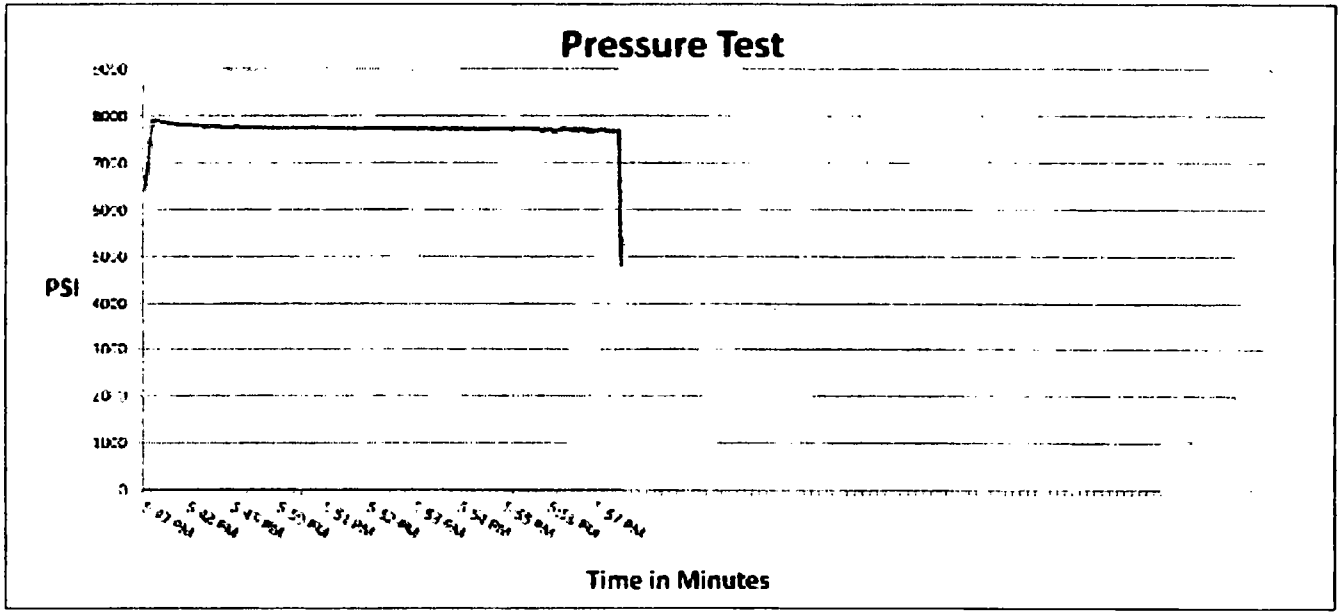
Pick Ticket #: 384842

Hose Specifications

Hose Type	Length
D	20'
I.D.	**O.D.**
3"	5.03"
Working Pressure	**Burst Pressure**
5000 PSI	[illegible]

Verification

Type of Fitting	Cooling Method
4 1/2 SR	Swage
Die Size	**Final O.D.**
3.62"	3.51"
Hose Serial #	**Hose Assembly Serial #**
10958	384842



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
7500 PSI	20 2/4 Minutes		7585 PSI

Comments: Hose assembly pressure tested with water at ambient temperature

Tested By: Richard Davis

Approved By: Charles Ash

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	**HOBBS**	*Hose Assembly Type*	**Rotary/Vibrator**
MWH Sales Representative	**CHARLES ASH**	*Certification*	**API 7K/FSL LEVEL2**
Date Assembled	**2/19/2017**	*Hose Grade*	**D**
Location Assembled	**OKC**	*Hose Working Pressure*	**5000**
Sales Order #	**318810**	*Hose Lot # and Date Code*	**10958-08/13**
Customer Purchase Order #	**356945**	*Hose I.D. (Inches)*	**3.5"**
Assembly Serial # (Pick Ticket #)	**384842**	*Hose O.D. (Inches)*	**5.45"**
Hose Assembly Length	**20FT**	*Armor (yes/no)*	NO

Fittings			
End A		**End B**	
Stem (Part and Revision #)	**R3.5X64WB**	*Stem (Part and Revision #)*	**R3.5X64WB**
Stem (Heat #)	**13105653**	*Stem (Heat #)*	**13105653**
Ferrule (Part and Revision #)	**RF3.5X5330**	*Ferrule (Part and Revision #)*	**RF3.5X5330**
Ferrule (Heat #)	**34038185**	*Ferrule (Heat #)*	**3403818**
Connection . Flange Hammer Union Part	**4-1/16 5K**	*Connection (Part #)*	**4-1/16 5K**
Connection (Heat #)		*Connection (Heat #)*	
Nut (Part #)		*Nut (Part #)*	
Nut (Heat #)		*Nut (Heat #)*	
Dies Used	**5.62"**	*Dies Used*	**5.53"**

Hydrostatic Test Requirements		
Test Pressure (psi)	**7,500**	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	**10 1/2**	

Date Tested	*Tested By*	*Approved By*
2/19/2017	Richard Dis	

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **HOBBS**	*Customer P.O.#* **356945**
Sales Order # **318810**	*Date Assembled:* **2/19/2017**

Specifications

Hose Assembly Type:	**Rotary/Vibrator**	*Rig #*	
Assembly Serial #	**384842**	*Hose Lot # and Date Code*	**10958-08/13**
Hose Working Pressure (psi)	**5000**	*Test Pressure (psi)*	**7500**
Hose Assembly Description:	**TRH56D-645KH-645KH-20.00' FT**		

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	*Date*
	2/20/2017

MOTIVE
DRILLING TECHNOLOGIES

Legacy Reserves

Lea County, NM (NAD83)
Lea
Lea Unit #203H

Original Wellbore

Plan: Plan 1

Standard Planning Report

14 September, 2018

LEGACY
RESERVES

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 1		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Lea				
Site Position:		**Northing:**	567,587.00 usft	**Latitude:**	32° 33' 27.391 N
From:	Map	**Easting:**	797,256.10 usft	**Longitude:**	103° 30' 9.733 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.45 °

Well	Lea Unit #203H					
Well Position	**+N/-S**	13,364.3 usft	**Northing:**	580,951.30 usft	**Latitude:**	32° 35' 40.177 N
	+E/-W	-7,264.1 usft	**Easting:**	789,992.00 usft	**Longitude:**	103° 31' 33.418 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,693.0 usft	**Ground Level:**	3,666.0 usft

Wellbore	Original Wellbore				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2000	2/27/2018	6.73	60.58	48,249.80000000

Design	Plan 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	174.45

Plan Survey Tool Program **Date** 9/11/2018

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	19,312.8	Plan 1 (Original Wellbore)	MWD	
				MWD - Standard	

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,023.7	7.86	90.00	2,022.1	0.0	35.8	1.50	1.50	0.00	90.00	
6,521.7	7.86	90.00	6,477.9	0.0	650.7	0.00	0.00	0.00	0.00	
7,045.5	0.00	0.00	7,000.0	0.0	686.5	1.50	-1.50	0.00	180.00	
11,368.1	0.00	0.00	11,322.6	0.0	686.5	0.00	0.00	0.00	0.00	
12,118.1	90.00	179.56	11,800.0	-477.5	690.2	12.00	12.00	0.00	179.56	
19,312.8	90.00	179.57	11,800.0	-7,672.0	744.9	0.00	0.00	0.00	83.03	BHL-203H

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Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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	1.50	90.00	1,600.0	0.0	1.3	0.1	1.50	1.50	0.00
1,700.0	3.00	90.00	1,699.9	0.0	5.2	0.5	1.50	1.50	0.00
1,800.0	4.50	90.00	1,799.7	0.0	11.8	1.1	1.50	1.50	0.00
1,900.0	6.00	90.00	1,899.3	0.0	20.9	2.0	1.50	1.50	0.00
2,000.0	7.50	90.00	1,998.6	0.0	32.7	3.2	1.50	1.50	0.00
2,023.7	7.86	90.00	2,022.1	0.0	35.8	3.5	1.50	1.50	0.00
2,100.0	7.86	90.00	2,097.6	0.0	46.3	4.5	0.00	0.00	0.00
2,200.0	7.86	90.00	2,196.7	0.0	59.9	5.8	0.00	0.00	0.00
2,300.0	7.86	90.00	2,295.8	0.0	73.6	7.1	0.00	0.00	0.00
2,400.0	7.86	90.00	2,394.8	0.0	87.3	8.4	0.00	0.00	0.00
2,500.0	7.86	90.00	2,493.9	0.0	100.9	9.8	0.00	0.00	0.00
2,600.0	7.86	90.00	2,593.0	0.0	114.6	11.1	0.00	0.00	0.00
2,700.0	7.86	90.00	2,692.0	0.0	128.3	12.4	0.00	0.00	0.00
2,800.0	7.86	90.00	2,791.1	0.0	142.0	13.7	0.00	0.00	0.00
2,900.0	7.86	90.00	2,890.1	0.0	155.6	15.0	0.00	0.00	0.00
3,000.0	7.86	90.00	2,989.2	0.0	169.3	16.4	0.00	0.00	0.00
3,100.0	7.86	90.00	3,088.3	0.0	183.0	17.7	0.00	0.00	0.00
3,200.0	7.86	90.00	3,187.3	0.0	196.6	19.0	0.00	0.00	0.00
3,300.0	7.86	90.00	3,286.4	0.0	210.3	20.3	0.00	0.00	0.00
3,400.0	7.86	90.00	3,385.4	0.0	224.0	21.6	0.00	0.00	0.00
3,500.0	7.86	90.00	3,484.5	0.0	237.6	23.0	0.00	0.00	0.00
3,600.0	7.86	90.00	3,583.6	0.0	251.3	24.3	0.00	0.00	0.00
3,700.0	7.86	90.00	3,682.6	0.0	265.0	25.6	0.00	0.00	0.00
3,800.0	7.86	90.00	3,781.7	0.0	278.6	26.9	0.00	0.00	0.00
3,900.0	7.86	90.00	3,880.8	0.0	292.3	28.2	0.00	0.00	0.00
4,000.0	7.86	90.00	3,979.8	0.0	306.0	29.6	0.00	0.00	0.00
4,100.0	7.86	90.00	4,078.9	0.0	319.6	30.9	0.00	0.00	0.00
4,200.0	7.86	90.00	4,177.9	0.0	333.3	32.2	0.00	0.00	0.00
4,300.0	7.86	90.00	4,277.0	0.0	347.0	33.5	0.00	0.00	0.00
4,400.0	7.86	90.00	4,376.1	0.0	360.6	34.9	0.00	0.00	0.00
4,500.0	7.86	90.00	4,475.1	0.0	374.3	36.2	0.00	0.00	0.00
4,600.0	7.86	90.00	4,574.2	0.0	388.0	37.5	0.00	0.00	0.00
4,700.0	7.86	90.00	4,673.2	0.0	401.6	38.8	0.00	0.00	0.00
4,800.0	7.86	90.00	4,772.3	0.0	415.3	40.1	0.00	0.00	0.00
4,900.0	7.86	90.00	4,871.4	0.0	429.0	41.5	0.00	0.00	0.00
5,000.0	7.86	90.00	4,970.4	0.0	442.7	42.8	0.00	0.00	0.00
5,100.0	7.86	90.00	5,069.5	0.0	456.3	44.1	0.00	0.00	0.00
5,200.0	7.86	90.00	5,168.6	0.0	470.0	45.4	0.00	0.00	0.00

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Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
5,300.0	7.86	90.00	5,267.6	0.0	483.7	46.7	0.00	0.00	0.00
5,400.0	7.86	90.00	5,366.7	0.0	497.3	48.1	0.00	0.00	0.00
5,500.0	7.86	90.00	5,465.7	0.0	511.0	49.4	0.00	0.00	0.00
5,600.0	7.86	90.00	5,564.8	0.0	524.7	50.7	0.00	0.00	0.00
5,700.0	7.86	90.00	5,663.9	0.0	538.3	52.0	0.00	0.00	0.00
5,800.0	7.86	90.00	5,762.9	0.0	552.0	53.3	0.00	0.00	0.00
5,900.0	7.86	90.00	5,862.0	0.0	565.7	54.7	0.00	0.00	0.00
6,000.0	7.86	90.00	5,961.0	0.0	579.3	56.0	0.00	0.00	0.00
6,100.0	7.86	90.00	6,060.1	0.0	593.0	57.3	0.00	0.00	0.00
6,200.0	7.86	90.00	6,159.2	0.0	606.7	58.6	0.00	0.00	0.00
6,300.0	7.86	90.00	6,258.2	0.0	620.3	59.9	0.00	0.00	0.00
6,400.0	7.86	90.00	6,357.3	0.0	634.0	61.3	0.00	0.00	0.00
6,500.0	7.86	90.00	6,456.3	0.0	647.7	62.6	0.00	0.00	0.00
6,521.7	7.86	90.00	6,477.9	0.0	650.7	62.9	0.00	0.00	0.00
6,600.0	6.68	90.00	6,555.5	0.0	660.6	63.8	1.50	-1.50	0.00
6,700.0	5.18	90.00	6,655.0	0.0	670.9	64.8	1.50	-1.50	0.00
6,800.0	3.68	90.00	6,754.7	0.0	678.6	65.6	1.50	-1.50	0.00
6,900.0	2.18	90.00	6,854.5	0.0	683.7	66.1	1.50	-1.50	0.00
7,000.0	0.68	90.00	6,954.5	0.0	686.2	66.3	1.50	-1.50	0.00
7,045.5	0.00	0.00	7,000.0	0.0	686.5	66.3	1.50	-1.50	0.00
7,100.0	0.00	0.00	7,054.5	0.0	686.5	66.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,154.5	0.0	686.5	66.3	0.00	0.00	0.00
7,300.0	0.00	0.00	7,254.5	0.0	686.5	66.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,354.5	0.0	686.5	66.3	0.00	0.00	0.00
7,500.0	0.00	0.00	7,454.5	0.0	686.5	66.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,554.5	0.0	686.5	66.3	0.00	0.00	0.00
7,700.0	0.00	0.00	7,654.5	0.0	686.5	66.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,754.5	0.0	686.5	66.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,854.5	0.0	686.5	66.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,954.5	0.0	686.5	66.3	0.00	0.00	0.00
8,100.0	0.00	0.00	8,054.5	0.0	686.5	66.3	0.00	0.00	0.00
8,200.0	0.00	0.00	8,154.5	0.0	686.5	66.3	0.00	0.00	0.00
8,300.0	0.00	0.00	8,254.5	0.0	686.5	66.3	0.00	0.00	0.00
8,400.0	0.00	0.00	8,354.5	0.0	686.5	66.3	0.00	0.00	0.00
8,500.0	0.00	0.00	8,454.5	0.0	686.5	66.3	0.00	0.00	0.00
8,600.0	0.00	0.00	8,554.5	0.0	686.5	66.3	0.00	0.00	0.00
8,700.0	0.00	0.00	8,654.5	0.0	686.5	66.3	0.00	0.00	0.00
8,800.0	0.00	0.00	8,754.5	0.0	686.5	66.3	0.00	0.00	0.00
8,900.0	0.00	0.00	8,854.5	0.0	686.5	66.3	0.00	0.00	0.00
9,000.0	0.00	0.00	8,954.5	0.0	686.5	66.3	0.00	0.00	0.00
9,100.0	0.00	0.00	9,054.5	0.0	686.5	66.3	0.00	0.00	0.00
9,200.0	0.00	0.00	9,154.5	0.0	686.5	66.3	0.00	0.00	0.00
9,300.0	0.00	0.00	9,254.5	0.0	686.5	66.3	0.00	0.00	0.00
9,400.0	0.00	0.00	9,354.5	0.0	686.5	66.3	0.00	0.00	0.00
9,500.0	0.00	0.00	9,454.5	0.0	686.5	66.3	0.00	0.00	0.00
9,600.0	0.00	0.00	9,554.5	0.0	686.5	66.3	0.00	0.00	0.00
9,700.0	0.00	0.00	9,654.5	0.0	686.5	66.3	0.00	0.00	0.00
9,800.0	0.00	0.00	9,754.5	0.0	686.5	66.3	0.00	0.00	0.00
9,900.0	0.00	0.00	9,854.5	0.0	686.5	66.3	0.00	0.00	0.00
10,000.0	0.00	0.00	9,954.5	0.0	686.5	66.3	0.00	0.00	0.00
10,100.0	0.00	0.00	10,054.5	0.0	686.5	66.3	0.00	0.00	0.00
10,200.0	0.00	0.00	10,154.5	0.0	686.5	66.3	0.00	0.00	0.00
10,300.0	0.00	0.00	10,254.5	0.0	686.5	66.3	0.00	0.00	0.00
10,400.0	0.00	0.00	10,354.5	0.0	686.5	66.3	0.00	0.00	0.00

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Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
10,500.0	0.00	0.00	10,454.5	0.0	686.5	66.3	0.00	0.00	0.00
10,600.0	0.00	0.00	10,554.5	0.0	686.5	66.3	0.00	0.00	0.00
10,700.0	0.00	0.00	10,654.5	0.0	686.5	66.3	0.00	0.00	0.00
10,800.0	0.00	0.00	10,754.5	0.0	686.5	66.3	0.00	0.00	0.00
10,900.0	0.00	0.00	10,854.5	0.0	686.5	66.3	0.00	0.00	0.00
11,000.0	0.00	0.00	10,954.5	0.0	686.5	66.3	0.00	0.00	0.00
11,100.0	0.00	0.00	11,054.5	0.0	686.5	66.3	0.00	0.00	0.00
11,200.0	0.00	0.00	11,154.5	0.0	686.5	66.3	0.00	0.00	0.00
11,300.0	0.00	0.00	11,254.5	0.0	686.5	66.3	0.00	0.00	0.00
11,368.1	0.00	0.00	11,322.6	0.0	686.5	66.3	0.00	0.00	0.00
11,375.0	0.83	179.56	11,329.5	-0.1	686.5	66.4	12.00	12.00	0.00
11,400.0	3.83	179.56	11,354.5	-1.1	686.5	67.4	12.00	12.00	0.00
11,425.0	6.83	179.56	11,379.4	-3.4	686.5	69.7	12.00	12.00	0.00
11,450.0	9.83	179.56	11,404.1	-7.0	686.6	73.3	12.00	12.00	0.00
11,475.0	12.83	179.56	11,428.6	-11.9	686.6	78.2	12.00	12.00	0.00
11,500.0	15.83	179.56	11,452.8	-18.1	686.6	84.4	12.00	12.00	0.00
11,525.0	18.83	179.56	11,476.7	-25.6	686.7	91.8	12.00	12.00	0.00
11,550.0	21.83	179.56	11,500.1	-34.2	686.8	100.4	12.00	12.00	0.00
11,575.0	24.83	179.56	11,523.1	-44.1	686.8	110.3	12.00	12.00	0.00
11,600.0	27.83	179.56	11,545.5	-55.2	686.9	121.4	12.00	12.00	0.00
11,625.0	30.83	179.56	11,567.3	-67.5	687.0	133.5	12.00	12.00	0.00
11,650.0	33.83	179.56	11,588.4	-80.8	687.1	146.9	12.00	12.00	0.00
11,675.0	36.83	179.56	11,608.8	-95.3	687.2	161.3	12.00	12.00	0.00
11,700.0	39.83	179.56	11,628.4	-110.8	687.4	176.7	12.00	12.00	0.00
11,725.0	42.83	179.56	11,647.2	-127.3	687.5	193.1	12.00	12.00	0.00
11,750.0	45.83	179.56	11,665.1	-144.8	687.6	210.5	12.00	12.00	0.00
11,775.0	48.83	179.56	11,682.0	-163.2	687.8	228.9	12.00	12.00	0.00
11,800.0	51.83	179.56	11,698.0	-182.4	687.9	248.0	12.00	12.00	0.00
11,825.0	54.83	179.56	11,712.9	-202.4	688.1	268.0	12.00	12.00	0.00
11,850.0	57.83	179.56	11,726.7	-223.3	688.2	288.7	12.00	12.00	0.00
11,875.0	60.83	179.56	11,739.5	-244.8	688.4	310.1	12.00	12.00	0.00
11,900.0	63.83	179.56	11,751.1	-266.9	688.5	332.2	12.00	12.00	0.00
11,925.0	66.83	179.56	11,761.5	-289.6	688.7	354.8	12.00	12.00	0.00
11,950.0	69.83	179.56	11,770.8	-312.8	688.9	377.9	12.00	12.00	0.00
11,975.0	72.83	179.56	11,778.8	-336.5	689.1	401.5	12.00	12.00	0.00
12,000.0	75.83	179.56	11,785.5	-360.6	689.3	425.5	12.00	12.00	0.00
12,025.0	78.83	179.56	11,791.0	-385.0	689.5	449.8	12.00	12.00	0.00
12,050.0	81.83	179.56	11,795.2	-409.6	689.6	474.3	12.00	12.00	0.00
12,075.0	84.83	179.56	11,798.1	-434.4	689.8	499.1	12.00	12.00	0.00
12,100.0	87.83	179.56	11,799.7	-459.4	690.0	523.9	12.00	12.00	0.00
12,118.1	90.00	179.56	11,800.0	-477.5	690.2	541.9	12.00	12.00	0.00
12,200.0	90.00	179.56	11,800.0	-559.4	690.8	623.5	0.00	0.00	0.00
12,300.0	90.00	179.56	11,800.0	-659.4	691.6	723.1	0.00	0.00	0.00
12,400.0	90.00	179.56	11,800.0	-759.4	692.3	822.7	0.00	0.00	0.00
12,500.0	90.00	179.56	11,800.0	-859.4	693.1	922.3	0.00	0.00	0.00
12,600.0	90.00	179.56	11,800.0	-959.4	693.9	1,021.9	0.00	0.00	0.00
12,700.0	90.00	179.56	11,800.0	-1,059.4	694.6	1,121.5	0.00	0.00	0.00
12,800.0	90.00	179.56	11,800.0	-1,159.4	695.4	1,221.1	0.00	0.00	0.00
12,900.0	90.00	179.56	11,800.0	-1,259.4	696.2	1,320.7	0.00	0.00	0.00
13,000.0	90.00	179.56	11,800.0	-1,359.4	696.9	1,420.3	0.00	0.00	0.00
13,100.0	90.00	179.56	11,800.0	-1,459.4	697.7	1,519.9	0.00	0.00	0.00
13,200.0	90.00	179.56	11,800.0	-1,559.3	698.5	1,619.5	0.00	0.00	0.00
13,300.0	90.00	179.56	11,800.0	-1,659.3	699.2	1,719.2	0.00	0.00	0.00
13,400.0	90.00	179.56	11,800.0	-1,759.3	700.0	1,818.8	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
13,500.0	90.00	179.56	11,800.0	-1,859.3	700.8	1,918.4	0.00	0.00	0.00
13,600.0	90.00	179.56	11,800.0	-1,959.3	701.5	2,018.0	0.00	0.00	0.00
13,700.0	90.00	179.56	11,800.0	-2,059.3	702.3	2,117.6	0.00	0.00	0.00
13,800.0	90.00	179.56	11,800.0	-2,159.3	703.1	2,217.2	0.00	0.00	0.00
13,900.0	90.00	179.56	11,800.0	-2,259.3	703.8	2,316.8	0.00	0.00	0.00
14,000.0	90.00	179.56	11,800.0	-2,359.3	704.6	2,416.4	0.00	0.00	0.00
14,100.0	90.00	179.56	11,800.0	-2,459.3	705.3	2,516.0	0.00	0.00	0.00
14,200.0	90.00	179.56	11,800.0	-2,559.3	706.1	2,615.6	0.00	0.00	0.00
14,300.0	90.00	179.56	11,800.0	-2,659.3	706.9	2,715.2	0.00	0.00	0.00
14,400.0	90.00	179.56	11,800.0	-2,759.3	707.6	2,814.8	0.00	0.00	0.00
14,500.0	90.00	179.56	11,800.0	-2,859.3	708.4	2,914.4	0.00	0.00	0.00
14,600.0	90.00	179.56	11,800.0	-2,959.3	709.2	3,014.0	0.00	0.00	0.00
14,700.0	90.00	179.56	11,800.0	-3,059.3	709.9	3,113.6	0.00	0.00	0.00
14,800.0	90.00	179.56	11,800.0	-3,159.3	710.7	3,213.2	0.00	0.00	0.00
14,900.0	90.00	179.56	11,800.0	-3,259.3	711.4	3,312.8	0.00	0.00	0.00
15,000.0	90.00	179.56	11,800.0	-3,359.3	712.2	3,412.4	0.00	0.00	0.00
15,100.0	90.00	179.56	11,800.0	-3,459.3	713.0	3,512.0	0.00	0.00	0.00
15,200.0	90.00	179.56	11,800.0	-3,559.3	713.7	3,611.6	0.00	0.00	0.00
15,300.0	90.00	179.56	11,800.0	-3,659.3	714.5	3,711.2	0.00	0.00	0.00
15,400.0	90.00	179.56	11,800.0	-3,759.3	715.3	3,810.8	0.00	0.00	0.00
15,500.0	90.00	179.56	11,800.0	-3,859.3	716.0	3,910.4	0.00	0.00	0.00
15,600.0	90.00	179.56	11,800.0	-3,959.3	716.8	4,010.0	0.00	0.00	0.00
15,700.0	90.00	179.56	11,800.0	-4,059.3	717.5	4,109.6	0.00	0.00	0.00
15,800.0	90.00	179.56	11,800.0	-4,159.3	718.3	4,209.2	0.00	0.00	0.00
15,900.0	90.00	179.56	11,800.0	-4,259.3	719.1	4,308.8	0.00	0.00	0.00
16,000.0	90.00	179.56	11,800.0	-4,359.3	719.8	4,408.4	0.00	0.00	0.00
16,100.0	90.00	179.56	11,800.0	-4,459.3	720.6	4,508.0	0.00	0.00	0.00
16,200.0	90.00	179.56	11,800.0	-4,559.3	721.3	4,607.6	0.00	0.00	0.00
16,300.0	90.00	179.56	11,800.0	-4,659.3	722.1	4,707.2	0.00	0.00	0.00
16,400.0	90.00	179.57	11,800.0	-4,759.3	722.9	4,806.8	0.00	0.00	0.00
16,500.0	90.00	179.57	11,800.0	-4,859.3	723.6	4,906.4	0.00	0.00	0.00
16,600.0	90.00	179.57	11,800.0	-4,959.2	724.4	5,006.0	0.00	0.00	0.00
16,700.0	90.00	179.57	11,800.0	-5,059.2	725.1	5,105.6	0.00	0.00	0.00
16,800.0	90.00	179.57	11,800.0	-5,159.2	725.9	5,205.2	0.00	0.00	0.00
16,900.0	90.00	179.57	11,800.0	-5,259.2	726.7	5,304.8	0.00	0.00	0.00
17,000.0	90.00	179.57	11,800.0	-5,359.2	727.4	5,404.4	0.00	0.00	0.00
17,100.0	90.00	179.57	11,800.0	-5,459.2	728.2	5,504.1	0.00	0.00	0.00
17,200.0	90.00	179.57	11,800.0	-5,559.2	728.9	5,603.7	0.00	0.00	0.00
17,300.0	90.00	179.57	11,800.0	-5,659.2	729.7	5,703.3	0.00	0.00	0.00
17,400.0	90.00	179.57	11,800.0	-5,759.2	730.4	5,802.9	0.00	0.00	0.00
17,500.0	90.00	179.57	11,800.0	-5,859.2	731.2	5,902.5	0.00	0.00	0.00
17,600.0	90.00	179.57	11,800.0	-5,959.2	732.0	6,002.1	0.00	0.00	0.00
17,700.0	90.00	179.57	11,800.0	-6,059.2	732.7	6,101.7	0.00	0.00	0.00
17,800.0	90.00	179.57	11,800.0	-6,159.2	733.5	6,201.3	0.00	0.00	0.00
17,900.0	90.00	179.57	11,800.0	-6,259.2	734.2	6,300.9	0.00	0.00	0.00
18,000.0	90.00	179.57	11,800.0	-6,359.2	735.0	6,400.5	0.00	0.00	0.00
18,100.0	90.00	179.57	11,800.0	-6,459.2	735.7	6,500.1	0.00	0.00	0.00
18,200.0	90.00	179.57	11,800.0	-6,559.2	736.5	6,599.7	0.00	0.00	0.00
18,300.0	90.00	179.57	11,800.0	-6,659.2	737.2	6,699.3	0.00	0.00	0.00
18,400.0	90.00	179.57	11,800.0	-6,759.2	738.0	6,798.9	0.00	0.00	0.00
18,500.0	90.00	179.57	11,800.0	-6,859.2	738.8	6,898.5	0.00	0.00	0.00
18,600.0	90.00	179.57	11,800.0	-6,959.2	739.5	6,998.1	0.00	0.00	0.00
18,700.0	90.00	179.57	11,800.0	-7,059.2	740.3	7,097.7	0.00	0.00	0.00
18,800.0	90.00	179.57	11,800.0	-7,159.2	741.0	7,197.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #203H
Company:	Legacy Reserves	**TVD Reference:**	RKB @ 3693.0usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	RKB @ 3693.0usft
Site:	Lea	**North Reference:**	Grid
Well:	Lea Unit #203H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 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)
18,900.0	90.00	179.57	11,800.0	-7,259.2	741.8	7,296.9	0.00	0.00	0.00
19,000.0	90.00	179.57	11,800.0	-7,359.2	742.5	7,396.5	0.00	0.00	0.00
19,100.0	90.00	179.57	11,800.0	-7,459.2	743.3	7,496.1	0.00	0.00	0.00
19,200.0	90.00	179.57	11,800.0	-7,559.2	744.0	7,595.7	0.00	0.00	0.00
19,300.0	90.00	179.57	11,800.0	-7,659.2	744.8	7,695.3	0.00	0.00	0.00
19,312.8	90.00	179.57	11,800.0	-7,672.0	744.9	7,708.0	0.00	0.00	0.00

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
FTP-203H	0.00	0.00	11,700.0	-187.5	686.5	580,763.80	790,678.50	32° 35' 38.270 N	103° 31' 25.411 W
- plan misses target center by 2.1usft at 11805.3usft MD (11701.2 TVD, -186.6 N, 687.9 E)									
- Point									
BHL-203H	0.00	0.00	11,800.0	-7,672.0	744.9	573,279.33	790,736.88	32° 34' 24.211 N	103° 31' 25.394 W
- plan hits target center									
- Point									

[redacted]

WELL CONTROL PLAN

LEGACY RESERVES OPERATING, LP

LEA UNIT 203H

SECTION 11- T20S- R34E LEA COUNTY, NM

[redacted]

1. DRILLING WELL CONTROL PLAN

1.1 WELL CONTROL - CERTIFICATIONS

Required IADC/IWCF Well Control Certifications Supervisor Level:

Any personnel who supervises or operates the BOP must possess a valid current IADC training certification and photo identification. This would include the onsite drilling supervisor, tool pusher/rig manager, driller, and any personnel that will be acting in these capacities. Another example of this may be a wireline or snubbing crew rigged up on the rig to assist the rig, the operator of each system must also have a valid control certification for their level of operation.

BLM recognizes IADC training as the industry approved accredited training. Online self-certifications will not be acceptable. Enforcement actions for the lack of a valid Supervisory Level certificate shall be prompt action to correct the deficiency. **Enforcement actions include but are not limited to immediate replacement of personnel lacking certifications, drilling operations being shut down or installment of a 10M annular.**

IADC Driller Level for all Drillers and general knowledge for the Assistant Driller, Derrick Hands, Floor Hands and Motor Hands is recognized by the BLM; however, a Driller Level certification will need to be presented only if acting in a temporary Driller Level certification capacity.

Well Control-Position/Roles

IADC Well control training and certification is targeted toward each role, e.g., Supervisor Level toward those who direct, Driller Level to those who act, Introductory to those who need to know.

- **Supervisor Level**
  - Specifies and has oversight that the correct actions are carried out
  - Role is to supervise well control equipment, training, testing, and well control events
  - Directs the testing of BOP and other well control equipment
  - Regularly direct well control crew drills
  - Land based rigs – usually runs the choke during a well kill operation
  - Due to role on the rig, training and certification is targeted more toward management of well control and managing an influx out of the well

- **Driller Level**
  - Performs an action to prevent or respond to well control accident
  - Role is to monitor the well via electronic devices while drilling and detect unplanned influxes
  - Assist with the testing of BOP and other well control equipment
  - Regularly assist with well control crew drills
  - When influx is detected, responsible to close the BOP
  - Due to role on the rig, training and certification is targeted more toward monitoring and shutting the well in (closing the BOP) when an influx is detected

(Well Control-Positions/Roles Continued)

- **Derrick Hand, Assistant Driller Introductory Level**
  - Role is to assist Driller with kick detection by physically monitoring the well at the mixing pits/tanks
  - Regularly record mud weights/viscosity for analysis by the Supervisor level and mud engineer so pre-influx signs can be detected
  - Mix required kill fluids as directed by Supervisor or Driller
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes, either via mud samples or visual signs on the pits/tanks

- **Motorman, Floor Hand Introductory Level**
  - Role is to assist the Supervisor, Driller, or Derrick Hand with detecting influxes
  - Be certain all valves are aligned for proper well control as directed by Supervisor
  - Perform Supervisor or Driller assigned tasks during a well control event
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes

1.2 WELL CONTROL-COMPONENT AND PREVENTER COMPATIBILITY CHECKLIST

The table below, which covers the drilling and casing of the 10M Stack portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

- Example 8-3/4" Production hole section, 10M requirement

Component	OD	Preventer	RWP
Drill pipe	5"	Fixed lower 5" Upper 4.5-7" VBR	10M
HWDP	5"	Fixed lower 5" Upper 4.5-7" VBR	10M
Jars	5"	Fixed lower 5" Upper 4.5-7" VBR	10M
Drill collars and MWD tools	6.25-6.75"	Upper 4.5-7" VBR	10M
Mud Motor	6.75"	Upper 4.5-7" VBR	10M
Production casing	5.5"	Upper 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

- VBR = Variable Bore Ram. Compatible range listed in chart.

1.3 WELL CONTROL-BOP TESTING

BOP Test will be completed per Onshore Oil and Gas Order #2 Well Control requirements. The 5M Annular Preventer on a required 10M BOP stack will be tested to 100% of rated working pressure including a 10 minute low pressure test. Pressure shall be maintained at least 10 minutes.

1.4 WELL CONTROL - DRILLS

The following drills are conducted and recorded in the Daily Drilling Report and the Contractor's reporting system while engaged in drilling operations:

Type	Frequency	Objective	Comments
Shallow gas kick drill - drilling	Once per well with crew on tour	Response training to a shallow gas influx	To be done prior to drilling surface hole if shallow gas is noted
Kick drill - drilling	Once per week per crew	Response training to an influx while drilling (bit on bottom)	Only one kick drill per week per crew is required, alternating between drilling and tripping.
Kick drill - tripping	Once per week per crew	Response training to an influx while tripping (bit off bottom). Practice stabbing TIW valve	
Choke drill	Once per well with crew on tour	Practice in operating the remotely operated choke with pressure in the well	Before drilling out of the last casing set above a prospective reservoir Include the scenario of flowing well with gas on drill floor as a table top
H_2S drill	Prior to drilling into a potential H_2S zone/reservoir	Practice in use of respiratory equipment	

1.5 WELL CONTROL – MONITORING

- Drilling operations which utilize static fluid levels in the wellbore as the active barrier element, a means of accurately monitoring fill-up and displacement volumes during trips are available to the driller and operator. A recirculating trip tank is installed and equipped with a volume indicator easily read from the driller's / operator's position. This data is recorded on a calibrated chart recorder or digitally. The actual volumes are compared to the calculated volumes.
- The On-Site Supervisor ensures hole-filling and pit monitoring procedures are established and documented for every rig operation.
- The well is kept full of fluid with a known density and monitored at all times even when out of the hole.
- Flow checks are a minimum of 15 minutes.
- A flow check is made:
    - In the event of a drilling break.
    - After indications of down hole gains or losses.
    - Prior to all trips out of the hole.
    - After pulling into the casing shoe.
    - Before the BHA enters the BOP stack.
    - If trip displacement is incorrect.

- Prior to dropping a survey instrument.
- Prior to dropping a core ball.
- After a well kill operation.
- When the mud density is reduced in the well.

- Flow checks may be made at any time at the sole discretion of the driller or his designate. The Onsite Supervisor ensures that personnel are aware of this authority and the authority to close the well in immediately without further consultation.
- Record slow circulating rates (SCR) after each crew change, bit trip, and 500' of new hole drilled and after any variance greater than 0.2 ppg in MW. Slow pump rate recordings should include return flow percent, TVD, MD & pressure. SCR's will be done on all pumps at 30, 40 & 50 SPM. Pressures will be recorded at the choke panel. SCR will be recorded in the IADC daily report and ORB Wellview daily report
- Drilling blind (i.e. without returns) is permissible only in known lithology where the absence of hydrocarbons has been predetermined and written approval of the Drilling Manager.
- All open hole logs to be run with pack-off or lubricator.
- The Drilling Contractor has a fully working pit level totalizer / monitoring system with read out for the driller and an audible alarm set to 10 BBL gain / loss volume. Systems are selectable to enable monitoring of all pits in use. Pit volumes are monitored at all times, especially when transferring fluids. Both systems data is recorded on a calibrated chart recorder or electronically.
- The Drilling Contractor has a fully working return mud flow indicator with drillers display and an audible alarm, and is adjustable to record any variance in return volumes.

1.6 WELL CONTROL – SHUT IN

- The "hard shut in" method (i.e. against a closed choke using either an annular or ram type preventer) is the Company standard.
- The HCR(s) or failsafe valves are left closed during drilling to prevent any erosion and buildup of solids. The adjustable choke should also be left closed.
- The rig specific shut in procedure, the BOP configuration along with space-out position for the tool joints is posted in the Driller's control cabin or doghouse.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Manager.
- During a well kill by circulation, constant bottom hole pressure is maintained throughout.
- Kill sheets are maintained by the Driller and posted in the Driller's control cabin or doghouse. The sheet is updated at a minimum every 500 feet.

2. SHUT-IN PROCEDURES:

2.1 PROCEDURE WHILE DRILLING

- Sound alarm (alert crew)
- Space out drill string – Stop rotating, pick the drill string up off bottom, and space out to ensure no tool joint is located in the BOP element selected for initial closure.
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain
    - Time
    - Kick Volume
    - Pipe depth
    - MW in, MW out
    - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
- If pressure has built or is anticipated during the kill to reach 5,000 psi or greater, the annular preventer CANNOT be used as per Oil Company Well Control Policy, swap to the upper BOP pipe ram.

2.2 PROCEDURE WHILE TRIPPING

- Sound alarm (alert crew)
- Stab full opening safety valve in the drill string and close.
- Space out drill string (ensure no tool joint is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain

Procedure While Tripping (Continued)

  - Time
  - Kick Volume
  - Pipe depth
  - MW in, MW out
  - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
  If pressure has built or is anticipated during the kill to reach 5,000 psi or greater, the annular preventer CANNOT be used as per Company Well Control Policy, swap to the upper BOP pipe ram.

2.3 PROCEDURE WHILE RUNNING CASING

- Sound alarm (alert crew)
- Stab crossover and full opening safety valve and close
- Space out casing (ensure no coupling is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
  - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
  - SIDPP and SICP
  - Hole Depth and Hole TVD
  - Pit gain
  - Time
  - Kick Volume
  - Pipe depth
  - MW in, MW out
  - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit
  If pressure has built or is anticipated during the kill to reach 5,000 psi or greater, the annular preventer CANNOT be used, swap to the upper BOP pipe ram.

2.4 PROCEDURE WITH NO PIPE IN HOLE (OPEN HOLE)

- Sound alarm (alert crew)
- Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
    - Shut-In Pressure
    - Hole Depth and Hole TVD
    - Pit gain
    - Time
    - Kick Volume
    - MW in, MW out
    - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.
- Recheck all pressures and fluid volume on accumulator unit.

2.5 PROCEDURE WHILE PULLING BHA THRU STACK

- PRIOR to pulling last joint of drill pipe thru the stack.
- Perform flow check, if flowing.
- Sound alarm (alert crew).
- Stab full opening safety valve and close
- Space out drill string with tool joint just beneath the upper pipe ram.
- Shut-in using upper pipe ram. (HCR and choke will already be in the closed position).
- Confirm shut-in.
- Notify toolpusher/company representative
- Read and record the following:
    - SIDPP and SICP
    - Pit gain
    - Time
- Regroup and identify forward plan

- **With BHA in the stack and compatible ram preventer and pipe combo immediately available.**
    - Sound alarm (alert crew)
    - Stab crossover and full opening safety valve and close
    - Space out drill string with upset just beneath the compatible pipe ram.
    - Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
    - Confirm shut-in
    - Notify toolpusher/company representative
    - Read and record the following:
        - SIDPP and SICP
        - Pit gain

Procedures While Pulling BHA thru Stack (Continued)

    - Time
  - Regroup and identify forward plan

- **With BHA in the stack and <u>NO</u> compatible ram preventer and pipe combo immediately available.**
  - Sound alarm (alert crew)
  - If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
  - If impossible to pick up high enough to pull the string clear of the stack:
  - Stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close
  - Space out drill string with tool joint just beneath the upper pipe ram.
  - Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
  - Confirm shut-in
  - Notify toolpusher/company representative
  - Read and record the following:
    - SIDPP and SICP
    - Pit gain
    - Time

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

SUPO Data Report

05/09/2019

APD ID: 10400035223 **Submission Date:** 10/23/2018

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Well Type: OIL WELL **Well Work Type:** Drill

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

203H_Location_Verification_Map_03_21_18_20181016091143.pdf

203H_Well_Pad_Plat_03_21_18_20181016091154.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** YES

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Existing production facilities will be utilized.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: WATER WELL

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: STATE

Water source volume (barrels): 10000

Source volume (acre-feet): 1.288931

Source volume (gal): 420000

Water source use type: STIMULATION

Water source type: RAW PRODUCED

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 3000

Source volume (acre-feet): 0.3866793

Source volume (gal): 126000

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Water source and transportation map:

Water_Transportation_Plat___Lea_Unit_203H_20181017141145.pdf

Lea_Unit_Water_Sources__Lower__20181023151350.pdf

Water source comments:

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description:

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids (flowback, water, cuttings)

Amount of waste: 20000 barrels

Waste disposal frequency : Daily

Safe containment description: Drilling fluids will be contained in steel mud tanks.

Safe containmant attachment:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

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

Disposal type description:

Disposal location description: NMOCD approved disposal site in Halfway, NM.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site in Halfway, NM.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Section 9 - Well Site Layout

Well Site Layout Diagram:

203H_Well_Pad_Plat_03_21_18_20181016091249.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: No New Surface Disturbance **Multiple Well Pad Name:** LEA UNIT

Multiple Well Pad Number: 7

Recontouring attachment:

Drainage/Erosion control construction: To mitigate erosion and protect the natural drainage areas, erosion control methods (e.g. cut and fill ratios of 3:1) will be implemented during the construction and production phases of this project. The slopes of the well pad may be reseeded or replanted per agreement with the landowner. Erosion mitigation such as silt fences and hay bales will be located as necessary around the well pad.

Drainage/Erosion control reclamation: • The original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors. • A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community will be established on the site, with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation. • Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed. • The site will be free of State- or county-listed noxious weeds, oil field debris and equipment, and contaminated soil. Invasive and non-native weeds are controlled.

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

Disturbance Comments: Existing wellpad, pipeline, & lease road will be utilized.

Reconstruction method: Final reclamation to achieve restoration of the original landform and a natural vegetative community. The original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors.

Topsoil redistribution: Topsoil will be redistributed after the well pad has been returned to original contours, or as close as practical.

Soil treatment: No soil treatment will be needed.

Existing Vegetation at the well pad: Existing well pad, no vegetation will be affected

Existing Vegetation at the well pad attachment:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Existing Vegetation Community at the road: Existing road, no vegetation will be affected

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Existing pipeline, no vegetation will be affected

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: No new surface disturbance expected.

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

First Name: Scott **Last Name:** St. John

Phone: (405)286-9326 **Email:** sstjohn@rsenergysolutions.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Weeds will be mowed regularly to prevent them from becoming dominant within the project area

Weed treatment plan attachment:

Monitoring plan description: The project location will be periodically monitored by Legacy Reserves Operating, LP's staff that are responsible for infrastructure maintenance.

Monitoring plan attachment:

Success standards: Develop sufficient plant and root coverage to maximize erosion and sediment control.

Pit closure description: No pit will be utilized for this project.

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 203H

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

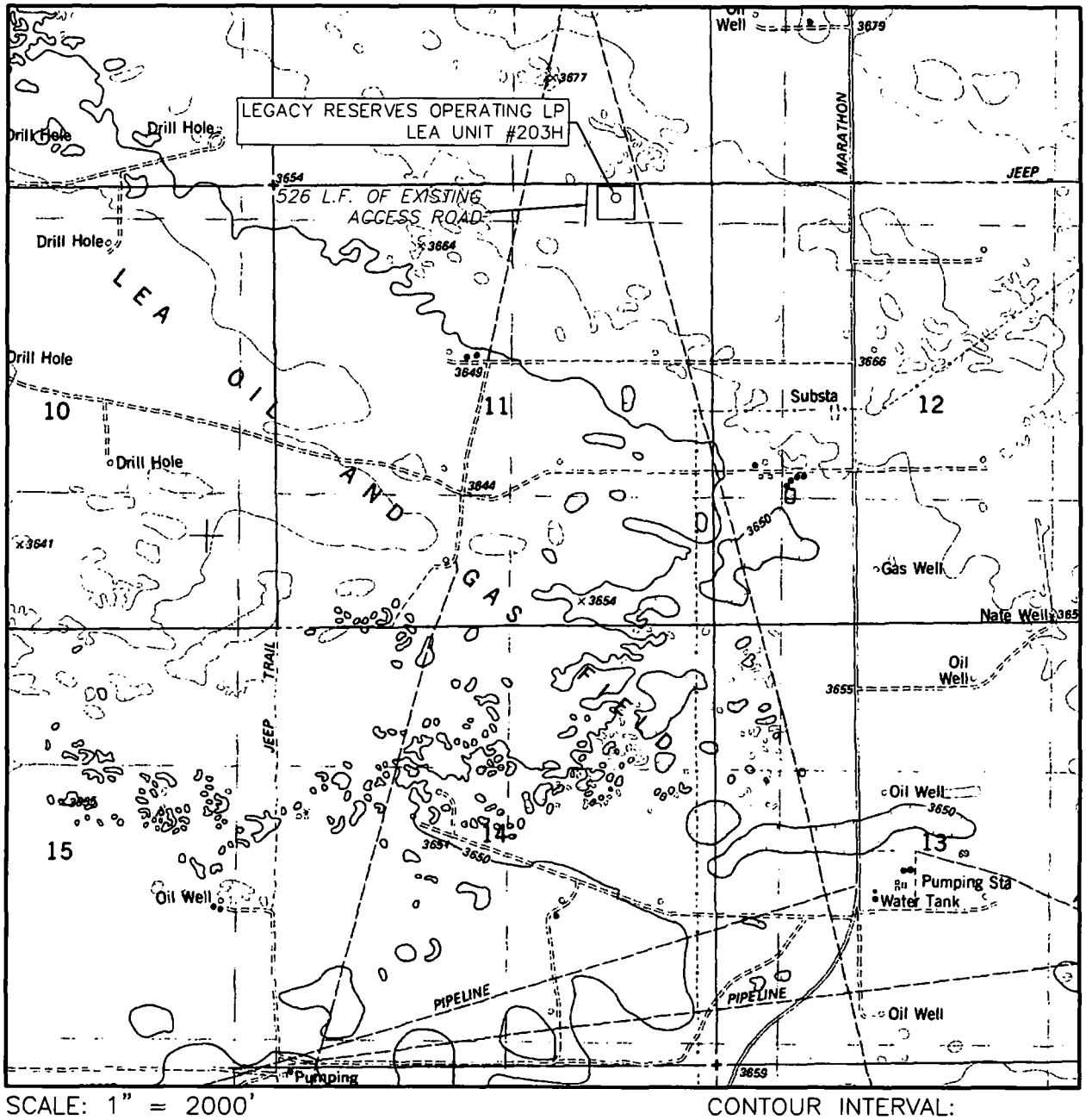
SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: An onsite was previously conducted for the existing Lea Unit #54H, Lea Unit #55H, and Lea Unit #56H pad. The Lea Unit #201H is located on this same well pad.

Other SUPO Attachment

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
LEA – 10'

SEC. 11 TWP. 20-S RGE. 34-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 140' FNL & 1115' FEL

ELEVATION 3666'

OPERATOR LEGACY RESERVES OPERATING LP

LEASE LEA UNIT

U.S.G.S. TOPOGRAPHIC MAP
LEA

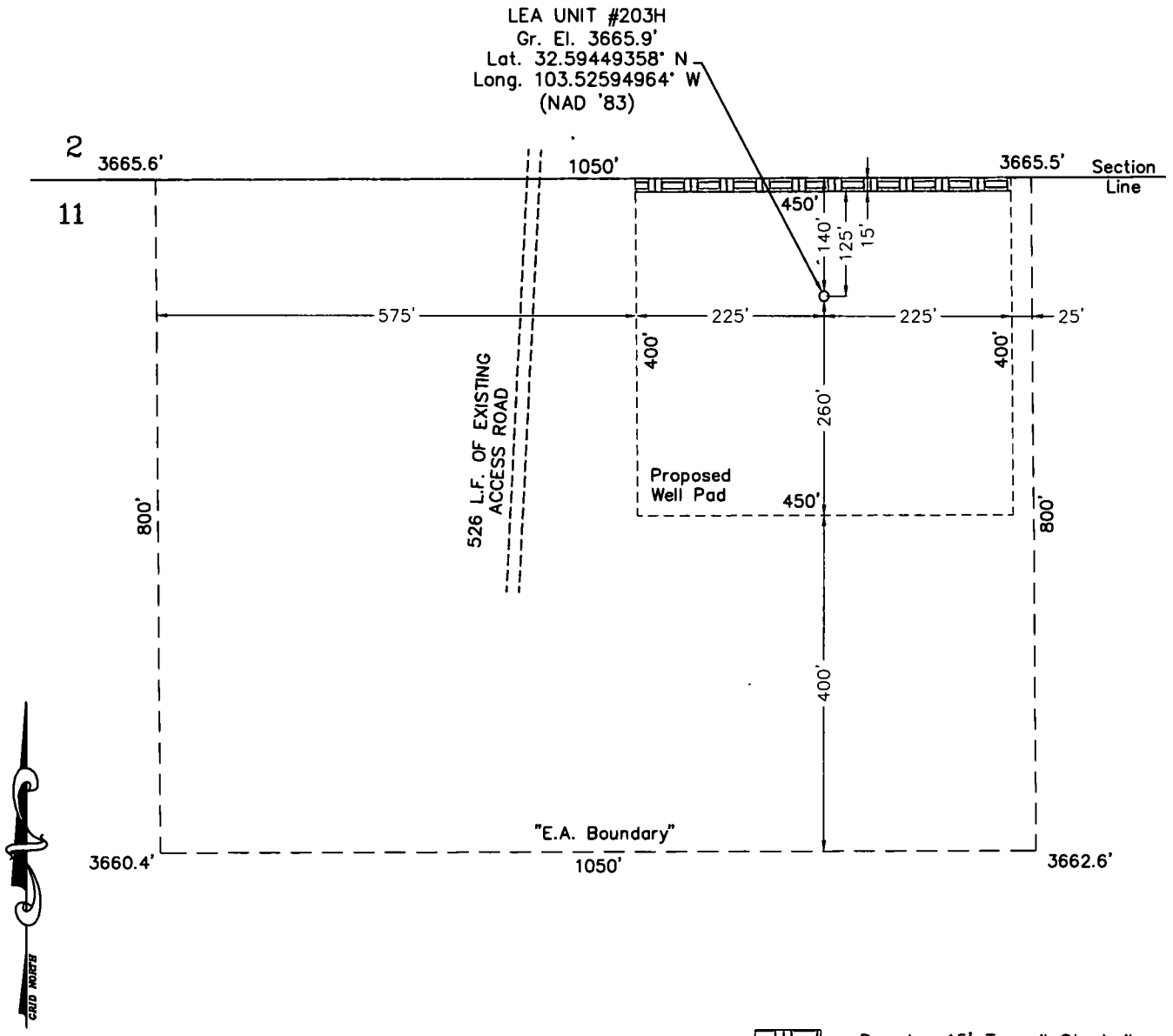
NORTH

WEST COMPANY
Land Surveyors ■ Civil Engineers

SURVEYORS - ENGINEERS - PLANNERS
FIRM REGISTRATION NUMBER: 100682-00
110 W. LOUISIANA AVE., SUITE 110
MIDLAND, TEXAS 79701
(432) 687-0865 - FAX (432)687-0868

SECTION 11, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY NEW MEXICO

2017-0929 D2



– Denotes 15' Topsoil Stockpile

200 0 200 400

Graphic Scale in Feet

DRIVING DIRECTIONS

FROM THE INTERSECTION OF STATE HIGHWAY 18 AND U.S. HIGHWAY 62–180 IN HOBBS, NEW MEXICO, GO WEST AND SOUTHWEST ON U.S. HIGHWAY 62–180 23.6 MILES TO MARATHON ROAD / CO. RD. 27–A ON SOUTH (LEFT) SIDE OF THE HIGHWAY. THEN GO SOUTH 3.2 MILES TO A LEASE ROAD ON THE WEST (RIGHT) SIDE OF THE ROAD, THEN GO WEST ON LEASE ROAD 0.7 MILE TO A LEASE ROAD ON THE NORTH (RIGHT) SIDE OF ROAD. GO NORTH AND NORTHEAST 0.4 MILE TO A POINT APPROXIMATELY 300 FEET WEST OF THE PROPOSED LOCATION.

WEST COMPANY
Land Surveyors ▪ Civil Engineers

SURVEYORS - ENGINEERS - PLANNERS
110 W. LOUISIANA AVE., SUITE 110
MIDLAND, TEXAS 79701
(432) 687-0865 - FAX (432)687-0868

LEGACY RESERVES OPERATING LP

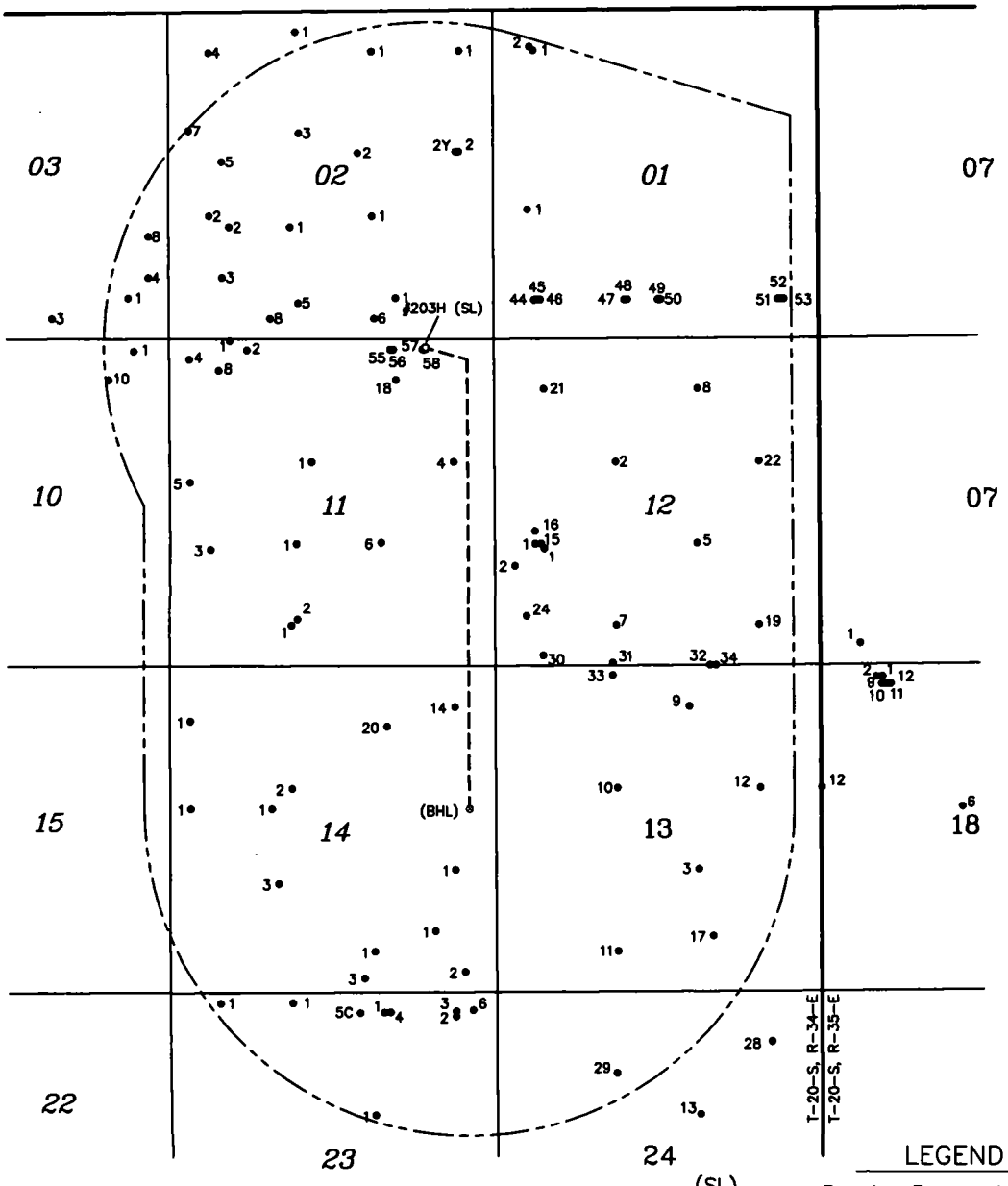
LEA UNIT #203H

Located 140' FNL & 1115' FEL, Section 11
Township 20 South, Range 34 East, N.M.P.M.
Lea County, New Mexico

Drawn By: SC	Issued: March 21, 2018
Scale: 1" = 200'	Field Book:
Revision Date:	Quadrangle: Lea
W.O. No: 2017–0929	Dwg. No.: 2017–0929

"Well Proximity Exhibit"

2017-0929



LEGEND

(SL) ⊙ – Denotes Proposed Surface Well Location

(BHL) ⊗ – Denotes Proposed Bottom Hole Location

● – Denotes Active Well Location

– – – – – – Denotes Wellbore Path

— — — — Denotes 1 Mile Buffer

GRID NORTH

Scale
1" = 3000'

NOTE:

1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1983. Distances shown hereon are mean horizontal surface values.

2) This Plat only shows wells within a 1 mile Diameter from the centerline of the wellbore according to the NM OCD Oil and Gas Map.

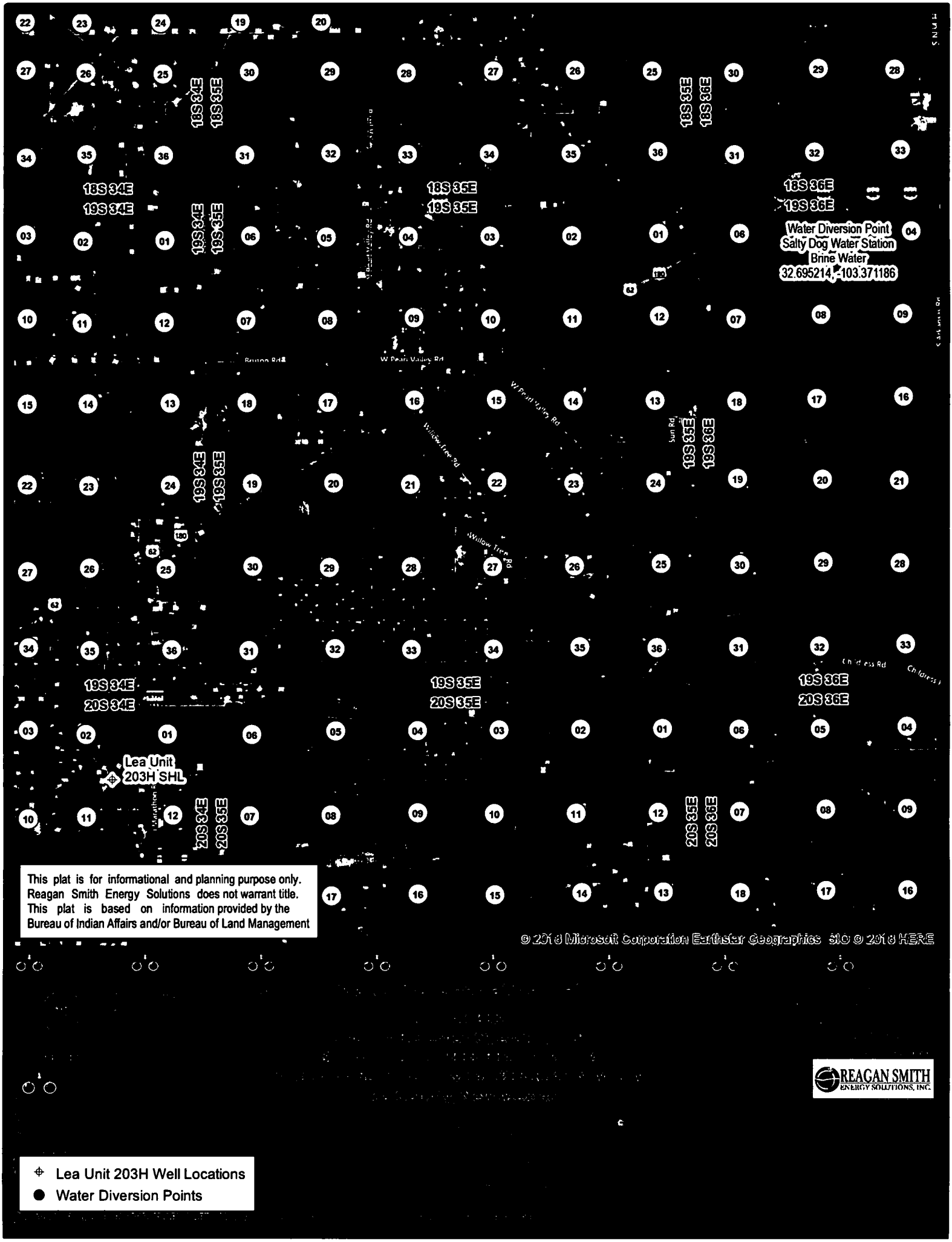
LEGACY RESERVES OPERATING LP

Proximity Sketch of the

LEA UNIT 203H

Surface Location:
Section 11, T-20-S, R-34-E
Bottom Hole Location:
Section 14, T-20-S, R-34-E
Lea County, New Mexico

Drawn By: SC/LRG	Date: Feb. 19, 2018
Scale: 1" = 3000'	Surveyed: Feb. 09, 2018
Revision Date: Mar. 22, 18	Quadrangle: Lea
J:\2017\2017-0929\2017-0929 LEA UNITS.DWG	


18S 34E
19S 34E
18S 35E
19S 35E
18S 35E
19S 36E
18S 36E
19S 36E
Water Diversion Point
Salty Dog Water Station
Brine Water
32.695214, -103.371186
19S 34E
20S 34E
19S 35E
20S 35E
19S 36E
20S 36E
Lea Unit
203H SHL
20S 34E
20S 35E
20S 35E
20S 36E
W Pearl Valley Rd
Willow Tree Rd
Sun Rd
Chidress Rd
Marathon Rd
This plat is for informational and planning purpose only. Reagan Smith Energy Solutions does not warrant title. This plat is based on information provided by the Bureau of Indian Affairs and/or Bureau of Land Management
© 2018 Microsoft Corporation Earthstar Geographics SIO © 2018 HERE
Lea Unit 203H Well Locations
Water Diversion Points
REAGAN SMITH
ENERGY SOLUTIONS, INC.

Lea Unit Water Sources:

FW Usage: 12,000 bbls
FW Source:

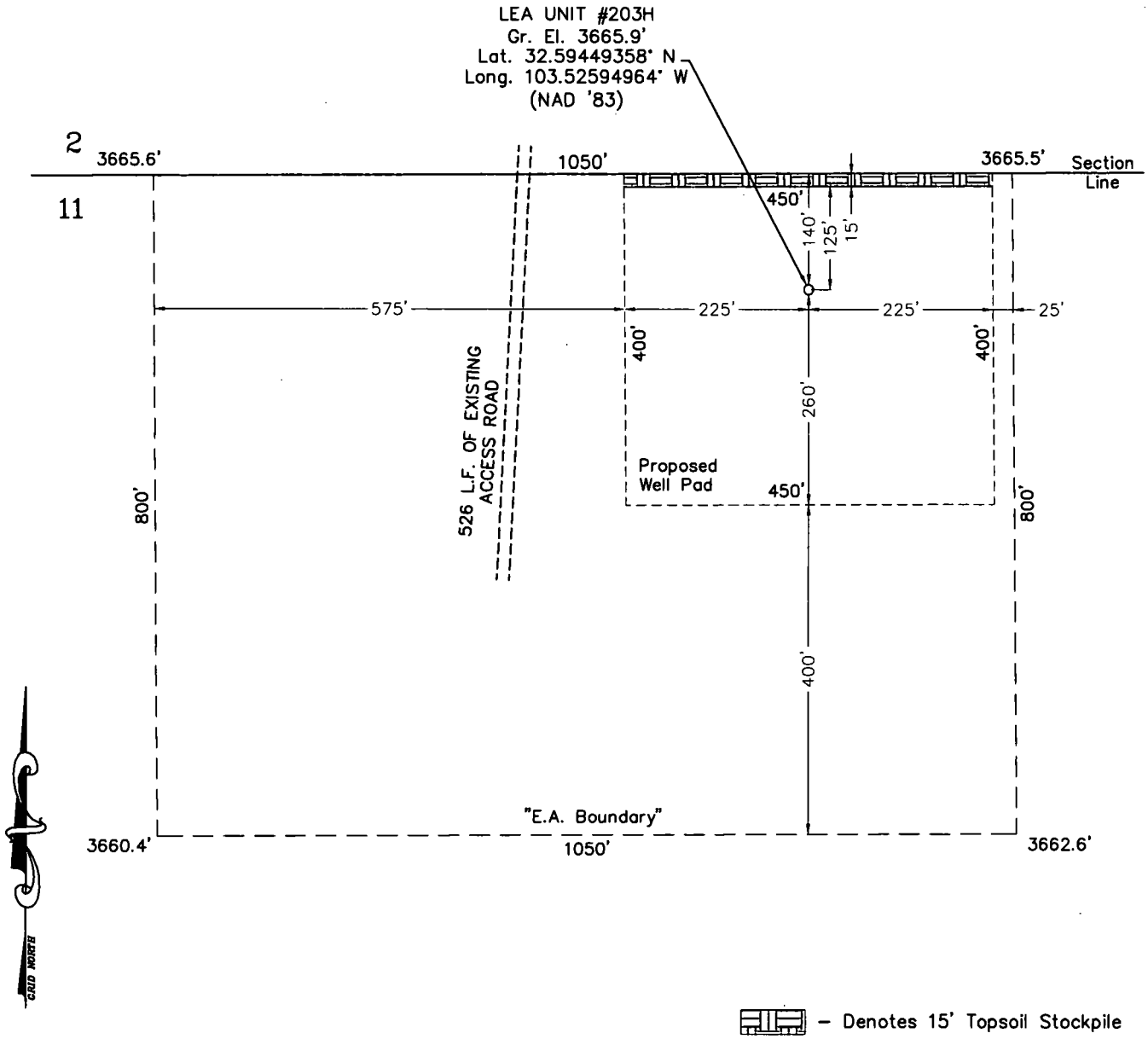
Rio Tanks, Inc./FAS-LINE – Fresh Water
4602 W. Pierce
Carlsbad, NM 88220

Brine Water Usage: 3,000 bbls
Brine Water Source

Salty Dog Water Station – Brine Water
Sec 5-T19S-R36E
32.695214, -10.3371186

SECTION 11, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY NEW MEXICO

2017-0929 D2



– Denotes 15' Topsoil Stockpile

200 0 200 400

Graphic Scale in Feet

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FROM THE INTERSECTION OF STATE HIGHWAY 18 AND U.S. HIGHWAY 62–180 IN HOBBS, NEW MEXICO, GO WEST AND SOUTHWEST ON U.S. HIGHWAY 62–180 23.6 MILES TO MARATHON ROAD / CO. RD. 27–A ON SOUTH (LEFT) SIDE OF THE HIGHWAY. THEN GO SOUTH 3.2 MILES TO A LEASE ROAD ON THE WEST (RIGHT) SIDE OF THE ROAD, THEN GO WEST ON LEASE ROAD 0.7 MILE TO A LEASE ROAD ON THE NORTH (RIGHT) SIDE OF ROAD. GO NORTH AND NORTHEAST 0.4 MILE TO A POINT APPROXIMATELY 300 FEET WEST OF THE PROPOSED LOCATION.

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LEGACY RESERVES OPERATING LP

LEA UNIT #203H

Located 140' FNL & 1115' FEL, Section 11
Township 20 South, Range 34 East, N.M.P.M.
Lea County, New Mexico

Drawn By: SC	Issued: March 21, 2018
Scale: 1" = 200'	Field Book:
Revision Date:	Quadrangle: Lea
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AFMSS

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

PWD Data Report
05/09/2019

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:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

05/09/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001015

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: