PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	LEGACY RESERVES OPERATING LP
LEASE NO.:	NMLC065375A
WELL NAME & NO.:	63H –LEA UNIT
SURFACE HOLE FOOTAGE:	2270'/S & 2610'/W
BOTTOM HOLE FOOTAGE	330'/N & 1750'/W
LOCATION:	Section 19.,T20S., R.35E., NMP
COUNTY:	LEA County, New Mexico

HOBBS OCD
MAY 07 2018
RECEIVED

Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	
Other	☐4 String Area	☒Capitan Reef	☐WIPP

A. Hydrogen Sulfide

1. 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 **1745** 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 is:

Option 1:

- 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:

Operator has proposed DV tool at depth of 3950', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

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:

Operator has proposed DV tool at depth of 3950' and 1800', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

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 **5 1/2** inch production casing is:

- Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 3150'). 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 **3000 (3M)** 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 **5000 (5M)** psi.

D. SPECIAL REQUIREMENT(S)

Commercial Well Determination

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

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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

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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. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
    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

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WELL NAME & NO.:	63H –LEA UNIT
SURFACE HOLE FOOTAGE:	2270'/S & 2610'/W
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LOCATION:	Section 19.,T20S., R.35E., NMP
COUNTY:	LEA County, New Mexico

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

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)

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.

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.

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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

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

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

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

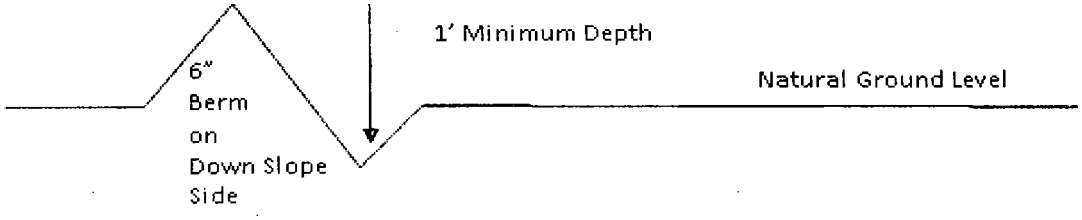
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

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

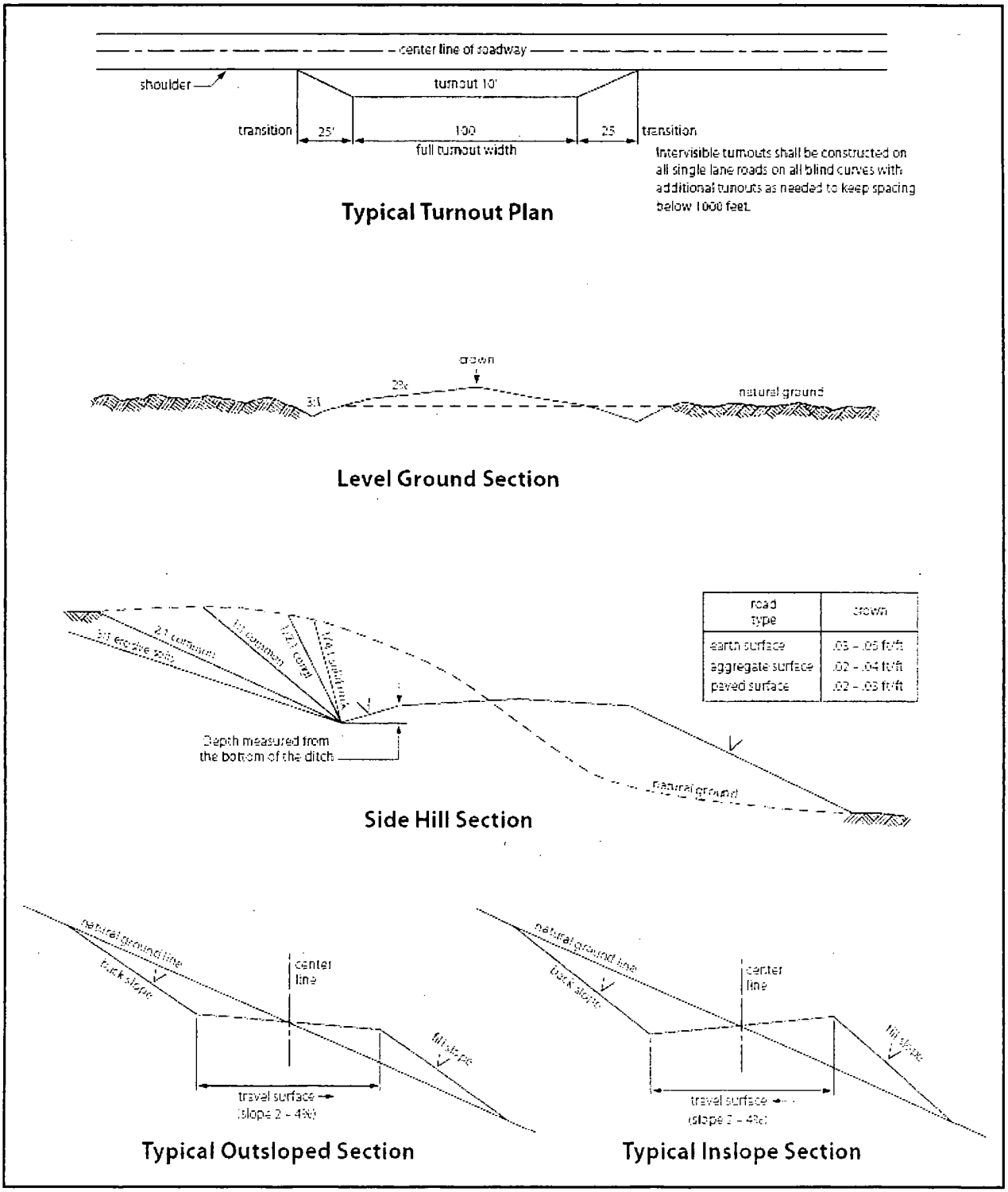


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures

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

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

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) 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 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 agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The 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 the 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 the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will 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 must 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 must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

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

8. The 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 will be "snaked" around hummocks and dunes rather then 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 must be less than or equal to 4 inches and a working pressure below 125 psi.

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.

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).

X. 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).

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 2, for Sandy Sites

The 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 will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will 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). The 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. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	LEGACY RESERVES OPERATING LP
LEASE NO.:	NMLC065375A
WELL NAME & NO.:	63H –LEA UNIT
SURFACE HOLE FOOTAGE:	2270'/S & 2610'/W
BOTTOM HOLE FOOTAGE	330'/N & 1750'/W
LOCATION:	Section 19.,T20S., R.35E., NMP
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)

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.

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.

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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

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

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

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

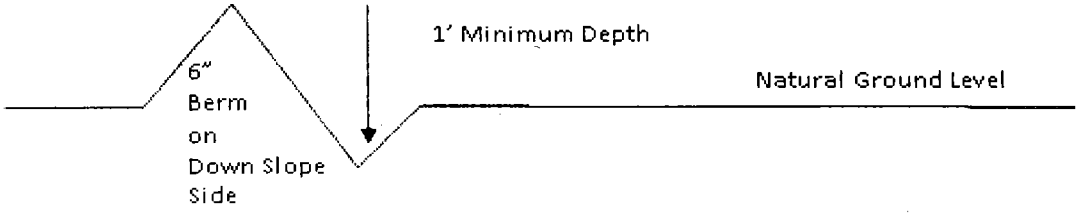
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

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

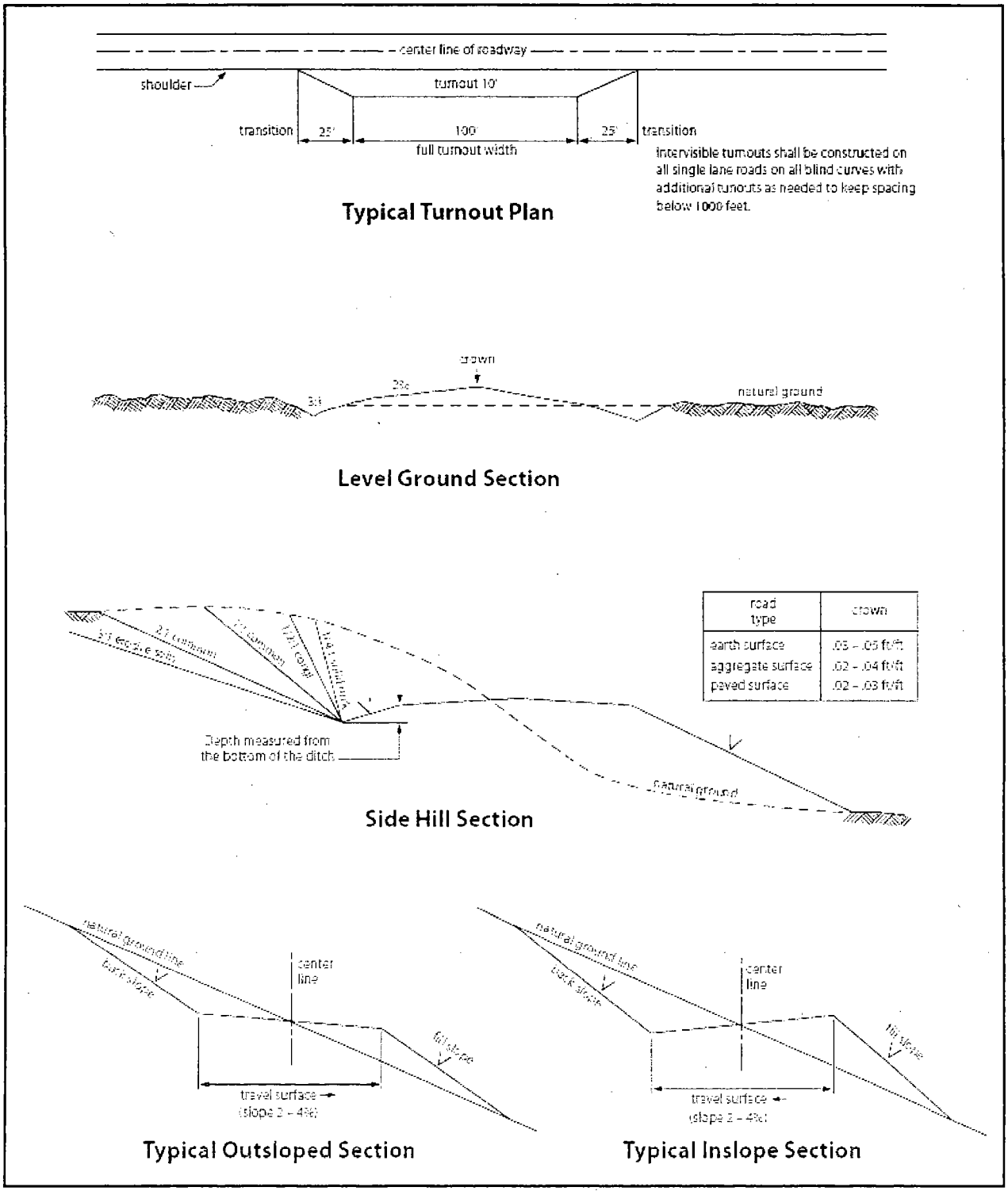


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures

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

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

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) 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 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 agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The 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 the 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 the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will 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 must 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 must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

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

8. The 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 will be "snaked" around hummocks and dunes rather then 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 must be less than or equal to 4 inches and a working pressure below 125 psi.

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.

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).

X. 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).

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 2, for Sandy Sites

The 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 will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will 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). The 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. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

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

LEGACY RESERVES OPERATING, L. P.
HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN
LEA UNIT 63H
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.

Production Casing

Size	Grade	#/ft	Collapse	Burst (Internal Yield)	Tensile	Coupling	Length	Dry Weight	Mud Weight
5.5"	*P-110*	*20*	*11080 psi*	*12360 psi*	*641 kips*	*BTC*	*18,300'*	*366,000 lb*	*9.1 ppg*

Collapse: $DF_C = 1.25$

Base Assumptions

- Cementing operations in which utilizes a collapse force equivalent to the gradient of the planned cement slurry (0.77 psi/ft) and an internal back-up force equivalent to the fresh water displacement fluid (0.433 psi/ft).
- Production operations in which the pipe is completely evacuated with an external force equivalent to the pore pressure gradient (0.52 psi/ft).

Collapse Calculations: Collapse Rating / Collapse Force

Cementing Operations:
11,080psi / [(0.66psi/ft-0.433 psi/ft)(10,500'TVD)] = **3.13**

Production Operations:
11080psi / (10,500' TVD)(0.52psi/ft) = **2.03**

Burst: $DF_B = 1.25$

Base Assumption

- Frac pressure utilizing an internal force of 9500 psi along with a frac fluid gradient equivalent to 0.468 psi/ft and an external force equal to the minimum fluid gradient (0.433 psi/ft) in which the casing will be ran.
- Production operations in which the casing is completely filled with a gas equivalent gradient of 0.2 psi/ft and an external force equivalent to pore pressure of 0.5 psi/ft.

Burst Calculations: Internal Yield Rating / Burst Force

Frac Pressure:
12,360psi / [(9500 psi)+ (0.468 – 0.433psi/ft)(10,500'TVD)] = **1.28**

Production Operations:
12,360psi / [(0.5 psi/ft – 0.2 psi/ft)(10,500'TVD)] = **3.92**

Tensile: $DF_T = 1.6$

Base Assumption

- A downward force of 100,000 lb. overpull is applied at the base of the casing along with the weight of the string and considering the effects of buoyancy (factor =0.86).

Tensile Calculations: Joint Strength / Axial Load

Overpull:
641,000 lbs /[(100,000 lbs.) + (366,000 lbs.)(0.86)] = **1.6**

- 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**

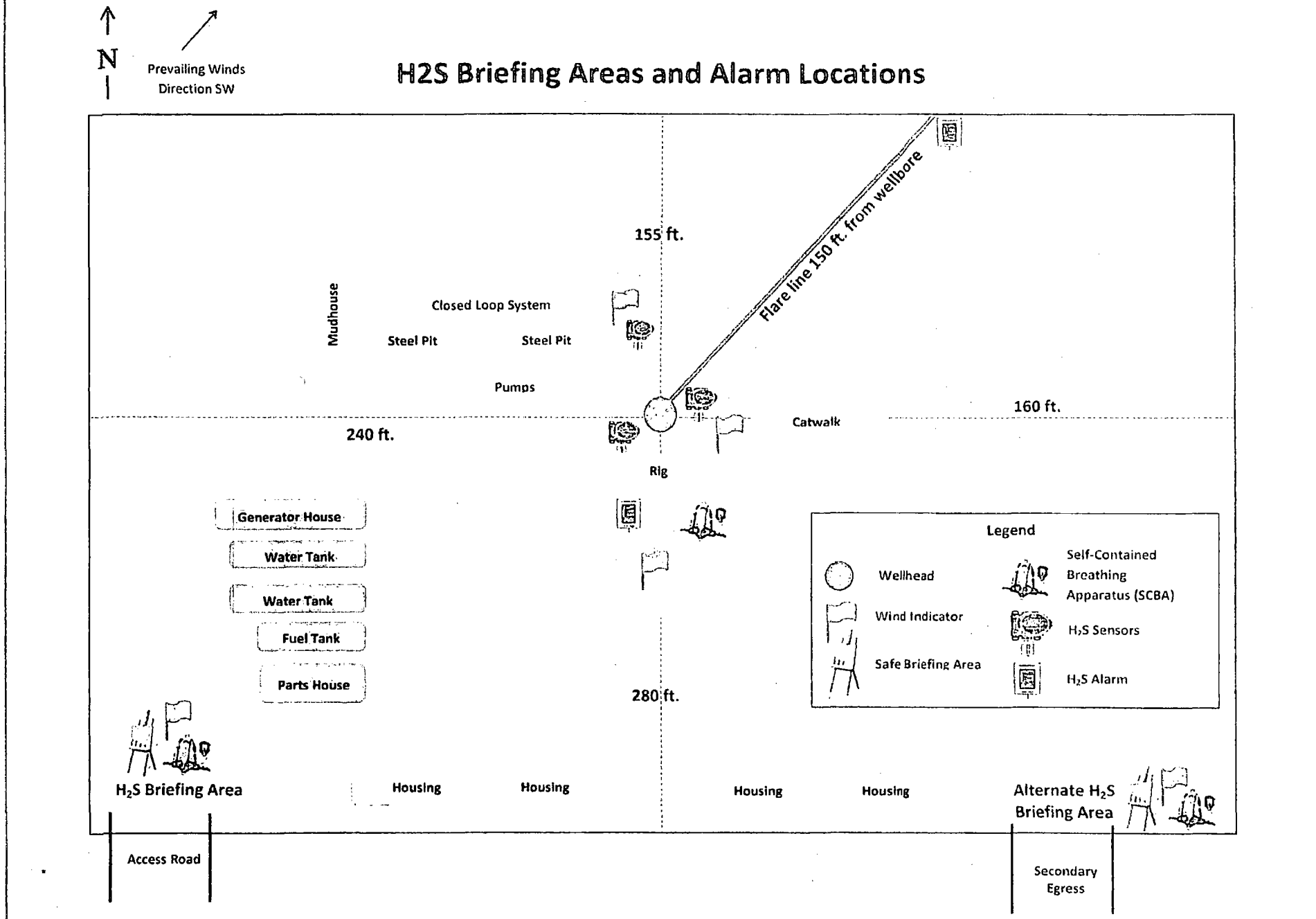
LEGACY RESERVES OPERATING LP	
Legacy Reserves Operating LP	**Office (432) 689-5200**
Drilling Manager:	**Office (432) 689-5200**
Daniel Breeding	**Cell (432) 853-1680**
Drilling Engineer:	**Office (432) 689-5200**
Matthew Dickson	**Cell (432) 212-5698**
Operations Manager:	**Office (432) 689-5200**
Ernie Hanson	**Cell (432) 230-9009**
Legacy Company Representative:	
Rick Massey	**Cell (575) 942-4035**

DRILLING CONTRACTOR-McVAY 4	
Tool Pusher:	
Terry Johnson	**Cell: (575) 370-5620**
Relief 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



Legacy Reserves

Lea County, NM (NAD-27 2015)
Lea Unit #63H
Lea Unit #63H

Lateral #1

Plan: Design #1

Standard Planning Report

03 December, 2016

TERRA DIRECTIONAL SERVICES, L.L.C.

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Company:	Legacy Reserves	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Project:	Lea County, NM (NAD-27 2015)	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site:	Lea Unit #63H	**North Reference:**	Grid
Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Project	Lea County, NM (NAD-27 2015)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Lea Unit #63H				
Site Position:		**Northing:**	567,541.00 usft	**Latitude:**	32° 33' 26.965 N
From:	Map	**Easting:**	757,924.70 usft	**Longitude:**	103° 29' 46.363 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.45 °

Well	Lea Unit #63H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	567,541.00 usft	**Latitude:**	32° 33' 26.965 N
	+E/-W	0.00 usft	**Easting:**	757,924.70 usft	**Longitude:**	103° 29' 46.363 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,689.00 usft

Wellbore Lateral #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/20/2016	7.00	60.39	48,202

Design Design #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	353.40	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,927.04	0.00	0.00	9,927.04	0.00	0.00	0.00	0.00	0.00	0.00	
10,827.04	90.00	334.45	10,500.00	516.93	-247.12	10.00	10.00	0.00	334.45	
11,925.73	90.00	356.42	10,500.00	1,573.81	-521.69	2.00	0.00	2.00	90.00	
18,314.46	90.00	356.42	10,500.00	7,950.10	-920.20	0.00	0.00	0.00	0.00	BHL-D1 (LU#63H/L1)

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Company:	Legacy Reserves	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Project:	Lea County, NM (NAD-27 2015)	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site:	Lea Unit #63H	**North Reference:**	Grid
Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Company:	Legacy Reserves	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Project:	Lea County, NM (NAD-27 2015)	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site:	Lea Unit #63H	**North Reference:**	Grid
Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,927.04	0.00	0.00	9,927.04	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 10.00									
9,950.00	2.30	334.45	9,949.99	0.41	-0.20	0.44	10.00	10.00	0.00
10,000.00	7.30	334.45	9,999.80	4.19	-2.00	4.39	10.00	10.00	0.00
10,050.00	12.30	334.45	10,049.06	11.86	-5.67	12.43	10.00	10.00	0.00
10,100.00	17.30	334.45	10,097.39	23.37	-11.17	24.50	10.00	10.00	0.00
10,150.00	22.30	334.45	10,144.42	38.65	-18.48	40.52	10.00	10.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Company:	Legacy Reserves	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Project:	Lea County, NM (NAD-27 2015)	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site:	Lea Unit #63H	**North Reference:**	Grid
Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,200.00	27.30	334.45	10,189.79	57.56	-27.52	60.34	10.00	10.00	0.00
10,250.00	32.30	334.45	10,233.17	79.97	-38.23	83.83	10.00	10.00	0.00
10,300.00	37.30	334.45	10,274.21	105.70	-50.53	110.81	10.00	10.00	0.00
10,350.00	42.30	334.45	10,312.62	134.57	-64.33	141.07	10.00	10.00	0.00
10,400.00	47.30	334.45	10,348.09	166.34	-79.52	174.38	10.00	10.00	0.00
10,450.00	52.30	334.45	10,380.35	200.78	-95.98	210.49	10.00	10.00	0.00
10,500.00	57.30	334.45	10,409.17	237.63	-113.60	249.12	10.00	10.00	0.00
10,550.00	62.30	334.45	10,434.31	276.61	-132.23	289.98	10.00	10.00	0.00
10,600.00	67.30	334.45	10,455.60	317.41	-151.74	332.75	10.00	10.00	0.00
10,650.00	72.30	334.45	10,472.86	359.73	-171.97	377.12	10.00	10.00	0.00
10,700.00	77.30	334.45	10,485.97	403.25	-192.77	422.74	10.00	10.00	0.00
10,750.00	82.30	334.45	10,494.83	447.63	-213.99	469.27	10.00	10.00	0.00
10,800.00	87.30	334.45	10,499.36	492.54	-235.46	516.35	10.00	10.00	0.00
10,827.04	90.00	334.45	10,500.00	516.93	-247.12	541.91	10.00	10.00	0.00
Start DLS 2.00 TFO 90.00									
10,900.00	90.00	335.91	10,500.00	583.15	-277.74	611.21	2.00	0.00	2.00
11,000.00	90.00	337.91	10,500.00	675.13	-316.96	707.10	2.00	0.00	2.00
11,100.00	90.00	339.91	10,500.00	768.43	-352.94	803.91	2.00	0.00	2.00
11,200.00	90.00	341.91	10,500.00	862.92	-385.65	901.54	2.00	0.00	2.00
11,300.00	90.00	343.91	10,500.00	958.50	-415.03	999.86	2.00	0.00	2.00
11,400.00	90.00	345.91	10,500.00	1,055.05	-441.07	1,098.76	2.00	0.00	2.00
11,500.00	90.00	347.91	10,500.00	1,152.44	-463.72	1,198.12	2.00	0.00	2.00
11,600.00	90.00	349.91	10,500.00	1,250.57	-482.95	1,297.81	2.00	0.00	2.00
11,700.00	90.00	351.91	10,500.00	1,349.31	-498.75	1,397.71	2.00	0.00	2.00
11,800.00	90.00	353.91	10,500.00	1,448.54	-511.09	1,497.70	2.00	0.00	2.00
11,900.00	90.00	355.91	10,500.00	1,548.14	-519.97	1,597.66	2.00	0.00	2.00
11,925.73	90.00	356.42	10,500.00	1,573.81	-521.69	1,623.35	2.00	0.00	2.00
Start 6388.73 hold at 11925.73 MD									
12,000.00	90.00	356.42	10,500.00	1,647.94	-526.32	1,697.53	0.00	0.00	0.00
12,100.00	90.00	356.42	10,500.00	1,747.74	-532.56	1,797.39	0.00	0.00	0.00
12,200.00	90.00	356.42	10,500.00	1,847.55	-538.80	1,897.25	0.00	0.00	0.00
12,300.00	90.00	356.42	10,500.00	1,947.35	-545.03	1,997.11	0.00	0.00	0.00
12,400.00	90.00	356.42	10,500.00	2,047.16	-551.27	2,096.97	0.00	0.00	0.00
12,500.00	90.00	356.42	10,500.00	2,146.97	-557.51	2,196.83	0.00	0.00	0.00
12,600.00	90.00	356.42	10,500.00	2,246.77	-563.75	2,296.69	0.00	0.00	0.00
12,700.00	90.00	356.42	10,500.00	2,346.58	-569.98	2,396.55	0.00	0.00	0.00
12,800.00	90.00	356.42	10,500.00	2,446.38	-576.22	2,496.41	0.00	0.00	0.00
12,900.00	90.00	356.42	10,500.00	2,546.19	-582.46	2,596.27	0.00	0.00	0.00
13,000.00	90.00	356.42	10,500.00	2,645.99	-588.70	2,696.13	0.00	0.00	0.00
13,100.00	90.00	356.42	10,500.00	2,745.80	-594.94	2,795.99	0.00	0.00	0.00
13,200.00	90.00	356.42	10,500.00	2,845.60	-601.17	2,895.85	0.00	0.00	0.00
13,300.00	90.00	356.42	10,500.00	2,945.41	-607.41	2,995.71	0.00	0.00	0.00
13,400.00	90.00	356.42	10,500.00	3,045.21	-613.65	3,095.57	0.00	0.00	0.00
13,500.00	90.00	356.42	10,500.00	3,145.02	-619.89	3,195.43	0.00	0.00	0.00
13,600.00	90.00	356.42	10,500.00	3,244.82	-626.12	3,295.29	0.00	0.00	0.00
13,700.00	90.00	356.42	10,500.00	3,344.63	-632.36	3,395.15	0.00	0.00	0.00
13,800.00	90.00	356.42	10,500.00	3,444.43	-638.60	3,495.02	0.00	0.00	0.00
13,900.00	90.00	356.42	10,500.00	3,544.24	-644.84	3,594.88	0.00	0.00	0.00
14,000.00	90.00	356.42	10,500.00	3,644.04	-651.07	3,694.74	0.00	0.00	0.00
14,100.00	90.00	356.42	10,500.00	3,743.85	-657.31	3,794.60	0.00	0.00	0.00
14,200.00	90.00	356.42	10,500.00	3,843.65	-663.55	3,894.46	0.00	0.00	0.00
14,300.00	90.00	356.42	10,500.00	3,943.46	-669.79	3,994.32	0.00	0.00	0.00
14,400.00	90.00	356.42	10,500.00	4,043.27	-676.03	4,094.18	0.00	0.00	0.00
14,500.00	90.00	356.42	10,500.00	4,143.07	-682.26	4,194.04	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Company:	Legacy Reserves	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Project:	Lea County, NM (NAD-27 2015)	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site:	Lea Unit #63H	**North Reference:**	Grid
Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,600.00	90.00	356.42	10,500.00	4,242.88	-688.50	4,293.90	0.00	0.00	0.00
14,700.00	90.00	356.42	10,500.00	4,342.68	-694.74	4,393.76	0.00	0.00	0.00
14,800.00	90.00	356.42	10,500.00	4,442.49	-700.98	4,493.62	0.00	0.00	0.00
14,900.00	90.00	356.42	10,500.00	4,542.29	-707.21	4,593.48	0.00	0.00	0.00
15,000.00	90.00	356.42	10,500.00	4,642.10	-713.45	4,693.34	0.00	0.00	0.00
15,100.00	90.00	356.42	10,500.00	4,741.90	-719.69	4,793.20	0.00	0.00	0.00
15,200.00	90.00	356.42	10,500.00	4,841.71	-725.93	4,893.06	0.00	0.00	0.00
15,300.00	90.00	356.42	10,500.00	4,941.51	-732.17	4,992.92	0.00	0.00	0.00
15,400.00	90.00	356.42	10,500.00	5,041.32	-738.40	5,092.78	0.00	0.00	0.00
15,500.00	90.00	356.42	10,500.00	5,141.12	-744.64	5,192.64	0.00	0.00	0.00
15,600.00	90.00	356.42	10,500.00	5,240.93	-750.88	5,292.51	0.00	0.00	0.00
15,700.00	90.00	356.42	10,500.00	5,340.73	-757.12	5,392.37	0.00	0.00	0.00
15,800.00	90.00	356.42	10,500.00	5,440.54	-763.35	5,492.23	0.00	0.00	0.00
15,900.00	90.00	356.42	10,500.00	5,540.34	-769.59	5,592.09	0.00	0.00	0.00
16,000.00	90.00	356.42	10,500.00	5,640.15	-775.83	5,691.95	0.00	0.00	0.00
16,100.00	90.00	356.42	10,500.00	5,739.95	-782.07	5,791.81	0.00	0.00	0.00
16,200.00	90.00	356.42	10,500.00	5,839.76	-788.31	5,891.67	0.00	0.00	0.00
16,300.00	90.00	356.42	10,500.00	5,939.57	-794.54	5,991.53	0.00	0.00	0.00
16,400.00	90.00	356.42	10,500.00	6,039.37	-800.78	6,091.39	0.00	0.00	0.00
16,500.00	90.00	356.42	10,500.00	6,139.18	-807.02	6,191.25	0.00	0.00	0.00
16,600.00	90.00	356.42	10,500.00	6,238.98	-813.26	6,291.11	0.00	0.00	0.00
16,700.00	90.00	356.42	10,500.00	6,338.79	-819.49	6,390.97	0.00	0.00	0.00
16,800.00	90.00	356.42	10,500.00	6,438.59	-825.73	6,490.83	0.00	0.00	0.00
16,900.00	90.00	356.42	10,500.00	6,538.40	-831.97	6,590.69	0.00	0.00	0.00
17,000.00	90.00	356.42	10,500.00	6,638.20	-838.21	6,690.55	0.00	0.00	0.00
17,100.00	90.00	356.42	10,500.00	6,738.01	-844.45	6,790.41	0.00	0.00	0.00
17,200.00	90.00	356.42	10,500.00	6,837.81	-850.68	6,890.27	0.00	0.00	0.00
17,300.00	90.00	356.42	10,500.00	6,937.62	-856.92	6,990.13	0.00	0.00	0.00
17,400.00	90.00	356.42	10,500.00	7,037.42	-863.16	7,090.00	0.00	0.00	0.00
17,500.00	90.00	356.42	10,500.00	7,137.23	-869.40	7,189.86	0.00	0.00	0.00
17,600.00	90.00	356.42	10,500.00	7,237.03	-875.63	7,289.72	0.00	0.00	0.00
17,700.00	90.00	356.42	10,500.00	7,336.84	-881.87	7,389.58	0.00	0.00	0.00
17,800.00	90.00	356.42	10,500.00	7,436.64	-888.11	7,489.44	0.00	0.00	0.00
17,900.00	90.00	356.42	10,500.00	7,536.45	-894.35	7,589.30	0.00	0.00	0.00
18,000.00	90.00	356.42	10,500.00	7,636.25	-900.58	7,689.16	0.00	0.00	0.00
18,100.00	90.00	356.42	10,500.00	7,736.06	-906.82	7,789.02	0.00	0.00	0.00
18,200.00	90.00	356.42	10,500.00	7,835.87	-913.06	7,888.88	0.00	0.00	0.00
18,300.00	90.00	356.42	10,500.00	7,935.67	-919.30	7,988.74	0.00	0.00	0.00
18,314.46	90.00	356.42	10,500.00	7,950.10	-920.20	8,003.18	0.00	0.00	0.00

TD at **18314.46**

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Company:	Legacy Reserves	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Project:	Lea County, NM (NAD-27 2015)	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site:	Lea Unit #63H	**North Reference:**	Grid
Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP-D1 (LU#63H/L1) - plan hits target center - Point	0.00	0.00	9,927.04	0.00	0.00	567,541.00	757,924.70	32° 33' 26.965 N	103° 29' 46.363 W
END TURN-D1 (LU#63H - plan hits target center - Point	0.00	0.00	10,500.00	1,573.81	-521.69	569,114.82	757,403.01	32° 33' 42.578 N	103° 29' 52.314 W
BHL-D1 (LU#63H/L1) - plan hits target center - Rectangle (sides W80.00 H6,376.29 D30.00)	0.00	356.42	10,500.00	7,950.10	-920.20	575,491.10	757,004.50	32° 34' 45.701 N	103° 29' 56.386 W
EOC/TURN-D1 (LU#63H - plan hits target center - Point	0.00	0.00	10,500.00	516.93	-247.12	568,057.93	757,677.58	32° 33' 32.099 N	103° 29' 49.203 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,927.04	9,927.04	0.00	0.00	Start Build 10.00
10,827.04	10,500.00	516.93	-247.12	Start DLS 2.00 TFO 90.00
11,925.73	10,500.00	1,573.81	-521.69	Start 6388.73 hold at 11925.73 MD
18,314.46	10,500.00	7,950.10	-920.20	TD at 18314.46

LEGACY
RESERVES

Legacy Reserves

Lea County, NM (NAD-27 2015)
Lea Unit #63H
Lea Unit #63H

Lateral #1
Design #1

Anticollision Report

03 December, 2016

TERRA DIRECTIONAL SERVICES, L.L.C.

TDS
Anticollision Report

Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 12/3/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,314.46	Design #1 (Lateral #1)	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 Unit #62H						
Lea Unit #62H - Lateral #1 - Design #1	10,083.23	10,080.30	45.42	0.37	1.008	Level 2, CC, ES, SF
Lea Unit #64H						
Lea Unit #64H - Lateral #1 - Design #1	9,390.51	9,392.81	44.08	2.14	1.051	Level 2, CC, ES, SF

Offset Design Lea Unit #62H - Lea Unit #62H - Lateral #1 - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.57	-0.50	-50.10	50.11				
100.00	100.00	99.00	99.00	0.09	0.09	-90.57	-0.50	-50.10	50.10	49.92	0.18	273.207	
200.00	200.00	199.00	199.00	0.32	0.31	-90.57	-0.50	-50.10	50.10	49.47	0.63	79.327	
300.00	300.00	299.00	299.00	0.54	0.54	-90.57	-0.50	-50.10	50.10	49.02	1.08	46.343	
400.00	400.00	399.00	399.00	0.77	0.76	-90.57	-0.50	-50.10	50.10	48.57	1.53	32.733	
500.00	500.00	499.00	499.00	0.99	0.99	-90.57	-0.50	-50.10	50.10	48.12	1.98	25.302	
600.00	600.00	599.00	599.00	1.22	1.21	-90.57	-0.50	-50.10	50.10	47.67	2.43	20.621	
700.00	700.00	699.00	699.00	1.44	1.44	-90.57	-0.50	-50.10	50.10	47.22	2.88	17.401	
800.00	800.00	799.00	799.00	1.67	1.66	-90.57	-0.50	-50.10	50.10	46.77	3.33	15.051	
900.00	900.00	899.00	899.00	1.89	1.89	-90.57	-0.50	-50.10	50.10	46.32	3.78	13.261	
1,000.00	1,000.00	999.00	999.00	2.12	2.11	-90.57	-0.50	-50.10	50.10	45.87	4.23	11.851	
1,100.00	1,100.00	1,099.00	1,099.00	2.34	2.34	-90.57	-0.50	-50.10	50.10	45.43	4.68	10.712	
1,200.00	1,200.00	1,199.00	1,199.00	2.56	2.56	-90.57	-0.50	-50.10	50.10	44.98	5.13	9.772	
1,300.00	1,300.00	1,299.00	1,299.00	2.79	2.79	-90.57	-0.50	-50.10	50.10	44.53	5.58	8.985	
1,400.00	1,400.00	1,399.00	1,399.00	3.01	3.01	-90.57	-0.50	-50.10	50.10	44.08	6.03	8.314	
1,500.00	1,500.00	1,499.00	1,499.00	3.24	3.24	-90.57	-0.50	-50.10	50.10	43.63	6.48	7.737	
1,600.00	1,600.00	1,599.00	1,599.00	3.46	3.46	-90.57	-0.50	-50.10	50.10	43.18	6.93	7.235	
1,700.00	1,700.00	1,699.00	1,699.00	3.69	3.69	-90.57	-0.50	-50.10	50.10	42.73	7.37	6.794	
1,800.00	1,800.00	1,799.00	1,799.00	3.91	3.91	-90.57	-0.50	-50.10	50.10	42.28	7.82	6.404	
1,900.00	1,900.00	1,899.00	1,899.00	4.14	4.14	-90.57	-0.50	-50.10	50.10	41.83	8.27	6.056	
2,000.00	2,000.00	1,999.00	1,999.00	4.36	4.36	-90.57	-0.50	-50.10	50.10	41.38	8.72	5.744	
2,100.00	2,100.00	2,099.00	2,099.00	4.59	4.59	-90.57	-0.50	-50.10	50.10	40.93	9.17	5.462	
2,200.00	2,200.00	2,199.00	2,199.00	4.81	4.81	-90.57	-0.50	-50.10	50.10	40.48	9.62	5.207	
2,300.00	2,300.00	2,299.00	2,299.00	5.04	5.03	-90.57	-0.50	-50.10	50.10	40.03	10.07	4.975	

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 #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Lea Unit #62H - Lea Unit #62H - Lateral #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,400.00	2,400.00	2,399.00	2,399.00	5.26	5.26	-90.57	-0.50	-50.10	50.10	39.58	10.52	4.762	
2,500.00	2,500.00	2,499.00	2,499.00	5.49	5.48	-90.57	-0.50	-50.10	50.10	39.13	10.97	4.567	
2,600.00	2,600.00	2,599.00	2,599.00	5.71	5.71	-90.57	-0.50	-50.10	50.10	38.68	11.42	4.387	
2,700.00	2,700.00	2,699.00	2,699.00	5.94	5.93	-90.57	-0.50	-50.10	50.10	38.23	11.87	4.221	
2,800.00	2,800.00	2,799.00	2,799.00	6.16	6.16	-90.57	-0.50	-50.10	50.10	37.78	12.32	4.067	
2,900.00	2,900.00	2,899.00	2,899.00	6.39	6.38	-90.57	-0.50	-50.10	50.10	37.33	12.77	3.924	
3,000.00	3,000.00	2,999.00	2,999.00	6.61	6.61	-90.57	-0.50	-50.10	50.10	36.88	13.22	3.790	
3,100.00	3,100.00	3,099.00	3,099.00	6.84	6.83	-90.57	-0.50	-50.10	50.10	36.43	13.67	3.666	
3,200.00	3,200.00	3,199.00	3,199.00	7.06	7.06	-90.57	-0.50	-50.10	50.10	35.98	14.12	3.549	
3,300.00	3,300.00	3,299.00	3,299.00	7.28	7.28	-90.57	-0.50	-50.10	50.10	35.54	14.57	3.439	
3,400.00	3,400.00	3,399.00	3,399.00	7.51	7.51	-90.57	-0.50	-50.10	50.10	35.09	15.02	3.336	
3,500.00	3,500.00	3,499.00	3,499.00	7.73	7.73	-90.57	-0.50	-50.10	50.10	34.64	15.47	3.239	
3,600.00	3,600.00	3,599.00	3,599.00	7.96	7.96	-90.57	-0.50	-50.10	50.10	34.19	15.92	3.148	
3,700.00	3,700.00	3,699.00	3,699.00	8.18	8.18	-90.57	-0.50	-50.10	50.10	33.74	16.37	3.062	
3,800.00	3,800.00	3,799.00	3,799.00	8.41	8.41	-90.57	-0.50	-50.10	50.10	33.29	16.81	2.980	
3,900.00	3,900.00	3,899.00	3,899.00	8.63	8.63	-90.57	-0.50	-50.10	50.10	32.84	17.26	2.902	
4,000.00	4,000.00	3,999.00	3,999.00	8.86	8.86	-90.57	-0.50	-50.10	50.10	32.39	17.71	2.828	
4,100.00	4,100.00	4,099.00	4,099.00	9.08	9.08	-90.57	-0.50	-50.10	50.10	31.94	18.16	2.758	
4,200.00	4,200.00	4,199.00	4,199.00	9.31	9.31	-90.57	-0.50	-50.10	50.10	31.49	18.61	2.692	
4,300.00	4,300.00	4,299.00	4,299.00	9.53	9.53	-90.57	-0.50	-50.10	50.10	31.04	19.06	2.628	
4,400.00	4,400.00	4,399.00	4,399.00	9.76	9.75	-90.57	-0.50	-50.10	50.10	30.59	19.51	2.568	
4,500.00	4,500.00	4,499.00	4,499.00	9.98	9.98	-90.57	-0.50	-50.10	50.10	30.14	19.96	2.510	
4,600.00	4,600.00	4,599.00	4,599.00	10.21	10.20	-90.57	-0.50	-50.10	50.10	29.69	20.41	2.455	
4,700.00	4,700.00	4,699.00	4,699.00	10.43	10.43	-90.57	-0.50	-50.10	50.10	29.24	20.86	2.402	
4,800.00	4,800.00	4,799.00	4,799.00	10.66	10.65	-90.57	-0.50	-50.10	50.10	28.79	21.31	2.351	
4,900.00	4,900.00	4,899.00	4,899.00	10.88	10.88	-90.57	-0.50	-50.10	50.10	28.34	21.76	2.303	
5,000.00	5,000.00	4,999.00	4,999.00	11.11	11.10	-90.57	-0.50	-50.10	50.10	27.89	22.21	2.256	
5,100.00	5,100.00	5,099.00	5,099.00	11.33	11.33	-90.57	-0.50	-50.10	50.10	27.44	22.66	2.211	
5,200.00	5,200.00	5,199.00	5,199.00	11.56	11.55	-90.57	-0.50	-50.10	50.10	26.99	23.11	2.168	
5,300.00	5,300.00	5,299.00	5,299.00	11.78	11.78	-90.57	-0.50	-50.10	50.10	26.54	23.56	2.127	
5,400.00	5,400.00	5,399.00	5,399.00	12.00	12.00	-90.57	-0.50	-50.10	50.10	26.10	24.01	2.087	
5,500.00	5,500.00	5,499.00	5,499.00	12.23	12.23	-90.57	-0.50	-50.10	50.10	25.65	24.46	2.049	
5,600.00	5,600.00	5,599.00	5,599.00	12.45	12.45	-90.57	-0.50	-50.10	50.10	25.20	24.91	2.012	
5,700.00	5,700.00	5,699.00	5,699.00	12.68	12.68	-90.57	-0.50	-50.10	50.10	24.75	25.36	1.976	
5,800.00	5,800.00	5,799.00	5,799.00	12.90	12.90	-90.57	-0.50	-50.10	50.10	24.30	25.81	1.942	
5,900.00	5,900.00	5,899.00	5,899.00	13.13	13.13	-90.57	-0.50	-50.10	50.10	23.85	26.25	1.908	
6,000.00	6,000.00	5,999.00	5,999.00	13.35	13.35	-90.57	-0.50	-50.10	50.10	23.40	26.70	1.876	
6,100.00	6,100.00	6,099.00	6,099.00	13.58	13.58	-90.57	-0.50	-50.10	50.10	22.95	27.15	1.845	
6,200.00	6,200.00	6,199.00	6,199.00	13.80	13.80	-90.57	-0.50	-50.10	50.10	22.50	27.60	1.815	
6,300.00	6,300.00	6,299.00	6,299.00	14.03	14.03	-90.57	-0.50	-50.10	50.10	22.05	28.05	1.786	
6,400.00	6,400.00	6,399.00	6,399.00	14.25	14.25	-90.57	-0.50	-50.10	50.10	21.60	28.50	1.758	
6,500.00	6,500.00	6,499.00	6,499.00	14.48	14.47	-90.57	-0.50	-50.10	50.10	21.15	28.95	1.731	
6,600.00	6,600.00	6,599.00	6,599.00	14.70	14.70	-90.57	-0.50	-50.10	50.10	20.70	29.40	1.704	
6,700.00	6,700.00	6,699.00	6,699.00	14.93	14.92	-90.57	-0.50	-50.10	50.10	20.25	29.85	1.678	
6,800.00	6,800.00	6,799.00	6,799.00	15.15	15.15	-90.57	-0.50	-50.10	50.10	19.80	30.30	1.654	
6,900.00	6,900.00	6,899.00	6,899.00	15.38	15.37	-90.57	-0.50	-50.10	50.10	19.35	30.75	1.629	
7,000.00	7,000.00	6,999.00	6,999.00	15.60	15.60	-90.57	-0.50	-50.10	50.10	18.90	31.20	1.606	
7,100.00	7,100.00	7,099.00	7,099.00	15.83	15.82	-90.57	-0.50	-50.10	50.10	18.45	31.65	1.583	
7,200.00	7,200.00	7,199.00	7,199.00	16.05	16.05	-90.57	-0.50	-50.10	50.10	18.00	32.10	1.561	
7,300.00	7,300.00	7,299.00	7,299.00	16.28	16.27	-90.57	-0.50	-50.10	50.10	17.55	32.55	1.539	
7,400.00	7,400.00	7,399.00	7,399.00	16.50	16.50	-90.57	-0.50	-50.10	50.10	17.10	33.00	1.518	
7,500.00	7,500.00	7,499.00	7,499.00	16.72	16.72	-90.57	-0.50	-50.10	50.10	16.66	33.45	1.498	Level 3

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 #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design — Lea Unit #62H - Lea Unit #62H - Lateral #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,600.00	7,600.00	7,599.00	7,599.00	16.95	16.95	-90.57	-0.50	-50.10	50.10	16.21	33.90	1.478	Level 3
7,700.00	7,700.00	7,699.00	7,699.00	17.17	17.17	-90.57	-0.50	-50.10	50.10	15.76	34.35	1.459	Level 3
7,800.00	7,800.00	7,799.00	7,799.00	17.40	17.40	-90.57	-0.50	-50.10	50.10	15.31	34.80	1.440	Level 3
7,900.00	7,900.00	7,899.00	7,899.00	17.62	17.62	-90.57	-0.50	-50.10	50.10	14.86	35.25	1.422	Level 3
8,000.00	8,000.00	7,999.00	7,999.00	17.85	17.85	-90.57	-0.50	-50.10	50.10	14.41	35.70	1.404	Level 3
8,100.00	8,100.00	8,099.00	8,099.00	18.07	18.07	-90.57	-0.50	-50.10	50.10	13.96	36.14	1.386	Level 3
8,200.00	8,200.00	8,199.00	8,199.00	18.30	18.30	-90.57	-0.50	-50.10	50.10	13.51	36.59	1.369	Level 3
8,300.00	8,300.00	8,299.00	8,299.00	18.52	18.52	-90.57	-0.50	-50.10	50.10	13.06	37.04	1.353	Level 3
8,400.00	8,400.00	8,399.00	8,399.00	18.75	18.75	-90.57	-0.50	-50.10	50.10	12.61	37.49	1.336	Level 3
8,500.00	8,500.00	8,499.00	8,499.00	18.97	18.97	-90.57	-0.50	-50.10	50.10	12.16	37.94	1.320	Level 3
8,600.00	8,600.00	8,599.00	8,599.00	19.20	19.20	-90.57	-0.50	-50.10	50.10	11.71	38.39	1.305	Level 3
8,700.00	8,700.00	8,699.00	8,699.00	19.42	19.42	-90.57	-0.50	-50.10	50.10	11.26	38.84	1.290	Level 3
8,800.00	8,800.00	8,799.00	8,799.00	19.65	19.64	-90.57	-0.50	-50.10	50.10	10.81	39.29	1.275	Level 3
8,900.00	8,900.00	8,899.00	8,899.00	19.87	19.87	-90.57	-0.50	-50.10	50.10	10.36	39.74	1.261	Level 3
9,000.00	9,000.00	8,999.00	8,999.00	20.10	20.09	-90.57	-0.50	-50.10	50.10	9.91	40.19	1.247	Level 2
9,100.00	9,100.00	9,099.00	9,099.00	20.32	20.32	-90.57	-0.50	-50.10	50.10	9.46	40.6-	1.233	Level 2
9,200.00	9,200.00	9,199.00	9,199.00	20.55	20.54	-90.57	-0.50	-50.10	50.10	9.01	41.09	1.219	Level 2
9,300.00	9,300.00	9,299.00	9,299.00	20.77	20.77	-90.57	-0.50	-50.10	50.10	8.56	41.54	1.206	Level 2
9,400.00	9,400.00	9,399.00	9,399.00	21.00	20.99	-90.57	-0.50	-50.10	50.10	8.11	41.99	1.193	Level 2
9,500.00	9,500.00	9,499.00	9,499.00	21.22	21.22	-90.57	-0.50	-50.10	50.10	7.66	42.44	1.181	Level 2
9,600.00	9,600.00	9,599.00	9,599.00	21.44	21.44	-90.57	-0.50	-50.10	50.10	7.21	42.89	1.168	Level 2
9,700.00	9,700.00	9,699.00	9,699.00	21.67	21.67	-90.57	-0.50	-50.10	50.10	6.77	43.34	1.156	Level 2
9,800.00	9,800.00	9,799.00	9,799.00	21.89	21.89	-90.57	-0.50	-50.10	50.10	6.32	43.79	1.144	Level 2
9,900.00	9,900.00	9,899.00	9,899.00	22.12	22.12	-90.57	-0.50	-50.10	50.10	5.87	44.24	1.133	Level 2
9,927.04	9,927.04	9,926.04	9,926.04	22.18	22.18	-90.57	-0.50	-50.10	50.10	5.74	44.36	1.130	Level 2
9,950.00	9,949.99	9,948.99	9,948.99	22.23	22.23	-65.52	-0.50	-50.10	49.91	5.45	44.46	1.123	Level 2
10,000.00	9,999.80	9,998.80	9,998.80	22.34	22.34	-70.16	-0.50	-50.10	48.33	3.65	44.68	1.082	Level 2
10,050.00	10,049.06	10,048.06	10,048.06	22.45	22.45	-80.22	-0.50	-50.10	46.12	1.22	44.90	1.027	Level 2
10,083.23	10,081.30	10,080.30	10,080.30	22.53	22.52	-90.00	-0.50	-50.10	45.42	0.37	45.04	1.008	Level 2, CC, ES, SF
10,100.00	10,097.39	10,096.39	10,096.39	22.57	22.56	-95.70	-0.50	-50.10	45.66	0.55	45.12	1.012	Level 2
10,150.00	10,144.42	10,143.42	10,143.42	22.68	22.67	-113.83	-0.50	-50.10	50.33	4.99	45.34	1.110	Level 2
10,200.00	10,189.79	10,188.79	10,188.79	22.79	22.77	-129.84	-0.50	-50.10	62.30	16.74	45.55	1.368	Level 3
10,250.00	10,233.17	10,232.17	10,232.17	22.90	22.87	-141.47	-0.50	-50.10	81.34	35.58	45.76	1.778	
10,300.00	10,274.21	10,273.21	10,273.21	23.03	22.96	-149.26	-0.50	-50.10	106.20	60.26	45.94	2.312	
10,350.00	10,312.62	10,311.62	10,311.62	23.17	23.04	-154.37	-0.50	-50.10	135.82	89.70	46.12	2.945	
10,400.00	10,348.09	10,355.22	10,355.20	23.33	23.14	-158.67	0.14	-50.36	168.93	122.68	46.25	3.652	
10,450.00	10,380.35	10,407.68	10,407.41	23.52	23.26	-162.38	4.75	-52.24	202.81	156.68	46.13	4.396	
10,500.00	10,409.17	10,465.78	10,464.43	23.73	23.39	-165.29	14.98	-56.41	236.66	191.04	45.62	5.187	
10,550.00	10,434.31	10,531.32	10,527.02	23.98	23.53	-167.72	32.87	-63.69	269.97	225.38	44.59	6.054	
10,600.00	10,455.60	10,606.75	10,595.77	24.26	23.70	-169.87	61.49	-75.35	302.10	259.26	42.84	7.052	
10,650.00	10,472.86	10,695.35	10,670.51	24.58	23.91	-171.83	105.41	-93.24	332.17	292.08	40.09	8.286	
10,700.00	10,485.97	10,801.05	10,748.80	24.93	24.21	-173.66	170.97	-119.94	358.98	322.94	36.04	9.961	
10,750.00	10,494.83	10,927.51	10,823.47	25.32	24.71	-175.38	265.20	-158.31	380.85	350.25	30.61	12.444	
10,800.00	10,499.36	11,075.44	10,880.06	25.75	25.55	-176.98	391.36	-209.70	395.72	370.91	24.81	15.950	
10,827.04	10,500.00	11,162.55	10,896.37	25.99	26.17	-177.79	470.54	-241.94	400.11	377.44	22.67	17.652	
10,900.00	10,500.00	11,280.73	10,900.00	26.66	27.15	-178.78	580.14	-285.77	401.09	378.74	22.35	17.946	
11,000.00	10,500.00	11,380.75	10,900.00	27.65	28.05	-179.78	674.67	-318.41	401.00	378.14	22.86	17.539	
11,018.80	10,500.00	11,399.50	10,900.00	27.86	28.22	180.00	692.57	-323.97	401.00	378.03	22.97	17.456	
11,100.00	10,500.00	11,480.22	10,900.00	28.74	29.02	178.97	770.25	-345.92	401.07	377.57	23.50	17.067	
11,200.00	10,500.00	11,579.03	10,900.00	29.91	30.05	177.48	866.49	-368.28	401.39	377.10	24.29	16.522	
11,300.00	10,500.00	11,677.08	10,900.00	31.14	31.12	175.78	963.00	-385.52	402.11	376.82	25.29	15.900	
11,400.00	10,500.00	11,774.27	10,900.00	32.42	32.22	173.86	1,059.41	-397.70	403.36	376.83	26.53	15.204	

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

TDS

Anticollision Report

Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Lea Unit #62H - Lea Unit #62H - Lateral #1 - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,500.00	10,500.00	11,870.52	10,900.00	33.74	33.33	171.75	1,155.38	-404.92	405.30	377.25	28.05	14.448	
11,600.00	10,500.00	11,968.90	10,900.00	35.09	34.49	169.65	1,253.67	-409.10	407.75	377.93	29.83	13.670	
11,700.00	10,500.00	12,068.22	10,900.00	36.45	35.71	168.01	1,352.90	-413.27	410.03	378.40	31.62	12.966	
11,800.00	10,500.00	12,167.88	10,900.00	37.83	36.98	166.87	1,452.47	-417.45	411.81	378.47	33.34	12.353	
11,900.00	10,500.00	12,267.76	10,900.00	39.21	38.29	166.22	1,552.27	-421.64	412.90	378.01	34.89	11.833	
11,925.73	10,500.00	12,293.48	10,900.00	39.56	38.64	166.13	1,577.96	-422.72	413.05	377.79	35.26	11.715	
12,000.00	10,500.00	12,367.74	10,900.00	40.58	39.65	165.92	1,652.16	-425.83	413.42	377.11	36.31	11.385	
12,100.00	10,500.00	12,467.72	10,900.00	41.96	41.05	165.65	1,752.05	-430.02	413.92	376.16	37.77	10.960	
12,200.00	10,500.00	12,567.70	10,900.00	43.37	42.48	165.37	1,851.94	-434.21	414.44	375.17	39.26	10.555	
12,300.00	10,500.00	12,667.68	10,900.00	44.82	43.95	165.10	1,951.83	-438.41	414.96	374.15	40.80	10.170	
12,400.00	10,500.00	12,767.66	10,900.00	46.29	45.44	164.83	2,051.72	-442.60	415.49	373.11	42.38	9.803	
12,500.00	10,500.00	12,867.64	10,900.00	47.79	46.95	164.56	2,151.61	-446.79	416.03	372.03	44.00	9.455	
12,600.00	10,500.00	12,967.61	10,900.00	49.31	48.49	164.28	2,251.50	-450.99	416.58	370.92	45.66	9.124	
12,700.00	10,500.00	13,067.59	10,900.00	50.85	50.05	164.01	2,351.39	-455.18	417.14	369.79	47.34	8.811	
12,800.00	10,500.00	13,167.57	10,900.00	52.41	51.62	163.74	2,451.29	-459.37	417.71	368.64	49.07	8.513	
12,900.00	10,500.00	13,267.55	10,900.00	54.00	53.22	163.47	2,551.18	-463.56	418.28	367.46	50.82	8.231	
13,000.00	10,500.00	13,367.53	10,900.00	55.59	54.83	163.21	2,651.07	-467.76	418.87	366.27	52.61	7.963	
13,100.00	10,500.00	13,467.51	10,900.00	57.21	56.45	162.94	2,750.96	-471.95	419.47	365.05	54.42	7.708	
13,200.00	10,500.00	13,567.49	10,900.00	58.83	58.09	162.67	2,850.85	-476.14	420.07	363.81	56.26	7.466	
13,300.00	10,500.00	13,667.47	10,900.00	60.47	59.73	162.41	2,950.74	-480.33	420.69	362.55	58.14	7.236	
13,400.00	10,500.00	13,767.45	10,900.00	62.13	61.39	162.14	3,050.63	-484.53	421.31	361.28	60.04	7.018	
13,500.00	10,500.00	13,867.43	10,900.00	63.79	63.06	161.88	3,150.52	-488.72	421.94	359.98	61.96	6.810	
13,600.00	10,500.00	13,967.41	10,900.00	65.46	64.74	161.61	3,250.41	-492.91	422.58	358.67	63.91	6.612	
13,700.00	10,500.00	14,067.38	10,900.00	67.14	66.43	161.35	3,350.31	-497.11	423.23	357.34	65.89	6.423	
13,800.00	10,500.00	14,167.36	10,900.00	68.84	68.13	161.09	3,450.20	-501.30	423.89	356.00	67.90	6.243	
13,900.00	10,500.00	14,267.34	10,900.00	70.53	69.83	160.83	3,550.09	-505.49	424.56	354.64	69.92	6.072	
14,000.00	10,500.00	14,367.32	10,900.00	72.24	71.54	160.57	3,649.98	-509.68	425.24	353.26	71.98	5.908	
14,100.00	10,500.00	14,467.30	10,900.00	73.95	73.26	160.31	3,749.87	-513.88	425.92	351.87	74.05	5.752	
14,200.00	10,500.00	14,567.28	10,900.00	75.68	74.98	160.05	3,849.76	-518.07	426.62	350.46	76.15	5.602	
14,300.00	10,500.00	14,667.26	10,900.00	77.40	76.71	159.79	3,949.65	-522.26	427.32	349.04	78.28	5.459	
14,400.00	10,500.00	14,767.24	10,900.00	79.13	78.45	159.53	4,049.54	-526.46	428.03	347.61	80.42	5.322	
14,500.00	10,500.00	14,867.22	10,900.00	80.87	80.18	159.28	4,149.43	-530.65	428.75	346.16	82.59	5.191	
14,600.00	10,500.00	14,967.20	10,900.00	82.61	81.93	159.02	4,249.33	-534.84	429.48	344.70	84.78	5.066	
14,700.00	10,500.00	15,067.17	10,900.00	84.36	83.67	158.77	4,349.22	-539.03	430.22	343.22	87.00	4.945	
14,800.00	10,500.00	15,167.15	10,900.00	86.11	85.43	158.51	4,449.11	-543.23	430.96	341.73	89.23	4.830	
14,900.00	10,500.00	15,267.13	10,900.00	87.87	87.18	158.26	4,549.00	-547.42	431.72	340.23	91.49	4.719	
15,000.00	10,500.00	15,367.11	10,900.00	89.63	88.94	158.01	4,648.89	-551.61	432.48	338.71	93.77	4.612	
15,100.00	10,500.00	15,467.09	10,900.00	91.39	90.70	157.76	4,748.78	-555.80	433.25	337.19	96.07	4.510	
15,200.00	10,500.00	15,567.07	10,900.00	93.15	92.47	157.51	4,848.67	-560.00	434.03	335.65	98.38	4.412	
15,300.00	10,500.00	15,667.05	10,900.00	94.92	94.24	157.26	4,948.56	-564.19	434.82	334.09	100.73	4.317	
15,400.00	10,500.00	15,767.03	10,900.00	96.70	96.01	157.01	5,048.45	-568.38	435.61	332.53	103.09	4.226	
15,500.00	10,500.00	15,867.01	10,900.00	98.47	97.78	156.76	5,148.35	-572.58	436.42	330.95	105.47	4.138	
15,600.00	10,500.00	15,966.99	10,900.00	100.25	99.56	156.52	5,248.24	-576.77	437.23	329.36	107.87	4.053	
15,700.00	10,500.00	16,066.97	10,900.00	102.03	101.34	156.27	5,348.13	-580.96	438.05	327.76	110.29	3.972	
15,800.00	10,500.00	16,166.94	10,900.00	103.82	103.12	156.03	5,448.02	-585.15	438.88	326.15	112.73	3.893	
15,900.00	10,500.00	16,266.92	10,900.00	105.60	104.90	155.78	5,547.91	-589.35	439.71	324.52	115.19	3.817	
16,000.00	10,500.00	16,366.90	10,900.00	107.39	106.69	155.54	5,647.80	-593.54	440.56	322.89	117.67	3.744	
16,100.00	10,500.00	16,466.88	10,900.00	109.18	108.47	155.30	5,747.69	-597.73	441.41	321.24	120.17	3.673	
16,200.00	10,500.00	16,566.86	10,900.00	110.97	110.26	155.06	5,847.58	-601.92	442.27	319.58	122.69	3.605	
16,300.00	10,500.00	16,666.84	10,900.00	112.77	112.05	154.82	5,947.47	-606.12	443.13	317.91	125.22	3.539	
16,400.00	10,500.00	16,766.82	10,900.00	114.56	113.85	154.58	6,047.36	-610.31	444.01	316.23	127.78	3.475	
16,500.00	10,500.00	16,866.80	10,900.00	116.36	115.64	154.34	6,147.26	-614.50	444.89	314.54	130.35	3.413	

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 #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Lea Unit #62H - Lea Unit #62H - Lateral #1 - Design #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,600.00	10,500.00	16,966.78	10,900.00	118.16	117.44	154.10	6,247.15	-618.70	445.78	312.84	132.94	3.353	
16,700.00	10,500.00	17,066.76	10,900.00	119.96	119.23	153.87	6,347.04	-622.89	446.68	311.13	135.55	3.295	
16,800.00	10,500.00	17,166.73	10,900.00	121.76	121.03	153.63	6,446.93	-627.08	447.59	309.41	138.18	3.239	
16,900.00	10,500.00	17,266.71	10,900.00	123.57	122.83	153.40	6,546.82	-631.27	448.50	307.67	140.82	3.185	
17,000.00	10,500.00	17,366.69	10,900.00	125.37	124.63	153.16	6,646.71	-635.47	449.42	305.93	143.49	3.132	
17,100.00	10,500.00	17,466.67	10,900.00	127.18	126.43	152.93	6,746.60	-639.66	450.35	304.18	146.17	3.081	
17,200.00	10,500.00	17,566.65	10,900.00	128.99	128.24	152.70	6,846.49	-643.85	451.28	302.42	148.86	3.032	
17,300.00	10,500.00	17,666.63	10,900.00	130.80	130.04	152.47	6,946.38	-648.04	452.22	300.65	151.58	2.983	
17,400.00	10,500.00	17,766.61	10,900.00	132.61	131.85	152.24	7,046.28	-652.24	453.17	298.87	154.31	2.937	
17,500.00	10,500.00	17,866.59	10,900.00	134.42	133.65	152.01	7,146.17	-656.43	454.13	297.08	157.06	2.892	
17,600.00	10,500.00	17,966.57	10,900.00	136.23	135.46	151.78	7,246.06	-660.62	455.10	295.28	159.82	2.848	
17,700.00	10,500.00	18,066.55	10,900.00	138.04	137.27	151.56	7,345.95	-664.82	456.07	293.47	162.60	2.805	
17,800.00	10,500.00	18,166.53	10,900.00	139.86	139.08	151.33	7,445.84	-669.01	457.05	291.65	165.40	2.763	
17,900.00	10,500.00	18,266.50	10,900.00	141.68	140.89	151.11	7,545.73	-673.20	458.03	289.82	168.21	2.723	
18,000.00	10,500.00	18,366.48	10,900.00	143.49	142.70	150.88	7,645.62	-677.39	459.02	287.99	171.04	2.684	
18,100.00	10,500.00	18,466.46	10,900.00	145.31	144.51	150.66	7,745.51	-681.59	460.02	286.14	173.88	2.646	
18,200.00	10,500.00	18,566.44	10,900.00	147.13	146.32	150.44	7,845.40	-685.78	461.03	284.29	176.74	2.609	
18,300.00	10,500.00	18,666.42	10,900.00	148.95	148.14	150.22	7,945.30	-689.97	462.04	282.43	179.61	2.572	
18,314.46	10,500.00	18,674.23	10,900.00	149.21	148.28	150.20	7,953.10	-690.30	462.24	282.49	179.75	2.572	

Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Lea Unit #64H - Lea Unit #64H - Lateral #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	89.43	0.50	50.10	50.10				
100.00	100.00	100.00	100.00	0.09	0.09	89.43	0.50	50.10	50.10	49.92	0.18	271.841	
200.00	200.00	200.00	200.00	0.32	0.32	89.43	0.50	50.10	50.10	49.47	0.63	79.046	
300.00	300.00	300.00	300.00	0.54	0.54	89.43	0.50	50.10	50.10	49.02	1.08	46.247	
400.00	400.00	400.00	400.00	0.77	0.77	89.43	0.50	50.10	50.10	48.57	1.53	32.685	
500.00	500.00	500.00	500.00	0.99	0.99	89.43	0.50	50.10	50.10	48.12	1.98	25.273	
600.00	600.00	600.00	600.00	1.22	1.22	89.43	0.50	50.10	50.10	47.67	2.43	20.602	
700.00	700.00	700.00	700.00	1.44	1.44	89.43	0.50	50.10	50.10	47.22	2.88	17.388	
800.00	800.00	800.00	800.00	1.67	1.67	89.43	0.50	50.10	50.10	46.77	3.33	15.041	
900.00	900.00	900.00	900.00	1.89	1.89	89.43	0.50	50.10	50.10	46.32	3.78	13.253	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	89.43	0.50	50.10	50.10	45.87	4.23	11.844	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	89.43	0.50	50.10	50.10	45.42	4.68	10.707	
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	89.43	0.50	50.10	50.10	44.97	5.13	9.768	
1,300.00	1,300.00	1,300.00	1,300.00	2.79	2.79	89.43	0.50	50.10	50.10	44.52	5.58	8.981	
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	89.43	0.50	50.10	50.10	44.07	6.03	8.311	
1,500.00	1,500.00	1,500.00	1,500.00	3.24	3.24	89.43	0.50	50.10	50.10	43.62	6.48	7.735	
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	89.43	0.50	50.10	50.10	43.18	6.93	7.233	
1,700.00	1,700.00	1,700.00	1,700.00	3.69	3.69	89.43	0.50	50.10	50.10	42.73	7.38	6.792	
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	89.43	0.50	50.10	50.10	42.28	7.83	6.402	
1,900.00	1,900.00	1,900.00	1,900.00	4.14	4.14	89.43	0.50	50.10	50.10	41.83	8.28	6.054	
2,000.00	2,000.00	2,000.00	2,000.00	4.36	4.36	89.43	0.50	50.10	50.10	41.38	8.73	5.742	
2,100.00	2,100.00	2,100.00	2,100.00	4.59	4.59	89.43	0.50	50.10	50.10	40.93	9.17	5.461	
2,200.00	2,200.00	2,200.00	2,200.00	4.81	4.81	89.43	0.50	50.10	50.10	40.48	9.62	5.206	
2,300.00	2,300.00	2,300.00	2,300.00	5.04	5.04	89.43	0.50	50.10	50.10	40.03	10.07	4.973	
2,400.00	2,400.00	2,400.00	2,400.00	5.26	5.26	89.43	0.50	50.10	50.10	39.58	10.52	4.761	
2,500.00	2,500.00	2,500.00	2,500.00	5.49	5.49	89.43	0.50	50.10	50.10	39.13	10.97	4.566	
2,600.00	2,600.00	2,600.00	2,600.00	5.71	5.71	89.43	0.50	50.10	50.10	38.68	11.42	4.386	
2,700.00	2,700.00	2,700.00	2,700.00	5.94	5.94	89.43	0.50	50.10	50.10	38.23	11.87	4.220	
2,800.00	2,800.00	2,800.00	2,800.00	6.16	6.16	89.43	0.50	50.10	50.10	37.78	12.32	4.066	
2,900.00	2,900.00	2,900.00	2,900.00	6.39	6.39	89.43	0.50	50.10	50.10	37.33	12.77	3.923	
3,000.00	3,000.00	3,000.00	3,000.00	6.61	6.61	89.43	0.50	50.10	50.10	36.88	13.22	3.790	
3,100.00	3,100.00	3,100.00	3,100.00	6.84	6.84	89.43	0.50	50.10	50.10	36.43	13.67	3.665	
3,200.00	3,200.00	3,200.00	3,200.00	7.06	7.06	89.43	0.50	50.10	50.10	35.98	14.12	3.548	
3,300.00	3,300.00	3,300.00	3,300.00	7.28	7.28	89.43	0.50	50.10	50.10	35.53	14.57	3.439	
3,400.00	3,400.00	3,400.00	3,400.00	7.51	7.51	89.43	0.50	50.10	50.10	35.08	15.02	3.336	
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	89.43	0.50	50.10	50.10	34.63	15.47	3.239	
3,600.00	3,600.00	3,600.00	3,600.00	7.96	7.96	89.43	0.50	50.10	50.10	34.18	15.92	3.148	
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	89.43	0.50	50.10	50.10	33.74	16.37	3.061	
3,800.00	3,800.00	3,800.00	3,800.00	8.41	8.41	89.43	0.50	50.10	50.10	33.29	16.82	2.979	
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	89.43	0.50	50.10	50.10	32.84	17.27	2.902	
4,000.00	4,000.00	4,000.00	4,000.00	8.86	8.86	89.43	0.50	50.10	50.10	32.39	17.72	2.828	
4,100.00	4,100.00	4,100.00	4,100.00	9.08	9.08	89.43	0.50	50.10	50.10	31.94	18.17	2.758	
4,200.00	4,200.00	4,200.00	4,200.00	9.31	9.31	89.43	0.50	50.10	50.10	31.49	18.62	2.691	
4,300.00	4,300.00	4,300.00	4,300.00	9.53	9.53	89.43	0.50	50.10	50.10	31.04	19.06	2.628	
4,400.00	4,400.00	4,400.00	4,400.00	9.76	9.76	89.43	0.50	50.10	50.10	30.59	19.51	2.567	
4,500.00	4,500.00	4,500.00	4,500.00	9.98	9.98	89.43	0.50	50.10	50.10	30.14	19.96	2.510	
4,600.00	4,600.00	4,600.00	4,600.00	10.21	10.21	89.43	0.50	50.10	50.10	29.69	20.41	2.454	
4,700.00	4,700.00	4,700.00	4,700.00	10.43	10.43	89.43	0.50	50.10	50.10	29.24	20.86	2.402	
4,800.00	4,800.00	4,800.00	4,800.00	10.66	10.66	89.43	0.50	50.10	50.10	28.79	21.31	2.351	
4,900.00	4,900.00	4,900.00	4,900.00	10.88	10.88	89.43	0.50	50.10	50.10	28.34	21.76	2.302	
5,000.00	5,000.00	5,000.00	5,000.00	11.11	11.11	89.43	0.50	50.10	50.10	27.89	22.21	2.256	
5,100.00	5,100.00	5,100.00	5,100.00	11.33	11.33	89.43	0.50	50.10	50.10	27.44	22.66	2.211	

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 #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Lea Unit #64H - Lea Unit #64H - Lateral #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,200.00	5,200.00	5,200.00	11.56	11.56	89.43	0.50	50.10	50.10	26.99	23.11	2.168	
5,300.00	5,300.00	5,300.00	5,300.00	11.78	11.78	89.43	0.50	50.10	50.10	26.54	23.56	2.127	
5,400.00	5,400.00	5,400.00	5,400.00	12.00	12.00	89.43	0.50	50.10	50.10	26.09	24.01	2.087	
5,500.00	5,500.00	5,500.00	5,500.00	12.23	12.23	89.43	0.50	50.10	50.10	25.64	24.46	2.048	
5,600.00	5,600.00	5,600.00	5,600.00	12.45	12.45	89.43	0.50	50.10	50.10	25.19	24.91	2.011	
5,700.00	5,700.00	5,700.00	5,700.00	12.68	12.68	89.43	0.50	50.10	50.10	24.74	25.36	1.976	
5,800.00	5,800.00	5,800.00	5,800.00	12.90	12.90	89.43	0.50	50.10	50.10	24.29	25.81	1.941	
5,900.00	5,900.00	5,900.00	5,900.00	13.13	13.13	89.43	0.50	50.10	50.10	23.85	26.26	1.908	
6,000.00	6,000.00	6,000.00	6,000.00	13.35	13.35	89.43	0.50	50.10	50.10	23.40	26.71	1.876	
6,100.00	6,100.00	6,100.00	6,100.00	13.58	13.58	89.43	0.50	50.10	50.10	22.95	27.16	1.845	
6,200.00	6,200.00	6,200.00	6,200.00	13.80	13.80	89.43	0.50	50.10	50.10	22.50	27.61	1.815	
6,300.00	6,300.00	6,300.00	6,300.00	14.03	14.03	89.43	0.50	50.10	50.10	22.05	28.06	1.786	
6,400.00	6,400.00	6,400.00	6,400.00	14.25	14.25	89.43	0.50	50.10	50.10	21.60	28.50	1.758	
6,500.00	6,500.00	6,500.00	6,500.00	14.48	14.48	89.43	0.50	50.10	50.10	21.15	28.95	1.730	
6,600.00	6,600.00	6,600.00	6,600.00	14.70	14.70	89.43	0.50	50.10	50.10	20.70	29.40	1.704	
6,700.00	6,700.00	6,700.00	6,700.00	14.93	14.93	89.43	0.50	50.10	50.10	20.25	29.85	1.678	
6,800.00	6,800.00	6,800.00	6,800.00	15.15	15.15	89.43	0.50	50.10	50.10	19.80	30.30	1.653	
6,900.00	6,900.00	6,900.00	6,900.00	15.38	15.38	89.43	0.50	50.10	50.10	19.35	30.75	1.629	
7,000.00	7,000.00	7,000.00	7,000.00	15.60	15.60	89.43	0.50	50.10	50.10	18.90	31.20	1.606	
7,100.00	7,100.00	7,100.00	7,100.00	15.83	15.83	89.43	0.50	50.10	50.10	18.45	31.65	1.583	
7,200.00	7,200.00	7,200.00	7,200.00	16.05	16.05	89.43	0.50	50.10	50.10	18.00	32.10	1.561	
7,300.00	7,300.00	7,300.00	7,300.00	16.28	16.28	89.43	0.50	50.10	50.10	17.55	32.55	1.539	
7,400.00	7,400.00	7,400.00	7,400.00	16.50	16.50	89.43	0.50	50.10	50.10	17.10	33.00	1.518	
7,500.00	7,500.00	7,500.00	7,500.00	16.72	16.72	89.43	0.50	50.10	50.10	16.65	33.45	1.498	Level 3
7,600.00	7,600.00	7,600.00	7,600.00	16.95	16.95	89.43	0.50	50.10	50.10	16.20	33.90	1.478	Level 3
7,700.00	7,700.00	7,700.00	7,700.00	17.17	17.17	89.43	0.50	50.10	50.10	15.75	34.35	1.459	Level 3
7,800.00	7,800.00	7,800.00	7,800.00	17.40	17.40	89.43	0.50	50.10	50.10	15.30	34.80	1.440	Level 3
7,900.00	7,900.00	7,900.00	7,900.00	17.62	17.62	89.43	0.50	50.10	50.10	14.85	35.25	1.421	Level 3
8,000.00	8,000.00	8,000.00	8,000.00	17.85	17.85	89.43	0.50	50.10	50.10	14.41	35.70	1.404	Level 3
8,100.00	8,100.00	8,100.00	8,100.00	18.07	18.07	89.43	0.50	50.10	50.10	13.96	36.15	1.386	Level 3
8,200.00	8,200.00	8,200.00	8,200.00	18.30	18.30	89.43	0.50	50.10	50.10	13.51	36.60	1.369	Level 3
8,300.00	8,300.00	8,300.00	8,300.00	18.52	18.52	89.43	0.50	50.10	50.10	13.06	37.05	1.352	Level 3
8,400.00	8,400.00	8,400.00	8,400.00	18.75	18.75	89.43	0.50	50.10	50.10	12.61	37.50	1.336	Level 3
8,500.00	8,500.00	8,500.00	8,500.00	18.97	18.97	89.43	0.50	50.10	50.10	12.16	37.94	1.320	Level 3
8,600.00	8,600.00	8,600.00	8,600.00	19.20	19.20	89.43	0.50	50.10	50.10	11.71	38.39	1.305	Level 3
8,700.00	8,700.00	8,700.00	8,700.00	19.42	19.42	89.43	0.50	50.10	50.10	11.26	38.84	1.290	Level 3
8,800.00	8,800.00	8,800.00	8,800.00	19.65	19.65	89.43	0.50	50.10	50.10	10.81	39.29	1.275	Level 3
8,900.00	8,900.00	8,900.00	8,900.00	19.87	19.87	89.43	0.50	50.10	50.10	10.36	39.74	1.261	Level 3
9,000.00	9,000.00	9,000.00	9,000.00	20.10	20.10	89.43	0.50	50.10	50.10	9.91	40.19	1.247	Level 2
9,100.00	9,100.00	9,100.00	9,100.00	20.32	20.32	89.43	0.50	50.10	50.10	9.46	40.64	1.233	Level 2
9,200.00	9,200.00	9,200.00	9,200.00	20.55	20.55	89.43	0.50	50.10	50.10	9.01	41.09	1.219	Level 2
9,300.00	9,300.00	9,302.72	9,302.50	20.77	20.78	84.17	4.87	47.68	48.00	6.50	41.49	1.157	Level 2
9,390.51	9,390.51	9,392.81	9,390.51	20.97	20.98	61.05	21.34	38.57	44.08	2.14	41.94	1.051	Level 2, CC, ES, SF
9,400.00	9,400.00	9,401.86	9,399.16	21.00	21.00	57.61	23.66	37.29	44.17	2.19	41.98	1.052	Level 2
9,500.00	9,500.00	9,491.34	9,482.07	21.22	21.20	21.75	52.90	21.11	59.72	18.96	40.76	1.465	Level 3
9,600.00	9,600.00	9,568.87	9,548.95	21.44	21.38	1.44	87.11	2.19	100.99	63.10	37.89	2.665	
9,700.00	9,700.00	9,634.41	9,600.95	21.67	21.57	-7.98	121.97	-17.10	158.06	122.76	35.29	4.478	
9,800.00	9,800.00	9,689.20	9,640.69	21.89	21.75	-12.85	154.95	-35.34	225.03	191.94	33.09	6.801	
9,900.00	9,900.00	9,734.89	9,670.96	22.12	21.93	-15.68	184.89	-51.90	298.89	267.67	31.23	9.571	
9,927.04	9,927.04	9,750.00	9,680.35	22.18	21.99	-16.44	195.24	-57.62	319.83	288.72	31.11	10.281	
9,950.00	9,949.99	9,750.00	9,680.35	22.23	21.99	8.67	195.24	-57.62	337.58	307.57	30.01	11.248	
10,000.00	9,999.80	9,775.34	9,695.40	22.34	22.10	6.97	213.08	-67.49	374.94	345.37	29.57	12.678	

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 #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Lea Unit #64H - Lea Unit #64H - Lateral #1 - Design #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,050.00	10,049.06	9,800.00	9,709.17	22.45	22.22	5.75	230.98	-77.39	410.71	381.72	28.99	14.167	
10,100.00	10,097.39	9,816.88	9,718.08	22.57	22.31	4.97	243.52	-84.33	444.62	416.75	27.87	15.952	
10,150.00	10,144.42	9,838.06	9,728.65	22.68	22.42	4.28	259.58	-93.21	476.71	449.70	27.01	17.648	
10,200.00	10,189.79	9,850.00	9,734.31	22.79	22.49	3.84	268.78	-98.30	507.03	481.37	25.66	19.760	
10,250.00	10,233.17	9,881.03	9,747.99	22.90	22.68	3.26	293.15	-111.78	535.03	509.72	25.30	21.146	
10,300.00	10,274.21	9,900.00	9,755.60	23.03	22.80	2.91	308.35	-120.19	561.14	536.80	24.34	23.055	
10,350.00	10,312.62	9,924.65	9,764.62	23.17	22.97	2.56	328.42	-131.30	585.12	561.46	23.66	24.734	
10,400.00	10,348.09	9,950.00	9,772.86	23.33	23.15	2.25	349.40	-142.90	606.97	583.95	23.01	26.373	
10,450.00	10,380.35	9,968.75	9,778.27	23.52	23.29	2.04	365.11	-151.59	626.58	604.41	22.16	28.273	
10,500.00	10,409.17	10,000.00	9,785.97	23.73	23.54	1.77	391.61	-166.25	644.09	622.30	21.79	29.554	
10,550.00	10,434.31	10,000.00	9,785.97	23.98	23.54	1.72	391.61	-166.25	659.34	638.78	20.56	32.069	
10,600.00	10,455.60	10,035.51	9,792.70	24.26	23.85	1.48	422.11	-183.12	671.85	651.42	20.43	32.893	
10,650.00	10,472.86	10,050.00	9,794.83	24.58	23.97	1.37	434.65	-190.06	682.40	662.52	19.88	34.318	
10,700.00	10,485.97	10,080.28	9,798.09	24.93	24.26	1.19	460.99	-204.63	690.40	670.64	19.77	34.929	
10,750.00	10,494.83	10,100.00	9,799.36	25.32	24.44	1.08	478.21	-214.15	696.14	676.55	19.59	35.533	
10,800.00	10,499.36	10,127.04	9,800.00	25.75	24.71	0.94	501.86	-227.24	699.47	679.85	19.62	35.647	
10,827.04	10,500.00	10,149.76	9,800.00	25.99	24.94	0.83	521.79	-238.16	700.07	680.35	19.73	35.487	
10,900.00	10,500.00	10,222.42	9,800.00	26.66	25.69	0.53	586.07	-272.01	700.03	679.92	20.11	34.803	
11,000.00	10,500.00	10,322.15	9,800.00	27.65	26.81	0.10	675.67	-315.80	700.00	679.28	20.73	33.775	
11,024.89	10,500.00	10,347.00	9,800.00	27.92	27.10	0.00	698.23	-326.22	700.00	679.10	20.90	33.497	
11,100.00	10,500.00	10,422.06	9,800.00	28.74	28.01	-0.32	766.91	-356.51	700.01	678.58	21.43	32.668	
11,200.00	10,500.00	10,522.15	9,800.00	29.91	29.30	-0.74	859.68	-394.08	700.06	677.84	22.21	31.513	
11,300.00	10,500.00	10,622.43	9,800.00	31.14	30.65	-1.16	953.87	-428.45	700.14	677.06	23.08	30.335	
11,400.00	10,500.00	10,722.88	9,800.00	32.42	32.05	-1.58	1,049.38	-459.55	700.27	676.25	24.02	29.156	
11,500.00	10,500.00	10,823.52	9,800.00	33.74	33.47	-2.00	1,146.11	-487.34	700.43	675.41	25.02	27.993	
11,600.00	10,500.00	10,924.34	9,800.00	35.09	34.93	-2.41	1,243.92	-511.75	700.62	674.54	26.09	26.858	
11,700.00	10,500.00	11,025.34	9,800.00	36.45	36.39	-2.83	1,342.71	-532.73	700.86	673.65	27.21	25.761	
11,800.00	10,500.00	11,126.53	9,800.00	37.83	37.86	-3.24	1,442.37	-550.26	701.12	672.74	28.38	24.707	
11,900.00	10,500.00	11,227.90	9,800.00	39.21	39.34	-3.64	1,542.75	-564.27	701.42	671.83	29.60	23.700	
11,925.73	10,500.00	11,254.00	9,800.00	39.56	39.72	-3.75	1,568.68	-567.30	701.50	671.59	29.92	23.449	
12,000.00	10,500.00	11,329.48	9,800.00	40.58	40.81	-3.97	1,643.79	-574.74	701.68	670.85	30.84	22.754	
12,100.00	10,500.00	11,431.21	9,800.00	41.96	42.28	-4.01	1,745.29	-581.63	701.72	669.67	32.05	21.896	
12,200.00	10,500.00	11,532.86	9,800.00	43.37	43.73	-3.77	1,846.88	-584.91	701.52	668.31	33.21	21.123	
12,300.00	10,500.00	11,634.16	9,800.00	44.82	45.17	-3.22	1,948.17	-584.59	701.12	666.78	34.33	20.421	
12,400.00	10,500.00	11,733.82	9,800.00	46.29	46.54	-2.55	2,047.81	-582.54	700.70	665.25	35.45	19.764	
12,500.00	10,500.00	11,833.47	9,800.00	47.79	47.92	-1.87	2,147.44	-580.48	700.38	663.77	36.61	19.132	
12,600.00	10,500.00	11,933.13	9,800.00	49.31	49.32	-1.20	2,247.07	-578.42	700.15	662.35	37.80	18.523	
12,700.00	10,500.00	12,032.78	9,800.00	50.85	50.75	-0.52	2,346.71	-576.36	700.03	661.00	39.03	17.935	
12,776.80	10,500.00	12,109.32	9,800.00	52.05	51.86	0.00	2,423.22	-574.77	700.00	660.00	40.00	17.498	
12,800.00	10,500.00	12,132.44	9,800.00	52.41	52.20	0.16	2,446.34	-574.30	700.00	659.70	40.30	17.368	
12,900.00	10,500.00	12,232.09	9,800.00	54.00	53.67	0.83	2,545.98	-572.24	700.07	658.46	41.62	16.822	
13,000.00	10,500.00	12,331.75	9,800.00	55.59	55.17	1.51	2,645.61	-570.18	700.25	657.27	42.97	16.295	
13,100.00	10,500.00	12,431.40	9,800.00	57.21	56.68	2.19	2,745.24	-568.12	700.51	656.14	44.37	15.786	
13,200.00	10,500.00	12,531.06	9,800.00	58.83	58.21	2.86	2,844.88	-566.06	700.88	655.06	45.82	15.295	
13,300.00	10,500.00	12,630.71	9,800.00	60.47	59.75	3.54	2,944.51	-564.00	701.35	654.03	47.32	14.822	
13,400.00	10,500.00	12,730.37	9,800.00	62.13	61.31	4.21	3,044.14	-561.94	701.91	653.04	48.86	14.364	
13,500.00	10,500.00	12,830.02	9,800.00	63.79	62.89	4.88	3,143.78	-559.88	702.57	652.11	50.46	13.923	
13,600.00	10,500.00	12,929.68	9,800.00	65.46	64.47	5.56	3,243.41	-557.82	703.33	651.22	52.11	13.497	
13,700.00	10,500.00	13,029.33	9,800.00	67.14	66.07	6.23	3,343.04	-555.76	704.18	650.37	53.81	13.086	
13,800.00	10,500.00	13,128.99	9,800.00	68.84	67.68	6.89	3,442.68	-553.70	705.13	649.56	55.57	12.689	
13,900.00	10,500.00	13,228.64	9,800.00	70.53	69.30	7.56	3,542.31	-551.64	706.18	648.79	57.39	12.306	
14,000.00	10,500.00	13,328.30	9,800.00	72.24	70.93	8.22	3,641.95	-549.58	707.32	648.07	59.26	11.937	

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 #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Lea Unit #64H - Lea Unit #64H - Lateral #1 - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.00 usft

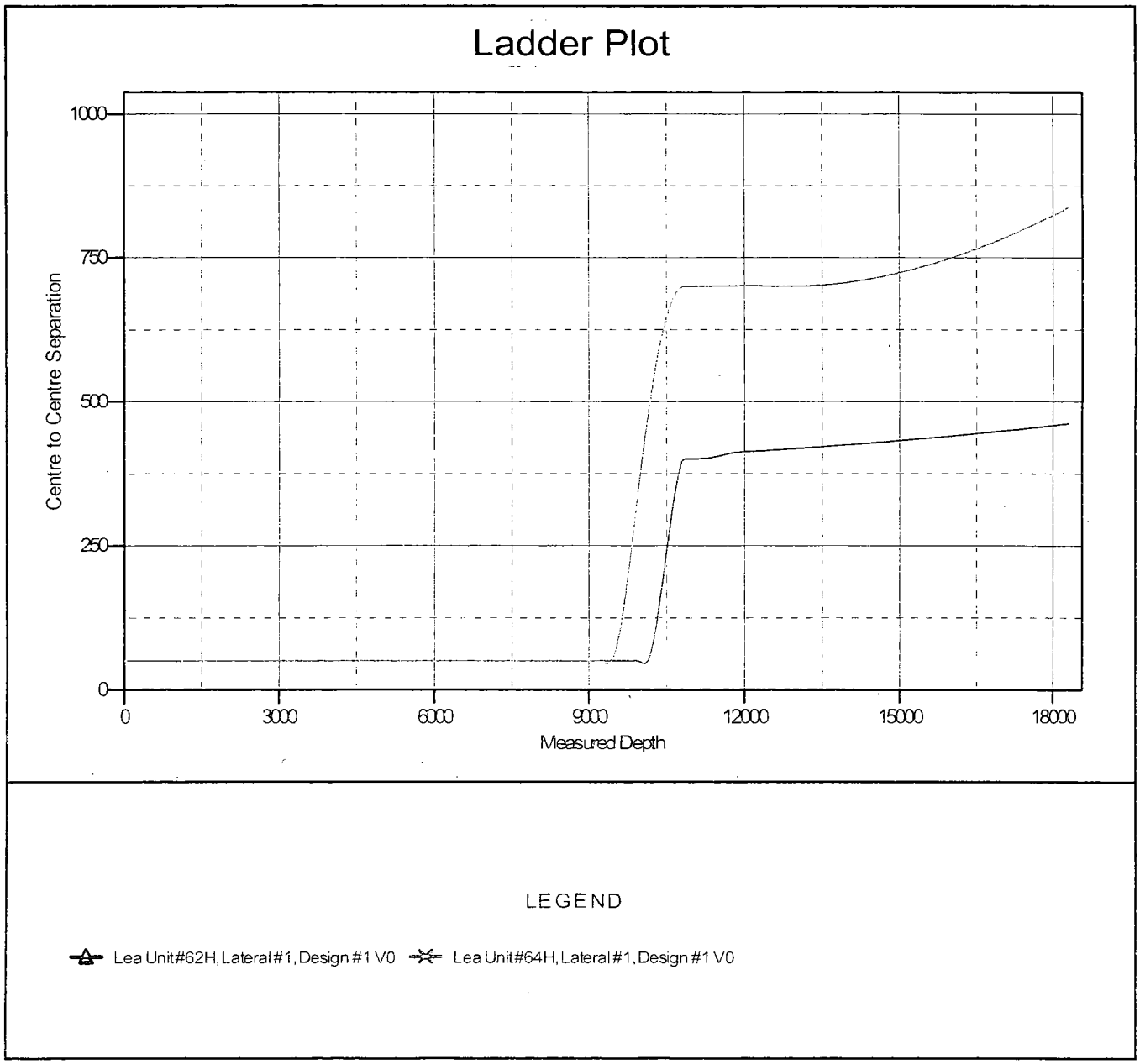
Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.00	10,500.00	13,427.96	9,800.00	73.95	72.57	8.89	3,741.58	-547.52	708.56	647.38	61.18	11.581	
14,200.00	10,500.00	13,527.61	9,800.00	75.68	74.21	9.55	3,841.21	-545.46	709.89	646.72	63.17	11.238	
14,300.00	10,500.00	13,627.27	9,800.00	77.40	75.87	10.20	3,940.85	-543.40	711.32	646.11	65.22	10.907	
14,400.00	10,500.00	13,726.92	9,800.00	79.13	77.53	10.86	4,040.48	-541.34	712.84	645.53	67.32	10.589	
14,500.00	10,500.00	13,826.58	9,800.00	80.87	79.20	11.51	4,140.11	-539.28	714.46	644.98	69.48	10.283	
14,600.00	10,500.00	13,926.23	9,800.00	82.61	80.87	12.16	4,239.75	-537.22	716.17	644.46	71.70	9.988	
14,700.00	10,500.00	14,025.89	9,800.00	84.36	82.55	12.80	4,339.38	-535.16	717.97	643.98	73.98	9.705	
14,800.00	10,500.00	14,125.54	9,800.00	86.11	84.24	13.44	4,439.02	-533.10	719.86	643.54	76.32	9.432	
14,900.00	10,500.00	14,225.20	9,800.00	87.87	85.93	14.08	4,538.65	-531.04	721.84	643.12	78.71	9.170	
15,000.00	10,500.00	14,324.85	9,800.00	89.63	87.63	14.72	4,638.28	-528.99	723.91	642.74	81.17	8.919	
15,100.00	10,500.00	14,424.51	9,800.00	91.39	89.33	15.35	4,737.92	-526.93	726.07	642.39	83.68	8.677	
15,200.00	10,500.00	14,524.16	9,800.00	93.15	91.04	15.98	4,837.55	-524.87	728.32	642.07	86.24	8.445	
15,300.00	10,500.00	14,623.82	9,800.00	94.92	92.75	16.60	4,937.18	-522.81	730.65	641.79	88.86	8.222	
15,400.00	10,500.00	14,723.47	9,800.00	96.70	94.47	17.22	5,036.82	-520.75	733.07	641.53	91.54	8.008	
15,500.00	10,500.00	14,823.13	9,800.00	98.47	96.18	17.84	5,136.45	-518.69	735.58	641.31	94.27	7.803	
15,600.00	10,500.00	14,922.78	9,800.00	100.25	97.91	18.45	5,236.09	-516.63	738.17	641.12	97.05	7.606	
15,700.00	10,500.00	15,022.44	9,800.00	102.03	99.63	19.05	5,335.72	-514.57	740.85	640.96	99.88	7.417	
15,800.00	10,500.00	15,122.09	9,800.00	103.82	101.36	19.66	5,435.35	-512.51	743.61	640.84	102.77	7.236	
15,900.00	10,500.00	15,221.75	9,800.00	105.60	103.09	20.25	5,534.99	-510.45	746.45	640.75	105.70	7.062	
16,000.00	10,500.00	15,321.40	9,800.00	107.39	104.83	20.85	5,634.62	-508.39	749.37	640.69	108.68	6.895	
16,100.00	10,500.00	15,421.06	9,800.00	109.18	106.57	21.44	5,734.25	-506.33	752.37	640.67	111.71	6.735	
16,200.00	10,500.00	15,520.71	9,800.00	110.97	108.31	22.02	5,833.89	-504.27	755.45	640.67	114.78	6.582	
16,300.00	10,500.00	15,620.37	9,800.00	112.77	110.05	22.60	5,933.52	-502.21	758.61	640.72	117.90	6.435	
16,400.00	10,500.00	15,720.02	9,800.00	114.56	111.80	23.17	6,033.16	-500.15	761.85	640.79	121.06	6.293	
16,500.00	10,500.00	15,819.68	9,800.00	116.36	113.54	23.74	6,132.79	-498.09	765.16	640.91	124.26	6.158	
16,600.00	10,500.00	15,919.33	9,800.00	118.16	115.29	24.31	6,232.42	-496.03	768.55	641.05	127.50	6.028	
16,700.00	10,500.00	16,018.99	9,800.00	119.96	117.05	24.87	6,332.06	-493.97	772.02	641.23	130.78	5.903	
16,800.00	10,500.00	16,118.64	9,800.00	121.76	118.80	25.42	6,431.69	-491.91	775.55	641.45	134.10	5.783	
16,900.00	10,500.00	16,218.30	9,800.00	123.57	120.56	25.97	6,531.32	-489.85	779.16	641.70	137.46	5.668	
17,000.00	10,500.00	16,317.95	9,800.00	125.37	122.31	26.52	6,630.96	-487.79	782.84	641.99	140.85	5.558	
17,100.00	10,500.00	16,417.61	9,800.00	127.18	124.07	27.06	6,730.59	-485.73	786.59	642.31	144.28	5.452	
17,200.00	10,500.00	16,517.26	9,800.00	128.99	125.83	27.59	6,830.23	-483.67	790.41	642.67	147.74	5.350	
17,300.00	10,500.00	16,616.92	9,800.00	130.80	127.60	28.12	6,929.86	-481.61	794.30	643.07	151.23	5.252	
17,400.00	10,500.00	16,716.57	9,800.00	132.61	129.36	28.64	7,029.49	-479.55	798.26	643.50	154.76	5.158	
17,500.00	10,500.00	16,816.23	9,800.00	134.42	131.13	29.16	7,129.13	-477.50	802.28	643.97	158.31	5.068	
17,600.00	10,500.00	16,915.88	9,800.00	136.23	132.89	29.68	7,228.76	-475.44	806.37	644.48	161.89	4.981	
17,700.00	10,500.00	17,015.54	9,800.00	138.04	134.66	30.19	7,328.39	-473.38	810.52	645.02	165.50	4.897	
17,800.00	10,500.00	17,115.19	9,800.00	139.86	136.43	30.69	7,428.03	-471.32	814.73	645.60	169.14	4.817	
17,900.00	10,500.00	17,214.85	9,800.00	141.68	138.20	31.19	7,527.66	-469.26	819.01	646.21	172.80	4.740	
18,000.00	10,500.00	17,314.50	9,800.00	143.49	139.98	31.68	7,627.30	-467.20	823.35	646.87	176.48	4.665	
18,100.00	10,500.00	17,414.16	9,800.00	145.31	141.75	32.17	7,726.93	-465.14	827.75	647.56	180.19	4.594	
18,200.00	10,500.00	17,513.81	9,800.00	147.13	143.53	32.65	7,826.56	-463.08	832.21	648.29	183.92	4.525	
18,300.00	10,500.00	17,613.47	9,800.00	148.95	145.30	33.13	7,926.20	-461.02	836.73	649.05	187.67	4.458	
18,314.46	10,500.00	17,627.87	9,800.00	149.21	145.56	33.20	7,940.60	-460.72	837.38	649.17	188.22	4.449	

Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 3707.00usft (McVay 4)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Lea Unit #63H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.45°



Company:	Legacy Reserves	**Local Co-ordinate Reference:**	Well Lea Unit #63H
Project:	Lea County, NM (NAD-27 2015)	**TVD Reference:**	KB @ 3707.00usft (McVay 4)
Reference Site:	Lea Unit #63H	**MD Reference:**	KB @ 3707.00usft (McVay 4)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	Lea Unit #63H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 3707.00usft (McVay 4)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Lea Unit #63H
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