# PECOS DISTRICT
# SURFACE USE
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | Legacy Reserves Operating |
| LEASE NO.: | NM128366 |
| WELL NAME & NO.: | 49H – Lea Unit |
| SURFACE HOLE FOOTAGE: | 630'/S & 2610'/E |
| BOTTOM HOLE FOOTAGE | 330'/S & 1980'/E, sec. 12 |
| LOCATION: | Section 1, T. 20 S., R. 34 E., NMPM |
| 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.





**Approval Date: 01/19/2018**

missing pages
B.C

## V. SPECIAL REQUIREMENT(S)

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

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

**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**

**Construction Steps**

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

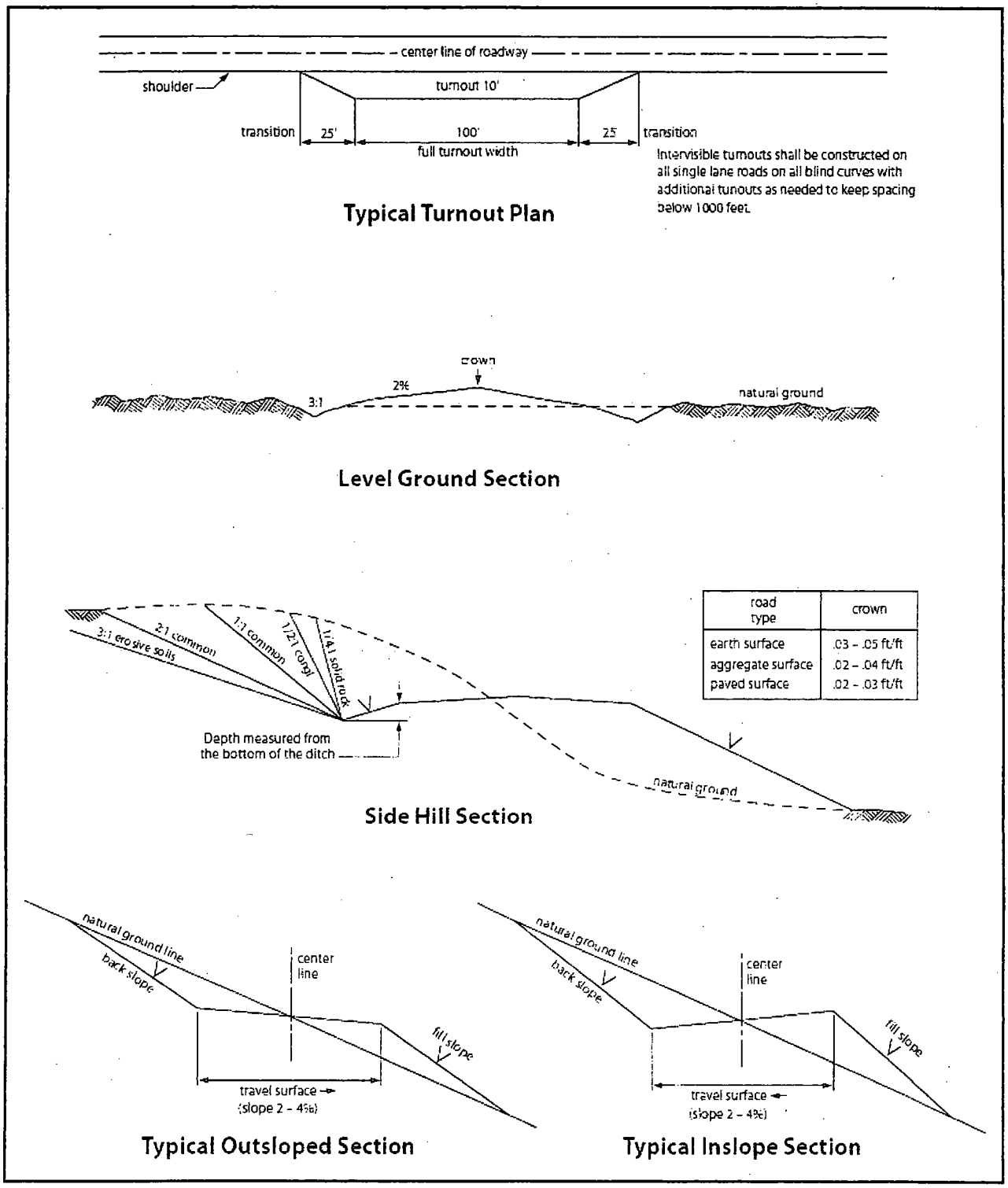



Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed

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,

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

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

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

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

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

## IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

LEGACY RESERVES

**Legacy Reserves**
**Project: Lea County, NM (NAD-27 2015)**
**Site: Lea Unit #49H**
**Well: Lea Unit #49H**
**Wellbore: Lateral #1**
**Plan: Design #2 (Lea Unit #49H/Lateral #1)**

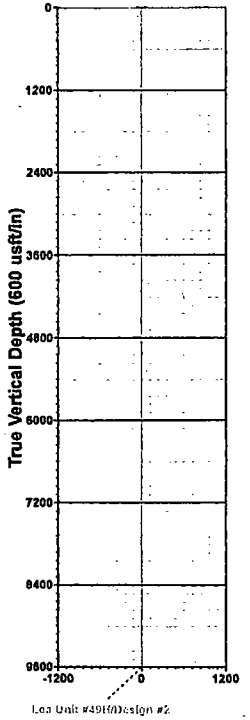
**Section Details**

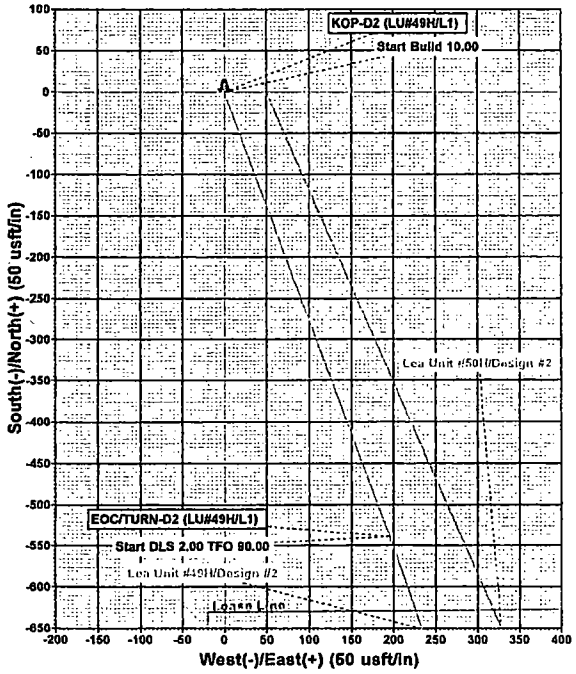
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 9927.04 | 0.00 | 0.00 | 9927.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 10827.04 | 90.00 | 160.05 | 10500.00 | -538.58 | 195.49 | 10.00 | 160.05 | 568.12 | |
| 4 | 11614.73 | 90.00 | 175.80 | 10500.00 | -1305.42 | 359.73 | 2.00 | 90.00 | 1340.12 | |
| 5 | 15891.98 | 90.00 | 175.80 | 10500.00 | -5572.20 | 672.70 | 0.00 | 0.00 | 5612.66 | BHL-D2 (LU#49H/L1) |

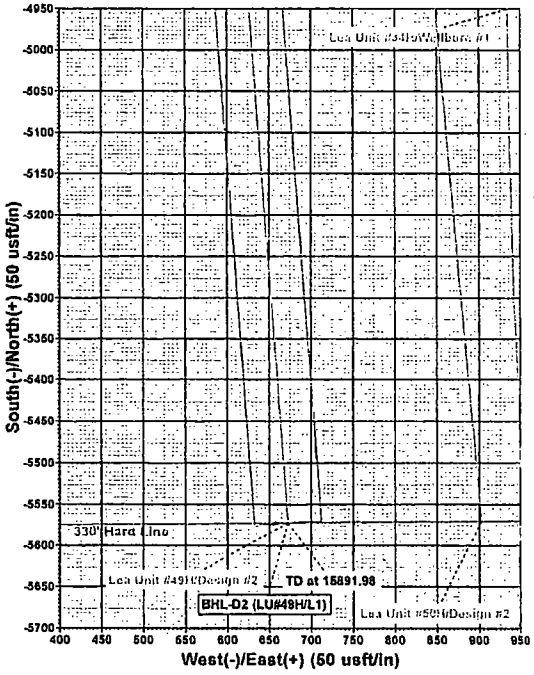
**WELL DETAILS: Lea Unit #49H**

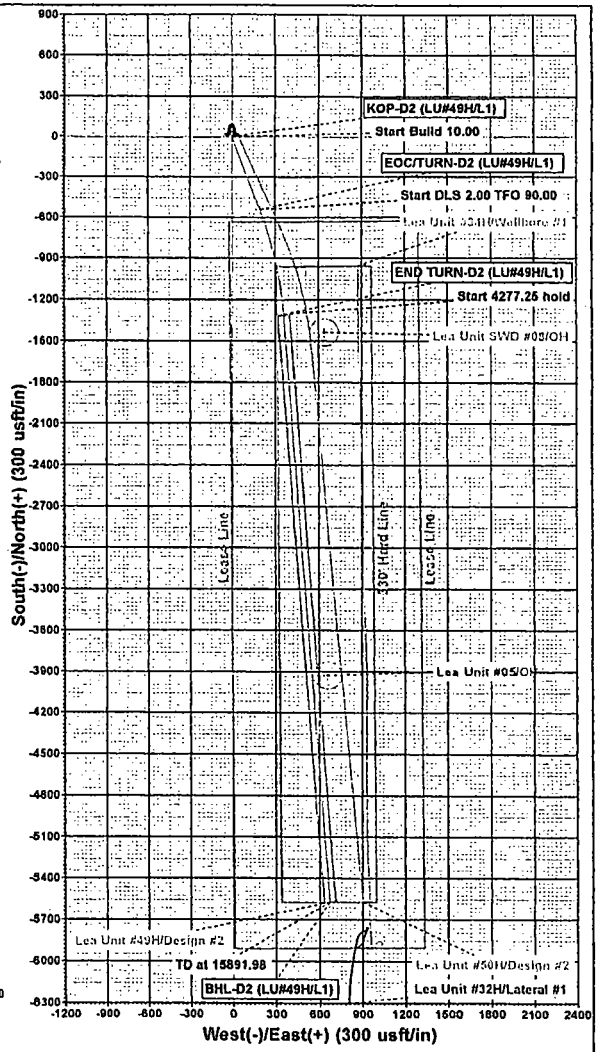
**Ground Elevation:: 3678.00**
**RKB Elevation: KB @ 3696.00usft (McVay 4)**
**Rig Name: McVay 4**

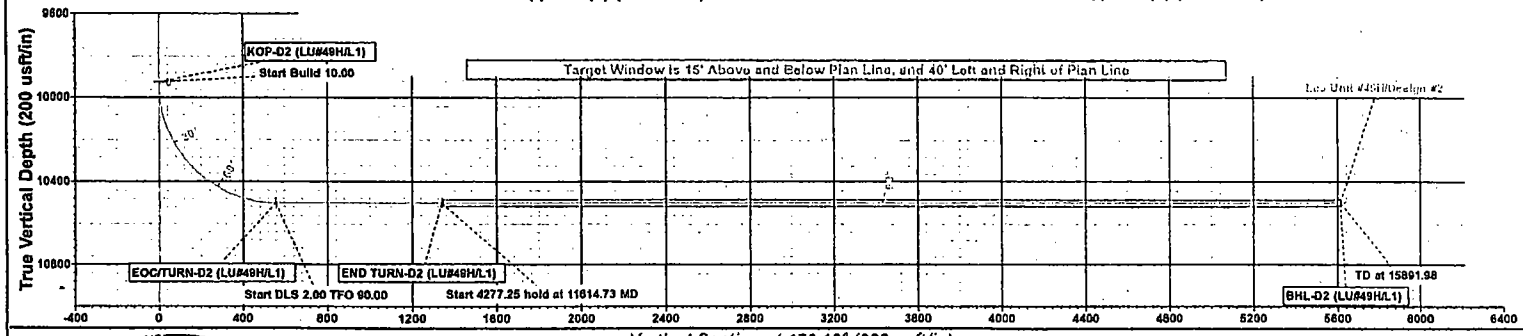
| Northing | Easting | Latittude | Longitude |
|---|---|---|---|
| 581684.20 | 752597.70 | 32° 35' 47.319 N | 103° 30' 47.326 W |





**Azimuths to Grid North**
**True North: -0.44°**
**Magnetic North: 6.72°**

**Magnetic Field**
**Strength: 48362.1snT**
**Dip Angle: 60.44°**
**Date: 7/18/2015**
**Model: IGRF2015**

**PROJECT DETAILS: Lea County, NM (NAD-27 2015)**
**Geodetic System: US State Plane 1927 (Exact solution)**
**Datum: NAD 1927 (NADCON CONUS)**
**Ellipsoid: Clarke 1866**
**Zone: New Mexico East 3001**
**System Datum: Mean Sea Level**
**Local North: Grid**


**Terra Directional Services**
**3705 South County Road 1210, Midland, TX 79706**
**Office: (432) 618-1210**


**Plan: Design #2 (Lea Unit #49H/Lateral #1)**
**Created By: Well Planner Date: 13:21, December 09 2016**

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Company:** | Legacy Reserves | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Project:** | Lea County, NM (NAD-27 2015) | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site:** | Lea Unit #49H | **North Reference:** | Grid |
| **Well:** | Lea Unit #49H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Lateral #1 | | |
| **Design:** | Design #2 | | |

| | | | |
|---|---|---|---|
| **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 #49H | | | | |
| **Site Position:** | | **Northing:** | 581,684.20 usft | **Latitude:** | 32° 35' 47.319 N |
| **From:** | Map | **Easting:** | 752,597.70 usft | **Longitude:** | 103° 30' 47.326 W |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13.20 in | **Grid Convergence:** | 0.44 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | Lea Unit #49H | | | | | |
| **Well Position** | **+N/-S** | 0.00 usft | **Northing:** | 581,684.20 usft | **Latitude:** | 32° 35' 47.319 N |
| | **+E/-W** | 0.00 usft | **Easting:** | 752,597.70 usft | **Longitude:** | 103° 30' 47.326 W |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | 0.00 usft | **Ground Level:** | 3,678.00 usft |

| | | | | | |
|---|---|---|---|---|---|
| **Wellbore** | Lateral #1 | | | | |
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2015 | 7/18/2015 | 7.16 | 60.44 | 48,362 |

| | | | | | |
|---|---|---|---|---|---|
| **Design** | Design #2 | | | | |
| **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 | 173.12 | |

**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 | 160.05 | 10,500.00 | -538.58 | 195.49 | 10.00 | 10.00 | 0.00 | 160.05 | |
| 11,614.73 | 90.00 | 175.80 | 10,500.00 | -1,306.42 | 359.73 | 2.00 | 0.00 | 2.00 | 90.00 | |
| 15,891.98 | 90.00 | 175.80 | 10,500.00 | -5,572.20 | 672.70 | 0.00 | 0.00 | 0.00 | 0.00 | BHL-D2 (LU#49H/L1) |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Company:** | Legacy Reserves | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Project:** | Lea County, NM (NAD-27 2015) | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site:** | Lea Unit #49H | **North Reference:** | Grid |
| **Well:** | Lea Unit #49H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Lateral #1 | | |
| **Design:** | Design #2 | | |

**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 |
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| 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 | 160.05 | 9,949.99 | -0.43 | 0.16 | 0.45 | 10.00 | 10.00 | 0.00 |
| 10,000.00 | 7.30 | 160.05 | 9,999.80 | -4.36 | 1.58 | 4.52 | 10.00 | 10.00 | 0.00 |
| 10,050.00 | 12.30 | 160.05 | 10,049.06 | -12.35 | 4.48 | 12.80 | 10.00 | 10.00 | 0.00 |
| 10,100.00 | 17.30 | 160.05 | 10,097.39 | -24.35 | 8.84 | 25.24 | 10.00 | 10.00 | 0.00 |
| 10,150.00 | 22.30 | 160.05 | 10,144.42 | -40.27 | 14.62 | 41.73 | 10.00 | 10.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Company:** | Legacy Reserves | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Project:** | Lea County, NM (NAD-27 2015) | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site:** | Lea Unit #49H | **North Reference:** | Grid |
| **Well:** | Lea Unit #49H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Lateral #1 | | |
| **Design:** | Design #2 | | |

**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 | 175.80 | 10,500.00 | -4,283.69 | 578.16 | 4,322.10 | 0.00 | 0.00 | 0.00 |
| 14,700.00 | 90.00 | 175.80 | 10,500.00 | -4,383.42 | 585.48 | 4,421.99 | 0.00 | 0.00 | 0.00 |
| 14,800.00 | 90.00 | 175.80 | 10,500.00 | -4,483.15 | 592.80 | 4,521.88 | 0.00 | 0.00 | 0.00 |
| 14,900.00 | 90.00 | 175.80 | 10,500.00 | -4,582.88 | 600.12 | 4,621.77 | 0.00 | 0.00 | 0.00 |
| 15,000.00 | 90.00 | 175.80 | 10,500.00 | -4,682.61 | 607.43 | 4,721.66 | 0.00 | 0.00 | 0.00 |
| 15,100.00 | 90.00 | 175.80 | 10,500.00 | -4,782.35 | 614.75 | 4,821.55 | 0.00 | 0.00 | 0.00 |
| 15,200.00 | 90.00 | 175.80 | 10,500.00 | -4,882.08 | 622.07 | 4,921.44 | 0.00 | 0.00 | 0.00 |
| 15,300.00 | 90.00 | 175.80 | 10,500.00 | -4,981.81 | 629.38 | 5,021.33 | 0.00 | 0.00 | 0.00 |
| 15,400.00 | 90.00 | 175.80 | 10,500.00 | -5,081.54 | 636.70 | 5,121.22 | 0.00 | 0.00 | 0.00 |
| 15,500.00 | 90.00 | 175.80 | 10,500.00 | -5,181.27 | 644.02 | 5,221.11 | 0.00 | 0.00 | 0.00 |
| 15,600.00 | 90.00 | 175.80 | 10,500.00 | -5,281.01 | 651.34 | 5,321.00 | 0.00 | 0.00 | 0.00 |
| 15,700.00 | 90.00 | 175.80 | 10,500.00 | -5,380.74 | 658.65 | 5,420.89 | 0.00 | 0.00 | 0.00 |
| 15,800.00 | 90.00 | 175.80 | 10,500.00 | -5,480.47 | 665.97 | 5,520.78 | 0.00 | 0.00 | 0.00 |
| 15,891.98 | 90.00 | 175.80 | 10,500.00 | -5,572.20 | 672.70 | 5,612.66 | 0.00 | 0.00 | 0.00 |
| TD at 15891.98 | | | | | | | | | |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| LU SWD #8 (LU#49H/L1 | 0.00 | 0.00 | 0.00 | -1,434.40 | 640.73 | 580,249.80 | 753,238.43 | 32° 35' 33.077 N | 103° 30' 39.966 W |
| - plan misses target center by 1571.00usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) | | | | | | | | | |
| - Circle (radius 100.00) | | | | | | | | | |
| LU #5 (LU#49H/L1) | 0.00 | 0.00 | 0.00 | -3,922.77 | 659.72 | 577,761.43 | 753,257.42 | 32° 35' 8.454 N | 103° 30' 39.969 W |
| - plan misses target center by 3977.86usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) | | | | | | | | | |
| - Circle (radius 100.00) | | | | | | | | | |
| KOP-D2 (LU#49H/L1) | 0.00 | 0.00 | 9,927.04 | 0.00 | 0.00 | 581,684.20 | 752,597.70 | 32° 35' 47.319 N | 103° 30' 47.326 W |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |
| EOC/TURN-D2 (LU#49H | 0.00 | 0.00 | 10,500.00 | -538.58 | 195.49 | 581,145.63 | 752,793.19 | 32° 35' 41.975 N | 103° 30' 45.089 W |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |
| BHL-D2 (LU#49H/L1) | 0.00 | 175.80 | 10,500.00 | -5,572.20 | 672.70 | 576,112.00 | 753,270.40 | 32° 34' 52.132 N | 103° 30' 39.966 W |
| - plan hits target center | | | | | | | | | |
| - Rectangle (sides W80.00 H4,272.54 D30.00) | | | | | | | | | |
| END TURN-D2 (LU#49H | 0.00 | 0.00 | 10,500.00 | -1,306.42 | 359.73 | 580,377.78 | 752,957.42 | 32° 35' 34.365 N | 103° 30' 43.239 W |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |

**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 | -538.58 | 195.49 | Start DLS 2.00 TFO 90.00 |
| 11,614.73 | 10,500.00 | -1,306.42 | 359.73 | Start 4277.25 hold at 11614.73 MD |
| 15,891.98 | 10,500.00 | -5,572.20 | 672.70 | TD at 15891.98 |

| | | | |
|---|---|---|---|
| **Company:** | Legacy Reserves | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

| | | | |
|---|---|---|---|
| **Reference** | Design #2 | | |
| **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** 12/9/2016

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.00 | 15,891.98 | Design #2 (Lateral #1) | MWD | MWD - Standard |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| Lea County Offset Wells | | | | | | |
| Lea Unit #05 - OH - OH | 14,246.02 | 10,000.00 | 480.24 | 436.72 | 11.035 | CC, ES |
| Lea Unit #05 - OH - OH | 14,300.00 | 10,000.00 | 483.27 | 439.17 | 10.959 | SF |
| Lea Unit SWD #08 - OH - OH | 11,762.93 | 10,474.40 | 270.88 | 95.46 | 1.544 | CC, ES, SF |
| Lea Unit #32H | | | | | | |
| Lea Unit #32H - Lateral #1 - Lateral #1 | 15,891.98 | 10,458.40 | 312.00 | 235.37 | 4.072 | CC, ES, SF |
| Lea Unit #34H | | | | | | |
| Lea Unit #34H - Wellbore #1 - Wellbore #1 | 15,891.98 | 10,563.66 | 401.51 | 315.11 | 4.647 | CC, ES, SF |
| Lea Unit #50H | | | | | | |
| Lea Unit #50H - Lateral #1 - Design #2 | 9,010.72 | 9,009.72 | 49.90 | 9.67 | 1.240 | Level 2, CC |
| Lea Unit #50H - Lateral #1 - Design #2 | 9,100.00 | 9,098.61 | 49.96 | 9.33 | 1.230 | Level 2, ES, SF |

**Offset Design** Lea County Offset Wells - Lea Unit #05 - OH - OH

**Survey Program:** 10000-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 | 170.45 | -3,922.77 | 659.72 | 3,977.99 | | | | |
| 100.00 | 100.00 | 68.00 | 68.00 | 0.09 | 0.08 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,977.69 | 0.17 | N/A | |
| 200.00 | 200.00 | 168.00 | 168.00 | 0.32 | 0.19 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,977.35 | 0.51 | 7,862.618 | |
| 300.00 | 300.00 | 268.00 | 268.00 | 0.54 | 0.30 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,977.02 | 0.84 | 4,718.316 | |
| 400.00 | 400.00 | 368.00 | 368.00 | 0.77 | 0.41 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,976.68 | 1.18 | 3,370.454 | |
| 500.00 | 500.00 | 468.00 | 468.00 | 0.99 | 0.53 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,976.34 | 1.52 | 2,621.563 | |
| 600.00 | 600.00 | 568.00 | 568.00 | 1.22 | 0.64 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,976.00 | 1.85 | 2,144.966 | |
| 700.00 | 700.00 | 668.00 | 668.00 | 1.44 | 0.75 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,975.67 | 2.19 | 1,815.001 | |
| 800.00 | 800.00 | 768.00 | 768.00 | 1.67 | 0.86 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,975.33 | 2.53 | 1,573.020 | |
| 900.00 | 900.00 | 868.00 | 868.00 | 1.89 | 0.98 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,974.99 | 2.87 | 1,387.972 | |
| 1,000.00 | 1,000.00 | 968.00 | 968.00 | 2.12 | 1.09 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,974.66 | 3.20 | 1,241.879 | |
| 1,100.00 | 1,100.00 | 1,068.00 | 1,068.00 | 2.34 | 1.20 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,974.32 | 3.54 | 1,123.611 | |
| 1,200.00 | 1,200.00 | 1,168.00 | 1,168.00 | 2.56 | 1.31 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,973.98 | 3.88 | 1,025.911 | |
| 1,300.00 | 1,300.00 | 1,268.00 | 1,268.00 | 2.79 | 1.43 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,973.64 | 4.21 | 943.842 | |
| 1,400.00 | 1,400.00 | 1,368.00 | 1,368.00 | 3.01 | 1.54 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,973.31 | 4.55 | 873.931 | |
| 1,500.00 | 1,500.00 | 1,468.00 | 1,468.00 | 3.24 | 1.65 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,972.97 | 4.89 | 813.662 | |

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 #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea County Offset Wells - Lea Unit #05 - OH - OH — **Offset Site Error:** 0.00 usft

**Survey Program:** 10000-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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6,800.00 | 6,800.00 | 6,768.00 | 6,768.00 | 15.15 | 7.61 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,955.10 | 22.76 | 174.792 | |
| 6,900.00 | 6,900.00 | 6,868.00 | 6,868.00 | 15.38 | 7.72 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,954.76 | 23.09 | 172.241 | |
| 7,000.00 | 7,000.00 | 6,968.00 | 6,968.00 | 15.60 | 7.83 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,954.43 | 23.43 | 169.762 | |
| 7,100.00 | 7,100.00 | 7,068.00 | 7,068.00 | 15.83 | 7.94 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,954.09 | 23.77 | 167.354 | |
| 7,200.00 | 7,200.00 | 7,168.00 | 7,168.00 | 16.05 | 8.06 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,953.75 | 24.11 | 165.014 | |
| 7,300.00 | 7,300.00 | 7,268.00 | 7,268.00 | 16.28 | 8.17 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,953.41 | 24.44 | 162.738 | |
| 7,400.00 | 7,400.00 | 7,368.00 | 7,368.00 | 16.50 | 8.28 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,953.08 | 24.78 | 160.524 | |
| 7,500.00 | 7,500.00 | 7,468.00 | 7,468.00 | 16.72 | 8.39 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,952.74 | 25.12 | 158.369 | |
| 7,600.00 | 7,600.00 | 7,568.00 | 7,568.00 | 16.95 | 8.51 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,952.40 | 25.45 | 156.271 | |
| 7,700.00 | 7,700.00 | 7,668.00 | 7,668.00 | 17.17 | 8.62 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,952.07 | 25.79 | 154.229 | |
| 7,800.00 | 7,800.00 | 7,768.00 | 7,768.00 | 17.40 | 8.73 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,951.73 | 26.13 | 152.239 | |
| 7,900.00 | 7,900.00 | 7,868.00 | 7,868.00 | 17.62 | 8.84 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,951.39 | 26.47 | 150.299 | |
| 8,000.00 | 8,000.00 | 7,968.00 | 7,968.00 | 17.85 | 8.95 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,951.05 | 26.80 | 148.409 | |
| 8,100.00 | 8,100.00 | 8,068.00 | 8,068.00 | 18.07 | 9.07 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,950.72 | 27.14 | 146.565 | |
| 8,200.00 | 8,200.00 | 8,168.00 | 8,168.00 | 18.30 | 9.18 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,950.38 | 27.48 | 144.767 | |
| 8,300.00 | 8,300.00 | 8,268.00 | 8,268.00 | 18.52 | 9.29 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,950.04 | 27.81 | 143.012 | |
| 8,400.00 | 8,400.00 | 8,368.00 | 8,368.00 | 18.75 | 9.40 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,949.71 | 28.15 | 141.299 | |
| 8,500.00 | 8,500.00 | 8,468.00 | 8,468.00 | 18.97 | 9.52 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,949.37 | 28.49 | 139.627 | |
| 8,600.00 | 8,600.00 | 8,568.00 | 8,568.00 | 19.20 | 9.63 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,949.03 | 28.83 | 137.994 | |
| 8,700.00 | 8,700.00 | 8,668.00 | 8,668.00 | 19.42 | 9.74 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,948.69 | 29.16 | 136.399 | |
| 8,800.00 | 8,800.00 | 8,768.00 | 8,768.00 | 19.65 | 9.85 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,948.36 | 29.50 | 134.840 | |
| 8,900.00 | 8,900.00 | 8,868.00 | 8,868.00 | 19.87 | 9.97 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,948.02 | 29.84 | 133.316 | |
| 9,000.00 | 9,000.00 | 8,968.00 | 8,968.00 | 20.10 | 10.08 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,947.68 | 30.17 | 131.827 | |
| 9,100.00 | 9,100.00 | 9,068.00 | 9,068.00 | 20.32 | 10.19 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,947.35 | 30.51 | 130.370 | |
| 9,200.00 | 9,200.00 | 9,168.00 | 9,168.00 | 20.55 | 10.30 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,947.01 | 30.85 | 128.945 | |
| 9,300.00 | 9,300.00 | 9,268.00 | 9,268.00 | 20.77 | 10.42 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,946.67 | 31.19 | 127.551 | |
| 9,400.00 | 9,400.00 | 9,368.00 | 9,368.00 | 21.00 | 10.53 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,946.33 | 31.52 | 126.187 | |
| 9,500.00 | 9,500.00 | 9,468.00 | 9,468.00 | 21.22 | 10.64 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,946.00 | 31.86 | 124.852 | |
| 9,600.00 | 9,600.00 | 9,568.00 | 9,568.00 | 21.44 | 10.75 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,945.66 | 32.20 | 123.545 | |
| 9,700.00 | 9,700.00 | 9,668.00 | 9,668.00 | 21.67 | 10.87 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,945.32 | 32.53 | 122.264 | |
| 9,800.00 | 9,800.00 | 9,768.00 | 9,768.00 | 21.89 | 10.98 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,944.99 | 32.87 | 121.010 | |
| 9,900.00 | 9,900.00 | 9,868.00 | 9,868.00 | 22.12 | 11.09 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,944.65 | 33.21 | 119.782 | |
| 9,927.04 | 9,927.04 | 9,895.04 | 9,895.04 | 22.18 | 11.12 | 170.45 | -3,922.77 | 659.72 | 3,977.86 | 3,944.56 | 33.30 | 119.454 | |
| 9,950.00 | 9,949.99 | 9,917.99 | 9,917.99 | 22.23 | 11.15 | 10.41 | -3,922.77 | 659.72 | 3,977.41 | 3,944.03 | 33.37 | 119.187 | |
| 10,000.00 | 9,999.80 | 9,967.80 | 9,967.80 | 22.31 | 11.20 | 10.50 | -3,922.77 | 659.72 | 3,973.30 | 3,939.78 | 33.51 | 118.564 | |
| 10,050.00 | 10,049.06 | 10,000.00 | 10,000.00 | 22.40 | 11.24 | 10.67 | -3,922.77 | 659.72 | 3,964.97 | 3,931.33 | 33.63 | 117.888 | |
| 10,100.00 | 10,097.39 | 10,000.00 | 10,000.00 | 22.48 | 11.24 | 10.90 | -3,922.77 | 659.72 | 3,952.92 | 3,919.20 | 33.72 | 117.245 | |
| 10,150.00 | 10,144.42 | 10,000.00 | 10,000.00 | 22.57 | 11.24 | 11.21 | -3,922.77 | 659.72 | 3,937.34 | 3,903.55 | 33.79 | 116.516 | |
| 10,200.00 | 10,189.79 | 10,000.00 | 10,000.00 | 22.65 | 11.24 | 11.62 | -3,922.77 | 659.72 | 3,918.30 | 3,884.44 | 33.86 | 115.704 | |
| 10,250.00 | 10,233.17 | 10,000.00 | 10,000.00 | 22.74 | 11.24 | 12.14 | -3,922.77 | 659.72 | 3,895.91 | 3,861.98 | 33.93 | 114.815 | |
| 10,300.00 | 10,274.21 | 10,000.00 | 10,000.00 | 22.85 | 11.24 | 12.78 | -3,922.77 | 659.72 | 3,870.27 | 3,836.27 | 33.99 | 113.851 | |
| 10,350.00 | 10,312.62 | 10,000.00 | 10,000.00 | 22.97 | 11.24 | 13.59 | -3,922.77 | 659.72 | 3,841.51 | 3,807.46 | 34.05 | 112.815 | |
| 10,400.00 | 10,348.09 | 10,000.00 | 10,000.00 | 23.11 | 11.24 | 14.58 | -3,922.77 | 659.72 | 3,809.80 | 3,775.69 | 34.10 | 111.711 | |
| 10,450.00 | 10,380.35 | 10,000.00 | 10,000.00 | 23.27 | 11.24 | 15.84 | -3,922.77 | 659.72 | 3,775.29 | 3,741.14 | 34.15 | 110.544 | |
| 10,500.00 | 10,409.17 | 10,000.00 | 10,000.00 | 23.46 | 11.24 | 17.42 | -3,922.77 | 659.72 | 3,738.18 | 3,703.98 | 34.20 | 109.317 | |
| 10,550.00 | 10,434.31 | 10,000.00 | 10,000.00 | 23.69 | 11.24 | 19.46 | -3,922.77 | 659.72 | 3,698.67 | 3,664.44 | 34.24 | 108.036 | |
| 10,600.00 | 10,455.60 | 10,000.00 | 10,000.00 | 23.95 | 11.24 | 22.14 | -3,922.77 | 659.72 | 3,657.00 | 3,622.73 | 34.27 | 106.706 | |
| 10,650.00 | 10,472.86 | 10,000.00 | 10,000.00 | 24.24 | 11.24 | 25.76 | -3,922.77 | 659.72 | 3,613.41 | 3,579.10 | 34.31 | 105.331 | |
| 10,700.00 | 10,485.97 | 10,000.00 | 10,000.00 | 24.57 | 11.24 | 30.80 | -3,922.77 | 659.72 | 3,568.17 | 3,533.83 | 34.34 | 103.919 | |
| 10,750.00 | 10,494.83 | 10,000.00 | 10,000.00 | 24.94 | 11.24 | 38.08 | -3,922.77 | 659.72 | 3,521.55 | 3,487.20 | 34.37 | 102.474 | |
| 10,800.00 | 10,499.36 | 10,000.00 | 10,000.00 | 25.33 | 11.24 | 48.94 | -3,922.77 | 659.72 | 3,473.90 | 3,439.51 | 34.39 | 101.004 | |
| 10,827.04 | 10,500.00 | 10,000.00 | 10,000.00 | 25.56 | 11.24 | 56.92 | -3,922.77 | 659.72 | 3,447.80 | 3,413.39 | 34.41 | 100.199 | |

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 #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea County Offset Wells - Lea Unit #05 - OH - OH — **Offset Site Error:** 0.00 usft

**Survey Program:** 10000-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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15,891.98 | 10,500.00 | 10,000.00 | 10,000.00 | 105.90 | 11.24 | -12.97 | -3,922.77 | 659.72 | 1,714.59 | 1,674.89 | 39.70 | 43.190 | |

| | | | |
|---|---|---|---|
| **Company:** | Legacy Reserves | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea County Offset Wells - Lea Unit SWD #08 - OH - OH — **Offset Site Error:** 0.00 usft

**Survey Program:** 13039-INC — **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 | 5,174.40 | 5,174.40 | 11.56 | 68.89 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,490.55 | 80.45 | 19.529 | |
| 5,300.00 | 5,300.00 | 5,274.40 | 5,274.40 | 11.78 | 70.22 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,489.00 | 82.00 | 19.158 | |
| 5,400.00 | 5,400.00 | 5,374.40 | 5,374.40 | 12.00 | 71.55 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,487.44 | 83.56 | 18.801 | |
| 5,500.00 | 5,500.00 | 5,474.40 | 5,474.40 | 12.23 | 72.88 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,485.89 | 85.11 | 18.458 | |
| 5,600.00 | 5,600.00 | 5,574.40 | 5,574.40 | 12.45 | 74.22 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,484.33 | 86.67 | 18.126 | |
| 5,700.00 | 5,700.00 | 5,674.40 | 5,674.40 | 12.68 | 75.55 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,482.77 | 88.23 | 17.807 | |
| 5,800.00 | 5,800.00 | 5,774.40 | 5,774.40 | 12.90 | 76.88 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,481.22 | 89.78 | 17.498 | |
| 5,900.00 | 5,900.00 | 5,874.40 | 5,874.40 | 13.13 | 78.21 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,479.66 | 91.34 | 17.200 | |
| 6,000.00 | 6,000.00 | 5,974.40 | 5,974.40 | 13.35 | 79.54 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,478.11 | 92.89 | 16.912 | |
| 6,100.00 | 6,100.00 | 6,074.40 | 6,074.40 | 13.58 | 80.87 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,476.55 | 94.45 | 16.633 | |
| 6,200.00 | 6,200.00 | 6,174.40 | 6,174.40 | 13.80 | 82.20 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,474.99 | 96.01 | 16.364 | |
| 6,300.00 | 6,300.00 | 6,274.40 | 6,274.40 | 14.03 | 83.53 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,473.44 | 97.56 | 16.103 | |
| 6,400.00 | 6,400.00 | 6,374.40 | 6,374.40 | 14.25 | 84.87 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,471.88 | 99.12 | 15.850 | |
| 6,500.00 | 6,500.00 | 6,474.40 | 6,474.40 | 14.48 | 86.20 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,470.32 | 100.67 | 15.605 | |
| 6,600.00 | 6,600.00 | 6,574.40 | 6,574.40 | 14.70 | 87.53 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,468.77 | 102.23 | 15.367 | |
| 6,700.00 | 6,700.00 | 6,674.40 | 6,674.40 | 14.93 | 88.86 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,467.21 | 103.79 | 15.137 | |
| 6,800.00 | 6,800.00 | 6,774.40 | 6,774.40 | 15.15 | 90.19 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,465.66 | 105.34 | 14.913 | |
| 6,900.00 | 6,900.00 | 6,874.40 | 6,874.40 | 15.38 | 91.52 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,464.10 | 106.90 | 14.696 | |
| 7,000.00 | 7,000.00 | 6,974.40 | 6,974.40 | 15.60 | 92.85 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,462.54 | 108.46 | 14.485 | |
| 7,100.00 | 7,100.00 | 7,074.40 | 7,074.40 | 15.83 | 94.19 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,460.99 | 110.01 | 14.280 | |
| 7,200.00 | 7,200.00 | 7,174.40 | 7,174.40 | 16.05 | 95.52 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,459.43 | 111.57 | 14.081 | |
| 7,300.00 | 7,300.00 | 7,274.40 | 7,274.40 | 16.28 | 96.85 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,457.88 | 113.12 | 13.887 | |
| 7,400.00 | 7,400.00 | 7,374.40 | 7,374.40 | 16.50 | 98.18 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,456.32 | 114.68 | 13.699 | |
| 7,500.00 | 7,500.00 | 7,474.40 | 7,474.40 | 16.72 | 99.51 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,454.76 | 116.24 | 13.516 | |
| 7,600.00 | 7,600.00 | 7,574.40 | 7,574.40 | 16.95 | 100.84 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,453.21 | 117.79 | 13.337 | |
| 7,700.00 | 7,700.00 | 7,674.40 | 7,674.40 | 17.17 | 102.17 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,451.65 | 119.35 | 13.163 | |
| 7,800.00 | 7,800.00 | 7,774.40 | 7,774.40 | 17.40 | 103.51 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,450.09 | 120.90 | 12.994 | |
| 7,900.00 | 7,900.00 | 7,874.40 | 7,874.40 | 17.62 | 104.84 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,448.54 | 122.46 | 12.829 | |
| 8,000.00 | 8,000.00 | 7,974.40 | 7,974.40 | 17.85 | 106.17 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,446.98 | 124.02 | 12.668 | |
| 8,100.00 | 8,100.00 | 8,074.40 | 8,074.40 | 18.07 | 107.50 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,445.43 | 125.57 | 12.511 | |
| 8,200.00 | 8,200.00 | 8,174.40 | 8,174.40 | 18.30 | 108.83 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,443.87 | 127.13 | 12.358 | |
| 8,300.00 | 8,300.00 | 8,274.40 | 8,274.40 | 18.52 | 110.16 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,442.31 | 128.68 | 12.208 | |
| 8,400.00 | 8,400.00 | 8,374.40 | 8,374.40 | 18.75 | 111.49 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,440.76 | 130.24 | 12.062 | |
| 8,500.00 | 8,500.00 | 8,474.40 | 8,474.40 | 18.97 | 112.82 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,439.20 | 131.80 | 11.920 | |
| 8,600.00 | 8,600.00 | 8,574.40 | 8,574.40 | 19.20 | 114.16 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,437.65 | 133.35 | 11.781 | |
| 8,700.00 | 8,700.00 | 8,674.40 | 8,674.40 | 19.42 | 115.49 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,436.09 | 134.91 | 11.645 | |
| 8,800.00 | 8,800.00 | 8,774.40 | 8,774.40 | 19.65 | 116.82 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,434.53 | 136.47 | 11.512 | |
| 8,900.00 | 8,900.00 | 8,874.40 | 8,874.40 | 19.87 | 118.15 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,432.98 | 138.02 | 11.382 | |
| 9,000.00 | 9,000.00 | 8,974.40 | 8,974.40 | 20.10 | 119.48 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,431.42 | 139.58 | 11.255 | |
| 9,100.00 | 9,100.00 | 9,074.40 | 9,074.40 | 20.32 | 120.81 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,429.87 | 141.13 | 11.131 | |
| 9,200.00 | 9,200.00 | 9,174.40 | 9,174.40 | 20.55 | 122.14 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,428.31 | 142.69 | 11.010 | |
| 9,300.00 | 9,300.00 | 9,274.40 | 9,274.40 | 20.77 | 123.48 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,426.75 | 144.25 | 10.891 | |
| 9,400.00 | 9,400.00 | 9,374.40 | 9,374.40 | 21.00 | 124.81 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,425.20 | 145.80 | 10.775 | |
| 9,500.00 | 9,500.00 | 9,474.40 | 9,474.40 | 21.22 | 126.14 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,423.64 | 147.36 | 10.661 | |
| 9,600.00 | 9,600.00 | 9,574.40 | 9,574.40 | 21.44 | 127.47 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,422.08 | 148.91 | 10.550 | |
| 9,700.00 | 9,700.00 | 9,674.40 | 9,674.40 | 21.67 | 128.80 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,420.53 | 150.47 | 10.441 | |
| 9,800.00 | 9,800.00 | 9,774.40 | 9,774.40 | 21.89 | 130.13 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,418.97 | 152.03 | 10.334 | |
| 9,900.00 | 9,900.00 | 9,874.40 | 9,874.40 | 22.12 | 131.46 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,417.42 | 153.58 | 10.229 | |
| 9,927.04 | 9,927.04 | 9,901.44 | 9,901.44 | 22.18 | 131.82 | 155.93 | -1,434.40 | 640.73 | 1,571.00 | 1,417.00 | 154.00 | 10.201 | |
| 9,950.00 | 9,949.99 | 9,924.39 | 9,924.39 | 22.23 | 132.13 | -4.12 | -1,434.40 | 640.73 | 1,570.54 | 1,416.19 | 154.35 | 10.175 | |
| 10,000.00 | 9,999.80 | 9,974.20 | 9,974.20 | 22.31 | 132.79 | -4.17 | -1,434.40 | 640.73 | 1,566.37 | 1,411.27 | 155.10 | 10.099 | |
| 10,050.00 | 10,049.06 | 10,023.46 | 10,023.46 | 22.40 | 133.45 | -4.25 | -1,434.40 | 640.73 | 1,557.89 | 1,402.05 | 155.84 | 9.997 | |

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 #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea County Offset Wells - Lea Unit SWD #08 - OH - OH — Offset Site Error: 0.00 usft

Survey Program: 13039-INC — 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14,300.00 | 10,500.00 | 10,474.40 | 10,474.40 | 77.50 | 139.45 | -90.00 | -1,434.40 | 640.73 | 2,551.49 | 2,384.89 | 166.60 | 15.315 | |
| 14,400.00 | 10,500.00 | 10,474.40 | 10,474.40 | 79.26 | 139.45 | -90.00 | -1,434.40 | 640.73 | 2,650.95 | 2,484.36 | 166.59 | 15.913 | |
| 14,500.00 | 10,500.00 | 10,474.40 | 10,474.40 | 81.02 | 139.45 | -90.00 | -1,434.40 | 640.73 | 2,750.44 | 2,583.86 | 166.58 | 16.511 | |
| 14,600.00 | 10,500.00 | 10,474.40 | 10,474.40 | 82.79 | 139.45 | -90.00 | -1,434.40 | 640.73 | 2,849.97 | 2,683.40 | 166.58 | 17.109 | |
| 14,700.00 | 10,500.00 | 10,474.40 | 10,474.40 | 84.56 | 139.45 | -90.00 | -1,434.40 | 640.73 | 2,949.54 | 2,782.96 | 166.57 | 17.707 | |
| 14,800.00 | 10,500.00 | 10,474.40 | 10,474.40 | 86.34 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,049.13 | 2,882.55 | 166.58 | 18.305 | |
| 14,900.00 | 10,500.00 | 10,474.40 | 10,474.40 | 88.12 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,148.74 | 2,982.16 | 166.58 | 18.902 | |
| 15,000.00 | 10,500.00 | 10,474.40 | 10,474.40 | 89.90 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,248.38 | 3,081.79 | 166.59 | 19.499 | |
| 15,100.00 | 10,500.00 | 10,474.40 | 10,474.40 | 91.68 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,348.05 | 3,181.44 | 166.60 | 20.096 | |
| 15,200.00 | 10,500.00 | 10,474.40 | 10,474.40 | 93.47 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,447.73 | 3,281.11 | 166.62 | 20.693 | |
| 15,300.00 | 10,500.00 | 10,474.40 | 10,474.40 | 95.26 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,547.43 | 3,380.80 | 166.63 | 21.289 | |
| 15,400.00 | 10,500.00 | 10,474.40 | 10,474.40 | 97.05 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,647.14 | 3,480.49 | 166.65 | 21.885 | |
| 15,500.00 | 10,500.00 | 10,474.40 | 10,474.40 | 98.85 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,746.88 | 3,580.20 | 166.67 | 22.481 | |
| 15,600.00 | 10,500.00 | 10,474.40 | 10,474.40 | 100.64 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,846.62 | 3,679.93 | 166.69 | 23.076 | |
| 15,700.00 | 10,500.00 | 10,474.40 | 10,474.40 | 102.44 | 139.45 | -90.00 | -1,434.40 | 640.73 | 3,946.38 | 3,779.66 | 166.72 | 23.671 | |
| 15,800.00 | 10,500.00 | 10,474.40 | 10,474.40 | 104.24 | 139.45 | -90.00 | -1,434.40 | 640.73 | 4,046.15 | 3,879.40 | 166.75 | 24.265 | |
| 15,891.98 | 10,500.00 | 10,474.40 | 10,474.40 | 105.90 | 139.45 | -90.00 | -1,434.40 | 640.73 | 4,137.92 | 3,971.15 | 166.77 | 24.812 | |

| | | | |
|---|---|---|---|
| **Company:** | Legacy Reserves | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea Unit #32H - Lea Unit #32H - Lateral #1 - Lateral #1 — Offset Site Error: 0.00 usft

Survey Program: 100-VES-ISCWSA-GYRO-3, 5535-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 | 5,355.64 | 5,353.98 | 11.56 | 9.64 | 171.03 | -5,808.71 | 916.76 | 5,883.24 | 5,862.30 | 20.94 | 280.911 | |
| 5,300.00 | 5,300.00 | 5,452.83 | 5,451.11 | 11.78 | 9.73 | 171.02 | -5,805.62 | 917.81 | 5,880.27 | 5,859.01 | 21.26 | 276.593 | |
| 5,400.00 | 5,400.00 | 5,551.05 | 5,549.27 | 12.00 | 9.81 | 171.00 | -5,802.55 | 918.91 | 5,877.35 | 5,855.79 | 21.56 | 272.541 | |
| 5,500.00 | 5,500.00 | 5,654.43 | 5,652.59 | 12.23 | 9.82 | 170.99 | -5,799.29 | 919.97 | 5,874.40 | 5,852.60 | 21.80 | 269.472 | |
| 5,600.00 | 5,600.00 | 5,755.21 | 5,753.32 | 12.45 | 9.83 | 170.97 | -5,796.10 | 920.99 | 5,871.43 | 5,849.39 | 22.04 | 266.410 | |
| 5,700.00 | 5,700.00 | 5,848.14 | 5,846.20 | 12.68 | 9.85 | 170.96 | -5,793.10 | 922.08 | 5,868.44 | 5,846.16 | 22.28 | 263.363 | |
| 5,800.00 | 5,800.00 | 5,924.76 | 5,922.78 | 12.90 | 9.87 | 170.94 | -5,790.89 | 923.18 | 5,865.80 | 5,843.27 | 22.53 | 260.389 | |
| 5,900.00 | 5,900.00 | 6,031.91 | 6,029.87 | 13.13 | 9.90 | 170.92 | -5,787.94 | 924.55 | 5,863.29 | 5,840.51 | 22.78 | 257.383 | |
| 6,000.00 | 6,000.00 | 6,142.92 | 6,140.83 | 13.35 | 9.93 | 170.91 | -5,784.70 | 925.74 | 5,860.57 | 5,837.53 | 23.04 | 254.375 | |
| 6,100.00 | 6,100.00 | 6,238.05 | 6,235.91 | 13.58 | 9.97 | 170.89 | -5,781.84 | 926.99 | 5,857.80 | 5,834.51 | 23.30 | 251.411 | |
| 6,200.00 | 6,200.00 | 6,320.06 | 6,317.88 | 13.80 | 10.00 | 170.88 | -5,779.48 | 928.29 | 5,855.23 | 5,831.67 | 23.56 | 248.521 | |
| 6,300.00 | 6,300.00 | 6,395.60 | 6,393.39 | 14.03 | 10.03 | 170.86 | -5,777.64 | 929.52 | 5,853.07 | 5,829.25 | 23.82 | 245.714 | |
| 6,400.00 | 6,400.00 | 6,489.59 | 6,487.34 | 14.25 | 10.08 | 170.84 | -5,775.58 | 930.98 | 5,851.15 | 5,827.06 | 24.09 | 242.874 | |
| 6,500.00 | 6,500.00 | 6,591.02 | 6,588.74 | 14.48 | 10.13 | 170.83 | -5,773.41 | 932.50 | 5,849.28 | 5,824.92 | 24.37 | 240.033 | |
| 6,600.00 | 6,600.00 | 6,691.73 | 6,689.42 | 14.70 | 10.18 | 170.81 | -5,771.27 | 933.50 | 5,847.34 | 5,822.69 | 24.65 | 237.220 | |
| 6,700.00 | 6,700.00 | 6,784.25 | 6,781.91 | 14.93 | 10.24 | 170.80 | -5,769.44 | 934.52 | 5,845.56 | 5,820.63 | 24.93 | 234.476 | |
| 6,800.00 | 6,800.00 | 6,891.57 | 6,889.21 | 15.15 | 10.30 | 170.79 | -5,767.15 | 935.60 | 5,843.61 | 5,818.38 | 25.22 | 231.674 | |
| 6,900.00 | 6,900.00 | 6,971.80 | 6,969.41 | 15.38 | 10.35 | 170.78 | -5,765.65 | 936.18 | 5,841.87 | 5,816.37 | 25.50 | 229.064 | |
| 7,000.00 | 7,000.00 | 7,055.86 | 7,053.47 | 15.60 | 10.41 | 170.77 | -5,764.36 | 936.77 | 5,840.47 | 5,814.68 | 25.79 | 226.472 | |
| 7,100.00 | 7,100.00 | 7,164.07 | 7,161.66 | 15.83 | 10.49 | 170.76 | -5,762.73 | 937.61 | 5,839.11 | 5,813.02 | 26.09 | 223.767 | |
| 7,200.00 | 7,200.00 | 7,263.62 | 7,261.20 | 16.05 | 10.57 | 170.75 | -5,761.10 | 938.48 | 5,837.63 | 5,811.23 | 26.40 | 221.146 | |
| 7,300.00 | 7,300.00 | 7,349.29 | 7,346.85 | 16.28 | 10.64 | 170.74 | -5,759.87 | 939.16 | 5,836.34 | 5,809.64 | 26.69 | 218.649 | |
| 7,400.00 | 7,400.00 | 7,439.24 | 7,436.80 | 16.50 | 10.71 | 170.73 | -5,758.77 | 939.84 | 5,835.25 | 5,808.26 | 27.00 | 216.159 | |
| 7,500.00 | 7,500.00 | 7,540.56 | 7,538.11 | 16.72 | 10.80 | 170.73 | -5,757.70 | 940.24 | 5,834.27 | 5,806.96 | 27.31 | 213.637 | |
| 7,600.00 | 7,600.00 | 7,640.15 | 7,637.69 | 16.95 | 10.89 | 170.72 | -5,756.57 | 940.22 | 5,833.15 | 5,805.53 | 27.62 | 211.162 | |
| 7,700.00 | 7,700.00 | 7,722.00 | 7,719.54 | 17.17 | 10.96 | 170.72 | -5,755.93 | 940.03 | 5,832.33 | 5,804.40 | 27.93 | 208.850 | |
| 7,800.00 | 7,800.00 | 7,820.90 | 7,818.44 | 17.40 | 11.06 | 170.73 | -5,755.21 | 939.66 | 5,831.56 | 5,803.31 | 28.25 | 206.455 | |
| 7,900.00 | 7,900.00 | 7,903.94 | 7,901.47 | 17.62 | 11.14 | 170.73 | -5,754.91 | 939.06 | 5,831.07 | 5,802.51 | 28.55 | 204.218 | |
| 8,000.00 | 8,000.00 | 8,022.04 | 8,019.56 | 17.85 | 11.26 | 170.74 | -5,754.32 | 937.73 | 5,830.37 | 5,801.48 | 28.90 | 201.751 | |
| 8,100.00 | 8,100.00 | 8,114.88 | 8,112.40 | 18.07 | 11.36 | 170.75 | -5,753.93 | 936.66 | 5,829.77 | 5,800.55 | 29.22 | 199.503 | |
| 8,200.00 | 8,200.00 | 8,218.41 | 8,215.92 | 18.30 | 11.47 | 170.76 | -5,753.43 | 935.60 | 5,829.13 | 5,799.57 | 29.56 | 197.210 | |
| 8,300.00 | 8,300.00 | 8,316.19 | 8,313.69 | 18.52 | 11.57 | 170.78 | -5,753.02 | 934.24 | 5,828.49 | 5,798.60 | 29.89 | 194.991 | |
| 8,400.00 | 8,400.00 | 8,406.57 | 8,404.06 | 18.75 | 11.68 | 170.79 | -5,752.68 | 933.18 | 5,827.94 | 5,797.72 | 30.22 | 192.858 | |
| 8,500.00 | 8,500.00 | 8,494.18 | 8,491.67 | 18.97 | 11.78 | 170.79 | -5,752.54 | 932.25 | 5,827.61 | 5,797.06 | 30.55 | 190.778 | |
| 8,600.00 | 8,600.00 | 8,583.66 | 8,581.14 | 19.20 | 11.88 | 170.80 | -5,752.55 | 931.34 | 5,827.46 | 5,796.58 | 30.88 | 188.717 | |
| 8,624.03 | 8,624.03 | 8,604.56 | 8,602.04 | 19.25 | 11.91 | 170.81 | -5,752.57 | 931.16 | 5,827.45 | 5,796.49 | 30.96 | 188.233 | |
| 8,700.00 | 8,700.00 | 8,675.07 | 8,672.55 | 19.42 | 11.99 | 170.81 | -5,752.70 | 930.67 | 5,827.50 | 5,796.29 | 31.22 | 186.685 | |
| 8,800.00 | 8,800.00 | 8,767.90 | 8,765.38 | 19.65 | 12.11 | 170.82 | -5,752.89 | 930.17 | 5,827.62 | 5,796.06 | 31.56 | 184.680 | |
| 8,900.00 | 8,900.00 | 8,831.00 | 8,828.48 | 19.87 | 12.19 | 170.82 | -5,753.17 | 929.80 | 5,828.03 | 5,796.17 | 31.86 | 182.939 | |
| 9,000.00 | 9,000.00 | 8,890.75 | 8,888.22 | 20.10 | 12.26 | 170.82 | -5,753.79 | 929.74 | 5,829.12 | 5,796.96 | 32.16 | 181.270 | |
| 9,100.00 | 9,100.00 | 8,945.07 | 8,942.53 | 20.32 | 12.33 | 170.82 | -5,754.81 | 930.19 | 5,831.08 | 5,798.63 | 32.45 | 179.707 | |
| 9,200.00 | 9,200.00 | 9,019.00 | 9,016.43 | 20.55 | 12.43 | 170.82 | -5,756.70 | 930.75 | 5,833.70 | 5,800.93 | 32.77 | 178.039 | |
| 9,300.00 | 9,300.00 | 9,092.09 | 9,089.48 | 20.77 | 12.52 | 170.81 | -5,758.92 | 931.22 | 5,836.77 | 5,803.68 | 33.09 | 176.417 | |
| 9,400.00 | 9,400.00 | 9,196.08 | 9,193.42 | 21.00 | 12.66 | 170.81 | -5,762.22 | 931.89 | 5,840.01 | 5,806.56 | 33.45 | 174.593 | |
| 9,500.00 | 9,500.00 | 9,300.20 | 9,297.49 | 21.22 | 12.80 | 170.82 | -5,765.56 | 931.64 | 5,843.13 | 5,809.32 | 33.81 | 172.807 | |
| 9,600.00 | 9,600.00 | 9,462.30 | 9,459.50 | 21.44 | 13.01 | 170.86 | -5,769.93 | 928.61 | 5,845.38 | 5,811.11 | 34.26 | 170.596 | |
| 9,700.00 | 9,700.00 | 9,559.33 | 9,556.45 | 21.67 | 13.15 | 170.89 | -5,772.40 | 925.68 | 5,847.41 | 5,812.79 | 34.62 | 168.884 | |
| 9,800.00 | 9,800.00 | 9,679.00 | 9,676.01 | 21.89 | 13.31 | 170.93 | -5,775.44 | 921.47 | 5,849.37 | 5,814.36 | 35.02 | 167.035 | |
| 9,900.00 | 9,900.00 | 9,754.08 | 9,751.01 | 22.12 | 13.42 | 170.97 | -5,777.38 | 918.58 | 5,851.33 | 5,815.98 | 35.35 | 165.530 | |
| 9,927.04 | 9,927.04 | 9,774.72 | 9,771.63 | 22.18 | 13.45 | 170.97 | -5,777.98 | 917.74 | 5,851.93 | 5,816.49 | 35.44 | 165.128 | |
| 9,950.00 | 9,949.99 | 9,799.13 | 9,796.01 | 22.23 | 13.48 | 10.94 | -5,778.70 | 916.72 | 5,852.00 | 5,816.48 | 35.52 | 164.752 | |
| 10,000.00 | 9,999.80 | 9,852.14 | 9,848.94 | 22.31 | 13.56 | 11.03 | -5,780.26 | 914.42 | 5,849.01 | 5,813.32 | 35.68 | 163.915 | |

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 #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea Unit #32H - Lea Unit #32H - Lateral #1 - Lateral #1 — Offset Site Error: 0.00 usft

Survey Program: 100-VES-ISCWSA-GYRO-3, 5535-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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14,300.00 | 10,500.00 | 10,370.00 | 10,365.55 | 77.50 | 14.35 | -59.80 | -5,797.16 | 882.93 | 1,845.31 | 1,806.95 | 38.36 | 48.110 | |
| 14,400.00 | 10,500.00 | 10,380.99 | 10,376.49 | 79.26 | 14.36 | -62.19 | -5,797.87 | 882.22 | 1,745.98 | 1,707.49 | 38.49 | 45.362 | |
| 14,500.00 | 10,500.00 | 10,393.26 | 10,388.76 | 81.02 | 14.37 | -62.70 | -5,798.04 | 882.07 | 1,646.81 | 1,608.16 | 38.65 | 42.612 | |
| 14,600.00 | 10,500.00 | 10,385.74 | 10,381.22 | 82.79 | 14.37 | -63.26 | -5,798.22 | 881.90 | 1,547.72 | 1,508.88 | 38.84 | 39.848 | |
| 14,700.00 | 10,500.00 | 10,388.44 | 10,383.90 | 84.56 | 14.38 | -63.88 | -5,798.44 | 881.72 | 1,448.75 | 1,409.67 | 39.09 | 37.065 | |
| 14,800.00 | 10,500.00 | 10,391.40 | 10,386.84 | 86.34 | 14.38 | -64.57 | -5,798.68 | 881.51 | 1,349.92 | 1,310.52 | 39.40 | 34.261 | |
| 14,900.00 | 10,500.00 | 10,402.00 | 10,397.38 | 88.12 | 14.40 | -67.10 | -5,799.64 | 880.75 | 1,251.31 | 1,211.51 | 39.80 | 31.443 | |
| 15,000.00 | 10,500.00 | 10,402.00 | 10,397.38 | 89.90 | 14.40 | -67.10 | -5,799.64 | 880.75 | 1,152.80 | 1,112.48 | 40.33 | 28.588 | |
| 15,100.00 | 10,500.00 | 10,402.00 | 10,397.38 | 91.68 | 14.40 | -67.10 | -5,799.64 | 880.75 | 1,054.59 | 1,013.55 | 41.03 | 25.702 | |
| 15,200.00 | 10,500.00 | 10,402.00 | 10,397.38 | 93.47 | 14.40 | -67.10 | -5,799.64 | 880.75 | 956.74 | 914.75 | 41.99 | 22.787 | |
| 15,300.00 | 10,500.00 | 10,411.15 | 10,406.45 | 95.26 | 14.41 | -69.38 | -5,800.59 | 880.07 | 859.28 | 816.04 | 43.25 | 19.870 | |
| 15,400.00 | 10,500.00 | 10,416.54 | 10,411.79 | 97.05 | 14.42 | -70.76 | -5,801.20 | 879.66 | 762.45 | 717.43 | 45.02 | 16.936 | |
| 15,500.00 | 10,500.00 | 10,422.74 | 10,417.92 | 98.85 | 14.43 | -72.38 | -5,801.95 | 879.17 | 666.45 | 618.91 | 47.53 | 14.020 | |
| 15,600.00 | 10,500.00 | 10,433.00 | 10,428.06 | 100.64 | 14.45 | -75.14 | -5,803.32 | 878.35 | 571.70 | 520.56 | 51.14 | 11.180 | |
| 15,700.00 | 10,500.00 | 10,433.00 | 10,428.06 | 102.44 | 14.45 | -75.14 | -5,803.32 | 878.35 | 478.89 | 422.18 | 56.71 | 8.445 | |
| 15,800.00 | 10,500.00 | 10,447.53 | 10,442.37 | 104.24 | 14.47 | -79.20 | -5,805.52 | 877.13 | 389.25 | 324.32 | 64.93 | 5.995 | |
| 15,891.98 | 10,500.00 | 10,458.40 | 10,453.03 | 105.90 | 14.49 | -82.34 | -5,807.40 | 876.16 | 312.00 | 235.37 | 76.62 | 4.072 | CC, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | Legacy Reserves | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea Unit #34H - Lea Unit #34H - Wellbore #1 - Wellbore #1 — Offset Site Error: 0.00 usft

Survey Program: 44-VES-ISCWSA-GYRO-3, 10260-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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.00 | 5,100.00 | 5,188.78 | 5,187.06 | 11.33 | 9.10 | 170.29 | -5,861.67 | 1,002.55 | 5,947.75 | 5,927.38 | 20.37 | 291.951 | |
| 5,200.00 | 5,200.00 | 15,605.00 | 10,960.88 | 11.56 | 88.42 | 137.51 | -955.65 | 875.31 | 5,924.36 | 5,882.32 | 42.04 | 140.925 | |
| 5,300.00 | 5,300.00 | 15,605.00 | 10,960.88 | 11.78 | 88.42 | 137.51 | -955.65 | 875.31 | 5,826.82 | 5,784.64 | 42.19 | 138.123 | |
| 5,400.00 | 5,400.00 | 15,605.00 | 10,960.88 | 12.00 | 88.42 | 137.51 | -955.65 | 875.31 | 5,729.37 | 5,687.03 | 42.34 | 135.319 | |
| 5,500.00 | 5,500.00 | 15,605.00 | 10,960.88 | 12.23 | 88.42 | 137.51 | -955.65 | 875.31 | 5,632.01 | 5,589.51 | 42.50 | 132.513 | |
| 5,600.00 | 5,600.00 | 15,605.00 | 10,960.88 | 12.45 | 88.42 | 137.51 | -955.65 | 875.31 | 5,534.74 | 5,492.07 | 42.67 | 129.707 | |
| 5,700.00 | 5,700.00 | 15,605.00 | 10,960.88 | 12.68 | 88.42 | 137.51 | -955.65 | 875.31 | 5,437.57 | 5,394.72 | 42.85 | 126.901 | |
| 5,800.00 | 5,800.00 | 15,605.00 | 10,960.88 | 12.90 | 88.42 | 137.51 | -955.65 | 875.31 | 5,340.50 | 5,297.47 | 43.04 | 124.095 | |
| 5,900.00 | 5,900.00 | 15,605.00 | 10,960.88 | 13.13 | 88.42 | 137.51 | -955.65 | 875.31 | 5,243.55 | 5,200.32 | 43.23 | 121.292 | |
| 6,000.00 | 6,000.00 | 15,605.00 | 10,960.88 | 13.35 | 88.42 | 137.51 | -955.65 | 875.31 | 5,146.71 | 5,103.27 | 43.44 | 118.491 | |
| 6,100.00 | 6,100.00 | 15,605.00 | 10,960.88 | 13.58 | 88.42 | 137.51 | -955.65 | 875.31 | 5,049.99 | 5,006.35 | 43.65 | 115.695 | |
| 6,200.00 | 6,200.00 | 15,605.00 | 10,960.88 | 13.80 | 88.42 | 137.51 | -955.65 | 875.31 | 4,953.41 | 4,909.54 | 43.87 | 112.903 | |
| 6,300.00 | 6,300.00 | 15,605.00 | 10,960.88 | 14.03 | 88.42 | 137.51 | -955.65 | 875.31 | 4,856.96 | 4,812.86 | 44.11 | 110.117 | |
| 6,400.00 | 6,400.00 | 15,605.00 | 10,960.88 | 14.25 | 88.42 | 137.51 | -955.65 | 875.31 | 4,760.66 | 4,716.31 | 44.35 | 107.338 | |
| 6,500.00 | 6,500.00 | 15,605.00 | 10,960.88 | 14.48 | 88.42 | 137.51 | -955.65 | 875.31 | 4,664.52 | 4,619.91 | 44.61 | 104.566 | |
| 6,600.00 | 6,600.00 | 15,605.00 | 10,960.88 | 14.70 | 88.42 | 137.51 | -955.65 | 875.31 | 4,568.54 | 4,523.66 | 44.88 | 101.803 | |
| 6,700.00 | 6,700.00 | 15,605.00 | 10,960.88 | 14.93 | 88.42 | 137.51 | -955.65 | 875.31 | 4,472.74 | 4,427.58 | 45.16 | 99.049 | |
| 6,800.00 | 6,800.00 | 15,605.00 | 10,960.88 | 15.15 | 88.42 | 137.51 | -955.65 | 875.31 | 4,377.12 | 4,331.67 | 45.45 | 96.306 | |
| 6,900.00 | 6,900.00 | 15,605.00 | 10,960.88 | 15.38 | 88.42 | 137.51 | -955.65 | 875.31 | 4,281.71 | 4,235.95 | 45.76 | 93.574 | |
| 7,000.00 | 7,000.00 | 15,605.00 | 10,960.88 | 15.60 | 88.42 | 137.51 | -955.65 | 875.31 | 4,186.51 | 4,140.43 | 46.08 | 90.854 | |
| 7,100.00 | 7,100.00 | 15,605.00 | 10,960.88 | 15.83 | 88.42 | 137.51 | -955.65 | 875.31 | 4,091.54 | 4,045.12 | 46.42 | 88.148 | |
| 7,200.00 | 7,200.00 | 15,605.00 | 10,960.88 | 16.05 | 88.42 | 137.51 | -955.65 | 875.31 | 3,996.81 | 3,950.04 | 46.77 | 85.456 | |
| 7,300.00 | 7,300.00 | 15,605.00 | 10,960.88 | 16.28 | 88.42 | 137.51 | -955.65 | 875.31 | 3,902.35 | 3,855.21 | 47.14 | 82.779 | |
| 7,400.00 | 7,400.00 | 15,605.00 | 10,960.88 | 16.50 | 88.42 | 137.51 | -955.65 | 875.31 | 3,808.17 | 3,760.64 | 47.53 | 80.119 | |
| 7,500.00 | 7,500.00 | 15,605.00 | 10,960.88 | 16.72 | 88.42 | 137.51 | -955.65 | 875.31 | 3,714.29 | 3,666.35 | 47.94 | 77.476 | |
| 7,600.00 | 7,600.00 | 15,605.00 | 10,960.88 | 16.95 | 88.42 | 137.51 | -955.65 | 875.31 | 3,620.75 | 3,572.37 | 48.37 | 74.851 | |
| 7,700.00 | 7,700.00 | 15,605.00 | 10,960.88 | 17.17 | 88.42 | 137.51 | -955.65 | 875.31 | 3,527.55 | 3,478.73 | 48.83 | 72.247 | |
| 7,800.00 | 7,800.00 | 15,605.00 | 10,960.88 | 17.40 | 88.42 | 137.51 | -955.65 | 875.31 | 3,434.74 | 3,385.44 | 49.30 | 69.663 | |
| 7,900.00 | 7,900.00 | 15,605.00 | 10,960.88 | 17.62 | 88.42 | 137.51 | -955.65 | 875.31 | 3,342.35 | 3,292.54 | 49.81 | 67.103 | |
| 8,000.00 | 8,000.00 | 15,605.00 | 10,960.88 | 17.85 | 88.42 | 137.51 | -955.65 | 875.31 | 3,250.40 | 3,200.06 | 50.34 | 64.566 | |
| 8,100.00 | 8,100.00 | 15,605.00 | 10,960.88 | 18.07 | 88.42 | 137.51 | -955.65 | 875.31 | 3,158.94 | 3,108.04 | 50.91 | 62.054 | |
| 8,200.00 | 8,200.00 | 15,605.00 | 10,960.88 | 18.30 | 88.42 | 137.51 | -955.65 | 875.31 | 3,068.02 | 3,016.52 | 51.50 | 59.569 | |
| 8,300.00 | 8,300.00 | 15,605.00 | 10,960.88 | 18.52 | 88.42 | 137.51 | -955.65 | 875.31 | 2,977.68 | 2,925.54 | 52.14 | 57.114 | |
| 8,400.00 | 8,400.00 | 15,605.00 | 10,960.88 | 18.75 | 88.42 | 137.51 | -955.65 | 875.31 | 2,887.97 | 2,835.17 | 52.81 | 54.689 | |
| 8,500.00 | 8,500.00 | 15,605.00 | 10,960.88 | 18.97 | 88.42 | 137.51 | -955.65 | 875.31 | 2,798.97 | 2,745.45 | 53.52 | 52.297 | |
| 8,600.00 | 8,600.00 | 15,605.00 | 10,960.88 | 19.20 | 88.42 | 137.51 | -955.65 | 875.31 | 2,710.73 | 2,656.45 | 54.28 | 49.941 | |
| 8,700.00 | 8,700.00 | 15,605.00 | 10,960.88 | 19.42 | 88.42 | 137.51 | -955.65 | 875.31 | 2,623.33 | 2,568.24 | 55.09 | 47.622 | |
| 8,800.00 | 8,800.00 | 15,605.00 | 10,960.88 | 19.65 | 88.42 | 137.51 | -955.65 | 875.31 | 2,536.87 | 2,480.92 | 55.95 | 45.344 | |
| 8,900.00 | 8,900.00 | 15,605.00 | 10,960.88 | 19.87 | 88.42 | 137.51 | -955.65 | 875.31 | 2,451.43 | 2,394.57 | 56.86 | 43.110 | |
| 9,000.00 | 9,000.00 | 15,605.00 | 10,960.88 | 20.10 | 88.42 | 137.51 | -955.65 | 875.31 | 2,367.14 | 2,309.29 | 57.84 | 40.923 | |
| 9,100.00 | 9,100.00 | 15,605.00 | 10,960.88 | 20.32 | 88.42 | 137.51 | -955.65 | 875.31 | 2,284.11 | 2,225.22 | 58.89 | 38.787 | |
| 9,200.00 | 9,200.00 | 15,605.00 | 10,960.88 | 20.55 | 88.42 | 137.51 | -955.65 | 875.31 | 2,202.49 | 2,142.49 | 60.00 | 36.706 | |
| 9,300.00 | 9,300.00 | 15,605.00 | 10,960.88 | 20.77 | 88.42 | 137.51 | -955.65 | 875.31 | 2,122.45 | 2,061.26 | 61.19 | 34.684 | |
| 9,400.00 | 9,400.00 | 15,605.00 | 10,960.88 | 21.00 | 88.42 | 137.51 | -955.65 | 875.31 | 2,044.17 | 1,981.71 | 62.46 | 32.727 | |
| 9,500.00 | 9,500.00 | 15,605.00 | 10,960.88 | 21.22 | 88.42 | 137.51 | -955.65 | 875.31 | 1,967.85 | 1,904.05 | 63.81 | 30.840 | |
| 9,600.00 | 9,600.00 | 15,605.00 | 10,960.88 | 21.44 | 88.42 | 137.51 | -955.65 | 875.31 | 1,893.75 | 1,828.51 | 65.24 | 29.028 | |
| 9,700.00 | 9,700.00 | 15,605.00 | 10,960.88 | 21.67 | 88.42 | 137.51 | -955.65 | 875.31 | 1,822.11 | 1,755.36 | 66.75 | 27.297 | |
| 9,800.00 | 9,800.00 | 15,605.00 | 10,960.88 | 21.89 | 88.42 | 137.51 | -955.65 | 875.31 | 1,753.26 | 1,684.92 | 68.34 | 25.654 | |
| 9,900.00 | 9,900.00 | 15,605.00 | 10,960.88 | 22.12 | 88.42 | 137.51 | -955.65 | 875.31 | 1,687.53 | 1,617.52 | 70.00 | 24.106 | |
| 9,927.04 | 9,927.04 | 15,605.00 | 10,960.88 | 22.18 | 88.42 | 137.51 | -955.65 | 875.31 | 1,670.34 | 1,599.87 | 70.46 | 23.705 | |
| 9,950.00 | 9,949.99 | 15,605.00 | 10,960.88 | 22.23 | 88.42 | -23.28 | -955.65 | 875.31 | 1,655.62 | 1,584.76 | 70.86 | 23.366 | |
| 10,000.00 | 9,999.80 | 15,605.00 | 10,960.88 | 22.31 | 88.42 | -25.15 | -955.65 | 875.31 | 1,622.00 | 1,550.28 | 71.71 | 22.618 | |

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 #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea Unit #34H - Lea Unit #34H - Wellbore #1 - Wellbore #1 — Offset Site Error: 0.00 usft

Survey Program: 44-VES-ISCWSA-GYRO-3, 10260-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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14,300.00 | 10,500.00 | 12,563.44 | 10,944.47 | 77.50 | 37.66 | -140.91 | -3,996.02 | 935.39 | 599.70 | 518.87 | 80.83 | 7.419 | |
| 14,400.00 | 10,500.00 | 12,445.01 | 10,939.57 | 79.26 | 35.84 | -141.30 | -4,114.33 | 934.91 | 591.64 | 511.52 | 80.11 | 7.385 | |
| 14,500.00 | 10,500.00 | 12,346.85 | 10,933.98 | 81.02 | 34.35 | -141.58 | -4,212.33 | 934.04 | 582.08 | 502.05 | 80.03 | 7.274 | |
| 14,600.00 | 10,500.00 | 12,251.35 | 10,928.32 | 82.79 | 32.99 | -141.77 | -4,307.66 | 934.01 | 572.88 | 492.73 | 80.14 | 7.148 | |
| 14,700.00 | 10,500.00 | 12,162.54 | 10,924.85 | 84.56 | 31.72 | -142.08 | -4,396.41 | 933.93 | 565.22 | 484.92 | 80.30 | 7.039 | |
| 14,800.00 | 10,500.00 | 12,062.65 | 10,921.93 | 86.34 | 30.33 | -142.50 | -4,496.25 | 933.79 | 558.34 | 478.25 | 80.09 | 6.971 | |
| 14,900.00 | 10,500.00 | 11,966.76 | 10,919.91 | 88.12 | 29.02 | -142.99 | -4,592.12 | 933.35 | 551.95 | 472.04 | 79.91 | 6.907 | |
| 15,000.00 | 10,500.00 | 11,866.76 | 10,918.32 | 89.90 | 27.64 | -143.56 | -4,692.11 | 932.66 | 545.88 | 466.33 | 79.55 | 6.862 | |
| 15,100.00 | 10,500.00 | 11,769.55 | 10,916.38 | 91.68 | 26.41 | -144.07 | -4,789.29 | 932.39 | 539.79 | 460.40 | 79.39 | 6.799 | |
| 15,200.00 | 10,500.00 | 11,678.31 | 10,915.68 | 93.47 | 25.30 | -144.55 | -4,880.53 | 932.96 | 535.23 | 455.83 | 79.40 | 6.741 | |
| 15,300.00 | 10,500.00 | 11,579.82 | 10,914.96 | 95.26 | 24.17 | -145.02 | -4,979.01 | 934.32 | 531.21 | 451.88 | 79.34 | 6.696 | |
| 15,400.00 | 10,500.00 | 11,485.43 | 10,915.27 | 97.05 | 23.13 | -145.51 | -5,073.38 | 935.97 | 528.29 | 448.94 | 79.35 | 6.658 | |
| 15,500.00 | 10,500.00 | 11,382.96 | 10,915.05 | 98.85 | 22.00 | -145.93 | -5,175.81 | 938.57 | 525.42 | 446.10 | 79.32 | 6.624 | |
| 15,600.00 | 10,500.00 | 11,273.15 | 10,913.65 | 100.64 | 20.89 | -146.30 | -5,285.57 | 941.67 | 521.88 | 442.59 | 79.29 | 6.582 | |
| 15,700.00 | 10,500.00 | 11,043.68 | 10,871.53 | 102.44 | 19.07 | -144.31 | -5,510.01 | 950.09 | 504.92 | 426.38 | 78.54 | 6.429 | |
| 15,800.00 | 10,500.00 | 10,810.42 | 10,759.30 | 104.24 | 18.08 | -136.49 | -5,712.10 | 948.66 | 460.09 | 380.68 | 79.42 | 5.793 | |
| 15,891.98 | 10,500.00 | 10,563.66 | 10,555.61 | 105.90 | 17.81 | -105.98 | -5,845.05 | 957.39 | 401.51 | 315.11 | 86.40 | 4.647 | CC, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | Legacy Reserves | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Lea Unit #50H - Lea Unit #50H - Lateral #1 - Design #2 — **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 | 5,199.00 | 5,199.00 | 11.56 | 11.55 | 89.20 | 0.70 | 49.90 | 49.90 | 26.80 | 23.11 | 2.160 | |
| 5,300.00 | 5,300.00 | 5,299.00 | 5,299.00 | 11.78 | 11.78 | 89.20 | 0.70 | 49.90 | 49.90 | 26.35 | 23.56 | 2.118 | |
| 5,400.00 | 5,400.00 | 5,399.00 | 5,399.00 | 12.00 | 12.00 | 89.20 | 0.70 | 49.90 | 49.90 | 25.90 | 24.01 | 2.079 | |
| 5,500.00 | 5,500.00 | 5,499.00 | 5,499.00 | 12.23 | 12.23 | 89.20 | 0.70 | 49.90 | 49.90 | 25.45 | 24.46 | 2.041 | |
| 5,600.00 | 5,600.00 | 5,599.00 | 5,599.00 | 12.45 | 12.45 | 89.20 | 0.70 | 49.90 | 49.90 | 25.00 | 24.91 | 2.004 | |
| 5,700.00 | 5,700.00 | 5,699.00 | 5,699.00 | 12.68 | 12.68 | 89.20 | 0.70 | 49.90 | 49.90 | 24.55 | 25.36 | 1.968 | |
| 5,800.00 | 5,800.00 | 5,799.00 | 5,799.00 | 12.90 | 12.90 | 89.20 | 0.70 | 49.90 | 49.90 | 24.10 | 25.81 | 1.934 | |
| 5,900.00 | 5,900.00 | 5,899.00 | 5,899.00 | 13.13 | 13.13 | 89.20 | 0.70 | 49.90 | 49.90 | 23.65 | 26.25 | 1.901 | |
| 6,000.00 | 6,000.00 | 5,999.00 | 5,999.00 | 13.35 | 13.35 | 89.20 | 0.70 | 49.90 | 49.90 | 23.20 | 26.70 | 1.869 | |
| 6,100.00 | 6,100.00 | 6,099.00 | 6,099.00 | 13.58 | 13.58 | 89.20 | 0.70 | 49.90 | 49.90 | 22.75 | 27.15 | 1.838 | |
| 6,200.00 | 6,200.00 | 6,199.00 | 6,199.00 | 13.80 | 13.80 | 89.20 | 0.70 | 49.90 | 49.90 | 22.30 | 27.60 | 1.808 | |
| 6,300.00 | 6,300.00 | 6,299.00 | 6,299.00 | 14.03 | 14.03 | 89.20 | 0.70 | 49.90 | 49.90 | 21.85 | 28.05 | 1.779 | |
| 6,400.00 | 6,400.00 | 6,399.00 | 6,399.00 | 14.25 | 14.25 | 89.20 | 0.70 | 49.90 | 49.90 | 21.40 | 28.50 | 1.751 | |
| 6,500.00 | 6,500.00 | 6,499.00 | 6,499.00 | 14.48 | 14.47 | 89.20 | 0.70 | 49.90 | 49.90 | 20.95 | 28.95 | 1.724 | |
| 6,600.00 | 6,600.00 | 6,599.00 | 6,599.00 | 14.70 | 14.70 | 89.20 | 0.70 | 49.90 | 49.90 | 20.50 | 29.40 | 1.697 | |
| 6,700.00 | 6,700.00 | 6,699.00 | 6,699.00 | 14.93 | 14.92 | 89.20 | 0.70 | 49.90 | 49.90 | 20.05 | 29.85 | 1.672 | |
| 6,800.00 | 6,800.00 | 6,799.00 | 6,799.00 | 15.15 | 15.15 | 89.20 | 0.70 | 49.90 | 49.90 | 19.60 | 30.30 | 1.647 | |
| 6,900.00 | 6,900.00 | 6,899.00 | 6,899.00 | 15.38 | 15.37 | 89.20 | 0.70 | 49.90 | 49.90 | 19.15 | 30.75 | 1.623 | |
| 7,000.00 | 7,000.00 | 6,999.00 | 6,999.00 | 15.60 | 15.60 | 89.20 | 0.70 | 49.90 | 49.90 | 18.71 | 31.20 | 1.600 | |
| 7,100.00 | 7,100.00 | 7,099.00 | 7,099.00 | 15.83 | 15.82 | 89.20 | 0.70 | 49.90 | 49.90 | 18.26 | 31.65 | 1.577 | |
| 7,200.00 | 7,200.00 | 7,199.00 | 7,199.00 | 16.05 | 16.05 | 89.20 | 0.70 | 49.90 | 49.90 | 17.81 | 32.10 | 1.555 | |
| 7,300.00 | 7,300.00 | 7,299.00 | 7,299.00 | 16.28 | 16.27 | 89.20 | 0.70 | 49.90 | 49.90 | 17.36 | 32.55 | 1.533 | |
| 7,400.00 | 7,400.00 | 7,399.00 | 7,399.00 | 16.50 | 16.50 | 89.20 | 0.70 | 49.90 | 49.90 | 16.91 | 33.00 | 1.512 | |
| 7,500.00 | 7,500.00 | 7,499.00 | 7,499.00 | 16.72 | 16.72 | 89.20 | 0.70 | 49.90 | 49.90 | 16.46 | 33.45 | 1.492 | Level 3 |
| 7,600.00 | 7,600.00 | 7,599.00 | 7,599.00 | 16.95 | 16.95 | 89.20 | 0.70 | 49.90 | 49.90 | 16.01 | 33.90 | 1.472 | Level 3 |
| 7,700.00 | 7,700.00 | 7,699.00 | 7,699.00 | 17.17 | 17.17 | 89.20 | 0.70 | 49.90 | 49.90 | 15.56 | 34.35 | 1.453 | Level 3 |
| 7,800.00 | 7,800.00 | 7,799.00 | 7,799.00 | 17.40 | 17.40 | 89.20 | 0.70 | 49.90 | 49.90 | 15.11 | 34.80 | 1.434 | Level 3 |
| 7,900.00 | 7,900.00 | 7,899.00 | 7,899.00 | 17.62 | 17.62 | 89.20 | 0.70 | 49.90 | 49.90 | 14.66 | 35.25 | 1.416 | Level 3 |
| 8,000.00 | 8,000.00 | 7,999.00 | 7,999.00 | 17.85 | 17.85 | 89.20 | 0.70 | 49.90 | 49.90 | 14.21 | 35.70 | 1.398 | Level 3 |
| 8,100.00 | 8,100.00 | 8,099.00 | 8,099.00 | 18.07 | 18.07 | 89.20 | 0.70 | 49.90 | 49.90 | 13.76 | 36.14 | 1.381 | Level 3 |
| 8,200.00 | 8,200.00 | 8,199.00 | 8,199.00 | 18.30 | 18.30 | 89.20 | 0.70 | 49.90 | 49.90 | 13.31 | 36.59 | 1.364 | Level 3 |
| 8,300.00 | 8,300.00 | 8,299.00 | 8,299.00 | 18.52 | 18.52 | 89.20 | 0.70 | 49.90 | 49.90 | 12.86 | 37.04 | 1.347 | Level 3 |
| 8,400.00 | 8,400.00 | 8,399.00 | 8,399.00 | 18.75 | 18.75 | 89.20 | 0.70 | 49.90 | 49.90 | 12.41 | 37.49 | 1.331 | Level 3 |
| 8,500.00 | 8,500.00 | 8,499.00 | 8,499.00 | 18.97 | 18.97 | 89.20 | 0.70 | 49.90 | 49.90 | 11.96 | 37.94 | 1.315 | Level 3 |
| 8,600.00 | 8,600.00 | 8,599.00 | 8,599.00 | 19.20 | 19.20 | 89.20 | 0.70 | 49.90 | 49.90 | 11.51 | 38.39 | 1.300 | Level 3 |
| 8,700.00 | 8,700.00 | 8,699.00 | 8,699.00 | 19.42 | 19.42 | 89.20 | 0.70 | 49.90 | 49.90 | 11.06 | 38.84 | 1.285 | Level 3 |
| 8,800.00 | 8,800.00 | 8,799.00 | 8,799.00 | 19.65 | 19.64 | 89.20 | 0.70 | 49.90 | 49.90 | 10.61 | 39.29 | 1.270 | Level 3 |
| 8,900.00 | 8,900.00 | 8,899.00 | 8,899.00 | 19.87 | 19.87 | 89.20 | 0.70 | 49.90 | 49.90 | 10.16 | 39.74 | 1.256 | Level 3 |
| 9,000.00 | 9,000.00 | 8,999.00 | 8,999.00 | 20.10 | 20.09 | 89.20 | 0.70 | 49.90 | 49.90 | 9.71 | 40.19 | 1.242 | Level 2 |
| 9,010.72 | 9,010.72 | 9,009.72 | 9,009.72 | 20.12 | 20.12 | 89.20 | 0.70 | 49.90 | 49.90 | 9.67 | 40.24 | 1.240 | Level 2, CC |
| 9,100.00 | 9,100.00 | 9,098.61 | 9,098.60 | 20.32 | 20.31 | 89.36 | 0.56 | 49.96 | 49.96 | 9.33 | 40.63 | 1.230 | Level 2, ES, SF |
| 9,200.00 | 9,200.00 | 9,195.12 | 9,194.67 | 20.55 | 20.48 | 97.73 | -7.24 | 53.30 | 53.96 | 13.05 | 40.90 | 1.319 | Level 3 |
| 9,300.00 | 9,300.00 | 9,287.75 | 9,285.00 | 20.77 | 20.64 | 112.86 | -25.82 | 61.24 | 67.92 | 27.29 | 40.63 | 1.672 | |
| 9,400.00 | 9,400.00 | 9,373.88 | 9,366.02 | 21.00 | 20.79 | 125.88 | -52.58 | 72.69 | 95.58 | 56.01 | 39.57 | 2.415 | |
| 9,500.00 | 9,500.00 | 9,450.00 | 9,434.25 | 21.22 | 20.94 | 134.19 | -83.52 | 85.93 | 136.20 | 98.36 | 37.84 | 3.600 | |
| 9,600.00 | 9,600.00 | 9,521.58 | 9,494.82 | 21.44 | 21.10 | 139.59 | -118.53 | 100.90 | 187.31 | 150.85 | 36.46 | 5.137 | |
| 9,700.00 | 9,700.00 | 9,582.83 | 9,543.42 | 21.67 | 21.27 | 142.90 | -152.78 | 115.56 | 246.78 | 211.91 | 34.87 | 7.077 | |
| 9,800.00 | 9,800.00 | 9,636.44 | 9,583.20 | 21.89 | 21.44 | 145.09 | -185.79 | 129.68 | 312.90 | 279.51 | 33.38 | 9.374 | |
| 9,900.00 | 9,900.00 | 9,683.23 | 9,615.66 | 22.12 | 21.61 | 146.60 | -216.78 | 142.93 | 384.33 | 352.29 | 32.03 | 11.998 | |
| 9,927.04 | 9,927.04 | 9,700.00 | 9,626.74 | 22.18 | 21.68 | 147.07 | -228.35 | 147.88 | 404.47 | 372.45 | 32.01 | 12.634 | |
| 9,950.00 | 9,949.99 | 9,700.00 | 9,626.74 | 22.23 | 21.68 | -12.42 | -228.35 | 147.88 | 421.45 | 390.32 | 31.12 | 13.541 | |
| 10,000.00 | 9,999.80 | 9,726.25 | 9,643.49 | 22.31 | 21.79 | -10.89 | -246.93 | 155.83 | 457.03 | 426.29 | 30.74 | 14.868 | |

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 #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

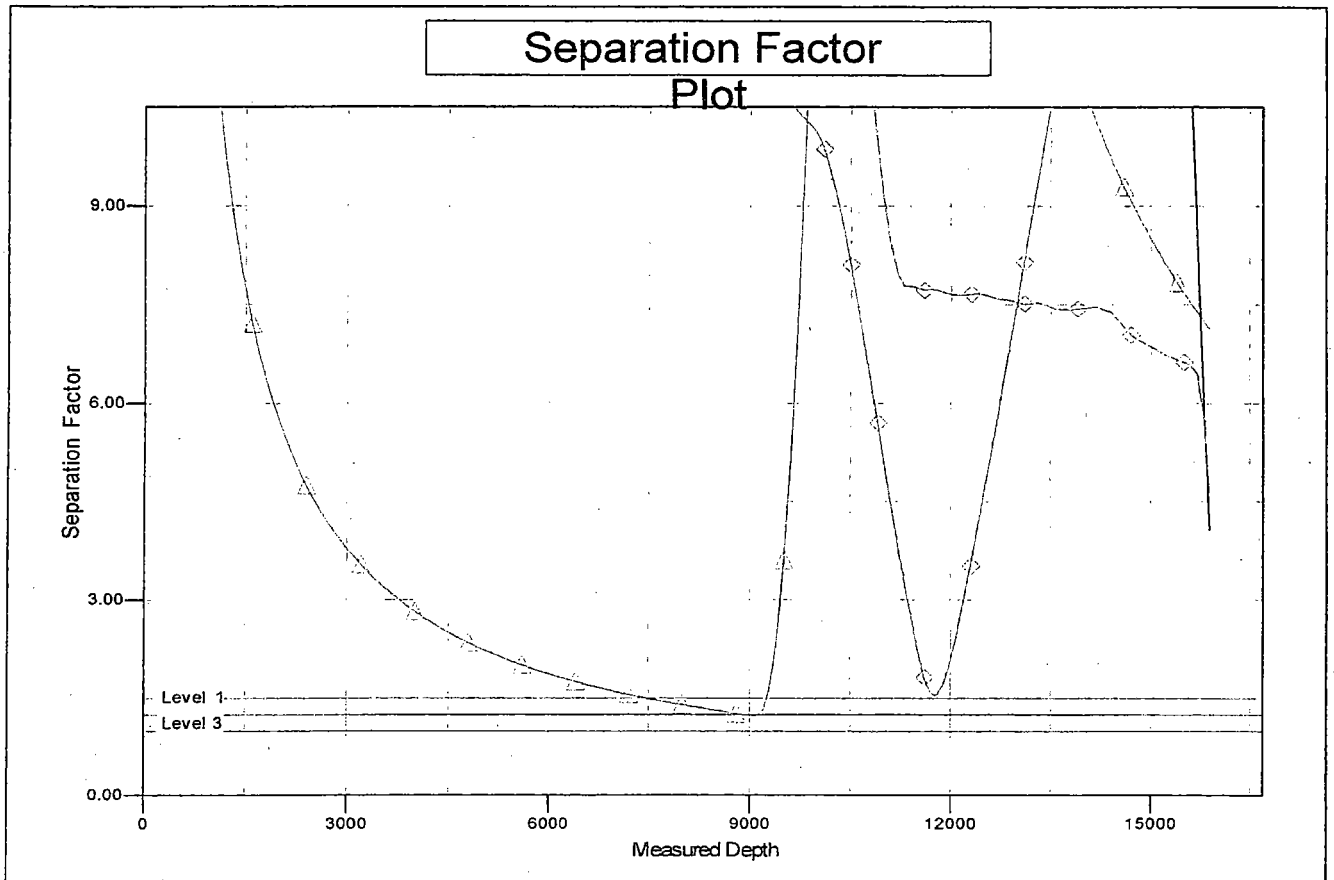
**Offset Design** Lea Unit #50H - Lea Unit #50H - Lateral #1 - Design #2 — Offset Site Error: 0.00 usft

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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14,200.00 | 10,500.00 | 13,457.67 | 9,800.00 | 75.75 | 76.07 | -16.44 | -3,866.88 | 754.42 | 728.81 | 657.47 | 71.33 | 10.217 | |
| 14,300.00 | 10,500.00 | 13,557.66 | 9,800.00 | 77.50 | 77.83 | -16.54 | -3,966.49 | 763.08 | 729.19 | 656.05 | 73.14 | 9.970 | |
| 14,400.00 | 10,500.00 | 13,657.65 | 9,800.00 | 79.26 | 79.60 | -16.65 | -4,066.11 | 771.75 | 729.58 | 654.62 | 74.96 | 9.733 | |
| 14,500.00 | 10,500.00 | 13,757.64 | 9,800.00 | 81.02 | 81.37 | -16.75 | -4,165.72 | 780.42 | 729.97 | 653.18 | 76.79 | 9.506 | |
| 14,600.00 | 10,500.00 | 13,857.63 | 9,800.00 | 82.79 | 83.15 | -16.85 | -4,265.34 | 789.08 | 730.36 | 651.73 | 78.63 | 9.289 | |
| 14,700.00 | 10,500.00 | 13,957.62 | 9,800.00 | 84.56 | 84.93 | -16.95 | -4,364.95 | 797.75 | 730.75 | 650.27 | 80.48 | 9.080 | |
| 14,800.00 | 10,500.00 | 14,057.61 | 9,800.00 | 86.34 | 86.72 | -17.05 | -4,464.57 | 806.41 | 731.15 | 648.81 | 82.34 | 8.880 | |
| 14,900.00 | 10,500.00 | 14,157.61 | 9,800.00 | 88.12 | 88.50 | -17.15 | -4,564.18 | 815.08 | 731.55 | 647.34 | 84.21 | 8.688 | |
| 15,000.00 | 10,500.00 | 14,257.60 | 9,800.00 | 89.90 | 90.30 | -17.25 | -4,663.80 | 823.74 | 731.95 | 645.86 | 86.08 | 8.503 | |
| 15,100.00 | 10,500.00 | 14,357.59 | 9,800.00 | 91.68 | 92.09 | -17.36 | -4,763.41 | 832.41 | 732.35 | 644.38 | 87.97 | 8.325 | |
| 15,200.00 | 10,500.00 | 14,457.58 | 9,800.00 | 93.47 | 93.89 | -17.46 | -4,863.03 | 841.07 | 732.75 | 642.89 | 89.87 | 8.154 | |
| 15,300.00 | 10,500.00 | 14,557.57 | 9,800.00 | 95.26 | 95.68 | -17.56 | -4,962.64 | 849.74 | 733.16 | 641.39 | 91.77 | 7.989 | |
| 15,400.00 | 10,500.00 | 14,657.56 | 9,800.00 | 97.05 | 97.49 | -17.66 | -5,062.26 | 858.41 | 733.57 | 639.89 | 93.69 | 7.830 | |
| 15,500.00 | 10,500.00 | 14,757.55 | 9,800.00 | 98.85 | 99.29 | -17.76 | -5,161.87 | 867.07 | 733.98 | 638.37 | 95.61 | 7.677 | |
| 15,600.00 | 10,500.00 | 14,857.54 | 9,800.00 | 100.64 | 101.09 | -17.86 | -5,261.49 | 875.74 | 734.40 | 636.86 | 97.54 | 7.529 | |
| 15,700.00 | 10,500.00 | 14,957.53 | 9,800.00 | 102.44 | 102.90 | -17.96 | -5,361.10 | 884.40 | 734.81 | 635.33 | 99.48 | 7.387 | |
| 15,800.00 | 10,500.00 | 15,057.52 | 9,800.00 | 104.24 | 104.71 | -18.06 | -5,460.71 | 893.07 | 735.23 | 633.80 | 101.43 | 7.249 | |
| 15,891.98 | 10,500.00 | 15,149.49 | 9,800.00 | 105.90 | 106.38 | -18.15 | -5,552.34 | 901.04 | 735.62 | 632.39 | 103.23 | 7.126 | |

| | | | |
|---|---|---|---|
| **Company:** | Legacy Reserves | **Local Co-ordinate Reference:** | Well Lea Unit #49H |
| **Project:** | Lea County, NM (NAD-27 2015) | **TVD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Reference Site:** | Lea Unit #49H | **MD Reference:** | KB @ 3696.00usft (McVay 4) |
| **Site Error:** | 0.00 usft | **North Reference:** | Grid |
| **Reference Well:** | Lea Unit #49H | **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 #2 | **Offset TVD Reference:** | Offset Datum |

| | |
|---|---|
| Reference Depths are relative to KB @ 3696.00usft (McVay 4) | Coordinates are relative to: Lea Unit #49H |
| Offset Depths are relative to Offset Datum | Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30 |
| Central Meridian is 104° 20' 0.000 W | Grid Convergence at Surface is: 0.44° |




LEGEND

- Lea Unit#50H, Lateral#1, Design#2 V0
- Lea Unit#05, OH, OH V0
- Lea Unit#34H, Wellbore#1, Wellbore#1 V0
- Lea Unit SWD#08, OH, OH V0
- Lea Unit#32H, Lateral#1, Lateral#1 V0

# LEGACY RESERVES OPERATING, L. P.
## HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN
## LEA UNIT 49H
## 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.

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.

| Depth | Mud Wt. | Visc | Fluid Loss | Type Mud |
|---|---|---|---|---|
| 0' to 1800' | 8.4-8.9 | 30-32 | NC | Fresh water gel spud mud |
| 1800' to 5600' | 9.8-10 | 28-29 | NC | Brine water |
| 5600' to 10,500' | 8.4-8.6 | 28-29 | NC | Fresh water/brine, use hi-viscosity Weeps to clean hole |
| 10,500' to 15,892' | 8.9-9.1 | 28-29 | 18-20 | Fresh water/brine |

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. A Pason PVT system will be rigged up prior to spudding this well. A volume monitoring system that measures, calculates and displays readings from the mud system on the rig to alert the rig crew of impending gas kicks and lost circulation. In order to effectively run open hole logs and casing, the mud viscosity and fluid loss properties may be adjusted.

9. ***Proposed Drilling Plan:***

Set surface and intermediate casing and cement to surface. Drill 8-3/4" to ~10,500', Kick off and drill 8-3/4" hole to TD of ~15,892'. Set 5-1/2" casing from surface to TD (~ 15,892'). Cement 5-1/2" production casing back to surface.

10. ***Casing Information:***

| String | Hole size | Depth | Casing OD | Collar | Weight | Grade |
|---|---|---|---|---|---|---|
| Surface | 17-1/2" | 1800' MD | New 13-3/8" | STC | 54.5# | J-55 |
| Intermediate | 12-1/4" | 4000' MD | New 9-5/8" | LTC | 40# | J-55 |
| Intermediate | 12-1/4" | 5600' MD | New 9-5/8" | LTC | 40# | HCK-55 |
| Production | 8-3/4" | 15,892' MD | New 5-1/2" | BTC | 20# | P-110 |

| 13-3/8", J-55: | | 9-5/8", J-55 | |
|---|---|---|---|
| Collapse Factor: | 1.42 | Collapse Factor: | 1.25 |
| Burst Factor: | 3.86 | Burst Factor: | 1.41 |
| Tension Factor: | 2.59 | Tension Factor: | 1.6 |

| 9-5/8", HCK-55 | | 5-1/2", P-110 | |
|---|---|---|---|
| Collapse Factor: | 1.45 | Collapse Factor: | 2.03 |
| Burst Factor: | 1.27 | Burst Factor: | 1.28 |
| Tension Factor: | 4.23 | Tension Factor: | 1.78 |

11. ***Cementing Information:***

*Surface Casing (75% excess on lead & 75% excess on tail to design for cement top at surface):*

Lead: 1100 sxs class C cement + 4% bwoc bentonite II + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005% bwoc Static Free + 0.005 gps FP-6L (13.50 ppg, 1.93 cfps, 9.71 gps wtr).

Tail: 200 sxs class C cement + 1.5% bwoc Calcium Chloride + 0.005 lbs/sack Static Free + 0.005 gps FP-6L (14.80 ppg, 1.34 cfps, 6.35 gps wtr).

*Intermediate Casing*

Lead: 400 sx (35:65) paz (fly ash) class C cement+ 4% bwoc Bentonite II+ 5% bwoc MPA-5 + 0,25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sk cello flake+ 0.005 lbs/sk defoamer + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr)

Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr)

Stage 2

Lead: 600 sx (35:65) paz (fly ash) class C cement+ 4% bwoc bentonite II + 5% bwoc MPA-5 + 0,25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sk Cello Flake+ 0.005 lbs/sk Static Free+ 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr)

Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr)

Stage 3

Lead: 600 sx (35:65) paz (fly ash) class C cement+ 4% bwoc bentonite II + 5% bwoc MPA-5 + 0,25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sk Cello Flake+ 0.005 lbs/sk Static Free+ 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr)

Tail: 200 sx class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr)

*Production Casing (80% excess on lead & 20% excess on tail to design for cement top at surface):*

Lead: 1600 sxs (50:50) poz (fly ash) class H cement + 10% bwoc bentonite II + 5% bwow sodium chloride + 5 pps LCM-1 + 0.005 lbs/sk Static Free + 0.005 gps FP-6L (11.90 ppg, 2.38 cf/sx, 13.22 gps wtr).

Tail: 1200 sxs Class H (15:61:11) poz (fly ash): class H cement: CSE-2 + 4% bwow sodium chloride + 3 pps LCM-1 + 0.6% bwoc FL-25 + 0.005 gps FP-6L + 0.005% bwoc Static Free (13.20 ppg, 1.62 cf/sx, 9.45 gps wtr).

12. ***Pressure Control Eqpt/BOP:***

Legacy Reserves plans to use a 13-5/8" 5000-psi working pressure BOP system consisting of a double ram BOP with one ram being pipe and one ram being blind, a 5000-psi annular type preventer, a 5000-psi choke manifold and 80 gallon accumulator with floor, five remote operating stations and an auxiliary power system. A rotating head will be utilized as needed. A drill string safety valve in the open position will be available on the rig floor. A mud gas separator will be available for use if needed.

**A 3M BOP will be used to drill from the surface casing shoe (~1800') to the intermediate casing shoe (~5600'). The BOP will be a 5M system, however the "A" section wellhead will be a 3M wellhead (see attached BOP Diagram).**

The BOP unit will be hydraulically operated. The BOP will be operated at least once per day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling.

The BOPs will be tested by an independent service company to 250 psi low and 5000 psi high.

H. Cuts and Fills: Not significant

I. Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and with the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.

J. The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along the access road route.

K. The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

3. LOCATION OF EXISTING WELLS:

See well map attachment for all wells within a one-mile radius.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. In the event the well is found productive, a 4" surface poly flowline (125 psi) (oil/gas/water) will be laid along roads, for 5363.9', to the satellite battery located in the NW/4SW/4 of section 12, T. 20 S., R. 34 E. The company also proposes to construct 928.4' of a 23 kv overhead electric line, south and west, alongside of the proposed access road.

B. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted to BLM specifications.

C. Containment berms will be constructed completely around production facilities designed to hold fluids. The containment berms will be constructed or compacted subsoil, be sufficiently impervious, hold 1½ times the capacity of the largest tank and away from cut or fill areas.

5. LOCATION AND TYPE OF WATER SUPPLY: **9,500 bbls of fresh water and 6,500 bbls of brine water will be used for this well (See attached water source map).**

The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from commercial water stations in the area and hauled to the location by transport truck using the existing and proposed roads shown in the attached survey plats. If a commercial water well is nearby, a temporary, surface poly line, will be laid along existing roads or other ROW easements and the water pumped to the well. No water well will be drilled on the location.

6. SOURCE OF CONSTRUCTION MATERIALS: **4,000 YARDS OF CALICHE WILL BE USED TO CONSTRUCT THIS WELL PAD AND ACCESS ROAD.**

Any construction material that may be required for surfacing of the drill pad and access road will be from a contractor having a permitted source of materials within the general area. No

C. Reclamation Performance Standards

The following reclamation performance standards will be met:

*Interim Reclamation* – Includes disturbed areas that may be redisturbed during operations and will be redisturbed at final reclamation to achieve restoration of the original landform and a natural vegetative community.

- Disturbed areas not needed for active, long-term production operations or vehicle travel will be recontoured, protected from erosion, and revegetated with a self-sustaining, vigorous, diverse, native (or as otherwise approved) plant community sufficient to minimize visual impacts, provide forage, stabilize soils, and impede the invasion of noxious, invasive, and non-native weeds.

*Final Reclamation* – Includes disturbed areas where the original landform and a natural vegetative community will be restored and it is anticipated the site will not be redisturbed for future development.

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

D. Reclamation Actions

Earthwork for interim and final reclamation will be completed within 6 months of well completion or plugging unless a delay is approved in writing by the BLM authorized officer. The following minimum reclamation actions will be taken to ensure that the reclamation objectives and standards are met. It may be necessary to take additional reclamation actions beyond the minimum in order to achieve the Reclamation Standards.

Reclamation – General

Notification:

- The BLM will be notified at least 3 days prior to commencement of any reclamation operations.

Housekeeping:

A. The area surrounding the well site is in a fairly flat, sandy loam, rolling hills type area. The vegetation consists of Shinnery Oak, Yucca, Mesquite with three-awns and some dropseed species.
B. There is no permanent or live water in the immediate area.
C. There are no dwellings within 2 miles of this location.
D. A class III archaeological survey has been conducted and filed with the Carlsbad Field Office of the Bureau of Land Management.

13. BOND COVERAGE:

Bond Coverage is Nationwide; Bond Number NMB-001014.

OPERATORS REPRESENTATIVE:

The Legacy Reserves Operating L.P. representatives responsible for ensuring compliance of the surface use plan are listed below:

Drilling:

Matt Dickson – Drilling Engineer, Legacy Reserves Operating, L.P.
P.O. Box 10848
Midland, Texas 79702
(432) 689-5204 (Office)
(432) 212-5698 (Cell)

**ON-SITE PERFORMED ON 6/16/15 RESULTED IN PROPOSED LOCATION BEING OK WHERE STAKED. IT WAS AGREED TO TURN THE LOCATION TO A V-DOOR EAST. IT WAS ALSO AGREED TO MOVE AND PLACE THE TOP SOIL TO THE NORTH, AND THE INTERIM RECLAMATION WILL BE THE NORTH, EAST, SOUTH AND WEST PORTION OF THIS PAD.**

**PRESENT AT ON-SITE:**
**CRAIG SPARKMAN – LEGACY RESERVES OPERATING, L.P.**
**TRISH BADBEAR – BLM**
**CASSANDRA BROOKS – BLM**
**MATT MATHIS – CEHMM**
**CHRISTOPHER FREEMAN – CEHMM**
**DOUG BURGER – LEGACY LAND & ENVIRONMENTAL SOLUTIONS**
**KELLY POINDEXTER – WEST COMPANY OF MIDLAND – SURVEYORS**

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed in conformity with the APD package and the terms and conditions under which it is approved. I also certify that I, or Legacy Reserves Operating, L.P., am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 23rd day of January 2017.