16-874

Form 3160-3
(March 2012)

HOBBS OCD

APR 04 2016

RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NM-02127B

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
LEA UNIT (NMNM-70976B)

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
LEA UNIT 46H (302802)

2. Name of Operator LEGACY RESERVES OPERATING, L. P. 240974

9. API Well No.
30-025-43144

3a. Address P. O. BOX 10848
MIDLAND, TX. 79702

3b. Phone No. *(include area code)*
432-221-6334 (Craig Sparkman)

10. Field and Pool, or Exploratory
LEA; BONE SPRING (37570) KB

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 630 FSL & 760 FWL Section 1 (First Take: 330 FNL & 890 FWL, Section 12)
At proposed prod. zone 330 FSL & 890 FWL Section 12 (Last take)

11. Sec., T. R. M. or Blk. and Survey or Area
SHL: SECTION 1, T. 20 S., R. 34 E.
BHL: SECTION 12, T. 20 S., R. 34 E.

14. Distance in miles and direction from nearest town or post office*
26 MILES SOUTHWEST OF HOBBS, NM

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
SHL: 630'
BHL: 330'

16. No. of acres in lease
480

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
230' #45H

19. Proposed Depth
TVD: 9,500'
MD: 14,843'

20. BLM/BIA Bond No. on file
NMB001014 & NMB001015

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3674' GL

22. Approximate date work will start*
ASAP

23. Estimated duration
45 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature
Barry W. Hunt

Name *(Printed/Typed)*
BARRY W. HUNT

Date
2/22/16

Title
PERMIT AGENT FOR LEGACY RESERVES OPERATING, L. P.

Approved by *(Signature)*
Steve Caffey

Name *(Printed/Typed)*

Date
APR 1 2016

Title
FIELD MANAGER

Office
CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

Lea County Controlled Water Basin

KZ 04/06/16

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

APR 14 2016

LEGACY
RESERVES

June 30, 2015

RE: Legacy Reserves – Lea Unit :
Surface Agreement with George L. Klein on behalf of Klein Properties LLC

To whom it may concern:

This letter is to inform you that Legacy Reserves Operating LP is currently in the process of negotiating a Surface Use Agreement with George L. Klein, on behalf of Klein Properties LLC for the purposes of building well pad locations and other necessary oil and gas operations on land owned by Klein Properties LLC. Legacy anticipates this agreement will be completed in the near future.

The agreement will cover all of Section 1-20S-34E. If there are any questions for George Klein, he can be reached by phone or mail by using the following information:

- Phone – (214) 738-2046
- Address – PO Box 541382
  Grand Prairie, Texas 75054-1382

If you have any questions in regards to the Surface Use Agreement with Klein Properties LLC please call Clay Roberts, Landman, at Legacy Reserves. He can be reached at 432-689-5206

Sincerely,

303 W. Wall, Suite 1400 ■ Midland, Texas 79701 ■ P.O. Box 10848 ■ Midland, Texas 79702
OFFICE 432-689-5200 ■ FAX 432-684-3774

DRILLING PLAN

LEA UNIT 46H

LEGACY RESERVES OPERATING LP

SHL: Unit M, Section 01

BHL: Unit M, Section 12

T20S-R34E, Lea County, New Mexico

To satisfy requirements of Onshore Oil and Gas Order No. 1, Legacy Reserves Operating LP submits the following for your consideration:

1. ***Location:*** SHL: 630' FSL & 760' FWL, Sec. 01, T20S-R34E (First Take: 330 FNL & 890 FWL, Sec. 12)
   BHL: 330' FSL & 890' FWL, Sec. 12, T20S-R34E (Last Take)

2. ***Elevations:*** 3,674' GL

3. ***Geological Name of Surface Formation:*** Quaternary alluvium deposits

4. ***Drilling Tools and Associated Equipment:*** Rotary drilling rig using fluid as a means for removal of solid cuttings from the well.

5. ***Proposed Drilling Depth:*** 14,843' MD 9,500' TVD

6. ***Estimated Tops of Geological Markers:***

Rustler	1,680'	Delaware	5,666'
Top Salt	1,720'	Bone Spring Lime	8,205'
Bottom Salt	3,150'	Avalon	8,760'
Top of Capitan Reef	3,150'	1st. Bone Spring	9,501'
Capitan Reef Bottom	4,710'		
San Andres	4,710'		

7. ***Possible mineral bearing formations:***
   Primary: Bone Spring (oil); Secondary: Delaware (oil), Avalon (oil), fresh water (~125')

8. ***Proposed Mud System:***

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 5400'	9.8-10	28-29	NC	Brine water
5400' to 9,500'	8.4-8.6	28-29	NC	Fresh water/brine, use hi-viscosity Weeps to clean hole
9,500' to 14,843'	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 ~9,500', Kick off and drill 8-3/4" hole to TD of ~14,843'. Set 5-1/2" casing from surface to TD (~ 14,843'). 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"	3901' MD	New 9-5/8"	LTC	40#	J-55
Intermediate	12-1/4"	5400' MD	New 9-5/8"	LTC	40#	HCK-55
Production	8-3/4"	14,843' MD	New 5-1/2"	BTC	20#	P-110

5-1/2", P-110:		9-5/8", HCK-55	
Collapse Factor:	1.55	Collapse Factor:	1.28
Burst Factor:	1.29	Burst Factor:	2.03
Tension Factor:	3.06	Tension Factor:	3.33

9-5/8, J-55		13-3/8, J-55	
Collapse Factor:	1.24	Collapse Factor:	3.08
Burst Factor:	1.82	Burst Factor:	3.54
Tension Factor:	3.12	Tension Factor:	5.66

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 (80% excess on lead & 80% excess on tail to design for cement top at surface):
A DV tool and ECP will be used to cement the 9-5/8" casing if losses greater than 50% are encountered in the Capitan Reef. DV tool will be placed at approximately 3,950'.

No DV tool:

Lead: 1300 sxs (35:65) poz (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 cf/sx, 8.81 gps wtr).

Tail: 300 sxs class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr).

With DV Tool:

Stage 1

Lead: 300 sxs (35:65) poz (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 cf/sx, 8.81 gps wtr).

Tail: 300 sxs class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr).

Stage 2

Lead: 800 sxs (35:65) poz (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 cf/sx, 8.81 gps wtr).

Tail: 200 sxs 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 (~5400'). 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.

13. ***Testing, Logging, and Coring Program:***

See COA

A. Mud logging program: 2 man unit from approximately 200' above the top of the Delaware to TD (5466' – 14,843').

B. No open hole logs, DST's or cores are planned.

14. ***Potential Hazards***

See COA

No abnormal pressures or temperatures are expected during the drilling of this well. If H2S is encountered the operator will comply with provisions of Onshore Order 6. Since there will be an H2S Safety package on location, attached is an "H2S Drilling Operations Plan". Adequate flare lines will be installed on the mud/gas separator so gas may be flared safely. All personnel will be familiar with all aspects of safe operations of equipment being used. Lost circulation may occur and a cement contingency plan is included in this plan along with mud materials to be kept on location at all times in order to combat lost circulation or unexpected kicks. Estimated BHP: 4180 psi, estimated BHT: 162°F.

15. ***Road and Location***

Road and location construction will begin after BLM approval of the APD. Drilling is expected to take 30-35 days and an additional 10 days for the completion.

16. ***Additional Requirements of Project:***

Completion: The targeted Bone Spring pay zone will be perforated and stimulated in multiple stages using acid and hydraulic fracturing treatments. Fresh water used in the drilling and completion of this well will be transferred from off-site via temporary flowlines and stored in frac tanks on the location.

LEGACY RESERVES

Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Site: Lea Unit #46H
Well: Lea Unit #46H
Wellbore: OH
Plan: Plan #2 (Lea Unit #46H/OH)

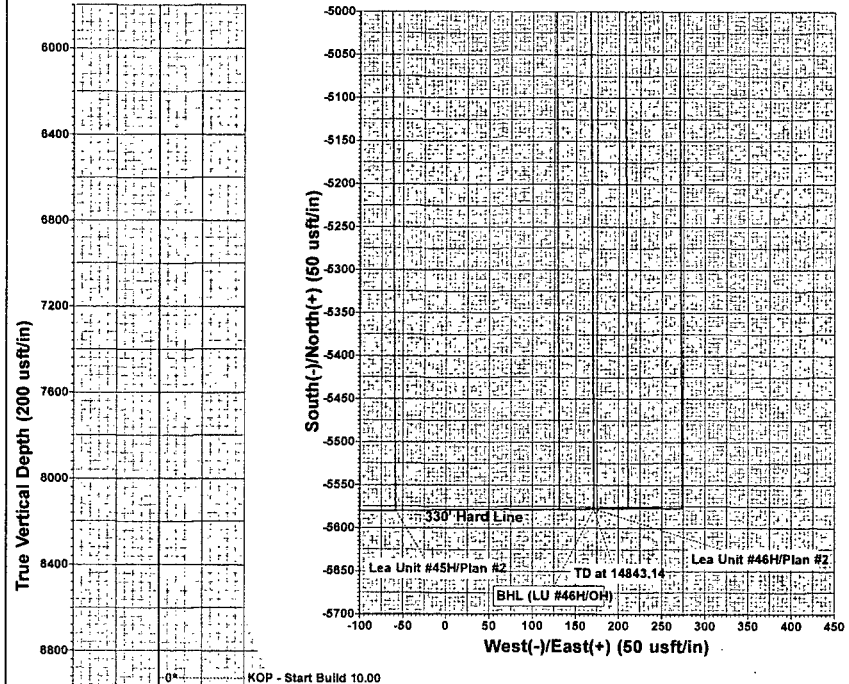
Section Details

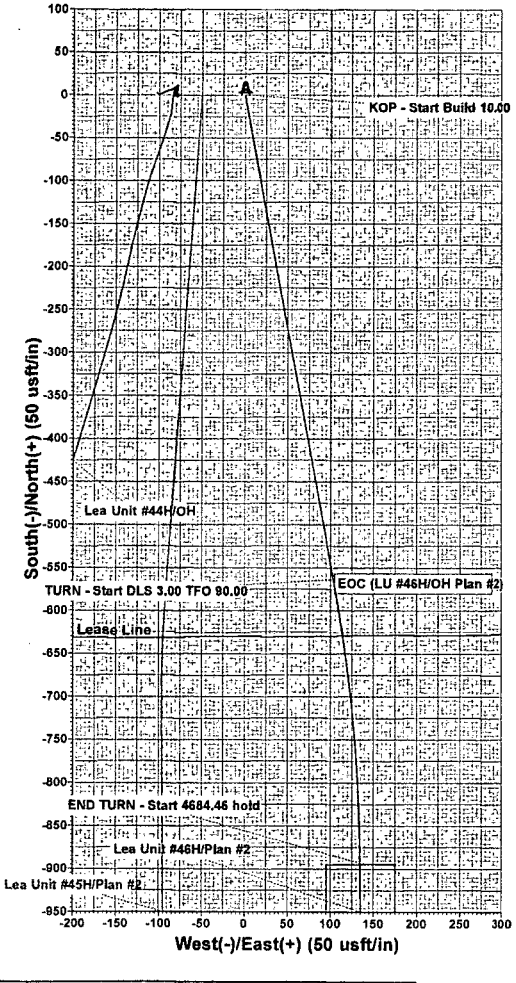
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8927.04	0.00	0.00	8927.04	0.00	0.00	0.00	0.00	0.00	
3	9827.04	90.00	169.60	9500.00	-563.54	103.43	10.00	169.60	566.46	
4	10158.68	90.00	179.55	9500.00	-893.29	134.75	3.00	90.00	897.01	
5	14843.14	90.00	179.55	9500.00	-5577.60	171.60	0.00	0.00	5580.24	BHL (LU #46H/OH)

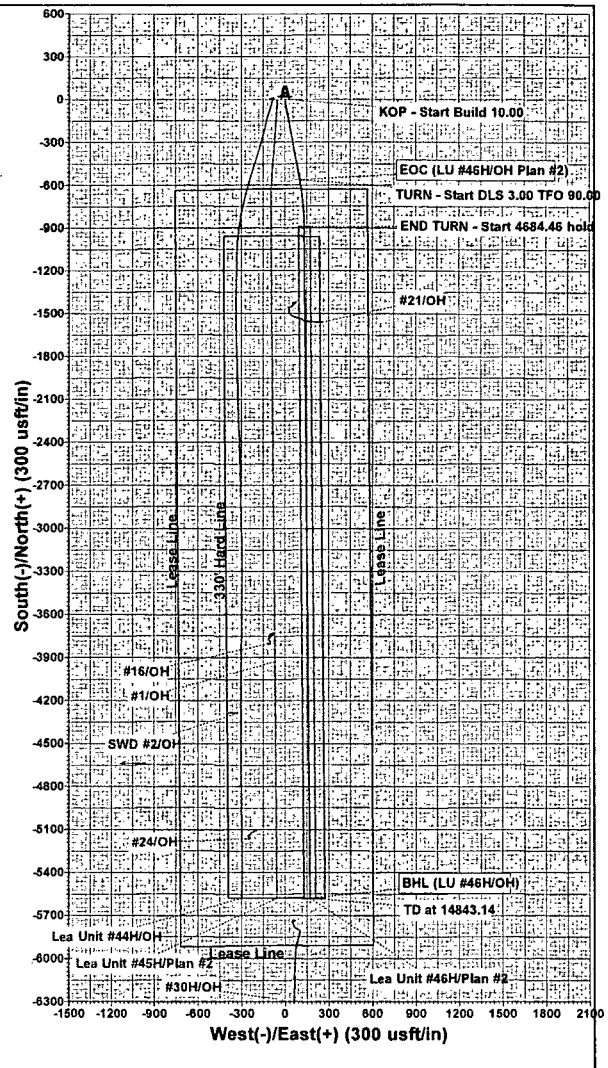
WELL DETAILS: Lea Unit #46H

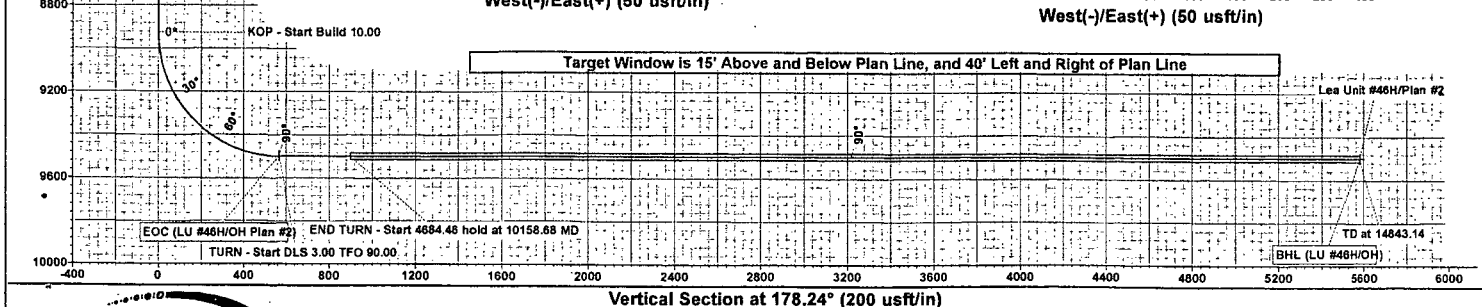
Ground Elevation:: 3674.00
RKB Elevation: KB @ 3692.00usft (McVay 4)
Rig Name: McVay 4

Northing	Easting	Latittude	Longitude
581668.60	750681.60	32° 35' 47.311 N	103° 31' 9.724 W









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

Magnetic Field
Strength: 48361.5snT
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

Plan: Plan #2 (Lea Unit #46H/OH)
eated By: Well Planner Date: 16:33, February 04 2016

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