Form 3160-3
(June 2015)

OCD – HOBBS
09/19/2018
RECEIVED

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM0006531A

6. If Indian, Allotee or Tribe Name:

1a. Type of work: [✓] DRILL [ ] REENTER

1b. Type of Well: [✓] Oil Well [ ] Gas Well [ ] Other

1c. Type of Completion: [ ] Hydraulic Fracturing [✓] Single Zone [ ] Multiple Zone

7. If Unit or CA Agreement, Name and No.:

8. Lease Name and Well No.: LEA UNIT 100H [302802]

2. Name of Operator: LEGACY RESERVES OPERATING LP [240974]

9. API Well No.: 30-025-45211

3a. Address: 303 West Wall St., Ste 1800 Midland TX 79701

3b. Phone No. *(include area code)*: (432)689-5287

10. Field and Pool, or Exploratory: LEA / UPPER WOLFCAMP [98247]

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: NWNE / 140 FNL / 1790 FEL / LAT 32.5945012 / LONG -103.5281411

At proposed prod. zone: S2NE / 2310 FNL / 2210 FEL / LAT 32.5740291 / LONG -103.5294989

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 11 / T20S / R34E / NMP

14. Distance in miles and direction from nearest town or post office*: 26 miles

12. County or Parish: LEA

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 140 feet

16. No of acres in lease: 280

17. Spacing Unit dedicated to this well: 2559.68

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 50 feet

19. Proposed Depth: 11300 feet / 18443 feet

20. BLM/BIA Bond No. in file: FED: NMB001015

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3665 feet

22. Approximate date work will start*: 08/27/2018

23. Estimated duration: 45 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Shane Clark / Ph: (405)286-9326	06/21/2018
Title: Permitting Specialist		
Approved by *(Signature)*: (Electronic Submission)	Name *(Printed/Typed)*: Cody Layton / Ph: (575)234-5959	Date: 09/18/2018
Title: Assistant Field Manager Lands & Minerals	Office: CARLSBAD	

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

Conditions of approval, if any, are attached.

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

GCP Rec 09/19/2018

APPROVED WITH CONDITIONS

KZ 09/19/2018

Approval Date: 09/18/2018

(Continued on page 2)

*(Instructions on page 2)

AFMSS

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

Operator Certification Data Report

09/18/2018

Operator Certification

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

NAME: Shane Clark **Signed on:** 06/21/2018

Title: Permitting Specialist

Street Address: 1219 Classen Drive

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

Phone: (405)286-9326

Email address: sclark@rsenergysolutions.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

APD ID: 10400031102 **Submission Date:** 06/21/2018

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400031102 **Tie to previous NOS?** **Submission Date:** 06/21/2018

BLM Office: CARLSBAD **User:** Shane Clark **Title:** Permitting Specialist

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

Lease number: NMNM0006531A **Lease Acres:** 280

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

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

Agreement number:

Agreement name:

Keep application confidential? YES

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

Operator letter of designation: Operator_letter_of_designation_20180613093245.pdf

Operator Info

Operator Organization Name: LEGACY RESERVES OPERATING LP

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

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)689-5287

Operator Internet Address:

Section 2 - Well Information

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

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

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

Well Name: LEA UNIT **Well Number:** 100H **Well API Number:**

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

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

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Describe other minerals:

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

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

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

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

Reservoir well spacing assigned acres Measurement: 2559.68 Acres

Well plat: Well_Plat_20180613100330.pdf

Lease_Plat_20180621081034.pdf

Well work start Date: 08/27/2018 **Duration:** 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	140	FNL	1790	FEL	20S	34E	11	Aliquot NWNE	32.5945012	-103.5281411	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 000653 1A	3665	0	0
KOP Leg #1	280	FNL	2207	FEL	20S	34E	11	Aliquot NWNE	32.594137	-103.529531	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 000653 1A	-7158	10861	10823
PPP Leg #1	757	FNL	2210	FEL	20S	34E	11	Aliquot NWNE	32.592826	-103.529531	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 000653 1A	-7635	11611	11300

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	0	FNL	2209	FEL	20S	34E	14	Aliquot NENE	32.58038	-103.529528	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0080262	-7635	16137	11300
EXIT Leg #1	2310	FNL	2210	FEL	20S	34E	11	Aliquot S2NE	32.5740291	-103.5294989	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0080262	-7635	18443	11300
BHL Leg #1	2310	FNL	2210	FEL	20S	34E	11	Aliquot S2NE	32.5740291	-103.5294989	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 0080262	-7635	18443	11300

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

March 20, 2018

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

Re: Legacy Reserves Operating, L.P.
Designation of Agent
Lea Unit 100H
11-20S-34E NMPM
Lea County, NM

To whom it may concern:

Legacy Reserves Operating, L.P. has contracted with Reagan Smith Energy Solutions, Inc. to assist in regulatory compliance associated with the Lea Unit 100H. Reagan Smith Energy Solutions, Inc. has the authority to act as Legacy Reserves Operating, L.P.'s agent to maintain regulatory compliance for the Lea Unit 100H. This includes the submittal of an APD, Communitization Agreement, Designations of Operator, Sundry Notices, and any other regulatory documents on behalf of Legacy Reserves Operating, L.P. in order to maintain regulatory compliance with the Bureau of Land Management in regard to the above referenced project.

Sincerely,

Matthew Dickson
Legacy Reserves Operating, L.P.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Frances Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	LEA UNIT	100H

OGRID No.	Operator Name	Elevation
	LEGACY RESERVES OPERATING LP	3665'

Surface Location

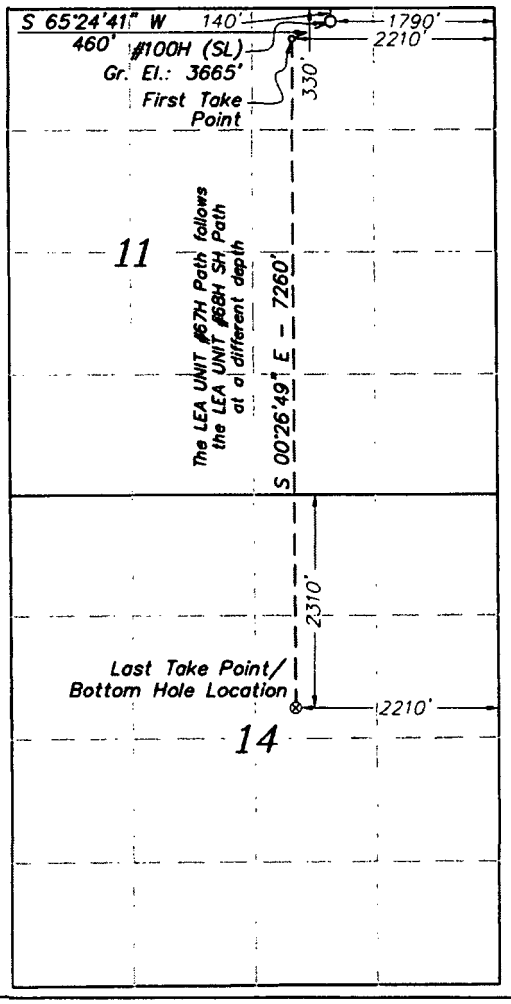
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	11	20 S	34 E		140	NORTH	1790	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	14	20 S	34 E		2310	NORTH	2210	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



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

SURFACE LOCATION
(NAD83)
Plane Coordinate
X = 789,317.0
Y = 580,948.9
Geodetic (D.D.)
32.59450115° N
103.52814107° W

FIRST TAKE POINT
(NAD83)
Plane Coordinate
X = 788,898.5
Y = 580,757.4
Geodetic (D.D.)
32.59398343° N
103.52950471° W

BOTTOM HOLE LOCATION
& LAST TAKE POINT
(NAD83)
Plane Coordinate
X = 788,955.1
Y = 573,497.7
Geodetic (D.D.)
32.57402905° N
103.52949891° W

Scale
1" = 2000'

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

December 20, 2017
Date of Survey

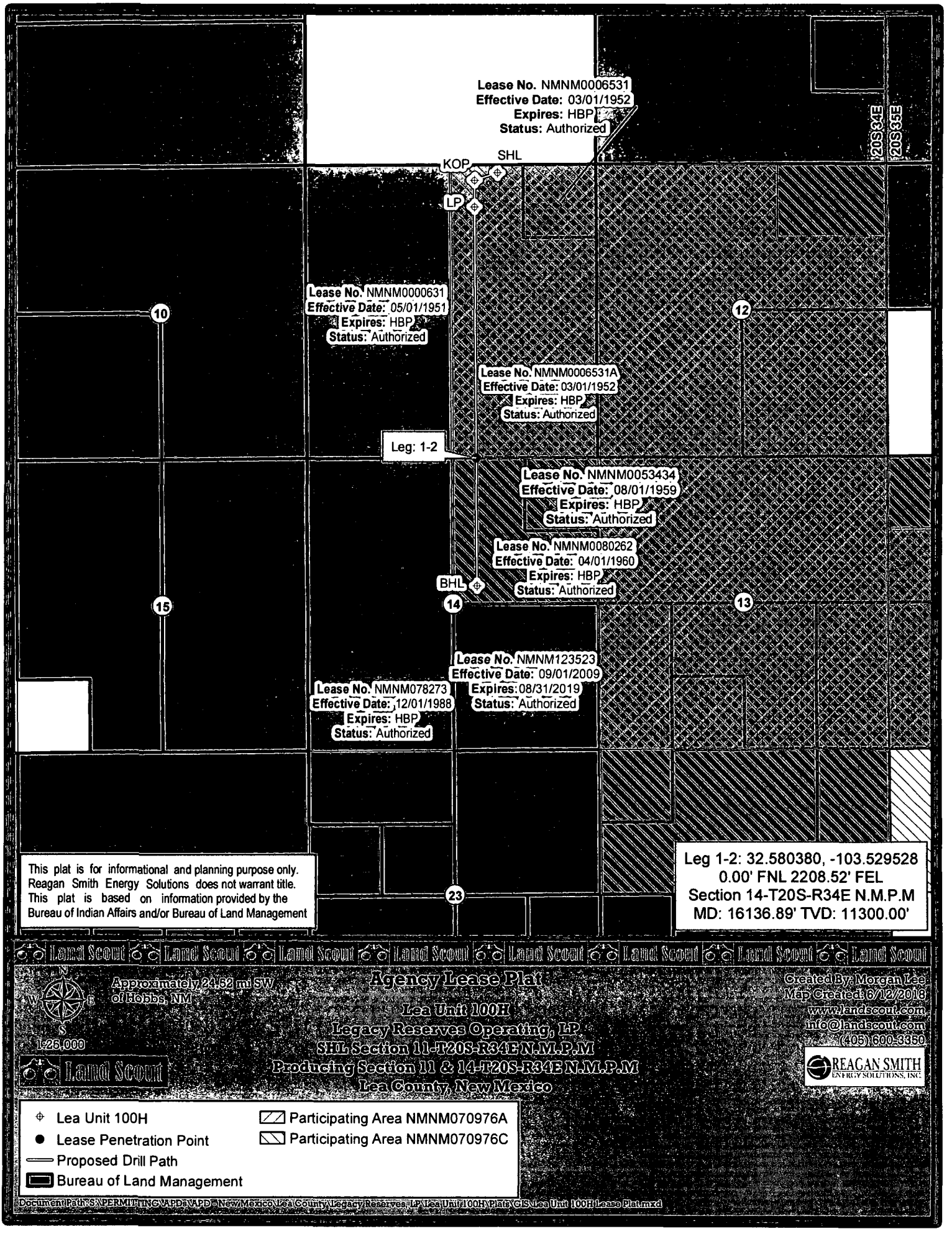
Signature & Seal of Professional Surveyor

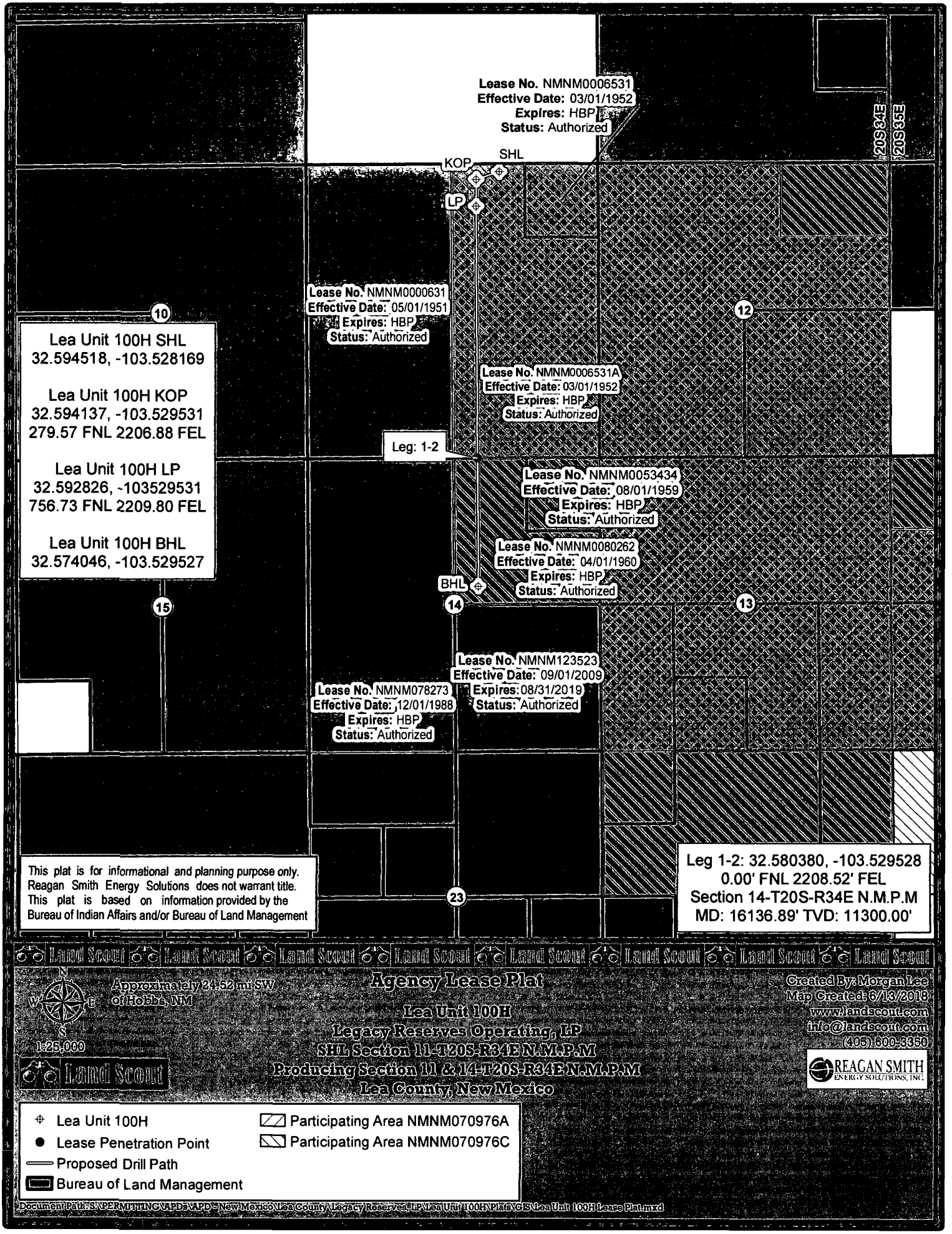
04-10-18

LINDSAY GYGAX
NEW MEXICO
23263
PROFESSIONAL SURVEYOR

W.O. Num. 2017-0929 J

Certificate No. Lindsay Gygax 23263


Lease No. NMNM0006531
Effective Date: 03/01/1952
Expires: HBP
Status: Authorized
20S 34E
20S 35E
SHL
KOP
LP
Lease No. NMNM0000631
Effective Date: 05/01/1951
Expires: HBP
Status: Authorized
10
12
Lease No. NMNM0006531A
Effective Date: 03/01/1952
Expires: HBP
Status: Authorized
Leg: 1-2
Lease No. NMNM0053434
Effective Date: 08/01/1959
Expires: HBP
Status: Authorized
Lease No. NMNM0080262
Effective Date: 04/01/1960
Expires: HBP
Status: Authorized
BHL
15
14
13
Lease No. NMNM123523
Effective Date: 09/01/2009
Expires: 08/31/2019
Status: Authorized
Lease No. NMNM078273
Effective Date: 12/01/1988
Expires: HBP
Status: Authorized
23
This plat is for informational and planning purpose only.
Reagan Smith Energy Solutions does not warrant title.
This plat is based on information provided by the
Bureau of Indian Affairs and/or Bureau of Land Management
Leg 1-2: 32.580380, -103.529528
0.00' FNL 2208.52' FEL
Section 14-T20S-R34E N.M.P.M
MD: 16136.89' TVD: 11300.00'
Land Scout
N
W
E
S
1:25,000
Approximately 24.52 mi SW of Hobbs, NM
Agency Lease Plat
Lea Unit 100H
Legacy Reserves Operating, LP
SHL Section 11-T20S-R34E N.M.P.M
Producing Section 11 & 14-T20S-R34E N.M.P.M
Lea County, New Mexico
Created By: Morgan Lee
Map Created: 6/12/2018
www.landscout.com
info@landscout.com
(405) 600-3350
REAGAN SMITH
ENERGY SOLUTIONS, INC.
Lea Unit 100H
Lease Penetration Point
Proposed Drill Path
Bureau of Land Management
Participating Area NMNM070976A
Participating Area NMNM070976C
Document Path: S:\PERMITTING\APDs\APD - New Mexico\Lea County\Legacy Reserves, LP\Lea Unit 100H\Plats\GIS\Lea Unit 100H Lease Plat.mxd


Lease No. NMNM0006531
Effective Date: 03/01/1952
Expires: HBP
Status: Authorized
20S 34E
20S 35E
SHL
KOP
LP
Lease No. NMNM0000631
Effective Date: 05/01/1951
Expires: HBP
Status: Authorized
10
12
Lea Unit 100H SHL
32.594518, -103.528169
Lea Unit 100H KOP
32.594137, -103.529531
279.57 FNL 2206.88 FEL
Lea Unit 100H LP
32.592826, -103529531
756.73 FNL 2209.80 FEL
Lea Unit 100H BHL
32.574046, -103.529527
Lease No. NMNM0006531A
Effective Date: 03/01/1952
Expires: HBP
Status: Authorized
Leg: 1-2
Lease No. NMNM0053434
Effective Date: 08/01/1959
Expires: HBP
Status: Authorized
Lease No. NMNM0080262
Effective Date: 04/01/1960
Expires: HBP
Status: Authorized
BHL
15
14
13
Lease No. NMNM123523
Effective Date: 09/01/2009
Expires: 08/31/2019
Status: Authorized
Lease No. NMNM078273
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23
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0.00' FNL 2208.52' FEL
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SHL Section 11-T20S-R34E N.M.P.M
Producing Section 11 & 14-T20S-R34E N.M.P.M
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REAGAN SMITH
ENERGY SOLUTIONS, INC.
Lea Unit 100H
Lease Penetration Point
Proposed Drill Path
Bureau of Land Management
Participating Area NMNM070976A
Participating Area NMNM070976C
Document Path: S:\PERMITTING\APDs\APD - New Mexico\Lea County\Legacy Reserves, LP\Lea Unit 100H\Plats\GIS\Lea Unit 100H Lease Plat.mxd

APD ID: 10400031102 **Submission Date:** 06/21/2018

Highlighted data reflects the most recent changes

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Show Final Text

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

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	MANZANITA	3665	0	0		USEABLE WATER	No
2	RUSTLER	1965	1700	1728		NONE	No
3	YATES	241	3424	3452		NONE	No
4	SEVEN RIVERS	-144	3809	3837		NONE	No
5	QUEEN	-967	4632	4660		NONE	No
6	BELL CANYON	-1923	5588	5616		NONE	No
7	CHERRY CANYON	-2806	6471	6499		NONE	No
8	BRUSHY CANYON	-3442	7107	7135		NONE	No
9	BONE SPRING	-4526	8191	8219		NATURAL GAS,OIL	No
10	UPPER AVALON SHALE	-5117	8782	8810		NATURAL GAS,OIL	No
11	BONE SPRING 1ST	-5839	9504	9532		NATURAL GAS,OIL	No
12	BONE SPRING 2ND	-6376	10041	10069		NATURAL GAS,OIL	No
13	BONE SPRING 3RD	-7034	10699	10727		NATURAL GAS,OIL	No
14	WOLFCAMP	-7344	11009	11085		NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Pressure Rating (PSI): 5M **Rating Depth:** 11300

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

Variance request: A variance is requested to use a 5M annular on the 10 M BOP. A variance to the requirement of a rigid steel line connecting to the choke manifold is requested. Specifications for the flex hose are provided with BOP schematic in exhibit section.

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

Choke Diagram Attachment:

McVay_2_Choke_Manifold_Diagram_20180813105610.pdf

BOP Diagram Attachment:

McVay_2_BOP_Diagram_20180813105620.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1800	0	1794			1800	J-55	54.5	BUTT	1.42	3.5	DRY	4.3	DRY	4.3
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5600	0	5562			5600	HCL-80	47	BUTT	1.97	1.34	DRY	2.99	DRY	2.99
3	INTERMEDIATE	8.5	7.0	NEW	API	N	0	10700	0	10662			10700	HCP-110	32	BUTT	2.31	1.98	DRY	2.31	DRY	2.31
4	PRODUCTION	6	4.5	NEW	API	N	10200	18443	10162	11300			8243	P-110	13.5	BUTT	1.89	1.26	DRY	1.91	DRY	1.91

Casing Attachments

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Lea_Unit__100H_Drilling_Program_20180621090724.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Lea_Unit__100H_Drilling_Program_20180621090732.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Lea_Unit__100H_Drilling_Program_20180621090742.pdf

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Casing Attachments

Casing ID: 4 **String Type:**PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Lea_Unit__100H_Drilling_Program_20180621090751.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1600	1300	1.72	13.5	2236	100	Class C cement	4%Bentonite, 0.4 pps Defoamer, 0.125 pps Cellophane, 9.102 H2O GPS
SURFACE	Tail		1600	1800	200	1.32	14.8	348	60	Class C Neat	6.304 H2O GPS
INTERMEDIATE	Lead		0	5000	1700	1.94	12.6	3298	180	35:65 POZ-Class C	6% Bentonite, 0.5% Fluidloss, 0.15% Retarder, 0.4pps Defoamer, 10.542 H2O GPS
INTERMEDIATE	Tail		5000	5600	350	1.18	15.6	413	140	Class H	0.3% Fluidloss, 5.216 H2O GPS
INTERMEDIATE	Lead		0	5300	820	1.18	15.6	967.6	15	Class H	0.2% Retarder, 6.3 H2O GPS
INTERMEDIATE	Tail		5300	10700	550	1.62	12.6	891	30	PVL	1.3% Salt, 5% Expanding Cement, 0.5% Fluidloss, 0.3% Retarder, 0.1% Antisettling, 0.4 pps Defoamer, 8.621 H2O GPS
PRODUCTION	Lead		10200	18443	700	1.34	14.2	938	30	50:50 Poz (fly ash) Class H cement	5% Salt, 2% Bentonite, 0.5% Fluidloss, 0.2% Retarder, 0.2% Dispersant, 0.4pps

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Defoamer, 6.088 H2O GPS

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

Describe the mud monitoring system utilized: A Pason PVT system will be rigged up prior to spudding this well. A volume monitoring system that measures, calculates, and displays readings from the mud system on the rig to alert the rig crew of impending gas kicks and lost circulation. In order to effectively run casing, the mud viscosity and fluid loss properties may be adjusted.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
5600	10700	OTHER : Cut brine	9	9.2							
1800	5600	OTHER : Brine	10	10							
0	1800	OTHER : Fresh Water	8.5	9							
10700	11300	OIL-BASED MUD	10.5	11							

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Section 6 - Test, Logging, Coring

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

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

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

CBL,GR,MWD,MUDLOG

Coring operation description for the well:

No coring planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5880 **Anticipated Surface Pressure:** 3394

Anticipated Bottom Hole Temperature(F): 200

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Contingency_Plan_Legacy_Lea_Unit_100H_20180618133655.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Lea_Unit__100H_Planning_Plan_20180618142939.pdf

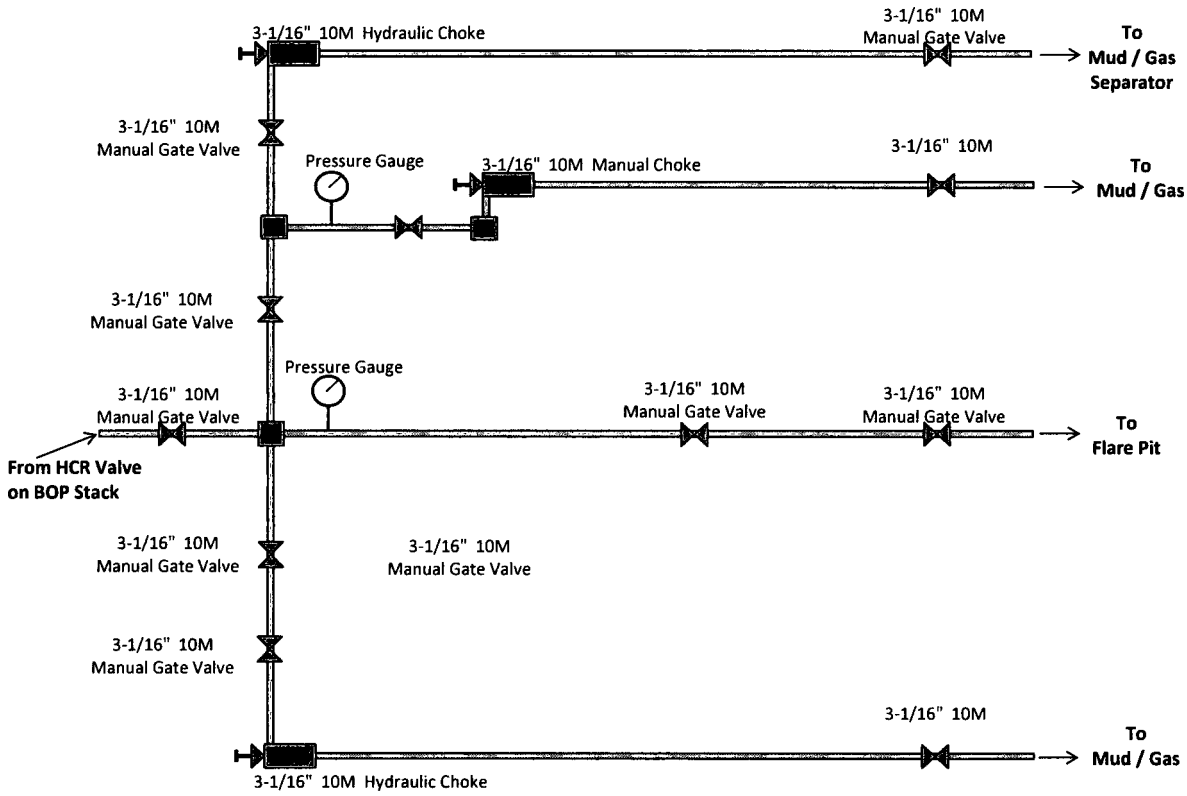
Other proposed operations facets description:

Other proposed operations facets attachment:

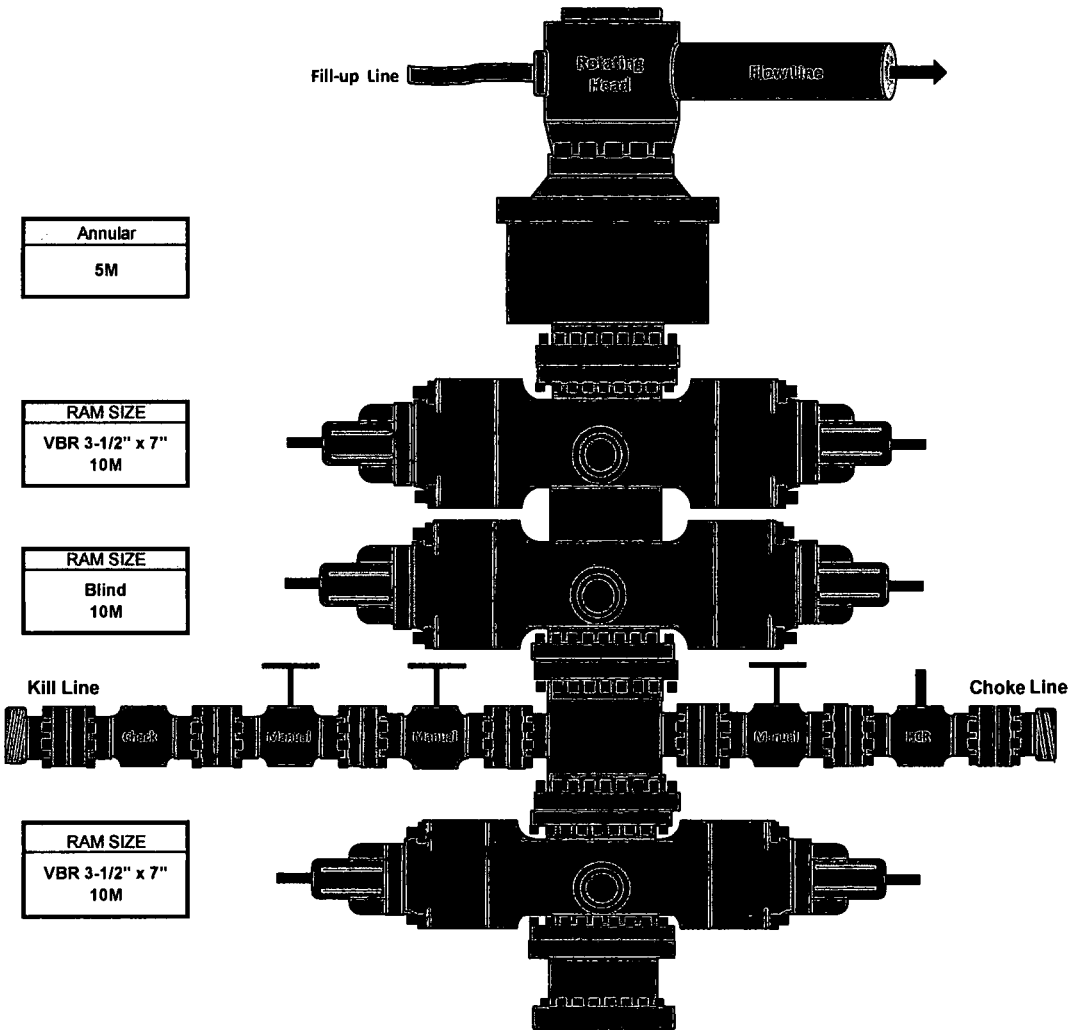
Rig_Schematic_20180619120621.pdf
Flex_Hose_Specs_20180619120636.pdf
Lea_Unit_100H_Waste_Minimization_Plan_20180619120651.pdf
Lea_Unit_100H_GasCapturePlanFormAPD_20180621091933.docx

Other Variance attachment:

Choke Manifold (10M)



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



APD ID: 10400031102 **Submission Date:** 06/21/2018

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Existing_road_Map_20180619131904.pdf

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

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

One_Mile_Radius_Plat_20180619130557.pdf

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

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

Section 5 - Location and Types of Water Supply

Water Source Table

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

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: WATER WELL

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: STATE

Water source volume (barrels): 10000 **Source volume (acre-feet):** 1.288931

Source volume (gal): 420000

Water source use type: STIMULATION **Water source type:** RAW PRODUCED

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 3000 **Source volume (acre-feet):** 0.3866793

Source volume (gal): 126000

Water source and transportation map:

Water_Transportation_Plat_20180619130941.pdf

Water source comments:

New water well? NO

New Water Well Info

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

Well target aquifer:

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

Aquifer comments:

Aquifer documentation:

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

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

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

Drilling method: **Drill material:**

Grout material: **Grout depth:**

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

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description:

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

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

Amount of waste: 20000 barrels

Waste disposal frequency : Daily

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

Safe containmant attachment:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

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

Disposal type description:

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

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

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

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Rig_Schematic_20180619132201.pdf

Comments:

Section 10 - Plans for Surface Reclamation

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

Multiple Well Pad Number: 7

Recontouring attachment:

Lea_Unit_100H_Surface_Reclamation___Elevations_20180619134208.pdf

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

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

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

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

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

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

Soil treatment: No soil treatment will be needed.

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

Existing Vegetation at the well pad attachment:

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

Existing Vegetation Community at the road attachment:

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

Existing Vegetation Community at the pipeline attachment:

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

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

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

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

Operator Contact/Responsible Official Contact Info

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

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

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

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

Weed treatment plan attachment:

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

Monitoring plan attachment:

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

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

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

Operator Name: LEGACY RESERVES OPERATING LP

Well Name: LEA UNIT **Well Number:** 100H

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

Section 12 - Other Information

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

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: An onsite was previously conducted for the existing Lea Unit #54H, Lea Unit #55H, and Lea Unit #56H pad. The Lea Unit 100H is located on this same well pad.

Other SUPO Attachment

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

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

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

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

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

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

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

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

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

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

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

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

09/18/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001015

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: