

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.*

5. Lease Serial No.  
NMLC065710A

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE** - Other instructions on page 2.

7. If Unit of CA/Agreement, Name and/or No.

1. Type of Well

Oil Well     Gas Well     Other

8. Well Name and No.  
LUSK WEST DELAWARE UNIT #12

2. Name of Operator  
SHACKELFORD OIL COMPANY

9. API Well No.  
30-025-20874

3a. Address  
203 W WALL ST, STE 200, MIDLAND, TX 79701

3b. Phone No. (include area code)  
(432) 682-9784

10. Field and Pool or Exploratory Area  
LUSK DELAWARE, WEST

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
SEC 20 T19S R32E 1650' FSL & 990' FWL

11. Country or Parish, State  
LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input checked="" type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

**HOBBS OCD**

**JUL 19 2016**

**RECEIVED**

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

SEE ATTACHED

14. I hereby certify that the foregoing is true and correct.

Name (Printed/Typed) Don Shackelford	Title President
Signature 	Date 7/12/16

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by 	Title Eng	Date 7/14/16
Conditions of approval, if any, are attached. Approval of this notice 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.	Office CFO	

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.

(Instructions on page 2)

*KZ*

Items Attached

1. Proposed Procedures
2. Calculation of Cement
3. Current Schematic
4. Proposed Schematic

Proposed Procedures: LWDU #12 WSW

1. Drill plug from 3525' to 3796' circulate hole clean
2. Clean out hole to 5500' and circulate hole clean, set plug from 5450-5130'. Pull up inside of casing and shut in for day
3. GIH and tag plug. Witness by Hobbs BLM
4. POOH w/tubing
5. GIH w/wireline and take approximately 30 sidewall cores
6. Review sidewall cores if it appears the well is productive run 5 1/2" new 17# LTC casing to 5130'
7. Cement w/900 sxs of class C cement w/2% CACL and circulate cement to surface
8. Evaluate well for completion
9. Perforate 4952-4990, 4925-4940, 4900-4915, 4828-4840, 4775-4805, 4530-4540
10. GIH w/tubing and packer and acidize w/2000 gals of NEFE acid. Swab back review for frac
11. Frac well with 80,000 lbs of 16/30 sand, 12,000 gals fluid and 325,000 SCF of nitrogen

J-55

If cement doesn't circ  
contact BLM

LWDU #12

Calculation of Cement

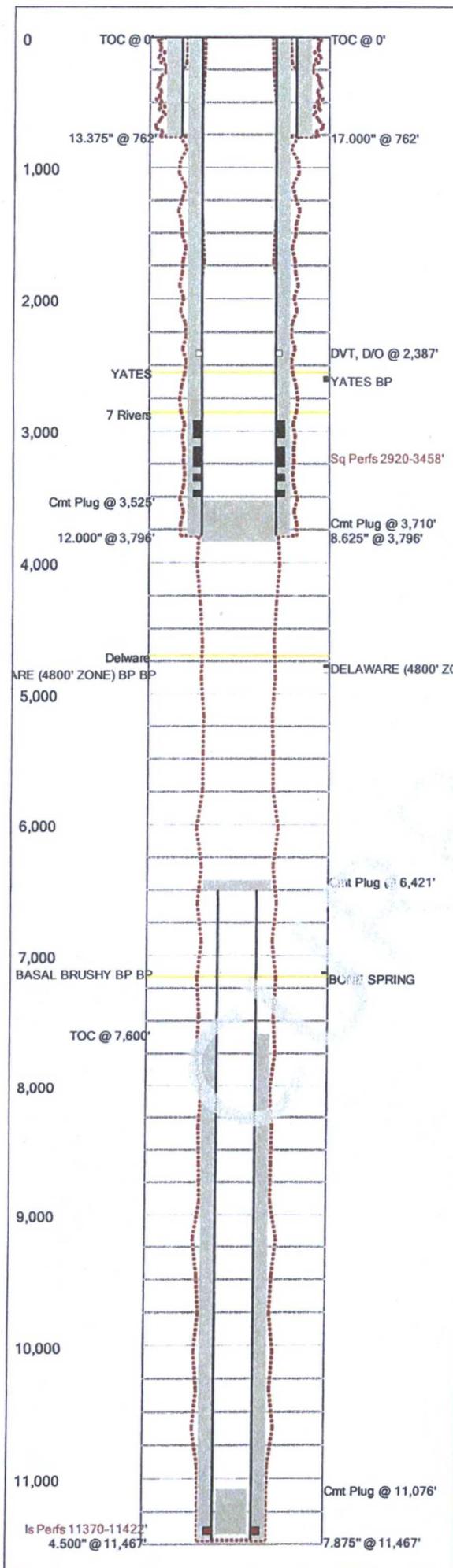
5 1/2" casing 15.50# J-55

1. 8 5/8" 32# to 3796' .1772 cuft/ft = 672.65 cuft
2. 7 7/8" O/H to 5300' .1738 cuft/ft - 1504 ft x .1738 = 261.39 cuft
1. 672.65 cuft
2. 261.40 cuft
- 934.05 cuft Total

Class C Cement 1.33 cuft/sack

$934.05 \text{ cuft} / 1.33 \text{ ft/cuft} = 703 \text{ sxs} \times 15\% \text{ excess} = 808.45 \text{ sxs}$

Total estimated cement- 900 sxs



Field Name		Lease Name		Well No.
Lusk West Delaware		Lusk West Delaware Unit		12
County		State		API No.
Lea		New Mexico		30025208740000
Version	Version Tag			
1	Current			
GL (ft)	KB (ft)	Section	Township/Block	Range/Survey
3,567.7	3,585.0	20	19S	32E
Operator		Well Status	Latitude	Longitude
Shackelford Oil Company		Shut In		
Dist. N/S (ft)		N/S Line	Dist. E/W (ft)	E/W Line
1650		FSL	990	FWL
Footage From		Footage To		
Prop Num		Spud Date	Comp. Date	
		2/11/1964	4/6/1965	
Additional Information				
The #12 was Re-entered by Pioneer 9/3/1997 to be used as a WSW for the Lusk West Deep Unit Water Flood				
Other 1	Other 2	Other 3	Other 4	
Prepared By	Updated By		Last Updated	
Shackelford	Shackelford		7/12/2016 1:14 PM	

Date	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
2/4/1964	17.000	0	762	
2/19/1964	12.000	0	3,796	
3/4/1964	7.875	0	11,467	

Date	Description	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)
2/13/1964	Surface Casing	13.375	48.00		0	762
2/19/1964	Intermediate Casing	8.625	32.00	J-55	0	3,796
3/18/1964	Production Casing	4.500			6,500	11,467

Date	No. Sx	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
2/4/1964	775	13.375	0	762	Cement Circulated
2/20/1964	2,350	8.625	0	3,796	1st state - 600 sx were pumped, 200 sx were circulated. DV Tool was @ 2387. 1750 sx were pumped about 100 sx were circulated
3/18/1964	600	4.500	7,600	11,467	600 sx Regulate Plus + 1/3 cu/SKSTRATA-CRETE 6 +4% Gel

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)
2/20/1964	DVT, D/O	8.625	0.000	2,387	0

Date	No. Sx	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
8/15/1996	100	8.625	3,525	3,846	Original plug set at base of 8.625 csg was not tagged by Pioneer. They sat new plug @ 3525
10/18/1971	35	8.625	3,710	3,796	Estimated
10/18/1971	25	7.875	6,421	6,500	Estimated
10/18/1971	25	3.640	11,076	11,422	Estimated

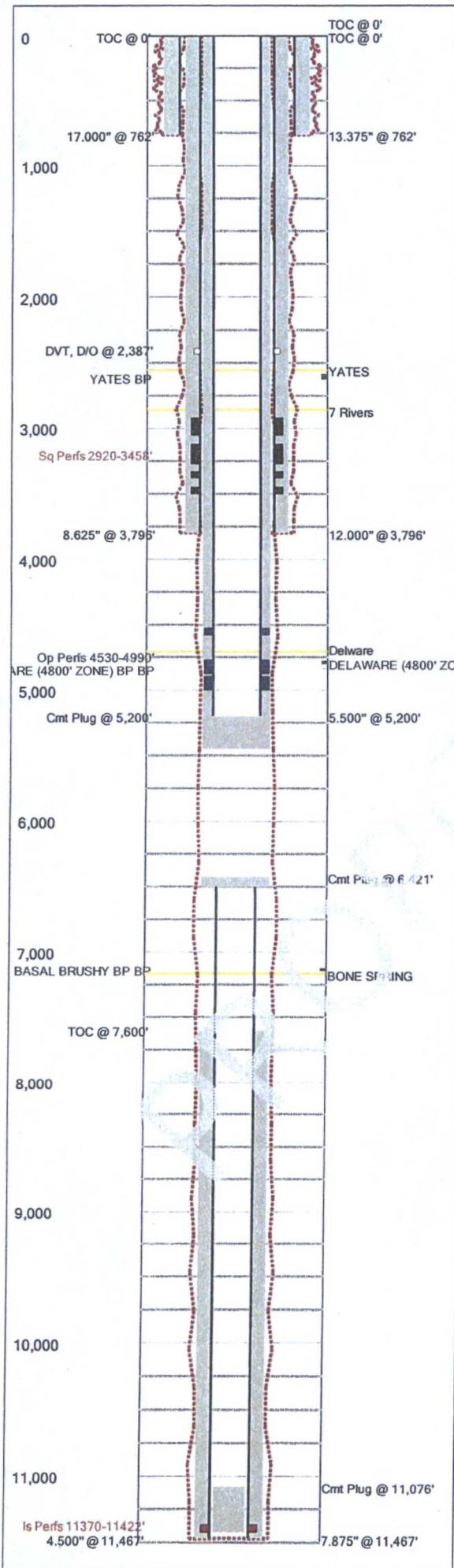
C	Date	Perf. Status	Formation	OA Top (MD ft)	OA Bottom (MD ft)	Shots
	8/17/1996	Squeezed	7 Rivers	2,920	3,458	
	3/16/1964	Isolated	Strawn	11,370	11,422	

Formation	Top (TVD ft)	Comments
YATES	2,554	
7 Rivers	2,856	
Delaware	4,705	
BONE SPRING	7,162	



Last Updated: 7/12/2016 01:14 PM

YATES	2,583	2,627	0	0	0	0.0%	0.0%	0	0
DELAWARE (4800	4,776	4,802	0	0	0	0.0%	0.0%	0	0
DELAWARE (4800'	4,838	4,839	0	0	0	0.0%	0.0%	0	0
BASAL BRUSHY	7,121	7,142	0	0	0	0.0%	0.0%	0	0



Field Name		Lease Name		Well No.
Lusk West Delaware		Lusk West Delaware Unit		12
County		State		API No.
Lea		New Mexico		30025208740000
Version		Version Tag		
2		Proposed		
GL (ft)	KB (ft)	Section	Township/Block	Range/Survey
3,567.7	3,585.0	20	19S	32E
Operator		Well Status	Latitude	Longitude
Shackelford Oil Company		Shut In		
Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line	Footage From
1650	FSL	990	FWL	
Prop Num		Spud Date	Comp. Date	
		2/11/1964	4/6/1965	
Additional Information				
The #12 was Re-entered by Pioneer 9/3/1997 to be used as a WSW for the Lusk West Deep Unit Water Flood				
Other 1	Other 2	Other 3	Other 4	
Prepared By		Updated By	Last Updated	
Shackelford		Shackelford	7/12/2016 1:51 PM	

Date	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
2/4/1964	17.000	0	762	
2/19/1964	12.000	0	3,796	
3/4/1964	7.875	0	11,467	

Date	Description	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)
2/19/1964	Surface casing	13.375	48.00		0	762
2/19/1964	Intermediate casing	8.625	32.00	J-55	0	3,796
	Production casing	5.500	17.00	J-55	0	5,200
3/18/1964	Production casing	4.500			6,500	11,467

C	Date	No. Sx	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	2/19/1964	775	13.375	0	762	Cement Circulated
	2/19/1964	2,350	8.625	0	3,796	1st state - 600 sx were pumped, 200 sx were circulated. DV Tool was @ 2387. 1750 sx were pumped about 100 sx were circulated
		900	5.500	0	5,200	Cement Circulated
	3/18/1964	600	4.500	7,600	11,467	600 sx Regulate Plus + 1/3 cu/SKSTRATA-CRETE 6 +4% Gel

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)
2/20/1964	DVT, D/O	8.625	0.000	2,387	0

Date	No. Sx	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	75	7.875	5,200	5,450	
10/18/1971	25	7.875	6,421	6,500	Estimated
10/18/1971	25	3.640	11,076	11,422	Estimated

C	Date	Perf. Status	Formation	OA Top (MD ft)	OA Bottom (MD ft)	Shots
	8/17/1996	Squeezed	7 Rivers	2,920	3,458	
		Open		4,530	4,990	240
	3/16/1964	Isolated	Strawn	11,370	11,422	

Formation	Top (TVD ft)	Comments
YATES	2,554	
7 Rivers	2,856	
Delaware	4,705	
BONE SPRING	7,162	

Field Name		Lease Name		Well No.	County	State	API No.	
Lusk West Delaware		Lusk West Delaware Unit		12	Lea	New Mexico	30025208740000	
Version	Version Tag			Spud Date	Comp. Date	GL (ft)	KB (ft)	
20	2 Proposed			2/11/1964	4/6/1965	3,567.7	3,585.0	
Section	Township/Block	Range/Survey	Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line	Footage From	
	19S	32E	1,650	FSL	990	FWL		
Operator		Well Status		Latitude		Longitude		Prop Num
Shackelford Oil Company		Shut In						
Other 1		Other 2		Other 3		Other 4		
Last Updated			Prepared By			Updated By		
07/12/2016 1:51 PM			Shackelford			Shackelford		
Additional Information								
The #12 was Re-entered by Pioneer 9/3/1997 to be used as a WSW for the Lusk West Deep Unit Water Flood								

Hole Summary

Date	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
2/4/1964	17.000	0	762	
2/19/1964	12.000	0	3,796	
3/4/1964	7.875	0	11,467	

Tubular Summary

Date	Description	No. Jts	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)	Comments
2/13/1964	Surface Casing		13.375	48.00		0	762	
2/19/1964	Intermediate Casing		8.625	32.00	J-55	0	3,796	
	Production Casing		5.500	17.00	J-55	0	5,200	
3/18/1964	Production Casing		4.500			6,500	11,467	

Casing Cement Summary

C	Date	No. Sx	Yield (ft3/sk)	Vol. (ft3)	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
	2/14/1964	775	1.00	775	13.375	0	762		Cement Circulated
	2/20/1964	2,350	1.00	2,350	8.625	0	3,796		1st state - 600 sx were pumped, 200 sx were circulated. DV Tool was @ 2387. 1750 sx were pumped about 100 sx were circulated
		900	1.00	900	5.500	0	5,200		Cement Circulated
	3/18/1964	600	1.00	600	4.500	7,600	11,467		600 sx Regulate Plus + 1/3 cu/SKSTRATA-CRETE 6 +4% Gel

Tools/Problems Summary

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
2/20/1964	DV tool (drilled out)	8.625	0.000	2,387			

Cement Plug Summary

Date	No. Sx	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	75	7.875	5,200	5,450	
10/18/1971	25	7.875	6,421	6,500	Estimated
10/18/1971	25	3.640	11,076	11,422	Estimated

Perforation Summary

C	Date	Perf. Status	Formation	Comments		
	8/17/1996	Squeezed	7 Rivers	100 sxs of Class C Cement		
			SPF	Shots	Phasing (deg)	Interval Comments
			Top (MD ft)	Bottom (MD ft)		
			2,920	3,028		
			2,960	2,960		
			2,984	2,984		
			3,002	3,000		
			3,122	3,120		
			3,134	3,142		
			3,152	3,160		
			3,198	3,206		
			3,220	3,228		
			3,330	3,338		
			3,450	3,458		
C	Date	Perf. Status	Formation	Comments		
	3/16/1964	Isolated	Strawn			
			SPF	Shots	Phasing (deg)	Interval Comments
			Top (MD ft)	Bottom (MD ft)		
			11,370	11,422		
C	Date	Perf. Status	Formation	Comments		
		Open				
			SPF	Shots	Phasing (deg)	Interval Comments
			Top (MD ft)	Bottom (MD ft)		
			4,530	4,540	2	20
			4,775	4,805	2	60
			4,828	4,840	2	24
			4,900	4,915	2	30
			4,925	4,940	2	30

C	Date	Perf. Status	Formation		Comments	
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	4,952	4,990	2	76		

Formation Top Summary

Formation Name	Top(TVD ft)	Comments
YATES	2,554	
7 Rivers	2,856	
Delware	4,705	
BONE SPRING	7,162	

Behind Pipe Summary

C	Formation Name	Top (MD ft)	Bottom (MD ft)	Net Pay (ft)	Drain. Area(Acre)	Res. Pres. (psi)	Water Sat. (%)	Eff. Por. (%)	EUR Oil (MBO)	EUR Gas (MMCF)	Comments
	YATES	2,583	2,627	0	0	0	0.0%	0.0%	0	0	
	DELAWARE (4800'	4,776	4,802	0	0	0	0.0%	0.0%	0	0	
	DELAWARE (4800'	4,838	4,839	0	0	0	0.0%	0.0%	0	0	
	BASAL BRUSHY	7,121	7,142	0	0	0	0.0%	0.0%	0	0	

LWDU #12  
30-025-20874  
Shackelford Oil Co.  
Conditions of Approval

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.

**Notify BLM at 575-393-3612 a minimum of 24 hours prior to commencing work.**

1. Run new 5-1/2" casing from 0-5130' and cement to surface. Notify BLM if Cement doesn't circulate to surface.
2. **Must conduct a casing integrity test before perforating and fracturing. Submit results to BLM. The CIT is to be performed on the production per Onshore Order #2 III.B.1.h. Notify BLM if test fails.**
3. Before casing or a liner is added or replaced, prior BLM approval of the design is required. Use notice of intent Form 3160-5.
4. Surface disturbance beyond the originally approved pad must have prior approval.
5. Closed loop system required.
6. All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of work over operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.
7. Operator to have H2S monitoring equipment on location.

8. A minimum of a 2000 (2M) BOP to be used. All blowout preventer (BOP) and related equipment (BOPE) shall comply with reasonable well control requirements. A two ram system with a blind ram and a pipe ram designed for the size of the work string shall be adequate. Tapered work strings will require an additional pipe ram. The manifold shall comply with Onshore Oil and Gas Order #2 Attachment I (2M Diagrams of Choke Manifold Equipment). The accumulator system shall have an immediately available power source to close the rams and retain 200 psi above pre-charge. The pre-charge test shall follow requirements in Onshore Order #2.
9. **Subsequent sundry required detailing work done, a C-102 form, and completion report for the new formations. Operator to include well bore schematic of current well condition when work is complete. Operator should also submit a sundry to change the well name to reflect lease production.**
10. See attached for General Plugback COAs.

CRW 071416

BUREAU OF LAND MANAGEMENT  
Carlsbad Field Office  
620 East Greene Street  
Carlsbad, New Mexico 88220  
575-234-5972

**Permanent Abandonment of Production Zone Conditions of Approval**

Failure to comply with the following Conditions of Approval may result in a Notice of Incidents of Noncompliance (INC) in accordance with 43 CFR 3163.1.

1. Plugging operations shall commence within ninety (90) days from this approval.

**If you are unable to plug back the well by the 90<sup>th</sup> day provide this office, prior to the 90<sup>th</sup> day, with the reason for not meeting the deadline and a date when we can expect the well to be plugged back. Failure to do so will result in enforcement action.**

2. **Notification:** Contact the appropriate BLM office at least 24 hours prior to the commencing of any plug back operations. For wells in Eddy County, call 575-361-2822.

3. **Blowout Preventers:** A blowout preventer (BOP), as appropriate, shall be installed before commencing any plugging operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,090 feet; a 3M system for a well not deeper than 13,636 feet; and a 5M system for a well not deeper than 22,727 feet.

4. **Mud Requirement:** Mud shall be placed between all plugs. Minimum consistency of plugging mud shall be obtained by mixing at the rate of 25 sacks (50 pounds each) of gel per 100 barrels of **brine** water. Minimum nine (9) pounds per gallon.

5. **Cement Requirement:** Sufficient cement shall be used to bring any required plug to the specified depth and length. Any given cement volumes on the proposed plugging procedure are merely estimates and are not final. Unless specific approval is received, no plug except the surface plug shall be less than 25 sacks of cement. Any plug that requires a tag will have a minimum WOC time of 4 hours.

In lieu of a cement plug across perforations in a cased hole (not for any other plugs), a bridge plug set within 50 feet to 100 feet above the perforations shall be capped with 25 sacks of cement. **Before pumping cement on top of CIBP, tag will be required to verify depth. Based on depth, a tag of the cement may be deemed necessary.**

Unless otherwise specified in the approved procedure, the cement plug shall consist of either **Neat Class "C"**, for up to 7,500 feet of depth or **Neat Class "H"**, for deeper than 7,500 feet plugs.

6. **Subsequent Plug back Reporting:** Within 30 days after plug back work is completed, file one original and three copies of the Subsequent Report, Form 3160-5 to BLM. The report should give in detail the manner in which the plug back work was carried out, the extent (by depths) of cement plugs placed, and the size and location (by depths) of casing left in the well. **Show date work was completed.**

7. **Trash:** All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.