State of New Mexico
Energy, Minerals and Natural Resources Department

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 5/21/13
Well information;
Operator Logos, Well Name and Number Logos #7

API# 30-043-21155, Section 5, Township 22 (N)S, Range 5 E/(W)

Conditions of Approval:
(See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- o Hold C-104 for directional survey & "As Drilled" Plat
- ✓ Hold C-104 for NSL, NSP, DHC
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- o Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- o Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils

Charlie Perrin
NMOCD Approved by Signature

9-5-2013
Date

ca

Form 3160-3
(August 2007)

RECEIVED
MAY 23 2013
Farmington Field Office
Bureau of Land Management

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
Jicarilla Apache Lease #424

6. If Indian, Allotee or Tribe Name
Jicarilla Apache Nation

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

1a. Type of work: ☑ DRILL ☐ REENTER

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

8. Lease Name and Well No.
Logos #7

2. Name of Operator Logos Operating, LLC

9. API Well No.
30-043-21155

3a. Address 4001 North Butler Ave., Building 7101
Farmington, NM 87401

3b. Phone No. *(include area code)*
505-436-2627

10. Field and Pool, or Exploratory
Wildcat Dakota

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 1645' FNL, 180' FWL
At proposed prod. zone same as above

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 5, T22N, R5W, UL E

14. Distance in miles and direction from nearest town or post office*
4 miles SW of Counselors, NM

12. County or Parish
Sandoval

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
1645'

16. No. of acres in lease
2561.60 acres

17. Spacing Unit dedicated to this well
SW/4 NW/4 40 acres

RCVD SEP 5 '13
OIL CONS. DIV.
DIST. 3

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
1316'

19. Proposed Depth
~6500'

20. BLM/BIA Bond No. on file
1062402

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
6880' GL

22. Approximate date work will start*
08/01/2013

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	Name *(Printed/Typed)*	Date
[signature]	Kristy Graham	05/21/2013
Title: Production Engineer		
Approved by *(Signature)* [signature]	Name *(Printed/Typed)*	Date 8/4/13
Title AFM	Office FFO	

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.

(Continued on page 2)

*(Instructions on page 2)

CONFIDENTIAL

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

NMOCD

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Drive, 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. Francis Drive
Santa Fe, NM 87505

RECEIVED
MAY 23 2013
Farmington Field Office
Bureau of Land Management

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-043-21155	97977	WC 22N5W5;Dakota(O)

[4] Property Code	[5] Property Name	[6] Well Number
311963	LOGOS	7

[7] OGRID No.	[8] Operator Name	[9] Elevation
289408	LOGOS RESOURCES, LLC	6880'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	5	22N	5W		1645	NORTH	180	WEST	SANDOVAL

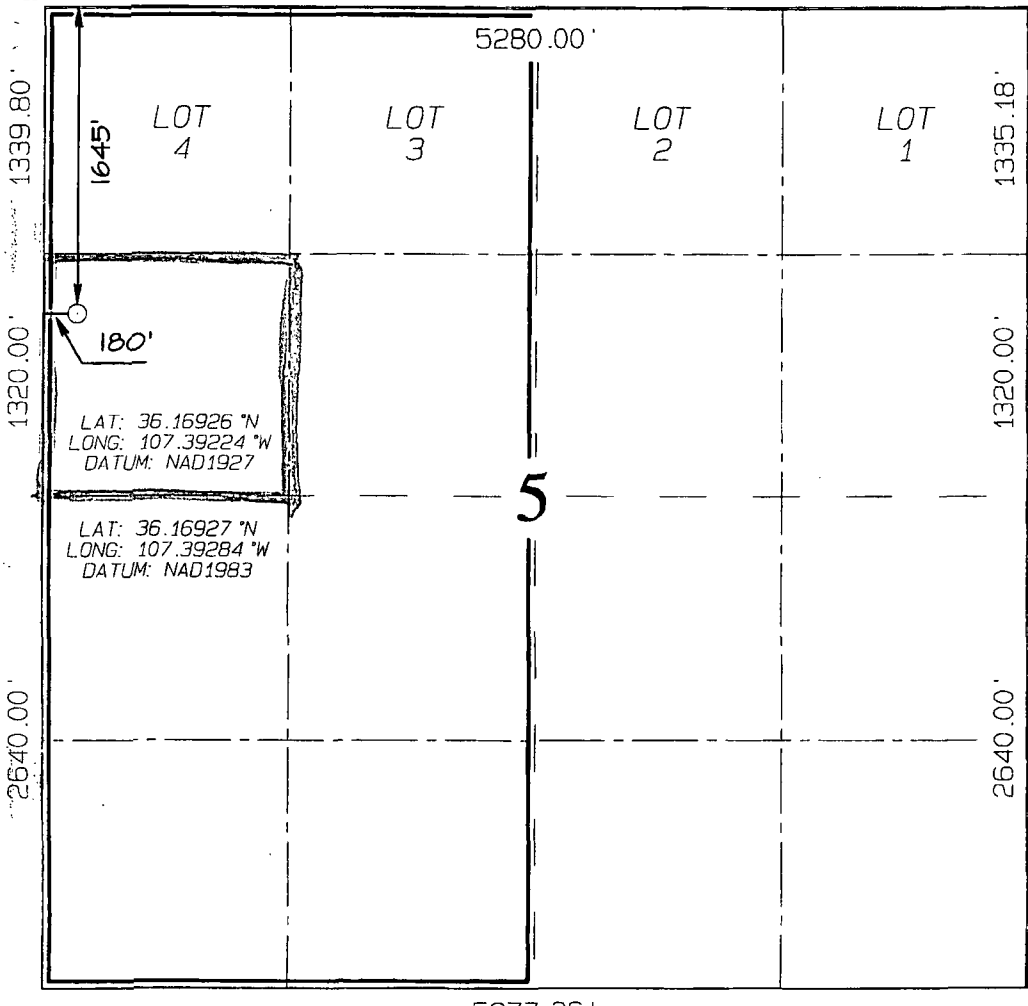
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40 acres SW/4 NW/4			

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

16



[17] 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: Kristy Graham Date: 5/21/13

Printed Name: Kristy Graham

E-mail Address: kgraham@logosresourcesllc.com

[18] 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.

Date of Survey: MARCH 26, 2013

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS

Certificate Number 15269

LOGOS OPERATING, LLC.
OPERATIONS PLAN
LOGOS #7

Note: This procedure will be adjusted on site based on actual conditions.

I. Location: 1645' FNL & 180' FWL
Sec 5, T22N, R5W
Sandoval County, NM

Date: May 21, 2013

Field: Wildcat Dakota
Surface: Jicarilla Apache
Minerals: Jicarilla Apache #424

Elev: GL 6,880'

II. Geology: Surface formation _ Nacimiento

A.

Formation Tops	Depths
Ojo Alamo	1,340'
Kirtland	1,620'
Pictured Cliffs	1,853'
Lewis	1,944'
Chacra	2,276'
Cliff House	3,332'
Menefee	3,413'
Point Lookout	4,092'
Mancos	4,283'
Niobrara A	5,027'
Niobrara B	5,130'
Niobrara C	5,247'
Greenhorn	6,093'
Graneros	6,140'
Dakota	6,160'
Morrison	6,540'
Total Depth	6,550'

Estimated depths of anticipated water, oil, gas, and other mineral bearing formations which are expected to be encountered:

Water and gas - 1,853', 2,276', 3,332', 4,092'
Water, gas, and oil - 4,283', 5,027', 5,130', 5,247', and 6,160'

B. Logging Program: Induction/GR and density/neutron logs from TD to the surface casing point. Mud logs will be run from below the surface casing to TD. No DST's or cores are planned for this well. Cased hole GR/CCl and CBL logs will be run from PBTD to surface.

C. No over pressured zones are expected in this well. No H_2S zones will be penetrated in this well. Max. BHP = 2,850 psig. Lost circulation zones may be encountered in the Mesa Verde group and Niobrara sections.

III. Drilling

A. Contractor:

B. Mud Program:

The surface hole will be drilled with a fresh water mud.

The production hole will be drilled with a fresh water mud and will use bentonite to increase the viscosity. The weighting material will be drill solids or if conditions dictate, barite. The maximum mud weight expected is 9.2 ppg. The water loss will be controlled to a 6 - 8 cc/30 min. and loss circulation will be controlled with cedar fiber, paper, etc.

The Chacra, Cliff House, Menefee, and Point Lookout, Mancos, Niobrara, and Dakota formations will all be considered for completion in this well. A completion procedure will be developed after evaluating the wireline and mud logs.

C. Minimum Blowout Control Specifications:

Double ram type 2000 psi working pressure BOP with a rotating head. See the attached Exhibit #1 for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up to 250 psi (Low) for 5 minutes and 1,500 psi (High) for 10 minutes. All tests and inspections will be recorded in the daily drilling tour book.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

IV. Materials

A. Casing Program:

Hole Size	Depth	Casing Size	Wt. & Grade
12-1/4"	500'	9-5/8"	36# J-55
7-7/8"	6,550'	5-1/2"	17# P-110

B. Float Equipment:

a) Surface Casing: Notched collar, aluminum insert float in the first collar, and 3 centralizers on the bottom 3 joints.

b) Production Casing: Production Casing: 5-1/2" cement float shoe and self-fill insert float collar. Place float one joint above shoe. **Place DV tool at 4,386'**. Place ten centralizers spaced every other joint above the shoe, two turbolizers on the collars below the DV tool and two turbolizers above the DV tool. Place five turbolizers every third joint from the top of the well.

V. Cementing:

Note: Cement volumes will be adjusted based on actual conditions.

Surface casing: 9-5/8" - Use 225 sx (266 cu. ft.) of Type V with 2% $CaCl_2$ and ¼ #/sk celloflake (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG). 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 1500 psi.

Production Casing: 5-1/2" - Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water. **1st Stage: Lead** with 260 sx (458 cu.ft.) of Cl "B" 65/35 poz with 6% gel, 1% $CaCl_2$, 4% phenoseal, and ¼ #/sx celloflake (Yield = 1.76 cu. ft./sk; slurry weight = 12.8 PPG). **Tail** with 100 sx (146 cu.ft.) of Cl "B" 50/50 poz with 0.15% dispersant, 1% $CaCl_2$ and ¼#/sk. celloflake. (Yield = 1.46 cu. ft./sk; slurry weight = 13.0 PPG). **2nd Stage:** Precede cement with 20 bbls of water. **Lead** with 600 sx (1056 cu.ft) Cl "B" 65/35 poz with 6% gel, 1% $CaCl_2$, and ¼ #/sx celloflake (Yield = 1.76 cu. ft./sk; slurry weight = 12.8 PPG). **Tail** with 100 sx (146 cu.ft.) of Cl "B" 50/50 poz with 0.15% dispersant, 1% $CaCl_2$ and ¼#/sk. celloflake. (Yield = 1.46 cu. ft./sk; slurry weight = 13.0 PPG). Total cement volume is 1806 cu.ft. (50% excess to hole volume to circulate cement to surface).

Kristy Graham, Production Engineer

MULTI-POINT SURFACE USE PLAN
Logos #7

1. Existing Roads:

All existing roads used to access the proposed location are shown on attached Plat #1 and shall be maintained in the same or better condition than presently found.

Directions: 4 miles southwest of Counselors, NM

2. Planned Access Roads:

Approximately 1458' of new access road will be constructed for this location. The existing access road will be maintained in at least the current condition and will be upgraded where necessary to provide uninterrupted access to the proposed well.

3. Location of Existing Wells:

Attached map (Plat #1) shows existing wells within a one mile radius of the proposed well. There is one P&A well, four producing wells, and six permitted wells (including the Logos #7) within one mile. All producing wells and permitted wells are Logos Operating, LLC.

4. Location of Production Facilities:

In the event of production, production facilities will be located on the drill pad. The actual placement of this equipment will be determined when the well's production characteristics can be evaluated after completion.

Upon completion of drilling, the location and surrounding area will be cleared of all debris.

5. Water Supply:

Water for drilling and completion operations will be hauled by truck from various permitted water sources within the area through the water haulers association.

6. Source of Construction Materials:

No additional construction materials will be required to build the proposed location.

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Exhibit #1
Typical BOP setup

Location: San Juan Basin, New Mexcio

Date: August 20, 2001
By: John Thompson (Walsh E&P)