Form 3160-3
(June 2015)

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.
NMNM117567

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.
NMNM 0136953

8. Lease Name and Well No.
ESCRITO D14 2407 COM
002H

2. Name of Operator
LOGOS OPERATING LLC

9. API Well No.
30-039-31385

3a. Address
2010 AFTON PLACE, FARMINGTON, NM 87401

3b. Phone No. *(include area code)*
(505) 278-8720

10. Field and Pool, or Exploratory
ESCRITO/GALLUP

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWNW / 491 FNL / 541 FWL / LAT 36.318829 / LONG -107.552305
At proposed prod. zone SWNE / 2087 FNL / 2593 FEL / LAT 36.314923 / LONG -107.580701

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 14/T24N/R7W/NMP

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

12. County or Parish
RIO ARRIBA

13. State
NM

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

16. No of acres in lease

17. Spacing Unit dedicated to this well
480.0

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

19. Proposed Depth
5812 feet / 14564 feet

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
7034 feet

22. Approximate date work will start*
08/26/2019

23. Estimated duration
30 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)	ETTA TRUJILLO / Ph: (505) 324-4145	04/26/2022

Title
Regulatory Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	DAVE J MANKIEWICZ / Ph: (505) 564-7761	07/05/2022

Title	Office
AFM-Minerals	Farmington 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.

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 07/05/2022

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 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. Francis 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

1 API Number	2 Pool Code	3 Pool Name
30-039-31385	22619	ESCRITO GALLUP (ASSOCIATED)

4 Property Code	5 Property Name	6 Well Number
317800	ESCRITO D14-2407 COM	02H
7 OGRID No.	**8 Operator Name**	**9 Elevation**
289408	LOGOS OPERATING, LLC	7034

10 Surface Location

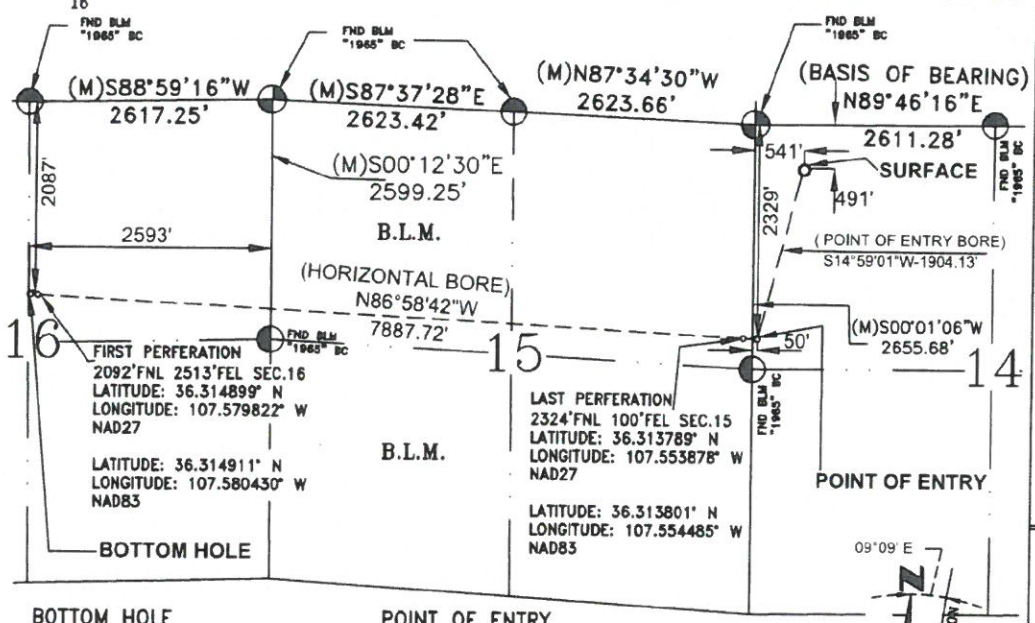
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	14	24-N	7-W		491'	NORTH	541'	WEST	RIO ARRIBA

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
G	16	24-N	7-W		2087'	NORTH	2593'	EAST	RIO ARRIBA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
480 ACRES= N/2 SEC 15 & NE/4 SEC 16		CA NMNM136953	

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



BOTTOM HOLE
2087' FNL 2593' FEL SEC. 16
LATITUDE: 36.314910° N
LONGITUDE: 107.580094° W
NAD27

LATITUDE: 36.314923° N
LONGITUDE: 107.580701° W
NAD83

POINT OF ENTRY
2329'FNL 50'FWL SEC.14
LATITUDE: 36.313767° N
LONGITUDE: 107.553370° W
NAD27

LATITUDE: 36.313779° N
LONGITUDE: 107.553976° W
NAD83

SURFACE
491' FNL 541' FWL SEC. 14
LATITUDE: 36.318817° N
LONGITUDE: 107.551698° W
NAD27

LATITUDE: 36.318829° N
LONGITUDE: 107.552305° W
NAD83

BASIS OF BEARING:
BETWEEN FOUND MONUMENTS AT THE NORTHWEST CORNER AND THE NORTH QUARTER CORNER OF SECTION 14, TOWNSHIP 24 NORTH, RANGE 7 WEST, N.M.P.M. RIO ARRIBA COUNTY, NEW MEXICO.

LINE BEARS: N 89°46'16" E A DISTANCE OF 2611.28 FEET AS MEASURED BY G.P.S. LOCAL GRID NAD83.

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 a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Tam Sessions 5-7-19
Signature Date
Tamra Sessions
Printed Name
tsessions@logosresourcesllc.com
E-mail Address

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.

MAY 1, 2019
Date of Survey
Signature and Seal of Professional Surveyor:

GLEN W. RUSSELL
Certificate Number 15703

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: LOGOS Operating, LLC **OGRID:** 289408 **Date:** 07/06/2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Escrito D14 2407 Com 2H	30-039-	D 14 T24N R7W	491FNL 541FWL	199.54	405.16	83.39

IV. Central Delivery Point Name: Enterprise Field Services [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Escrito D14 2407 Com 2H	30-039-	Pending	Pending	Pending	Pending	Pending

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	Etta Trujillo
Printed Name:	Etta Trujillo
Title:	Regulatory Specialist
E-mail Address:	etrujillo@logosresourcesllc.com
Date:	07/06/2022
Phone:	(505) 324-4154

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

LOGOS Operating, LLC

VI. Separation Equipment

The operator will select separation equipment for the maximum anticipated throughput and pressure to optimize gas capture. Separation equipment is sized according to manufacturer's design specifications. Separation vessels are built following the A.S.M.E. section VII division 1 codes for pressure vessel design, fabrication, inspection, testing and certification. Anticipated well pressures and production rates are evaluated to select separation equipment according to the equipment's designed operating pressure and throughput.

After completion, the operator utilizes flowback equipment, including separators, to manage wellbore fluids and solids during the initial separation period. After the initial flowback period is complete the operator utilizes iterative facility separation equipment to ensure that optimal separation is achieved.

VII. Operational Practices 19.15.27.8 NMAC A through F

A. The operator will maximize the recovery of natural gas and minimize the amount of gas vented or flared when technically and safely feasible as further described and detailed within the following subsections (B-F of 19.15.27.8). In all cases where natural gas venting and flaring requires regulatory reporting, reporting will be submitted accurately and within the required time frames.
B. Venting and flaring during drilling operations:
    a. New Drill HZ Gas/Oil Wells: The operator drills wells in the area by utilizing a balanced mud to safely drill the wellbore. This technique prevents gas from coming to surface during the drilling process. If there is an emergency or malfunction and natural gas does come to surface the natural gas will be captured and routed to sales if technically and safely feasible.
C. Venting and flaring during completion or recompletion operations:
    a. New Drill HZ Gas/Oil Wells: The operator's facilities are designed to handle the maximum throughput and pressures from the newly drilled and completed wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. During initial flowback and initial separation flowback the operator will utilize contracted flowback equipment, including separators, to manage wellbore fluids and solids. The initial flowback period will be minimized and flow will be sent to separation equipment as soon as possible to reduce the amount of gas that is vented to atmosphere. The natural gas will be utilized on site as needed for fuel gas and natural gas will be sold.

D. Venting and flaring during production operations:
    a. New Drill HZ Gas/Oil Wells: The operator's facilities are designed to handle the maximum throughput and pressures from producing wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. Operations will effectively manage the following scenarios to minimize the quantity of natural gas that is vented or flared:

(a) If there is an emergency or malfunction vented or flared natural gas will be reported, if required, and the emergency or malfunction will be resolved as soon as technically and safely feasible.
(b) If the wellbore needs to be unloaded to atmosphere the operator will not vent the well after the well has achieved a stabilized rate and pressure. The operator will remain on site during unloading. Plunger lift systems will be optimized to reduce the amount of natural gas venting. Downhole maintenance, such as workovers, swabbing, etc. will only be conducted as needed and best management practices will be utilized to reduce venting of natural gas.
(c) The operator will minimize the amount of time that natural gas is vented to atmosphere from gauging and sampling a storage tank or low-pressure vessel, automatic tank gauges will be the primary means of gauging. The formation is only anticipated to produce water and therefore tank emissions are anticipated to be negligible.
(d) The operator will reduce the amount of time needed for loading out liquids from a storage tanks or other low-pressure vessels whenever feasible. Operations will always utilize the water transfer systems when available. Water loading emissions are anticipated to be negligible. Operations will utilize a LACT system when available to minimize gas vented during oil tank loading.
(e) Equipment will be repaired and maintained routinely to minimize the venting or flaring of natural gas. Repairs and maintenance will be conducted in a manner that minimizes the amount of natural gas vented to atmosphere through the isolation of the equipment that is being repaired or maintained.
(f) Electric controllers and pumps will be installed to replace pneumatic controllers whenever feasible. Pneumatic controllers and pumps will be inspected frequently to ensure that no excess gas is vented to atmosphere.
(g) Storage tanks and other low-pressure vessel normal operational venting will be minimized during the early life of the well with the installation of a vapor recovery unit to limit the flash and working and breathing emissions to atmosphere.
(h) No dehydration or amine units are anticipated to be set on location.
(i) Compressors, compressor engines, turbines, flanges, connectors, valves, storage tanks, and other low-pressure vessels and flanges will be routinely inspected to ensure that no excess venting occurs outside of normal operations.
(j) Regulatory required testing, such as bradenhead and packer testing will be performed in a manner that minimizes the amount of natural gas vented to atmosphere.
(k) If natural gas does not meet gathering pipeline specifications gas samples will be collected twice per week to determine when pipeline specification gas content has been achieved. During this time frame gas will be flared and not vented to atmosphere. Natural gas that meets pipeline specifications will be sold via pipeline and natural gas that can be utilized for fuel gas will be used during this time.
(l) If pipeline, equipment, or facilities need purged of impurities gas losses will be minimized as much as technically and safely feasible.

E. Performance standards:
    a. The production facilities are designed to handle the maximum throughput and pressures from producing wellbores and will be designed to minimize waste. The amount of gas vented and flared will be minimized when technically and safely feasible.
    b. All tanks that are routed to a control device that is installed after 5/25/2021 will have an automatic gauging system to minimize the amount of vented natural gas.
    c. If a flare stack is installed or replaced after 5/25/2021 it will be equipped with an automatic ignitor or continuous pilot. The flare stack will be properly sized and designed to ensure proper combustion efficiency. The flare stack will be located 100 feet away from the nearest wellhead or storage tank.
    d. AVO inspections will be conducted weekly for the year after completion and for all wells producing greater than 60,000 cubic feet of natural gas daily. The AVO inspection will include all components, including flare stacks, thief hatches, closed vent systems, pumps, compressors, pressure relief devices, valves, lines, flanges, connectors, and associated pipeline to identify any leaks and releases by comprehensive auditory, visual, and olfactory inspection. The AVO inspection records will be maintained for 5 years which will be available at the department's request. Identified leaks will be repaired as soon as feasible to minimize the amount of vented natural gas.

F. Measurement or estimation of vented and flared natural gas.
    a. The volume of natural gas that is vented, flared or consumed for beneficial use will be measured when possible, or estimated, during drilling, completions, or production operations.
    b. Equipment will be installed to measure the volume of natural gas flared for all APD's issued after 5/25/2021 on facilities that will have an average daily gas rate greater than 60,000 cubic feet of natural gas. Measurement equipment will conform to API MPMS Chapter 14.10 regulations. The measurement equipment will not have a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment. If metering is not practical then the volume of gas will be estimated.

LOGOS Operating, LLC
Operations Plan

Note: This procedure will be adjusted onsite based upon actual conditions

Date:	June 14, 2022	Pool:	Escrito Gallup (Associated)
Well Name:	**Escrito D14 2407 Com #2H**	Elevation:	7,034'
Surface Location:	Sec 14, T24N, R7W 491 FNL, 541 FWL (36.318829º N, 107.552305º W – NAD83)	Measured Depth:	14,564'
Bottom Hole Location:	Sec 16, T24N, R7W 2087 FNL, 2593 FEL (36.314923º N, 107.580701º W – NAD83)	County:	Rio Arriba

Lease Serial #NMNM 117567; CA NMNM 136953

I. GEOLOGY

A. Formation Tops (14' KB): Estimated top of important geological markers:
SURFACE FORMATION - NACIMIENTO

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	1804	1797	MENEFEE	4262	4049
KIRTLAND	1962	1949	*POINT LOOKOUT	5007	4726
*FRUITLAND	2163	2139	*MANCOS	5224	4924
*PICTURED CLIFFS	2491	2439	EL VADO	6142	5700
LEWIS	2580	2520	KICKOFF POINT	5488	5163
CHACRA	3388	3254	LANDING POINT	6679	5872
*CLIFF HOUSE	4215	4006	TD	14564	5812

* indicates depth at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered.

B. **MUD LOGGING PROGRAM:** Mudlogger on location from KOP to TD.

C. **LOGGING PROGRAM:** LWD GR from surface casing to TD.

D. **NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. **MUD PROGRAM:** LSND mud (WBM) will be used to drill the 12-1/4" Surface hole, the 8 ¾" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary.

Above ground steel pits will be used for fluid and cuttings while drilling. In the unlikely event that a tank develops a leak, upon immediate visual discovery, the fluid would be transferred to another tank and contaminated soil would be removed and disposed. Any leaks, spills or other undesirable events will be reported in accordance with BLM NTL 3A. Rig crews will monitor the tanks at all times.

B. **BOP TESTING:** While drill pipe is in use, the pipe rams and the blindrams will be function tested once each

trip. The BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes.** Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes.** Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded and logged with time and results.**

C. **GeoHazards:** There are no known Geohazards

D. **Maximum Anticipated Pressure:** 5872' TVD x 0.43 = 2525 psi

E. **H2S Concerns**: There is no record of any naturally occurring H2S in any formation in the Rosa Unit. No H2S is anticipated in this formation or this well.

III. MATERIALS

A. CASING EQUIPMENT:

CASING TYPE	OH SIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	12.25"	320' or greater	9.625"	36 LBS	J-55 or equiv	LTC
INTERMEDIATE	8.75"	6,679'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	6,529' – 14,564'	4.5"	11.6 LBS	P-110 or equiv	LTC or BTC
TIE BACK	6.125"	Surf. – 6,529'	4.5"	11.6 LBS	P-110 or equiv	LTC or BTC

NOTE: All casing depths are approximate, based on assumed 14' KB elevation, and will be based on drilling conditions +/- 50'. Weights, grades, and connections will be based on availability and may vary but will be equivalent or greater.

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
2. INTERMEDIATE CASING: 7" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. Optional use of DV Tool will be considered if losses while drilling are encountered. See note below.
3. PRODUCTION LINER: Run 4-1/2" Liner with cement nose guide Float Shoe+ 2jts. of 4-1/2" casing+ Landing Collar+ 4-1/2" pup joint+ 1 RSI (Sliding Sleeve). Centralizer program will be determined by wellbore condition. Set seals on Liner Hanger. Liner to be pressure tested during completion operations.

NOTE: Use of DV tool would be considered by operator as back up in case we experience heavy losses and are concerned with cement not reaching surface. If major losses are not encountered we will not run DV tool. Optional use of cancelation plugs for DV tools may be used if losses while cementing are not encountered.

C. **CEMENTING:**

(Note: Volumes may be adjusted onsite due to actual conditions)

1. SURFACE: Casing shall be set at ~ 320' and cemented to surface. TOC at Surface. 129 sks of 15.8 ppg Type Neat G, 1.18 cuft/sk yield or equivalent 109 sks of 14.6 ppg Type III with 1.39 cuf/sk yield, 30% excess.

2. INTERMEDIATE: If deemed necessary, the intermediate casing will be cemented in 1, 2 or 3 stages using DV/STAGE tools in order to reduce cement losses and maximize cement coverage. If losses are not observed a cancelation plug will be pumped and the remaining cement will be pumped during stage 1. Lead Cement: 189 bbls, 545 sks, 12.3 ppg@ 1.95 cuft/sk yield. Tail Cement: 43 bbls, 186 sks,13.5 ppg@ 1.3 cu'ft/sk yield. Displacement: Displace w/ Drilling mud or water. Total Cement: 233 bbls, 731 sks. Calculated at 30% excess for the open hole and 0% excess for the cased hole for adequate TOC to surface.
3. PRODUCTION LINER: Lead Cement: Yield 1.56 cuft/sk 13.3 ppg (570 sx / 158 bbls). Calculated at 15% excess for open hole and 0% excess for cased hole for adequate TOC for a minimum of 100' overlap between production liner and intermediate casing. Displacement: Displace w/ drilling mud or water.

IV. COMPLETION

A. CBL

CBLs and/or Temperature Surveys Will Be Performed as Needed or Required

B. PRESSURE TEST

With frac stack installed on wellhead, pressure test 4-1/2" casing to 1500 psi for 30 minutes. Increase pressure to Open Toe sleeves.

C. STIMULATION

Stimulate with sand, water and N2. Isolate stages with flow through frac plugs. Drill out frac plugs and flowback lateral.

D. PRODUCTION TUBING

Run 2-7/8", 6.5#, J-55, EUE tubing

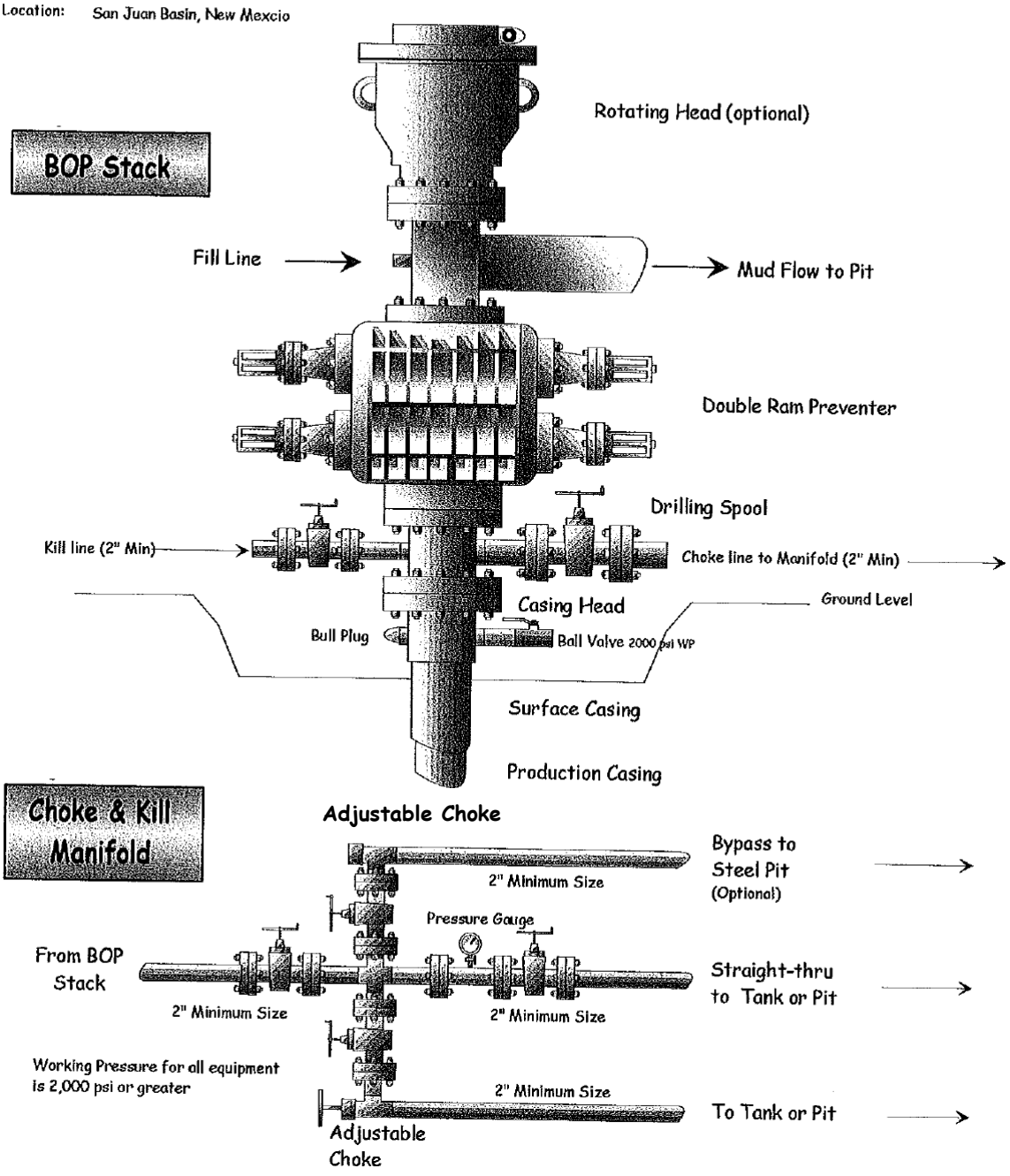
*NOTE: Although this horizontal well may be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 8(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 8(2) NMAC, 19.15.16.15 8(2)NMAC, and 19.15.16.15. 8(4) NMAC.

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Exhibit #1
Typical BOP setup

Location: San Juan Basin, New Mexcio



ESCRITO D14 2407 COM #002H

LOGOS RESOURCES II, LLC

Company: Logos Operating LLC
Project: Rio Arriba, NM NAD83
Site: Escrito D14-2407
Well: Escrito D14-2407 COM 2H
Wellbore: OH
Design: Plan #2 (EV_B)

PROJECT DETAILS: Rio Arriba, NM NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: True

Scientific Drilling

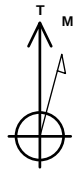
WELL DETAILS: Escrito D14-2407 COM 2H

GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1935474.24	2805880.52	36.3188290	-107.5523050

Plan: Plan #2 (EV_B) (Escrito D14-2407 COM 2H/OH)

Created By: Janie Collins Date: 11:13, May 08 2019



Azimuths to True North
Magnetic North: 8.
Magnetic Field
Strength: 49486.6
Dip Angle: 62.
Date: 5/3/2
Model: HD

DESIGN TARGET DETAILS

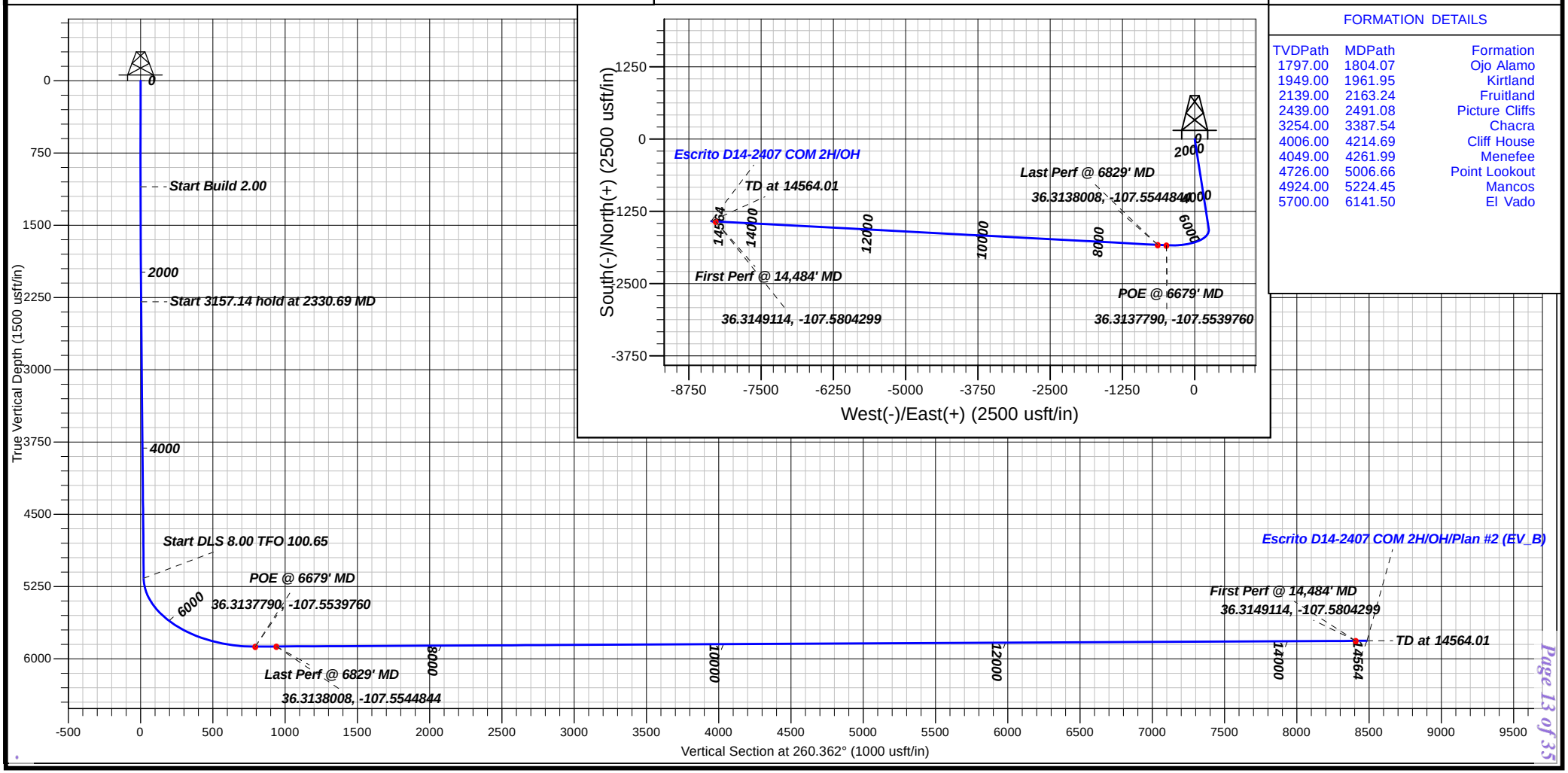
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Escrito 2H POE (EV_B)	5872.00	-1838.35	-492.30	1933634.47	2805393.56	36.3137790	-107.5539760
Escrito 2H BHL (EV_B)	5812.00	-1420.67	-8365.72	1934029.27	2797518.97	36.3149230	-107.5807010
Escrito 2H FPerf	5812.00	-1425.06	-8285.88	1934025.11	2797598.82	36.3149110	-107.5804300
Escrito 2H LPerf	5872.00	-1830.33	-642.26	1933642.05	2805243.58	36.3138010	-107.5544850

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
1100.00	0.00	0.000	1100.00	0.00	0.00	0.00	0.00	0.00	
2330.69	24.61	171.156	2293.18	-257.21	40.02	2.00	171.16	3.61	
5487.83	24.61	171.156	5163.45	-1556.53	242.19	0.00	0.00	21.83	
6679.29	90.44	273.037	5872.00	-1838.35	-492.30	8.00	100.65	793.13	Escrito 2H POE (EV_B)
14564.01	90.44	273.037	5812.00	-1420.67	-8365.72	0.00	0.00	8485.49	Escrito 2H BHL (EV_B)

CASING DETAILS

No casing data is available



FORMATION DETAILS

TVDPath	MDPath	Formation
1797.00	1804.07	Ojo Alamo
1949.00	1961.95	Kirtland
2139.00	2163.24	Fruitland
2439.00	2491.08	Picture Cliffs
3254.00	3387.54	Chacra
4006.00	4214.69	Cliff House
4049.00	4261.99	Menefee
4726.00	5006.66	Point Lookout
4924.00	5224.45	Mancos
5700.00	6141.50	El Vado

Logos Operating LLC

Rio Arriba, NM NAD83
Escrito D14-2407
Escrito D14-2407 COM 2H

OH

Plan: Plan #2 (EV_B)

Standard Planning Report

08 May, 2019

Scientific Drilling

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LOGOS RESOURCES II, LLC

Scientific Drilling, Intl

Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Escrito D14-2407 COM 2H
Company:	Logos Operating LLC	**TVD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Site:	Escrito D14-2407	**North Reference:**	True
Well:	Escrito D14-2407 COM 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 (EV_B)		

Project	Rio Arriba, NM NAD83		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Escrito D14-2407				
Site Position:		**Northing:**	1,935,474.24 usft	**Latitude:**	36.3188290
From:	Lat/Long	**Easting:**	2,805,880.52 usft	**Longitude:**	-107.5523050
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.17 °

Well	Escrito D14-2407 COM 2H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	1,935,474.24 usft	**Latitude:**	36.3188290
	+E/-W	0.00 usft	**Easting:**	2,805,880.52 usft	**Longitude:**	-107.5523050
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	7,034.00 usft

Wellbore	OH			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	5/3/2019	8.68	62.88	49,487

Design	Plan #2 (EV_B)			
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	260.362

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,330.69	24.61	171.156	2,293.18	-257.21	40.02	2.00	2.00	0.00	171.16	
5,487.83	24.61	171.156	5,163.45	-1,556.53	242.19	0.00	0.00	0.00	0.00	
6,679.29	90.44	273.037	5,872.00	-1,838.35	-492.30	8.00	5.52	8.55	100.65	Escrito 2H POE (EV_
14,564.01	90.44	273.037	5,812.00	-1,420.67	-8,365.72	0.00	0.00	0.00	0.00	Escrito 2H BHL (EV_E

LOGOS RESOURCES II, LLC

Scientific Drilling, Intl

Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Escrito D14-2407 COM 2H
Company:	Logos Operating LLC	**TVD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Site:	Escrito D14-2407	**North Reference:**	True
Well:	Escrito D14-2407 COM 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 (EV_B)		

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)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,200.00	2.00	171.156	1,199.98	-1.72	0.27	0.02	2.00	2.00	0.00
1,300.00	4.00	171.156	1,299.84	-6.90	1.07	0.10	2.00	2.00	0.00
1,400.00	6.00	171.156	1,399.45	-15.51	2.41	0.22	2.00	2.00	0.00
1,500.00	8.00	171.156	1,498.70	-27.55	4.29	0.39	2.00	2.00	0.00
1,600.00	10.00	171.156	1,597.46	-43.00	6.69	0.60	2.00	2.00	0.00
1,700.00	12.00	171.156	1,695.62	-61.86	9.62	0.87	2.00	2.00	0.00
1,800.00	14.00	171.156	1,793.05	-84.08	13.08	1.18	2.00	2.00	0.00
1,900.00	16.00	171.156	1,889.64	-109.66	17.06	1.54	2.00	2.00	0.00
2,000.00	18.00	171.156	1,985.26	-138.54	21.56	1.94	2.00	2.00	0.00
2,100.00	20.00	171.156	2,079.81	-170.71	26.56	2.39	2.00	2.00	0.00
2,200.00	22.00	171.156	2,173.16	-206.12	32.07	2.89	2.00	2.00	0.00
2,300.00	24.00	171.156	2,265.21	-244.73	38.08	3.43	2.00	2.00	0.00
2,330.69	24.61	171.156	2,293.18	-257.21	40.02	3.61	2.00	2.00	0.00
Start 3157.14 hold at 2330.69 MD									
2,400.00	24.61	171.156	2,356.19	-285.73	44.46	4.01	0.00	0.00	0.00
2,500.00	24.61	171.156	2,447.11	-326.89	50.86	4.58	0.00	0.00	0.00
2,599.99	24.61	171.156	2,538.02	-368.04	57.27	5.16	0.00	0.00	0.00
2,699.99	24.61	171.156	2,628.93	-409.20	63.67	5.74	0.00	0.00	0.00
2,799.99	24.61	171.156	2,719.85	-450.35	70.07	6.32	0.00	0.00	0.00
2,899.99	24.61	171.156	2,810.76	-491.51	76.48	6.89	0.00	0.00	0.00
2,999.99	24.61	171.156	2,901.67	-532.66	82.88	7.47	0.00	0.00	0.00
3,099.99	24.61	171.156	2,992.59	-573.82	89.28	8.05	0.00	0.00	0.00
3,199.99	24.61	171.156	3,083.50	-614.97	95.69	8.62	0.00	0.00	0.00
3,299.99	24.61	171.156	3,174.41	-656.13	102.09	9.20	0.00	0.00	0.00
3,399.99	24.61	171.156	3,265.33	-697.28	108.49	9.78	0.00	0.00	0.00
3,499.99	24.61	171.156	3,356.24	-738.44	114.90	10.36	0.00	0.00	0.00
3,599.99	24.61	171.156	3,447.15	-779.59	121.30	10.93	0.00	0.00	0.00
3,699.99	24.61	171.156	3,538.07	-820.75	127.70	11.51	0.00	0.00	0.00
3,799.99	24.61	171.156	3,628.98	-861.90	134.11	12.09	0.00	0.00	0.00
3,899.99	24.61	171.156	3,719.89	-903.06	140.51	12.66	0.00	0.00	0.00
3,999.99	24.61	171.156	3,810.81	-944.21	146.92	13.24	0.00	0.00	0.00
4,099.99	24.61	171.156	3,901.72	-985.36	153.32	13.82	0.00	0.00	0.00
4,199.99	24.61	171.156	3,992.63	-1,026.52	159.72	14.40	0.00	0.00	0.00
4,299.99	24.61	171.156	4,083.55	-1,067.67	166.13	14.97	0.00	0.00	0.00
4,399.99	24.61	171.156	4,174.46	-1,108.83	172.53	15.55	0.00	0.00	0.00
4,499.99	24.61	171.156	4,265.37	-1,149.98	178.93	16.13	0.00	0.00	0.00
4,599.99	24.61	171.156	4,356.29	-1,191.14	185.34	16.70	0.00	0.00	0.00
4,699.99	24.61	171.156	4,447.20	-1,232.29	191.74	17.28	0.00	0.00	0.00
4,799.99	24.61	171.156	4,538.11	-1,273.45	198.14	17.86	0.00	0.00	0.00

LOGOS RESOURCES II, LLC

Scientific Drilling, Intl

Planning Report

Scientific Drilling

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Company:	Logos Operating LLC	**TVD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Site:	Escrito D14-2407	**North Reference:**	True
Well:	Escrito D14-2407 COM 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 (EV_B)		

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)
4,899.99	24.61	171.156	4,629.03	-1,314.60	204.55	18.44	0.00	0.00	0.00
4,999.99	24.61	171.156	4,719.94	-1,355.76	210.95	19.01	0.00	0.00	0.00
5,099.99	24.61	171.156	4,810.85	-1,396.91	217.35	19.59	0.00	0.00	0.00
5,199.99	24.61	171.156	4,901.77	-1,438.07	223.76	20.17	0.00	0.00	0.00
5,299.99	24.61	171.156	4,992.68	-1,479.22	230.16	20.74	0.00	0.00	0.00
5,399.99	24.61	171.156	5,083.59	-1,520.38	236.56	21.32	0.00	0.00	0.00
5,487.83	24.61	171.156	5,163.45	-1,556.53	242.19	21.83	0.00	0.00	0.00
Start DLS 8.00 TFO 100.65									
5,499.99	24.45	173.466	5,174.51	-1,561.53	242.86	22.00	8.00	-1.33	19.00
5,599.99	24.49	192.855	5,265.68	-1,602.37	240.60	31.06	8.00	0.04	19.39
5,699.99	26.87	210.552	5,355.93	-1,642.10	224.48	53.62	8.00	2.38	17.70
5,799.99	31.06	224.691	5,443.50	-1,679.97	194.80	89.22	8.00	4.19	14.14
5,899.99	36.43	235.406	5,526.70	-1,715.22	152.15	137.17	8.00	5.37	10.72
5,999.99	42.53	243.565	5,603.89	-1,747.18	97.35	196.54	8.00	6.10	8.16
6,099.99	49.09	249.966	5,673.59	-1,775.22	31.47	266.18	8.00	6.56	6.40
6,199.99	55.94	255.187	5,734.44	-1,798.79	-44.20	344.73	8.00	6.85	5.22
6,299.99	62.98	259.614	5,785.24	-1,817.44	-128.19	430.67	8.00	7.04	4.43
6,399.99	70.13	263.512	5,825.01	-1,830.81	-218.88	522.31	8.00	7.16	3.90
6,499.99	77.37	267.071	5,852.98	-1,838.63	-314.48	617.87	8.00	7.24	3.56
6,599.99	84.65	270.433	5,868.60	-1,840.75	-413.15	715.50	8.00	7.28	3.36
6,679.29	90.44	273.037	5,872.00	-1,838.35	-492.30	793.13	8.00	7.30	3.28
POE @ 6679' MD - 36.3137790, -107.5539760									
6,699.99	90.44	273.037	5,871.84	-1,837.25	-512.97	813.33	0.00	0.00	0.00
6,799.99	90.44	273.037	5,871.08	-1,831.95	-612.82	910.89	0.00	0.00	0.00
6,829.29	90.44	273.037	5,870.86	-1,830.40	-642.09	939.47	0.00	0.00	0.00
Last Perf @ 6829' MD - 36.3138008, -107.5544844									
6,899.99	90.44	273.037	5,870.32	-1,826.65	-712.68	1,008.45	0.00	0.00	0.00
6,999.99	90.44	273.037	5,869.56	-1,821.36	-812.54	1,106.01	0.00	0.00	0.00
7,099.99	90.44	273.037	5,868.80	-1,816.06	-912.39	1,203.57	0.00	0.00	0.00
7,199.99	90.44	273.037	5,868.04	-1,810.76	-1,012.25	1,301.13	0.00	0.00	0.00
7,299.99	90.44	273.037	5,867.28	-1,805.47	-1,112.11	1,398.69	0.00	0.00	0.00
7,399.99	90.44	273.037	5,866.52	-1,800.17	-1,211.96	1,496.25	0.00	0.00	0.00
7,499.99	90.44	273.037	5,865.75	-1,794.87	-1,311.82	1,593.81	0.00	0.00	0.00
7,599.98	90.44	273.037	5,864.99	-1,789.57	-1,411.68	1,691.37	0.00	0.00	0.00
7,699.98	90.44	273.037	5,864.23	-1,784.28	-1,511.53	1,788.93	0.00	0.00	0.00
7,799.98	90.44	273.037	5,863.47	-1,778.98	-1,611.39	1,886.49	0.00	0.00	0.00
7,899.98	90.44	273.037	5,862.71	-1,773.68	-1,711.25	1,984.05	0.00	0.00	0.00
7,999.98	90.44	273.037	5,861.95	-1,768.38	-1,811.10	2,081.61	0.00	0.00	0.00
8,099.98	90.44	273.037	5,861.19	-1,763.09	-1,910.96	2,179.17	0.00	0.00	0.00
8,199.98	90.44	273.037	5,860.43	-1,757.79	-2,010.82	2,276.73	0.00	0.00	0.00
8,299.98	90.44	273.037	5,859.67	-1,752.49	-2,110.67	2,374.29	0.00	0.00	0.00
8,399.98	90.44	273.037	5,858.91	-1,747.20	-2,210.53	2,471.85	0.00	0.00	0.00
8,499.98	90.44	273.037	5,858.15	-1,741.90	-2,310.38	2,569.41	0.00	0.00	0.00
8,599.98	90.44	273.037	5,857.38	-1,736.60	-2,410.24	2,666.97	0.00	0.00	0.00
8,699.98	90.44	273.037	5,856.62	-1,731.30	-2,510.10	2,764.53	0.00	0.00	0.00
8,799.98	90.44	273.037	5,855.86	-1,726.01	-2,609.95	2,862.09	0.00	0.00	0.00
8,899.98	90.44	273.037	5,855.10	-1,720.71	-2,709.81	2,959.65	0.00	0.00	0.00
8,999.98	90.44	273.037	5,854.34	-1,715.41	-2,809.67	3,057.21	0.00	0.00	0.00
9,099.98	90.44	273.037	5,853.58	-1,710.11	-2,909.52	3,154.77	0.00	0.00	0.00
9,199.98	90.44	273.037	5,852.82	-1,704.82	-3,009.38	3,252.33	0.00	0.00	0.00
9,299.98	90.44	273.037	5,852.06	-1,699.52	-3,109.24	3,349.89	0.00	0.00	0.00
9,399.98	90.44	273.037	5,851.30	-1,694.22	-3,209.09	3,447.45	0.00	0.00	0.00

LOGOS RESOURCES II, LLC

Scientific Drilling, Intl

Planning Report

Scientific Drilling

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Company:	Logos Operating LLC	**TVD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Site:	Escrito D14-2407	**North Reference:**	True
Well:	Escrito D14-2407 COM 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 (EV_B)		

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)
9,499.98	90.44	273.037	5,850.54	-1,688.93	-3,308.95	3,545.01	0.00	0.00	0.00
9,599.98	90.44	273.037	5,849.77	-1,683.63	-3,408.81	3,642.57	0.00	0.00	0.00
9,699.98	90.44	273.037	5,849.01	-1,678.33	-3,508.66	3,740.13	0.00	0.00	0.00
9,799.98	90.44	273.037	5,848.25	-1,673.03	-3,608.52	3,837.69	0.00	0.00	0.00
9,899.98	90.44	273.037	5,847.49	-1,667.74	-3,708.38	3,935.25	0.00	0.00	0.00
9,999.98	90.44	273.037	5,846.73	-1,662.44	-3,808.23	4,032.81	0.00	0.00	0.00
10,099.98	90.44	273.037	5,845.97	-1,657.14	-3,908.09	4,130.37	0.00	0.00	0.00
10,199.98	90.44	273.037	5,845.21	-1,651.84	-4,007.95	4,227.93	0.00	0.00	0.00
10,299.98	90.44	273.037	5,844.45	-1,646.55	-4,107.80	4,325.49	0.00	0.00	0.00
10,399.98	90.44	273.037	5,843.69	-1,641.25	-4,207.66	4,423.05	0.00	0.00	0.00
10,499.98	90.44	273.037	5,842.93	-1,635.95	-4,307.51	4,520.61	0.00	0.00	0.00
10,599.98	90.44	273.037	5,842.17	-1,630.66	-4,407.37	4,618.17	0.00	0.00	0.00
10,699.98	90.44	273.037	5,841.40	-1,625.36	-4,507.23	4,715.73	0.00	0.00	0.00
10,799.98	90.44	273.037	5,840.64	-1,620.06	-4,607.08	4,813.29	0.00	0.00	0.00
10,899.98	90.44	273.037	5,839.88	-1,614.76	-4,706.94	4,910.85	0.00	0.00	0.00
10,999.98	90.44	273.037	5,839.12	-1,609.47	-4,806.80	5,008.41	0.00	0.00	0.00
11,099.98	90.44	273.037	5,838.36	-1,604.17	-4,906.65	5,105.97	0.00	0.00	0.00
11,199.98	90.44	273.037	5,837.60	-1,598.87	-5,006.51	5,203.53	0.00	0.00	0.00
11,299.98	90.44	273.037	5,836.84	-1,593.57	-5,106.37	5,301.09	0.00	0.00	0.00
11,399.98	90.44	273.037	5,836.08	-1,588.28	-5,206.22	5,398.65	0.00	0.00	0.00
11,499.98	90.44	273.037	5,835.32	-1,582.98	-5,306.08	5,496.21	0.00	0.00	0.00
11,599.98	90.44	273.037	5,834.56	-1,577.68	-5,405.94	5,593.77	0.00	0.00	0.00
11,699.98	90.44	273.037	5,833.79	-1,572.39	-5,505.79	5,691.33	0.00	0.00	0.00
11,799.98	90.44	273.037	5,833.03	-1,567.09	-5,605.65	5,788.89	0.00	0.00	0.00
11,899.98	90.44	273.037	5,832.27	-1,561.79	-5,705.51	5,886.45	0.00	0.00	0.00
11,999.98	90.44	273.037	5,831.51	-1,556.49	-5,805.36	5,984.01	0.00	0.00	0.00
12,099.98	90.44	273.037	5,830.75	-1,551.20	-5,905.22	6,081.57	0.00	0.00	0.00
12,199.98	90.44	273.037	5,829.99	-1,545.90	-6,005.08	6,179.13	0.00	0.00	0.00
12,299.98	90.44	273.037	5,829.23	-1,540.60	-6,104.93	6,276.69	0.00	0.00	0.00
12,399.98	90.44	273.037	5,828.47	-1,535.30	-6,204.79	6,374.25	0.00	0.00	0.00
12,499.98	90.44	273.037	5,827.71	-1,530.01	-6,304.64	6,471.81	0.00	0.00	0.00
12,599.98	90.44	273.037	5,826.95	-1,524.71	-6,404.50	6,569.37	0.00	0.00	0.00
12,699.97	90.44	273.037	5,826.18	-1,519.41	-6,504.36	6,666.93	0.00	0.00	0.00
12,799.97	90.44	273.037	5,825.42	-1,514.11	-6,604.21	6,764.49	0.00	0.00	0.00
12,899.97	90.44	273.037	5,824.66	-1,508.82	-6,704.07	6,862.05	0.00	0.00	0.00
12,999.97	90.44	273.037	5,823.90	-1,503.52	-6,803.93	6,959.61	0.00	0.00	0.00
13,099.97	90.44	273.037	5,823.14	-1,498.22	-6,903.78	7,057.17	0.00	0.00	0.00
13,199.97	90.44	273.037	5,822.38	-1,492.93	-7,003.64	7,154.74	0.00	0.00	0.00
13,299.97	90.44	273.037	5,821.62	-1,487.63	-7,103.50	7,252.30	0.00	0.00	0.00
13,399.97	90.44	273.037	5,820.86	-1,482.33	-7,203.35	7,349.86	0.00	0.00	0.00
13,499.97	90.44	273.037	5,820.10	-1,477.03	-7,303.21	7,447.42	0.00	0.00	0.00
13,599.97	90.44	273.037	5,819.34	-1,471.74	-7,403.07	7,544.98	0.00	0.00	0.00
13,699.97	90.44	273.037	5,818.58	-1,466.44	-7,502.92	7,642.54	0.00	0.00	0.00
13,799.97	90.44	273.037	5,817.81	-1,461.14	-7,602.78	7,740.10	0.00	0.00	0.00
13,899.97	90.44	273.037	5,817.05	-1,455.84	-7,702.64	7,837.66	0.00	0.00	0.00
13,999.97	90.44	273.037	5,816.29	-1,450.55	-7,802.49	7,935.22	0.00	0.00	0.00
14,099.97	90.44	273.037	5,815.53	-1,445.25	-7,902.35	8,032.78	0.00	0.00	0.00
14,199.97	90.44	273.037	5,814.77	-1,439.95	-8,002.21	8,130.34	0.00	0.00	0.00
14,299.97	90.44	273.037	5,814.01	-1,434.66	-8,102.06	8,227.90	0.00	0.00	0.00
14,399.97	90.44	273.037	5,813.25	-1,429.36	-8,201.92	8,325.46	0.00	0.00	0.00
14,484.01	90.44	273.037	5,812.61	-1,424.91	-8,285.84	8,407.45	0.00	0.00	0.00

First Perf @ 14,484' MD - 36.3149114, -107.5804299

LOGOS RESOURCES II, LLC

Scientific Drilling, Intl

Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Escrito D14-2407 COM 2H
Company:	Logos Operating LLC	**TVD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Site:	Escrito D14-2407	**North Reference:**	True
Well:	Escrito D14-2407 COM 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 (EV_B)		

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)
14,499.97	90.44	273.037	5,812.49	-1,424.06	-8,301.77	8,423.02	0.00	0.00	0.00
14,564.01	90.44	273.037	5,812.00	-1,420.67	-8,365.72	8,485.49	0.00	0.00	0.00
TD at 14564.01									

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
Escrito 2H FPerf	0.00	0.000	5,812.00	-1,425.06	-8,285.88	1,934,025.12	2,797,598.82	36.3149110	-107.5804300
- plan misses target center by 0.63usft at 14484.05usft MD (5812.61 TVD, -1424.90 N, -8285.88 E)									
- Point									
Escrito 2H BHL (EV_B)	0.00	0.000	5,812.00	-1,420.67	-8,365.72	1,934,029.28	2,797,518.97	36.3149230	-107.5807010
- plan hits target center									
- Point									
Escrito 2H POE (EV_B)	0.00	0.000	5,872.00	-1,838.35	-492.30	1,933,634.48	2,805,393.57	36.3137790	-107.5539760
- plan hits target center									
- Point									
Escrito 2H LPerf	0.00	0.000	5,872.00	-1,830.33	-642.26	1,933,642.05	2,805,243.59	36.3138010	-107.5544850
- plan misses target center by 1.14usft at 6829.46usft MD (5870.86 TVD, -1830.39 N, -642.25 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,804.07	1,797.00	Ojo Alamo		0.00	0.000
1,961.95	1,949.00	Kirtland		0.00	0.000
2,163.24	2,139.00	Fruitland		0.00	0.000
2,491.08	2,439.00	Picture Cliffs		0.00	0.000
3,387.54	3,254.00	Chacra		0.00	0.000
4,214.69	4,006.00	Cliff House		0.00	0.000
4,261.99	4,049.00	Menefee		0.00	0.000
5,006.66	4,726.00	Point Lookout		0.00	0.000
5,224.45	4,924.00	Mancos		0.00	0.000
6,141.50	5,700.00	El Vado		0.00	0.000

LOGOS RESOURCES II, LLC

Scientific Drilling, Intl

Planning Report

Scientific Drilling

Database:	Grand Junction District	**Local Co-ordinate Reference:**	Well Escrito D14-2407 COM 2H
Company:	Logos Operating LLC	**TVD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 7034' & RKB 14' @ 7048.00usft (Aztec 920)
Site:	Escrito D14-2407	**North Reference:**	True
Well:	Escrito D14-2407 COM 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 (EV_B)		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,100.00	1,100.00	0.00	0.00	Start Build 2.00
2,330.69	2,293.18	-257.21	40.02	Start 3157.14 hold at 2330.69 MD
5,487.83	5,163.45	-1,556.53	242.19	Start DLS 8.00 TFO 100.65
6,679.29	5,872.00	-1,838.35	-492.30	POE @ 6679' MD
6,679.29	5,872.00	-1,838.35	-492.30	36.3137790, -107.5539760
6,829.29	5,870.86	-1,830.40	-642.09	Last Perf @ 6829' MD
6,829.29	5,870.86	-1,830.40	-642.09	36.3138008, -107.5544844
14,484.01	5,812.61	-1,424.91	-8,285.84	First Perf @ 14,484' MD
14,484.01	5,812.61	-1,424.91	-8,285.84	36.3149114, -107.5804299
14,564.01	5,812.00	-1,420.67	-8,365.72	TD at 14564.01

LOGOS Operating, LLC. Escrito D14-2407 Com 2H

DOI-BLM-NM-F010-2022-0009-EA

Conditions of Approval (COA), Design Features, and Best Management Practices

LOGOS Operating, LLC would adhere to the following Conditions of Approval (COAs) and follow the general design features and best management practices (BMPs).

Control of Waste

- A closed-loop system will be used. Cuttings will be stored on-site in aboveground storage tanks. Cuttings will be disposed of at an approved waste disposal facility.
- The closed-loop system storage tanks will be sized to ensure confinement of all fluids and will provide sufficient freeboard to prevent uncontrolled releases.
- A liner will be installed under tanks, pumps, ancillary facilities, and truck loading/unloading areas associated with the closed-loop system.
- Any spills of non-freshwater fluids will be cleaned up immediately and removed to an approved disposal site.
- Portable toilets will be provided and maintained during construction, as needed.
- Garbage, trash, and other waste materials will be collected in a portable, self-contained, and fully enclosed trash container during drilling and completion operations. The accumulated trash will be removed, as needed, and will be disposed of at an authorized sanitary landfill. No trash will be buried or burned on location.
- Immediately after removal of the drilling and completion rigs, all debris and other waste materials not contained in the trash container will be cleaned up and removed from the well location.
- No chemicals subject to reporting under the Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed annually in association with the drilling, testing, or completing of these wells.
- No extremely hazardous substances (as defined in 40 CFR 355) in threshold planning quantities will be used, produced, stored, transported, or disposed in association with the drilling, testing, or completing of these wells.
- Berms will be constructed around all storage facilities sufficient in size to contain the storage capacity of tanks. Berm walls will be compacted with appropriate equipment to assure containment.

Protection of Air Resources

- The BLM's regulatory jurisdiction over field production operations has resulted in the development of BMPs designed to reduce impacts to air quality by reducing all emissions from field production and operations. Typical measures could include flaring hydrocarbons and gases at high temperatures in order to reduce emissions of incomplete combustion, requiring that vapor recovery systems be maintained and functional in areas where petroleum liquids are stored, ensuring that compressor engines 300 horsepower or less have nitrogen oxide (NOx) emissions limited to 2 grams per horsepower hour, revegetating areas not required for production facilities to reduce the amount of dust, and watering dirt roads during periods of high use in order to reduce fugitive dust emissions.
- BMPs for dust abatement and erosion control will be utilized to reduce fugitive dust for the life of the project, as necessary. Water application, using a rear-spraying truck or other suitable means, will be the primary method of dust suppression along the road. Magnesium chloride, organic-based compounds, or polymer compounds could also be applied to roads or other surfaces to reduce fugitive dust. Neither petroleum-based products nor produced water would be used.

Noise

- Engines would be equipped with mufflers and barriers or other sound-proofing measures would be implemented, if needed, to meet the requirements of BLM Notice to Lessees and Operators on Onshore Oil and Gas Leases within the jurisdiction of the FFO NTL 04-2 FFO.

Protection of Paleontological Resources

- Any paleontological resource discovered by the Operator, or any person working on their 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 is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant scientific values. The Holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the Holder.

Protection of Cultural Resources

- All BLM/FFO cultural resources stipulations will be followed as indicated in the Cultural Resource Records of Review. These stipulations may include, but are not limited to, temporary or permanent fencing or other physical barriers, monitoring of earth disturbing construction, reduction and/or specific construction avoidance zones, and employee education. All employees, contractors, and sub-contractors of the project will be informed

by the project proponent that cultural sites are to be avoided by all personnel, personal vehicles, and company equipment. All employees, contractors, and sub-contractors of the project will also be informed that it is illegal to collect, damage, or disturb cultural resources and that such activities are punishable by criminal and/or administrative penalties under the provisions of the Archaeological Resources Protection Act. In the event of a discovery during construction, the project proponent will immediately stop all construction activities in the immediate vicinity of the discovery and then immediately notify the archaeological monitor, if present, or the BLM. The BLM will then evaluate or cause the site to be evaluated. Should a discovery be evaluated as significant (e.g., National Register, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act), it will be protected in place until mitigating measures can be developed and implemented according to guidelines set by the BLM.

Protection of Flora and Fauna, including Special Status Species (SSS) and Livestock

- All surface lines in service will be inspected daily.
- In areas where the surface lines traverse a side slope or steep slope, t-posts will be used to secure them. The 12-inch lay flat lines will have a joint every 660 feet and a 6-foot by 10-foot containment will be placed under each connection.
- The construction and drilling activities will not be allowed during the Crow Mesa Wildlife Area SDA seasonal restriction, between December 1 and March 31, to protect the integrity of the habitat for wintering deer and elk. This stipulation does not apply to operation and maintenance of production facilities.
- A migratory bird nest survey will be conducted for any ground-disturbing activities occurring between May 15 and July 31. The survey must be conducted by a BLM biologist using a survey protocol developed and provided by the BLM/FFO. If active nests are located within the proposed permitted area, project activities will not be permitted without written approval by a BLM/FFO biologist.
- Should any active raptor nests be observed within one-third mile of the proposed project area or should any SSS (listed by the USFWS or BLM) be observed within the proposed project area prior to or during project implementation, construction would cease and the BLM-FFO would be immediately contacted. The BLM-FFO would then ensure evaluation of the resource. Should a discovery be evaluated as significant (protected under the ESA, etc.), it would be protected in place until mitigation could be developed and implemented according to guidelines set by the BLM.
- Any open water containing fluids (i.e. produced water) that could harm birds and other wildlife will be netted in accordance to BLM/FFO migratory bird policy.
- Wildlife hazards associated with the proposed project would be fenced, covered, and/or contained in storage tanks, as necessary.

- During Interim Reclamation, the TUA will be reseeded with a BLM/FFO approved seed mix. Refer to Section 3.3 or the site-specific Reclamation Plans prepared for each location and attached to the Surface Use Plan of Operations. Seeding will be accomplished within 120 days of construction completion, weather permitting. Upon evaluation after the second growing season, seeding will be repeated if a satisfactory stand is not obtained.
- Grazing permittees will be notified when construction is scheduled to begin. All hazards to livestock will be fenced or contained.
- All existing improvements (such as fences, gates, and bar ditches) will be repaired to previous or better than pre-construction conditions. Cut fences will be tied to H-braces prior to cutting and openings will be protected as necessary during construction to prevent the escape of livestock. A temporary closure will be installed the same day the fence is cut. Following reclamation, the fence will be reconstructed to BLM specifications.
- Backfilling operations will be performed within a reasonable amount of time to ensure that the trenches are not left open for more than 24 hours. If a trench is left open overnight, it will be temporarily fenced or a night watchman will be utilized. The excavated soils will be returned to the trenches, atop the pipe, and compacted to prevent subsidence. The trenches will be compacted after approximately 2 feet of fill is placed over the pipe and after the ground surface has been leveled.
- Escape ramps/crossovers will be constructed every 1,320 feet. The ends of the open trench will be sloped each night with a 4:1 slope.
- Established livestock and wildlife trails will be left in place as crossovers. In areas where active grazing is taking place, escape ramps/crossovers will be placed every 500 feet. Crossovers will be a minimum of 10 feet wide and not fenced.
- The end of the pipe will be plugged to prevent animals from crawling in.
- Before the trench is closed, it will be inspected for animals. Any trapped wildlife or livestock will be promptly removed and released at least 150 yards from the trench.
- Production equipment will be placed on location in such a manner to minimize long-term disturbance and maximize interim reclamation. As practical, access will be provided by a teardrop-shaped road through the production area so that the center may be revegetated.

Protection of Visual Resources and Dark Skies

- Lights would be limited to those needed for safety during construction and operations.
- Any permanent lighting would be operated with a switch/timer, pointed directly down at the ground, shielded, and utilize warm temperature emitters of 3,000 Kelvin or less.

- Equipment not subject to safety requirements would be painted a BLM Standard Environmental Color (Juniper Green) to minimize contrast with the surrounding landscape.

Protection of Topsoil

- The upper 6 inches of topsoil (if available) will be stripped following vegetation and site clearing. Topsoil will not be mixed with the underlying subsoil horizons and will be stockpiled as a berm along the perimeter of the well pad within the construction zone, separate from subsoil or other excavated material.
- Topsoil and sub-surface soils will be replaced in the proper order, prior to final seedbed preparation. Spreading shall not be done when the ground or topsoil is wet. Vehicle/equipment traffic will not be allowed to cross topsoil stockpiles. If topsoil is stored for a length of time such that nutrients are depleted from the topsoil, amendments will be added to the topsoil as advised by the LOGOS environmental scientist or appropriate agent/contractor.
- If the location becomes prone to wind or water erosion, LOGOS will take appropriate measures to prevent topsoil loss from wind. Such measures may include using tackifiers or water to wet the topsoil stockpile to create a crust across the exposed soil to prevent soil loss.
- No construction or routine maintenance activities would be performed during periods when the soil is too wet to adequately support construction equipment. If equipment would create ruts deeper than six inches, the soil would be deemed too wet for construction or maintenance.
- Diversions and other water control features will be installed as needed during construction and interim reclamation.
- The access road will be designed and constructed as a Resource Road in accordance with the BLM Gold Book Standards (BLM and USFS 2007), BLM 9113-1 (Roads Design Handbook), and BLM 9113-2 (Roads National Inventory and Condition Assessment Guidance and Instructions Handbook). Construction will include ditching, draining, installing culverts, crowning and capping or sloping and dipping the roadbed, as necessary, to provide a well-constructed and safe road.
- Permanent erosion-control measures will be installed after the workspace has been re-contoured.

Protection of the Public

- The hauling of equipment and materials on public roads would comply with Department of Transportation regulations. No toxic substances would be stored or used within the

proposed project area. LOGOS would have inspectors present during construction. Any accidents involving persons or property would immediately be reported to the BLM-FFO. LOGOS would notify the public of potential hazards by posting signage, as necessary.

- Worker safety incidents would be reported to the BLM FFO as required under NTL–3A (U.S. Geological Survey 1979). LOGOS would adhere to company safety policies and Occupational Safety and Health Administration (OSHA) regulations.
- Vehicles would be restricted to proposed and existing disturbance areas.
- The proposed site would have an informational sign, delineating Operator, Legal Description, etc.
- Oil and gas industry traffic is expected to adhere to all posted speed limits and signs. Drivers would be appropriately licensed and inspected.

Lay-Flat Pipeline Best Management Practices

- Time construction activities at perennial, intermittent, and ephemeral drainage crossings (e.g., buried pipelines, culverts) to avoid high-flow conditions. When construction disturbs a flowing stream, utilize either a piped stream diversion or a cofferdam and pump to divert flow around the disturbed area.
- Design and construct surface pipelines at drainage crossings at an adequate height above possible flood levels. Bore/bury pipeline crossings below the surface deep enough to remain undisturbed by scour and fill processes typically associated with peak flows. Complete a hydraulic analysis during the pipeline design phase to avoid repeated maintenance of such a crossing and eliminate costly repairs and potential environmental degradation associated with pipeline breaks at stream crossings. Utilize horizontal directional boring techniques below perennial water bodies and/or wetland complexes when environmental circumstances allow.
- X-ray pipeline welds within 100 feet of a perennial stream to prevent leakage into the stream. Where pipelines cross streams that support federally or State-listed threatened or endangered species or BLM-listed sensitive species, utilize additional safeguards (such as double-walled pipe, and remotely actuated block or check valves) on both sides of the stream.
- Avoid water courses when locating pipelines and flowlines; utilize road corridors wherever possible to minimize surface disturbance and provide better leak detection and access for installation and repair activities.
- Operator shall remove all “temporary lay-flat” and “temporary flow-lines” used in accordance with the approved operations, no more than 60 days after installation for the intended purpose. If more time is required for use, the Operator must contact the Farmington Field Office and request the extra time needed through Sundry (Form 3160) NOI (Notice of Intent), prior to the 60th day of use.

- Reclamation, including seeding, of temporarily disturbed areas along roads and pipelines, and of topsoil piles and berms, shall be completed within 30 days following completion of construction. Any such area on which construction is completed prior to December 1 shall be seeded during the remainder of the early winter season instead of during the following spring unless BLM approves otherwise based on weather. If road or pipeline construction occurs discontinuously (e.g., new segments installed as new pads are built) or continuously but with a total duration greater than 30 days, reclamation, including seeding, shall be phased such that no portion of the temporarily disturbed area remains in an unreclaimed condition for longer than 30 days. BLM may authorize deviation from this requirement based on the season and the amount of work remaining on the entirety of the road or pipeline when the 30-day period has expired.
- To the extent practical, existing vegetation shall be preserved when clearing and grading for pads, roads, and pipelines. Cleared trees and rocks may be salvaged for redistribution over reshaped cut and-fill slopes or along linear features.

Prevention and Control of Weeds

Farmington Field Office Standard Noxious/Invasive Weeds Design Features and Best Management Practices

Noxious/Invasive Weeds: LOGOS will inventory the proposed site for the presence of noxious and invasive weeds. Noxious weeds are those listed on the New Mexico Noxious Weed List and USDA's Federal Noxious Weed List. The New Mexico Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly checked for any changes. Invasive species may or may not be listed as a noxious weed but have been identified to likely cause economic or environmental harm or harm to human health. The following noxious weeds have been identified as occurring on lands within the boundaries of the Farmington Field Office (FFO). There are numerous invasive species on the FFO such as Russian thistle (*Salsola spp.)* and field bindweed (*Convolvulus arvensis*).

African rue (*Peganum harmala*)	Leafy spurge (*Euphorbia esula*)
Bull thistle (*Cirsium vulgare*)	Musk thistle (*Carduus nutans*)
Camelthorn (*Alhagi pseudalhagi*)	Perennial pepperweed (*Lepidium latifolium*)
Canada thistle (*Cirsium arvense*)	Russian knapweed (*Centaurea repens*)
Dalmation toadflax (*Linaria genistifolia*)	Saltcedar (*Tamarix* spp.)
Diffuse knapweed (*Centaurea diffusa*)	Scotch thistle (*Onopordum acanthium)*

Halogeton (*Halogeton glomeratus*)	Spotted knapweed (*Centaurea maculosa*)
Hoary cress (*Cardaria draba*)	Yellow toadflax (*Linaria vulgaris*)

- Any identified weeds will be treated prior to new surface disturbance if determined by the BLM FFO Noxious Weed Specialist. If a Weed Management Plan is not on file, a Weed Management Plan will be created. A Pesticide Use Proposal (PUP) will be submitted to and approved by the FFO Noxious Weed Specialist prior to application of pesticide. The FFO Noxious Weed Specialist (505-564-7600) can provide assistance in the development of the PUP.
- Vehicles and equipment should be inspected and cleaned prior to coming onto the site. This is especially important on vehicles from out of state or if coming from a weed-infested site.
- Fill dirt or gravel may be needed for excavation, road construction/repair, or as a surfacing material. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the BLM FFO Noxious Weed Specialist.
- The site shall be monitored for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found the FFO Specialist shall be notified at (505) 564-7600 and provided with a Weed Management Plan and if necessary, a PUP. The BLM FFO can provide assistance developing the Weed Management Plan and/or the PUP.
- Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. The LOGOS weed-control contractor would contact the BLM-FFO prior to using these chemicals.

Noxious/invasive weed treatments must be reported to the BLM FFO Noxious Weed Specialist. A Pesticide Use Report (PUR) is required to report any mechanical, chemical, biological or cultural treatments used to eradicate, and/or control noxious or invasive species. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Specialist.

Bare ground vegetation trim-out:

Facility/ Structure	Required Trim-Out Buffer Distance	Pesticide Use for Vegetation Control	Pesticide Use Plan On file with BLM
Well Head	10’	Yes	Yes

Tanks/Containment	10’	Yes	Yes
Gas Lift Compressors	10’	Yes	Yes
Metering Equipment	10’	Yes	Yes
SCC (Smokeless Combustion Chamber	10’	Yes	Yes

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington District Office
6251 College Blvd, Suite A
Farmington, New Mexico 87402

In Reply Refer To:
3162.3-1(NMF0110)

Logos Operating LLC
Escrito D14 2407 Com #002H
Lease: NMNM117567 Unit: NMNM136953
SH: NW¼NW¼ Section 14, T.24 N., R.7 W.
BH: SW¼NE¼ Section 16, T.24 N., R.7 W.
Rio Arriba County, New Mexico

***Above Data Required on Well Sign**

GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when **checked**:

A. ☒ Note all surface/drilling conditions of approval attached.

B. ☒ The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated

C. ☐ Test the surface casing to a minimum of _____ psi for 30 minutes.

D. ☐ Test all casing strings below the surface casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield burst) for a minimum of 30 minutes.

E. ☐ Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, New Mexico State Office, Reservoir Management Group, 301 Dinosaur Trail, Santa Fe, New Mexico 87508.
The effective date of the agreement must be **prior** to any sales.

Approval Date: 07/05/2022

F. ☐ The use of co-flex hose is authorized contingent upon the following:
1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.
3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

I. GENERAL

A. Full compliance with all applicable laws, regulations, and Onshore Orders, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.

B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).

C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.

E. As soon as practical, notice is required of all blowouts, fires and accidents involving life-threatening injuries or loss of life. (See NTL-3A).

F. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a notice of intent (on a Sundry Notice, Form 3160-5) within three business days (original and three copies of Federal leases and an original and four copies on Indian leases). **Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to at Virgil Lucero at 505-793-1836.**

G. The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.

H. Unless drilling operations are commenced within two years, approval of the Application for Permit to Drill will expire. A written request for a two years extension may be granted if submitted prior to expiration.

I. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all time, unless the well is secured with blowout preventers or cement plugs.

J. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.

II. REPORTING REQUIREMENTS

A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.

B. The following reports shall be filed with the BLM-Authorized Officer within 30 days after the work is completed.

1 .Original and three copies on Federal and an Original and five copies on Indian leases of Sundry Notice (Form 3150-5), giving complete information concerning.

a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of any and all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.

b. Intervals tested, perforated (include; size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.

c. Subsequent Report of Abandonment, show the manner in which the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.

2. Well Completion Report (Form 3160-4) will be submitted with 30 days after well has been completed.

a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.

3. Submit a cement evaluation log if cement is not circulated to surface.

III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results. 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of * Days or 50 MMCF following its (completion)(recompletion), whichever first occurs, without the prior, written approval of the authorized officer. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the first gas to surface.

V. SAFETY

A. All rig heating stoves are to be of the explosion-proof type.

B. Rig safety lines are to be installed.

C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

VI. CHANGE OF PLANS OR ABANDONMENT

A. Any changes of plans required to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.F.

B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.F. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.

C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

VII. PHONE NUMBERS

A. For BOPE tests, cementing, and plugging operations the phone number is 505-564-7750 and must be called 24 hours in advance in order that a BLM representative may witness the operations.

B. Emergency program changes after hours contact:

Virgil Lucero (505) 793-1836
BLM 24 Hour Number (505) 564-7750

Approval Date: 07/05/2022

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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 123355

COMMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 123355
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

COMMENTS

Created By	Comment	Comment Date
kpickford	Using 80-acre pool spacing for oil.	7/12/2022

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
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State of New Mexico
Energy, Minerals and Natural Resources
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Santa Fe, NM 87505

CONDITIONS

Operator:	OGRID:
LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	289408
	Action Number: 123355
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Notify OCD 24 hours prior to casing & cement	7/12/2022
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	7/12/2022
kpickford	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	7/12/2022
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	7/12/2022
kpickford	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. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	7/12/2022