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.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No. 30 039 31406

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory

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

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

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

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

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
Title		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Title	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: 08/23/2021

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

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 31406	97232	BASIN MANCOS

4 Property Code	5 Property Name	6 Well Number
320608	ROSA UNIT	658H

7 OGRID No.	8 Operator Name	9 Elevation
289408	LOGOS OPERATING, LLC	6394'

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
K	30	31N	5W	3	2317	SOUTH	947	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
L	26	31N	6W		2639	SOUTH	230	WEST	RIO ARRIBA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
1649.96 REFER TO DESCRIPTION BELOW			R-13457

T31N R5W, Section 30 : Lots 1 - 4, E/2
T31N R6W, Section 25 : Lots 1 - 4, W/2 E/2, W/2
T31N R6W, Section 26 : Entire Section

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

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.

Etta Trujillo — 05/07/2021
Signature — Date

Etta Trujillo
Printed Name

etrujillo@logosresourcesllc.com
E-mail Address

18 SURVEYOR CERTIFICATION

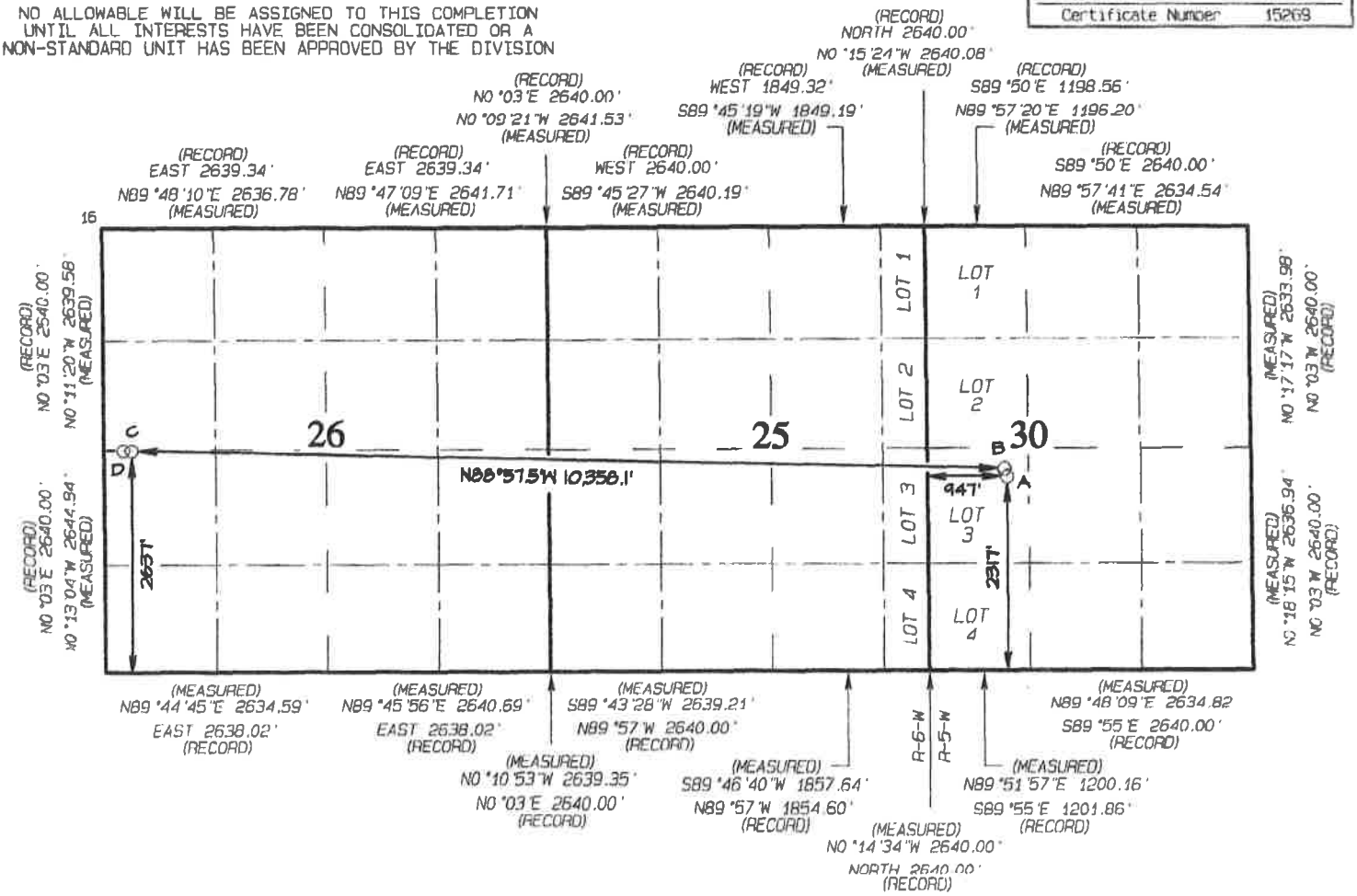
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: JANUARY 13, 2021
Survey Date: SEPTEMBER 3, 2015

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269



END-OF-LATERAL (D)
2639' FSL 230' FWL
SEC 26, T31N, R6W
LAT: 36.870597 °N
LONG: 107.439800 °W
DATUM: NAD1927

LAT: 36.870603 °N
LONG: 107.440404 °W
DATUM: NAD1983

N89°57.5'W 100.0'

FIRST PERFORATION (C)
2637' FSL 330' FWL
SEC 26, T31N, R6W
LAT: 36.870591 °N
LONG: 107.439458 °W
DATUM: NAD1927

LAT: 36.870597 °N
LONG: 107.440052 °W
DATUM: NAD1983

N88°57.5'W 10,358.1'

POINT-OF-ENTRY (B)
2405' FSL 915' FWL
SEC 30, T31N, R5W
LAT: 36.869952 °N
LONG: 107.404056 °W
DATUM: NAD1927

LAT: 36.869958 °N
LONG: 107.404659 °W
DATUM: NAD1983

N20°15.4'W 93.6'

SURFACE LOCATION (A)
2317' FSL 947' FWL
SEC 30, T31N, R5W
LAT: 36.869716 °N
LONG: 107.403947 °W
DATUM: NAD1927

LAT: 36.869716 °N
LONG: 107.404550 °W
DATUM: NAD1983

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:** 08 / 26 / 2021

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
Rosa Unit 662H	30-039-	K 30 T31N R5W	2300FSL 946FWL	N/A	12,462	2,400
Rosa Unit 664H	30-039-	K 30 T31N R5W	2260FSL 966FWL	N/A	12,462	2,400
Rosa Unit 665H	30-039-31358	K 30 T31N R5W	2247FSL 973FWL	N/A	10,865	1,800
Rosa Unit 658H	30-039-	K 30 T31N R5W	2317FSL 947FWL	N/A	10,865	1,800

IV. Central Delivery Point Name: A-59 [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
Rosa Unit 662H	30-039-	2022	Pending	Pending	Pending	Pending
Rosa Unit 664H	30-039-	2022	Pending	Pending	Pending	Pending
Rosa Unit 665H	30-039-31358	8/25/2021	Pending	Pending	Pending	Pending
Rosa Unit 658H	30-039-	2022	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:	08/26/2021
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 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 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 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.
(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) No dehydration or amine units are anticipated to be set on location.
(h) 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.
(i) 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.
(j) 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.
(k) 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:	April 14, 2021	Pool:	Basin Mancos
Well Name:	**Rosa Unit 658H**	GL Elevation:	6,394'
Surface Location:	Sec 30, T31N, R5W 2317 FSL, 947 FWL (36.869716° N, 107.404550° W – NAD83)	Measured Depth:	18,243' (GL)
Bottom Hole Location:	Sec 26, T31N, R6W 2639 FSL, 230 FWL (36.870603° N, 107.440404° W – NAD83)	County:	Rio Arriba

Lease Serial #NMSF-078764, CA Serial #NMNM-78407E

I. GEOLOGY

A. Formation Tops (Based on GL Elevation): Estimated top of important geological markers:

SURFACE FORMATION – NACIMIENTO

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	2,554	2,521	*POINT LOOKOUT	5,833	5,698
KIRTLAND	2,684	2,647	*MANCOS	6,324	6,184
*FRUITLAND	3,165	3,113	KICKOFF POINT	5,694	5,561
*PICTURED CLIFFS	3,503	3,440	LANDING POINT	7,785	6,992
LEWIS	3,600	3,534			
CHACRA	4,722	4,621			
*CLIFF HOUSE	5,576	5,448			
MENEFEE	5,626	5,496	TD	18,243	6,971

* 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 17-1/2" surface hole as well as the 12-1/4" directional vertical hole. A LSND (WBM) or (OBM) will be used to drill the 8-3/4" curve and lateral portion of the wellbore. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

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:** 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. BOP equipment will be tested every 30 days, after any repairs are made to the BOP equipment, and after the BOP equipment is subjected to pressure. Annular preventers will be functionally operated at least once per week. Pipe and blind rams shall be activated each trip or but not more than once a day. The New Mexico Oil & Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of BOPE. **All tests and inspections will be recorded and logged with time and results.** A full BOP test will be conducted when initially installed for the first well on the pad or if seals subject to test pressure are broken, following related repairs and at a minimum of 30 day intervals. A BOPE Shell Test only will be conducted for subsequent wells on the pad when seals subject to pressure have not been broken or repaired and fall within the 30 day interval of first full test.

III. MATERIALS

A. CASING EQUIPMENT:

CASING TYPE	OH SIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	17.5"	320' or greater	13.375"	54.5 LBS	J-55 or equiv	BTC
INTERMEDIATE	12.25"	6,514'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.75"	18,243'	5.5"	20 LBS	P-110 or equiv	LTC/BTC

NOTE: All casing depths are approximate, based on GL 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: 13-3/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
2. INTERMEDIATE CASING: 9-5/8" 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 Tools (2) will be strategically placed above loss circulation zones anticipated in the Mesaverde and Fruitland Coal. Optional use of cancelation plugs for DV tools may be used if losses while cementing are not encountered.
3. PRODUCTION CASING: Run 5-1/2" casing with cement nose guide Float Shoe, 5-1/2" full or pup joints as necessary, Landing Collar, 5-1/2" full or pup joints as necessary, at least (1) one RSI (Sliding Sleeve) positioned inside the applicable production area. Centralizer program will be determined by wellbore conditions. Production casing to be pressure tested during completion operations with frac stack installed.

C. CEMENTING:

(Note: Cement type and volumes may be adjusted onsite due to actual conditions and availability)

1. SURFACE: Casing shall be set at ~ 320' and cemented to surface. TOC at Surface. 263 sks of 15.8 ppg, 1.18 cuft/sk yield Type Neat G, 30% excess.

2. INTERMEDIATE: Intermediate casing shall be kept fluid filled while running in to the hole to meet BLM minimum collapse requirements. The intermediate casing will be cemented in 2 or 3 stages using DV/STAGE tools in order to reduce cement losses and maximize cement coverage. Operator proposes optional DV tools above anticipated loss circulation zones in the Mesaverde and in the Fruitland coal. If losses are not observed during the second stage a cancelation plug will be pumped and the remaining cement will be pumped during stage 2. If cement does not circulate to the DV tool(s) or to surface, a CBL will be run to determine TOC.

	Top (ft)	Footage (ft)	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Density (PPG)	Sacks Cement
Stage 1 Tail	6,068	500	0.31318	1.3	221	39	1.15	15.8	192
Stage 1 Lead	4,774	1,294	0.31318	1.3	527	94	2.31	12.3	238
					748	**133**			**420**
Stage 2 Tail	4,674	100	0.31318	1.3	45	8	1.15	13.5	39
Stage 2 Lead	3,217	1,457	0.31318	1.3	593	106	2.31	12.3	256
					639	**114**			**296**
Stage 3 Tail	3,117	100	0.31318	1.3	45	8	1.15	12.8	39
Stage 3 Lead	326	2,791	0.31318	1.3	1,136	202	2.31	12.0	491
Stage 3 Lead	-	326	0.36268	1	118	21	2.31	12.0	51
					1,300	**232**			**582**
All Stage Totals					**2,686**	**478**			**1,297**

Calculations based on 30% excess for open hole and cement to surface. Actual excess pumped will be determined by well conditions.

3. PRODUCTION: Production casing will be cemented in 1 stage with at least 150' of cement overlap above intermediate shoe. A CBL, or alternatively, a Temperature Survey will be used to determine TOC.

	Top (ft)	Footage (ft)	Cement (ft3/ft) Annular Capacity	Excess (15%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Density (PPG)	Sacks Cement
Cased Lead	6,418	150	0.25307	1	38	7	1.56	13.3	24
Open Hole Lead	6,568	11,700	0.25259	1.15	3,407	607	1.56	13.3	2,184
					3,445	**614**			**2,208**

Calculations based on 15% excess for open hole and 150' overlap into intermediate casing. Actual volumes will vary.

Cement calculations are used for volume estimation. Well conditions will dictate final cement job design. Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected. All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

IV. COMPLETION

A. CBL

CBLs and/or Temperature Surveys will be performed as needed or required to determine cement top if cement is not circulated.

B. **PRESSURE TEST**

C. With frac stack installed on wellhead, pressure test 5-1/2" casing to 1550 psi (0.22 psi/ft * 6,992' TVD) for 30 minutes. Increase pressure to Open RSI sleeves.

D. **STIMULATION**

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

E. **PRODUCTION TUBING**

2-7/8", 6.5#, J-55, EUE tubing will be run once volumes and pressures dictate.

*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.

Surface Casing Design - Evacuated/Max SICP (collaspe & burst), 100k overpull (tension)

Rosa Unit 658H

	Size	Weight	Grade	Conn	Collapse	Burst	Tension	Notes
Surface	13.375	54.5	J55	BTC	2,020	3,520	394,000	0' - 32
					1.125	1.000	1.200	

341 psi (Maximum Estimated SIP)

36 ppf K55 STC

	Casing Depth	MW in	MW out	Pres in	Pres out	SF	
Collapse	**320**	0	9	0	146	13.79	
Burst	**320**	9	0	146	0	24.04	
		Mud Wt	**Air Wt**	**Bouy Wt**	**BW +100k**	**SF**	100k over pull
Tension	**320**	9	17,440	15,044	115,044	3.42	
		BF					BF= 1- (MW)/65.5
		0.8626					

Intermediate Casing Design - Evacuated/Max Mud Wt (collaspe & burst), 100k overpull (tens

Rosa Unit 658H

Intermediate	Top Interval	Btm Interval	Size	Weight	Grade	Conn	Collapse	Burst	Te
Interval 1	0	6514	9.625	43.5	N80	LTC	3,270	4,360	3:
							1.125	1.000	1.

Collapse

			Depth TVD	MW in	MW out	Pres in	Pres out	SF - 1.125
Interval 1	0	6514	6347	0	9	0	2970	1.10
23	J55							

Burst

			Depth TVD	MW in	MW out	Pres in	Pres out	SF - 1.0	Fr
Interval 1	0	6514	6347	9	0	2970	0	1.47	0
23	J55					2970			

Tension

			Depth TVD	Mud Wt	Air Wt	Bouy Wt	BW +100k	SF - 1.2
Interval 1	0	6514	6347	9	276,095	238,158	338,158	0.93
23	J55			BF				
				0.8626				

BF= 1- (MW)/65.5

Production Casing Design - Evacuation/Max Mud Wt (collaspe), Max Frac Pres (burst) & 100

Rosa Unit 658H

Production	Size	Weight	Grade	Conn	Collapse	Burst	Tension	Notes
Interval 1	5.5	20	P-110	LTC	7,560	10,690	278,000	TD 18243', TVD
					1.125	1.000	1.200	

Collapse	Casing Depth (TVD)	MW in	MW out	Pres in	Pres out	SF		
	6971	0.00	9.00	0	3262	2.32		
Burst	6971	9.00	0.00	3262	0	1.10	6500	6500 psi frac pr
				9762				Burst pressure =
Tension		Mud Wt	Air Wt	Bouy Wt	BW +100k			100k over pull
	6971	8.80	139,420	120,689	220,689	1.26		
		BF						BF= 1- (MW)/65
		0.8656						

LOGOS RESOURCES II, LLC

Company: Logos Operating LLC
Project: Rio Arriba, NM NAD83
Site: Rosa Unit 30
Well: Rosa Unit #658H
Wellbore: OH
Design: Plan #2

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

LONESTAR CONSULTING

WELL DETAILS: Rosa Unit #658H

GL 6394' @ 6394.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	2136182.63	2848513.55	36.8697160	-107.4045499	A1 (658H)

Plan: Plan #2 (Rosa Unit #658H/OH)

Created By: Janie Collins Date: 12:03, January 18 2021

Azimuths to True North
Magnetic North: 10.80

Magnetic Field
Strength: 51652.1nT
Dip Angle: 63.87
Date: 12/31/2004
Model: IGRF2005

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
658H POE Rev 1	6992.00	88.05	-32.02	2136270.54	2848481.13	36.8699578	-107.4046594
658H BHL Rev 2	6971.00	324.91	-10487.60	2136460.44	2838024.61	36.8706030	-107.4404040
658H FPerf	6971.00	322.69	-10387.56	2136458.67	2838124.66	36.8705970	-107.4400620

SECTION DETAILS

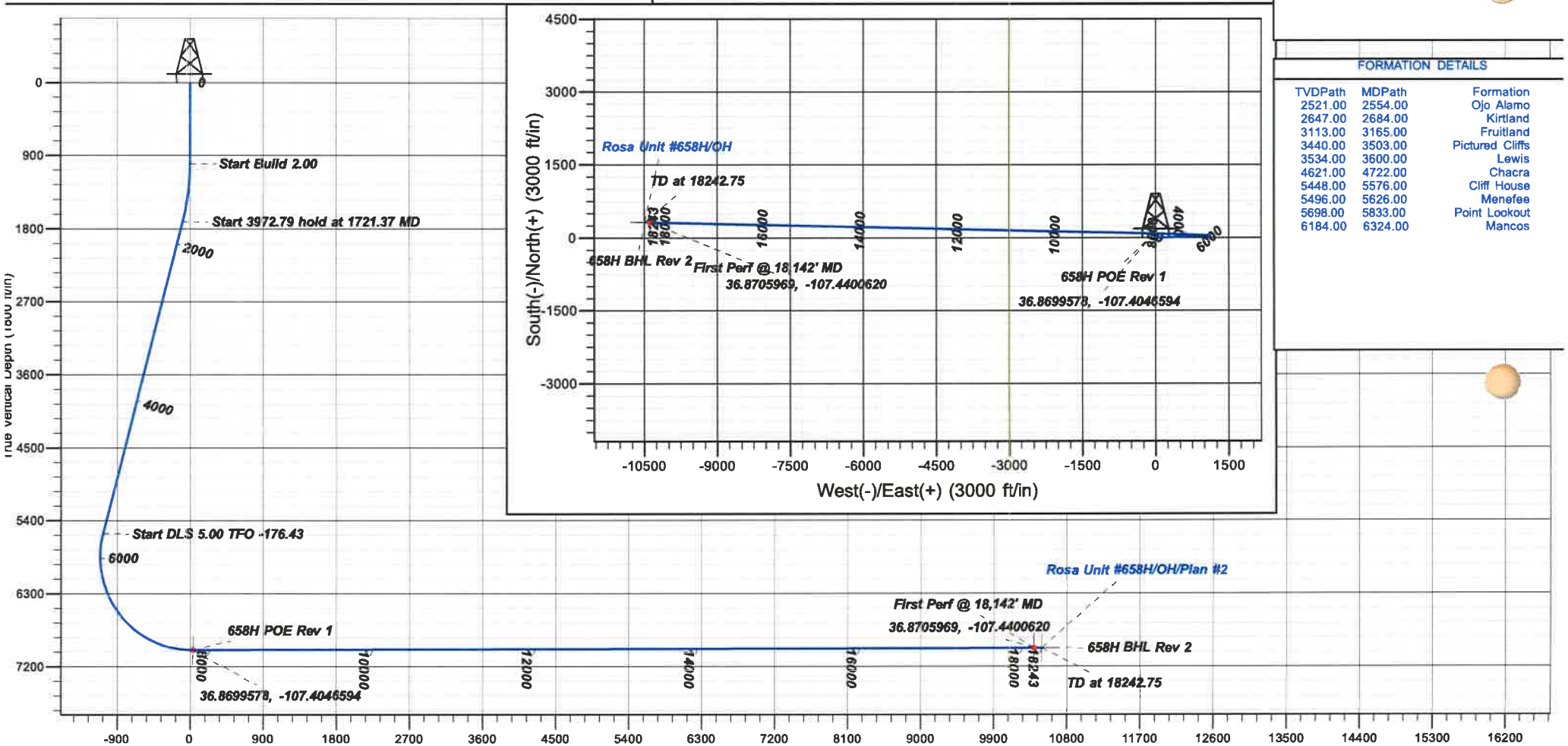
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
1721.37	14.43	87.84	1713.77	3.40	90.28	2.00	87.84	-90.13	
5694.15	14.43	87.84	5561.27	40.64	1079.40	0.00	0.00	-1077.63	
7784.47	90.12	271.30	6992.00	88.05	-32.02	5.00	-176.43	34.73	658H POE Rev 1
18242.75	90.12	271.30	6971.00	324.91	-10487.60	0.00	0.00	10492.63	658H BHL Rev 2

CASING DETAILS

TVD	MD	Name

FORMATION DETAILS

TVDPath	MDPath	Formation
2521.00	2554.00	Ojo Alamo
2647.00	2684.00	Kirtland
3113.00	3165.00	Fruitland
3440.00	3503.00	Pictured Cliffs
3534.00	3600.00	Lewis
4621.00	4722.00	Chacra
5448.00	5576.00	Cliff House
5496.00	5626.00	Menefee
5698.00	5833.00	Point Lookout
6184.00	6324.00	Mancos



LOGOS RESOURCES II, LLC

Logos Operating LLC

Rio Arriba, NM NAD83
Rosa Unit 30
Rosa Unit #658H - Slot A1 (658H)

OH

Plan: Plan #2

Standard Planning Report

18 January, 2021

LONESTAR CONSULTING

LOGOS RESOURCES II, LLC

Lonestar Consulting
Planning Report

LONESTAR CONSULTING

Database:	EDM _16.0	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Company:	Logos Operating LLC	**TVD Reference:**	GL 6394' @ 6394.00ft
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 6394' @ 6394.00ft
Site:	Rosa Unit 30	**North Reference:**	True
Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 Rosa Unit 30

Site Position:		**Northing:**	2,136,112.13 usft	**Latitude:**	36.8695220
From:	Lat/Long	**Easting:**	2,848,540.75 usft	**Longitude:**	-107.4044580
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in		

Well Rosa Unit #658H - Slot A1 (658H)

Well Position	**+N/-S**	0.00 ft	**Northing:**	2,136,182.63 usft	**Latitude:**	36.8697159
	+E/-W	0.00 ft	**Easting:**	2,848,513.55 usft	**Longitude:**	-107.4045499
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,394.00 ft
Grid Convergence:		0.26 °				

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	10.80	63.87	51,652.07569632

Design Plan #2

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.00	0.00	0.00	271.77	

Plan Survey Tool Program **Date** 1/18/2021

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,242.75	Plan #2 (OH)	MWD+HDGM	
				OWSG MWD + HDGM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,721.37	14.43	87.84	1,713.77	3.40	90.28	2.00	2.00	0.00	87.84	
5,694.15	14.43	87.84	5,561.27	40.64	1,079.40	0.00	0.00	0.00	0.00	
7,784.47	90.12	271.30	6,992.00	88.05	-32.02	5.00	3.62	-8.45	-176.43	658H POE Rev 1
18,242.75	90.12	271.30	6,971.00	324.91	-10,487.60	0.00	0.00	0.00	0.00	658H BHL Rev 2

Database:	EDM_16.0	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Company:	Logos Operating LLC	**TVD Reference:**	GL 6394' @ 6394.00ft
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 6394' @ 6394.00ft
Site:	Rosa Unit 30	**North Reference:**	True
Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	2.00	87.84	1,099.98	0.07	1.74	-1.74	2.00	2.00	0.00
1,200.00	4.00	87.84	1,199.84	0.26	6.97	-6.96	2.00	2.00	0.00
1,300.00	6.00	87.84	1,299.45	0.59	15.68	-15.66	2.00	2.00	0.00
1,400.00	8.00	87.84	1,398.70	1.05	27.86	-27.81	2.00	2.00	0.00
1,500.00	10.00	87.84	1,497.47	1.64	43.49	-43.42	2.00	2.00	0.00
1,600.00	12.00	87.84	1,595.62	2.36	62.56	-62.46	2.00	2.00	0.00
1,700.00	14.00	87.84	1,693.06	3.20	85.04	-84.90	2.00	2.00	0.00
1,721.37	14.43	87.84	1,713.77	3.40	90.28	-90.13	2.00	2.00	0.00
1,800.00	14.43	87.84	1,789.92	4.14	109.86	-109.68	0.00	0.00	0.00
1,900.00	14.43	87.84	1,886.77	5.07	134.75	-134.53	0.00	0.00	0.00
2,000.00	14.43	87.84	1,983.61	6.01	159.65	-159.39	0.00	0.00	0.00
2,100.00	14.43	87.84	2,080.46	6.95	184.55	-184.25	0.00	0.00	0.00
2,200.00	14.43	87.84	2,177.31	7.89	209.45	-209.10	0.00	0.00	0.00
2,300.00	14.43	87.84	2,274.15	8.82	234.34	-233.96	0.00	0.00	0.00
2,400.00	14.43	87.84	2,371.00	9.76	259.24	-258.82	0.00	0.00	0.00
2,500.00	14.43	87.84	2,467.85	10.70	284.14	-283.67	0.00	0.00	0.00
2,600.00	14.43	87.84	2,564.69	11.64	309.04	-308.53	0.00	0.00	0.00
2,700.00	14.43	87.84	2,661.54	12.57	333.93	-333.38	0.00	0.00	0.00
2,800.00	14.43	87.84	2,758.39	13.51	358.83	-358.24	0.00	0.00	0.00
2,900.00	14.43	87.84	2,855.23	14.45	383.73	-383.10	0.00	0.00	0.00
3,000.00	14.43	87.84	2,952.08	15.39	408.63	-407.95	0.00	0.00	0.00
3,100.00	14.43	87.84	3,048.93	16.32	433.52	-432.81	0.00	0.00	0.00
3,200.00	14.43	87.84	3,145.77	17.26	458.42	-457.67	0.00	0.00	0.00
3,300.00	14.43	87.84	3,242.62	18.20	483.32	-482.52	0.00	0.00	0.00
3,400.00	14.43	87.84	3,339.46	19.14	508.22	-507.38	0.00	0.00	0.00
3,500.00	14.43	87.84	3,436.31	20.07	533.11	-532.24	0.00	0.00	0.00
3,600.00	14.43	87.84	3,533.16	21.01	558.01	-557.09	0.00	0.00	0.00
3,700.00	14.43	87.84	3,630.00	21.95	582.91	-581.95	0.00	0.00	0.00
3,800.00	14.43	87.84	3,726.85	22.89	607.81	-606.81	0.00	0.00	0.00
3,900.00	14.43	87.84	3,823.70	23.82	632.70	-631.66	0.00	0.00	0.00
4,000.00	14.43	87.84	3,920.54	24.76	657.60	-656.52	0.00	0.00	0.00
4,100.00	14.43	87.84	4,017.39	25.70	682.50	-681.38	0.00	0.00	0.00
4,200.00	14.43	87.84	4,114.24	26.64	707.40	-706.23	0.00	0.00	0.00
4,300.00	14.43	87.84	4,211.08	27.57	732.29	-731.09	0.00	0.00	0.00
4,400.00	14.43	87.84	4,307.93	28.51	757.19	-755.95	0.00	0.00	0.00
4,500.00	14.43	87.84	4,404.78	29.45	782.09	-780.80	0.00	0.00	0.00
4,600.00	14.43	87.84	4,501.62	30.39	806.99	-805.66	0.00	0.00	0.00
4,700.00	14.43	87.84	4,598.47	31.32	831.88	-830.52	0.00	0.00	0.00
4,800.00	14.43	87.84	4,695.31	32.26	856.78	-855.37	0.00	0.00	0.00
4,900.00	14.43	87.84	4,792.16	33.20	881.68	-880.23	0.00	0.00	0.00
5,000.00	14.43	87.84	4,889.01	34.14	906.58	-905.09	0.00	0.00	0.00
5,100.00	14.43	87.84	4,985.85	35.07	931.47	-929.94	0.00	0.00	0.00
5,200.00	14.43	87.84	5,082.70	36.01	956.37	-954.80	0.00	0.00	0.00

LOGOS RESOURCES II, LLC

Lonestar Consulting
Planning Report

LONESTAR CONSULTING

Database:	EDM _16.0	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Company:	Logos Operating LLC	**TVD Reference:**	GL 6394' @ 6394.00ft
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 6394' @ 6394.00ft
Site:	Rosa Unit 30	**North Reference:**	True
Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	14.43	87.84	5,179.55	36.95	981.27	-979.66	0.00	0.00	0.00
5,400.00	14.43	87.84	5,276.39	37.89	1,006.17	-1,004.51	0.00	0.00	0.00
5,500.00	14.43	87.84	5,373.24	38.82	1,031.06	-1,029.37	0.00	0.00	0.00
5,600.00	14.43	87.84	5,470.09	39.76	1,055.96	-1,054.22	0.00	0.00	0.00
5,694.15	14.43	87.84	5,561.27	40.64	1,079.40	-1,077.63	0.00	0.00	0.00
5,700.00	14.14	87.77	5,566.94	40.70	1,080.85	-1,079.07	5.00	-4.99	-1.27
5,800.00	9.15	85.78	5,664.85	41.76	1,100.99	-1,099.17	5.00	-4.98	-1.99
5,900.00	4.20	79.12	5,764.14	43.04	1,112.53	-1,110.66	5.00	-4.95	-6.66
6,000.00	1.26	316.19	5,864.06	44.53	1,115.37	-1,113.45	5.00	-2.94	-122.93
6,100.00	5.96	279.84	5,963.84	46.21	1,109.49	-1,107.53	5.00	4.70	-36.34
6,200.00	10.93	275.91	6,062.72	48.07	1,094.94	-1,092.92	5.00	4.97	-3.94
6,300.00	15.92	274.42	6,159.96	50.10	1,071.82	-1,069.76	5.00	4.99	-1.49
6,400.00	20.91	273.63	6,254.81	52.29	1,040.32	-1,038.21	5.00	4.99	-0.79
6,500.00	25.91	273.13	6,346.55	54.61	1,000.68	-998.51	5.00	5.00	-0.50
6,600.00	30.90	272.78	6,434.49	57.05	953.19	-950.96	5.00	5.00	-0.35
6,700.00	35.90	272.53	6,517.94	59.59	898.21	-895.94	5.00	5.00	-0.26
6,800.00	40.90	272.33	6,596.29	62.22	836.17	-833.84	5.00	5.00	-0.20
6,900.00	45.90	272.16	6,668.92	64.90	767.54	-765.16	5.00	5.00	-0.16
7,000.00	50.90	272.02	6,735.30	67.63	692.83	-690.41	5.00	5.00	-0.14
7,100.00	55.90	271.90	6,794.91	70.37	612.63	-610.15	5.00	5.00	-0.12
7,200.00	60.90	271.79	6,847.29	73.11	527.53	-525.01	5.00	5.00	-0.11
7,300.00	65.89	271.70	6,892.06	75.83	438.19	-435.63	5.00	5.00	-0.10
7,400.00	70.89	271.61	6,928.87	78.51	345.28	-342.68	5.00	5.00	-0.09
7,500.00	75.89	271.52	6,957.44	81.13	249.52	-246.89	5.00	5.00	-0.08
7,600.00	80.89	271.44	6,977.56	83.66	151.63	-148.96	5.00	5.00	-0.08
7,700.00	85.89	271.36	6,989.06	86.09	52.35	-49.66	5.00	5.00	-0.08
7,784.47	90.12	271.30	6,992.00	88.05	-32.02	34.73	5.00	5.00	-0.08
7,800.00	90.12	271.30	6,991.97	88.40	-47.55	50.26	0.00	0.00	0.00
7,900.00	90.12	271.30	6,991.77	90.67	-147.52	150.26	0.00	0.00	0.00
8,000.00	90.12	271.30	6,991.57	92.93	-247.50	250.26	0.00	0.00	0.00
8,100.00	90.12	271.30	6,991.37	95.20	-347.47	350.25	0.00	0.00	0.00
8,200.00	90.12	271.30	6,991.17	97.46	-447.45	450.25	0.00	0.00	0.00
8,300.00	90.12	271.30	6,990.96	99.73	-547.42	550.25	0.00	0.00	0.00
8,400.00	90.12	271.30	6,990.76	101.99	-647.39	650.24	0.00	0.00	0.00
8,500.00	90.12	271.30	6,990.56	104.26	-747.37	750.24	0.00	0.00	0.00
8,600.00	90.12	271.30	6,990.36	106.52	-847.34	850.24	0.00	0.00	0.00
8,700.00	90.12	271.30	6,990.16	108.79	-947.32	950.23	0.00	0.00	0.00
8,800.00	90.12	271.30	6,989.96	111.05	-1,047.29	1,050.23	0.00	0.00	0.00
8,900.00	90.12	271.30	6,989.76	113.31	-1,147.27	1,150.22	0.00	0.00	0.00
9,000.00	90.12	271.30	6,989.56	115.58	-1,247.24	1,250.22	0.00	0.00	0.00
9,100.00	90.12	271.30	6,989.36	117.84	-1,347.21	1,350.22	0.00	0.00	0.00
9,200.00	90.12	271.30	6,989.16	120.11	-1,447.19	1,450.21	0.00	0.00	0.00
9,300.00	90.12	271.30	6,988.96	122.37	-1,547.16	1,550.21	0.00	0.00	0.00
9,400.00	90.12	271.30	6,988.76	124.64	-1,647.14	1,650.21	0.00	0.00	0.00
9,500.00	90.12	271.30	6,988.56	126.90	-1,747.11	1,750.20	0.00	0.00	0.00
9,600.00	90.12	271.30	6,988.35	129.17	-1,847.08	1,850.20	0.00	0.00	0.00
9,700.00	90.12	271.30	6,988.15	131.43	-1,947.06	1,950.20	0.00	0.00	0.00
9,800.00	90.12	271.30	6,987.95	133.70	-2,047.03	2,050.19	0.00	0.00	0.00
9,900.00	90.12	271.30	6,987.75	135.96	-2,147.01	2,150.19	0.00	0.00	0.00
10,000.00	90.12	271.30	6,987.55	138.23	-2,246.98	2,250.18	0.00	0.00	0.00
10,100.00	90.12	271.30	6,987.35	140.49	-2,346.96	2,350.18	0.00	0.00	0.00
10,200.00	90.12	271.30	6,987.15	142.76	-2,446.93	2,450.18	0.00	0.00	0.00
10,300.00	90.12	271.30	6,986.95	145.02	-2,546.90	2,550.17	0.00	0.00	0.00
10,400.00	90.12	271.30	6,986.75	147.29	-2,646.88	2,650.17	0.00	0.00	0.00

Database:	EDM _16.0	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Company:	Logos Operating LLC	**TVD Reference:**	GL 6394' @ 6394.00ft
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 6394' @ 6394.00ft
Site:	Rosa Unit 30	**North Reference:**	True
Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,500.00	90.12	271.30	6,986.55	149.55	-2,746.85	2,750.17	0.00	0.00	0.00
10,600.00	90.12	271.30	6,986.35	151.82	-2,846.83	2,850.16	0.00	0.00	0.00
10,700.00	90.12	271.30	6,986.15	154.08	-2,946.80	2,950.16	0.00	0.00	0.00
10,800.00	90.12	271.30	6,985.95	156.35	-3,046.77	3,050.15	0.00	0.00	0.00
10,900.00	90.12	271.30	6,985.74	158.61	-3,146.75	3,150.15	0.00	0.00	0.00
11,000.00	90.12	271.30	6,985.54	160.88	-3,246.72	3,250.15	0.00	0.00	0.00
11,100.00	90.12	271.30	6,985.34	163.14	-3,346.70	3,350.14	0.00	0.00	0.00
11,200.00	90.12	271.30	6,985.14	165.41	-3,446.67	3,450.14	0.00	0.00	0.00
11,300.00	90.12	271.30	6,984.94	167.67	-3,546.65	3,550.14	0.00	0.00	0.00
11,400.00	90.12	271.30	6,984.74	169.93	-3,646.62	3,650.13	0.00	0.00	0.00
11,500.00	90.12	271.30	6,984.54	172.20	-3,746.59	3,750.13	0.00	0.00	0.00
11,600.00	90.12	271.30	6,984.34	174.46	-3,846.57	3,850.13	0.00	0.00	0.00
11,700.00	90.12	271.30	6,984.14	176.73	-3,946.54	3,950.12	0.00	0.00	0.00
11,800.00	90.12	271.30	6,983.94	178.99	-4,046.52	4,050.12	0.00	0.00	0.00
11,900.00	90.12	271.30	6,983.74	181.26	-4,146.49	4,150.11	0.00	0.00	0.00
12,000.00	90.12	271.30	6,983.54	183.52	-4,246.46	4,250.11	0.00	0.00	0.00
12,100.00	90.12	271.30	6,983.33	185.79	-4,346.44	4,350.11	0.00	0.00	0.00
12,200.00	90.12	271.30	6,983.13	188.05	-4,446.41	4,450.10	0.00	0.00	0.00
12,300.00	90.12	271.30	6,982.93	190.32	-4,546.39	4,550.10	0.00	0.00	0.00
12,400.00	90.12	271.30	6,982.73	192.58	-4,646.36	4,650.10	0.00	0.00	0.00
12,500.00	90.12	271.30	6,982.53	194.85	-4,746.34	4,750.09	0.00	0.00	0.00
12,600.00	90.12	271.30	6,982.33	197.11	-4,846.31	4,850.09	0.00	0.00	0.00
12,700.00	90.12	271.30	6,982.13	199.38	-4,946.28	4,950.09	0.00	0.00	0.00
12,800.00	90.12	271.30	6,981.93	201.64	-5,046.26	5,050.08	0.00	0.00	0.00
12,900.00	90.12	271.30	6,981.73	203.91	-5,146.23	5,150.08	0.00	0.00	0.00
13,000.00	90.12	271.30	6,981.53	206.17	-5,246.21	5,250.07	0.00	0.00	0.00
13,100.00	90.12	271.30	6,981.33	208.44	-5,346.18	5,350.07	0.00	0.00	0.00
13,200.00	90.12	271.30	6,981.13	210.70	-5,446.15	5,450.07	0.00	0.00	0.00
13,300.00	90.12	271.30	6,980.93	212.97	-5,546.13	5,550.06	0.00	0.00	0.00
13,400.00	90.12	271.30	6,980.72	215.23	-5,646.10	5,650.06	0.00	0.00	0.00
13,500.00	90.12	271.30	6,980.52	217.50	-5,746.08	5,750.06	0.00	0.00	0.00
13,600.00	90.12	271.30	6,980.32	219.76	-5,846.05	5,850.05	0.00	0.00	0.00
13,700.00	90.12	271.30	6,980.12	222.02	-5,946.02	5,950.05	0.00	0.00	0.00
13,800.00	90.12	271.30	6,979.92	224.29	-6,046.00	6,050.04	0.00	0.00	0.00
13,900.00	90.12	271.30	6,979.72	226.55	-6,145.97	6,150.04	0.00	0.00	0.00
14,000.00	90.12	271.30	6,979.52	228.82	-6,245.95	6,250.04	0.00	0.00	0.00
14,100.00	90.12	271.30	6,979.32	231.08	-6,345.92	6,350.03	0.00	0.00	0.00
14,200.00	90.12	271.30	6,979.12	233.35	-6,445.90	6,450.03	0.00	0.00	0.00
14,300.00	90.12	271.30	6,978.92	235.61	-6,545.87	6,550.03	0.00	0.00	0.00
14,400.00	90.12	271.30	6,978.72	237.88	-6,645.84	6,650.02	0.00	0.00	0.00
14,500.00	90.12	271.30	6,978.52	240.14	-6,745.82	6,750.02	0.00	0.00	0.00
14,600.00	90.12	271.30	6,978.31	242.41	-6,845.79	6,850.02	0.00	0.00	0.00
14,700.00	90.12	271.30	6,978.11	244.67	-6,945.77	6,950.01	0.00	0.00	0.00
14,800.00	90.12	271.30	6,977.91	246.94	-7,045.74	7,050.01	0.00	0.00	0.00
14,900.00	90.12	271.30	6,977.71	249.20	-7,145.71	7,150.00	0.00	0.00	0.00
15,000.00	90.12	271.30	6,977.51	251.47	-7,245.69	7,250.00	0.00	0.00	0.00
15,100.00	90.12	271.30	6,977.31	253.73	-7,345.66	7,350.00	0.00	0.00	0.00
15,200.00	90.12	271.30	6,977.11	256.00	-7,445.64	7,449.99	0.00	0.00	0.00
15,300.00	90.12	271.30	6,976.91	258.26	-7,545.61	7,549.99	0.00	0.00	0.00
15,400.00	90.12	271.30	6,976.71	260.53	-7,645.59	7,649.99	0.00	0.00	0.00
15,500.00	90.12	271.30	6,976.51	262.79	-7,745.56	7,749.98	0.00	0.00	0.00
15,600.00	90.12	271.30	6,976.31	265.06	-7,845.53	7,849.98	0.00	0.00	0.00
15,700.00	90.12	271.30	6,976.11	267.32	-7,945.51	7,949.98	0.00	0.00	0.00
15,800.00	90.12	271.30	6,975.91	269.59	-8,045.48	8,049.97	0.00	0.00	0.00

LOGOS RESOURCES II, LLC

Lonestar Consulting
Planning Report

LONESTAR CONSULTING

Database:	EDM _16.0	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Company:	Logos Operating LLC	**TVD Reference:**	GL 6394' @ 6394.00ft
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 6394' @ 6394.00ft
Site:	Rosa Unit 30	**North Reference:**	True
Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,900.00	90.12	271.30	6,975.70	271.85	-8,145.46	8,149.97	0.00	0.00	0.00
16,000.00	90.12	271.30	6,975.50	274.12	-8,245.43	8,249.96	0.00	0.00	0.00
16,100.00	90.12	271.30	6,975.30	276.38	-8,345.40	8,349.96	0.00	0.00	0.00
16,200.00	90.12	271.30	6,975.10	278.64	-8,445.38	8,449.96	0.00	0.00	0.00
16,300.00	90.12	271.30	6,974.90	280.91	-8,545.35	8,549.95	0.00	0.00	0.00
16,400.00	90.12	271.30	6,974.70	283.17	-8,645.33	8,649.95	0.00	0.00	0.00
16,500.00	90.12	271.30	6,974.50	285.44	-8,745.30	8,749.95	0.00	0.00	0.00
16,600.00	90.12	271.30	6,974.30	287.70	-8,845.28	8,849.94	0.00	0.00	0.00
16,700.00	90.12	271.30	6,974.10	289.97	-8,945.25	8,949.94	0.00	0.00	0.00
16,800.00	90.12	271.30	6,973.90	292.23	-9,045.22	9,049.94	0.00	0.00	0.00
16,900.00	90.12	271.30	6,973.70	294.50	-9,145.20	9,149.93	0.00	0.00	0.00
17,000.00	90.12	271.30	6,973.50	296.76	-9,245.17	9,249.93	0.00	0.00	0.00
17,100.00	90.12	271.30	6,973.29	299.03	-9,345.15	9,349.92	0.00	0.00	0.00
17,200.00	90.12	271.30	6,973.09	301.29	-9,445.12	9,449.92	0.00	0.00	0.00
17,300.00	90.12	271.30	6,972.89	303.56	-9,545.09	9,549.92	0.00	0.00	0.00
17,400.00	90.12	271.30	6,972.69	305.82	-9,645.07	9,649.91	0.00	0.00	0.00
17,500.00	90.12	271.30	6,972.49	308.09	-9,745.04	9,749.91	0.00	0.00	0.00
17,600.00	90.12	271.30	6,972.29	310.35	-9,845.02	9,849.91	0.00	0.00	0.00
17,700.00	90.12	271.30	6,972.09	312.62	-9,944.99	9,949.90	0.00	0.00	0.00
17,800.00	90.12	271.30	6,971.89	314.88	-10,044.97	10,049.90	0.00	0.00	0.00
17,900.00	90.12	271.30	6,971.69	317.15	-10,144.94	10,149.89	0.00	0.00	0.00
18,000.00	90.12	271.30	6,971.49	319.41	-10,244.91	10,249.89	0.00	0.00	0.00
18,100.00	90.12	271.30	6,971.29	321.68	-10,344.89	10,349.89	0.00	0.00	0.00
18,200.00	90.12	271.30	6,971.09	323.94	-10,444.86	10,449.88	0.00	0.00	0.00
18,242.75	90.12	271.30	6,971.00	324.91	-10,487.60	10,492.63	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
658H FPerf	0.00	0.00	6,971.00	322.69	-10,387.56	2,136,458.67	2,838,124.66	36.8705970	-107.4400620
- plan misses target center by 0.21ft at 18142.69ft MD (6971.20 TVD, 322.64 N, -10387.56 E)									
- Point									
658H BHL Rev 2	0.00	0.00	6,971.00	324.91	-10,487.60	2,136,460.44	2,838,024.62	36.8706030	-107.4404040
- plan hits target center									
- Point									
658H POE Rev 1	0.00	0.00	6,992.00	88.05	-32.02	2,136,270.53	2,848,481.13	36.8699578	-107.4046594
- plan hits target center									
- Point									

Database:	EDM _16.0	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Company:	Logos Operating LLC	**TVD Reference:**	GL 6394' @ 6394.00ft
Project:	Rio Arriba, NM NAD83	**MD Reference:**	GL 6394' @ 6394.00ft
Site:	Rosa Unit 30	**North Reference:**	True
Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,529.07	2,496.00	Ojo Alamo		0.00	0.00
2,659.17	2,622.00	Kirtland		0.00	0.00
3,140.35	3,088.00	Fruitland		0.00	0.00
3,478.00	3,415.00	Pictured Cliffs		0.00	0.00
3,575.06	3,509.00	Lewis		0.00	0.00
4,697.45	4,596.00	Chacra		0.00	0.00
5,551.38	5,423.00	Cliff House		0.00	0.00
5,600.94	5,471.00	Menefee		0.00	0.00
5,808.25	5,673.00	Point Lookout		0.00	0.00
6,299.00	6,159.00	Mancos		0.00	0.00

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.00	1,000.00	0.00	0.00	Start Build 2.00
1,721.37	1,713.77	3.40	90.28	Start 3972.79 hold at 1721.37 MD
5,694.15	5,561.27	40.64	1,079.40	Start DLS 5.00 TFO -176.43
7,784.47	6,992.00	88.05	-32.02	POE @ 7784' MD
7,784.47	6,992.00	88.05	-32.02	36.8699578, -107.4046594
18,142.68	6,971.20	322.64	-10,387.56	First Perf @ 18,142' MD
18,142.68	6,971.20	322.64	-10,387.56	36.8705969, -107.4400620
18,242.75	6,971.00	324.91	-10,487.60	TD at 18242.75

LOGOS RESOURCES II, LLC

Logos Operating LLC

Rio Arriba, NM NAD83
Rosa Unit 30
Rosa Unit #658H

OH
Plan #2

Anticollision Summary Report

18 January, 2021

LONESTAR CONSULTING

LOGOS RESOURCES II, LLC

Lonestar Consulting
Anticollision Summary Report

LONESTAR CONSULTING

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Project:	Rio Arriba, NM NAD83	**TVD Reference:**	GL 6394' @ 6394.00ft
Reference Site:	Rosa Unit 30	**MD Reference:**	GL 6394' @ 6394.00ft
Site Error:	0.00 ft	**North Reference:**	True
Reference Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM _16.0
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 10,000.00ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 1/18/2021

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	18,242.75	Plan #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Rosa Unit 30						
Rosa Unit #665H - OH - Plan #2	1,000.00	1,000.00	45.13	37.96	6.294	CC, ES
Rosa Unit #665H - OH - Plan #2	18,242.75	18,225.57	1,490.22	816.98	2.213	SF
Sec 25 T31N R6W Offsets						
Rosa Unit #160C - OH - OH	1,000.00	1,025.02	2,356.59	2,321.88	67.887	CC
Rosa Unit #160C - OH - OH	1,100.00	1,124.90	2,358.29	2,320.19	61.903	ES
Rosa Unit #160C - OH - OH	3,800.00	3,720.00	2,964.84	2,838.06	23.386	SF
Rosa Unit #218 - OH - OH	541.33	559.78	3,572.66	3,553.72	188.626	CC
Rosa Unit #218 - OH - OH	1,100.00	1,118.19	3,574.43	3,536.53	94.330	ES
Rosa Unit #218 - OH - OH	3,100.00	3,058.00	4,002.01	3,897.92	38.448	SF
Rosa Unit #218A - OH - OH	592.92	583.93	1,811.77	1,791.91	91.234	CC
Rosa Unit #218A - OH - OH	1,100.00	1,091.00	1,813.51	1,776.45	48.925	ES
Rosa Unit #218A - OH - OH	3,100.00	3,040.12	2,245.40	2,141.90	21.695	SF
Sec 26 T31N R6W Offsets						
Rosa Unit #211 - OH - OH	14,627.68	3,050.00	3,966.15	3,885.47	49.157	CC
Rosa Unit #211 - OH - OH	14,700.00	3,050.00	3,966.81	3,885.27	48.649	ES
Rosa Unit #211 - OH - OH	17,000.00	3,050.00	4,621.50	4,491.97	35.680	SF
Rosa Unit #215A - OH - OH	17,335.61	2,800.00	4,208.31	4,119.18	47.218	CC
Rosa Unit #215A - OH - OH	17,400.00	2,800.00	4,208.80	4,118.84	46.783	ES
Rosa Unit #215A - OH - OH	18,242.75	2,800.00	4,304.97	4,194.94	39.126	SF
Rosa Unit #5C - OH - OH	14,916.59	7,004.74	709.94	255.38	1.562	CC, ES, SF
Rosa Unit #5D - OH - OH	15,017.05	7,159.73	624.54	348.81	2.265	CC, ES, SF

LOGOS RESOURCES II, LLC

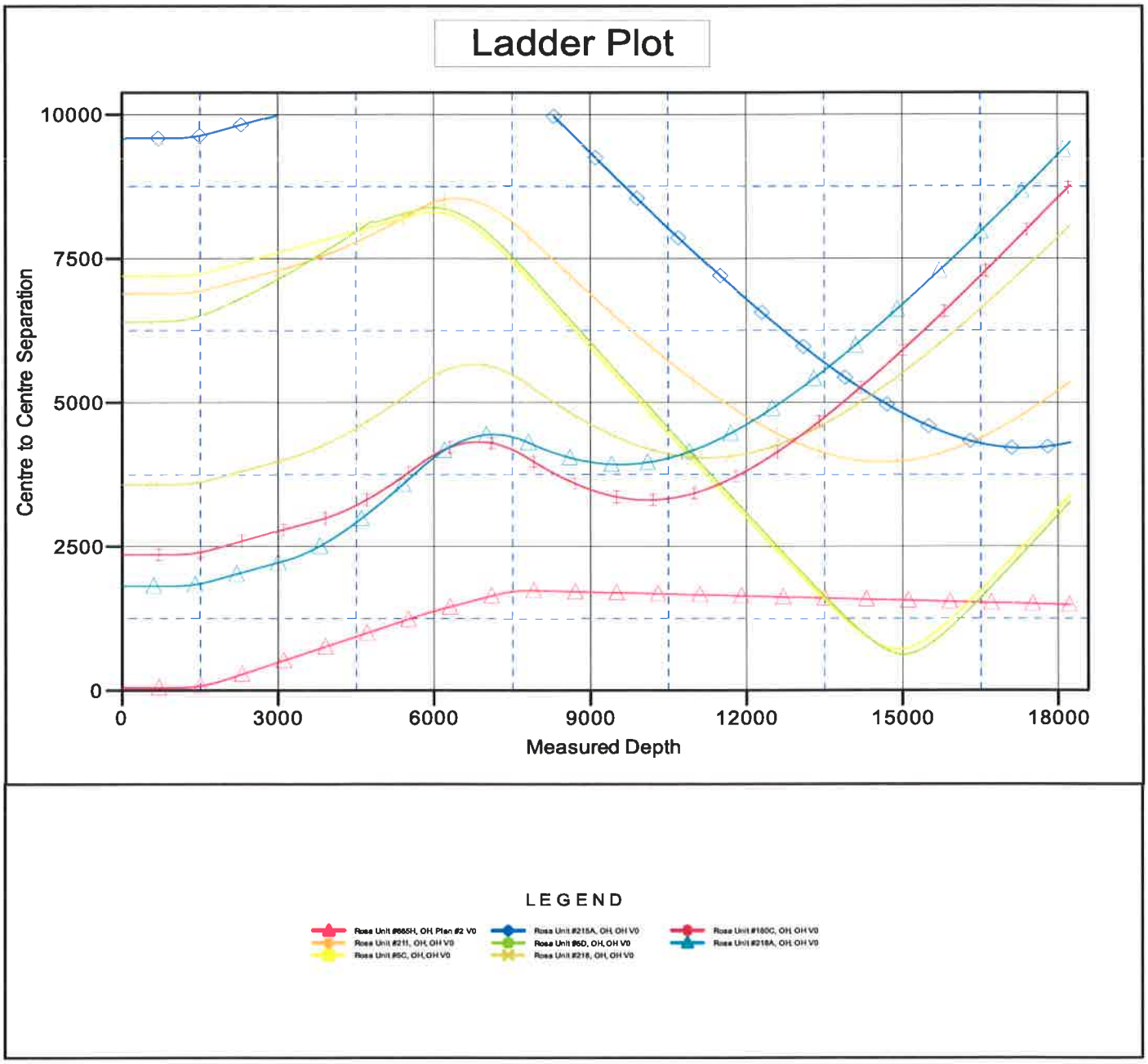
Lonestar Consulting
Anticollision Summary Report

LONESTAR CONSULTING

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Project:	Rio Arriba, NM NAD83	**TVD Reference:**	GL 6394' @ 6394.00ft
Reference Site:	Rosa Unit 30	**MD Reference:**	GL 6394' @ 6394.00ft
Site Error:	0.00 ft	**North Reference:**	True
Reference Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM _16.0
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to GL 6394' @ 6394.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Rosa Unit #658H - Slot A1 (658H)
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.26°



LOGOS RESOURCES II, LLC

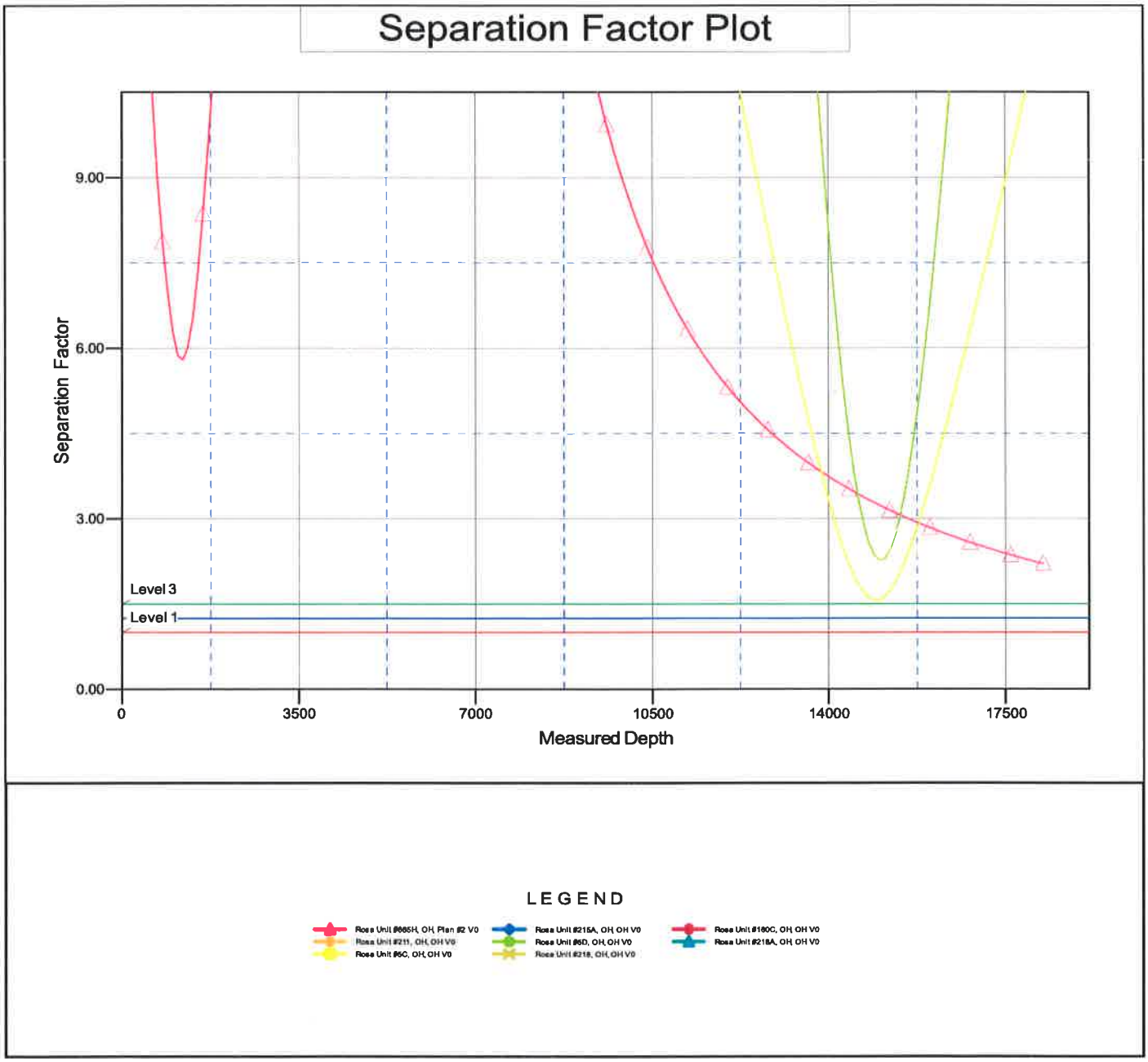
Lonestar Consulting
Anticollision Summary Report

LONESTAR CONSULTING

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #658H - Slot A1 (658H)
Project:	Rio Arriba, NM NAD83	**TVD Reference:**	GL 6394' @ 6394.00ft
Reference Site:	Rosa Unit 30	**MD Reference:**	GL 6394' @ 6394.00ft
Site Error:	0.00 ft	**North Reference:**	True
Reference Well:	Rosa Unit #658H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM _16.0
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

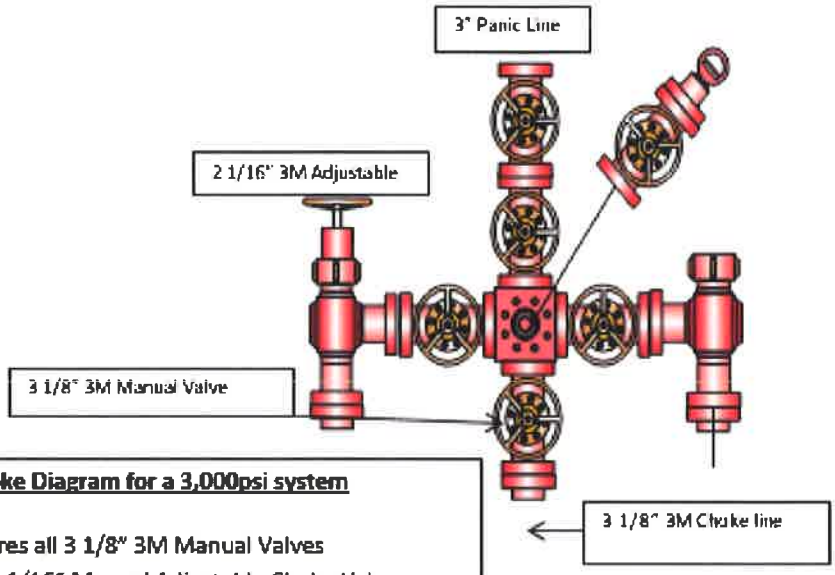
Reference Depths are relative to GL 6394' @ 6394.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: Rosa Unit #658H - Slot A1 (658H)
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.26°



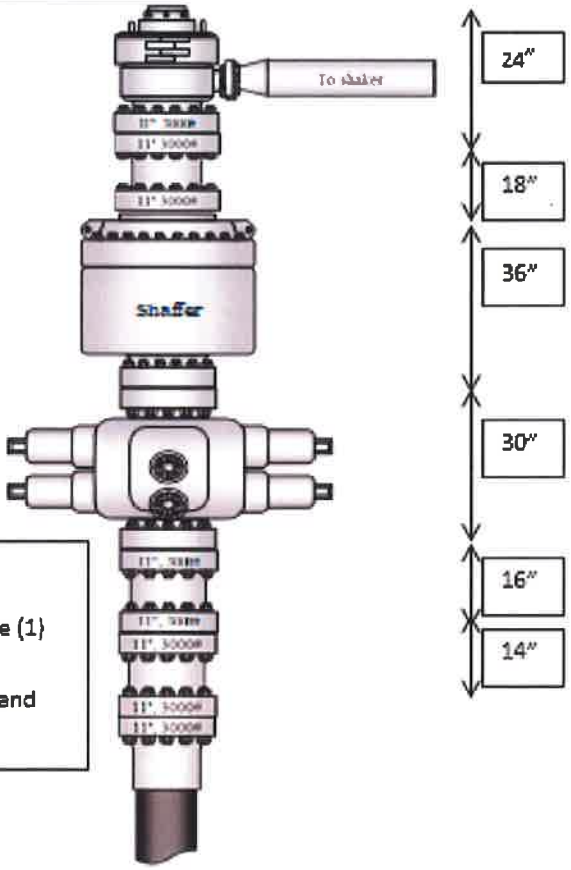
LOGOS RESOURCES II, LLC

3M 11" B.O.P.E Diagram



Choke Diagram for a 3,000psi system

- Features all 3 1/8" 3M Manual Valves
- Two 2 1/16" Manual Adjustable Choke Valves
- 3" Panic Line and 2" Vent lines
- (2) 3 1/8" 3M Coflex Hose f/Choke to BOP



11" 3,000psi BOP

- Choke Side has (1) manual 3 1/8" Valve (1) HCR
- Kill Side has (2) 2 1/16" Manual Valve and (1) check valve

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 46424

COMMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 46424
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 9/9/2021	9/9/2021

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

CONDITIONS

Action 46424

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 46424
	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	9/9/2021
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	9/9/2021
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	9/9/2021
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	9/9/2021
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	9/9/2021