

Form 3160-5
(June 2019)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.5. Lease Serial No.
NMSF078769
6. If Indian, Allottee or Tribe Name**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other2. Name of Operator
LOGOS OPERATING LLC3a. Address 2010 AFTON PLACE
FARMINGTON, NM 874013b. Phone No. (include area code)
(505) 278-87204. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC 19 T31N R05W NE/NW (C) 952 FNL 422 FWL7. If Unit of CA/Agreement, Name and/or No.
NMNM78407E8. Well Name and No.
ROSA UNIT 647H9. API Well No.
30-039-3141110. Field and Pool or Exploratory Area
BASIN MANCOS11. Country or Parish, State
RIO ARriba COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION				
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal		

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

LOGOS Operating request a change in plans for the following: Operating request a change in plans for the following:

Original surface location from 946' FNL & 438' FWL to new **surface location 952' FNL & 422' FWL**Original bottom-hole location from 1382' FNL & 1923' FWL to new **bottom-hole location 2579' FNL & 2304' FWL**Original TD @ 18,019' MD 6825' TVD to new **TD @ 17,779' MD 6821' TVD.**

Geology tops have been updated per changes.

Original KOP @ 6374' MD 6327' TVD to new **KOP @ 6586' MD 6361' TVD**Original Landing point @ 7456' MD 7032' TVD to new **Landing point @ 7579' MD 6955' TVD**Original 7" casing Intermediate @ 6272' MD to **9.625" Intermediate casing, 6429' MD 6183' TVD**Original 4.5" casing Production Liner @ 18,019' MD to **5.5" Production casing, 17,779' MD 6821' TVD**

The 9.625" Intermediate & 5.5" production cementing bbls and sacks have been update per casing depth changes.

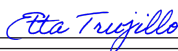
Attached: New C102, Operation and Directional Drill plans.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Etta Trujillo

Title Regulatory Specialist

Signature



Date 11/16/2021

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

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

(Instructions on page 2)

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

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31411	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 320608	⁵ Property Name ROSA UNIT	⁶ Well Number 647H
⁷ GRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 6305'

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
C	19	31N	5W	1	952	NORTH	422	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
K	21	31N	5W		2579	SOUTH	2304	WEST	RIO ARriba
¹² Dedicated Acres 872.43	S/2 - Sections 19, 20, 21, T31N, R5W				¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13457		

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.

Signature Etta Trujillo Date 11/12/2021
Printed Name Etta Trujillo
E-mail Address etrujillo@logosresourcesllc.com

18 SURVEYOR CERTIFICATION

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

Date Revised: OCTOBER 12, 2021
Survey Date: JANUARY 2, 2015

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

SURFACE LOCATION
952' FNL 422' FWL
SECTION 19, T31N, R5W
LAT: 36.889709°N
LONG: 107.405733°W
DATUM: NAD1927

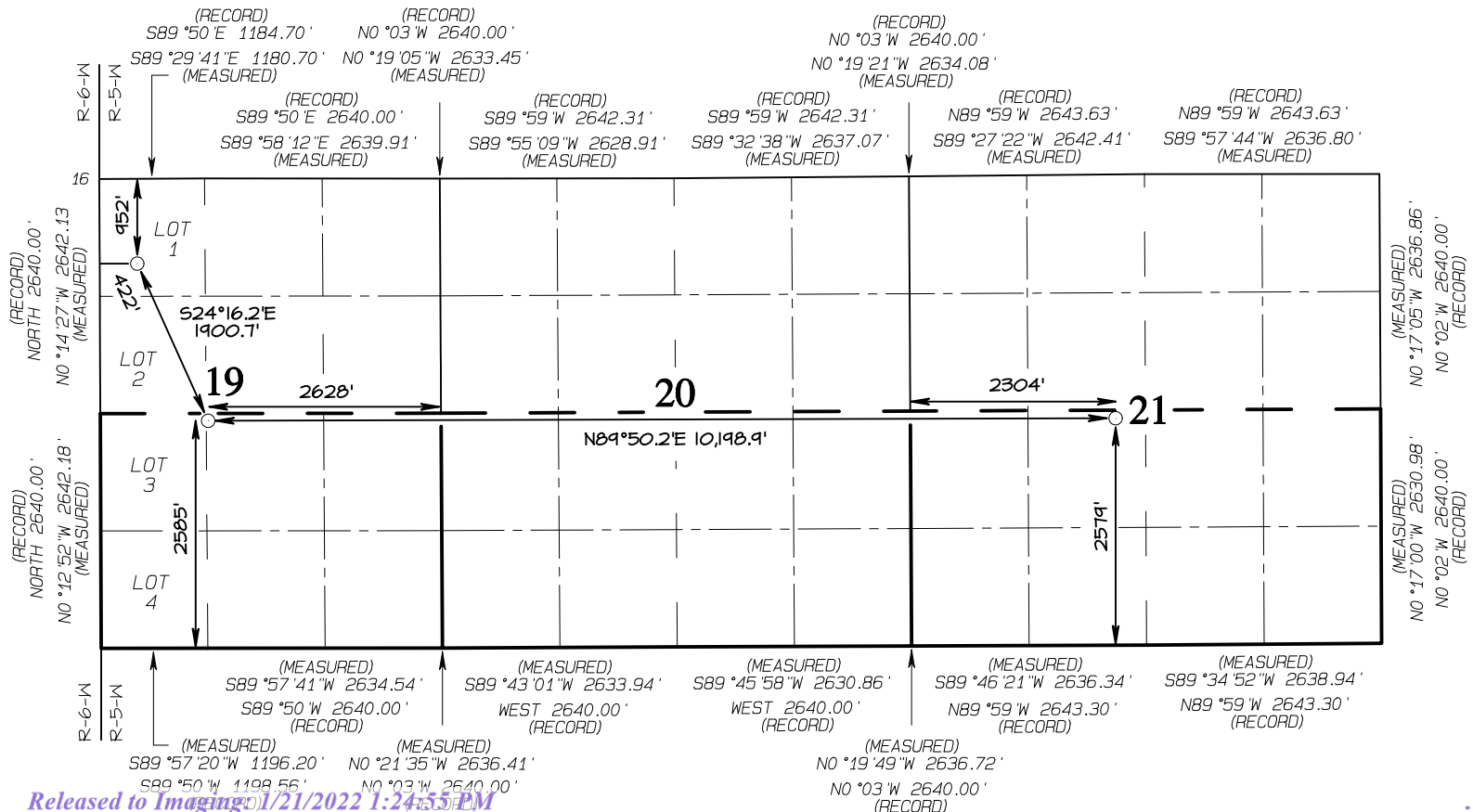
FIRST TAKE POINT
2585' FSL 2628' FWL
SECTION 19, T31N, R5W
LAT: 36.884941°N
LONG: 107.403088°W
DATUM: NAD1927

LAST TAKE POINT
2579' FSL 2304' FWL
SECTION 21, T31N, R5W
LAT: 36.884889°N
LONG: 107.368215°W
DATUM: NAD1927

LAT: 36.889715°N
LONG: 107.406336°W
DATUM: NAD1983

LAT: 36.884947°N
LONG: 107.403691°W
DATUM: NAD1983

LAT: 36.884896°N
LONG: 107.368817°W
DATUM: NAD1983



Released to Imaging: 1/21/2023 1:24:55 PM



Company: Logos Operating LLC
Project: Rio Arriba, NM NAD83
Site: Rosa Unit 27
Well: Rosa Unit 647H
Wellbore: OH
Design: Plan #3

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



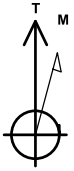
WELL DETAILS: Rosa Unit 647H

GL 6305' & RKB 25 @ 6330.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	2143461.40	2847958.58	36.8897155	-107.4063358	A8

Plan: Plan #3 (Rosa Unit 647H/OH)

Created By: Janie Collins Date: 14:29, September 28 2021



Azimuths to True North
Magnetic North: 8.6°

Magnetic Field
Strength: 49683.8 nT
Dip Angle: 63.8°
Date: 6/14/2021
Model: HDGM2021_FIT

DESIGN TARGET DETAILS

Well	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
647H POE Rev 1	6955.00	-1736.22	773.50	2141728.66	2848739.84	36.8849465	-107.4036910
647H BHL Rev 1	6821.00	-1752.63	10972.45	2141757.88	2858938.74	36.8848956	-107.3688173

SECTION DETAILS

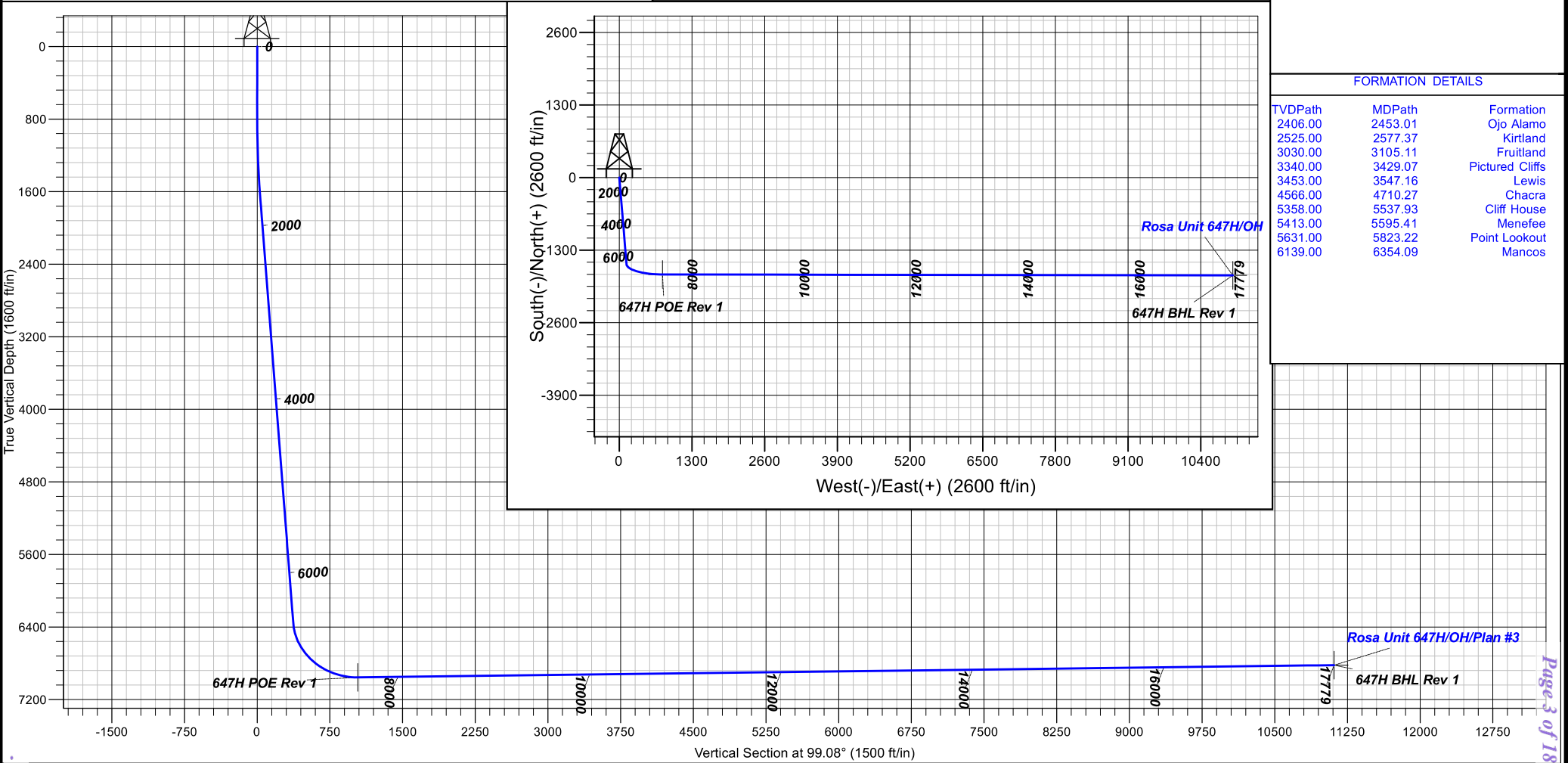
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00
1644.01	16.88	175.24	1631.85	-123.01	10.25	2.00	175.24	29.52
6586.44	16.88	175.24	6361.34	-1553.19	129.37	0.00	0.00	372.73
7578.81	90.75	90.09	6955.00	-1736.22	773.50	9.00	-85.14	1037.67
17778.65	90.75	90.09	6821.00	-1752.63	10972.45	0.00	0.00	11111.55

CASING DETAILS

TVD	MD	Name
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FORMATION DETAILS

TVDPath	MDPath	Formation
2406.00	2453.01	Ojo Alamo
2525.00	2577.37	Kirtland
3030.00	3105.11	Fruitland
3340.00	3429.07	Pictured Cliffs
3453.00	3547.16	Lewis
4566.00	4710.27	Chacra
5358.00	5537.93	Cliff House
5413.00	5595.41	Menefee
5631.00	5823.22	Point Lookout
6139.00	6354.09	Mancos



Received by OCB: 1/21/2023 10:19:06 AM

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Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 27

Rosa Unit 647H - Slot A8

OH

Plan: Plan #3

Standard Planning Report

28 September, 2021





Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit 647H - Slot A8
Company:	Logos Operating LLC	TVD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Site:	Rosa Unit 27	North Reference:	True
Well:	Rosa Unit 647H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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 27			
Site Position:		Northing:	2,143,451.58 usft	Latitude:	36.8896880
From:	Lat/Long	Easting:	2,848,002.44 usft	Longitude:	-107.4061860
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.26

Well	Rosa Unit 647H - Slot A8					
Well Position	+N/-S	10.01 ft	Northing:	2,143,461.40 usft	Latitude:	36.8897155
	+E/-W	-43.82 ft	Easting:	2,847,958.58 usft	Longitude:	-107.4063359
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	6,305.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021_FILE	6/14/2021	8.68	63.37	49,683.80000000

Design	Plan #3			
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	99.08

Plan Survey Tool Program	Date	9/28/2021		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,778.65 Plan #3 (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	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,644.01	16.88	175.24	1,631.85	-123.01	10.25	2.00	2.00	0.00	175.24	
6,586.44	16.88	175.24	6,361.34	-1,553.19	129.37	0.00	0.00	0.00	0.00	
7,578.81	90.75	90.09	6,955.00	-1,736.22	773.50	9.00	7.44	-8.58	-85.14	647H POE Rev 1
17,778.65	90.75	90.09	6,821.00	-1,752.63	10,972.46	0.00	0.00	0.00	0.00	647H BHL Rev 1



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit 647H - Slot A8
Company:	Logos Operating LLC	TVD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Site:	Rosa Unit 27	North Reference:	True
Well:	Rosa Unit 647H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	2.00	175.24	899.98	-1.74	0.14	0.42	2.00	2.00	0.00
1,000.00	4.00	175.24	999.84	-6.95	0.58	1.67	2.00	2.00	0.00
1,100.00	6.00	175.24	1,099.45	-15.64	1.30	3.75	2.00	2.00	0.00
1,200.00	8.00	175.24	1,198.70	-27.78	2.31	6.67	2.00	2.00	0.00
1,300.00	10.00	175.24	1,297.47	-43.37	3.61	10.41	2.00	2.00	0.00
1,400.00	12.00	175.24	1,395.62	-62.39	5.20	14.97	2.00	2.00	0.00
1,500.00	14.00	175.24	1,493.06	-84.80	7.06	20.35	2.00	2.00	0.00
1,600.00	16.00	175.24	1,589.64	-110.59	9.21	26.54	2.00	2.00	0.00
1,644.01	16.88	175.24	1,631.85	-123.01	10.25	29.52	2.00	2.00	0.00
1,700.00	16.88	175.24	1,685.43	-139.21	11.59	33.41	0.00	0.00	0.00
1,800.00	16.88	175.24	1,781.12	-168.15	14.00	40.35	0.00	0.00	0.00
1,900.00	16.88	175.24	1,876.81	-197.08	16.42	47.30	0.00	0.00	0.00
2,000.00	16.88	175.24	1,972.51	-226.02	18.83	54.24	0.00	0.00	0.00
2,100.00	16.88	175.24	2,068.20	-254.96	21.24	61.18	0.00	0.00	0.00
2,200.00	16.88	175.24	2,163.89	-283.89	23.65	68.13	0.00	0.00	0.00
2,300.00	16.88	175.24	2,259.58	-312.83	26.06	75.07	0.00	0.00	0.00
2,400.00	16.88	175.24	2,355.27	-341.77	28.47	82.02	0.00	0.00	0.00
2,500.00	16.88	175.24	2,450.96	-370.70	30.88	88.96	0.00	0.00	0.00
2,600.00	16.88	175.24	2,546.65	-399.64	33.29	95.90	0.00	0.00	0.00
2,700.00	16.88	175.24	2,642.35	-428.58	35.70	102.85	0.00	0.00	0.00
2,800.00	16.88	175.24	2,738.04	-457.51	38.11	109.79	0.00	0.00	0.00
2,900.00	16.88	175.24	2,833.73	-486.45	40.52	116.74	0.00	0.00	0.00
3,000.00	16.88	175.24	2,929.42	-515.39	42.93	123.68	0.00	0.00	0.00
3,100.00	16.88	175.24	3,025.11	-544.32	45.34	130.63	0.00	0.00	0.00
3,200.00	16.88	175.24	3,120.80	-573.26	47.75	137.57	0.00	0.00	0.00
3,300.00	16.88	175.24	3,216.49	-602.20	50.16	144.51	0.00	0.00	0.00
3,400.00	16.88	175.24	3,312.19	-631.13	52.57	151.46	0.00	0.00	0.00
3,500.00	16.88	175.24	3,407.88	-660.07	54.98	158.40	0.00	0.00	0.00
3,600.00	16.88	175.24	3,503.57	-689.01	57.39	165.35	0.00	0.00	0.00
3,700.00	16.88	175.24	3,599.26	-717.95	59.80	172.29	0.00	0.00	0.00
3,800.00	16.88	175.24	3,694.95	-746.88	62.21	179.24	0.00	0.00	0.00
3,900.00	16.88	175.24	3,790.64	-775.82	64.62	186.18	0.00	0.00	0.00
4,000.00	16.88	175.24	3,886.33	-804.76	67.03	193.12	0.00	0.00	0.00
4,100.00	16.88	175.24	3,982.03	-833.69	69.44	200.07	0.00	0.00	0.00
4,200.00	16.88	175.24	4,077.72	-862.63	71.85	207.01	0.00	0.00	0.00
4,300.00	16.88	175.24	4,173.41	-891.57	74.26	213.96	0.00	0.00	0.00
4,400.00	16.88	175.24	4,269.10	-920.50	76.67	220.90	0.00	0.00	0.00
4,500.00	16.88	175.24	4,364.79	-949.44	79.08	227.85	0.00	0.00	0.00
4,600.00	16.88	175.24	4,460.48	-978.38	81.49	234.79	0.00	0.00	0.00
4,700.00	16.88	175.24	4,556.17	-1,007.31	83.90	241.73	0.00	0.00	0.00
4,800.00	16.88	175.24	4,651.87	-1,036.25	86.31	248.68	0.00	0.00	0.00
4,900.00	16.88	175.24	4,747.56	-1,065.19	88.72	255.62	0.00	0.00	0.00
5,000.00	16.88	175.24	4,843.25	-1,094.12	91.13	262.57	0.00	0.00	0.00
5,100.00	16.88	175.24	4,938.94	-1,123.06	93.54	269.51	0.00	0.00	0.00
5,200.00	16.88	175.24	5,034.63	-1,152.00	95.95	276.45	0.00	0.00	0.00



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit 647H - Slot A8
Company:	Logos Operating LLC	TVD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Site:	Rosa Unit 27	North Reference:	True
Well:	Rosa Unit 647H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	16.88	175.24	5,130.32	-1,180.93	98.36	283.40	0.00	0.00	0.00
5,400.00	16.88	175.24	5,226.01	-1,209.87	100.77	290.34	0.00	0.00	0.00
5,500.00	16.88	175.24	5,321.71	-1,238.81	103.18	297.29	0.00	0.00	0.00
5,600.00	16.88	175.24	5,417.40	-1,267.75	105.59	304.23	0.00	0.00	0.00
5,700.00	16.88	175.24	5,513.09	-1,296.68	108.00	311.18	0.00	0.00	0.00
5,800.00	16.88	175.24	5,608.78	-1,325.62	110.41	318.12	0.00	0.00	0.00
5,900.00	16.88	175.24	5,704.47	-1,354.56	112.82	325.06	0.00	0.00	0.00
6,000.00	16.88	175.24	5,800.16	-1,383.49	115.23	332.01	0.00	0.00	0.00
6,100.00	16.88	175.24	5,895.85	-1,412.43	117.64	338.95	0.00	0.00	0.00
6,200.00	16.88	175.24	5,991.55	-1,441.37	120.05	345.90	0.00	0.00	0.00
6,300.00	16.88	175.24	6,087.24	-1,470.30	122.46	352.84	0.00	0.00	0.00
6,400.00	16.88	175.24	6,182.93	-1,499.24	124.87	359.79	0.00	0.00	0.00
6,500.00	16.88	175.24	6,278.62	-1,528.18	127.28	366.73	0.00	0.00	0.00
6,586.44	16.88	175.24	6,361.34	-1,553.19	129.37	372.73	0.00	0.00	0.00
6,600.00	17.03	171.08	6,374.31	-1,557.11	129.84	373.82	9.00	1.07	-30.65
6,700.00	20.39	144.74	6,469.18	-1,585.86	142.19	390.55	9.00	3.36	-26.34
6,800.00	26.43	127.77	6,561.01	-1,613.77	169.89	422.31	9.00	6.04	-16.97
6,900.00	33.74	117.22	6,647.54	-1,640.16	212.27	468.32	9.00	7.31	-10.55
7,000.00	41.66	110.18	6,726.63	-1,664.38	268.28	527.44	9.00	7.92	-7.04
7,100.00	49.89	105.07	6,796.35	-1,685.83	336.53	598.23	9.00	8.23	-5.11
7,200.00	58.29	101.08	6,854.96	-1,703.99	415.36	678.93	9.00	8.40	-3.99
7,300.00	66.80	97.76	6,901.04	-1,718.40	502.82	767.57	9.00	8.51	-3.32
7,400.00	75.36	94.85	6,933.44	-1,728.72	596.75	861.95	9.00	8.57	-2.92
7,500.00	83.96	92.15	6,951.37	-1,734.69	694.84	959.76	9.00	8.60	-2.70
7,578.81	90.75	90.09	6,955.00	-1,736.22	773.50	1,037.67	9.00	8.61	-2.61
7,600.00	90.75	90.09	6,954.72	-1,736.26	794.69	1,058.61	0.00	0.00	0.00
7,700.00	90.75	90.09	6,953.41	-1,736.42	894.68	1,157.37	0.00	0.00	0.00
7,800.00	90.75	90.09	6,952.09	-1,736.58	994.68	1,256.14	0.00	0.00	0.00
7,900.00	90.75	90.09	6,950.78	-1,736.74	1,094.67	1,354.90	0.00	0.00	0.00
8,000.00	90.75	90.09	6,949.47	-1,736.90	1,194.66	1,453.67	0.00	0.00	0.00
8,100.00	90.75	90.09	6,948.15	-1,737.06	1,294.65	1,552.43	0.00	0.00	0.00
8,200.00	90.75	90.09	6,946.84	-1,737.23	1,394.64	1,651.20	0.00	0.00	0.00
8,300.00	90.75	90.09	6,945.53	-1,737.39	1,494.63	1,749.96	0.00	0.00	0.00
8,400.00	90.75	90.09	6,944.21	-1,737.55	1,594.62	1,848.73	0.00	0.00	0.00
8,500.00	90.75	90.09	6,942.90	-1,737.71	1,694.61	1,947.49	0.00	0.00	0.00
8,600.00	90.75	90.09	6,941.58	-1,737.87	1,794.61	2,046.26	0.00	0.00	0.00
8,700.00	90.75	90.09	6,940.27	-1,738.03	1,894.60	2,145.02	0.00	0.00	0.00
8,800.00	90.75	90.09	6,938.96	-1,738.19	1,994.59	2,243.79	0.00	0.00	0.00
8,900.00	90.75	90.09	6,937.64	-1,738.35	2,094.58	2,342.55	0.00	0.00	0.00
9,000.00	90.75	90.09	6,936.33	-1,738.51	2,194.57	2,441.32	0.00	0.00	0.00
9,100.00	90.75	90.09	6,935.02	-1,738.68	2,294.56	2,540.08	0.00	0.00	0.00
9,200.00	90.75	90.09	6,933.70	-1,738.84	2,394.55	2,638.85	0.00	0.00	0.00
9,300.00	90.75	90.09	6,932.39	-1,739.00	2,494.54	2,737.61	0.00	0.00	0.00
9,400.00	90.75	90.09	6,931.07	-1,739.16	2,594.54	2,836.38	0.00	0.00	0.00
9,500.00	90.75	90.09	6,929.76	-1,739.32	2,694.53	2,935.14	0.00	0.00	0.00
9,600.00	90.75	90.09	6,928.45	-1,739.48	2,794.52	3,033.91	0.00	0.00	0.00
9,700.00	90.75	90.09	6,927.13	-1,739.64	2,894.51	3,132.67	0.00	0.00	0.00
9,800.00	90.75	90.09	6,925.82	-1,739.80	2,994.50	3,231.44	0.00	0.00	0.00
9,900.00	90.75	90.09	6,924.51	-1,739.96	3,094.49	3,330.20	0.00	0.00	0.00
10,000.00	90.75	90.09	6,923.19	-1,740.12	3,194.48	3,428.97	0.00	0.00	0.00
10,100.00	90.75	90.09	6,921.88	-1,740.29	3,294.47	3,527.73	0.00	0.00	0.00
10,200.00	90.75	90.09	6,920.56	-1,740.45	3,394.47	3,626.50	0.00	0.00	0.00
10,300.00	90.75	90.09	6,919.25	-1,740.61	3,494.46	3,725.26	0.00	0.00	0.00
10,400.00	90.75	90.09	6,917.94	-1,740.77	3,594.45	3,824.03	0.00	0.00	0.00



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit 647H - Slot A8
Company:	Logos Operating LLC	TVD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Site:	Rosa Unit 27	North Reference:	True
Well:	Rosa Unit 647H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	90.75	90.09	6,916.62	-1,740.93	3,694.44	3,922.79	0.00	0.00	0.00
10,600.00	90.75	90.09	6,915.31	-1,741.09	3,794.43	4,021.56	0.00	0.00	0.00
10,700.00	90.75	90.09	6,914.00	-1,741.25	3,894.42	4,120.32	0.00	0.00	0.00
10,800.00	90.75	90.09	6,912.68	-1,741.41	3,994.41	4,219.09	0.00	0.00	0.00
10,900.00	90.75	90.09	6,911.37	-1,741.57	4,094.40	4,317.85	0.00	0.00	0.00
11,000.00	90.75	90.09	6,910.05	-1,741.74	4,194.40	4,416.62	0.00	0.00	0.00
11,100.00	90.75	90.09	6,908.74	-1,741.90	4,294.39	4,515.38	0.00	0.00	0.00
11,200.00	90.75	90.09	6,907.43	-1,742.06	4,394.38	4,614.15	0.00	0.00	0.00
11,300.00	90.75	90.09	6,906.11	-1,742.22	4,494.37	4,712.91	0.00	0.00	0.00
11,400.00	90.75	90.09	6,904.80	-1,742.38	4,594.36	4,811.68	0.00	0.00	0.00
11,500.00	90.75	90.09	6,903.49	-1,742.54	4,694.35	4,910.44	0.00	0.00	0.00
11,600.00	90.75	90.09	6,902.17	-1,742.70	4,794.34	5,009.21	0.00	0.00	0.00
11,700.00	90.75	90.09	6,900.86	-1,742.86	4,894.33	5,107.97	0.00	0.00	0.00
11,800.00	90.75	90.09	6,899.54	-1,743.02	4,994.33	5,206.74	0.00	0.00	0.00
11,900.00	90.75	90.09	6,898.23	-1,743.18	5,094.32	5,305.50	0.00	0.00	0.00
12,000.00	90.75	90.09	6,896.92	-1,743.35	5,194.31	5,404.27	0.00	0.00	0.00
12,100.00	90.75	90.09	6,895.60	-1,743.51	5,294.30	5,503.03	0.00	0.00	0.00
12,200.00	90.75	90.09	6,894.29	-1,743.67	5,394.29	5,601.80	0.00	0.00	0.00
12,300.00	90.75	90.09	6,892.98	-1,743.83	5,494.28	5,700.56	0.00	0.00	0.00
12,400.00	90.75	90.09	6,891.66	-1,743.99	5,594.27	5,799.33	0.00	0.00	0.00
12,500.00	90.75	90.09	6,890.35	-1,744.15	5,694.26	5,898.09	0.00	0.00	0.00
12,600.00	90.75	90.09	6,889.03	-1,744.31	5,794.26	5,996.86	0.00	0.00	0.00
12,700.00	90.75	90.09	6,887.72	-1,744.47	5,894.25	6,095.62	0.00	0.00	0.00
12,800.00	90.75	90.09	6,886.41	-1,744.63	5,994.24	6,194.39	0.00	0.00	0.00
12,900.00	90.75	90.09	6,885.09	-1,744.80	6,094.23	6,293.15	0.00	0.00	0.00
13,000.00	90.75	90.09	6,883.78	-1,744.96	6,194.22	6,391.92	0.00	0.00	0.00
13,100.00	90.75	90.09	6,882.47	-1,745.12	6,294.21	6,490.68	0.00	0.00	0.00
13,200.00	90.75	90.09	6,881.15	-1,745.28	6,394.20	6,589.45	0.00	0.00	0.00
13,300.00	90.75	90.09	6,879.84	-1,745.44	6,494.19	6,688.21	0.00	0.00	0.00
13,400.00	90.75	90.09	6,878.52	-1,745.60	6,594.19	6,786.98	0.00	0.00	0.00
13,500.00	90.75	90.09	6,877.21	-1,745.76	6,694.18	6,885.74	0.00	0.00	0.00
13,600.00	90.75	90.09	6,875.90	-1,745.92	6,794.17	6,984.51	0.00	0.00	0.00
13,700.00	90.75	90.09	6,874.58	-1,746.08	6,894.16	7,083.27	0.00	0.00	0.00
13,800.00	90.75	90.09	6,873.27	-1,746.25	6,994.15	7,182.04	0.00	0.00	0.00
13,900.00	90.75	90.09	6,871.96	-1,746.41	7,094.14	7,280.80	0.00	0.00	0.00
14,000.00	90.75	90.09	6,870.64	-1,746.57	7,194.13	7,379.57	0.00	0.00	0.00
14,100.00	90.75	90.09	6,869.33	-1,746.73	7,294.12	7,478.33	0.00	0.00	0.00
14,200.00	90.75	90.09	6,868.01	-1,746.89	7,394.12	7,577.09	0.00	0.00	0.00
14,300.00	90.75	90.09	6,866.70	-1,747.05	7,494.11	7,675.86	0.00	0.00	0.00
14,400.00	90.75	90.09	6,865.39	-1,747.21	7,594.10	7,774.62	0.00	0.00	0.00
14,500.00	90.75	90.09	6,864.07	-1,747.37	7,694.09	7,873.39	0.00	0.00	0.00
14,600.00	90.75	90.09	6,862.76	-1,747.53	7,794.08	7,972.15	0.00	0.00	0.00
14,700.00	90.75	90.09	6,861.45	-1,747.69	7,894.07	8,070.92	0.00	0.00	0.00
14,800.00	90.75	90.09	6,860.13	-1,747.86	7,994.06	8,169.68	0.00	0.00	0.00
14,900.00	90.75	90.09	6,858.82	-1,748.02	8,094.05	8,268.45	0.00	0.00	0.00
15,000.00	90.75	90.09	6,857.50	-1,748.18	8,194.05	8,367.21	0.00	0.00	0.00
15,100.00	90.75	90.09	6,856.19	-1,748.34	8,294.04	8,465.98	0.00	0.00	0.00
15,200.00	90.75	90.09	6,854.88	-1,748.50	8,394.03	8,564.74	0.00	0.00	0.00
15,300.00	90.75	90.09	6,853.56	-1,748.66	8,494.02	8,663.51	0.00	0.00	0.00
15,400.00	90.75	90.09	6,852.25	-1,748.82	8,594.01	8,762.27	0.00	0.00	0.00
15,500.00	90.75	90.09	6,850.94	-1,748.98	8,694.00	8,861.04	0.00	0.00	0.00
15,600.00	90.75	90.09	6,849.62	-1,749.14	8,793.99	8,959.80	0.00	0.00	0.00
15,700.00	90.75	90.09	6,848.31	-1,749.31	8,893.98	9,058.57	0.00	0.00	0.00
15,800.00	90.75	90.09	6,846.99	-1,749.47	8,993.98	9,157.33	0.00	0.00	0.00



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit 647H - Slot A8
Company:	Logos Operating LLC	TVD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6305' & RKB 25 @ 6330.00ft
Site:	Rosa Unit 27	North Reference:	True
Well:	Rosa Unit 647H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

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	90.75	90.09	6,845.68	-1,749.63	9,093.97	9,256.10	0.00	0.00	0.00	
16,000.00	90.75	90.09	6,844.37	-1,749.79	9,193.96	9,354.86	0.00	0.00	0.00	
16,100.00	90.75	90.09	6,843.05	-1,749.95	9,293.95	9,453.63	0.00	0.00	0.00	
16,200.00	90.75	90.09	6,841.74	-1,750.11	9,393.94	9,552.39	0.00	0.00	0.00	
16,300.00	90.75	90.09	6,840.43	-1,750.27	9,493.93	9,651.16	0.00	0.00	0.00	
16,400.00	90.75	90.09	6,839.11	-1,750.43	9,593.92	9,749.92	0.00	0.00	0.00	
16,500.00	90.75	90.09	6,837.80	-1,750.59	9,693.91	9,848.69	0.00	0.00	0.00	
16,600.00	90.75	90.09	6,836.48	-1,750.75	9,793.91	9,947.45	0.00	0.00	0.00	
16,700.00	90.75	90.09	6,835.17	-1,750.92	9,893.90	10,046.22	0.00	0.00	0.00	
16,800.00	90.75	90.09	6,833.86	-1,751.08	9,993.89	10,144.98	0.00	0.00	0.00	
16,900.00	90.75	90.09	6,832.54	-1,751.24	10,093.88	10,243.75	0.00	0.00	0.00	
17,000.00	90.75	90.09	6,831.23	-1,751.40	10,193.87	10,342.51	0.00	0.00	0.00	
17,100.00	90.75	90.09	6,829.92	-1,751.56	10,293.86	10,441.28	0.00	0.00	0.00	
17,200.00	90.75	90.09	6,828.60	-1,751.72	10,393.85	10,540.04	0.00	0.00	0.00	
17,300.00	90.75	90.09	6,827.29	-1,751.88	10,493.84	10,638.81	0.00	0.00	0.00	
17,400.00	90.75	90.09	6,825.97	-1,752.04	10,593.83	10,737.57	0.00	0.00	0.00	
17,500.00	90.75	90.09	6,824.66	-1,752.20	10,693.83	10,836.34	0.00	0.00	0.00	
17,600.00	90.75	90.09	6,823.35	-1,752.37	10,793.82	10,935.10	0.00	0.00	0.00	
17,700.00	90.75	90.09	6,822.03	-1,752.53	10,893.81	11,033.87	0.00	0.00	0.00	
17,778.65	90.75	90.09	6,821.00	-1,752.63	10,972.46	11,111.55	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
647H BHL Rev 1	0.00	0.00	6,821.00	-1,752.63	10,972.46	2,141,757.88	2,858,938.75	36.8848956	-107.3688173
- plan hits target center									
- Point									
647H POE Rev 1	0.00	0.00	6,955.00	-1,736.22	773.50	2,141,728.66	2,848,739.84	36.8849465	-107.4036910
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,453.01	2,406.00	Ojo Alamo		0.00	0.00	
2,577.37	2,525.00	Kirtland		0.00	0.00	
3,105.11	3,030.00	Fruitland		0.00	0.00	
3,429.07	3,340.00	Pictured Cliffs		0.00	0.00	
3,547.16	3,453.00	Lewis		0.00	0.00	
4,710.27	4,566.00	Chacra		0.00	0.00	
5,537.93	5,358.00	Cliff House		0.00	0.00	
5,595.41	5,413.00	Menefee		0.00	0.00	
5,823.22	5,631.00	Point Lookout		0.00	0.00	
6,354.09	6,139.00	Mancos		0.00	0.00	



LOGOS Operating, LLC Operations Plan

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

Date:	November 11, 2021	Pool:	Basin Mancos
Well Name:	Rosa Unit 647H	GL Elevation:	6,305'
Surface Location:	Sec 19, T31N, R5W 952 FNL, 422 FWL (36.889715° N, 107.406336° W – NAD83)	Measured Depth:	17,779' (KB)
Bottom Hole Location:	Sec 21, T31N, R5W 2579 FSL, 2304 FWL (36.884896° N, 107.368817° W – NAD83)	County:	Rio Arriba

Lease Serial # NMSF078769, CA Serial # NMNM78407E

I. GEOLOGY

A. Formation Tops (Based on 25' KB Elevation): Estimated top of important geological markers:
SURFACE FORMATION – NACIMIENTO

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	2453	2406	*POINT LOOKOUT	5823	5631
KIRTLAND	2577	2525	*MANCOS	6354	6139
*FRUITLAND	3105	3030	KICKOFF POINT	6586	6361
*PICTURED CLIFFS	3429	3340	LANDING POINT	7579	6955
LEWIS	3547	3453			
CHACRA	4710	4566			
*CLIFF HOUSE	5538	5358			
MENEFEE	5595	5413	TD	17,779	6821

* 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.

ROSA UNIT 647H



- 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	OHSIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	17.5"	320' or greater	13.375"	54.5 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE	12.25"	6,429'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	17,779'	5.5"	20 LBS	P-110 or equiv	LTC/BTC

NOTE: All casing depths are approximate, based on KB elevation (25') 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:

- SURFACE CASING:** 13-3/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
- 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 cancellation plugs for DV tools may be used if losses while cementing are not encountered.
- 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 Toe Sleeve (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)

- SURFACE:** Casing shall be set at ~ 320' and cemented to surface. TOC at Surface. 263 sks of 15.8 ppg Type Neat G, 1.18 cuft/sk yield or equivalent 223 sks of 14.6 ppg Type III with 1.39 cuft/sk yield, 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)	Sacks Cement	Density (PPG)
Stage 1 Tail	5,923	506	0.31318	1.3	206.01	36.7	42	224	40
Stage 1 Lead	4,763	1,161	0.31318	1.3	472.48	84.2	0	472	84
								696	124
Stage 2 Tail	3,629	1,134	0.31318	1.3	461.49	82.2	0	461	82
Stage 2 Lead	3,157	472	0.31318	1.3	192.17	34.2	0	192	34
								654	116
Stage 3 Tail	2,407	750	0.31318	1.3	305.35	54.4	0	305	54
Stage 3 Lead	320	2,087	0.31318	1.3	849.69	151.3	0	850	151
Stage 3 Lead	-	320	0.36268	1	116.06	20.7	0	116	21
								1,271	226
All Stage Totals					2,621	467		1,326	

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 100' 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)	Sacks Cement	Density (PPG)
Cased Lead	6,329	100	0.2531	1	25	5	1.56	16	13
Open Hole Lead	6,429	11,350	0.2291	1.15	3,001	534	1.56	1,924	13
					3,026	539		1,940	

Calculations based on 15% excess for open hole and 100' 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. Pressure test 5-1/2" casing to 1550 psi (0.22 psi/ft * 6,955' TVD) for 30 minutes. Increase pressure to Open RSI sleeves.

ROSA UNIT 647H



D. STIMULATION

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

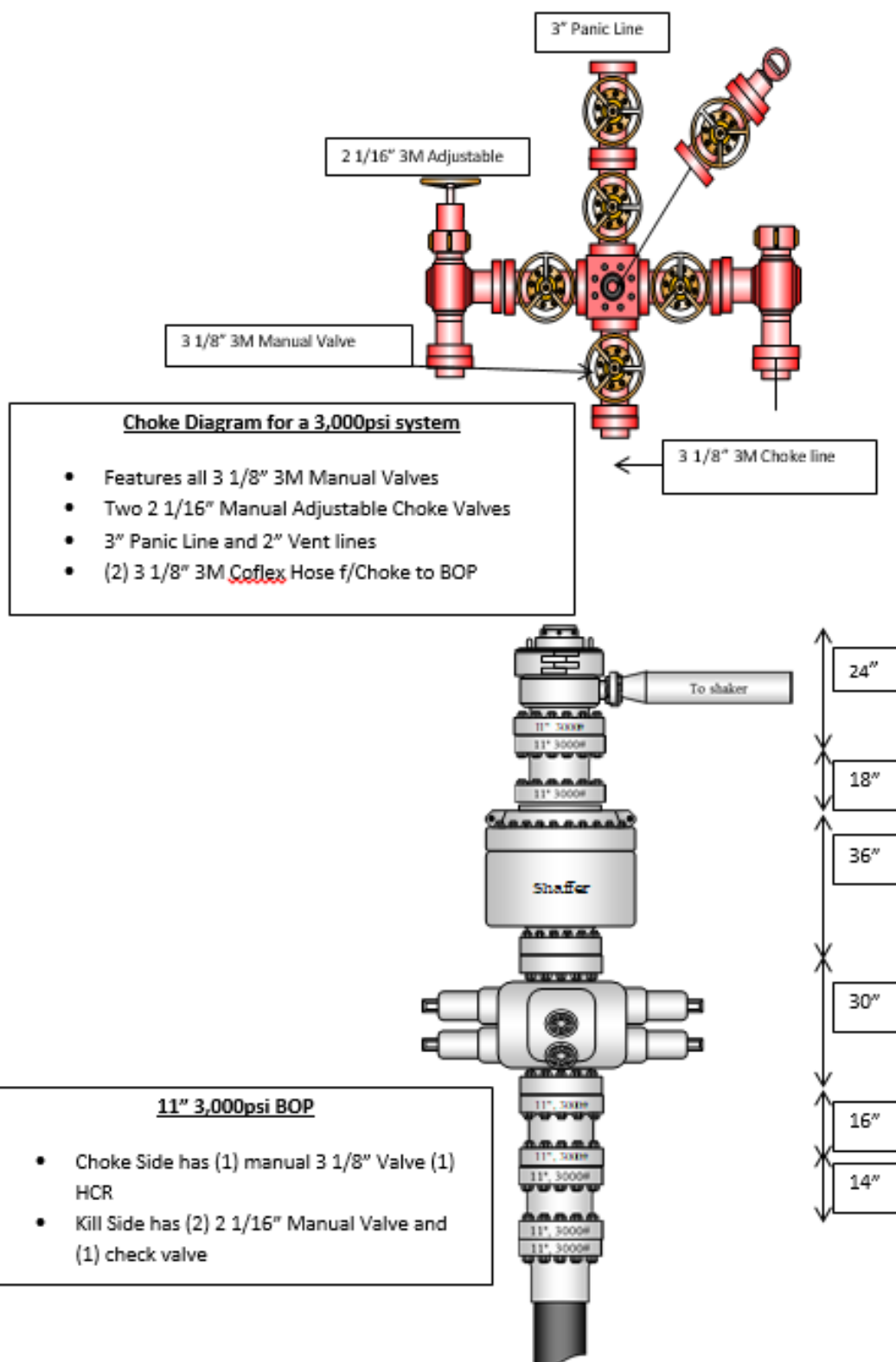
E. PRODUCTION TUBING

2-7/8", 6.5#, J-55 or L-80, EUE tubing will be run once volumes and pressures dictate. Due to the extremely high initial flow rates and pressures seen in offset wells, tubing will be installed once it is safe to do so, typically 12-18 months after completion.

*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.



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



ROSA UNIT 647H

Well Name: ROSA UNIT	Well Location: T31N / R5W / SEC 19 / NENW /	County or Parish/State: RIO ARriba / NM
Well Number: 647H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF078769	Unit or CA Name: ROSA UNIT-MANCOS PA	Unit or CA Number: NMNM78407E
US Well Number: 300393141100X1	Well Status: Temporarily Abandoned	Operator: LOGOS OPERATING LLC

Notice of Intent

Sundry ID: 2645068

Type of Submission: Notice of Intent

Type of Action: Other

Date Sundry Submitted: 11/18/2021

Time Sundry Submitted: 11:40

Date proposed operation will begin: 11/18/2021

Procedure Description: LOGOS Operating request a change in plans for the following: Operating request a change in plans for the following: Original surface location from 946' FNL & 438' FWL to new surface location 952' FNL & 422' FWL Original bottom-hole location from 1382' FNL & 1923' FWL to new bottom-hole location 2579' FSL & 2304' FWL Original TD @ 18,019' MD 6825' TVD to new TD @ 17,779' MD 6821' TVD. Geology tops have been updated per changes. Original KOP @ 6374' MD 6327' TVD to new KOP @ 6586' MD 6361' TVD Original Landing point @ 7456' MD 7032' TVD to new Landing point @ 7579' MD 6955' TVD Original 7" casing Intermediate @ 6272' MD to 9.625" Intermediate casing, 6429' MD 6183' TVD Original 4.5" casing Production Liner @ 18,019' MD to 5.5" Production casing, 17,779' MD 6821' TVD The 9.625" Intermediate & 5.5" production cementing bbls and sacks have been update per casing depth changes. Attached: New C102, Operation and Directional Drill plans.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

3160_5_Rosa_Unit_647H_Change_in_Plans_20211111_20211118113947.pdf

Well Name: ROSA UNIT

Well Location: T31N / R5W / SEC 19 /
NENW /County or Parish/State: RIO
ARRIBA / NM

Well Number: 647H

Type of Well: CONVENTIONAL GAS
WELL

Allottee or Tribe Name:

Lease Number: NMSF078769

Unit or CA Name: ROSA UNIT-
MANCOS PAUnit or CA Number:
NMNM78407E

US Well Number: 300393141100X1

Well Status: Temporarily Abandoned

Operator: LOGOS OPERATING
LLC**Operator Certification**

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: ETTA TRUJILLO

Signed on: NOV 18, 2021 11:40 AM

Name: LOGOS OPERATING LLC

Title: Regulatory Specialist

Street Address: 2010 AFTON PLACE

City: Farmington

State: NM

Phone: (505) 324-4154

Email address: ETRUJILLO@LOGOSRESOURCESLLC.COM

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: DAVE J MANKIEWICZ

BLM POC Title: AFM-Minerals

BLM POC Phone: 5055647761

BLM POC Email Address: DMANKIEW@BLM.GOV

Disposition: Approved

Disposition Date: 12/22/2021

Signature: Dave Mankiewicz

District I

1625 N. French Dr., Hobbs, NM 88240
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District II

811 S. First St., Artesia, NM 88210
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District III

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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 69099

COMMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 69099
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 1/3/2022	1/3/2022

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
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CONDITIONS

Action 69099

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 69099
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD Conditions of Approval	1/3/2022