

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.
NMSF078773
6. If Indian, Allottee or Tribe Name**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

LOGOS OPERATING, LLC

3a. Address 2010 AFTON PLACE,
FARMINGTON, NM 874013b. Phone No. (include area code)
(505) 278-87207. If Unit of CA/Agreement, Name and/or No.
NMNM78407E8. Well Name and No.
ROSA UNIT 744HAPI Well No.
30-039-31423

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SEC 33 T31N R05W, NENW (C) 349' FNL 1683' FWL

10. 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 (based on KB elevation):

Original bottom-hole location from 618' FNL & 66' FEL to new **bottom-hole location 177' FNL & 63' FEL**Original TD @ 20,884' MD 7,122' TVD to new **TD @ 20,770' MD 7,092' TVD.**

Geology tops have been updated per changes.

Original KOP @ 6,459' MD 6,459' TVD to new **KOP @ 6,475' MD 6,470' TVD**Original Landing point @ 7,480' 7,117' TVD to new **Landing point @ 7,461' MD 7,092' TVD**Original 9.625" casing Intermediate @ 6,367' MD to new **9.625" Intermediate casing @ 6,363' MD & additional 13.375" casing @ 3,606' MD**Original 5.5" casing Production casing @ 20,884' MD to new 5.5" Production casing @ **20,770' MD 7,092' TVD**

The 13.375" & 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.

Accepted for record – NMOCD

JRH

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

Etta Trujillo

Title Regulatory Specialist

4/3/23

Signature

Etta Trujillo

Date 3/23/2023

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)

Well Name: ROSA UNIT	Well Location: T31N / R05W / SEC 33 / NENW /	County or Parish/State:
Well Number: 744H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF0078773	Unit or CA Name:	Unit or CA Number: NMNM078407E
US Well Number: 3003931423	Well Status: Approved Application for Permit to Drill	Operator: LOGOS OPERATING LLC

Notice of Intent

Sundry ID: 2722436

Type of Submission: Notice of Intent	Type of Action: Other
Date Sundry Submitted: 03/23/2023	Time Sundry Submitted: 03:38
Date proposed operation will begin: 04/01/2023	

Procedure Description: LOGOS Operating request a change in plans for the following (based on KB elevation): Original bottom-hole location from 618' FNL & 66' FEL to new bottom-hole location 177' FNL & 63' FEL Original TD @ 20,884' MD 7,122' TVD to new TD @ 20,770' MD 7,092' TVD. Geology tops have been updated per changes. Original KOP @ 6,459' MD 6,459' TVD to new KOP @ 6,475' MD 6470' TVD Original Landing point @ 7,480' 7,117' TVD to new Landing point @ 7,461' MD 7,092' TVD Original 9.625" casing Intermediate @ 6,367' MD to new 9.625" Intermediate casing @ 6,363' MD & additional 13.375" casing @ 3,606' MD Original 5.5" casing Production casing @ 20,884' MD to new 5.5" Production casing @ 20,770' MD 7,092' TVD The 13.375" & 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_744H_Plan_8_Change_in_Plans_20230323_20230323153647.pdf

Well Name: ROSA UNIT		Well Location: T31N / R05W / SEC 33 / NENW /	County or Parish/State:
Well Number: 744H	Type of Well: CONVENTIONAL GAS WELL		Allottee or Tribe Name:
Lease Number: NMSF0078773	Unit or CA Name:	Unit or CA Number: NMNM078407E	
US Well Number: 3003931423	Well Status: Approved Application for Permit to Drill	Operator: LOGOS OPERATING LLC	

Operator

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

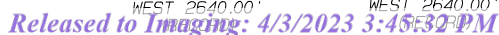
Operator Electronic Signature: ETTA TRUJILLO
Signed on: MAR 23, 2023 03:38 PM
Name: LOGOS OPERATING LLC
Title: Regulatory Specialist
Street Address: 2010 AFTON PLACE
City: Farmington State: NM
Phone: (505) 324-4154
Email address: ETRUJILLO@LOGOSRESOURCESLLC.COM

Field

Representative Name:
Street Address:
City: State: Zip:
Phone:
Email address:

BLM Point of Contact

BLM POC Name: KENNETH G RENNICK
BLM POC Title: Petroleum Engineer
BLM POC Phone: 5055647742
BLM POC Email Address: krennick@blm.gov
Disposition: Approved
Disposition Date: 03/23/2023
Signature: Kenneth Rennick





LOGOS Operating, LLC Operations Plan

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

Date:	March 16, 2023	Pool:	Basin Mancos
Well Name:	Rosa Unit 744H	GL Elevation:	6,492'
Surface Location:	Sec 33, T31N, R5W 349 FNL, 1683 FWL (36.862401° N, 107.370915° W – NAD83)	Measured Depth:	20,770' (MD)
Bottom Hole Location:	Sec 35, T31N, R5W 177 FNL, 63 FEL (36.862881° N, 107.322790° W – NAD83)	County:	Rio Arriba

Lease Serial #NMSF078773, CA Serial # NMNM78407E

I. GEOLOGY

A. Formation Tops (Based on 30' KB Elevation): Estimated top of important geological markers:
SURFACE FORMATION – NACIMIENTO

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	2678	2676	*POINT LOOKOUT	5807	5802
KIRTLAND	2805	2803	*MANCOS	6288	6283
*FRUITLAND	3269	3266	KICKOFF POINT	6475	6470
*PICTURED CLIFFS	3556	3553	POINT OF ENTRY	7461	7092
LEWIS	3657	3654			
CHACRA	4745	4741			
*CLIFF HOUSE	5576	5571			
MENEFEE	5608	5603	TD	20770	7092

* 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 the Tour book and on morning reports.

II. DRILLING

A. MUD PROGRAM: LSND mud (WBM) will be used to drill the 26" surface hole, 17-1/2" and 12-1/4" directional / vertical hole. An LSND (WBM) or (OBM) system will be used to drill the 8-1/2" curve and lateral portion of the wellbore. Treat for lost circulation as necessary. Obtain 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 of. 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 744H



- 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 on each tour. BOP equipment will be tested a minimum of 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 but not more than once daily. The New Mexico Oil & Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of the BOPE. **All tests and inspections will be recorded and logged with time and results.** A full BOP test will be conducted when 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 the first full test.
- C. GeoHazards:** There are no anticipated geohazards
- D. Maximum Anticipated Pressure:** 7092' TVD x 0.43 = 2979 psi
- E. H2S Concerns:** — There is no record of any naturally occurring H2S in any formation in the Rosa Unit. No H2S is anticipated in this formation or this well.

III. MATERIALS

A. CASING EQUIPMENT:

CASING TYPE	OH SIZE (IN)	KB DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	26"	330'	20"	94 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE	17.5"	3,606'	13.375"	61 LBS	N-80 or equiv	LTC/BTC
INTERMEDIATE	12.25"	6,363'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	20,770'	5.5"	20 LBS	P-110 or equiv	LTC/BTC

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

B. FLOAT EQUIPMENT:

- SURFACE CASING:** 20" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing one every 3 joints to Surf.
- INTERMEDIATE CASING:** 13-3/8" 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., 1,000 ft, and 500ft. Intermediate casing shall be kept fluid-filled while running into the hole to meet BLM minimum collapse requirements.
- 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 3,600 ft. Run (1) centralizer at 3,000 ft., and 2,500ft. Optional use of DV Tools will be strategically placed above loss circulation zones anticipated in the Mesaverde. Optional cancellation plugs for DV tools may be used if losses while cementing are not encountered. Intermediate casing shall be kept fluid-filled while running into the hole to meet BLM minimum collapse requirements.

ROSA UNIT 744H



4. **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. The 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. 573 sks of 15.8 ppg Type Neat G, 1.18 cuft/sk yield or equivalent 486 sks of 14.6 ppg Type III with 1.39 cuft/sk yield, 30% excess.
2. **INTERMEDIATE 1:** Intermediate casing shall be kept fluid-filled while running into the hole to meet BLM minimum collapse requirements. The intermediate casing will be cemented in 1 stage. If cement does not circulate to the surface, a CBL will be run to determine TOC.

Intermediate 1 -13-3/8"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	3,006	600	0.6947	1.3	575	102	1.18	488	15.8
Stage 1 Lead - OH	320	2,686	0.6947	1.3	2,426	432	2.10	1155	12.1
Stage 2 Lead - Cased	-	320	1.019	1	326	58	2.10	155	12.1
					3,327	593		1798	

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

3. **INTERMEDIATE 2:** Intermediate casing shall be kept fluid-filled while running into the hole to meet BLM minimum collapse requirements. The intermediate casing will be cemented in 1 or 2 stages using a DV/STAGE tool to reduce cement losses and maximize cement coverage. The operator proposes optional DV tools above anticipated loss circulation zones in the Mesaverde. If losses are not observed, a cancellation plug will be pumped and the remaining cement will be pumped during stage 2. Top of cement is planned at 100' above the base of the 13-3/8" casing (100' of lap). If cement does not circulate to the DV tool or to the 13-3/8" casing, a CBL will be run to determine TOC.

Intermediate 2 -9-5/8"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	5,857	506	0.3132	1.3	223	40	1.18	189	15.8
Stage 1 Lead	4,820	1,037	0.3132	1.3	422	75	1.97	214	12.4
					645	115		403	
Stage 2 Tail	4,220	600	0.3132	1.3	244	44	1.65	148	13.2
Stage 2 Lead	3,606	614	0.3132	1.3	250	45	1.97	127	12.4
Stage 2 Lead - Cased	3,506	100	0.3627	1	36	6	1.97	18	12.4
Stage 2 Totals					531	94		293	
Int 2 Totals					1,176	209		696	

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

4. **PRODUCTION:** Production casing will be cemented in 1 stage with 100' of cement

ROSA UNIT 744H



overlap above the intermediate shoe. A CBL, or alternatively, a Temperature Survey will be used to determine TOC.

	Top	ft	Cement (ft3/ft) Annular Capacity	Excess (15%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Cased Lead	6,263	100	0.2531	1	25	5	1.56	16	13.2
Open Hole Lead	6,363	14,407	0.2291	1.15	3,801	677	1.56	2,437	13.2
					3,826	681		2,453	

Calculations based on 15% excess for the open hole and 100' overlap into the intermediate casing. Actual volumes will vary.

Cement calculations are used for volume estimation. Well conditions will dictate the 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 the service provider selected. Cement yields may change depending on the 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 the cement top if cement is not circulated.

B. PRESSURE TEST

C. Pressure test 5-1/2" casing to 1560 psi (0.22 psi/ft * 7,092' TVD) for 30 minutes. Increase pressure to Open Toe sleeves.

D. STIMULATION

Stimulate with sand and water. Isolate stages with flow-through or dissolvable frac plugs. Drill out frac plugs as required and flow back lateral.

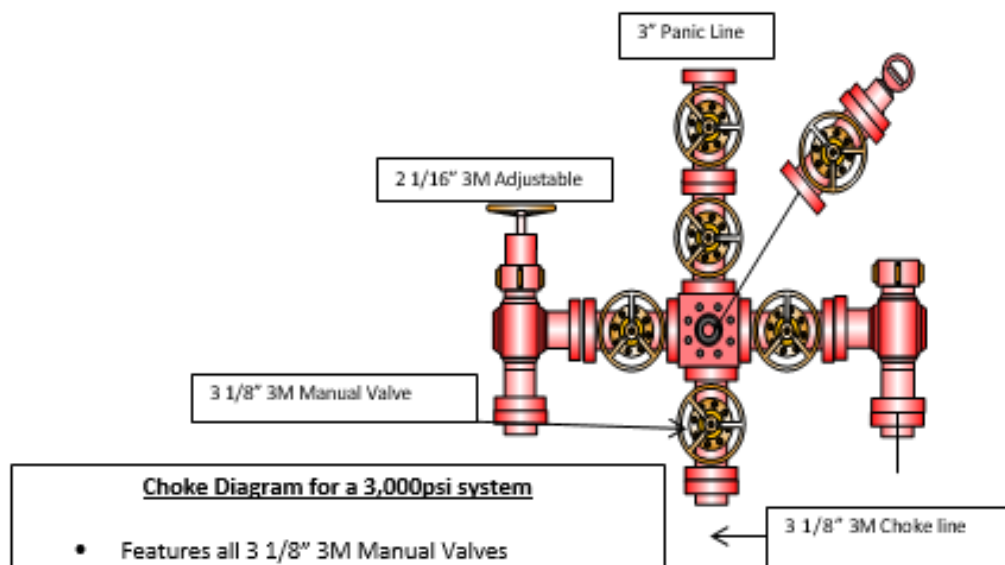
E. PRODUCTION TUBING

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.

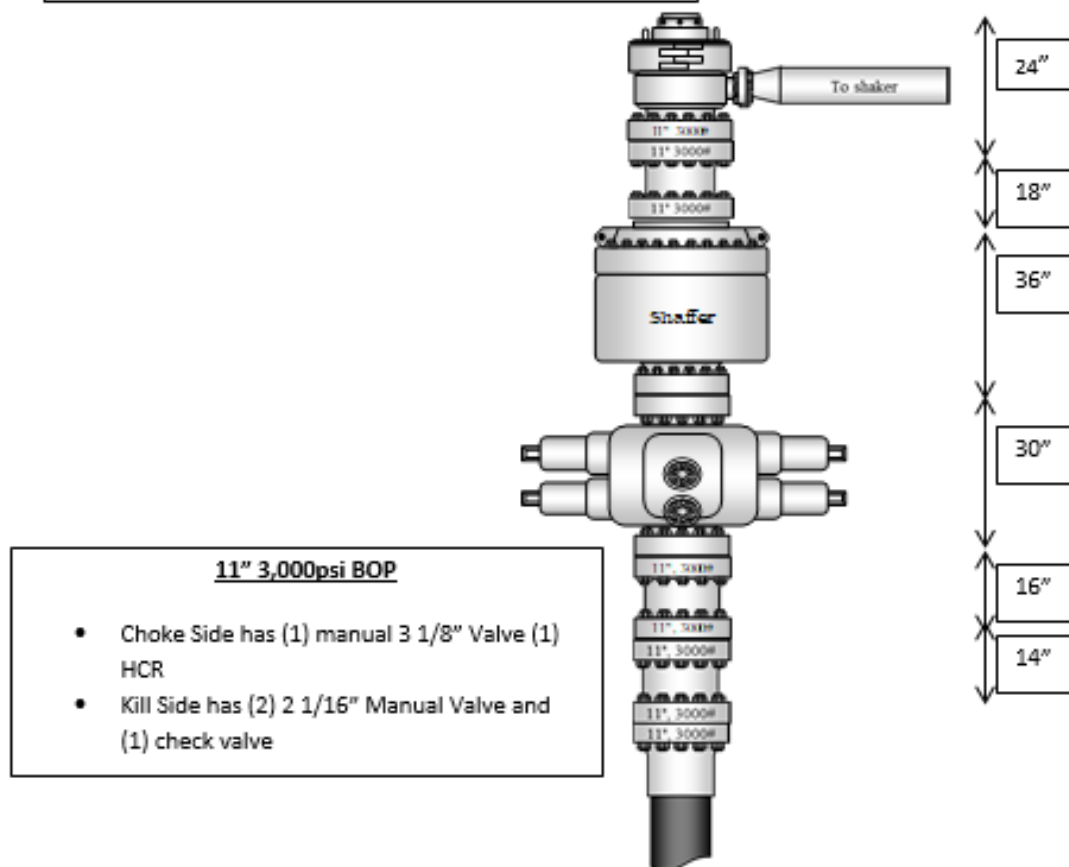


3M 11" B.O.P.E Diagram



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



ROSA UNIT 744H



Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 31

Rosa Unit #744H

OH

Plan #8

Anticollision Summary Report

10 March, 2023





Lonestar Consulting, LLC

Anticollision Summary Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Reference Site:	Rosa Unit 31	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site Error:	0.00 ft	North Reference:	True
Reference Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction
Reference Design:	Plan #8	Offset TVD Reference:	Offset Datum

Reference	Plan #8
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum centre distance of 15,000.00ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program	Date	3/10/2023
From (ft)	To (ft)	Survey (Wellbore)
0.00	20,770.21	Plan #8 (OH)
		Tool Name
		MWD+HDGM
		Description
		OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Rosa Unit 31						
Rosa Unit #740H - OH - Plan #9	885.28	884.96	17.31	11.22	2.842	CC
Rosa Unit #740H - OH - Plan #9	900.00	899.64	17.34	11.15	2.801	ES, SF
Rosa Unit #742H - OH - Plan #9	614.95	614.93	7.72	3.57	1.860	CC, ES, SF
Rosa Unit #745H - OH - Plan #4	350.00	350.00	30.33	28.03	13.218	CC
Rosa Unit #745H - OH - Plan #4	400.00	400.00	30.68	28.03	11.567	ES
Rosa Unit #745H - OH - Plan #4	20,770.76	21,252.77	1,050.19	240.95	1.298	Level 3, SF
Rosa Unit #746H - OH - Plan #8	350.00	350.00	15.33	13.04	6.684	CC, ES
Rosa Unit #746H - OH - Plan #8	20,770.76	20,898.88	1,722.46	881.65	2.049	SF
RU 147B - OH - OH	8,032.02	7,102.15	1,395.54	1,346.32	28.350	CC, ES
RU 147B - OH - OH	8,600.00	7,105.43	1,506.70	1,446.60	25.074	SF
RU 184C - OH - OH	13,165.14	7,345.56	643.73	447.37	3.278	CC, ES
RU 184C - OH - OH	13,200.00	7,345.31	644.68	447.64	3.272	SF



Lonestar Consulting, LLC

Anticollision Summary Report

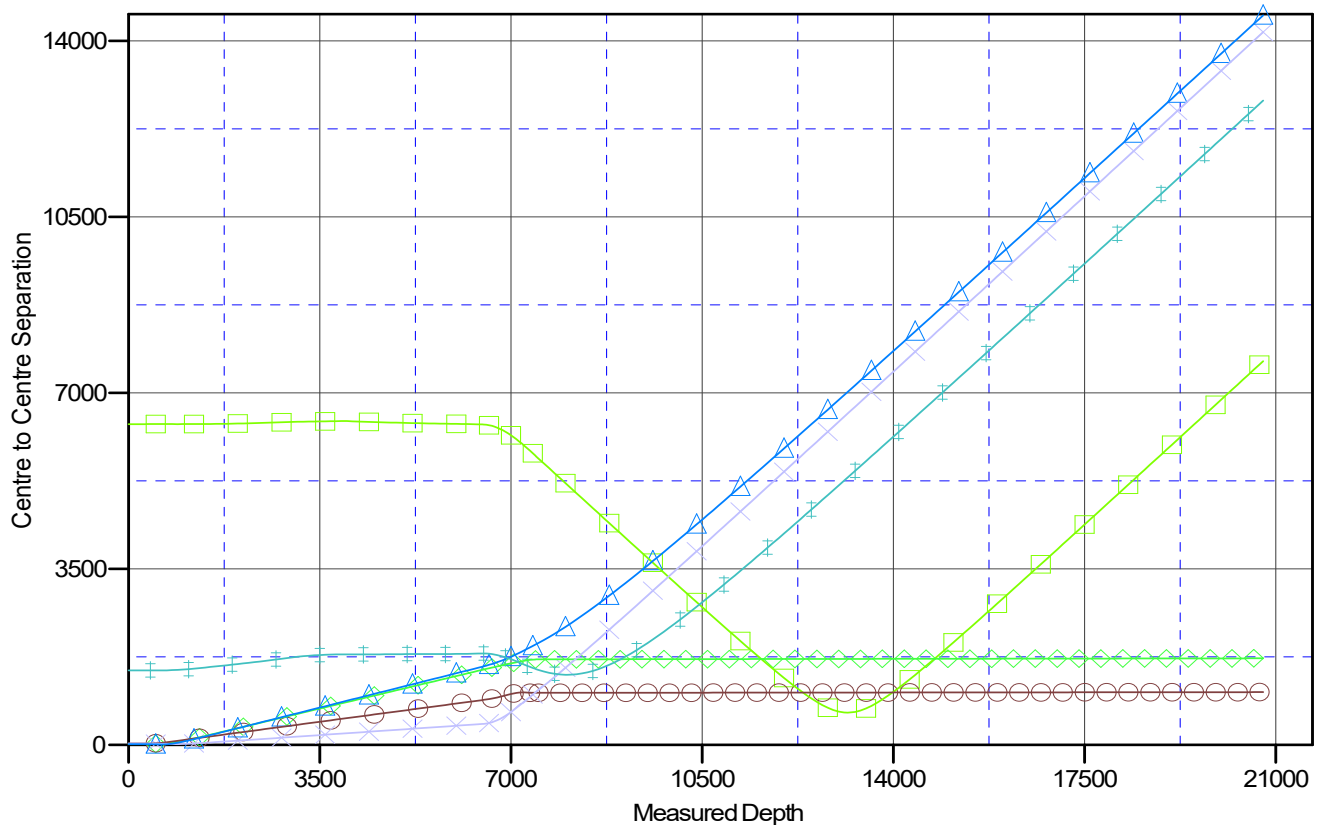


Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Reference Site:	Rosa Unit 31	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site Error:	0.00 ft	North Reference:	True
Reference Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction
Reference Design:	Plan #8	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.8333334

Coordinates are relative to: Rosa Unit #744H - Slot A3
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.28°

Ladder Plot



LEGEND

RU184C/OH/OHV0
 Rosa Unit#745H/OH/Plan#4 V0
 Rosa Unit#742H/OH/Plan#9 V0
 Rosa Unit#740H/OH/Plan#9 V0
 RU147B/OH/OHV0
 Rosa Unit#746H/OH/Plan#8 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Lonestar Consulting, LLC

Anticollision Summary Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Project:	Rio Arriba, NM NAD83	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Reference Site:	Rosa Unit 31	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site Error:	0.00 ft	North Reference:	True
Reference Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Grand Junction
Reference Design:	Plan #8	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6492' & RKB 30' @ 6522.00ft (H&

Offset Depths are relative to Offset Datum

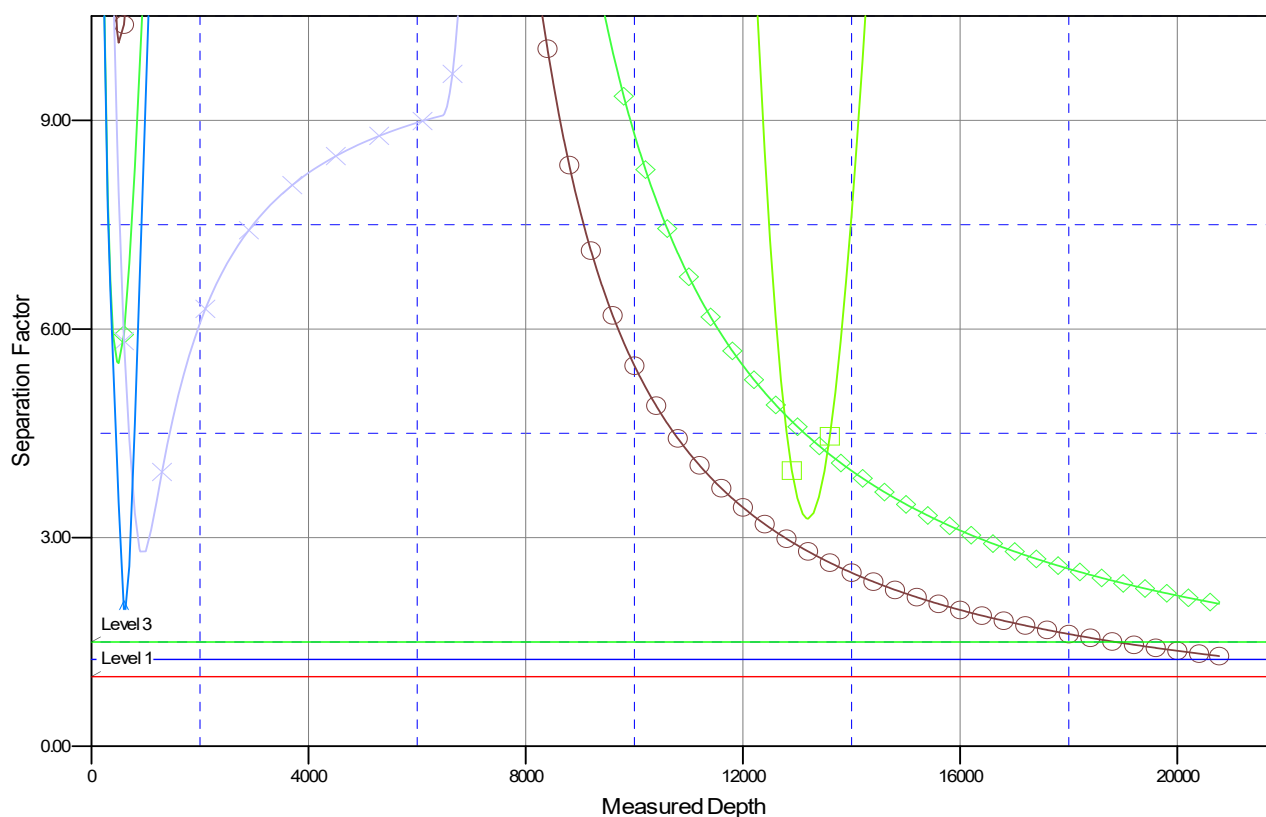
Central Meridian is -107.8333334

Coordinates are relative to: Rosa Unit #744H - Slot A3

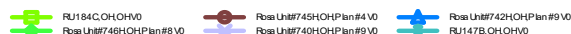
Coordinate System is US State Plane 1983, New Mexico Western Zone

Grid Convergence at Surface is: 0.28°

Separation Factor Plot



LEGEND



Released to Imaging: 4/3/2023 3:45:32 PM



Company: Logos Operating LLC
Project: Rio Arriba, NM NAD83
Site: Rosa Unit 31
Well: Rosa Unit #744H
Wellbore: OH
Design: Plan #8

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 #744H

GL 6492' & RKB 30' @ 6522.00ft (H&P 530)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	2133565.4216	2858364.9193	36.8624010	-107.3709150	A3

Plan: Plan #8 (Rosa Unit #744H/OH)

Created By: Janie Collins Date: 9:57, March 15 2023



Azimuths to True North
Magnetic North: 8

Magnetic Field
Strength: 49534.0 nT
Dip Angle: 63.8°
Date: 10/19/2022
Model: HDGM2022

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
744H POE Rev 5	7092.00	242.65	769.87	2133811.7951	2859133.6070	36.8630675	-107.3682833
744H BHL Rev 4	7092.00	178.19	14078.59	2133811.7742	2872442.4487	36.8628807	-107.3227895

SECTION DETAILS

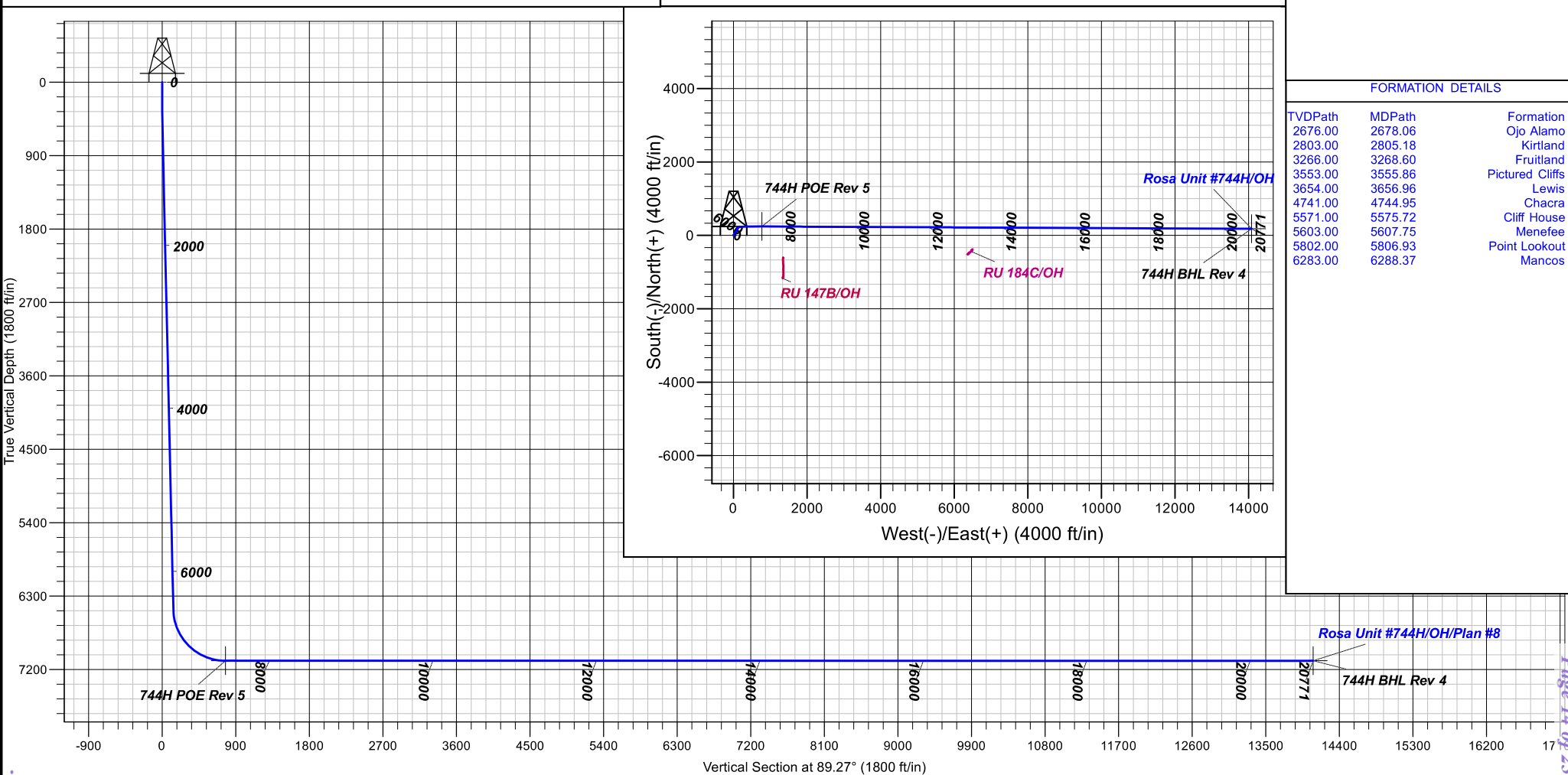
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00
472.69	2.45	30.89	472.65	2.25	1.35	2.00	30.89	1.38
6475.23	2.45	30.89	6469.68	222.78	133.30	0.00	0.00	136.11
7461.34	90.00	90.28	7092.00	242.65	769.87	9.00	59.41	772.86
20770.21	90.00	90.28	7092.00	178.19	14078.59	0.00	0.00	14079.71

CASING DETAILS

TVD	MD	Name
-----	----	------

FORMATION DETAILS

TVDPath	MDPath	Formation
2676.00	2678.06	Ojo Alamo
2803.00	2805.18	Kirtland
3266.00	3268.60	Fruitland
3553.00	3555.86	Pictured Cliffs
3654.00	3656.96	Lewis
4741.00	4744.95	Chacra
5571.00	5575.72	Cliff House
5603.00	5607.75	Menefee
5802.00	5806.93	Point Lookout
6283.00	6288.37	Mancos





Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 31

Rosa Unit #744H - Slot A3

OH

Plan: Plan #8

Standard Planning Report

15 March, 2023





Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Company:	Logos Operating LLC	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site:	Rosa Unit 31	North Reference:	True
Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #8		

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 31			
Site Position:		Northing:	2,133,595.0680 usft	Latitude: 36.8624824
From:	Map	Easting:	2,858,361.8390 usft	Longitude: -107.3709251
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	

Well	Rosa Unit #744H - Slot A3			
Well Position	+N/-S	0.00 ft	Northing:	2,133,565.4216 usft
	+E/-W	0.00 ft	Easting:	2,858,364.9193 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
Grid Convergence:		0.28 °	Ground Level:	6,492.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2022	10/19/2022	8.53	63.30	49,534.10000000

Design	Plan #8			
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	89.27

Plan Survey Tool Program	Date	3/15/2023		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,770.21 Plan #8 (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	
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
472.69	2.45	30.89	472.65	2.25	1.35	2.00	2.00	0.00	30.89	
6,475.23	2.45	30.89	6,469.68	222.78	133.30	0.00	0.00	0.00	0.00	
7,461.34	90.00	90.28	7,092.00	242.65	769.87	9.00	8.88	6.02	59.41	744H POE Rev 5
20,770.21	90.00	90.28	7,092.00	178.19	14,078.59	0.00	0.00	0.00	0.00	744H BHL Rev 4



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Company:	Logos Operating LLC	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site:	Rosa Unit 31	North Reference:	True
Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #8		

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
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	1.00	30.89	400.00	0.37	0.22	0.23	2.00	2.00	0.00
472.69	2.45	30.89	472.65	2.25	1.35	1.38	2.00	2.00	0.00
500.00	2.45	30.89	499.94	3.26	1.95	1.99	0.00	0.00	0.00
600.00	2.45	30.89	599.85	6.93	4.15	4.23	0.00	0.00	0.00
700.00	2.45	30.89	699.75	10.61	6.35	6.48	0.00	0.00	0.00
800.00	2.45	30.89	799.66	14.28	8.54	8.72	0.00	0.00	0.00
900.00	2.45	30.89	899.57	17.95	10.74	10.97	0.00	0.00	0.00
1,000.00	2.45	30.89	999.48	21.63	12.94	13.21	0.00	0.00	0.00
1,100.00	2.45	30.89	1,099.39	25.30	15.14	15.46	0.00	0.00	0.00
1,200.00	2.45	30.89	1,199.30	28.97	17.34	17.70	0.00	0.00	0.00
1,300.00	2.45	30.89	1,299.20	32.65	19.54	19.95	0.00	0.00	0.00
1,400.00	2.45	30.89	1,399.11	36.32	21.73	22.19	0.00	0.00	0.00
1,500.00	2.45	30.89	1,499.02	40.00	23.93	24.44	0.00	0.00	0.00
1,600.00	2.45	30.89	1,598.93	43.67	26.13	26.68	0.00	0.00	0.00
1,700.00	2.45	30.89	1,698.84	47.34	28.33	28.93	0.00	0.00	0.00
1,800.00	2.45	30.89	1,798.75	51.02	30.53	31.17	0.00	0.00	0.00
1,900.00	2.45	30.89	1,898.65	54.69	32.72	33.41	0.00	0.00	0.00
2,000.00	2.45	30.89	1,998.56	58.37	34.92	35.66	0.00	0.00	0.00
2,100.00	2.45	30.89	2,098.47	62.04	37.12	37.90	0.00	0.00	0.00
2,200.00	2.45	30.89	2,198.38	65.71	39.32	40.15	0.00	0.00	0.00
2,300.00	2.45	30.89	2,298.29	69.39	41.52	42.39	0.00	0.00	0.00
2,400.00	2.45	30.89	2,398.20	73.06	43.72	44.64	0.00	0.00	0.00
2,500.00	2.45	30.89	2,498.10	76.74	45.91	46.88	0.00	0.00	0.00
2,600.00	2.45	30.89	2,598.01	80.41	48.11	49.13	0.00	0.00	0.00
2,700.00	2.45	30.89	2,697.92	84.08	50.31	51.37	0.00	0.00	0.00
2,800.00	2.45	30.89	2,797.83	87.76	52.51	53.62	0.00	0.00	0.00
2,900.00	2.45	30.89	2,897.74	91.43	54.71	55.86	0.00	0.00	0.00
3,000.00	2.45	30.89	2,997.65	95.11	56.91	58.10	0.00	0.00	0.00
3,100.00	2.45	30.89	3,097.55	98.78	59.10	60.35	0.00	0.00	0.00
3,200.00	2.45	30.89	3,197.46	102.45	61.30	62.59	0.00	0.00	0.00
3,300.00	2.45	30.89	3,297.37	106.13	63.50	64.84	0.00	0.00	0.00
3,400.00	2.45	30.89	3,397.28	109.80	65.70	67.08	0.00	0.00	0.00
3,500.00	2.45	30.89	3,497.19	113.47	67.90	69.33	0.00	0.00	0.00
3,600.00	2.45	30.89	3,597.10	117.15	70.10	71.57	0.00	0.00	0.00
3,700.00	2.45	30.89	3,697.00	120.82	72.29	73.82	0.00	0.00	0.00
3,800.00	2.45	30.89	3,796.91	124.50	74.49	76.06	0.00	0.00	0.00
3,900.00	2.45	30.89	3,896.82	128.17	76.69	78.31	0.00	0.00	0.00
4,000.00	2.45	30.89	3,996.73	131.84	78.89	80.55	0.00	0.00	0.00
4,100.00	2.45	30.89	4,096.64	135.52	81.09	82.80	0.00	0.00	0.00
4,200.00	2.45	30.89	4,196.54	139.19	83.29	85.04	0.00	0.00	0.00
4,300.00	2.45	30.89	4,296.45	142.87	85.48	87.28	0.00	0.00	0.00
4,400.00	2.45	30.89	4,396.36	146.54	87.68	89.53	0.00	0.00	0.00
4,500.00	2.45	30.89	4,496.27	150.21	89.88	91.77	0.00	0.00	0.00
4,600.00	2.45	30.89	4,596.18	153.89	92.08	94.02	0.00	0.00	0.00
4,700.00	2.45	30.89	4,696.09	157.56	94.28	96.26	0.00	0.00	0.00
4,800.00	2.45	30.89	4,795.99	161.24	96.47	98.51	0.00	0.00	0.00
4,900.00	2.45	30.89	4,895.90	164.91	98.67	100.75	0.00	0.00	0.00
5,000.00	2.45	30.89	4,995.81	168.58	100.87	103.00	0.00	0.00	0.00
5,100.00	2.45	30.89	5,095.72	172.26	103.07	105.24	0.00	0.00	0.00



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Company:	Logos Operating LLC	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site:	Rosa Unit 31	North Reference:	True
Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #8		

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)
5,200.00	2.45	30.89	5,195.63	175.93	105.27	107.49	0.00	0.00	0.00
5,300.00	2.45	30.89	5,295.54	179.61	107.47	109.73	0.00	0.00	0.00
5,400.00	2.45	30.89	5,395.44	183.28	109.66	111.98	0.00	0.00	0.00
5,500.00	2.45	30.89	5,495.35	186.95	111.86	114.22	0.00	0.00	0.00
5,600.00	2.45	30.89	5,595.26	190.63	114.06	116.46	0.00	0.00	0.00
5,700.00	2.45	30.89	5,695.17	194.30	116.26	118.71	0.00	0.00	0.00
5,800.00	2.45	30.89	5,795.08	197.97	118.46	120.95	0.00	0.00	0.00
5,900.00	2.45	30.89	5,894.99	201.65	120.66	123.20	0.00	0.00	0.00
6,000.00	2.45	30.89	5,994.89	205.32	122.85	125.44	0.00	0.00	0.00
6,100.00	2.45	30.89	6,094.80	209.00	125.05	127.69	0.00	0.00	0.00
6,200.00	2.45	30.89	6,194.71	212.67	127.25	129.93	0.00	0.00	0.00
6,300.00	2.45	30.89	6,294.62	216.34	129.45	132.18	0.00	0.00	0.00
6,400.00	2.45	30.89	6,394.53	220.02	131.65	134.42	0.00	0.00	0.00
6,475.23	2.45	30.89	6,469.68	222.78	133.30	136.11	0.00	0.00	0.00
6,500.00	4.07	59.05	6,494.42	223.69	134.33	137.15	9.00	6.52	113.67
6,600.00	12.65	80.82	6,593.28	227.27	148.21	151.08	9.00	8.58	21.77
6,700.00	21.58	84.93	6,688.76	230.65	177.40	180.31	9.00	8.92	4.10
6,800.00	30.55	86.69	6,778.50	233.75	221.18	224.12	9.00	8.97	1.77
6,900.00	39.53	87.72	6,860.30	236.48	278.46	281.43	9.00	8.98	1.02
7,000.00	48.51	88.41	6,932.14	238.80	347.84	350.83	9.00	8.99	0.69
7,100.00	57.50	88.93	6,992.24	240.63	427.61	430.62	9.00	8.99	0.52
7,200.00	66.50	89.36	7,039.14	241.93	515.80	518.82	9.00	8.99	0.43
7,300.00	75.49	89.73	7,071.68	242.67	610.25	613.27	9.00	8.99	0.37
7,400.00	84.48	90.07	7,089.05	242.84	708.62	711.64	9.00	8.99	0.34
7,461.34	90.00	90.28	7,092.00	242.65	769.87	772.88	9.00	8.99	0.33
7,500.00	90.00	90.28	7,092.00	242.46	808.53	811.53	0.00	0.00	0.00
7,600.00	90.00	90.28	7,092.00	241.98	908.53	911.52	0.00	0.00	0.00
7,700.00	90.00	90.28	7,092.00	241.49	1,008.53	1,011.50	0.00	0.00	0.00
7,800.00	90.00	90.28	7,092.00	241.01	1,108.53	1,111.49	0.00	0.00	0.00
7,900.00	90.00	90.28	7,092.00	240.52	1,208.52	1,211.47	0.00	0.00	0.00
8,000.00	90.00	90.28	7,092.00	240.04	1,308.52	1,311.46	0.00	0.00	0.00
8,100.00	90.00	90.28	7,092.00	239.56	1,408.52	1,411.44	0.00	0.00	0.00
8,200.00	90.00	90.28	7,092.00	239.07	1,508.52	1,511.43	0.00	0.00	0.00
8,300.00	90.00	90.28	7,092.00	238.59	1,608.52	1,611.41	0.00	0.00	0.00
8,400.00	90.00	90.28	7,092.00	238.10	1,708.52	1,711.40	0.00	0.00	0.00
8,500.00	90.00	90.28	7,092.00	237.62	1,808.52	1,811.38	0.00	0.00	0.00
8,600.00	90.00	90.28	7,092.00	237.13	1,908.52	1,911.36	0.00	0.00	0.00
8,700.00	90.00	90.28	7,092.00	236.65	2,008.52	2,011.35	0.00	0.00	0.00
8,800.00	90.00	90.28	7,092.00	236.17	2,108.51	2,111.33	0.00	0.00	0.00
8,900.00	90.00	90.28	7,092.00	235.68	2,208.51	2,211.32	0.00	0.00	0.00
9,000.00	90.00	90.28	7,092.00	235.20	2,308.51	2,311.30	0.00	0.00	0.00
9,100.00	90.00	90.28	7,092.00	234.71	2,408.51	2,411.29	0.00	0.00	0.00
9,200.00	90.00	90.28	7,092.00	234.23	2,508.51	2,511.27	0.00	0.00	0.00
9,300.00	90.00	90.28	7,092.00	233.74	2,608.51	2,611.26	0.00	0.00	0.00
9,400.00	90.00	90.28	7,092.00	233.26	2,708.51	2,711.24	0.00	0.00	0.00
9,500.00	90.00	90.28	7,092.00	232.77	2,808.51	2,811.23	0.00	0.00	0.00
9,600.00	90.00	90.28	7,092.00	232.29	2,908.50	2,911.21	0.00	0.00	0.00
9,700.00	90.00	90.28	7,092.00	231.81	3,008.50	3,011.20	0.00	0.00	0.00
9,800.00	90.00	90.28	7,092.00	231.32	3,108.50	3,111.18	0.00	0.00	0.00
9,900.00	90.00	90.28	7,092.00	230.84	3,208.50	3,211.17	0.00	0.00	0.00
10,000.00	90.00	90.28	7,092.00	230.35	3,308.50	3,311.15	0.00	0.00	0.00
10,100.00	90.00	90.28	7,092.00	229.87	3,408.50	3,411.13	0.00	0.00	0.00
10,200.00	90.00	90.28	7,092.00	229.38	3,508.50	3,511.12	0.00	0.00	0.00
10,300.00	90.00	90.28	7,092.00	228.90	3,608.50	3,611.10	0.00	0.00	0.00



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Company:	Logos Operating LLC	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site:	Rosa Unit 31	North Reference:	True
Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #8		

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)
10,400.00	90.00	90.28	7,092.00	228.42	3,708.50	3,711.09	0.00	0.00	0.00
10,500.00	90.00	90.28	7,092.00	227.93	3,808.49	3,811.07	0.00	0.00	0.00
10,600.00	90.00	90.28	7,092.00	227.45	3,908.49	3,911.06	0.00	0.00	0.00
10,700.00	90.00	90.28	7,092.00	226.96	4,008.49	4,011.04	0.00	0.00	0.00
10,800.00	90.00	90.28	7,092.00	226.48	4,108.49	4,111.03	0.00	0.00	0.00
10,900.00	90.00	90.28	7,092.00	225.99	4,208.49	4,211.01	0.00	0.00	0.00
11,000.00	90.00	90.28	7,092.00	225.51	4,308.49	4,311.00	0.00	0.00	0.00
11,100.00	90.00	90.28	7,092.00	225.03	4,408.49	4,410.98	0.00	0.00	0.00
11,200.00	90.00	90.28	7,092.00	224.54	4,508.49	4,510.97	0.00	0.00	0.00
11,300.00	90.00	90.28	7,092.00	224.06	4,608.48	4,610.95	0.00	0.00	0.00
11,400.00	90.00	90.28	7,092.00	223.57	4,708.48	4,710.94	0.00	0.00	0.00
11,500.00	90.00	90.28	7,092.00	223.09	4,808.48	4,810.92	0.00	0.00	0.00
11,600.00	90.00	90.28	7,092.00	222.60	4,908.48	4,910.91	0.00	0.00	0.00
11,700.00	90.00	90.28	7,092.00	222.12	5,008.48	5,010.89	0.00	0.00	0.00
11,800.00	90.00	90.28	7,092.00	221.63	5,108.48	5,110.87	0.00	0.00	0.00
11,900.00	90.00	90.28	7,092.00	221.15	5,208.48	5,210.86	0.00	0.00	0.00
12,000.00	90.00	90.28	7,092.00	220.67	5,308.48	5,310.84	0.00	0.00	0.00
12,100.00	90.00	90.28	7,092.00	220.18	5,408.48	5,410.83	0.00	0.00	0.00
12,200.00	90.00	90.28	7,092.00	219.70	5,508.47	5,510.81	0.00	0.00	0.00
12,300.00	90.00	90.28	7,092.00	219.21	5,608.47	5,610.80	0.00	0.00	0.00
12,400.00	90.00	90.28	7,092.00	218.73	5,708.47	5,710.78	0.00	0.00	0.00
12,500.00	90.00	90.28	7,092.00	218.24	5,808.47	5,810.77	0.00	0.00	0.00
12,600.00	90.00	90.28	7,092.00	217.76	5,908.47	5,910.75	0.00	0.00	0.00
12,700.00	90.00	90.28	7,092.00	217.28	6,008.47	6,010.74	0.00	0.00	0.00
12,800.00	90.00	90.28	7,092.00	216.79	6,108.47	6,110.72	0.00	0.00	0.00
12,900.00	90.00	90.28	7,092.00	216.31	6,208.47	6,210.71	0.00	0.00	0.00
13,000.00	90.00	90.28	7,092.00	215.82	6,308.46	6,310.69	0.00	0.00	0.00
13,100.00	90.00	90.28	7,092.00	215.34	6,408.46	6,410.68	0.00	0.00	0.00
13,200.00	90.00	90.28	7,092.00	214.85	6,508.46	6,510.66	0.00	0.00	0.00
13,300.00	90.00	90.28	7,092.00	214.37	6,608.46	6,610.64	0.00	0.00	0.00
13,400.00	90.00	90.28	7,092.00	213.89	6,708.46	6,710.63	0.00	0.00	0.00
13,500.00	90.00	90.28	7,092.00	213.40	6,808.46	6,810.61	0.00	0.00	0.00
13,600.00	90.00	90.28	7,092.00	212.92	6,908.46	6,910.60	0.00	0.00	0.00
13,700.00	90.00	90.28	7,092.00	212.43	7,008.46	7,010.58	0.00	0.00	0.00
13,800.00	90.00	90.28	7,092.00	211.95	7,108.46	7,110.57	0.00	0.00	0.00
13,900.00	90.00	90.28	7,092.00	211.46	7,208.45	7,210.55	0.00	0.00	0.00
14,000.00	90.00	90.28	7,092.00	210.98	7,308.45	7,310.54	0.00	0.00	0.00
14,100.00	90.00	90.28	7,092.00	210.49	7,408.45	7,410.52	0.00	0.00	0.00
14,200.00	90.00	90.28	7,092.00	210.01	7,508.45	7,510.51	0.00	0.00	0.00
14,300.00	90.00	90.28	7,092.00	209.53	7,608.45	7,610.49	0.00	0.00	0.00
14,400.00	90.00	90.28	7,092.00	209.04	7,708.45	7,710.48	0.00	0.00	0.00
14,500.00	90.00	90.28	7,092.00	208.56	7,808.45	7,810.46	0.00	0.00	0.00
14,600.00	90.00	90.28	7,092.00	208.07	7,908.45	7,910.45	0.00	0.00	0.00
14,700.00	90.00	90.28	7,092.00	207.59	8,008.44	8,010.43	0.00	0.00	0.00
14,800.00	90.00	90.28	7,092.00	207.10	8,108.44	8,110.42	0.00	0.00	0.00
14,900.00	90.00	90.28	7,092.00	206.62	8,208.44	8,210.40	0.00	0.00	0.00
15,000.00	90.00	90.28	7,092.00	206.14	8,308.44	8,310.38	0.00	0.00	0.00
15,100.00	90.00	90.28	7,092.00	205.65	8,408.44	8,410.37	0.00	0.00	0.00
15,200.00	90.00	90.28	7,092.00	205.17	8,508.44	8,510.35	0.00	0.00	0.00
15,300.00	90.00	90.28	7,092.00	204.68	8,608.44	8,610.34	0.00	0.00	0.00
15,400.00	90.00	90.28	7,092.00	204.20	8,708.44	8,710.32	0.00	0.00	0.00
15,500.00	90.00	90.28	7,092.00	203.71	8,808.44	8,810.31	0.00	0.00	0.00
15,600.00	90.00	90.28	7,092.00	203.23	8,908.43	8,910.29	0.00	0.00	0.00
15,700.00	90.00	90.28	7,092.00	202.74	9,008.43	9,010.28	0.00	0.00	0.00



Lonestar Consulting, LLC

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Company:	Logos Operating LLC	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site:	Rosa Unit 31	North Reference:	True
Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #8		

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)	
15,800.00	90.00	90.28	7,092.00	202.26	9,108.43	9,110.26	0.00	0.00	0.00	
15,900.00	90.00	90.28	7,092.00	201.78	9,208.43	9,210.25	0.00	0.00	0.00	
16,000.00	90.00	90.28	7,092.00	201.29	9,308.43	9,310.23	0.00	0.00	0.00	
16,100.00	90.00	90.28	7,092.00	200.81	9,408.43	9,410.22	0.00	0.00	0.00	
16,200.00	90.00	90.28	7,092.00	200.32	9,508.43	9,510.20	0.00	0.00	0.00	
16,300.00	90.00	90.28	7,092.00	199.84	9,608.43	9,610.19	0.00	0.00	0.00	
16,400.00	90.00	90.28	7,092.00	199.35	9,708.43	9,710.17	0.00	0.00	0.00	
16,500.00	90.00	90.28	7,092.00	198.87	9,808.42	9,810.16	0.00	0.00	0.00	
16,600.00	90.00	90.28	7,092.00	198.39	9,908.42	9,910.14	0.00	0.00	0.00	
16,700.00	90.00	90.28	7,092.00	197.90	10,008.42	10,010.12	0.00	0.00	0.00	
16,800.00	90.00	90.28	7,092.00	197.42	10,108.42	10,110.11	0.00	0.00	0.00	
16,900.00	90.00	90.28	7,092.00	196.93	10,208.42	10,210.09	0.00	0.00	0.00	
17,000.00	90.00	90.28	7,092.00	196.45	10,308.42	10,310.08	0.00	0.00	0.00	
17,100.00	90.00	90.28	7,092.00	195.96	10,408.42	10,410.06	0.00	0.00	0.00	
17,200.00	90.00	90.28	7,092.00	195.48	10,508.42	10,510.05	0.00	0.00	0.00	
17,300.00	90.00	90.28	7,092.00	195.00	10,608.41	10,610.03	0.00	0.00	0.00	
17,400.00	90.00	90.28	7,092.00	194.51	10,708.41	10,710.02	0.00	0.00	0.00	
17,500.00	90.00	90.28	7,092.00	194.03	10,808.41	10,810.00	0.00	0.00	0.00	
17,600.00	90.00	90.28	7,092.00	193.54	10,908.41	10,909.99	0.00	0.00	0.00	
17,700.00	90.00	90.28	7,092.00	193.06	11,008.41	11,009.97	0.00	0.00	0.00	
17,800.00	90.00	90.28	7,092.00	192.57	11,108.41	11,109.96	0.00	0.00	0.00	
17,900.00	90.00	90.28	7,092.00	192.09	11,208.41	11,209.94	0.00	0.00	0.00	
18,000.00	90.00	90.28	7,092.00	191.60	11,308.41	11,309.93	0.00	0.00	0.00	
18,100.00	90.00	90.28	7,092.00	191.12	11,408.41	11,409.91	0.00	0.00	0.00	
18,200.00	90.00	90.28	7,092.00	190.64	11,508.40	11,509.89	0.00	0.00	0.00	
18,300.00	90.00	90.28	7,092.00	190.15	11,608.40	11,609.88	0.00	0.00	0.00	
18,400.00	90.00	90.28	7,092.00	189.67	11,708.40	11,709.86	0.00	0.00	0.00	
18,500.00	90.00	90.28	7,092.00	189.18	11,808.40	11,809.85	0.00	0.00	0.00	
18,600.00	90.00	90.28	7,092.00	188.70	11,908.40	11,909.83	0.00	0.00	0.00	
18,700.00	90.00	90.28	7,092.00	188.21	12,008.40	12,009.82	0.00	0.00	0.00	
18,800.00	90.00	90.28	7,092.00	187.73	12,108.40	12,109.80	0.00	0.00	0.00	
18,900.00	90.00	90.28	7,092.00	187.25	12,208.40	12,209.79	0.00	0.00	0.00	
19,000.00	90.00	90.28	7,092.00	186.76	12,308.39	12,309.77	0.00	0.00	0.00	
19,100.00	90.00	90.28	7,092.00	186.28	12,408.39	12,409.76	0.00	0.00	0.00	
19,200.00	90.00	90.28	7,092.00	185.79	12,508.39	12,509.74	0.00	0.00	0.00	
19,300.00	90.00	90.28	7,092.00	185.31	12,608.39	12,609.73	0.00	0.00	0.00	
19,400.00	90.00	90.28	7,092.00	184.82	12,708.39	12,709.71	0.00	0.00	0.00	
19,500.00	90.00	90.28	7,092.00	184.34	12,808.39	12,809.70	0.00	0.00	0.00	
19,600.00	90.00	90.28	7,092.00	183.86	12,908.39	12,909.68	0.00	0.00	0.00	
19,700.00	90.00	90.28	7,092.00	183.37	13,008.39	13,009.67	0.00	0.00	0.00	
19,800.00	90.00	90.28	7,092.00	182.89	13,108.39	13,109.65	0.00	0.00	0.00	
19,900.00	90.00	90.28	7,092.00	182.40	13,208.38	13,209.63	0.00	0.00	0.00	
20,000.00	90.00	90.28	7,092.00	181.92	13,308.38	13,309.62	0.00	0.00	0.00	
20,100.00	90.00	90.28	7,092.00	181.43	13,408.38	13,409.60	0.00	0.00	0.00	
20,200.00	90.00	90.28	7,092.00	180.95	13,508.38	13,509.59	0.00	0.00	0.00	
20,300.00	90.00	90.28	7,092.00	180.46	13,608.38	13,609.57	0.00	0.00	0.00	
20,400.00	90.00	90.28	7,092.00	179.98	13,708.38	13,709.56	0.00	0.00	0.00	
20,500.00	90.00	90.28	7,092.00	179.50	13,808.38	13,809.54	0.00	0.00	0.00	
20,600.00	90.00	90.28	7,092.00	179.01	13,908.38	13,909.53	0.00	0.00	0.00	
20,700.00	90.00	90.28	7,092.00	178.53	14,008.37	14,009.51	0.00	0.00	0.00	
20,770.21	90.00	90.28	7,092.00	178.19	14,078.59	14,079.71	0.00	0.00	0.00	



Lonestar Consulting, LLC
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well Rosa Unit #744H - Slot A3
Company:	Logos Operating LLC	TVD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 6492' & RKB 30' @ 6522.00ft (H&P 530)
Site:	Rosa Unit 31	North Reference:	True
Well:	Rosa Unit #744H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #8		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
744H POE Rev 5	0.00	0.00	7,092.00	242.65	769.87	2,133,811.7951	2,859,133.6070	36.8630674	-107.3682833
- plan hits target center									
- Point									
744H BHL Rev 4	0.00	0.00	7,092.00	178.19	14,078.59	2,133,811.7742	2,872,442.4487	36.8628807	-107.3227895
- plan hits target center									
- Point									

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
2,678.06	2,676.00	Ojo Alamo		0.00	0.00
2,805.18	2,803.00	Kirtland		0.00	0.00
3,268.60	3,266.00	Fruitland		0.00	0.00
3,555.86	3,553.00	Pictured Cliffs		0.00	0.00
3,656.96	3,654.00	Lewis		0.00	0.00
4,744.95	4,741.00	Chacra		0.00	0.00
5,575.72	5,571.00	Cliff House		0.00	0.00
5,607.75	5,603.00	Menefee		0.00	0.00
5,806.93	5,802.00	Point Lookout		0.00	0.00
6,288.37	6,283.00	Mancos		0.00	0.00

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
350.00	350.00	0.00	0.00	Start Build 2.00
472.69	472.65	2.25	1.35	Start 6002.54 hold at 472.69 MD
6,475.23	6,469.68	222.78	133.30	Start DLS 9.00 TFO 59.41
7,461.34	7,092.00	242.65	769.87	36.8630675 / -107.3682833
7,461.34	7,092.00	242.65	769.87	POE @ 7461' MD
20,770.21	7,092.00	178.19	14,078.58	TD at 20770.21

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 200414

COMMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 200414
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
john.harrison	Accepted for record - NMOCD JRH 4/3/23 BLM approved 3/23/23	4/3/2023

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 200414

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 200414
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
john.harrison	None	4/3/2023