

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit one copy to appropriate District Office

☒ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address LOGOS Operating, LLC 2010 Afton Place Farmington, NM 87401		² OGRID Number 289408	
		³ Reason for Filing Code/ Effective Date NW	
⁴ API Number 30-039-31430	⁵ Pool Name Basin Mancos		⁶ Pool Code 97232
⁷ Property Code 320608	⁸ Property Name Rosa Unit		⁹ Well Number 644H

II. ¹⁰ Surface Location

UL or lot no. C	Section 19	Township 31N	Range 5W	Lot Idn 1	Feet from the 956	North/South Line North	Feet from the 482	East/West line West	County Rio Arriba
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¹¹ Bottom Hole Location

UL or lot no. L	Section 23	Township 31N	Range 6W	Lot Idn	Feet from the 1825	North/South line South	Feet from the 1140	East/West line West	County Rio Arriba
¹² Lse Code F	¹³ Producing Method Code F		¹⁴ Gas Connection Date		¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
373888	Harvest Four Corners, LLC 1755 Arroyo Dr. Bloomfield, NM 87413	G

IV. Well Completion Data

²¹ Spud Date 6/7/2023	²² Ready Date 11/12/23	²³ TD 15,698' MD / 6,900' TVD	²⁴ PBTD 15,586' MD / 6,900' TVD	²⁵ Perforations 7,626' MD / 15,500' MD 6,936' TVD / 6,901' TVD	²⁶ DHC, MC R-13457	
²⁷ Hole Size		²⁸ Casing & Tubing Size		²⁹ Depth Set		³⁰ Sacks Cement
26"		20", 94#, J-55		381'		1902sx (371bbbls, 2113cf)
17.5"		13-3/8", 61#, J-55		3519'		2673sx (832bbbls, 4672cf)
12.5"		9-5/8", 43.5#, L-80		6476'		2597sx (797bbbls, 4467cf) DV tool @ 4834' & 3578'
8.5"		5.5", 20#, HCP-110		15,680'		2426sx (696bbbls, 4115cf) Circ 27bbbls to surface
		2-7/8", 6.5#, J-55		pending		

V. Well Test Data

³¹ Date New Oil NA	³² Gas Delivery Date 11/24/23	³³ Test Date 11/24/23	³⁴ Test Length 12 hrs	³⁵ Tbg. Pressure NA	³⁶ Csg. Pressure 2086
³⁷ Choke Size 18/64"	³⁸ Oil NA	³⁹ Water 408	⁴⁰ Gas 2138		⁴¹ Test Method F
⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature:			OIL CONSERVATION DIVISION		
Printed name: Lacey Granillo			Approved by: PATRICIA MARTINEZ		
Title: Regulatory Specialist			Title: PETROLEUM SPECIALIST		
E-mail Address: lgranillo@logosresourcesllc.com			Approval Date: 3/5/2024		
Date: 3/4/24		Phone: (505) 787-0118			



Request for Confidential "Tight Hole" Status

LOGOS Operating, LLC
Rosa Unit 644H
API# 30-039-31430
C Section 19 T31N R05W
Rio Arriba County, New Mexico

Per 19.15.7.16 WELL COMPLETION OR RECOMPLETION REPORT AND LOG (Form C-105): LOGOS Operating, LLC.
Request the Division keep Form C-105 and all pertained documentation confidential as of 12/21/2023 for 90 days acceptance of the referenced documents.

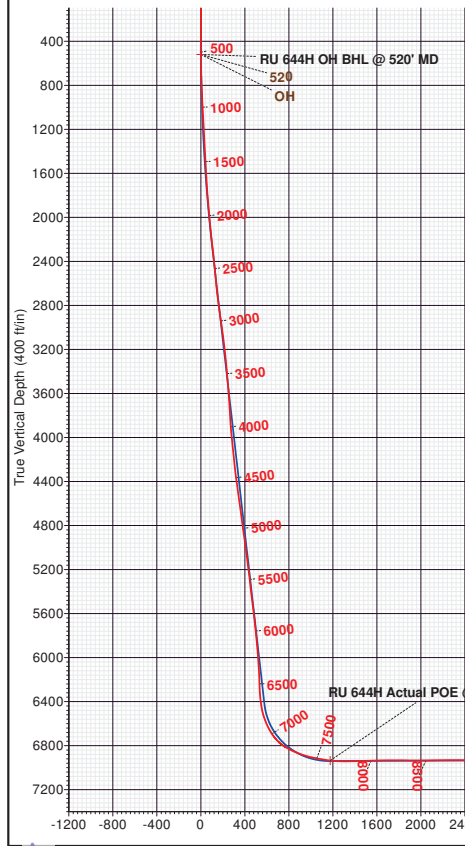
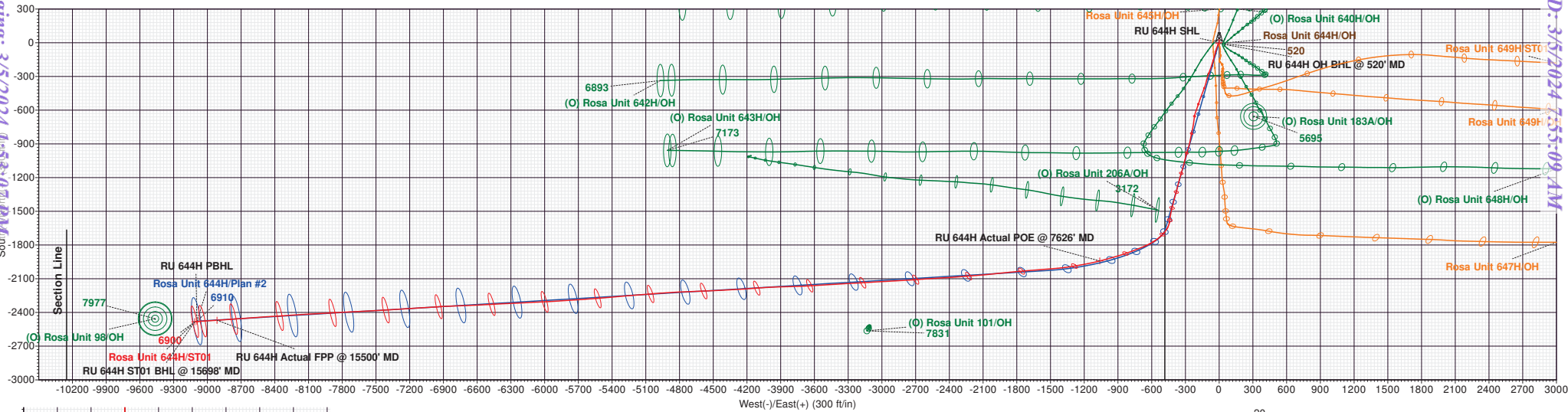
Sincerely,

Lacey Granillo

Lacey Granillo
Regulatory Specialist
Email: lgranillo@logosresourcesllc.com
Cell: 505-787-0118



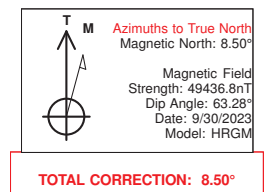
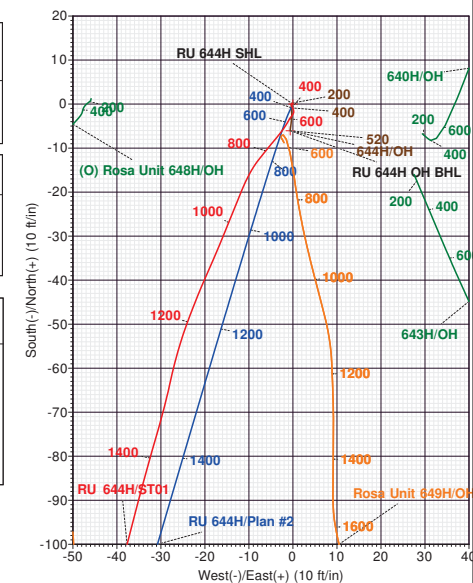
County: Rio Arriba, NM NAD83
 Site: Rosa Unit 27
 Well: Rosa Unit 644H
 Depth Reference: 6305+30 @ 6335.00ft (H&P 530)
 Rig: H&P 530
 Plan: ST01
 Job #: 16946



OH - ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation	
520.00	4.12	186.63	519.85	-6.06	-0.61	0.97	6.73	RU 644H OH BHL @ 520' MD	

ST01 - ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation	
7626.00	83.61	255.94	6935.82	-1941.81	-1062.16	1175.77	2402.80	RU 644H Actual POE @ 7626' MD	
15500.00	90.32	266.34	6901.22	-2469.60	-8914.31	9045.42	10275.87	RU 644H Actual FPP @ 15500' MD	
15698.00	90.20	265.94	6900.16	-2482.57	-9111.88	9243.42	10473.87	RU 644H ST01 BHL @ 15698' MD	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RU 644H SHL	0.00	0.00	0.00	2143457.12	2848019.08	36.8897030	-107.4061290
RU 644H OH BHL	519.85	-6.06	-0.61	2143451.06	2848018.50	36.8896864	-107.4061311
RU 644H ST01 BHL	6900.16	-2482.57	-9111.88	2140933.79	2838918.42	36.8828799	-107.4372849
RU 644H Actual FPP	6901.22	-2469.60	-8914.31	2140947.65	2839115.93	36.8829157	-107.4366094
RU 644H PBHL	6910.00	-2478.03	-9093.49	2140938.42	2838936.80	36.8828924	-107.4372220
RU 644H Actual POE	6935.82	-1941.81	-1062.16	2141510.58	2846965.63	36.8843693	-107.4097608



TOTAL CORRECTION: 8.50°

Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 27

Rosa Unit 644H

OH

Design: OH

Standard Survey Report

15 October, 2023

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

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:	13-3/16	"	

Well	Rosa Unit 644H					
Well Position	+N/-S	0.00 ft	Northing:	2,143,457.12 usft	Latitude:	36.8897030
	+E/-W	0.00 ft	Easting:	2,848,019.09 usft	Longitude:	-107.4061290
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,305.00 ft
Grid Convergence:		0.26 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	8/14/2023	8.51	63.28	49,450.71348643

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	266.59	

Survey Program	Date	10/15/2023			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
76.55	495.00	Survey #1 (OH)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
520.00	520.00	Survey #2 (OH)	Project	Projection	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
76.55	0.21	354.42	76.55	0.14	-0.01	0.01	0.27	0.27	0.00	
107.06	0.09	288.53	107.06	0.20	-0.04	0.03	0.63	-0.39	-215.96	
198.10	0.00	262.70	198.10	0.23	-0.11	0.10	0.10	-0.10	0.00	
289.29	0.17	228.82	289.29	0.14	-0.21	0.20	0.19	0.19	0.00	
350.26	0.52	197.41	350.26	-0.19	-0.36	0.37	0.63	0.57	-51.52	
444.00	1.49	171.01	443.98	-1.80	-0.30	0.41	1.12	1.03	-28.16	
495.00	4.12	186.63	494.92	-4.27	-0.41	0.66	5.32	5.16	30.63	
520.00	4.12	186.63	519.85	-6.06	-0.61	0.97	0.00	0.00	0.00	

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)

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									
RU 644H OH BHL	0.00	0.00	519.85	-6.06	-0.61	2,143,451.06	2,848,018.50	36.8896863	-107.4061311
- actual wellpath hits target center									
- Point									

Checked By: _____

Approved By: _____

Date: _____

Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 27

Rosa Unit 644H

OH

Design: OH

Survey Report - Geographic

15 October, 2023

SDT
Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

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:	13-3/16	"	Grid Convergence:	0.26	°

Well	Rosa Unit 644H					
Well Position	+N/-S	0.00 ft	Northing:	2,143,457.12 usft	Latitude:	36.8897030
	+E/-W	0.00 ft	Easting:	2,848,019.09 usft	Longitude:	-107.4061290
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,305.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	8/14/2023	8.51	63.28	49,450.71348643

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	266.59	

Survey Program	Date	10/15/2023			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
76.55	495.00	Survey #1 (OH)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
520.00	520.00	Survey #2 (OH)	Project	Projection	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	2,143,457.12	2,848,019.09	36.8897030	-107.4061290	
76.55	0.21	354.42	76.55	0.14	-0.01	2,143,457.26	2,848,019.07	36.8897034	-107.4061291	
107.06	0.09	288.53	107.06	0.20	-0.04	2,143,457.32	2,848,019.04	36.8897035	-107.4061292	
198.10	0.00	262.70	198.10	0.23	-0.11	2,143,457.34	2,848,018.98	36.8897036	-107.4061294	
289.29	0.17	228.82	289.29	0.14	-0.21	2,143,457.25	2,848,018.88	36.8897033	-107.4061298	
350.26	0.52	197.41	350.26	-0.19	-0.36	2,143,456.93	2,848,018.73	36.8897025	-107.4061303	
444.00	1.49	171.01	443.98	-1.80	-0.30	2,143,455.32	2,848,018.80	36.8896980	-107.4061301	
495.00	4.12	186.63	494.92	-4.27	-0.41	2,143,452.85	2,848,018.70	36.8896912	-107.4061304	
520.00	4.12	186.63	519.85	-6.06	-0.61	2,143,451.06	2,848,018.50	36.8896863	-107.4061311	

SDT
Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000 Multi User Db

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)		
RU 644H OH BHL	0.00	0.00	519.85	-6.06	-0.61	2,143,451.06	2,848,018.50	36.8896863	-107.4061311
- actual wellpath hits target center									
- Point									

Checked By: _____

Approved By: _____

Date: _____

Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 27

Rosa Unit 644H

ST01

Design: ST01

Standard Survey Report

16 October, 2023

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

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:	13-3/16 "		

Well	Rosa Unit 644H					
Well Position	+N/-S	0.00 ft	Northing:	2,143,457.12 usft	Latitude:	36.8897030
	+E/-W	0.00 ft	Easting:	2,848,019.09 usft	Longitude:	-107.4061290
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,305.00 ft
Grid Convergence:		0.26 °				

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HRGM	9/30/2023	8.50	63.28	49,436.82958917

Design	ST01				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00		266.59

Survey Program	Date	10/16/2023			
From	To	Survey (Wellbore)	Tool Name	Description	
(ft)	(ft)				
76.55	353.00	Survey #1 (OH)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
391.00	1,299.00	Survey #1-ST01 (ST01)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	
1,371.00	2,128.00	Survey #2-ST01-Corrected Run 1 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc	
2,237.00	3,466.00	Survey #3-ST01-Corrected Run 2 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc	
3,570.00	5,997.00	Survey #4-ST01-Corrected Run 3 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc	
6,083.00	6,489.00	Survey #5-ST01 (ST01)	A020Ga_GYRO-NS	OWSG Gyrocompass Gyro	
6,532.00	15,628.00	Survey #6-ST01-Corrected Run 4 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc	
15,698.00	15,698.00	Survey #7-ST01 (ST01)	Project	Projection	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate	
(ft)			(ft)			(ft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
76.55	0.21	354.42	76.55	0.14	-0.01	0.01	0.27	0.27	0.00	
107.06	0.09	288.53	107.06	0.20	-0.04	0.03	0.63	-0.39	-215.96	
198.10	0.00	262.70	198.10	0.23	-0.11	0.10	0.10	-0.10	0.00	

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
289.29	0.17	228.82	289.29	0.14	-0.21	0.20	0.19	0.19	0.00	
350.26	0.52	197.41	350.26	-0.19	-0.36	0.37	0.63	0.57	-51.52	
398.00	0.97	140.36	398.00	-0.70	-0.17	0.21	1.71	0.94	-119.50	
411.08	0.79	148.62	411.07	-0.87	-0.05	0.10	1.68	-1.38	63.15	
432.00	0.88	164.00	431.99	-1.14	0.07	0.00	1.15	0.43	73.52	
442.53	0.79	162.69	442.52	-1.29	0.11	-0.03	0.87	-0.85	-12.44	
451.96	0.79	168.57	451.95	-1.42	0.14	-0.06	0.86	0.00	62.35	
461.46	0.62	174.11	461.45	-1.53	0.16	-0.07	1.93	-1.79	58.32	
469.17	0.53	170.95	469.16	-1.61	0.17	-0.08	1.24	-1.17	-40.99	
508.00	0.44	194.68	507.99	-1.93	0.16	-0.05	0.56	-0.23	61.11	
544.00	1.06	208.74	543.98	-2.36	-0.03	0.17	1.78	1.72	39.06	
579.00	1.23	221.66	578.98	-2.92	-0.44	0.61	0.88	0.49	36.91	
610.00	1.76	209.36	609.97	-3.58	-0.89	1.10	1.99	1.71	-39.68	
635.00	2.20	210.94	634.95	-4.33	-1.33	1.58	1.77	1.76	6.32	
744.00	2.82	220.52	743.85	-8.16	-4.15	4.62	0.68	0.57	8.79	
838.00	4.22	218.14	837.67	-12.64	-7.78	8.52	1.50	1.49	-2.53	
929.00	5.98	202.24	928.31	-19.66	-11.65	12.80	2.46	1.93	-17.47	
1,020.00	6.60	202.06	1,018.76	-28.90	-15.40	17.10	0.68	0.68	-0.20	
1,112.00	6.77	203.99	1,110.14	-38.75	-19.60	21.87	0.31	0.18	2.10	
1,204.00	7.92	200.30	1,201.38	-49.65	-24.00	26.91	1.35	1.25	-4.01	
1,299.00	8.97	192.30	1,295.35	-63.03	-27.85	31.55	1.66	1.11	-8.42	
1,371.00	10.13	196.19	1,366.35	-74.59	-30.81	35.19	1.84	1.61	5.40	
1,466.00	10.43	194.73	1,459.83	-90.93	-35.32	40.67	0.42	0.32	-1.54	
1,561.00	10.35	194.08	1,553.27	-107.53	-39.59	45.91	0.15	-0.08	-0.68	
1,655.00	10.49	193.00	1,645.72	-124.05	-43.57	50.87	0.26	0.15	-1.15	
1,749.00	11.06	195.75	1,738.06	-141.07	-47.94	56.25	0.82	0.61	2.93	
1,844.00	12.71	199.88	1,831.03	-159.67	-53.97	63.37	1.95	1.74	4.35	
1,938.00	13.21	197.08	1,922.63	-179.66	-60.64	71.22	0.85	0.53	-2.98	
2,033.00	14.54	196.63	2,014.86	-201.47	-67.24	79.10	1.40	1.40	-0.47	
2,128.00	14.85	199.78	2,106.75	-224.35	-74.77	87.98	0.90	0.33	3.32	
2,237.00	14.96	201.33	2,212.08	-250.60	-84.62	99.37	0.38	0.10	1.42	
2,332.00	15.39	200.84	2,303.77	-273.80	-93.56	109.68	0.47	0.45	-0.52	
2,426.00	16.81	196.46	2,394.08	-298.49	-101.85	119.42	1.99	1.51	-4.66	
2,521.00	17.19	195.42	2,484.93	-325.20	-109.48	128.62	0.51	0.40	-1.09	
2,616.00	16.14	192.98	2,575.94	-351.60	-116.17	136.88	1.33	-1.11	-2.57	
2,710.00	16.73	199.29	2,666.11	-377.11	-123.58	145.79	2.00	0.63	6.71	
2,805.00	17.92	199.28	2,756.80	-403.81	-132.92	156.71	1.25	1.25	-0.01	
2,900.00	18.87	200.97	2,846.94	-431.95	-143.25	168.68	1.15	1.00	1.78	
2,994.00	19.36	201.50	2,935.76	-460.64	-154.40	181.52	0.55	0.52	0.56	
3,089.00	19.52	199.85	3,025.34	-490.22	-165.56	194.42	0.60	0.17	-1.74	
3,183.00	18.53	198.54	3,114.21	-519.15	-175.64	206.21	1.15	-1.05	-1.39	
3,278.00	16.43	198.88	3,204.82	-546.18	-184.79	216.95	2.21	-2.21	0.36	
3,372.00	14.31	199.14	3,295.45	-569.74	-192.90	226.45	2.26	-2.26	0.28	

SDT

Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,466.00	13.04	199.55	3,386.78	-590.70	-200.26	235.04	1.35	-1.35	0.44	
3,570.00	12.14	200.53	3,488.28	-612.00	-208.02	244.05	0.89	-0.87	0.94	
3,665.00	12.93	195.01	3,581.02	-631.62	-214.27	251.46	1.51	0.83	-5.81	
3,759.00	15.46	190.37	3,672.15	-654.11	-219.25	257.77	2.95	2.69	-4.94	
3,854.00	17.24	187.03	3,763.30	-680.54	-223.26	263.34	2.12	1.87	-3.52	
3,949.00	18.97	186.87	3,853.59	-709.84	-226.83	268.65	1.82	1.82	-0.17	
4,043.00	21.23	190.74	3,941.87	-741.74	-231.83	275.54	2.79	2.40	4.12	
4,138.00	20.60	191.69	4,030.61	-775.01	-238.42	284.09	0.75	-0.66	1.00	
4,232.00	21.49	192.46	4,118.34	-808.01	-245.48	293.11	0.99	0.95	0.82	
4,327.00	21.95	191.02	4,206.59	-842.43	-252.63	302.29	0.74	0.48	-1.52	
4,421.00	22.94	191.14	4,293.47	-877.65	-259.53	311.27	1.05	1.05	0.13	
4,516.00	23.05	196.24	4,380.93	-913.68	-268.31	322.18	2.10	0.12	5.37	
4,611.00	21.68	197.08	4,468.78	-948.31	-278.66	334.58	1.48	-1.44	0.88	
4,705.00	21.49	196.14	4,556.19	-981.44	-288.55	346.42	0.42	-0.20	-1.00	
4,799.00	24.83	194.82	4,642.60	-1,017.07	-298.39	358.36	3.60	3.55	-1.40	
4,894.00	23.32	193.84	4,729.34	-1,054.62	-307.99	370.17	1.64	-1.59	-1.03	
4,988.00	23.43	194.40	4,815.62	-1,090.78	-317.09	381.41	0.26	0.12	0.60	
5,083.00	23.36	196.75	4,902.82	-1,127.11	-327.21	393.67	0.98	-0.07	2.47	
5,177.00	21.43	196.14	4,989.72	-1,161.46	-337.36	405.84	2.07	-2.05	-0.65	
5,272.00	20.71	196.20	5,078.37	-1,194.26	-346.87	417.29	0.76	-0.76	0.06	
5,367.00	22.20	195.18	5,166.79	-1,227.71	-356.26	428.65	1.62	1.57	-1.07	
5,461.00	22.15	194.44	5,253.83	-1,262.01	-365.32	439.74	0.30	-0.05	-0.79	
5,556.00	20.92	192.71	5,342.20	-1,295.90	-373.52	449.94	1.46	-1.29	-1.82	
5,650.00	20.93	194.87	5,430.00	-1,328.50	-381.52	459.87	0.82	0.01	2.30	
5,713.00	20.82	196.70	5,488.87	-1,350.10	-387.63	467.25	1.05	-0.17	2.90	
5,808.00	19.91	195.85	5,577.93	-1,381.83	-396.90	478.39	1.01	-0.96	-0.89	
5,903.00	19.45	194.65	5,667.38	-1,412.70	-405.32	488.63	0.64	-0.48	-1.26	
5,997.00	19.11	193.85	5,756.11	-1,442.78	-412.96	498.04	0.46	-0.36	-0.85	
6,083.00	18.22	193.29	5,837.58	-1,469.53	-419.42	506.08	1.06	-1.03	-0.65	
6,178.00	17.55	192.71	5,927.99	-1,497.96	-425.98	514.33	0.73	-0.71	-0.61	
6,272.00	16.36	190.19	6,017.91	-1,524.81	-431.44	521.38	1.49	-1.27	-2.68	
6,367.00	14.76	189.62	6,109.42	-1,549.92	-435.83	527.25	1.69	-1.68	-0.60	
6,461.00	13.32	186.45	6,200.61	-1,572.48	-439.05	531.81	1.74	-1.53	-3.37	
6,489.00	13.33	181.58	6,227.86	-1,578.91	-439.50	532.64	4.01	0.04	-17.39	
6,532.00	10.83	187.86	6,269.91	-1,587.87	-440.19	533.86	6.56	-5.81	14.60	
6,626.00	16.49	195.59	6,361.22	-1,609.49	-444.99	539.94	6.31	6.02	8.22	
6,721.00	20.31	203.03	6,451.36	-1,637.67	-455.07	551.67	4.71	4.02	7.83	
6,816.00	27.42	216.19	6,538.24	-1,670.56	-474.47	573.00	9.31	7.48	13.85	
6,910.00	32.53	223.42	6,619.67	-1,706.42	-504.65	605.26	6.65	5.44	7.69	
7,005.00	38.93	231.89	6,696.79	-1,743.45	-545.76	648.50	8.50	6.74	8.92	
7,100.00	49.09	240.13	6,765.09	-1,779.88	-600.57	705.37	12.26	10.69	8.67	
7,194.00	61.83	247.76	6,818.33	-1,813.42	-670.07	776.75	15.10	13.55	8.12	
7,289.00	67.96	248.81	6,858.61	-1,845.22	-749.96	858.39	6.53	6.45	1.11	

SDT

Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,383.00	73.23	251.08	6,889.84	-1,875.58	-833.22	943.31	6.05	5.61	2.41
7,478.00	79.90	254.07	6,911.90	-1,903.20	-921.33	1,032.90	7.66	7.02	3.15
7,573.00	80.17	254.59	6,928.34	-1,928.47	-1,011.42	1,124.33	0.61	0.28	0.55
7,626.00	83.61	255.94	6,935.82	-1,941.81	-1,062.16	1,175.77	6.96	6.49	2.56
RU 644H Actual POE @ 7626' MD									
7,667.00	86.27	256.98	6,939.43	-1,951.37	-1,101.86	1,215.97	6.96	6.49	2.52
7,762.00	89.36	259.64	6,943.06	-1,970.60	-1,194.80	1,309.90	4.29	3.25	2.80
7,856.00	92.05	260.26	6,941.90	-1,987.00	-1,287.34	1,403.25	2.94	2.86	0.66
7,951.00	91.92	263.27	6,938.61	-2,000.59	-1,381.29	1,497.85	3.17	-0.14	3.17
8,045.00	92.22	265.46	6,935.21	-2,009.82	-1,474.77	1,591.71	2.35	0.32	2.33
8,140.00	89.83	265.44	6,933.51	-2,017.35	-1,569.45	1,686.67	2.52	-2.52	-0.02
8,234.00	90.17	265.40	6,933.51	-2,024.86	-1,663.15	1,780.65	0.36	0.36	-0.04
8,329.00	88.32	265.19	6,934.77	-2,032.65	-1,757.82	1,875.61	1.96	-1.95	-0.22
8,423.00	90.27	264.44	6,935.92	-2,041.14	-1,851.42	1,969.55	2.22	2.07	-0.80
8,518.00	90.71	264.17	6,935.11	-2,050.57	-1,945.95	2,064.47	0.54	0.46	-0.28
8,612.00	91.21	264.06	6,933.54	-2,060.21	-2,039.44	2,158.37	0.54	0.53	-0.12
8,707.00	89.90	265.52	6,932.61	-2,068.83	-2,134.04	2,253.32	2.06	-1.38	1.54
8,802.00	89.90	265.62	6,932.78	-2,076.17	-2,228.76	2,348.30	0.11	0.00	0.11
8,896.00	89.80	265.48	6,933.03	-2,083.46	-2,322.47	2,442.29	0.18	-0.11	-0.15
8,990.00	90.27	266.65	6,932.97	-2,089.91	-2,416.25	2,536.28	1.34	0.50	1.24
9,085.00	90.34	266.47	6,932.46	-2,095.61	-2,511.08	2,631.28	0.20	0.07	-0.19
9,179.00	90.00	266.30	6,932.18	-2,101.54	-2,604.89	2,725.28	0.40	-0.36	-0.18
9,274.00	89.80	265.81	6,932.35	-2,108.08	-2,699.66	2,820.27	0.56	-0.21	-0.52
9,368.00	90.74	266.85	6,931.91	-2,114.09	-2,793.47	2,914.27	1.49	1.00	1.11
9,463.00	90.71	266.80	6,930.71	-2,119.36	-2,888.31	3,009.26	0.06	-0.03	-0.05
9,557.00	90.37	266.94	6,929.82	-2,124.49	-2,982.17	3,103.25	0.39	-0.36	0.15
9,652.00	90.27	266.37	6,929.29	-2,130.03	-3,077.00	3,198.25	0.61	-0.11	-0.60
9,746.00	90.34	266.81	6,928.79	-2,135.62	-3,170.84	3,292.25	0.47	0.07	0.47
9,840.00	90.34	267.03	6,928.23	-2,140.67	-3,264.70	3,386.25	0.23	0.00	0.23
9,935.00	90.00	266.68	6,927.95	-2,145.88	-3,359.56	3,481.25	0.51	-0.36	-0.37
10,029.00	90.03	266.49	6,927.92	-2,151.48	-3,453.39	3,575.25	0.20	0.03	-0.20
10,124.00	90.13	266.45	6,927.79	-2,157.33	-3,548.21	3,670.25	0.11	0.11	-0.04
10,218.00	90.00	266.39	6,927.68	-2,163.20	-3,642.02	3,764.24	0.15	-0.14	-0.06
10,313.00	91.01	268.17	6,926.85	-2,167.71	-3,736.91	3,859.23	2.15	1.06	1.87
10,407.00	91.21	268.46	6,925.03	-2,170.47	-3,830.85	3,953.17	0.37	0.21	0.31
10,501.00	91.48	268.45	6,922.82	-2,173.01	-3,924.79	4,047.09	0.29	0.29	-0.01
10,595.00	90.94	266.43	6,920.84	-2,177.20	-4,018.67	4,141.06	2.22	-0.57	-2.15
10,690.00	89.83	265.81	6,920.20	-2,183.63	-4,113.45	4,236.05	1.34	-1.17	-0.65
10,785.00	90.07	266.02	6,920.28	-2,190.40	-4,208.21	4,331.04	0.34	0.25	0.22
10,879.00	89.97	267.11	6,920.25	-2,196.03	-4,302.04	4,425.04	1.16	-0.11	1.16
10,974.00	89.56	266.81	6,920.64	-2,201.07	-4,396.90	4,520.04	0.53	-0.43	-0.32
11,068.00	90.91	267.57	6,920.25	-2,205.68	-4,490.78	4,614.03	1.65	1.44	0.81
11,163.00	90.50	267.74	6,919.08	-2,209.57	-4,585.70	4,709.01	0.47	-0.43	0.18
11,258.00	90.30	267.59	6,918.42	-2,213.44	-4,680.62	4,803.99	0.26	-0.21	-0.16

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,352.00	89.83	267.89	6,918.31	-2,217.14	-4,774.54	4,897.97	0.59	-0.50	0.32
11,447.00	90.94	266.31	6,917.67	-2,221.95	-4,869.41	4,992.96	2.03	1.17	-1.66
11,541.00	90.97	265.96	6,916.11	-2,228.28	-4,963.19	5,086.94	0.37	0.03	-0.37
11,636.00	90.84	265.31	6,914.61	-2,235.51	-5,057.90	5,181.91	0.70	-0.14	-0.68
11,730.00	90.87	265.64	6,913.20	-2,242.93	-5,151.60	5,275.89	0.35	0.03	0.35
11,824.00	90.67	265.30	6,911.94	-2,250.35	-5,245.29	5,369.86	0.42	-0.21	-0.36
11,919.00	90.20	265.10	6,911.22	-2,258.30	-5,339.96	5,464.83	0.54	-0.49	-0.21
12,013.00	90.17	265.08	6,910.92	-2,266.35	-5,433.61	5,558.80	0.04	-0.03	-0.02
12,108.00	89.66	265.46	6,911.06	-2,274.18	-5,528.29	5,653.77	0.67	-0.54	0.40
12,203.00	89.46	265.89	6,911.79	-2,281.34	-5,623.01	5,748.75	0.50	-0.21	0.45
12,297.00	90.03	266.33	6,912.20	-2,287.72	-5,716.80	5,842.75	0.77	0.61	0.47
12,392.00	89.87	266.20	6,912.29	-2,293.91	-5,811.59	5,937.75	0.22	-0.17	-0.14
12,487.00	89.36	266.36	6,912.93	-2,300.07	-5,906.39	6,032.74	0.56	-0.54	0.17
12,581.00	90.81	267.45	6,912.79	-2,305.15	-6,000.25	6,126.74	1.93	1.54	1.16
12,676.00	90.17	267.23	6,911.97	-2,309.56	-6,095.14	6,221.73	0.71	-0.67	-0.23
12,770.00	89.90	267.03	6,911.92	-2,314.26	-6,189.03	6,315.72	0.36	-0.29	-0.21
12,864.00	91.81	267.42	6,910.51	-2,318.81	-6,282.90	6,409.70	2.07	2.03	0.41
12,959.00	91.51	267.34	6,907.76	-2,323.15	-6,377.76	6,504.65	0.33	-0.32	-0.08
13,053.00	91.18	267.08	6,905.56	-2,327.73	-6,471.62	6,598.62	0.45	-0.35	-0.28
13,147.00	90.03	266.92	6,904.56	-2,332.65	-6,565.49	6,692.61	1.24	-1.22	-0.17
13,242.00	89.83	267.51	6,904.68	-2,337.26	-6,660.38	6,787.61	0.66	-0.21	0.62
13,336.00	89.50	267.98	6,905.23	-2,340.96	-6,754.30	6,881.58	0.61	-0.35	0.50
13,430.00	89.09	267.98	6,906.39	-2,344.28	-6,848.24	6,975.55	0.44	-0.44	0.00
13,525.00	89.76	266.30	6,907.34	-2,349.02	-6,943.11	7,070.54	1.90	0.71	-1.77
13,619.00	89.80	266.37	6,907.70	-2,355.02	-7,036.92	7,164.53	0.09	0.04	0.07
13,714.00	89.80	266.54	6,908.03	-2,360.90	-7,131.73	7,259.53	0.18	0.00	0.18
13,808.00	89.60	266.38	6,908.52	-2,366.70	-7,225.55	7,353.53	0.27	-0.21	-0.17
13,903.00	91.04	266.28	6,907.99	-2,372.78	-7,320.35	7,448.53	1.52	1.52	-0.11
13,997.00	90.97	266.56	6,906.34	-2,378.65	-7,414.16	7,542.51	0.31	-0.07	0.30
14,092.00	90.50	267.00	6,905.13	-2,383.99	-7,509.00	7,637.50	0.68	-0.49	0.46
14,186.00	90.00	267.05	6,904.72	-2,388.87	-7,602.87	7,731.50	0.53	-0.53	0.05
14,281.00	89.70	267.29	6,904.96	-2,393.56	-7,697.75	7,826.49	0.40	-0.32	0.25
14,376.00	90.00	266.83	6,905.21	-2,398.43	-7,792.63	7,921.49	0.58	0.32	-0.48
14,470.00	89.80	266.93	6,905.38	-2,403.54	-7,886.49	8,015.49	0.24	-0.21	0.11
14,565.00	91.01	266.81	6,904.71	-2,408.73	-7,981.34	8,110.48	1.28	1.27	-0.13
14,659.00	90.60	266.92	6,903.38	-2,413.87	-8,075.19	8,204.47	0.45	-0.44	0.12
14,754.00	90.47	266.72	6,902.50	-2,419.14	-8,170.04	8,299.47	0.25	-0.14	-0.21
14,848.00	90.27	266.03	6,901.89	-2,425.08	-8,263.85	8,393.47	0.76	-0.21	-0.73
14,942.00	89.80	266.27	6,901.83	-2,431.40	-8,357.64	8,487.46	0.56	-0.50	0.26
15,037.00	89.29	266.62	6,902.59	-2,437.29	-8,452.45	8,582.46	0.65	-0.54	0.37
15,131.00	90.47	265.76	6,902.78	-2,443.53	-8,546.24	8,676.45	1.55	1.26	-0.91
15,226.00	90.20	266.01	6,902.23	-2,450.35	-8,641.00	8,771.44	0.39	-0.28	0.26
15,289.00	90.17	266.16	6,902.03	-2,454.65	-8,703.85	8,834.44	0.24	-0.05	0.24

SDT
Survey Report

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,352.00	90.30	265.64	6,901.77	-2,459.16	-8,766.69	8,897.44	0.85	0.21	-0.83	
15,383.00	90.13	265.87	6,901.65	-2,461.45	-8,797.60	8,928.43	0.92	-0.55	0.74	
15,446.00	90.20	265.92	6,901.47	-2,465.96	-8,860.44	8,991.43	0.14	0.11	0.08	
15,500.00	90.32	266.34	6,901.22	-2,469.60	-8,914.31	9,045.43	0.81	0.22	0.78	
RU 644H Actual FPP @ 15500' MD										
15,509.00	90.34	266.41	6,901.17	-2,470.17	-8,923.30	9,054.42	0.81	0.22	0.78	
15,572.00	90.47	266.64	6,900.73	-2,473.99	-8,986.18	9,117.42	0.42	0.21	0.37	
15,628.00	90.20	265.94	6,900.40	-2,477.62	-9,042.06	9,173.42	1.34	-0.48	-1.25	
15,698.00	90.20	265.94	6,900.16	-2,482.57	-9,111.88	9,243.42	0.00	0.00	0.00	
RU 644H ST01 BHL @ 15698' MD										

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	
RU 644H SHL - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	2,143,457.12	2,848,019.09	36.8897030	-107.4061290	
RU 644H OH BHL - actual wellpath misses target center by 4.09ft at 519.92ft MD (519.91 TVD, -2.04 N, 0.13 E) - Point	0.00	0.00	519.85	-6.06	-0.61	2,143,451.06	2,848,018.50	36.8896863	-107.4061311	
RU 644H ST01 BHL - actual wellpath hits target center - Point	0.00	0.00	6,900.16	-2,482.57	-9,111.88	2,140,933.79	2,838,918.42	36.8828799	-107.4372850	
RU 644H Actual FPP - actual wellpath hits target center - Point	0.00	0.00	6,901.22	-2,469.60	-8,914.31	2,140,947.64	2,839,115.93	36.8829157	-107.4366094	
RU 644H PBHL - actual wellpath misses target center by 10.30ft at 15679.30ft MD (6900.22 TVD, -2481.25 N, -9093.23 E) - Point	0.00	0.00	6,910.00	-2,478.03	-9,093.49	2,140,938.41	2,838,936.80	36.8828924	-107.4372221	
RU 644H Actual POE - actual wellpath hits target center - Point	0.00	0.00	6,935.82	-1,941.81	-1,062.16	2,141,510.58	2,846,965.64	36.8843693	-107.4097609	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,626.00	6,935.82	-1,941.81	-1,062.16	RU 644H Actual POE @ 7626' MD	
15,500.00	6,901.22	-2,469.60	-8,914.31	RU 644H Actual FPP @ 15500' MD	
15,698.00	6,900.16	-2,482.57	-9,111.88	RU 644H ST01 BHL @ 15698' MD	

Checked By: _____

Approved By: _____

Date: _____

Logos Operating LLC

Rio Arriba, NM NAD83

Rosa Unit 27

Rosa Unit 644H

ST01

Design: ST01

Survey Report - Geographic

16 October, 2023

SDT
Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

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:	13-3/16 "	Grid Convergence: 0.26 °

Well	Rosa Unit 644H			
Well Position	+N/-S	0.00 ft	Northing:	2,143,457.12 usft
	+E/-W	0.00 ft	Easting:	2,848,019.09 usft
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft
			Ground Level:	6,305.00 ft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	9/30/2023	8.50	63.28	49,436.82958917

Design	ST01			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	266.59

Survey Program	Date	10/16/2023		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
76.55	353.00	Survey #1 (OH)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
391.00	1,299.00	Survey #1-ST01 (ST01)	B001Mb_MWD+HRGM	OWSG MWD + HRGM
1,371.00	2,128.00	Survey #2-ST01-Corrected Run 1 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc
2,237.00	3,466.00	Survey #3-ST01-Corrected Run 2 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc
3,570.00	5,997.00	Survey #4-ST01-Corrected Run 3 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc
6,083.00	6,489.00	Survey #5-ST01 (ST01)	A020Ga_GYRO-NS	OWSG Gyrocompass Gyro
6,532.00	15,628.00	Survey #6-ST01-Corrected Run 4 (ST01)	MWD+HDGM+SAG+MS	MWD + HDGM + Sag Correction + Multi Station Correc
15,698.00	15,698.00	Survey #7-ST01 (ST01)	Project	Projection

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	2,143,457.12	2,848,019.09	36.8897030	-107.4061290	
76.55	0.21	354.42	76.55	0.14	-0.01	2,143,457.26	2,848,019.07	36.8897034	-107.4061291	
107.06	0.09	288.53	107.06	0.20	-0.04	2,143,457.32	2,848,019.04	36.8897035	-107.4061292	
198.10	0.00	262.70	198.10	0.23	-0.11	2,143,457.34	2,848,018.98	36.8897036	-107.4061294	
289.29	0.17	228.82	289.29	0.14	-0.21	2,143,457.25	2,848,018.88	36.8897033	-107.4061298	

SDT

Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
350.26	0.52	197.41	350.26	-0.19	-0.36	2,143,456.93	2,848,018.73	36.8897025	-107.4061303
398.00	0.97	140.36	398.00	-0.70	-0.17	2,143,456.41	2,848,018.92	36.8897010	-107.4061296
411.08	0.79	148.62	411.07	-0.87	-0.05	2,143,456.25	2,848,019.04	36.8897006	-107.4061292
432.00	0.88	164.00	431.99	-1.14	0.07	2,143,455.97	2,848,019.16	36.8896998	-107.4061288
442.53	0.79	162.69	442.52	-1.29	0.11	2,143,455.83	2,848,019.20	36.8896994	-107.4061287
451.96	0.79	168.57	451.95	-1.42	0.14	2,143,455.70	2,848,019.24	36.8896991	-107.4061286
461.46	0.62	174.11	461.45	-1.53	0.16	2,143,455.59	2,848,019.26	36.8896988	-107.4061285
469.17	0.53	170.95	469.16	-1.61	0.17	2,143,455.51	2,848,019.27	36.8896985	-107.4061285
508.00	0.44	194.68	507.99	-1.93	0.16	2,143,455.19	2,848,019.26	36.8896977	-107.4061285
544.00	1.06	208.74	543.98	-2.36	-0.03	2,143,454.76	2,848,019.07	36.8896965	-107.4061292
579.00	1.23	221.66	578.98	-2.92	-0.44	2,143,454.20	2,848,018.66	36.8896949	-107.4061305
610.00	1.76	209.36	609.97	-3.58	-0.89	2,143,453.53	2,848,018.21	36.8896931	-107.4061321
635.00	2.20	210.94	634.95	-4.33	-1.33	2,143,452.78	2,848,017.78	36.8896911	-107.4061336
744.00	2.82	220.52	743.85	-8.16	-4.15	2,143,448.94	2,848,014.98	36.8896805	-107.4061432
838.00	4.22	218.14	837.67	-12.64	-7.78	2,143,444.44	2,848,011.36	36.8896682	-107.4061557
929.00	5.98	202.24	928.31	-19.66	-11.65	2,143,437.40	2,848,007.53	36.8896490	-107.4061689
1,020.00	6.60	202.06	1,018.76	-28.90	-15.40	2,143,428.15	2,848,003.81	36.8896236	-107.4061817
1,112.00	6.77	203.99	1,110.14	-38.75	-19.60	2,143,418.28	2,847,999.67	36.8895965	-107.4061961
1,204.00	7.92	200.30	1,201.38	-49.65	-24.00	2,143,407.36	2,847,995.31	36.8895666	-107.4062111
1,299.00	8.97	192.30	1,295.35	-63.03	-27.85	2,143,393.97	2,847,991.52	36.8895298	-107.4062243
1,371.00	10.13	196.19	1,366.35	-74.59	-30.81	2,143,382.39	2,847,988.61	36.8894981	-107.4062344
1,466.00	10.43	194.73	1,459.83	-90.93	-35.32	2,143,366.03	2,847,984.17	36.8894532	-107.4062498
1,561.00	10.35	194.08	1,553.27	-107.53	-39.59	2,143,349.42	2,847,979.98	36.8894076	-107.4062644
1,655.00	10.49	193.00	1,645.72	-124.05	-43.57	2,143,332.87	2,847,976.08	36.8893622	-107.4062780
1,749.00	11.06	195.75	1,738.06	-141.07	-47.94	2,143,315.84	2,847,971.78	36.8893155	-107.4062930
1,844.00	12.71	199.88	1,831.03	-159.67	-53.97	2,143,297.21	2,847,965.84	36.8892644	-107.4063136
1,938.00	13.21	197.08	1,922.63	-179.66	-60.64	2,143,277.19	2,847,959.25	36.8892095	-107.4063364
2,033.00	14.54	196.63	2,014.86	-201.47	-67.24	2,143,255.36	2,847,952.75	36.8891496	-107.4063590
2,128.00	14.85	199.78	2,106.75	-224.35	-74.77	2,143,232.44	2,847,945.32	36.8890867	-107.4063847
2,237.00	14.96	201.33	2,212.08	-250.60	-84.62	2,143,206.15	2,847,935.59	36.8890146	-107.4064184
2,332.00	15.39	200.84	2,303.77	-273.80	-93.56	2,143,182.90	2,847,926.75	36.8889509	-107.4064490
2,426.00	16.81	196.46	2,394.08	-298.49	-101.85	2,143,158.17	2,847,918.57	36.8888831	-107.4064773
2,521.00	17.19	195.42	2,484.93	-325.20	-109.48	2,143,131.43	2,847,911.07	36.8888097	-107.4065034
2,616.00	16.14	192.98	2,575.94	-351.60	-116.17	2,143,105.00	2,847,904.49	36.8887372	-107.4065263
2,710.00	16.73	199.29	2,666.11	-377.11	-123.58	2,143,079.47	2,847,897.20	36.8886672	-107.4065516
2,805.00	17.92	199.28	2,756.80	-403.81	-132.92	2,143,052.72	2,847,887.97	36.8885938	-107.4065836
2,900.00	18.87	200.97	2,846.94	-431.95	-143.25	2,143,024.53	2,847,877.78	36.8885165	-107.4066189
2,994.00	19.36	201.50	2,935.76	-460.64	-154.40	2,142,995.79	2,847,866.76	36.8884377	-107.4066570
3,089.00	19.52	199.85	3,025.34	-490.22	-165.56	2,142,966.17	2,847,855.73	36.8883565	-107.4066952
3,183.00	18.53	198.54	3,114.21	-519.15	-175.64	2,142,937.19	2,847,845.77	36.8882770	-107.4067296
3,278.00	16.43	198.88	3,204.82	-546.18	-184.79	2,142,910.12	2,847,836.75	36.8882028	-107.4067609
3,372.00	14.31	199.14	3,295.45	-569.74	-192.90	2,142,886.53	2,847,828.74	36.8881381	-107.4067887
3,466.00	13.04	199.55	3,386.78	-590.70	-200.26	2,142,865.53	2,847,821.48	36.8880805	-107.4068138
3,570.00	12.14	200.53	3,488.28	-612.00	-208.02	2,142,844.19	2,847,813.81	36.8880220	-107.4068404
3,665.00	12.93	195.01	3,581.02	-631.62	-214.27	2,142,824.54	2,847,807.64	36.8879681	-107.4068618
3,759.00	15.46	190.37	3,672.15	-654.11	-219.25	2,142,802.03	2,847,802.76	36.8879063	-107.4068788
3,854.00	17.24	187.03	3,763.30	-680.54	-223.26	2,142,775.59	2,847,798.88	36.8878337	-107.4068925
3,949.00	18.97	186.87	3,853.59	-709.84	-226.83	2,142,746.27	2,847,795.44	36.8877532	-107.4069047
4,043.00	21.23	190.74	3,941.87	-741.74	-231.83	2,142,714.35	2,847,790.58	36.8876656	-107.4069218
4,138.00	20.60	191.69	4,030.61	-775.01	-238.42	2,142,681.06	2,847,784.14	36.8875742	-107.4069443
4,232.00	21.49	192.46	4,118.34	-808.01	-245.48	2,142,648.02	2,847,777.22	36.8874836	-107.4069685
4,327.00	21.95	191.02	4,206.59	-842.43	-252.63	2,142,613.57	2,847,770.23	36.8873890	-107.4069929
4,421.00	22.94	191.14	4,293.47	-877.65	-259.53	2,142,578.32	2,847,763.49	36.8872923	-107.4070165
4,516.00	23.05	196.24	4,380.93	-913.68	-268.31	2,142,542.25	2,847,754.87	36.8871933	-107.4070465
4,611.00	21.68	197.08	4,468.78	-948.31	-278.66	2,142,507.58	2,847,744.67	36.8870982	-107.4070819

SDT

Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,705.00	21.49	196.14	4,556.19	-981.44	-288.55	2,142,474.40	2,847,734.93	36.8870072	-107.4071157
4,799.00	24.83	194.82	4,642.60	-1,017.07	-298.39	2,142,438.72	2,847,725.26	36.8869093	-107.4071494
4,894.00	23.32	193.84	4,729.34	-1,054.62	-307.99	2,142,401.14	2,847,715.82	36.8868062	-107.4071822
4,988.00	23.43	194.40	4,815.62	-1,090.78	-317.09	2,142,364.93	2,847,706.89	36.8867069	-107.4072133
5,083.00	23.36	196.75	4,902.82	-1,127.11	-327.21	2,142,328.56	2,847,696.92	36.8866071	-107.4072479
5,177.00	21.43	196.14	4,989.72	-1,161.46	-337.36	2,142,294.17	2,847,686.93	36.8865128	-107.4072826
5,272.00	20.71	196.20	5,078.37	-1,194.26	-346.87	2,142,261.32	2,847,677.57	36.8864227	-107.4073151
5,367.00	22.20	195.18	5,166.79	-1,227.71	-356.26	2,142,227.83	2,847,668.33	36.8863308	-107.4073472
5,461.00	22.15	194.44	5,253.83	-1,262.01	-365.32	2,142,193.49	2,847,659.42	36.8862366	-107.4073782
5,556.00	20.92	192.71	5,342.20	-1,295.90	-373.52	2,142,159.56	2,847,651.37	36.8861435	-107.4074063
5,650.00	20.93	194.87	5,430.00	-1,328.50	-381.52	2,142,126.93	2,847,643.52	36.8860539	-107.4074336
5,713.00	20.82	196.70	5,488.87	-1,350.10	-387.63	2,142,105.30	2,847,637.51	36.8859946	-107.4074545
5,808.00	19.91	195.85	5,577.93	-1,381.83	-396.90	2,142,073.53	2,847,628.38	36.8859074	-107.4074862
5,903.00	19.45	194.65	5,667.38	-1,412.70	-405.32	2,142,042.62	2,847,620.10	36.8858227	-107.4075150
5,997.00	19.11	193.85	5,756.11	-1,442.78	-412.96	2,142,012.51	2,847,612.59	36.8857400	-107.4075411
6,083.00	18.22	193.29	5,837.58	-1,469.53	-419.42	2,141,985.73	2,847,606.25	36.8856666	-107.4075632
6,178.00	17.55	192.71	5,927.99	-1,497.96	-425.98	2,141,957.27	2,847,599.81	36.8855885	-107.4075856
6,272.00	16.36	190.19	6,017.91	-1,524.81	-431.44	2,141,930.39	2,847,594.47	36.8855147	-107.4076043
6,367.00	14.76	189.62	6,109.42	-1,549.92	-435.83	2,141,905.27	2,847,590.20	36.8854458	-107.4076193
6,461.00	13.32	186.45	6,200.61	-1,572.48	-439.05	2,141,882.69	2,847,587.08	36.8853838	-107.4076303
6,489.00	13.33	181.58	6,227.86	-1,578.91	-439.50	2,141,876.26	2,847,586.66	36.8853661	-107.4076319
6,532.00	10.83	187.86	6,269.91	-1,587.87	-440.19	2,141,867.29	2,847,586.01	36.8853415	-107.4076342
6,626.00	16.49	195.59	6,361.22	-1,609.49	-444.99	2,141,845.66	2,847,581.31	36.8852821	-107.4076506
6,721.00	20.31	203.03	6,451.36	-1,637.67	-455.07	2,141,817.44	2,847,571.35	36.8852047	-107.4076851
6,816.00	27.42	216.19	6,538.24	-1,670.56	-474.47	2,141,784.46	2,847,552.10	36.8851144	-107.4077514
6,910.00	32.53	223.42	6,619.67	-1,706.42	-504.65	2,141,748.46	2,847,522.08	36.8850159	-107.4078546
7,005.00	38.93	231.89	6,696.79	-1,743.45	-545.76	2,141,711.24	2,847,481.13	36.8849142	-107.4079952
7,100.00	49.09	240.13	6,765.09	-1,779.88	-600.57	2,141,674.57	2,847,426.49	36.8848141	-107.4081826
7,194.00	61.83	247.76	6,818.33	-1,813.42	-670.07	2,141,640.72	2,847,357.14	36.8847220	-107.4084203
7,289.00	67.96	248.81	6,858.61	-1,845.22	-749.96	2,141,608.57	2,847,277.39	36.8846346	-107.4086934
7,383.00	73.23	251.08	6,889.84	-1,875.58	-833.22	2,141,577.83	2,847,194.27	36.8845512	-107.4089781
7,478.00	79.90	254.07	6,911.90	-1,903.20	-921.33	2,141,549.82	2,847,106.29	36.8844753	-107.4092794
7,573.00	80.17	254.59	6,928.34	-1,928.47	-1,011.42	2,141,524.14	2,847,016.31	36.8844059	-107.4095874
7,626.00	83.61	255.94	6,935.82	-1,941.81	-1,062.16	2,141,510.58	2,846,965.64	36.8843693	-107.4097609
RU 644H Actual POE @ 7626' MD									
7,667.00	86.27	256.98	6,939.43	-1,951.37	-1,101.86	2,141,500.84	2,846,925.98	36.8843430	-107.4098966
7,762.00	89.36	259.64	6,943.06	-1,970.60	-1,194.80	2,141,481.20	2,846,833.12	36.8842902	-107.4102144
7,856.00	92.05	260.26	6,941.90	-1,987.00	-1,287.34	2,141,464.38	2,846,740.66	36.8842451	-107.4105309
7,951.00	91.92	263.27	6,938.61	-2,000.59	-1,381.29	2,141,450.37	2,846,646.76	36.8842078	-107.4108521
8,045.00	92.22	265.46	6,935.21	-2,009.82	-1,474.77	2,141,440.72	2,846,553.33	36.8841824	-107.4111718
8,140.00	89.83	265.44	6,933.51	-2,017.35	-1,569.45	2,141,432.77	2,846,458.68	36.8841617	-107.4114955
8,234.00	90.17	265.40	6,933.51	-2,024.86	-1,663.15	2,141,424.84	2,846,365.02	36.8841411	-107.4118159
8,329.00	88.32	265.19	6,934.77	-2,032.65	-1,757.82	2,141,416.63	2,846,270.39	36.8841197	-107.4121396
8,423.00	90.27	264.44	6,935.92	-2,041.14	-1,851.42	2,141,407.71	2,846,176.82	36.8840963	-107.4124596
8,518.00	90.71	264.17	6,935.11	-2,050.57	-1,945.95	2,141,397.86	2,846,082.34	36.8840704	-107.4127828
8,612.00	91.21	264.06	6,933.54	-2,060.21	-2,039.44	2,141,387.81	2,845,988.89	36.8840439	-107.4131025
8,707.00	89.90	265.52	6,932.61	-2,068.83	-2,134.04	2,141,378.76	2,845,894.33	36.8840202	-107.4134260
8,802.00	89.90	265.62	6,932.78	-2,076.17	-2,228.76	2,141,371.00	2,845,799.65	36.8840000	-107.4137498
8,896.00	89.80	265.48	6,933.03	-2,083.46	-2,322.47	2,141,363.29	2,845,705.97	36.8839800	-107.4140703
8,990.00	90.27	266.65	6,932.97	-2,089.91	-2,416.25	2,141,356.42	2,845,612.22	36.8839622	-107.4143909
9,085.00	90.34	266.47	6,932.46	-2,095.61	-2,511.08	2,141,350.29	2,845,517.42	36.8839466	-107.4147152
9,179.00	90.00	266.30	6,932.18	-2,101.54	-2,604.89	2,141,343.94	2,845,423.64	36.8839303	-107.4150359
9,274.00	89.80	265.81	6,932.35	-2,108.08	-2,699.66	2,141,336.98	2,845,328.89	36.8839123	-107.4153600
9,368.00	90.74	266.85	6,931.91	-2,114.09	-2,793.47	2,141,330.55	2,845,235.12	36.8838957	-107.4156807
9,463.00	90.71	266.80	6,930.71	-2,119.36	-2,888.31	2,141,324.86	2,845,140.30	36.8838813	-107.4160051

SDT

Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,557.00	90.37	266.94	6,929.82	-2,124.49	-2,982.17	2,141,319.31	2,845,046.46	36.8838671	-107.4163260
9,652.00	90.27	266.37	6,929.29	-2,130.03	-3,077.00	2,141,313.34	2,844,951.65	36.8838519	-107.4166502
9,746.00	90.34	266.81	6,928.79	-2,135.62	-3,170.84	2,141,307.33	2,844,857.85	36.8838365	-107.4169711
9,840.00	90.34	267.03	6,928.23	-2,140.67	-3,264.70	2,141,301.86	2,844,764.01	36.8838226	-107.4172920
9,935.00	90.00	266.68	6,927.95	-2,145.88	-3,359.56	2,141,296.22	2,844,669.18	36.8838082	-107.4176164
10,029.00	90.03	266.49	6,927.92	-2,151.48	-3,453.39	2,141,290.20	2,844,575.37	36.8837928	-107.4179372
10,124.00	90.13	266.45	6,927.79	-2,157.33	-3,548.21	2,141,283.93	2,844,480.58	36.8837767	-107.4182614
10,218.00	90.00	266.39	6,927.68	-2,163.20	-3,642.02	2,141,277.64	2,844,386.79	36.8837606	-107.4185822
10,313.00	91.01	268.17	6,926.85	-2,167.71	-3,736.91	2,141,272.71	2,844,291.93	36.8837482	-107.4189066
10,407.00	91.21	268.46	6,925.03	-2,170.47	-3,830.85	2,141,269.52	2,844,198.00	36.8837405	-107.4192279
10,501.00	91.48	268.45	6,922.82	-2,173.01	-3,924.79	2,141,266.57	2,844,104.07	36.8837335	-107.4195491
10,595.00	90.94	266.43	6,920.84	-2,177.20	-4,018.67	2,141,261.95	2,844,010.21	36.8837220	-107.4198701
10,690.00	89.83	265.81	6,920.20	-2,183.63	-4,113.45	2,141,255.10	2,843,915.46	36.8837043	-107.4201941
10,785.00	90.07	266.02	6,920.28	-2,190.40	-4,208.21	2,141,247.91	2,843,820.74	36.8836856	-107.4205181
10,879.00	89.97	267.11	6,920.25	-2,196.03	-4,302.04	2,141,241.86	2,843,726.93	36.8836701	-107.4208390
10,974.00	89.56	266.81	6,920.64	-2,201.07	-4,396.90	2,141,236.39	2,843,632.09	36.8836563	-107.4211633
11,068.00	90.91	267.57	6,920.25	-2,205.68	-4,490.78	2,141,231.37	2,843,538.23	36.8836436	-107.4214844
11,163.00	90.50	267.74	6,919.08	-2,209.57	-4,585.70	2,141,227.05	2,843,443.33	36.8836328	-107.4218089
11,258.00	90.30	267.59	6,918.42	-2,213.44	-4,680.62	2,141,222.76	2,843,348.43	36.8836222	-107.4221334
11,352.00	89.83	267.89	6,918.31	-2,217.14	-4,774.54	2,141,218.63	2,843,254.53	36.8836119	-107.4224546
11,447.00	90.94	266.31	6,917.67	-2,221.95	-4,869.41	2,141,213.40	2,843,159.68	36.8835987	-107.4227790
11,541.00	90.97	265.96	6,916.11	-2,228.28	-4,963.19	2,141,206.65	2,843,065.93	36.8835812	-107.4230996
11,636.00	90.84	265.31	6,914.61	-2,235.51	-5,057.90	2,141,198.99	2,842,971.25	36.8835613	-107.4234235
11,730.00	90.87	265.64	6,913.20	-2,242.93	-5,151.60	2,141,191.16	2,842,877.59	36.8835409	-107.4237438
11,824.00	90.67	265.30	6,911.94	-2,250.35	-5,245.29	2,141,183.32	2,842,783.93	36.8835205	-107.4240642
11,919.00	90.20	265.10	6,911.22	-2,258.30	-5,339.96	2,141,174.94	2,842,689.30	36.8834986	-107.4243879
12,013.00	90.17	265.08	6,910.92	-2,266.35	-5,433.61	2,141,166.48	2,842,595.68	36.8834765	-107.4247081
12,108.00	89.66	265.46	6,911.06	-2,274.18	-5,528.29	2,141,158.22	2,842,501.04	36.8834549	-107.4250318
12,203.00	89.46	265.89	6,911.79	-2,281.34	-5,623.01	2,141,150.63	2,842,406.35	36.8834352	-107.4253557
12,297.00	90.03	266.33	6,912.20	-2,287.72	-5,716.80	2,141,143.84	2,842,312.60	36.8834176	-107.4256764
12,392.00	89.87	266.20	6,912.29	-2,293.91	-5,811.59	2,141,137.22	2,842,217.83	36.8834005	-107.4260005
12,487.00	89.36	266.36	6,912.93	-2,300.07	-5,906.39	2,141,130.64	2,842,123.06	36.8833836	-107.4263247
12,581.00	90.81	267.45	6,912.79	-2,305.15	-6,000.25	2,141,125.14	2,842,029.23	36.8833696	-107.4266456
12,676.00	90.17	267.23	6,911.97	-2,309.56	-6,095.14	2,141,120.31	2,841,934.35	36.8833574	-107.4269701
12,770.00	89.90	267.03	6,911.92	-2,314.26	-6,189.03	2,141,115.18	2,841,840.49	36.8833444	-107.4272911
12,864.00	91.81	267.42	6,910.51	-2,318.81	-6,282.90	2,141,110.21	2,841,746.64	36.8833319	-107.4276120
12,959.00	91.51	267.34	6,907.76	-2,323.15	-6,377.76	2,141,105.45	2,841,651.80	36.8833199	-107.4279364
13,053.00	91.18	267.08	6,905.56	-2,327.73	-6,471.62	2,141,100.45	2,841,557.96	36.8833072	-107.4282573
13,147.00	90.03	266.92	6,904.56	-2,332.65	-6,565.49	2,141,095.11	2,841,464.12	36.8832937	-107.4285783
13,242.00	89.83	267.51	6,904.68	-2,337.26	-6,660.38	2,141,090.07	2,841,369.25	36.8832809	-107.4289027
13,336.00	89.50	267.98	6,905.23	-2,340.96	-6,754.30	2,141,085.95	2,841,275.35	36.8832707	-107.4292239
13,430.00	89.09	267.98	6,906.39	-2,344.28	-6,848.24	2,141,082.22	2,841,181.43	36.8832615	-107.4295451
13,525.00	89.76	266.30	6,907.34	-2,349.02	-6,943.11	2,141,077.05	2,841,086.58	36.8832485	-107.4298694
13,619.00	89.80	266.37	6,907.70	-2,355.02	-7,036.92	2,141,070.63	2,840,992.80	36.8832319	-107.4301902
13,714.00	89.80	266.54	6,908.03	-2,360.90	-7,131.73	2,141,064.33	2,840,898.01	36.8832157	-107.4305144
13,808.00	89.60	266.38	6,908.52	-2,366.70	-7,225.55	2,141,058.10	2,840,804.22	36.8831997	-107.4308352
13,903.00	91.04	266.28	6,907.99	-2,372.78	-7,320.35	2,141,051.60	2,840,709.44	36.8831829	-107.4311593
13,997.00	90.97	266.56	6,906.34	-2,378.65	-7,414.16	2,141,045.31	2,840,615.67	36.8831667	-107.4314801
14,092.00	90.50	267.00	6,905.13	-2,383.99	-7,509.00	2,141,039.55	2,840,520.85	36.8831520	-107.4318044
14,186.00	90.00	267.05	6,904.72	-2,388.87	-7,602.87	2,141,034.25	2,840,427.00	36.8831385	-107.4321253
14,281.00	89.70	267.29	6,904.96	-2,393.56	-7,697.75	2,141,029.14	2,840,332.14	36.8831256	-107.4324497
14,376.00	90.00	266.83	6,905.21	-2,398.43	-7,792.63	2,141,023.84	2,840,237.29	36.8831121	-107.4327741
14,470.00	89.80	266.93	6,905.38	-2,403.54	-7,886.49	2,141,018.30	2,840,143.45	36.8830980	-107.4330951
14,565.00	91.01	266.81	6,904.71	-2,408.73	-7,981.34	2,141,012.69	2,840,048.62	36.8830837	-107.4334194
14,659.00	90.60	266.92	6,903.38	-2,413.87	-8,075.19	2,141,007.13	2,839,954.80	36.8830695	-107.4337403

SDT
Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,754.00	90.47	266.72	6,902.50	-2,419.14	-8,170.04	2,141,001.44	2,839,859.97	36.8830549	-107.4340646	
14,848.00	90.27	266.03	6,901.89	-2,425.08	-8,263.85	2,140,995.07	2,839,766.19	36.8830385	-107.4343854	
14,942.00	89.80	266.27	6,901.83	-2,431.40	-8,357.64	2,140,988.34	2,839,672.43	36.8830211	-107.4347060	
15,037.00	89.29	266.62	6,902.59	-2,437.29	-8,452.45	2,140,982.03	2,839,577.65	36.8830049	-107.4350302	
15,131.00	90.47	265.76	6,902.78	-2,443.53	-8,546.24	2,140,975.36	2,839,483.89	36.8829876	-107.4353509	
15,226.00	90.20	266.01	6,902.23	-2,450.35	-8,641.00	2,140,968.12	2,839,389.16	36.8829688	-107.4356749	
15,289.00	90.17	266.16	6,902.03	-2,454.65	-8,703.85	2,140,963.54	2,839,326.33	36.8829570	-107.4358898	
15,352.00	90.30	265.64	6,901.77	-2,459.16	-8,766.69	2,140,958.75	2,839,263.51	36.8829445	-107.4361047	
15,383.00	90.13	265.87	6,901.65	-2,461.45	-8,797.60	2,140,956.32	2,839,232.61	36.8829382	-107.4362104	
15,446.00	90.20	265.92	6,901.47	-2,465.96	-8,860.44	2,140,951.53	2,839,169.79	36.8829258	-107.4364252	
15,500.00	90.32	266.34	6,901.22	-2,469.60	-8,914.31	2,140,947.64	2,839,115.93	36.8829157	-107.4366094	
RU 644H Actual FPP @ 15500' MD										
15,509.00	90.34	266.41	6,901.17	-2,470.17	-8,923.30	2,140,947.03	2,839,106.95	36.8829141	-107.4366401	
15,572.00	90.47	266.64	6,900.73	-2,473.99	-8,986.18	2,140,942.93	2,839,044.09	36.8829036	-107.4368551	
15,628.00	90.20	265.94	6,900.40	-2,477.62	-9,042.06	2,140,939.06	2,838,988.23	36.8828936	-107.4370462	
15,698.00	90.20	265.94	6,900.16	-2,482.57	-9,111.88	2,140,933.79	2,838,918.42	36.8828799	-107.4372850	
RU 644H ST01 BHL @ 15698' MD										

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting		
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
RU 644H SHL	0.00	0.00	0.00	0.00	0.00	2,143,457.12	2,848,019.09	36.8897030	-107.4061290
- actual wellpath hits target center									
- Point									
RU 644H OH BHL	0.00	0.00	519.85	-6.06	-0.61	2,143,451.06	2,848,018.50	36.8896863	-107.4061311
- actual wellpath misses target center by 4.09ft at 519.92ft MD (519.91 TVD, -2.04 N, 0.13 E)									
- Point									
RU 644H ST01 BHL	0.00	0.00	6,900.16	-2,482.57	-9,111.88	2,140,933.79	2,838,918.42	36.8828799	-107.4372850
- actual wellpath hits target center									
- Point									
RU 644H Actual FPP	0.00	0.00	6,901.22	-2,469.60	-8,914.31	2,140,947.64	2,839,115.93	36.8829157	-107.4366094
- actual wellpath hits target center									
- Point									
RU 644H PBHL	0.00	0.00	6,910.00	-2,478.03	-9,093.49	2,140,938.41	2,838,936.80	36.8828924	-107.4372221
- actual wellpath misses target center by 10.30ft at 15679.30ft MD (6900.22 TVD, -2481.25 N, -9093.23 E)									
- Point									
RU 644H Actual POE	0.00	0.00	6,935.82	-1,941.81	-1,062.16	2,141,510.58	2,846,965.64	36.8843693	-107.4097609
- actual wellpath hits target center									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
7,626.00	6,935.82	-1,941.81	-1,062.16	RU 644H Actual POE @ 7626' MD	
15,500.00	6,901.22	-2,469.60	-8,914.31	RU 644H Actual FPP @ 15500' MD	
15,698.00	6,900.16	-2,482.57	-9,111.88	RU 644H ST01 BHL @ 15698' MD	

SDT
Survey Report - Geographic

Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Rosa Unit 644H
Project:	Rio Arriba, NM NAD83	TVD Reference:	6305+30 @ 6335.00ft (H&P 530)
Site:	Rosa Unit 27	MD Reference:	6305+30 @ 6335.00ft (H&P 530)
Well:	Rosa Unit 644H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000 Multi User Db

Checked By:	_____	Approved By:	_____	Date:	_____
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Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB
No. 1004-0137 Expires:
December 31, 2024

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. NMSF78767

6. If Indian, Allottee or Tribe Name
NMNM78407E

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 87401

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

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)
956' FNL & 482' FWL UL C SEC 19 31N 5W

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

8. Well Name and No.
ROSA UNIT 644H

9. API Well No.
30-039-31430

10. Field and Pool or Exploratory Area
BASIN MANCOS

11. 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	Completion	

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 recomplete 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 perfonned 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 recompletion 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 detennined that the site is ready for final inspection.)

10/12/2023- MIRU Frac stack
10/13/23- MIRU Equip and WL. PT to 11,500 PSI. Test good. Open toe sleeves; 15,450'-15,452', 15,498'-15,500'.
10/14/23 thru 10/23/23- Standby for offset frac.
10/24/23 thru 11/2/23- Frac'd stage 1 w/ 230,328 proppant. 100 # mesh w/ 40/70 sand, 6410 bbls slickwater. Set CFP @ 15,435'.
Perf intervals @ 15,420'-7,626' total holes 1832. Perfed 5 and 6spf, w/ 0.38" holes, 60 phasing. Frac'd 40 total stages, 100 # mesh w/ 40/70 sand & 17,786,396 bbls total proppant, 460,640 bbls slickwater. Set kill plug @ 7,580'. PT to 6,500# PSI- good test.
11/3/23 thru 11/4/23- Prep to RDMO Frac.
11/10/23 thru 11/11/23- Prep for CTU drillout operations. DO kill plug @ 7580'. Circulate, CO & continue to DO composite frac plugs. 11/12/23- POOH w/ 2-3/8" CT and drill out BHA. RDMO
Per the approved operations plan, the 2-7/8", 6.5#, J-55, EUE, tubing will be run once volumes and pressures decline and could be close to a year after the well is brought online.

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

Lacey Granillo

Title Regulatory Specialist

Signature Lacey Granillo

Date 12/20/23

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

Well Name: ROSA UNIT	Well Location: T31N / R5W / SEC 19 / LOT 1 / 36.889703 / -107.406129	County or Parish/State: RIO ARRIBA / NM
Well Number: 644H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF078767	Unit or CA Name: ROSA UNIT	Unit or CA Number: NMNM78407E
US Well Number: 3003931430	Well Status: Drilling Well	Operator: LOGOS OPERATING LLC

Subsequent Report

Sundry ID: 2766962

Type of Submission: Subsequent Report Type of Action: Other

Date Sundry Submitted: 12/20/2023 Time Sundry Submitted: 02:05

Date Operation Actually Began: 10/12/2023

Actual Procedure: Logos is unable to submit a well completion report due to AFMSS2. This is to satisfy NM OCD reporting. attached: Completion sundry Well completion report As-Drilled C102 Final survey WBS

SR Attachments

Actual Procedure

- 3160_5_Rosa_Unit_644H_completion_sundry_20231220140427.pdf
- Rosa_Unit_644H_As_Completed_Schematic_20231220132636.pdf
- Logos__Rosa_Unit__644H_Final_PVA_20231220132629.pdf
- 3160_4_Rosa_Unit_644H_Completion_Report_for_BLM_20231220132618.pdf
- 4.Rosa_Unit_644H_As_Drilled_C_102_Plat_20231017_signed_20231220132602.pdf

Well Name: ROSA UNIT	Well Location: T31N / R5W / SEC 19 / LOT 1 / 36.889703 / -107.406129	County or Parish/State: RIO ARRIBA / NM
Well Number: 644H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF078767	Unit or CA Name: ROSA UNIT	Unit or CA Number: NMNM78407E
US Well Number: 3003931430	Well Status: Drilling Well	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: LACEY GRANILLO	Signed on: DEC 20, 2023 02:05 PM
Name: LOGOS OPERATING LLC	
Title: REGULATORY SPECIALIST	
Street Address: 2010 AFTON PLACE	
City: FARMINGTON	State: NM
Phone: (505) 324-4145	
Email address: LGRANILLO@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: Accepted	Disposition Date: 12/20/2023
Signature: Kenneth Rennick	

Well Name: ROSA UNIT	Well Location: T31N / R5W / SEC 19 / LOT 1 / 36.889703 / -107.406129	County or Parish/State: RIO ARRIBA / NM
Well Number: 644H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMSF078767	Unit or CA Name: ROSA UNIT	Unit or CA Number: NMNM78407E
US Well Number: 3003931430	Well Status: Drilling Well	Operator: LOGOS OPERATING LLC

Notification

Sundry ID:	2766964	Type of Action:	First Production
Type of Submission:	Notification	Time Sundry Submitted:	1:31:52 PM
Date Sundry Submitted:	Dec 20, 2023		
First Production Date:	Nov 24, 2023		
US Well Number:	3003931430		
First Production Remarks:	First delivery date: 11/24/2023 TP: 0 CP: 1107 Initial MCF: 334 MCF		
Disposition:	Accepted		
Accepted Date:	12/20/2023		

Submit To Appropriate District Office Two Copies <u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 811 S. First St., Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Rd., Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505		State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505				Form C-105 Revised April 3, 2017				
1. WELL API NO. 30-039-31430										
2. Type of Lease ☐ STATE ☐ FEE ☒ FED/INDIAN										
3. State Oil & Gas Lease No.										
WELL COMPLETION OR RECOMPLETION REPORT AND LOG										
4. Reason for filing: ☒ COMPLETION REPORT (Fill in boxes #1 through #31 for State and Fee wells only) ☐ C-144 CLOSURE ATTACHMENT (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)						5. Lease Name or Unit Agreement Name ROSA UNIT				
						6. Well Number: 644H				
7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER										
8. Name of Operator LOGOS OPERATING, LLC						9. OGRID 289408				
10. Address of Operator 2010 AFTON PLACE, FARMINGTON, NM 87401						11. Pool name or Wildcat BASIN MANCOS				
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	C	19	31N	R05W	1	956'	FNL	482'	FWL	RIO ARRIBA
BH:	L	23	31N	R06W		1825'	FSL	1140'	FWL	RIO ARRIBA
13. Date Spudded 6/7/23	14. Date T.D. Reached 10/5/2023		15. Date Rig Released 10/7/2023		16. Date Completed (Ready to Produce) 11/12/2023			17. Elevations (DF and RKB, RT, GR, etc.) 6305'		
18. Total Measured Depth of Well 15,698' MD / 6,900' TVD			19. Plug Back Measured Depth 15,586' MD / 6,900' TVD		20. Was Directional Survey Made? Y			21. Type Electric and Other Logs Run CBL		
22. Producing Interval(s), of this completion - Top, Bottom, Name BASIN MANCOS (7626' MD to 15500' MD)										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
20"		94#		381'		26"		1902sx		(371bbls, 2113cf)
13-3/8"		61#		3519' (GL)		17-1/2"		2673 sks		(832bbls, 4672cf)
9-5/8"		43.5#		6476'		12-1/2"		2597 sks		(797bbls, 4467cf)
5-1/2"		20#		15,680'		8-1/2"		2426 sks		DV tool @ 4834' & 3578' (696bbls, 4115cf) Circ 27bbls to surface
24. LINER RECORD										25. TUBING RECORD
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET			
					Pending					
26. Perforation record (interval, size, and number) 7626' MD to 15500' MD, 0.38" , 6SPF, 1832 total holes					27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC. DEPTH INTERVAL 7626' MD -15500' MD AMOUNT AND KIND MATERIAL USED Frac'd 40 stages of 17,786,396 lb Proppant, 100# mesh & 40/70 sand. 460,640 bbls of slickwater.					
28. PRODUCTION										
Date First Production 11/24/23		Production Method (Flowing, gas lift, pumping - Size and type pump) Flowing				Well Status (Prod. or Shut-in) Producing				
Date of Test 11/24/23	Hours Tested 12hrs	Choke Size 18/64	Prod'n For Test Period	Oil - Bbl n/a	Gas - MCF 2138 mcf	Water - Bbl. 408 bbls	Gas - Oil Ratio n/a			
Flow Tubing Press. n/a	Casing Pressure 2086	Calculated 24-Hour Rate	Oil - Bbl. n/a	Gas - MCF 2750 mcf	Water - Bbl. 456 bbls	Oil Gravity - API - (Corr.) n/a				
29. Disposition of Gas (Sold, used for fuel, vented, etc.) SOLD							30. Test Witnessed By			
31. List Attachments										
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.							33. Rig Release Date:			
34. If an on-site burial was used at the well, report the exact location of the on-site burial:										
Latitude				Longitude				NAD83		

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Printed

Signature: Lacey Granillo

Name Lacey Granillo Title Regulatory Specialist

Date 3/1/24

E-mail Address lgranillo@logosresourcesllc.com

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy	T. Canyon	T. Ojo Alamo 2485	T. Penn A"
T. Salt	T. Strawn	T. Kirtland 2591	T. Penn. "B"
B. Salt	T. Atoka	T. Fruitland 2941	T. Penn. "C"
T. Yates	T. Miss	T. Pictured Cliffs 3438	T. Penn. "D"
T. 7 Rivers	T. Devonian	T. Cliff House 5610	T. Leadville
T. Queen	T. Silurian	T. Menefee 5639	T. Madison
T. Grayburg	T. Montoya	T. Point Lookout 5853	T. Elbert
T. San Andres	T. Simpson	T. Mancos 6384	T. McCracken
T. Glorieta	T. McKee	T. Gallup	T. Ignacio Otzte
T. Paddock	T. Ellenburger	Base Greenhorn	T. Granite
T. Blinebry	T. Gr. Wash	T. Dakota	
T. Tubb	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T. Todilto	
T. Abo	T.	T. Entrada	
T. Wolfcamp	T.	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to.....

No. 3, from.....to.....

No. 2, from.....to.....

No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology	From	To	Thickness In Feet	Lithology
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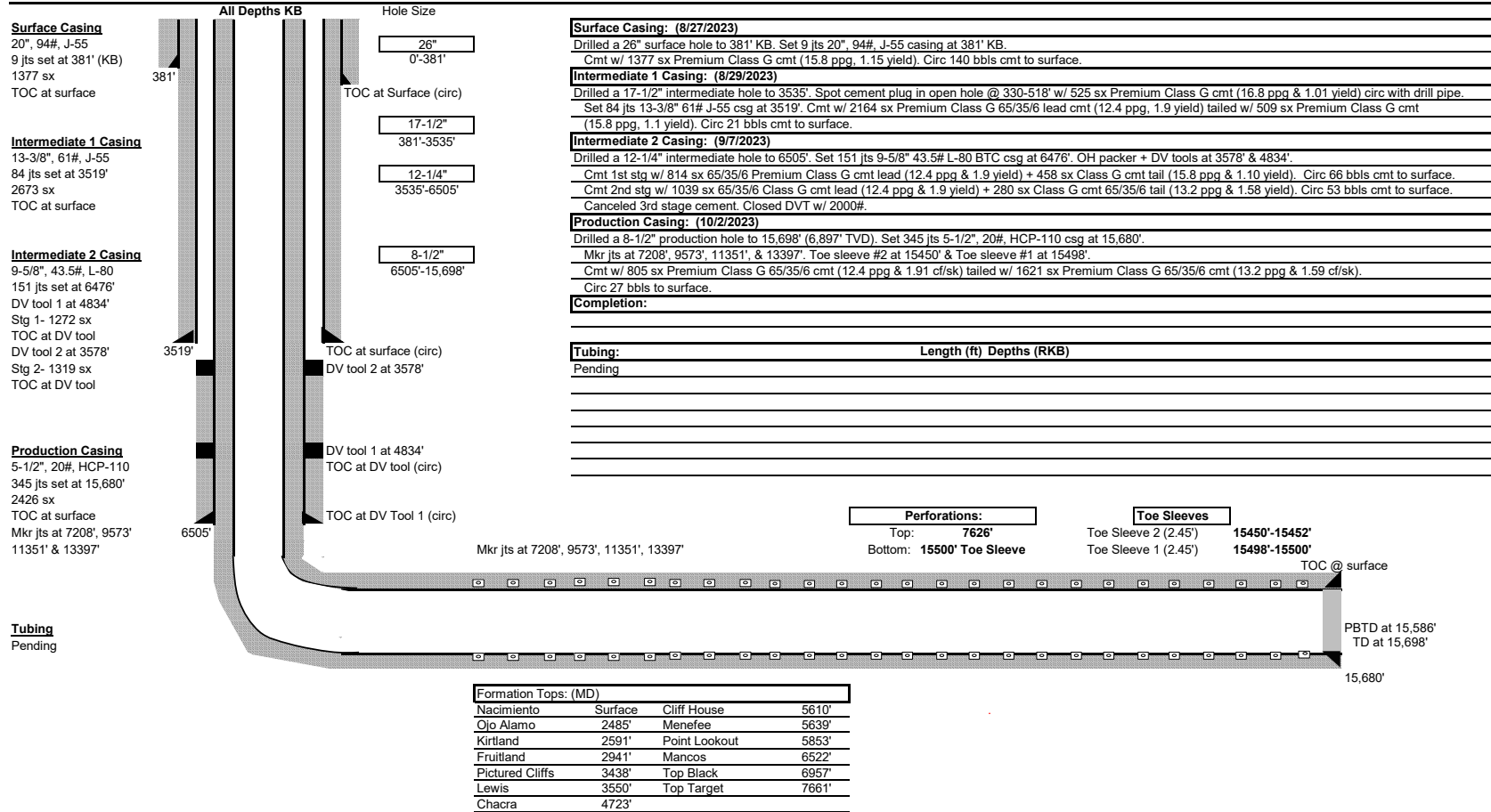


Well Name: Rosa Unit 644H
 Location: C - Sec 19 T31N, R05W, 956' FNL, 482' FWL
 County: Rio Arriba, NM
 API #: 30-039-31430
 Co-ordinates: 36.889688, -107.406129 NAD83
 Operator: LOGOS Operating, LLC

Ground Elevation: 6305'
 KB Elevation: 6335'
 TD (TVD): 6897'
 TD (MD): 15,698'
 PBTD (MD): 15,586'

Prepared By: 9/26/2023 Peace
 Reviewed By:
 Last Updated: 10/9/2023
 Spud Date: 6/7/2023
 Completion Date:
 Last Workover Date:

Wellbore Schematic



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

ACKNOWLEDGMENTS

Action 319983

ACKNOWLEDGMENTS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 319983
	Action Type: [C-104] Tight Hole Completion Packet (C-104CT)

ACKNOWLEDGMENTS

☒	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☒	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

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 319983

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 319983
	Action Type: [C-104] Tight Hole Completion Packet (C-104CT)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	File 3160-4 Completion Report and 3160-5 Completion Sundry within 10 days to NMOCD after BLM approval.	3/5/2024