U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

09/27/2024

Well Name: ROSA UNIT

Well Location: T31N / R5W / SEC 17 / SWNW / 36.900835 / -107.392851

County or Parish/State: RIO ARRIBA / NM

Well Number: 714H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMSF078769

Unit or CA Name:

Unit or CA Number: NMNM078407E

US Well Number: 3003931475

Operator: LOGOS OPERATING LLC

Notice of Intent

Sundry ID: 2814062

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 09/26/2024

Time Sundry Submitted: 02:27

Date proposed operation will begin: 09/26/2024

Procedure Description: LOGOS Operating request a change in plans for the following: Original SHL: Sec 17, T31N, R5W 2166’ FNL, 547’ FWL to Sec 17, T31N, R5W 2175’ FNL, 549’ FWL Original BHL: Sec 15, T31N, R5W 646’ FNL, 1299’ FEL to Sec 14, T31N, R6W 2335’ FNL, 5’ FWL Original TD @ 20,770’ (MD) 6,935’ (TVD) to new TD @ 20,674’ (MD) 6,922’ (TVD) Geology tops have been updated per changes. Original KOP @ 6,586’(MD) 6,405’ (TVD) to new KOP @ 6,336’ (MD) 6,332’ (TVD) Original Landing point @ 7,477’ (MD) 6,950’ (TVD) to new Landing point @ 7,321’ (MD) 6,952’ (TVD) Original surface depth hole size 17.5" to 26" or 24" and original casing size 13.375' to 20" Original intermediate depth 6,305’ to 6,250’ Original production depth 20,770’ to 20,674’ All cementing bbls and sacks have been updated per casing depth changes Attached: New C102, Operation and Directional Drill plans.

NOI Attachments

Procedure Description

Logos___Rosa_Unit_714H_5_Wall_Prelim_1_20240926142629.pdf

Rosa_Unit_714H_Operations_Plan_3_string_Prelim_WP1_9.25.2024_20240926142629.pdf

Logos___Rosa_Unit_714H_5_AC_Report_Prelim_1_20240926142629.pdf

714H_ROSA_UNIT_CIP_1_20240926_signed_20240926142629.PDF

Logos___Rosa_Unit_714H_5_Plan_Data_Prelim_1_20240926142628.pdf

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Well Name: ROSA UNIT

Well Location: T31N / R5W / SEC 17 / SWNW / 36.900835 / -107.392851

County or Parish/State: RIO ARRIBA / NM

Well Number: 714H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMSF078769

Unit or CA Name:

Unit or CA Number: NMNM078407E

US Well Number: 3003931475

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: SEP 26, 2024 02:27 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: Approved

Disposition Date: 09/27/2024

Signature: Kenneth Rennick

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C-102 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024 Submittal Type: ☐ Initial Submittal ☒ Amended Report ☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name
30-039-31475	97232	BASIN MANCOS

Property Code	Property Name	Well Number
320608	ROSA UNIT	714H

OGRID No.	Operator Name	Ground Level Elevation
289408	LOGOS OPERATING, LLC	6300'

Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
E	17	31N	5W		2175' NORTH	549' WEST	36.900808 °N	-107.392842 °W	RIO ARRIBA

Bottom Hole Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
E	14	31N	6W		2335' NORTH	5' WEST	36.900491 °N	-107.441190 °W	RIO ARRIBA

Penetrated Spacing Unit:

Dedicated Acres		Infill or Defining Well	Defining Well API	Overlapping Spacing Unit	Consolidation Code
823.43	N/2 - Section 13, T31N, R6W N/2 - Section 14, T31N, R6W N/2 - Section 18, T31N, R5W	Infill		☐ Yes ☒ No	Unitization

Order Numbers: R-13457

Well setbacks are under Common Ownership: ☐ Yes ☒ No

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
E	17	31N	5W		2335' NORTH	403' WEST	36.900371 °N	-107.393341 °W	RIO ARRIBA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
H	18	31N	5W		2349' NORTH	235' EAST	36.900332 °N	-107.395522 °W	RIO ARRIBA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
E	14	31N	6W		2335' NORTH	5' WEST	36.900491 °N	-107.441190 °W	RIO ARRIBA

Unitized Area or Area of Uniform Interest	Spacing Unit Type	Ground Floor Elevation
ROSA UNIT	☒ Horizontal ☐ Vertical ☐ Directional	

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Lacey Granillo
Signature

9/26/24
Date

Lacey Granillo
Printed Name

lgranillo@logosresourcesllc.com
E-mail Address

SURVEYOR CERTIFICATION

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

JASON C. EDWARDS
Signature and Seal of Professional Surveyor

Certificate Number	Date of Survey
15269	JUNE 22, 2022

Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

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BOTTOM HOLE LOCATION (E)
2335' FNL 5' FWL
SECTION 14, T31N, R6W
LAT 36.900486 °N
LONG -107.440586 °W
DATUM: NAD1927

LAT 36.900491 °N
LONG -107.441190 °W
DATUM: NAD1983

LAST TAKE POINT (D)
2335' FNL 5' FWL
SECTION 14, T31N, R6W
LAT 36.900486 °N
LONG -107.440586 °W
DATUM: NAD1927

LAT 36.900491 °N
LONG -107.441190 °W
DATUM: NAD1983

FIRST TAKE POINT (C)
2349' FNL 235' FEL
SECTION 18, T31N, R5W
LAT 36.900326 °N
LONG -107.394920 °W
DATUM: NAD1927

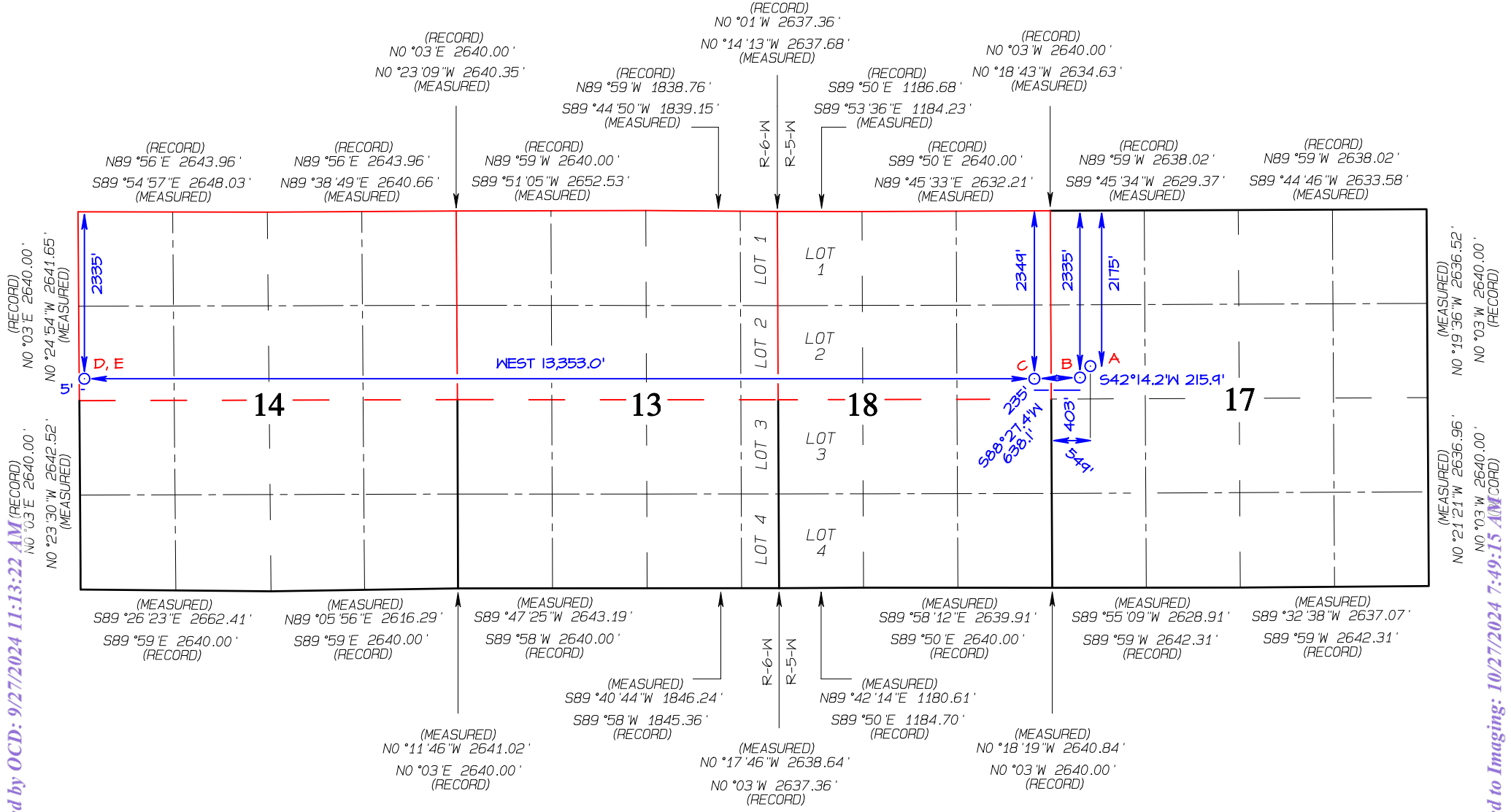
LAT 36.900332 °N
LONG -107.395522 °W
DATUM: NAD1983

KICK OFF POINT (B)
2335' FNL 403' FWL
SECTION 17, T31N, R5W
LAT 36.900365 °N
LONG -107.392738 °W
DATUM: NAD1927

LAT 36.900371 °N
LONG -107.393341 °W
DATUM: NAD1983

SURFACE LOCATION (A)
2175' FNL 549' FWL
SECTION 17, T31N, R5W
LAT 36.900802 °N
LONG -107.392239 °W
DATUM: NAD1927

LAT 36.900808 °N
LONG -107.392842 °W
DATUM: NAD1983



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BOTTOM HOLE LOCATION (E)
2335' FNL 5' FWL
SECTION 14, T31N, R6W
LAT 36.900486 °N
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LAT 36.900491 °N
LONG -107.441190 °W
DATUM: NAD1983

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2335' FNL 5' FWL
SECTION 14, T31N, R6W
LAT 36.900486 °N
LONG -107.440586 °W
DATUM: NAD1927

LAT 36.900491 °N
LONG -107.441190 °W
DATUM: NAD1983

LEASE X-ING (2)
2348' FNL 0' FWL
SEC 13, T31N, R6W
LAT 36.900425 °N
LONG -107.422521 °W
DATUM: NAD1927

LAT 36.900430 °N
LONG -107.423124 °W
DATUM: NAD1983

LEASE X-ING (1)
2341' FNL 0' FWL
SEC 18, T31N, R5W
LAT 36.900371 °N
LONG -107.407180 °W
DATUM: NAD1927

LAT 36.900376 °N
LONG -107.407783 °W
DATUM: NAD1983

FIRST TAKE POINT (C)
2349' FNL 235' FEL
SECTION 18, T31N, R5W
LAT 36.900326 °N
LONG -107.394920 °W
DATUM: NAD1927

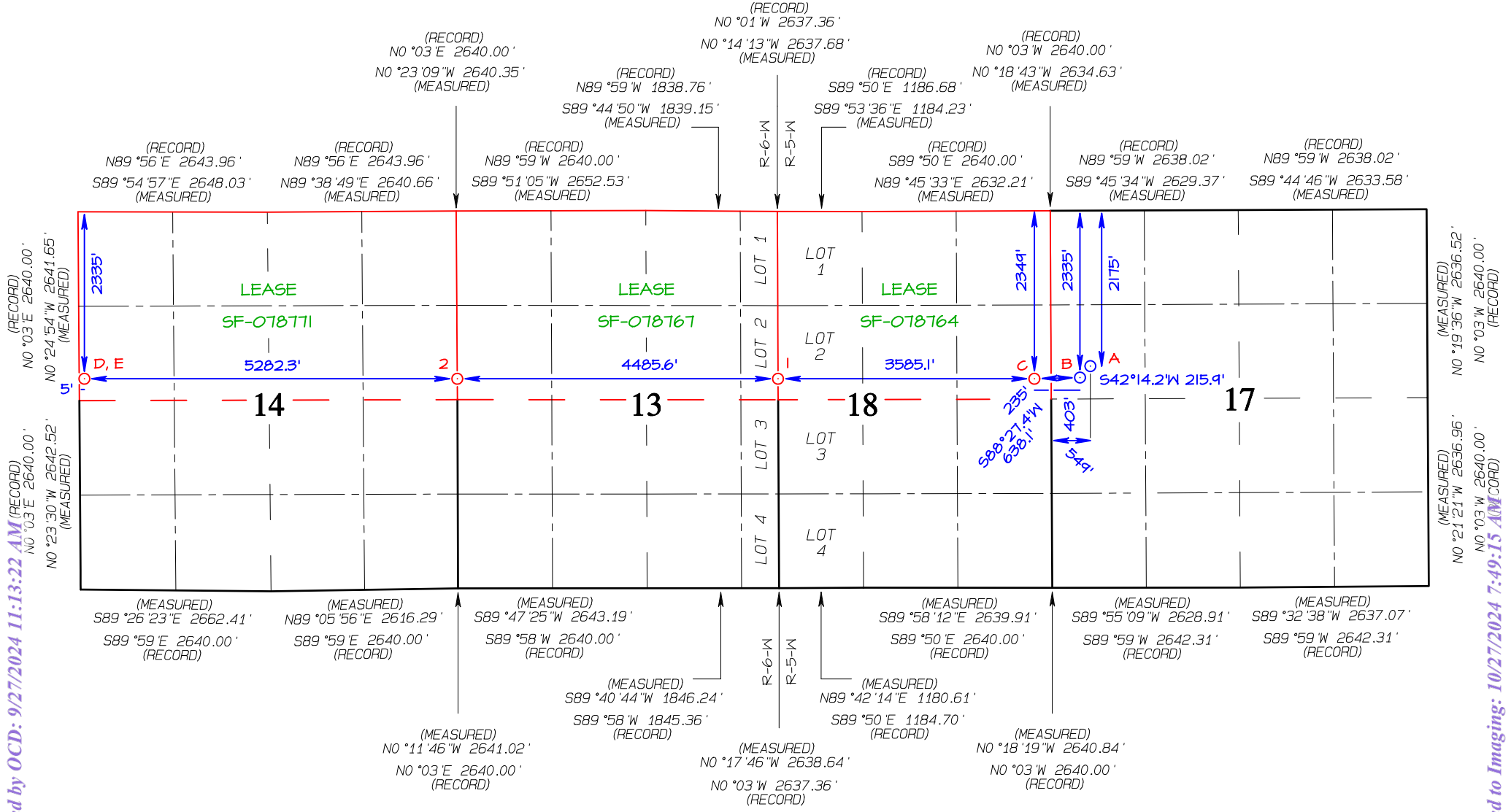
LAT 36.900332 °N
LONG -107.395522 °W
DATUM: NAD1983

KICK OFF POINT (B)
2335' FNL 403' FWL
SECTION 17, T31N, R5W
LAT 36.900365 °N
LONG -107.392738 °W
DATUM: NAD1927

LAT 36.900371 °N
LONG -107.393341 °W
DATUM: NAD1983

SURFACE LOCATION (A)
2175' FNL 549' FWL
SECTION 17, T31N, R5W
LAT 36.900802 °N
LONG -107.392239 °W
DATUM: NAD1927

LAT 36.900808 °N
LONG -107.392842 °W
DATUM: NAD1983



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Logos Operating LLC

Rio Arriba, NM (NAD83)
Rosa Pad 26 - 5 Well
Rosa Unit #714H

OH
Prelim 1

Anticollision Report

30 August, 2024

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Reference	Prelim 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Max. Cent. Dist. of 99,999.00usft or Max. SF of 100	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 8/30/2024

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	20,674.13	Prelim 1 (OH)	MWD+HRGM+MS	MWD + HRGM + Multi-Station Correction

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Rosa Pad 26						
(O) RU 009C - OH - OH-SVY+INC	20,360.98	7,109.37	2,718.25	2,387.18	8.211	CC
(O) RU 009C - OH - OH-SVY+INC	20,400.00	7,109.60	2,718.53	2,386.90	8.197	ES
(O) RU 009C - OH - OH-SVY+INC	20,600.00	7,110.75	2,728.74	2,394.91	8.174	SF
(O) RU 012D - OH - OH-SVY	20,674.13	6,966.29	668.75	579.51	7.494	CC, ES, SF
(O) RU 016D - OH - OH-SVY	18,696.37	7,215.76	909.26	274.84	1.433	Level 3, CC
(O) RU 016D - OH - OH-SVY	18,700.00	7,215.74	909.27	274.79	1.433	Level 3, ES, SF
(O) RU 020D - OH - OH-SVY	15,922.44	7,180.66	314.52	138.52	1.787	CC, ES, SF
(O) RU 020D - ST01 - ST01-SVY	15,871.83	7,174.79	283.61	98.35	1.531	CC, ES, SF
(O) RU 022B - OH - OH-SVY	9,517.53	7,248.23	1,329.93	851.62	2.781	CC, ES
(O) RU 022B - OH - OH-SVY	9,600.00	7,250.37	1,332.48	852.93	2.779	SF
(O) RU 030B - OH - OH-INC	13,052.14	7,096.53	2,373.56	2,108.11	8.942	CC
(O) RU 030B - OH - OH-INC	13,100.00	7,096.42	2,374.04	2,107.91	8.921	ES
(O) RU 030B - OH - OH-INC	13,300.00	7,095.97	2,386.47	2,117.93	8.887	SF
(O) RU 031 - OH - OH-TD	500.00	371.00	1,651.19	1,633.32	92.385	CC
(O) RU 031 - OH - OH-TD	6,100.00	5,967.15	1,857.15	1,575.14	6.585	ES, SF
(O) RU 031A - OH - OH-INC	6,084.35	6,058.00	1,194.70	1,049.33	8.218	CC, ES
(O) RU 031A - OH - OH-INC	6,100.00	6,058.00	1,194.80	1,049.40	8.217	SF
(O) RU 031B - OH - OH-INC	500.00	485.00	1,609.29	1,600.93	192.378	CC
(O) RU 031B - OH - OH-INC	1,000.00	1,008.18	1,621.74	1,599.35	72.419	ES
(O) RU 031B - OH - OH-INC	6,900.00	6,804.86	1,815.00	1,646.38	10.764	SF
(O) RU 046A - OH - OH-SVY	147.67	8.40	3,131.68	3,131.17	6,088.042	CC
(O) RU 046A - OH - OH-SVY	500.00	321.00	3,132.49	3,127.27	600.452	ES
(O) RU 046A - OH - OH-SVY	6,800.00	6,877.67	4,763.44	4,693.75	68.356	SF
(O) RU 065 - OH - OH-INC	500.00	465.00	3,994.24	3,988.43	688.175	CC, ES
(O) RU 065 - OH - OH-INC	6,900.00	6,817.91	4,419.04	4,205.86	20.730	SF
(O) RU 066 - OH - OH-INC	14,583.03	6,957.48	995.32	662.54	2.991	CC
(O) RU 066 - OH - OH-INC	14,600.00	6,957.45	995.46	662.40	2.989	ES, SF
(O) RU 066M - OH - OH-SVY	13,500.00	7,199.00	1,099.83	672.12	2.571	SF
(O) RU 066M - OH - OH-SVY	13,600.00	7,199.00	1,091.70	669.82	2.588	ES
(O) RU 066M - OH - OH-SVY	13,639.12	7,199.00	1,091.00	672.25	2.605	CC
(O) RU 067 - OH - OH-INC	16,909.17	6,966.00	804.51	501.93	2.659	CC, ES, SF
(O) RU 068 - OH - OH-INC	6,369.10	6,346.67	1,163.54	1,016.59	7.918	CC
(O) RU 068 - OH - OH-INC	6,400.00	6,377.40	1,163.80	1,016.08	7.878	ES
(O) RU 068 - OH - OH-INC	6,650.00	6,610.48	1,185.38	1,031.75	7.716	SF
(O) RU 119 - OH - OH-INC	9,871.30	6,957.94	1,942.59	1,684.68	7.532	CC
(O) RU 119 - OH - OH-INC	9,900.00	6,957.87	1,942.80	1,684.46	7.520	ES
(O) RU 119 - OH - OH-INC	10,100.00	6,957.42	1,956.01	1,694.92	7.492	SF

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
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Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Rosa Pad 26						
(O) RU 125 - OH - OH-INC	12,126.09	7,142.32	1,373.48	1,066.74	4.478	CC, ES
(O) RU 125 - OH - OH-INC	12,200.00	7,142.12	1,375.47	1,067.82	4.471	SF
(O) RU 125E - OH - OH-INC	11,931.29	6,958.98	1,237.43	972.85	4.677	CC, ES
(O) RU 125E - OH - OH-INC	12,000.00	6,958.85	1,239.33	973.72	4.666	SF
(O) RU 153B - OH - OH-INC	261.43	254.38	4,190.02	4,185.97	1,034.672	CC
(O) RU 153B - OH - OH-INC	4,700.00	4,701.06	4,282.53	4,048.76	18.319	ES
(O) RU 153B - OH - OH-INC	6,550.00	6,544.85	4,360.53	4,085.84	15.875	SF
(O) RU 153C - OH - OH-SVY	548.08	466.78	1,593.90	1,588.11	275.487	CC, ES
(O) RU 153C - OH - OH-SVY	6,400.00	6,598.56	2,686.11	2,552.54	20.110	SF
(O) RU 181D - OH - OH-SVY	20,674.13	7,176.12	2,992.47	2,768.71	13.373	CC, ES, SF
(O) RU 207 - OH - OH-INC	3,079.55	3,038.00	1,193.20	1,125.74	17.687	CC, ES
(O) RU 207 - OH - OH-INC	3,100.00	3,038.00	1,193.38	1,125.86	17.675	SF
(O) RU 207A - OH - OH-INC	500.00	486.00	850.58	842.82	109.557	CC
(O) RU 207A - OH - OH-INC	1,900.00	1,885.38	882.00	838.41	20.237	ES
(O) RU 207A - OH - OH-INC	2,900.00	2,809.00	909.59	844.33	13.939	SF
(O) RU 251 - OH - OH-TD	500.00	472.00	3,626.81	3,604.53	162.784	CC
(O) RU 251 - OH - OH-TD	6,350.00	6,317.97	3,787.50	3,489.19	12.696	ES
(O) RU 251 - OH - OH-TD	6,650.00	6,603.24	3,870.94	3,559.15	12.415	SF
(O) RU 374 - OH - OH-INC	400.00	711.10	7,754.46	7,738.53	486.610	CC
(O) RU 374 - OH - OH-INC	3,300.00	3,574.00	7,833.42	7,690.43	54.781	ES
(O) RU 374 - OH - OH-INC	3,900.00	3,574.00	7,876.59	7,731.93	54.446	SF
Rosa Pad 26 - 5 Well						
Rosa Unit #712H - OH - Prelim #1	500.00	500.00	19.92	16.55	5.913	CC, ES
Rosa Unit #712H - OH - Prelim #1	20,674.13	20,842.20	1,816.11	1,363.18	4.010	SF
Rosa Unit #720H - OH - Prelim #1	754.27	754.67	10.86	5.71	2.110	CC, ES, SF
Rosa Unit #722H - OH - Prelim #1	1,078.51	1,078.35	30.50	23.06	4.099	CC
Rosa Unit #722H - OH - Prelim #1	1,200.00	1,199.70	31.05	22.75	3.740	ES
Rosa Unit #722H - OH - Prelim #1	1,500.00	1,499.35	36.63	26.19	3.508	SF
Rosa Unit #724H - OH - Prelim #1	500.00	500.00	60.00	56.63	17.806	CC, ES
Rosa Unit #724H - OH - Prelim #1	800.00	793.52	70.10	64.72	13.042	SF

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC

Offset Site Error: 0.00 usft

Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY

Offset Well Error: 0.00 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-78.72	2,597.76	-13,021.34	13,278.06				
100.00	100.00	100.72	100.72	0.25	1.06	-78.72	2,598.12	-13,021.48	13,278.26	13,276.96	1.30	N/A	
200.00	200.00	165.28	165.28	0.61	1.74	-78.71	2,598.74	-13,021.72	13,278.81	13,276.47	2.34	5,677.410	
300.00	300.00	229.83	229.82	0.97	2.42	-78.71	2,599.65	-13,022.08	13,279.63	13,276.26	3.37	3,937.367	
400.00	400.00	300.03	300.00	1.33	3.16	-78.71	2,600.98	-13,022.59	13,280.72	13,276.25	4.47	2,974.000	
500.00	500.00	364.00	363.95	1.68	3.33	-78.70	2,602.50	-13,023.19	13,282.07	13,277.08	4.98	2,666.777	
606.93	606.91	426.57	426.50	2.05	3.40	58.80	2,603.87	-13,023.99	13,282.80	13,277.41	5.40	2,461.308	
652.72	652.66	452.00	451.93	2.21	3.43	58.80	2,604.21	-13,024.39	13,282.75	13,277.18	5.57	2,383.417	
700.00	699.91	452.00	451.93	2.37	3.43	58.80	2,604.21	-13,024.39	13,282.84	13,277.11	5.73	2,317.496	
800.00	799.84	482.00	481.92	2.71	3.46	58.81	2,604.47	-13,025.07	13,283.41	13,277.31	6.10	2,176.020	
900.00	899.77	512.00	511.90	3.06	3.50	58.81	2,604.60	-13,026.04	13,284.61	13,278.12	6.49	2,048.092	
1,000.00	999.70	525.90	525.79	3.41	3.51	58.81	2,604.61	-13,026.57	13,286.36	13,279.50	6.85	1,938.680	
1,100.00	1,099.63	542.00	541.88	3.76	3.53	58.81	2,604.62	-13,027.26	13,288.72	13,281.50	7.23	1,839.240	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,200.00	1,199.56	572.00	571.83	4.11	3.57	58.82	2,604.56	-13,028.84	13,291.74	13,284.11	7.62	1,743.659	
1,300.00	1,299.49	572.00	571.83	4.47	3.57	58.82	2,604.56	-13,028.84	13,295.33	13,287.35	7.98	1,666.871	
1,400.00	1,399.42	602.00	601.77	4.83	3.61	58.82	2,604.37	-13,030.79	13,299.59	13,291.21	8.38	1,586.936	
1,500.00	1,499.35	602.00	601.77	5.19	3.61	58.82	2,604.37	-13,030.79	13,304.46	13,295.72	8.73	1,523.159	
1,600.00	1,599.28	633.00	632.68	5.54	3.66	58.82	2,604.13	-13,033.16	13,309.93	13,300.79	9.14	1,455.654	
1,700.00	1,699.21	648.99	648.62	5.90	3.68	58.82	2,604.00	-13,034.50	13,316.01	13,306.49	9.53	1,397.760	
1,800.00	1,799.14	663.00	662.57	6.26	3.70	58.82	2,603.87	-13,035.75	13,322.71	13,312.80	9.91	1,344.913	
1,900.00	1,899.07	693.00	692.42	6.62	3.76	58.82	2,603.57	-13,038.66	13,330.03	13,319.71	10.32	1,291.780	
2,000.00	1,999.00	693.00	692.42	6.98	3.76	58.82	2,603.57	-13,038.66	13,337.95	13,327.28	10.67	1,249.777	
2,100.00	2,098.94	722.00	721.26	7.34	3.81	58.82	2,603.37	-13,041.73	13,346.44	13,335.36	11.08	1,204.074	
2,200.00	2,198.87	736.01	735.18	7.70	3.85	58.82	2,603.34	-13,043.30	13,355.57	13,344.10	11.47	1,164.475	
2,300.00	2,298.80	753.00	752.05	8.06	3.88	58.82	2,603.36	-13,045.35	13,365.37	13,353.51	11.86	1,126.896	
2,400.00	2,398.73	753.00	752.05	8.42	3.88	58.82	2,603.36	-13,045.35	13,375.82	13,363.61	12.21	1,095.393	
2,500.00	2,498.66	783.00	781.79	8.79	3.96	58.82	2,603.61	-13,049.21	13,386.83	13,374.19	12.64	1,059.364	
2,600.00	2,598.59	797.54	796.20	9.15	3.99	58.82	2,603.82	-13,051.18	13,398.47	13,385.45	13.02	1,028.726	
2,700.00	2,698.52	814.00	812.49	9.51	4.04	58.83	2,604.07	-13,053.52	13,410.75	13,397.33	13.42	999.583	
2,800.00	2,798.45	827.82	826.15	9.87	4.07	58.83	2,604.27	-13,055.58	13,423.65	13,409.84	13.80	972.499	
2,900.00	2,898.38	844.00	842.14	10.23	4.12	58.83	2,604.43	-13,058.09	13,437.16	13,422.96	14.20	946.540	
3,000.00	2,998.31	859.04	856.98	10.59	4.16	58.83	2,604.52	-13,060.53	13,451.28	13,436.69	14.59	922.128	
3,100.00	3,098.24	875.00	872.71	10.96	4.21	58.83	2,604.55	-13,063.24	13,466.02	13,451.04	14.98	898.921	
3,200.00	3,198.17	875.00	872.71	11.32	4.21	58.83	2,604.55	-13,063.24	13,481.43	13,466.11	15.32	879.806	
3,300.00	3,298.10	890.13	887.59	11.68	4.26	58.83	2,604.53	-13,065.97	13,497.45	13,481.74	15.72	858.651	
3,400.00	3,398.03	905.00	902.18	12.04	4.31	58.83	2,604.46	-13,068.84	13,514.19	13,498.07	16.11	838.688	
3,500.00	3,497.96	905.00	902.18	12.40	4.31	58.83	2,604.46	-13,068.84	13,531.54	13,515.08	16.45	822.448	
3,600.00	3,597.89	936.00	932.51	12.77	4.41	58.82	2,604.04	-13,075.22	13,549.51	13,532.61	16.90	801.528	
3,700.00	3,697.82	936.00	932.51	13.13	4.41	58.82	2,604.04	-13,075.22	13,568.07	13,550.82	17.24	786.948	
3,800.00	3,797.75	967.00	962.76	13.49	4.51	58.82	2,603.30	-13,081.95	13,587.15	13,569.47	17.68	768.358	
3,900.00	3,897.68	983.93	979.25	13.85	4.56	58.82	2,602.87	-13,085.76	13,606.84	13,588.76	18.08	752.713	
4,000.00	3,997.61	997.00	991.97	14.21	4.60	58.81	2,602.59	-13,088.76	13,627.11	13,608.66	18.46	738.392	
4,100.00	4,097.54	1,027.00	1,021.11	14.58	4.70	58.81	2,601.99	-13,095.85	13,647.97	13,629.08	18.89	722.307	
4,200.00	4,197.47	1,027.00	1,021.11	14.94	4.70	58.81	2,601.99	-13,095.85	13,669.40	13,650.17	19.23	711.010	
4,300.00	4,297.40	1,043.72	1,037.31	15.30	4.76	58.81	2,601.60	-13,099.98	13,691.43	13,671.81	19.62	697.801	
4,400.00	4,397.33	1,058.00	1,051.11	15.66	4.82	58.80	2,601.19	-13,103.64	13,714.10	13,694.09	20.01	685.502	
4,500.00	4,497.26	1,058.00	1,051.11	16.03	4.82	58.80	2,601.19	-13,103.64	13,737.38	13,717.05	20.33	675.657	
4,600.00	4,597.19	1,089.00	1,080.96	16.39	4.93	58.80	2,600.11	-13,111.92	13,761.19	13,740.40	20.79	662.023	
4,700.00	4,697.12	1,089.00	1,080.96	16.75	4.93	58.80	2,600.11	-13,111.92	13,785.63	13,764.52	21.11	653.049	
4,800.00	4,797.05	1,119.00	1,109.73	17.11	5.05	58.79	2,599.03	-13,120.37	13,810.67	13,789.11	21.56	640.608	
4,900.00	4,896.99	1,119.00	1,109.73	17.47	5.05	58.79	2,599.03	-13,120.37	13,836.26	13,814.38	21.88	632.404	
5,000.00	4,996.92	1,119.00	1,109.73	17.84	5.05	58.79	2,599.03	-13,120.37	13,862.53	13,840.33	22.20	624.513	
5,100.00	5,096.85	1,150.00	1,139.30	18.20	5.17	58.78	2,598.04	-13,129.61	13,889.34	13,866.69	22.65	613.113	
5,200.00	5,196.78	1,159.70	1,148.53	18.56	5.21	58.78	2,597.75	-13,132.58	13,916.72	13,893.71	23.01	604.764	
5,300.00	5,296.71	1,213.00	1,199.20	18.92	5.41	58.76	2,595.89	-13,149.03	13,944.51	13,920.95	23.56	591.852	
5,400.00	5,396.64	1,245.00	1,229.56	19.29	5.53	58.75	2,594.57	-13,159.03	13,972.65	13,948.63	24.02	581.756	
5,500.00	5,496.57	1,245.00	1,229.56	19.65	5.53	58.75	2,594.57	-13,159.03	14,001.36	13,977.03	24.33	575.479	
5,600.00	5,596.50	1,277.00	1,259.84	20.01	5.66	58.75	2,593.35	-13,169.32	14,030.55	14,005.76	24.79	565.950	
5,700.00	5,696.43	1,277.00	1,259.84	20.37	5.66	58.75	2,593.35	-13,169.32	14,060.36	14,035.26	25.10	560.171	
5,800.00	5,796.36	1,308.00	1,289.03	20.74	5.79	58.74	2,592.42	-13,179.72	14,090.77	14,065.21	25.56	551.234	
5,900.00	5,896.29	6,069.53	5,942.84	21.10	80.19	58.90	2,605.84	-13,806.38	13,946.00	13,844.97	101.03	138.037	
6,000.00	5,996.22	6,161.00	6,034.29	21.46	82.81	58.91	2,605.83	-13,806.48	13,944.17	13,840.16	104.01	134.063	
6,100.00	6,096.15	6,252.47	6,125.75	21.82	85.43	58.92	2,605.80	-13,806.63	13,942.40	13,835.41	106.99	130.311	
6,200.00	6,196.08	6,343.94	6,217.21	22.19	88.06	58.94	2,605.77	-13,806.84	13,940.69	13,830.72	109.98	126.762	
6,300.00	6,296.01	6,435.42	6,308.68	22.55	90.68	58.95	2,605.73	-13,807.11	13,939.05	13,826.09	112.96	123.402	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,335.60	6,331.59	6,468.00	6,341.25	22.68	91.61	58.95	2,605.71	-13,807.22	13,938.48	13,824.46	114.02	122.248	
6,350.00	6,345.97	6,481.16	6,354.41	22.73	91.99	41.28	2,605.70	-13,807.26	13,938.09	13,823.64	114.45	121.786	
6,400.00	6,395.75	6,526.75	6,399.99	22.91	93.30	23.64	2,605.67	-13,807.44	13,934.27	13,818.34	115.93	120.191	
6,450.00	6,445.03	6,571.90	6,445.14	23.10	94.59	19.14	2,605.64	-13,807.62	13,926.65	13,809.24	117.41	118.616	
6,500.00	6,493.52	6,616.34	6,489.57	23.29	95.87	17.27	2,605.61	-13,807.81	13,915.26	13,796.40	118.86	117.070	
6,550.00	6,540.91	6,659.80	6,533.03	23.48	97.11	16.40	2,605.58	-13,808.02	13,900.18	13,779.90	120.28	115.561	
6,600.00	6,586.91	6,702.02	6,575.24	23.66	98.33	16.05	2,605.55	-13,808.23	13,881.51	13,759.84	121.67	114.095	
6,650.00	6,631.24	6,742.74	6,615.95	23.85	99.49	16.04	2,605.51	-13,808.44	13,859.35	13,736.35	123.00	112.678	
6,700.00	6,673.63	6,781.70	6,654.90	24.05	100.61	16.29	2,605.48	-13,808.66	13,833.83	13,709.56	124.27	111.317	
6,750.00	6,713.80	6,818.67	6,691.87	24.24	101.67	16.80	2,605.44	-13,808.88	13,805.13	13,679.65	125.48	110.015	
6,800.00	6,751.52	6,853.42	6,726.61	24.44	102.67	17.56	2,605.41	-13,809.09	13,773.41	13,646.79	126.62	108.777	
6,850.00	6,786.56	6,885.74	6,758.93	24.65	103.59	18.60	2,605.38	-13,809.29	13,738.87	13,611.19	127.68	107.606	
6,900.00	6,818.69	6,915.43	6,788.61	24.87	104.45	19.99	2,605.35	-13,809.49	13,701.72	13,573.07	128.65	106.505	
6,950.00	6,847.72	6,942.31	6,815.48	25.10	105.22	21.83	2,605.32	-13,809.67	13,662.19	13,532.66	129.53	105.477	
7,000.00	6,873.46	6,966.20	6,839.37	25.34	105.90	24.26	2,605.29	-13,809.83	13,620.52	13,490.21	130.31	104.524	
7,050.00	6,895.77	6,986.96	6,860.13	25.60	106.50	27.52	2,605.27	-13,809.98	13,576.97	13,445.97	130.99	103.647	
7,100.00	6,914.50	7,004.46	6,877.63	25.87	107.00	32.01	2,605.25	-13,810.11	13,531.80	13,400.23	131.57	102.849	
7,150.00	6,929.54	7,018.59	6,891.76	26.15	107.41	38.35	2,605.23	-13,810.21	13,485.29	13,353.25	132.04	102.130	
7,200.00	6,940.80	7,029.26	6,902.42	26.44	107.71	47.58	2,605.22	-13,810.29	13,437.74	13,305.34	132.40	101.492	
7,250.00	6,948.20	7,036.40	6,909.56	26.75	107.92	61.09	2,605.21	-13,810.34	13,389.42	13,256.77	132.65	100.936	
7,300.00	6,951.70	7,039.96	6,913.12	27.07	108.02	79.68	2,605.20	-13,810.37	13,340.65	13,207.85	132.79	100.461	
7,321.06	6,952.00	7,040.38	6,913.54	27.20	108.03	88.63	2,605.20	-13,810.37	13,320.03	13,187.21	132.82	100.285	
7,400.00	6,951.82	7,040.77	6,913.93	27.74	108.04	88.63	2,605.20	-13,810.37	13,242.77	13,109.88	132.89	99.654	
7,500.00	6,951.60	7,041.25	6,914.41	28.49	108.06	88.65	2,605.20	-13,810.38	13,144.92	13,011.94	132.98	98.851	
7,600.00	6,951.37	7,041.74	6,914.90	29.30	108.07	88.66	2,605.20	-13,810.38	13,047.09	12,914.02	133.07	98.045	
7,700.00	6,951.15	7,042.22	6,915.38	30.18	108.08	88.67	2,605.20	-13,810.39	12,949.31	12,816.13	133.17	97.236	
7,800.00	6,950.92	7,042.71	6,915.87	31.12	108.10	88.68	2,605.20	-13,810.39	12,851.55	12,718.27	133.28	96.422	
7,900.00	6,950.70	7,043.20	6,916.36	32.11	108.11	88.69	2,605.20	-13,810.39	12,753.83	12,620.43	133.40	95.606	
8,000.00	6,950.47	7,043.69	6,916.85	33.15	108.13	88.70	2,605.20	-13,810.40	12,656.15	12,522.63	133.52	94.785	
8,100.00	6,950.25	7,044.18	6,917.34	34.23	108.14	88.71	2,605.20	-13,810.40	12,558.51	12,424.85	133.66	93.962	
8,200.00	6,950.03	7,044.67	6,917.83	35.35	108.15	88.72	2,605.20	-13,810.40	12,460.90	12,327.10	133.79	93.134	
8,300.00	6,949.80	7,045.16	6,918.32	36.51	108.17	88.73	2,605.20	-13,810.41	12,363.32	12,229.38	133.94	92.304	
8,400.00	6,949.58	7,045.65	6,918.81	37.70	108.18	88.74	2,605.20	-13,810.41	12,265.79	12,131.70	134.10	91.470	
8,500.00	6,949.35	7,046.14	6,919.30	38.92	108.20	88.75	2,605.20	-13,810.41	12,168.30	12,034.04	134.26	90.632	
8,600.00	6,949.13	7,046.63	6,919.79	40.17	108.21	88.76	2,605.20	-13,810.42	12,070.85	11,936.42	134.43	89.791	
8,700.00	6,948.90	7,047.12	6,920.28	41.44	108.22	88.77	2,605.20	-13,810.42	11,973.44	11,838.83	134.61	88.947	
8,800.00	6,948.68	7,047.62	6,920.78	42.73	108.24	88.78	2,605.19	-13,810.43	11,876.08	11,741.27	134.80	88.099	
8,900.00	6,948.45	7,048.11	6,921.27	44.04	108.25	88.79	2,605.19	-13,810.43	11,778.75	11,643.75	135.00	87.249	
9,000.00	6,948.23	7,048.61	6,921.77	45.38	108.27	88.80	2,605.19	-13,810.43	11,681.48	11,546.27	135.21	86.395	
9,100.00	6,948.00	7,049.10	6,922.26	46.72	108.28	88.81	2,605.19	-13,810.44	11,584.25	11,448.82	135.43	85.538	
9,200.00	6,947.78	7,049.60	6,922.76	48.09	108.29	88.82	2,605.19	-13,810.44	11,487.06	11,351.41	135.66	84.678	
9,300.00	6,947.55	7,050.10	6,923.25	49.47	108.31	88.83	2,605.19	-13,810.44	11,389.93	11,254.04	135.89	83.815	
9,400.00	6,947.33	7,050.59	6,923.75	50.86	108.32	88.84	2,605.19	-13,810.45	11,292.85	11,156.71	136.14	82.949	
9,500.00	6,947.10	7,051.09	6,924.25	52.26	108.34	88.85	2,605.19	-13,810.45	11,195.81	11,059.41	136.40	82.081	
9,600.00	6,946.88	7,051.59	6,924.75	53.68	108.35	88.86	2,605.19	-13,810.46	11,098.83	10,962.17	136.67	81.209	
9,700.00	6,946.66	7,052.09	6,925.25	55.10	108.37	88.87	2,605.19	-13,810.46	11,001.91	10,864.96	136.95	80.336	
9,800.00	6,946.43	7,052.59	6,925.75	56.54	108.38	88.88	2,605.19	-13,810.46	10,905.04	10,767.80	137.24	79.459	
9,900.00	6,946.21	7,053.09	6,926.25	57.98	108.40	88.89	2,605.19	-13,810.47	10,808.22	10,670.68	137.54	78.580	
10,000.00	6,945.98	7,053.59	6,926.75	59.43	108.41	88.91	2,605.19	-13,810.47	10,711.47	10,573.61	137.86	77.699	
10,100.00	6,945.76	7,054.09	6,927.25	60.89	108.42	88.92	2,605.19	-13,810.48	10,614.78	10,476.59	138.19	76.816	
10,200.00	6,945.53	7,054.60	6,927.75	62.36	108.44	88.93	2,605.19	-13,810.48	10,518.14	10,379.62	138.52	75.930	
10,300.00	6,945.31	7,055.10	6,928.26	63.83	108.45	88.94	2,605.19	-13,810.48	10,421.57	10,282.70	138.88	75.042	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.00	6,945.08	7,055.60	6,928.76	65.31	108.47	88.95	2,605.18	-13,810.49	10,325.07	10,185.83	139.24	74.153	
10,500.00	6,944.86	7,056.11	6,929.27	66.79	108.48	88.96	2,605.18	-13,810.49	10,228.63	10,089.01	139.62	73.262	
10,600.00	6,944.63	7,056.61	6,929.77	68.28	108.50	88.97	2,605.18	-13,810.49	10,132.26	9,992.26	140.01	72.369	
10,700.00	6,944.41	7,057.12	6,930.28	69.78	108.51	88.98	2,605.18	-13,810.50	10,035.97	9,895.55	140.41	71.475	
10,800.00	6,944.18	7,057.63	6,930.78	71.28	108.53	88.99	2,605.18	-13,810.50	9,939.74	9,798.91	140.83	70.579	
10,900.00	6,943.96	7,058.13	6,931.29	72.78	108.54	89.00	2,605.18	-13,810.51	9,843.59	9,702.33	141.26	69.682	
11,000.00	6,943.73	7,058.64	6,931.80	74.29	108.55	89.01	2,605.18	-13,810.51	9,747.52	9,605.81	141.71	68.785	
11,100.00	6,943.51	7,059.15	6,932.31	75.80	108.57	89.02	2,605.18	-13,810.51	9,651.53	9,509.36	142.17	67.886	
11,200.00	6,943.29	7,059.66	6,932.82	77.32	108.58	89.03	2,605.18	-13,810.52	9,555.62	9,412.97	142.65	66.986	
11,300.00	6,943.06	7,060.17	6,933.33	78.84	108.60	89.04	2,605.18	-13,810.52	9,459.80	9,316.65	143.14	66.086	
11,400.00	6,942.84	7,060.68	6,933.84	80.36	108.61	89.05	2,605.18	-13,810.53	9,364.06	9,220.41	143.65	65.185	
11,500.00	6,942.61	7,061.19	6,934.35	81.88	108.63	89.07	2,605.18	-13,810.53	9,268.41	9,124.24	144.18	64.284	
11,600.00	6,942.39	7,061.70	6,934.86	83.41	108.64	89.08	2,605.18	-13,810.53	9,172.86	9,028.14	144.72	63.383	
11,700.00	6,942.16	7,062.22	6,935.37	84.94	108.66	89.09	2,605.18	-13,810.54	9,077.40	8,932.12	145.28	62.482	
11,800.00	6,941.94	7,062.73	6,935.89	86.47	108.67	89.10	2,605.18	-13,810.54	8,982.04	8,836.18	145.86	61.581	
11,900.00	6,941.71	7,063.24	6,936.40	88.01	108.69	89.11	2,605.18	-13,810.55	8,886.78	8,740.33	146.45	60.680	
12,000.00	6,941.49	7,063.76	6,936.92	89.55	108.70	89.12	2,605.17	-13,810.55	8,791.63	8,644.56	147.07	59.780	
12,100.00	6,941.26	7,064.27	6,937.43	91.09	108.72	89.13	2,605.17	-13,810.55	8,696.59	8,548.89	147.70	58.881	
12,200.00	6,941.04	7,064.79	6,937.95	92.63	108.73	89.14	2,605.17	-13,810.56	8,601.66	8,453.30	148.35	57.982	
12,300.00	6,940.81	7,065.31	6,938.46	94.18	108.75	89.15	2,605.17	-13,810.56	8,506.84	8,357.82	149.02	57.084	
12,400.00	6,940.59	7,065.83	6,938.98	95.72	108.76	89.16	2,605.17	-13,810.57	8,412.15	8,262.43	149.71	56.188	
12,500.00	6,940.36	7,066.34	6,939.50	97.27	108.78	89.17	2,605.17	-13,810.57	8,317.57	8,167.15	150.43	55.293	
12,600.00	6,940.14	7,066.86	6,940.02	98.82	108.79	89.18	2,605.17	-13,810.57	8,223.13	8,071.97	151.16	54.399	
12,700.00	6,939.92	7,067.38	6,940.54	100.37	108.81	89.20	2,605.17	-13,810.58	8,128.82	7,976.90	151.92	53.507	
12,800.00	6,939.69	7,067.90	6,941.06	101.92	108.82	89.21	2,605.17	-13,810.58	8,034.65	7,881.95	152.70	52.618	
12,900.00	6,939.47	7,068.42	6,941.58	103.48	108.83	89.22	2,605.17	-13,810.59	7,940.62	7,787.12	153.50	51.730	
13,000.00	6,939.24	7,068.95	6,942.10	105.03	108.85	89.23	2,605.17	-13,810.59	7,846.74	7,692.41	154.33	50.844	
13,100.00	6,939.02	7,069.47	6,942.62	106.59	108.86	89.24	2,605.17	-13,810.59	7,753.01	7,597.83	155.18	49.961	
13,200.00	6,938.79	7,069.99	6,943.15	108.15	108.88	89.25	2,605.17	-13,810.60	7,659.44	7,503.38	156.06	49.081	
13,300.00	6,938.57	7,070.51	6,943.67	109.71	108.89	89.26	2,605.17	-13,810.60	7,566.03	7,409.07	156.96	48.204	
13,400.00	6,938.34	7,071.04	6,944.19	111.27	108.91	89.27	2,605.17	-13,810.61	7,472.80	7,314.91	157.89	47.329	
13,500.00	6,938.12	7,071.56	6,944.72	112.83	108.93	89.28	2,605.17	-13,810.61	7,379.74	7,220.89	158.85	46.458	
13,600.00	6,937.89	7,072.09	6,945.24	114.40	108.94	89.29	2,605.16	-13,810.61	7,286.86	7,127.03	159.83	45.591	
13,700.00	6,937.67	7,072.62	6,945.77	115.96	108.96	89.31	2,605.16	-13,810.62	7,194.18	7,033.33	160.85	44.727	
13,800.00	6,937.44	7,073.14	6,946.30	117.53	108.97	89.32	2,605.16	-13,810.62	7,101.69	6,939.80	161.89	43.866	
13,900.00	6,937.22	7,073.67	6,946.83	119.09	108.99	89.33	2,605.16	-13,810.63	7,009.41	6,846.44	162.97	43.010	
14,000.00	6,936.99	7,074.20	6,947.36	120.66	109.00	89.34	2,605.16	-13,810.63	6,917.35	6,753.27	164.08	42.159	
14,100.00	6,936.77	7,074.73	6,947.88	122.23	109.02	89.35	2,605.16	-13,810.63	6,825.51	6,660.29	165.22	41.311	
14,200.00	6,936.55	7,075.26	6,948.42	123.80	109.03	89.36	2,605.16	-13,810.64	6,733.90	6,567.50	166.40	40.469	
14,300.00	6,936.32	7,075.79	6,948.95	125.37	109.05	89.37	2,605.16	-13,810.64	6,642.53	6,474.93	167.61	39.631	
14,400.00	6,936.10	7,076.32	6,949.48	126.94	109.06	89.38	2,605.16	-13,810.65	6,551.42	6,382.56	168.86	38.798	
14,500.00	6,935.87	7,076.86	6,950.01	128.51	109.08	89.40	2,605.16	-13,810.65	6,460.57	6,290.42	170.14	37.971	
14,600.00	6,935.65	7,077.39	6,950.54	130.08	109.09	89.41	2,605.16	-13,810.65	6,369.99	6,198.52	171.47	37.150	
14,700.00	6,935.42	7,077.92	6,951.08	131.65	109.11	89.42	2,605.16	-13,810.66	6,279.70	6,106.87	172.83	36.334	
14,800.00	6,935.20	7,078.46	6,951.61	133.23	109.12	89.43	2,605.16	-13,810.66	6,189.71	6,015.47	174.24	35.524	
14,900.00	6,934.97	7,078.99	6,952.15	134.80	109.14	89.44	2,605.16	-13,810.67	6,100.02	5,924.33	175.69	34.720	
15,000.00	6,934.75	7,079.53	6,952.68	136.37	109.15	89.45	2,605.16	-13,810.67	6,010.67	5,833.48	177.18	33.923	
15,100.00	6,934.52	7,080.07	6,953.22	137.95	109.17	89.46	2,605.15	-13,810.68	5,921.65	5,742.93	178.72	33.133	
15,200.00	6,934.30	7,080.60	6,953.76	139.53	109.18	89.47	2,605.15	-13,810.68	5,832.99	5,652.68	180.31	32.350	
15,300.00	6,934.07	7,081.14	6,954.29	141.10	109.20	89.49	2,605.15	-13,810.68	5,744.71	5,562.76	181.95	31.573	
15,400.00	6,933.85	7,081.68	6,954.83	142.68	109.22	89.50	2,605.15	-13,810.69	5,656.81	5,473.17	183.64	30.805	
15,500.00	6,933.62	7,082.22	6,955.37	144.26	109.23	89.51	2,605.15	-13,810.69	5,569.32	5,383.94	185.37	30.044	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,600.00	6,933.40	7,082.76	6,955.91	145.84	109.25	89.52	2,605.15	-13,810.70	5,482.26	5,295.09	187.17	29.290	
15,700.00	6,933.18	7,083.30	6,956.45	147.42	109.26	89.53	2,605.15	-13,810.70	5,395.64	5,206.63	189.02	28.546	
15,800.00	6,932.95	7,083.84	6,957.00	148.99	109.28	89.54	2,605.15	-13,810.70	5,309.50	5,118.58	190.93	27.809	
15,900.00	6,932.73	7,084.39	6,957.54	150.57	109.29	89.55	2,605.15	-13,810.71	5,223.85	5,030.96	192.89	27.082	
16,000.00	6,932.50	7,084.93	6,958.08	152.15	109.31	89.57	2,605.15	-13,810.71	5,138.72	4,943.80	194.92	26.363	
16,100.00	6,932.28	7,085.47	6,958.63	153.74	109.32	89.58	2,605.15	-13,810.72	5,054.14	4,857.12	197.01	25.654	
16,200.00	6,932.05	7,086.02	6,959.17	155.32	109.34	89.59	2,605.15	-13,810.72	4,970.12	4,770.95	199.17	24.954	
16,300.00	6,931.83	7,086.56	6,959.72	156.90	109.36	89.60	2,605.15	-13,810.73	4,886.71	4,685.32	201.40	24.264	
16,400.00	6,931.60	7,087.11	6,960.26	158.48	109.37	89.61	2,605.15	-13,810.73	4,803.94	4,600.24	203.69	23.584	
16,500.00	6,931.38	7,087.66	6,960.81	160.06	109.39	89.62	2,605.15	-13,810.73	4,721.82	4,515.77	206.06	22.915	
16,600.00	6,931.15	7,088.21	6,961.36	161.65	109.40	89.63	2,605.14	-13,810.74	4,640.41	4,431.92	208.50	22.257	
16,700.00	6,930.93	7,088.75	6,961.91	163.23	109.42	89.65	2,605.14	-13,810.74	4,559.74	4,348.73	211.01	21.609	
16,800.00	6,930.70	7,089.30	6,962.45	164.81	109.43	89.66	2,605.14	-13,810.75	4,479.85	4,266.25	213.60	20.973	
16,900.00	6,930.48	7,089.85	6,963.00	166.40	109.45	89.67	2,605.14	-13,810.75	4,400.79	4,184.51	216.27	20.348	
17,000.00	6,930.25	7,090.40	6,963.56	167.98	109.47	89.68	2,605.14	-13,810.76	4,322.59	4,103.56	219.02	19.736	
17,100.00	6,930.03	7,090.96	6,964.11	169.56	109.48	89.69	2,605.14	-13,810.76	4,245.30	4,023.44	221.86	19.135	
17,200.00	6,929.81	7,091.51	6,964.66	171.15	109.50	89.70	2,605.14	-13,810.77	4,168.98	3,944.21	224.77	18.548	
17,300.00	6,929.58	7,092.06	6,965.21	172.73	109.51	89.72	2,605.14	-13,810.77	4,093.68	3,865.91	227.77	17.973	
17,400.00	6,929.36	7,092.62	6,965.77	174.32	109.53	89.73	2,605.14	-13,810.77	4,019.46	3,788.60	230.85	17.411	
17,500.00	6,929.13	7,093.17	6,966.32	175.91	109.54	89.74	2,605.14	-13,810.78	3,946.37	3,712.35	234.02	16.863	
17,600.00	6,928.91	7,093.73	6,966.88	177.49	109.56	89.75	2,605.14	-13,810.78	3,874.49	3,637.22	237.27	16.329	
17,700.00	6,928.68	7,094.28	6,967.43	179.08	109.58	89.76	2,605.14	-13,810.79	3,803.88	3,563.27	240.61	15.809	
17,800.00	6,928.46	7,094.84	6,967.99	180.66	109.59	89.77	2,605.14	-13,810.79	3,734.61	3,490.58	244.03	15.304	
17,900.00	6,928.23	7,095.40	6,968.55	182.25	109.61	89.79	2,605.14	-13,810.80	3,666.76	3,419.23	247.53	14.813	
18,000.00	6,928.01	7,095.96	6,969.11	183.84	109.62	89.80	2,605.13	-13,810.80	3,600.41	3,349.30	251.11	14.338	
18,100.00	6,927.78	7,096.51	6,969.66	185.43	109.64	89.81	2,605.13	-13,810.80	3,535.64	3,280.89	254.76	13.878	
18,200.00	6,927.56	7,097.07	6,970.22	187.01	109.66	89.82	2,605.13	-13,810.81	3,472.55	3,214.07	258.48	13.435	
18,300.00	6,927.33	7,097.64	6,970.79	188.60	109.67	89.83	2,605.13	-13,810.81	3,411.22	3,148.96	262.26	13.007	
18,400.00	6,927.11	7,098.20	6,971.35	190.19	109.69	89.84	2,605.13	-13,810.82	3,351.75	3,085.65	266.10	12.596	
18,500.00	6,926.88	7,098.76	6,971.91	191.78	109.71	89.86	2,605.13	-13,810.82	3,294.24	3,024.25	269.99	12.201	
18,600.00	6,926.66	7,099.32	6,972.47	193.37	109.72	89.87	2,605.13	-13,810.83	3,238.81	2,964.89	273.92	11.824	
18,700.00	6,926.44	7,099.89	6,973.04	194.96	109.74	89.88	2,605.13	-13,810.83	3,185.54	2,907.67	277.87	11.464	
18,800.00	6,926.21	7,100.45	6,973.60	196.54	109.75	89.89	2,605.13	-13,810.84	3,134.56	2,852.73	281.84	11.122	
18,900.00	6,925.99	7,101.02	6,974.17	198.13	109.77	89.90	2,605.13	-13,810.84	3,085.99	2,800.18	285.80	10.798	
19,000.00	6,925.76	7,101.58	6,974.73	199.72	109.79	89.92	2,605.13	-13,810.84	3,039.92	2,750.17	289.75	10.492	
19,100.00	6,925.54	7,102.15	6,975.30	201.31	109.80	89.93	2,605.13	-13,810.85	2,996.49	2,702.83	293.66	10.204	
19,200.00	6,925.31	7,102.72	6,975.87	202.90	109.82	89.94	2,605.13	-13,810.85	2,955.80	2,658.28	297.52	9.935	
19,300.00	6,925.09	7,103.29	6,976.44	204.49	109.84	89.95	2,605.13	-13,810.86	2,917.97	2,616.67	301.30	9.685	
19,400.00	6,924.86	7,103.86	6,977.01	206.08	109.85	89.96	2,605.12	-13,810.86	2,883.12	2,578.13	304.99	9.453	
19,500.00	6,924.64	7,104.43	6,977.58	207.67	109.87	89.98	2,605.12	-13,810.87	2,851.35	2,542.79	308.55	9.241	
19,600.00	6,924.41	7,105.00	6,978.15	209.26	109.88	89.99	2,605.12	-13,810.87	2,822.76	2,510.79	311.97	9.048	
19,700.00	6,924.19	7,105.57	6,978.72	210.85	109.90	90.00	2,605.12	-13,810.88	2,797.46	2,482.23	315.23	8.874	
19,800.00	6,923.96	7,106.14	6,979.29	212.44	109.92	90.01	2,605.12	-13,810.88	2,775.53	2,457.24	318.30	8.720	
19,900.00	6,923.74	7,106.72	6,979.86	214.04	109.93	90.02	2,605.12	-13,810.89	2,757.06	2,435.91	321.15	8.585	
20,000.00	6,923.51	7,107.29	6,980.44	215.63	109.95	90.04	2,605.12	-13,810.89	2,742.12	2,418.34	323.78	8.469	
20,100.00	6,923.29	7,107.87	6,981.01	217.22	109.97	90.05	2,605.12	-13,810.89	2,730.75	2,404.60	326.15	8.373	
20,200.00	6,923.07	7,108.44	6,981.59	218.81	109.98	90.06	2,605.12	-13,810.90	2,723.02	2,394.75	328.26	8.295	
20,300.00	6,922.84	7,109.02	6,982.17	220.40	110.00	90.07	2,605.12	-13,810.90	2,718.94	2,388.84	330.09	8.237	
20,360.98	6,922.70	7,109.37	6,982.52	221.37	110.01	90.08	2,605.12	-13,810.91	2,718.25	2,387.18	331.07	8.211	CC
20,400.00	6,922.62	7,109.60	6,982.74	221.99	110.02	90.09	2,605.12	-13,810.91	2,718.53	2,386.90	331.64	8.197	ES
20,500.00	6,922.39	7,110.18	6,983.32	223.59	110.03	90.10	2,605.12	-13,810.91	2,721.81	2,388.92	332.88	8.176	
20,600.00	6,922.17	7,110.75	6,983.90	225.18	110.05	90.11	2,605.12	-13,810.92	2,728.74	2,394.91	333.83	8.174	SF

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 009C - OH - OH-SVY+INC

Offset Site Error: 0.00 usft

Survey Program: 300-MWD OWSG Rev5, 8115-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,674.13	6,922.00	7,111.18	6,984.33	226.36	110.06	90.12	2,605.12	-13,810.92	2,736.23	2,401.88	334.35	8.184	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 360-B001Mb_MWD+HRGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-88.77	316.06	-14,738.29	14,741.72				
100.00	100.00	95.02	95.02	0.25	0.17	-88.77	315.91	-14,738.21	14,741.62	14,741.20	0.42	N/A	
200.00	200.00	232.73	232.73	0.61	0.42	-88.77	315.16	-14,737.81	14,741.32	14,740.29	1.03	N/A	
300.00	300.00	370.43	370.42	0.97	0.68	-88.78	313.76	-14,737.07	14,740.76	14,739.10	1.65	8,920.589	
400.00	400.00	478.00	477.92	1.33	1.08	-88.79	310.20	-14,736.34	14,740.01	14,737.61	2.40	6,142.871	
500.00	500.00	524.75	524.57	1.68	1.25	-88.81	307.17	-14,736.11	14,739.41	14,736.48	2.93	5,031.678	
606.93	606.91	568.00	567.69	2.05	1.41	48.70	303.80	-14,736.15	14,737.97	14,734.51	3.46	4,263.629	
700.00	699.91	595.65	595.23	2.37	1.51	48.70	301.36	-14,736.29	14,735.95	14,732.07	3.87	3,804.744	
800.00	799.84	626.00	625.43	2.71	1.62	48.69	298.35	-14,736.57	14,734.21	14,729.88	4.33	3,403.926	
900.00	899.77	670.06	669.20	3.06	1.79	48.67	293.33	-14,737.15	14,732.88	14,728.04	4.84	3,041.737	
1,000.00	999.70	711.94	710.66	3.41	1.96	48.66	287.51	-14,737.93	14,731.98	14,726.63	5.36	2,750.021	
1,100.00	1,099.63	751.00	749.21	3.76	2.11	48.64	281.25	-14,738.77	14,731.44	14,725.57	5.87	2,511.461	
1,175.49	1,175.07	783.00	780.64	4.03	2.25	48.62	275.32	-14,739.60	14,731.31	14,725.04	6.27	2,351.305	
1,200.00	1,199.56	792.00	789.46	4.11	2.28	48.61	273.55	-14,739.87	14,731.33	14,724.94	6.39	2,305.340	
1,300.00	1,299.49	861.29	857.12	4.47	2.58	48.56	258.78	-14,741.97	14,731.54	14,724.50	7.05	2,090.865	
1,400.00	1,399.42	960.48	953.39	4.83	3.04	48.48	235.08	-14,745.03	14,731.80	14,723.94	7.86	1,874.932	
1,500.00	1,499.35	1,139.17	1,126.44	5.19	3.89	48.33	190.88	-14,750.47	14,732.17	14,723.10	9.07	1,624.588	
1,535.78	1,535.11	1,151.61	1,138.49	5.31	3.96	48.31	187.82	-14,750.81	14,732.15	14,722.89	9.26	1,591.550	
1,600.00	1,599.28	1,162.00	1,148.56	5.54	4.01	48.31	185.25	-14,751.10	14,732.25	14,722.72	9.54	1,544.930	
1,700.00	1,699.21	1,224.00	1,208.63	5.90	4.31	48.25	170.06	-14,753.15	14,732.79	14,722.59	10.19	1,445.114	
1,800.00	1,799.14	1,235.83	1,220.10	6.26	4.37	48.24	167.20	-14,753.60	14,733.75	14,723.14	10.61	1,388.745	
1,900.00	1,899.07	1,371.49	1,352.09	6.62	5.01	48.14	136.31	-14,758.83	14,734.94	14,723.33	11.62	1,268.506	
2,000.00	1,999.00	1,476.00	1,454.00	6.98	5.51	48.06	113.45	-14,762.67	14,735.97	14,723.50	12.47	1,181.752	
2,100.00	2,098.94	1,545.68	1,521.83	7.34	5.85	48.00	97.71	-14,765.23	14,737.03	14,723.87	13.16	1,119.621	
2,200.00	2,198.87	1,791.00	1,760.45	7.70	7.04	47.81	41.36	-14,773.10	14,737.47	14,722.76	14.71	1,001.814	
2,300.00	2,298.80	1,854.00	1,821.59	8.06	7.35	47.76	26.26	-14,774.91	14,737.82	14,722.44	15.38	958.196	
2,400.00	2,398.73	1,870.16	1,837.24	8.42	7.43	47.75	22.29	-14,775.49	14,738.66	14,722.84	15.82	931.612	
2,500.00	2,498.66	1,921.73	1,887.12	8.79	7.69	47.70	9.31	-14,777.43	14,739.93	14,723.49	16.44	896.657	
2,600.00	2,598.59	2,298.28	2,252.85	9.15	9.55	47.39	-79.38	-14,788.92	14,740.71	14,722.05	18.65	790.287	
2,688.31	2,686.83	2,316.11	2,270.22	9.47	9.64	47.38	-83.40	-14,789.34	14,740.59	14,721.53	19.06	773.519	
2,700.00	2,698.52	2,319.04	2,273.08	9.51	9.65	47.38	-84.06	-14,789.42	14,740.60	14,721.49	19.11	771.244	
2,800.00	2,798.45	2,355.00	2,308.09	9.87	9.82	47.35	-92.20	-14,790.47	14,741.02	14,721.37	19.65	750.318	
2,900.00	2,898.38	2,414.71	2,366.22	10.23	10.11	47.30	-105.69	-14,792.42	14,741.84	14,721.54	20.30	726.374	
3,000.00	2,998.31	2,512.51	2,461.43	10.59	10.59	47.23	-127.85	-14,795.50	14,742.62	14,721.49	21.13	697.739	
3,100.00	3,098.24	2,657.51	2,602.68	10.96	11.29	47.12	-160.25	-14,800.15	14,743.54	14,721.35	22.19	664.437	
3,200.00	3,198.17	2,856.00	2,796.52	11.32	12.24	46.97	-202.69	-14,804.94	14,743.45	14,719.96	23.49	627.613	
3,300.00	3,298.10	3,206.28	3,141.82	11.68	13.75	46.79	-260.52	-14,809.32	14,741.77	14,716.41	25.36	581.370	
3,400.00	3,398.03	3,261.66	3,196.78	12.04	13.96	46.77	-267.29	-14,809.80	14,740.23	14,714.29	25.94	568.337	
3,500.00	3,497.96	3,325.02	3,259.76	12.40	14.20	46.75	-274.17	-14,810.52	14,738.95	14,712.41	26.54	555.383	
3,600.00	3,597.89	3,681.63	3,615.89	12.77	15.32	46.73	-287.01	-14,811.65	14,736.33	14,708.32	28.01	526.203	
3,700.00	3,697.82	3,785.91	3,720.17	13.13	15.63	46.74	-286.89	-14,811.29	14,733.42	14,704.74	28.69	513.607	
3,800.00	3,797.75	3,890.59	3,824.84	13.49	15.96	46.76	-286.76	-14,810.90	14,730.49	14,701.11	29.37	501.509	
3,900.00	3,897.68	3,995.26	3,929.51	13.85	16.28	46.77	-286.62	-14,810.47	14,727.52	14,697.46	30.06	489.963	
4,000.00	3,997.61	4,099.93	4,034.18	14.21	16.60	46.78	-286.46	-14,810.01	14,724.52	14,693.77	30.74	478.931	
4,100.00	4,097.54	4,204.60	4,138.85	14.58	16.93	46.79	-286.30	-14,809.52	14,721.49	14,690.06	31.43	468.379	
4,200.00	4,197.47	4,309.26	4,243.51	14.94	17.25	46.80	-286.12	-14,808.99	14,718.42	14,686.31	32.12	458.278	
4,300.00	4,297.40	4,413.92	4,348.17	15.30	17.57	46.81	-285.93	-14,808.42	14,715.33	14,682.53	32.80	448.598	
4,400.00	4,397.33	4,518.58	4,452.83	15.66	17.90	46.83	-285.73	-14,807.83	14,712.20	14,678.71	33.49	439.313	
4,500.00	4,497.26	4,623.24	4,557.48	16.03	18.22	46.84	-285.52	-14,807.20	14,709.05	14,674.87	34.18	430.401	
4,600.00	4,597.19	4,727.89	4,662.13	16.39	18.55	46.85	-285.30	-14,806.54	14,705.86	14,670.99	34.86	421.839	
4,700.00	4,697.12	4,832.54	4,766.78	16.75	18.87	46.86	-285.07	-14,805.84	14,702.63	14,667.09	35.55	413.606	
4,800.00	4,797.05	4,937.19	4,871.43	17.11	19.19	46.87	-284.82	-14,805.11	14,699.38	14,663.15	36.23	405.684	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 360-B001Mb_MWD+HRGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,896.99	5,041.83	4,976.07	17.47	19.52	46.89	-284.57	-14,804.34	14,696.10	14,659.18	36.92	398.056	
5,000.00	4,996.92	5,146.47	5,080.71	17.84	19.84	46.90	-284.30	-14,803.55	14,692.78	14,655.18	37.61	390.706	
5,100.00	5,096.85	5,251.11	5,185.34	18.20	20.17	46.91	-284.02	-14,802.71	14,689.43	14,651.14	38.29	383.618	
5,200.00	5,196.78	5,355.75	5,289.97	18.56	20.49	46.92	-283.73	-14,801.85	14,686.05	14,647.08	38.98	376.779	
5,300.00	5,296.71	5,460.38	5,394.60	18.92	20.82	46.94	-283.43	-14,800.95	14,682.64	14,642.98	39.66	370.176	
5,400.00	5,396.64	5,565.01	5,499.23	19.29	21.14	46.95	-283.12	-14,800.02	14,679.20	14,638.85	40.35	363.796	
5,500.00	5,496.57	5,669.64	5,603.85	19.65	21.46	46.96	-282.80	-14,799.05	14,675.73	14,634.69	41.04	357.630	
5,600.00	5,596.50	5,774.27	5,708.47	20.01	21.79	46.97	-282.46	-14,798.05	14,672.22	14,630.50	41.72	351.665	
5,700.00	5,696.43	5,878.89	5,813.09	20.37	22.11	46.99	-282.12	-14,797.02	14,668.68	14,626.27	42.41	345.893	
5,800.00	5,796.36	5,983.50	5,917.70	20.74	22.44	47.00	-281.76	-14,795.95	14,665.11	14,622.02	43.09	340.304	
5,900.00	5,896.29	6,088.12	6,022.31	21.10	22.76	47.01	-281.39	-14,794.85	14,661.51	14,617.73	43.78	334.890	
6,000.00	5,996.22	6,192.73	6,126.91	21.46	23.09	47.02	-281.01	-14,793.72	14,657.88	14,613.41	44.47	329.641	
6,100.00	6,096.15	6,297.34	6,231.51	21.82	23.41	47.04	-280.62	-14,792.55	14,654.22	14,609.07	45.15	324.552	
6,200.00	6,196.08	6,401.95	6,336.11	22.19	23.74	47.05	-280.22	-14,791.35	14,650.52	14,604.68	45.84	319.615	
6,300.00	6,296.01	6,506.55	6,440.71	22.55	24.06	47.06	-279.81	-14,790.12	14,646.80	14,600.27	46.52	314.822	
6,335.60	6,331.59	6,543.79	6,477.94	22.68	24.18	47.07	-279.66	-14,789.67	14,645.46	14,598.69	46.77	313.150	
6,350.00	6,345.97	6,558.84	6,492.99	22.73	24.22	29.39	-279.60	-14,789.49	14,644.76	14,597.89	46.87	312.475	
6,400.00	6,395.75	6,610.91	6,545.05	22.91	24.38	11.67	-279.38	-14,788.85	14,639.79	14,592.58	47.21	310.104	
6,450.00	6,445.03	6,662.40	6,596.54	23.10	24.54	7.03	-279.17	-14,788.22	14,630.93	14,583.38	47.55	307.701	
6,500.00	6,493.52	6,713.01	6,647.15	23.29	24.70	4.92	-278.96	-14,787.58	14,618.22	14,570.34	47.88	305.288	
6,550.00	6,540.91	6,762.41	6,696.55	23.48	24.85	3.73	-278.75	-14,786.96	14,601.76	14,553.55	48.21	302.882	
6,600.00	6,586.91	6,810.30	6,744.44	23.66	25.00	2.95	-278.54	-14,786.34	14,581.64	14,533.12	48.52	300.501	
6,650.00	6,631.24	6,856.39	6,790.52	23.85	25.15	2.40	-278.34	-14,785.74	14,557.98	14,509.16	48.83	298.159	
6,700.00	6,673.63	6,900.39	6,834.51	24.05	25.28	1.99	-278.15	-14,785.17	14,530.94	14,481.83	49.11	295.870	
6,750.00	6,713.80	6,942.03	6,876.15	24.24	25.41	1.66	-277.97	-14,784.62	14,500.68	14,451.30	49.38	293.647	
6,800.00	6,751.52	6,981.04	6,915.16	24.44	25.53	1.38	-277.79	-14,784.10	14,467.38	14,417.75	49.63	291.500	
6,850.00	6,786.56	7,017.20	6,951.31	24.65	25.65	1.14	-277.63	-14,783.61	14,431.26	14,381.40	49.86	289.439	
6,900.00	6,818.69	7,050.27	6,984.38	24.87	25.75	0.90	-277.48	-14,783.16	14,392.53	14,342.47	50.07	287.472	
6,950.00	6,847.72	7,080.05	7,014.16	25.10	25.84	0.67	-277.34	-14,782.75	14,351.45	14,301.20	50.25	285.606	
7,000.00	6,873.46	7,106.37	7,040.47	25.34	25.92	0.40	-277.22	-14,782.39	14,308.25	14,257.84	50.41	283.847	
7,050.00	6,895.77	7,129.05	7,063.15	25.60	25.99	0.09	-277.11	-14,782.08	14,263.21	14,212.67	50.54	282.199	
7,100.00	6,914.50	7,147.97	7,082.06	25.87	26.05	-0.34	-277.03	-14,781.81	14,216.61	14,165.96	50.65	280.664	
7,150.00	6,929.54	7,162.99	7,097.09	26.15	26.10	-0.99	-276.96	-14,781.60	14,168.73	14,118.00	50.74	279.244	
7,200.00	6,940.80	7,174.05	7,108.14	26.44	26.13	-2.19	-276.90	-14,781.45	14,119.88	14,069.08	50.80	277.939	
7,250.00	6,948.20	7,181.06	7,115.15	26.75	26.15	-5.32	-276.87	-14,781.35	14,070.34	14,019.50	50.84	276.746	
7,300.00	6,951.70	7,183.98	7,118.08	27.07	26.16	-33.49	-276.86	-14,781.31	14,020.44	13,969.58	50.86	275.661	
7,321.06	6,952.00	7,183.99	7,118.08	27.20	26.16	-143.65	-276.86	-14,781.31	13,999.38	13,948.51	50.86	275.235	
7,400.00	6,951.82	7,182.65	7,116.74	27.74	26.16	-143.49	-276.86	-14,781.33	13,920.46	13,869.59	50.86	273.677	
7,500.00	6,951.60	7,180.95	7,115.04	28.49	26.15	-143.28	-276.87	-14,781.35	13,820.48	13,769.61	50.87	271.699	
7,600.00	6,951.37	7,179.25	7,113.35	29.30	26.15	-143.07	-276.88	-14,781.37	13,720.50	13,669.63	50.87	269.716	
7,700.00	6,951.15	7,177.56	7,111.65	30.18	26.14	-142.86	-276.89	-14,781.40	13,620.52	13,569.64	50.87	267.727	
7,800.00	6,950.92	7,175.86	7,109.95	31.12	26.14	-142.65	-276.90	-14,781.42	13,520.54	13,469.66	50.88	265.735	
7,900.00	6,950.70	7,174.17	7,108.26	32.11	26.13	-142.43	-276.90	-14,781.45	13,420.56	13,369.68	50.89	263.737	
8,000.00	6,950.47	7,172.47	7,106.57	33.15	26.13	-142.22	-276.91	-14,781.47	13,320.58	13,269.69	50.89	261.736	
8,100.00	6,950.25	7,170.78	7,104.88	34.23	26.12	-142.00	-276.92	-14,781.49	13,220.60	13,169.70	50.90	259.730	
8,200.00	6,950.03	7,169.09	7,103.18	35.35	26.12	-141.78	-276.93	-14,781.52	13,120.63	13,069.71	50.91	257.720	
8,300.00	6,949.80	7,167.40	7,101.49	36.51	26.11	-141.55	-276.94	-14,781.54	13,020.65	12,969.73	50.92	255.705	
8,400.00	6,949.58	7,165.71	7,099.81	37.70	26.11	-141.33	-276.94	-14,781.56	12,920.67	12,869.74	50.93	253.687	
8,500.00	6,949.35	7,164.02	7,098.12	38.92	26.10	-141.10	-276.95	-14,781.59	12,820.69	12,769.75	50.94	251.665	
8,600.00	6,949.13	7,162.34	7,096.43	40.17	26.10	-140.87	-276.96	-14,781.61	12,720.71	12,669.76	50.96	249.639	
8,700.00	6,948.90	7,160.65	7,094.75	41.44	26.09	-140.64	-276.97	-14,781.64	12,620.73	12,569.76	50.97	247.610	
8,800.00	6,948.68	7,158.97	7,093.06	42.73	26.09	-140.41	-276.98	-14,781.66	12,520.76	12,469.77	50.99	245.577	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 360-B001Mb_MWD+HRGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.00	6,948.45	7,157.28	7,091.38	44.04	26.08	-140.18	-276.98	-14,781.68	12,420.78	12,369.78	51.00	243.541	
9,000.00	6,948.23	7,155.60	7,089.70	45.38	26.07	-139.94	-276.99	-14,781.71	12,320.80	12,269.78	51.02	241.502	
9,100.00	6,948.00	7,153.92	7,088.01	46.72	26.07	-139.70	-277.00	-14,781.73	12,220.82	12,169.79	51.04	239.459	
9,200.00	6,947.78	7,152.24	7,086.33	48.09	26.06	-139.46	-277.01	-14,781.75	12,120.85	12,069.79	51.05	237.414	
9,300.00	6,947.55	7,150.56	7,084.66	49.47	26.06	-139.21	-277.01	-14,781.78	12,020.87	11,969.80	51.07	235.366	
9,400.00	6,947.33	7,148.88	7,082.98	50.86	26.05	-138.97	-277.02	-14,781.80	11,920.89	11,869.80	51.09	233.315	
9,500.00	6,947.10	7,147.20	7,081.30	52.26	26.05	-138.72	-277.03	-14,781.82	11,820.92	11,769.80	51.11	231.262	
9,600.00	6,946.88	7,145.53	7,079.62	53.68	26.04	-138.47	-277.04	-14,781.85	11,720.94	11,669.80	51.14	229.206	
9,700.00	6,946.66	7,143.85	7,077.95	55.10	26.04	-138.21	-277.05	-14,781.87	11,620.96	11,569.80	51.16	227.147	
9,800.00	6,946.43	7,142.18	7,076.28	56.54	26.03	-137.96	-277.05	-14,781.89	11,520.99	11,469.80	51.18	225.087	
9,900.00	6,946.21	7,140.51	7,074.60	57.98	26.03	-137.70	-277.06	-14,781.92	11,421.01	11,369.80	51.21	223.025	
10,000.00	6,945.98	7,138.83	7,072.93	59.43	26.02	-137.44	-277.07	-14,781.94	11,321.03	11,269.80	51.24	220.960	
10,100.00	6,945.76	7,137.16	7,071.26	60.89	26.02	-137.18	-277.08	-14,781.96	11,221.06	11,169.80	51.26	218.894	
10,200.00	6,945.53	7,135.49	7,069.59	62.36	26.01	-136.91	-277.08	-14,781.99	11,121.08	11,069.79	51.29	216.826	
10,300.00	6,945.31	7,133.82	7,067.92	63.83	26.01	-136.64	-277.09	-14,782.01	11,021.11	10,969.79	51.32	214.756	
10,400.00	6,945.08	7,132.16	7,066.26	65.31	26.00	-136.37	-277.10	-14,782.03	10,921.13	10,869.78	51.35	212.685	
10,500.00	6,944.86	7,130.49	7,064.59	66.79	26.00	-136.10	-277.11	-14,782.06	10,821.16	10,769.78	51.38	210.613	
10,600.00	6,944.63	7,128.83	7,062.92	68.28	25.99	-135.83	-277.12	-14,782.08	10,721.18	10,669.77	51.41	208.539	
10,700.00	6,944.41	7,127.16	7,061.26	69.78	25.99	-135.55	-277.12	-14,782.10	10,621.21	10,569.77	51.44	206.465	
10,800.00	6,944.18	7,125.50	7,059.60	71.28	25.98	-135.27	-277.13	-14,782.12	10,521.23	10,469.76	51.48	204.389	
10,900.00	6,943.96	7,123.84	7,057.93	72.78	25.98	-134.99	-277.14	-14,782.15	10,421.26	10,369.75	51.51	202.312	
11,000.00	6,943.73	7,122.17	7,056.27	74.29	25.97	-134.70	-277.15	-14,782.17	10,321.29	10,269.74	51.55	200.235	
11,100.00	6,943.51	7,120.51	7,054.61	75.80	25.97	-134.41	-277.15	-14,782.19	10,221.31	10,169.73	51.58	198.157	
11,200.00	6,943.29	7,118.85	7,052.95	77.32	25.96	-134.12	-277.16	-14,782.22	10,121.34	10,069.72	51.62	196.079	
11,300.00	6,943.06	7,117.20	7,051.30	78.84	25.96	-133.83	-277.17	-14,782.24	10,021.37	9,969.71	51.66	194.000	
11,400.00	6,942.84	7,115.54	7,049.64	80.36	25.95	-133.53	-277.18	-14,782.26	9,921.39	9,869.70	51.70	191.921	
11,500.00	6,942.61	7,113.88	7,047.98	81.88	25.95	-133.23	-277.19	-14,782.29	9,821.42	9,769.69	51.73	189.842	
11,600.00	6,942.39	7,112.23	7,046.33	83.41	25.94	-132.93	-277.19	-14,782.31	9,721.45	9,669.67	51.78	187.763	
11,700.00	6,942.16	7,110.57	7,044.68	84.94	25.94	-132.63	-277.20	-14,782.33	9,621.48	9,569.66	51.82	185.684	
11,800.00	6,941.94	7,108.92	7,043.02	86.47	25.93	-132.32	-277.21	-14,782.35	9,521.51	9,469.65	51.86	183.605	
11,900.00	6,941.71	7,107.27	7,041.37	88.01	25.92	-132.01	-277.22	-14,782.38	9,421.53	9,369.63	51.90	181.526	
12,000.00	6,941.49	7,105.62	7,039.72	89.55	25.92	-131.70	-277.22	-14,782.40	9,321.56	9,269.62	51.95	179.448	
12,100.00	6,941.26	7,103.97	7,038.07	91.09	25.91	-131.38	-277.23	-14,782.42	9,221.59	9,169.60	51.99	177.370	
12,200.00	6,941.04	7,102.32	7,036.42	92.63	25.91	-131.07	-277.24	-14,782.45	9,121.62	9,069.59	52.04	175.293	
12,300.00	6,940.81	7,100.67	7,034.78	94.18	25.90	-130.75	-277.25	-14,782.47	9,021.65	8,969.57	52.08	173.216	
12,400.00	6,940.59	7,099.03	7,033.13	95.72	25.90	-130.42	-277.25	-14,782.49	8,921.68	8,869.55	52.13	171.141	
12,500.00	6,940.36	7,097.38	7,031.48	97.27	25.89	-130.09	-277.26	-14,782.51	8,821.72	8,769.54	52.18	169.066	
12,600.00	6,940.14	7,095.74	7,029.84	98.82	25.89	-129.76	-277.27	-14,782.54	8,721.75	8,669.52	52.23	166.993	
12,700.00	6,939.92	7,094.09	7,028.20	100.37	25.88	-129.43	-277.28	-14,782.56	8,621.78	8,569.50	52.28	164.920	
12,800.00	6,939.69	7,092.45	7,026.55	101.92	25.88	-129.10	-277.28	-14,782.58	8,521.81	8,469.48	52.33	162.849	
12,900.00	6,939.47	7,090.81	7,024.91	103.48	25.87	-128.76	-277.29	-14,782.60	8,421.84	8,369.46	52.38	160.779	
13,000.00	6,939.24	7,089.17	7,023.27	105.03	25.87	-128.41	-277.30	-14,782.63	8,321.88	8,269.44	52.43	158.710	
13,100.00	6,939.02	7,087.53	7,021.63	106.59	25.86	-128.07	-277.31	-14,782.65	8,221.91	8,169.42	52.49	156.643	
13,200.00	6,938.79	7,085.89	7,019.99	108.15	25.86	-127.72	-277.31	-14,782.67	8,121.94	8,069.40	52.54	154.578	
13,300.00	6,938.57	7,084.25	7,018.36	109.71	25.85	-127.37	-277.32	-14,782.69	8,021.98	7,969.38	52.60	152.514	
13,400.00	6,938.34	7,082.62	7,016.72	111.27	25.85	-127.02	-277.33	-14,782.72	7,922.01	7,869.36	52.65	150.452	
13,500.00	6,938.12	7,080.98	7,015.09	112.83	25.84	-126.66	-277.34	-14,782.74	7,822.05	7,769.34	52.71	148.392	
13,600.00	6,937.89	7,079.35	7,013.45	114.40	25.84	-126.30	-277.34	-14,782.76	7,722.09	7,669.32	52.77	146.333	
13,700.00	6,937.67	7,077.72	7,011.82	115.96	25.83	-125.94	-277.35	-14,782.78	7,622.12	7,569.29	52.83	144.277	
13,800.00	6,937.44	7,076.08	7,010.19	117.53	25.83	-125.57	-277.36	-14,782.81	7,522.16	7,469.27	52.89	142.223	
13,900.00	6,937.22	7,074.45	7,008.56	119.09	25.82	-125.20	-277.37	-14,782.83	7,422.20	7,369.25	52.95	140.171	
14,000.00	6,936.99	7,072.82	7,006.93	120.66	25.82	-124.83	-277.37	-14,782.85	7,322.24	7,269.23	53.01	138.122	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 360-B001Mb_MWD+HRGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Rule Assigned: Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.00	6,936.77	7,071.19	7,005.30	122.23	25.81	-124.45	-277.38	-14,782.87	7,222.28	7,169.20	53.08	136.075	
14,200.00	6,936.55	7,069.56	7,003.67	123.80	25.81	-124.07	-277.39	-14,782.90	7,122.32	7,069.18	53.14	134.030	
14,300.00	6,936.32	7,067.94	7,002.04	125.37	25.80	-123.69	-277.40	-14,782.92	7,022.36	6,969.16	53.20	131.987	
14,400.00	6,936.10	7,066.31	7,000.42	126.94	25.80	-123.31	-277.40	-14,782.94	6,922.40	6,869.13	53.27	129.948	
14,500.00	6,935.87	7,064.69	6,998.79	128.51	25.79	-122.92	-277.41	-14,782.96	6,822.45	6,769.11	53.34	127.910	
14,600.00	6,935.65	7,063.06	6,997.17	130.08	25.79	-122.53	-277.42	-14,782.98	6,722.49	6,669.08	53.41	125.876	
14,700.00	6,935.42	7,061.44	6,995.55	131.65	25.78	-122.13	-277.43	-14,783.01	6,622.53	6,569.06	53.47	123.844	
14,800.00	6,935.20	7,059.82	6,993.92	133.23	25.78	-121.74	-277.43	-14,783.03	6,522.58	6,469.04	53.54	121.815	
14,900.00	6,934.97	7,058.20	6,992.30	134.80	25.77	-121.33	-277.44	-14,783.05	6,422.63	6,369.01	53.62	119.789	
15,000.00	6,934.75	7,056.58	6,990.68	136.37	25.77	-120.93	-277.45	-14,783.07	6,322.67	6,268.99	53.69	117.766	
15,100.00	6,934.52	7,054.96	6,989.06	137.95	25.76	-120.52	-277.46	-14,783.09	6,222.72	6,168.96	53.76	115.746	
15,200.00	6,934.30	7,053.34	6,987.45	139.53	25.76	-120.11	-277.46	-14,783.12	6,122.77	6,068.94	53.84	113.729	
15,300.00	6,934.07	7,051.72	6,985.83	141.10	25.75	-119.70	-277.47	-14,783.14	6,022.83	5,968.91	53.91	111.715	
15,400.00	6,933.85	7,050.11	6,984.21	142.68	25.75	-119.28	-277.48	-14,783.16	5,922.88	5,868.89	53.99	109.704	
15,500.00	6,933.62	7,048.49	6,982.60	144.26	25.74	-118.86	-277.49	-14,783.18	5,822.93	5,768.86	54.07	107.696	
15,600.00	6,933.40	7,046.88	6,980.99	145.84	25.74	-118.44	-277.49	-14,783.21	5,722.99	5,668.84	54.15	105.691	
15,700.00	6,933.18	7,045.27	6,979.37	147.42	25.73	-118.02	-277.50	-14,783.23	5,623.04	5,568.82	54.23	103.690	
15,800.00	6,932.95	7,043.65	6,977.76	148.99	25.73	-117.59	-277.51	-14,783.25	5,523.10	5,468.79	54.31	101.691	
15,900.00	6,932.73	7,042.04	6,976.15	150.57	25.72	-117.15	-277.51	-14,783.27	5,423.16	5,368.77	54.40	99.696	
16,000.00	6,932.50	7,040.43	6,974.54	152.15	25.72	-116.72	-277.52	-14,783.29	5,323.23	5,268.74	54.48	97.705	
16,100.00	6,932.28	7,038.82	6,972.93	153.74	25.71	-116.28	-277.53	-14,783.31	5,223.29	5,168.72	54.57	95.716	
16,200.00	6,932.05	7,037.22	6,971.33	155.32	25.71	-115.84	-277.54	-14,783.34	5,123.36	5,068.70	54.66	93.731	
16,300.00	6,931.83	7,035.61	6,969.72	156.90	25.70	-115.40	-277.54	-14,783.36	5,023.42	4,968.67	54.75	91.750	
16,400.00	6,931.60	7,034.00	6,968.11	158.48	25.70	-114.95	-277.55	-14,783.38	4,923.49	4,868.65	54.84	89.771	
16,500.00	6,931.38	7,032.40	6,966.51	160.06	25.69	-114.50	-277.56	-14,783.40	4,823.57	4,768.63	54.94	87.796	
16,600.00	6,931.15	7,030.80	6,964.90	161.65	25.69	-114.05	-277.57	-14,783.42	4,723.64	4,668.60	55.04	85.825	
16,700.00	6,930.93	7,029.19	6,963.30	163.23	25.68	-113.59	-277.57	-14,783.45	4,623.72	4,568.58	55.14	83.856	
16,800.00	6,930.70	7,027.59	6,961.70	164.81	25.68	-113.13	-277.58	-14,783.47	4,523.80	4,468.56	55.24	81.891	
16,900.00	6,930.48	7,025.99	6,960.10	166.40	25.67	-112.67	-277.59	-14,783.49	4,423.89	4,368.54	55.35	79.929	
17,000.00	6,930.25	7,024.39	6,958.50	167.98	25.67	-112.20	-277.60	-14,783.51	4,323.97	4,268.52	55.46	77.971	
17,100.00	6,930.03	7,022.79	6,956.90	169.56	25.66	-111.74	-277.60	-14,783.53	4,224.06	4,168.50	55.57	76.016	
17,200.00	6,929.81	7,021.19	6,955.30	171.15	25.66	-111.27	-277.61	-14,783.55	4,124.16	4,068.47	55.68	74.063	
17,300.00	6,929.58	7,019.60	6,953.71	172.73	25.65	-110.79	-277.62	-14,783.58	4,024.26	3,968.45	55.80	72.114	
17,400.00	6,929.36	7,018.00	6,952.11	174.32	25.65	-110.32	-277.62	-14,783.60	3,924.36	3,868.43	55.93	70.168	
17,500.00	6,929.13	7,016.41	6,950.52	175.91	25.64	-109.84	-277.63	-14,783.62	3,824.47	3,768.41	56.06	68.225	
17,600.00	6,928.91	7,014.81	6,948.92	177.49	25.64	-109.36	-277.64	-14,783.64	3,724.58	3,668.39	56.19	66.285	
17,700.00	6,928.68	7,013.22	6,947.33	179.08	25.63	-108.88	-277.65	-14,783.66	3,624.70	3,568.37	56.33	64.347	
17,800.00	6,928.46	7,011.63	6,945.74	180.66	25.63	-108.39	-277.65	-14,783.68	3,524.82	3,468.35	56.48	62.412	
17,900.00	6,928.23	7,010.04	6,944.15	182.25	25.62	-107.91	-277.66	-14,783.70	3,424.96	3,368.33	56.63	60.480	
18,000.00	6,928.01	7,008.45	6,942.56	183.84	25.62	-107.42	-277.67	-14,783.73	3,325.09	3,268.30	56.79	58.550	
18,100.00	6,927.78	7,006.86	6,940.97	185.43	25.61	-106.92	-277.67	-14,783.75	3,225.24	3,168.28	56.96	56.622	
18,200.00	6,927.56	7,005.27	6,939.38	187.01	25.61	-106.43	-277.68	-14,783.77	3,125.39	3,068.25	57.14	54.696	
18,300.00	6,927.33	7,003.68	6,937.79	188.60	25.60	-105.93	-277.69	-14,783.79	3,025.56	2,968.23	57.33	52.772	
18,400.00	6,927.11	7,002.10	6,936.21	190.19	25.60	-105.43	-277.70	-14,783.81	2,925.73	2,868.19	57.54	50.849	
18,500.00	6,926.88	7,000.51	6,934.62	191.78	25.59	-104.93	-277.70	-14,783.83	2,825.92	2,768.16	57.76	48.928	
18,600.00	6,926.66	6,998.93	6,933.04	193.37	25.59	-104.43	-277.71	-14,783.85	2,726.12	2,668.12	57.99	47.008	
18,700.00	6,926.44	6,997.34	6,931.46	194.96	25.58	-103.92	-277.72	-14,783.88	2,626.33	2,568.08	58.25	45.089	
18,800.00	6,926.21	6,995.76	6,929.88	196.54	25.58	-103.42	-277.72	-14,783.90	2,526.56	2,468.03	58.53	43.170	
18,900.00	6,925.99	6,994.18	6,928.29	198.13	25.57	-102.91	-277.73	-14,783.92	2,426.80	2,367.97	58.83	41.252	
19,000.00	6,925.76	6,992.60	6,926.71	199.72	25.57	-102.40	-277.74	-14,783.94	2,327.07	2,267.91	59.16	39.333	
19,100.00	6,925.54	6,991.02	6,925.14	201.31	25.56	-101.89	-277.75	-14,783.96	2,227.36	2,167.82	59.53	37.413	
19,200.00	6,925.31	6,989.44	6,923.56	202.90	25.56	-101.37	-277.75	-14,783.98	2,127.67	2,067.73	59.95	35.493	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 012D - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 360-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,300.00	6,925.09	6,987.87	6,921.98	204.49	25.55	-100.86	-277.76	-14,784.00	2,028.02	1,967.61	60.41	33.571	
19,400.00	6,924.86	6,986.29	6,920.40	206.08	25.55	-100.34	-277.77	-14,784.02	1,928.40	1,867.46	60.93	31.648	
19,500.00	6,924.64	6,984.72	6,918.83	207.67	25.54	-99.82	-277.77	-14,784.05	1,828.82	1,767.29	61.53	29.723	
19,600.00	6,924.41	6,983.14	6,917.25	209.26	25.54	-99.30	-277.78	-14,784.07	1,729.28	1,667.07	62.21	27.796	
19,700.00	6,924.19	6,981.57	6,915.68	210.85	25.53	-98.78	-277.79	-14,784.09	1,629.80	1,566.80	63.01	25.867	
19,800.00	6,923.96	6,980.00	6,914.11	212.44	25.53	-98.26	-277.80	-14,784.11	1,530.39	1,466.46	63.93	23.937	
19,900.00	6,923.74	6,978.42	6,912.54	214.04	25.52	-97.74	-277.80	-14,784.13	1,431.06	1,366.03	65.03	22.006	
20,000.00	6,923.51	6,976.85	6,910.97	215.63	25.52	-97.22	-277.81	-14,784.15	1,331.83	1,265.49	66.34	20.076	
20,100.00	6,923.29	6,975.28	6,909.40	217.22	25.52	-96.69	-277.82	-14,784.17	1,232.71	1,164.79	67.92	18.149	
20,200.00	6,923.07	6,973.72	6,907.83	218.81	25.51	-96.17	-277.82	-14,784.19	1,133.76	1,063.90	69.86	16.229	
20,300.00	6,922.84	6,972.15	6,906.26	220.40	25.51	-95.64	-277.83	-14,784.21	1,035.00	962.73	72.27	14.322	
20,400.00	6,922.62	6,970.58	6,904.70	221.99	25.50	-95.12	-277.84	-14,784.24	936.50	861.19	75.31	12.436	
20,500.00	6,922.39	6,969.02	6,903.13	223.59	25.50	-94.59	-277.84	-14,784.26	838.35	759.14	79.21	10.584	
20,600.00	6,922.17	6,967.45	6,901.57	225.18	25.49	-94.06	-277.85	-14,784.28	740.70	656.36	84.33	8.783	
20,674.13	6,922.00	6,966.29	6,900.41	226.36	25.49	-93.67	-277.86	-14,784.29	668.75	579.51	89.24	7.494	CC, ES, SF

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 380-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	2,830.00	2,604.62	0.00	17.62	-95.74	-1,234.72	-12,276.49	12,605.21				
100.00	100.00	3,021.00	2,785.43	0.25	18.62	-95.52	-1,183.36	-12,243.20	12,584.68	12,566.36	18.32	686.887	
200.00	200.00	3,052.00	2,814.99	0.61	18.78	-95.49	-1,175.90	-12,237.62	12,563.85	12,545.15	18.69	672.105	
300.00	300.00	3,052.00	2,814.99	0.97	18.78	-95.49	-1,175.90	-12,237.62	12,543.61	12,524.63	18.98	660.766	
400.00	400.00	3,083.00	2,844.59	1.33	18.93	-95.46	-1,168.34	-12,232.35	12,523.97	12,504.51	19.46	643.644	
500.00	500.00	3,115.00	2,875.23	1.68	19.07	-95.42	-1,160.70	-12,227.17	12,504.98	12,485.04	19.95	626.935	
606.93	606.91	3,138.67	2,897.98	2.05	19.18	42.39	-1,155.34	-12,223.44	12,483.83	12,463.42	20.41	611.612	
700.00	699.91	3,179.00	2,936.92	2.37	19.35	42.43	-1,147.00	-12,217.09	12,464.60	12,443.70	20.90	596.398	
800.00	799.84	3,179.00	2,936.92	2.71	19.35	42.43	-1,147.00	-12,217.09	12,444.53	12,423.31	21.22	586.318	
900.00	899.77	3,211.00	2,967.96	3.06	19.48	42.46	-1,140.76	-12,212.40	12,425.12	12,403.42	21.70	572.639	
1,000.00	999.70	3,211.00	2,967.96	3.41	19.48	42.46	-1,140.76	-12,212.40	12,406.35	12,384.32	22.03	563.065	
1,100.00	1,099.63	3,211.00	2,967.96	3.76	19.48	42.46	-1,140.76	-12,212.40	12,388.36	12,365.99	22.37	553.738	
1,200.00	1,199.56	3,241.00	2,997.14	4.11	19.59	42.49	-1,134.90	-12,208.64	12,371.06	12,348.22	22.84	541.605	
1,300.00	1,299.49	3,241.00	2,997.14	4.47	19.59	42.49	-1,134.90	-12,208.64	12,354.40	12,331.22	23.18	532.888	
1,400.00	1,399.42	3,241.00	2,997.14	4.83	19.59	42.49	-1,134.90	-12,208.64	12,338.53	12,315.01	23.53	524.435	
1,500.00	1,499.35	3,272.00	3,027.37	5.19	19.71	42.52	-1,128.89	-12,205.30	12,323.26	12,299.26	24.00	513.497	
1,600.00	1,599.28	3,303.00	3,057.71	5.54	19.81	42.55	-1,123.35	-12,202.17	12,308.63	12,284.17	24.46	503.121	
1,700.00	1,699.21	3,386.34	3,139.90	5.90	20.04	42.61	-1,112.87	-12,193.40	12,294.24	12,269.13	25.11	489.633	
1,800.00	1,799.14	3,429.00	3,182.12	6.26	20.14	42.63	-1,108.68	-12,188.98	12,280.25	12,254.65	25.59	479.803	
1,900.00	1,899.07	3,461.00	3,213.81	6.62	20.22	42.65	-1,105.55	-12,185.83	12,266.76	12,240.72	26.04	471.024	
2,000.00	1,999.00	3,493.00	3,245.52	6.98	20.29	42.66	-1,102.38	-12,182.86	12,253.81	12,227.32	26.49	462.583	
2,100.00	2,098.94	3,493.00	3,245.52	7.34	20.29	42.66	-1,102.38	-12,182.86	12,241.51	12,214.68	26.84	456.175	
2,200.00	2,198.87	3,524.00	3,276.27	7.70	20.35	42.68	-1,099.44	-12,180.29	12,229.83	12,202.56	27.27	448.392	
2,300.00	2,298.80	3,524.00	3,276.27	8.06	20.35	42.68	-1,099.44	-12,180.29	12,218.90	12,191.28	27.62	442.408	
2,400.00	2,398.73	3,556.00	3,308.08	8.42	20.41	42.70	-1,096.75	-12,178.11	12,208.63	12,180.57	28.05	435.172	
2,500.00	2,498.66	3,556.00	3,308.08	8.79	20.41	42.70	-1,096.75	-12,178.11	12,199.06	12,170.66	28.40	429.582	
2,600.00	2,598.59	3,587.00	3,338.95	9.15	20.46	42.71	-1,094.45	-12,176.37	12,190.15	12,161.32	28.82	422.953	
2,700.00	2,698.52	3,587.00	3,338.95	9.51	20.46	42.71	-1,094.45	-12,176.37	12,181.95	12,152.78	29.16	417.725	
2,800.00	2,798.45	3,619.00	3,370.85	9.87	20.50	42.72	-1,092.38	-12,174.97	12,174.39	12,144.81	29.58	411.577	
2,900.00	2,898.38	3,633.21	3,385.03	10.23	20.52	42.73	-1,091.59	-12,174.46	12,167.52	12,137.57	29.95	406.265	
3,000.00	2,998.31	3,651.00	3,402.79	10.59	20.54	42.73	-1,090.74	-12,173.91	12,161.31	12,130.99	30.33	401.015	
3,100.00	3,098.24	3,746.00	3,497.69	10.96	20.62	42.76	-1,087.55	-12,171.13	12,155.38	12,124.52	30.86	393.911	
3,200.00	3,198.17	3,778.00	3,529.67	11.32	20.65	42.77	-1,086.84	-12,170.29	12,149.83	12,118.57	31.26	388.681	
3,300.00	3,298.10	3,792.22	3,543.89	11.68	20.65	42.77	-1,086.59	-12,170.01	12,144.93	12,113.31	31.62	384.103	
3,400.00	3,398.03	3,810.00	3,561.67	12.04	20.66	42.77	-1,086.30	-12,169.77	12,140.71	12,108.73	31.98	379.590	
3,500.00	3,497.96	3,841.00	3,592.66	12.40	20.68	42.78	-1,085.83	-12,169.54	12,137.11	12,104.76	32.36	375.102	
3,600.00	3,597.89	3,909.66	3,661.31	12.77	20.69	42.79	-1,084.73	-12,169.36	12,133.96	12,101.20	32.76	370.433	
3,700.00	3,697.82	4,009.58	3,761.22	13.13	30.58	42.81	-1,083.12	-12,169.17	12,130.90	12,087.56	43.35	279.841	
3,800.00	3,797.75	4,109.51	3,861.14	13.49	43.22	42.83	-1,081.51	-12,168.99	12,127.85	12,071.35	56.50	214.641	
3,900.00	3,897.68	4,209.45	3,961.06	13.85	55.93	42.85	-1,079.89	-12,168.80	12,124.80	12,055.16	69.64	174.106	
4,000.00	3,997.61	4,309.38	4,060.98	14.21	68.66	42.87	-1,078.27	-12,168.62	12,121.74	12,038.97	82.77	146.450	
4,100.00	4,097.54	4,409.32	4,160.90	14.58	81.41	42.89	-1,076.64	-12,168.43	12,118.69	12,022.79	95.90	126.372	
4,200.00	4,197.47	4,509.25	4,260.82	14.94	94.16	42.91	-1,075.02	-12,168.25	12,115.64	12,006.62	109.02	111.131	
4,300.00	4,297.40	4,609.18	4,360.74	15.30	106.92	42.93	-1,073.39	-12,168.06	12,112.59	11,990.45	122.14	99.166	
4,400.00	4,397.33	4,709.12	4,460.66	15.66	119.67	42.95	-1,071.76	-12,167.87	12,109.54	11,974.27	135.27	89.524	
4,500.00	4,497.26	4,809.05	4,560.58	16.03	132.43	42.97	-1,070.12	-12,167.69	12,106.49	11,958.10	148.39	81.587	
4,600.00	4,597.19	4,908.98	4,660.50	16.39	145.19	42.99	-1,068.49	-12,167.50	12,103.44	11,941.94	161.51	74.940	
4,700.00	4,697.12	5,008.91	4,760.42	16.75	157.95	43.01	-1,066.85	-12,167.31	12,100.40	11,925.77	174.63	69.292	
4,800.00	4,797.05	5,108.84	4,860.34	17.11	170.70	43.03	-1,065.20	-12,167.12	12,097.35	11,909.60	187.75	64.434	
4,900.00	4,896.99	5,208.78	4,960.25	17.47	183.46	43.05	-1,063.56	-12,166.94	12,094.31	11,893.44	200.87	60.210	
5,000.00	4,996.92	5,308.71	5,060.17	17.84	196.22	43.07	-1,061.91	-12,166.75	12,091.26	11,877.28	213.99	56.504	
5,100.00	5,096.85	5,408.64	5,160.09	18.20	208.98	43.09	-1,060.26	-12,166.56	12,088.22	11,861.11	227.11	53.227	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 380-MWD OWSG Rev5 — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,508.57	5,260.01	18.56	221.74	43.11	-1,058.60	-12,166.37	12,085.18	11,844.95	240.23	50.307	
5,300.00	5,296.71	5,608.50	5,359.92	18.92	234.49	43.13	-1,056.94	-12,166.18	12,082.14	11,828.79	253.35	47.690	
5,400.00	5,396.64	5,708.43	5,459.84	19.29	247.25	43.15	-1,055.28	-12,165.99	12,079.10	11,812.63	266.46	45.331	
5,500.00	5,496.57	5,808.36	5,559.75	19.65	260.01	43.17	-1,053.62	-12,165.80	12,076.06	11,796.47	279.58	43.193	
5,600.00	5,596.50	5,908.29	5,659.67	20.01	272.77	43.19	-1,051.96	-12,165.61	12,073.02	11,780.32	292.70	41.247	
5,700.00	5,696.43	6,008.22	5,759.59	20.37	285.52	43.21	-1,050.29	-12,165.42	12,069.98	11,764.16	305.82	39.467	
5,800.00	5,796.36	6,108.15	5,859.50	20.74	298.28	43.23	-1,048.62	-12,165.23	12,066.94	11,748.00	318.94	37.835	
5,900.00	5,896.29	6,208.08	5,959.41	21.10	311.04	43.25	-1,046.94	-12,165.04	12,063.91	11,731.85	332.06	36.331	
6,000.00	5,996.22	6,308.01	6,059.33	21.46	323.80	43.27	-1,045.27	-12,164.85	12,060.87	11,715.70	345.18	34.941	
6,100.00	6,096.15	6,407.93	6,159.24	21.82	336.55	43.29	-1,043.59	-12,164.66	12,057.84	11,699.54	358.30	33.653	
6,200.00	6,196.08	6,507.86	6,259.16	22.19	349.31	43.31	-1,041.91	-12,164.46	12,054.81	11,683.39	371.42	32.456	
6,300.00	6,296.01	6,607.79	6,359.07	22.55	362.07	43.33	-1,040.22	-12,164.27	12,051.78	11,667.24	384.54	31.341	
6,335.60	6,331.59	6,643.37	6,394.64	22.68	366.61	43.33	-1,039.62	-12,164.20	12,050.70	11,661.49	389.21	30.962	
6,350.00	6,345.97	6,657.75	6,409.02	22.73	368.45	25.66	-1,039.38	-12,164.17	12,050.10	11,659.00	391.09	30.811	
6,400.00	6,395.75	6,707.52	6,458.79	22.91	374.80	7.91	-1,038.54	-12,164.08	12,045.51	11,647.88	397.63	30.293	
6,450.00	6,445.03	6,756.79	6,508.05	23.10	381.09	3.22	-1,037.70	-12,163.98	12,037.03	11,632.93	404.10	29.787	
6,500.00	6,493.52	6,805.26	6,556.51	23.29	387.28	1.04	-1,036.88	-12,163.89	12,024.73	11,614.27	410.46	29.296	
6,550.00	6,540.91	6,852.62	6,603.86	23.48	393.33	-0.26	-1,036.08	-12,163.80	12,008.68	11,592.00	416.68	28.820	
6,600.00	6,586.91	6,898.59	6,649.82	23.66	399.19	-1.18	-1,035.30	-12,163.71	11,988.98	11,566.26	422.72	28.362	
6,650.00	6,631.24	6,942.87	6,694.10	23.85	404.85	-1.90	-1,034.55	-12,163.62	11,965.75	11,537.22	428.53	27.923	
6,700.00	6,673.63	6,985.21	6,736.43	24.05	410.25	-2.54	-1,033.83	-12,163.54	11,939.12	11,505.04	434.08	27.504	
6,750.00	6,713.80	7,025.33	6,776.55	24.24	415.37	-3.15	-1,033.15	-12,163.46	11,909.28	11,469.94	439.34	27.107	
6,800.00	6,751.52	7,062.99	6,814.20	24.44	420.18	-3.77	-1,032.51	-12,163.39	11,876.39	11,432.12	444.28	26.732	
6,850.00	6,786.56	7,097.95	6,849.16	24.65	424.65	-4.46	-1,031.92	-12,163.32	11,840.67	11,391.81	448.86	26.380	
6,900.00	6,818.69	7,130.01	6,881.22	24.87	428.74	-5.26	-1,031.37	-12,163.26	11,802.33	11,349.28	453.05	26.051	
6,950.00	6,847.72	7,158.97	6,910.16	25.10	432.44	-6.23	-1,030.88	-12,163.20	11,761.61	11,304.78	456.84	25.746	
7,000.00	6,873.46	7,184.63	6,935.83	25.34	435.71	-7.47	-1,030.44	-12,163.15	11,718.76	11,258.57	460.19	25.465	
7,050.00	6,895.77	7,206.86	6,958.05	25.60	438.55	-9.15	-1,030.06	-12,163.11	11,674.05	11,210.96	463.09	25.209	
7,100.00	6,914.50	7,225.50	6,976.69	25.87	440.93	-11.55	-1,029.74	-12,163.07	11,627.75	11,162.23	465.52	24.978	
7,150.00	6,929.54	7,240.45	6,991.64	26.15	442.84	-15.29	-1,029.49	-12,163.04	11,580.15	11,112.68	467.47	24.772	
7,200.00	6,940.80	7,251.62	7,002.80	26.44	444.27	-21.88	-1,029.30	-12,163.02	11,531.54	11,062.62	468.92	24.592	
7,250.00	6,948.20	7,258.92	7,010.11	26.75	445.20	-35.75	-1,029.17	-12,163.01	11,482.22	11,012.35	469.87	24.437	
7,300.00	6,951.70	7,262.33	7,013.52	27.07	445.64	-70.70	-1,029.11	-12,163.00	11,432.49	10,962.18	470.31	24.308	
7,321.06	6,952.00	7,262.59	7,013.78	27.20	445.67	-93.93	-1,029.11	-12,163.00	11,411.49	10,941.15	470.35	24.262	
7,400.00	6,951.82	7,262.27	7,013.45	27.74	445.63	-93.91	-1,029.12	-12,163.00	11,332.81	10,862.50	470.31	24.097	
7,500.00	6,951.60	7,261.86	7,013.04	28.49	445.57	-93.88	-1,029.12	-12,163.00	11,233.14	10,762.88	470.26	23.887	
7,600.00	6,951.37	7,261.44	7,012.63	29.30	445.52	-93.85	-1,029.13	-12,163.00	11,133.47	10,663.26	470.21	23.678	
7,700.00	6,951.15	7,261.03	7,012.22	30.18	445.47	-93.83	-1,029.14	-12,163.00	11,033.81	10,563.64	470.17	23.468	
7,800.00	6,950.92	7,260.62	7,011.81	31.12	445.42	-93.80	-1,029.14	-12,163.01	10,934.15	10,464.03	470.12	23.258	
7,900.00	6,950.70	7,260.21	7,011.39	32.11	445.36	-93.78	-1,029.15	-12,163.01	10,834.50	10,364.42	470.08	23.048	
8,000.00	6,950.47	7,259.80	7,010.98	33.15	445.31	-93.75	-1,029.16	-12,163.01	10,734.86	10,264.81	470.04	22.838	
8,100.00	6,950.25	7,259.39	7,010.57	34.23	445.26	-93.72	-1,029.17	-12,163.01	10,635.22	10,165.21	470.01	22.628	
8,200.00	6,950.03	7,258.97	7,010.16	35.35	445.21	-93.70	-1,029.17	-12,163.01	10,535.59	10,065.62	469.97	22.418	
8,300.00	6,949.80	7,258.56	7,009.75	36.51	445.15	-93.67	-1,029.18	-12,163.01	10,435.97	9,966.03	469.94	22.207	
8,400.00	6,949.58	7,258.15	7,009.33	37.70	445.10	-93.65	-1,029.19	-12,163.01	10,336.35	9,866.45	469.91	21.997	
8,500.00	6,949.35	7,257.74	7,008.92	38.92	445.05	-93.62	-1,029.19	-12,163.01	10,236.75	9,766.87	469.88	21.786	
8,600.00	6,949.13	7,257.33	7,008.51	40.17	445.00	-93.59	-1,029.20	-12,163.01	10,137.15	9,667.30	469.85	21.575	
8,700.00	6,948.90	7,256.91	7,008.10	41.44	444.94	-93.57	-1,029.21	-12,163.01	10,037.55	9,567.73	469.82	21.364	
8,800.00	6,948.68	7,256.50	7,007.69	42.73	444.89	-93.54	-1,029.21	-12,163.01	9,937.97	9,468.17	469.80	21.154	
8,900.00	6,948.45	7,256.09	7,007.28	44.04	444.84	-93.52	-1,029.22	-12,163.01	9,838.40	9,368.61	469.78	20.942	
9,000.00	6,948.23	7,255.68	7,006.86	45.38	444.79	-93.49	-1,029.23	-12,163.02	9,738.83	9,269.06	469.76	20.731	
9,100.00	6,948.00	7,255.27	7,006.45	46.72	444.73	-93.47	-1,029.24	-12,163.02	9,639.27	9,169.52	469.75	20.520	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 380-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	7,254.86	7,006.04	48.09	444.68	-93.44	-1,029.24	-12,163.02	9,539.72	9,069.99	469.74	20.309	
9,300.00	6,947.55	7,254.44	7,005.63	49.47	444.63	-93.41	-1,029.25	-12,163.02	9,440.18	8,970.46	469.73	20.097	
9,400.00	6,947.33	7,254.03	7,005.22	50.86	444.58	-93.39	-1,029.26	-12,163.02	9,340.65	8,870.94	469.72	19.886	
9,500.00	6,947.10	7,253.62	7,004.81	52.26	444.52	-93.36	-1,029.26	-12,163.02	9,241.13	8,771.42	469.71	19.674	
9,600.00	6,946.88	7,253.21	7,004.39	53.68	444.47	-93.34	-1,029.27	-12,163.02	9,141.63	8,671.91	469.71	19.462	
9,700.00	6,946.66	7,252.80	7,003.98	55.10	444.42	-93.31	-1,029.28	-12,163.02	9,042.13	8,572.42	469.71	19.250	
9,800.00	6,946.43	7,252.38	7,003.57	56.54	444.37	-93.28	-1,029.28	-12,163.02	8,942.64	8,472.92	469.72	19.038	
9,900.00	6,946.21	7,251.97	7,003.16	57.98	444.31	-93.26	-1,029.29	-12,163.02	8,843.17	8,373.44	469.73	18.826	
10,000.00	6,945.98	7,251.56	7,002.75	59.43	444.26	-93.23	-1,029.30	-12,163.02	8,743.70	8,273.97	469.74	18.614	
10,100.00	6,945.76	7,251.15	7,002.34	60.89	444.21	-93.21	-1,029.31	-12,163.02	8,644.25	8,174.50	469.75	18.402	
10,200.00	6,945.53	7,250.74	7,001.92	62.36	444.15	-93.18	-1,029.31	-12,163.02	8,544.81	8,075.04	469.77	18.189	
10,300.00	6,945.31	7,250.33	7,001.51	63.83	444.10	-93.15	-1,029.32	-12,163.03	8,445.39	7,975.60	469.79	17.977	
10,400.00	6,945.08	7,249.91	7,001.10	65.31	444.05	-93.13	-1,029.33	-12,163.03	8,345.98	7,876.16	469.82	17.764	
10,500.00	6,944.86	7,249.50	7,000.69	66.79	444.00	-93.10	-1,029.33	-12,163.03	8,246.58	7,776.73	469.85	17.552	
10,600.00	6,944.63	7,249.09	7,000.28	68.28	443.94	-93.08	-1,029.34	-12,163.03	8,147.20	7,677.32	469.88	17.339	
10,700.00	6,944.41	7,248.68	6,999.86	69.78	443.89	-93.05	-1,029.35	-12,163.03	8,047.83	7,577.91	469.92	17.126	
10,800.00	6,944.18	7,248.27	6,999.45	71.28	443.84	-93.02	-1,029.35	-12,163.03	7,948.48	7,478.51	469.97	16.913	
10,900.00	6,943.96	7,247.85	6,999.04	72.78	443.79	-93.00	-1,029.36	-12,163.03	7,849.15	7,379.13	470.02	16.700	
11,000.00	6,943.73	7,247.44	6,998.63	74.29	443.73	-92.97	-1,029.37	-12,163.03	7,749.83	7,279.76	470.07	16.486	
11,100.00	6,943.51	7,247.03	6,998.22	75.80	443.68	-92.95	-1,029.38	-12,163.03	7,650.53	7,180.40	470.13	16.273	
11,200.00	6,943.29	7,246.62	6,997.81	77.32	443.63	-92.92	-1,029.38	-12,163.03	7,551.25	7,081.05	470.20	16.060	
11,300.00	6,943.06	7,246.21	6,997.39	78.84	443.58	-92.90	-1,029.39	-12,163.03	7,451.99	6,981.72	470.27	15.846	
11,400.00	6,942.84	7,245.80	6,996.98	80.36	443.52	-92.87	-1,029.40	-12,163.03	7,352.75	6,882.40	470.35	15.633	
11,500.00	6,942.61	7,245.38	6,996.57	81.88	443.47	-92.84	-1,029.40	-12,163.04	7,253.53	6,783.09	470.43	15.419	
11,600.00	6,942.39	7,244.97	6,996.16	83.41	443.42	-92.82	-1,029.41	-12,163.04	7,154.33	6,683.80	470.52	15.205	
11,700.00	6,942.16	7,244.56	6,995.75	84.94	443.37	-92.79	-1,029.42	-12,163.04	7,055.15	6,584.53	470.62	14.991	
11,800.00	6,941.94	7,244.15	6,995.34	86.47	443.31	-92.77	-1,029.43	-12,163.04	6,956.00	6,485.27	470.73	14.777	
11,900.00	6,941.71	7,243.74	6,994.92	88.01	443.26	-92.74	-1,029.43	-12,163.04	6,856.87	6,386.02	470.84	14.563	
12,000.00	6,941.49	7,243.33	6,994.51	89.55	443.21	-92.71	-1,029.44	-12,163.04	6,757.76	6,286.80	470.97	14.349	
12,100.00	6,941.26	7,242.91	6,994.10	91.09	443.16	-92.69	-1,029.45	-12,163.04	6,658.69	6,187.59	471.10	14.134	
12,200.00	6,941.04	7,242.50	6,993.69	92.63	443.10	-92.66	-1,029.45	-12,163.04	6,559.64	6,088.40	471.24	13.920	
12,300.00	6,940.81	7,242.09	6,993.28	94.18	443.05	-92.64	-1,029.46	-12,163.04	6,460.62	5,989.23	471.39	13.706	
12,400.00	6,940.59	7,241.68	6,992.87	95.72	443.00	-92.61	-1,029.47	-12,163.04	6,361.63	5,890.08	471.55	13.491	
12,500.00	6,940.36	7,241.27	6,992.45	97.27	442.95	-92.58	-1,029.47	-12,163.04	6,262.68	5,790.95	471.72	13.276	
12,600.00	6,940.14	7,240.86	6,992.04	98.82	442.89	-92.56	-1,029.48	-12,163.04	6,163.75	5,691.85	471.91	13.061	
12,700.00	6,939.92	7,240.44	6,991.63	100.37	442.84	-92.53	-1,029.49	-12,163.04	6,064.87	5,592.77	472.10	12.847	
12,800.00	6,939.69	7,240.03	6,991.22	101.92	442.79	-92.51	-1,029.50	-12,163.05	5,966.02	5,493.71	472.31	12.632	
12,900.00	6,939.47	7,239.62	6,990.81	103.48	442.74	-92.48	-1,029.50	-12,163.05	5,867.21	5,394.67	472.53	12.417	
13,000.00	6,939.24	7,239.21	6,990.40	105.03	442.68	-92.45	-1,029.51	-12,163.05	5,768.44	5,295.67	472.77	12.201	
13,100.00	6,939.02	7,238.80	6,989.98	106.59	442.63	-92.43	-1,029.52	-12,163.05	5,669.71	5,196.69	473.02	11.986	
13,200.00	6,938.79	7,238.38	6,989.57	108.15	442.58	-92.40	-1,029.52	-12,163.05	5,571.03	5,097.74	473.29	11.771	
13,300.00	6,938.57	7,237.97	6,989.16	109.71	442.52	-92.38	-1,029.53	-12,163.05	5,472.39	4,998.82	473.58	11.555	
13,400.00	6,938.34	7,237.56	6,988.75	111.27	442.47	-92.35	-1,029.54	-12,163.05	5,373.81	4,899.93	473.88	11.340	
13,500.00	6,938.12	7,237.15	6,988.34	112.83	442.42	-92.32	-1,029.54	-12,163.05	5,275.28	4,801.07	474.21	11.124	
13,600.00	6,937.89	7,236.74	6,987.93	114.40	442.37	-92.30	-1,029.55	-12,163.05	5,176.81	4,702.25	474.55	10.909	
13,700.00	6,937.67	7,236.33	6,987.51	115.96	442.31	-92.27	-1,029.56	-12,163.05	5,078.39	4,603.47	474.92	10.693	
13,800.00	6,937.44	7,235.91	6,987.10	117.53	442.26	-92.25	-1,029.57	-12,163.05	4,980.04	4,504.73	475.31	10.477	
13,900.00	6,937.22	7,235.50	6,986.69	119.09	442.21	-92.22	-1,029.57	-12,163.05	4,881.76	4,406.03	475.73	10.262	
14,000.00	6,936.99	7,235.09	6,986.28	120.66	442.16	-92.20	-1,029.58	-12,163.06	4,783.54	4,307.37	476.17	10.046	
14,100.00	6,936.77	7,234.68	6,985.87	122.23	442.10	-92.17	-1,029.59	-12,163.06	4,685.41	4,208.76	476.64	9.830	
14,200.00	6,936.55	7,234.27	6,985.46	123.80	442.05	-92.14	-1,029.59	-12,163.06	4,587.35	4,110.20	477.14	9.614	
14,300.00	6,936.32	7,233.86	6,985.04	125.37	442.00	-92.12	-1,029.60	-12,163.06	4,489.38	4,011.70	477.68	9.398	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 380-MWD OWSG Rev5 — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
14,400.00	6,936.10	7,233.44	6,984.63	126.94	441.95	-92.09	-1,029.61	-12,163.06	4,391.50	3,913.25	478.25	9.182	
14,500.00	6,935.87	7,233.03	6,984.22	128.51	441.89	-92.07	-1,029.61	-12,163.06	4,293.71	3,814.86	478.86	8.967	
14,600.00	6,935.65	7,232.62	6,983.81	130.08	441.84	-92.04	-1,029.62	-12,163.06	4,196.04	3,716.53	479.51	8.751	
14,700.00	6,935.42	7,232.21	6,983.40	131.65	441.79	-92.01	-1,029.63	-12,163.06	4,098.47	3,618.27	480.20	8.535	
14,800.00	6,935.20	7,231.80	6,982.99	133.23	441.74	-91.99	-1,029.64	-12,163.06	4,001.03	3,520.09	480.94	8.319	
14,900.00	6,934.97	7,231.39	6,982.58	134.80	441.68	-91.96	-1,029.64	-12,163.06	3,903.71	3,421.98	481.73	8.104	
15,000.00	6,934.75	7,230.97	6,982.16	136.37	441.63	-91.94	-1,029.65	-12,163.06	3,806.53	3,323.96	482.57	7.888	
15,100.00	6,934.52	7,230.56	6,981.75	137.95	441.58	-91.91	-1,029.66	-12,163.06	3,709.50	3,226.03	483.48	7.673	
15,200.00	6,934.30	7,230.15	6,981.34	139.53	441.53	-91.88	-1,029.66	-12,163.07	3,612.64	3,128.20	484.44	7.457	
15,300.00	6,934.07	7,229.74	6,980.93	141.10	441.47	-91.86	-1,029.67	-12,163.07	3,515.95	3,030.47	485.48	7.242	
15,400.00	6,933.85	7,229.33	6,980.52	142.68	441.42	-91.83	-1,029.68	-12,163.07	3,419.45	2,932.87	486.58	7.027	
15,500.00	6,933.62	7,228.92	6,980.11	144.26	441.37	-91.81	-1,029.68	-12,163.07	3,323.16	2,835.39	487.77	6.813	
15,600.00	6,933.40	7,228.50	6,979.69	145.84	441.32	-91.78	-1,029.69	-12,163.07	3,227.09	2,738.04	489.05	6.599	
15,700.00	6,933.18	7,228.09	6,979.28	147.42	441.26	-91.75	-1,029.70	-12,163.07	3,131.27	2,640.85	490.42	6.385	
15,800.00	6,932.95	7,227.68	6,978.87	148.99	441.21	-91.73	-1,029.71	-12,163.07	3,035.72	2,543.83	491.89	6.172	
15,900.00	6,932.73	7,227.27	6,978.46	150.57	441.16	-91.70	-1,029.71	-12,163.07	2,940.46	2,446.98	493.48	5.959	
16,000.00	6,932.50	7,226.86	6,978.05	152.15	441.11	-91.68	-1,029.72	-12,163.07	2,845.53	2,350.35	495.19	5.746	
16,100.00	6,932.28	7,226.45	6,977.64	153.74	441.05	-91.65	-1,029.73	-12,163.07	2,750.96	2,253.93	497.03	5.535	
16,200.00	6,932.05	7,226.03	6,977.22	155.32	441.00	-91.62	-1,029.73	-12,163.07	2,656.79	2,157.77	499.02	5.324	
16,300.00	6,931.83	7,225.62	6,976.81	156.90	440.95	-91.60	-1,029.74	-12,163.07	2,563.06	2,061.88	501.18	5.114	
16,400.00	6,931.60	7,225.21	6,976.40	158.48	440.90	-91.57	-1,029.75	-12,163.07	2,469.81	1,966.31	503.51	4.905	
16,500.00	6,931.38	7,224.80	6,975.99	160.06	440.84	-91.55	-1,029.75	-12,163.08	2,377.12	1,871.09	506.04	4.698	
16,600.00	6,931.15	7,224.39	6,975.58	161.65	440.79	-91.52	-1,029.76	-12,163.08	2,285.05	1,776.27	508.78	4.491	
16,700.00	6,930.93	7,223.98	6,975.17	163.23	440.74	-91.49	-1,029.77	-12,163.08	2,193.67	1,681.90	511.77	4.286	
16,800.00	6,930.70	7,223.56	6,974.76	164.81	440.69	-91.47	-1,029.78	-12,163.08	2,103.07	1,588.05	515.02	4.083	
16,900.00	6,930.48	7,223.15	6,974.34	166.40	440.63	-91.44	-1,029.78	-12,163.08	2,013.37	1,494.81	518.56	3.883	
17,000.00	6,930.25	7,222.74	6,973.93	167.98	440.58	-91.42	-1,029.79	-12,163.08	1,924.68	1,402.25	522.43	3.684	
17,100.00	6,930.03	7,222.33	6,973.52	169.56	440.53	-91.39	-1,029.80	-12,163.08	1,837.15	1,310.50	526.65	3.488	
17,200.00	6,929.81	7,221.92	6,973.11	171.15	440.48	-91.37	-1,029.80	-12,163.08	1,750.95	1,219.70	531.26	3.296	
17,300.00	6,929.58	7,221.51	6,972.70	172.73	440.42	-91.34	-1,029.81	-12,163.08	1,666.31	1,130.00	536.30	3.107	
17,400.00	6,929.36	7,221.10	6,972.29	174.32	440.37	-91.31	-1,029.82	-12,163.08	1,583.45	1,041.63	541.81	2.922	
17,500.00	6,929.13	7,220.68	6,971.87	175.91	440.32	-91.29	-1,029.83	-12,163.08	1,502.68	954.85	547.83	2.743	
17,600.00	6,928.91	7,220.27	6,971.46	177.49	440.26	-91.26	-1,029.83	-12,163.08	1,424.35	869.97	554.38	2.569	
17,700.00	6,928.68	7,219.86	6,971.05	179.08	440.21	-91.24	-1,029.84	-12,163.09	1,348.89	787.41	561.48	2.402	
17,800.00	6,928.46	7,219.45	6,970.64	180.66	440.16	-91.21	-1,029.85	-12,163.09	1,276.80	707.67	569.13	2.243	
17,900.00	6,928.23	7,219.04	6,970.23	182.25	440.11	-91.18	-1,029.85	-12,163.09	1,208.70	631.39	577.30	2.094	
18,000.00	6,928.01	7,218.63	6,969.82	183.84	440.05	-91.16	-1,029.86	-12,163.09	1,145.29	559.38	585.91	1.955	
18,100.00	6,927.78	7,218.21	6,969.40	185.43	440.00	-91.13	-1,029.87	-12,163.09	1,087.38	492.60	594.79	1.828	
18,200.00	6,927.56	7,217.80	6,968.99	187.01	439.95	-91.11	-1,029.87	-12,163.09	1,035.92	432.22	603.71	1.716	
18,300.00	6,927.33	7,217.39	6,968.58	188.60	439.90	-91.08	-1,029.88	-12,163.09	991.90	379.58	612.32	1.620	
18,400.00	6,927.11	7,216.98	6,968.17	190.19	439.84	-91.05	-1,029.89	-12,163.09	956.34	336.16	620.18	1.542	
18,500.00	6,926.88	7,216.57	6,967.76	191.78	439.79	-91.03	-1,029.90	-12,163.09	930.22	303.43	626.80	1.484	Level 3
18,600.00	6,926.66	7,216.16	6,967.35	193.37	439.74	-91.00	-1,029.90	-12,163.09	914.35	282.66	631.69	1.447	Level 3
18,696.37	6,926.44	7,215.76	6,966.95	194.90	439.69	-90.98	-1,029.91	-12,163.09	909.26	274.84	634.42	1.433	Level 3, CC
18,700.00	6,926.44	7,215.74	6,966.94	194.96	439.69	-90.98	-1,029.91	-12,163.09	909.27	274.79	634.48	1.433	Level 3, ES, SF
18,800.00	6,926.21	7,215.33	6,966.52	196.54	439.63	-90.95	-1,029.92	-12,163.09	915.15	280.15	634.99	1.441	Level 3
18,900.00	6,925.99	7,214.92	6,966.11	198.13	439.58	-90.92	-1,029.92	-12,163.09	931.78	298.48	633.30	1.471	Level 3
19,000.00	6,925.76	7,214.51	6,965.70	199.72	439.53	-90.90	-1,029.93	-12,163.10	958.61	328.94	629.67	1.522	
19,100.00	6,925.54	7,214.10	6,965.29	201.31	439.48	-90.87	-1,029.94	-12,163.10	994.82	370.28	624.54	1.593	
19,200.00	6,925.31	7,213.69	6,964.88	202.90	439.42	-90.85	-1,029.94	-12,163.10	1,039.42	421.06	618.36	1.681	
19,300.00	6,925.09	7,213.28	6,964.47	204.49	439.37	-90.82	-1,029.95	-12,163.10	1,091.38	479.82	611.56	1.785	
19,400.00	6,924.86	7,212.86	6,964.06	206.08	439.32	-90.79	-1,029.96	-12,163.10	1,149.71	545.21	604.50	1.902	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 016D - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 380-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	7,212.45	6,963.64	207.67	439.27	-90.77	-1,029.97	-12,163.10	1,213.49	616.04	597.45	2.031	
19,600.00	6,924.41	7,212.04	6,963.23	209.26	439.21	-90.74	-1,029.97	-12,163.10	1,281.91	691.32	590.58	2.171	
19,700.00	6,924.19	7,211.63	6,962.82	210.85	439.16	-90.72	-1,029.98	-12,163.10	1,354.26	770.23	584.02	2.319	
19,800.00	6,923.96	7,211.22	6,962.41	212.44	439.11	-90.69	-1,029.99	-12,163.10	1,429.94	852.11	577.83	2.475	
19,900.00	6,923.74	7,210.81	6,962.00	214.04	439.06	-90.67	-1,029.99	-12,163.10	1,508.46	936.42	572.04	2.637	
20,000.00	6,923.51	7,210.39	6,961.59	215.63	439.00	-90.64	-1,030.00	-12,163.10	1,589.39	1,022.74	566.65	2.805	
20,100.00	6,923.29	7,209.98	6,961.17	217.22	438.95	-90.61	-1,030.01	-12,163.10	1,672.39	1,110.73	561.66	2.978	
20,200.00	6,923.07	7,209.57	6,960.76	218.81	438.90	-90.59	-1,030.01	-12,163.11	1,757.16	1,200.12	557.04	3.154	
20,300.00	6,922.84	7,209.16	6,960.35	220.40	438.85	-90.56	-1,030.02	-12,163.11	1,843.46	1,290.69	552.77	3.335	
20,400.00	6,922.62	7,208.75	6,959.94	221.99	438.79	-90.54	-1,030.03	-12,163.11	1,931.08	1,382.25	548.83	3.519	
20,500.00	6,922.39	7,208.34	6,959.53	223.59	438.74	-90.51	-1,030.04	-12,163.11	2,019.85	1,474.66	545.18	3.705	
20,600.00	6,922.17	7,207.93	6,959.12	225.18	438.69	-90.48	-1,030.04	-12,163.11	2,109.62	1,567.81	541.81	3.894	
20,674.13	6,922.00	7,207.62	6,958.81	226.36	438.65	-90.46	-1,030.05	-12,163.11	2,176.74	1,637.27	539.48	4.035	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 100-MWD

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	2,962.03	2,785.80	0.00	19.06	-88.13	313.51	-9,589.80	9,980.63				
100.00	100.00	3,000.00	2,822.02	0.25	19.26	-88.16	308.04	-9,579.79	9,953.45	9,936.30	17.15	580.395	
200.00	200.00	3,078.31	2,896.78	0.61	19.65	-88.22	296.71	-9,559.42	9,926.72	9,908.99	17.73	559.855	
300.00	300.00	3,100.00	2,917.47	0.97	19.76	-88.24	293.46	-9,553.77	9,900.21	9,882.12	18.10	547.075	
400.00	400.00	3,100.00	2,917.47	1.33	19.76	-88.24	293.46	-9,553.77	9,874.63	9,856.24	18.39	536.999	
500.00	500.00	3,150.46	2,965.78	1.68	19.99	-88.28	286.27	-9,541.11	9,849.30	9,830.32	18.99	518.754	
606.93	606.91	3,200.00	3,013.57	2.05	20.22	49.61	279.98	-9,529.69	9,822.38	9,802.78	19.60	501.091	
700.00	699.91	3,200.00	3,013.57	2.37	20.22	49.61	279.98	-9,529.69	9,798.16	9,778.27	19.89	492.621	
800.00	799.84	3,200.00	3,013.57	2.71	20.22	49.61	279.98	-9,529.69	9,773.06	9,752.86	20.20	483.795	
900.00	899.77	3,200.00	3,013.57	3.06	20.22	49.61	279.98	-9,529.69	9,748.92	9,728.40	20.52	475.118	
1,000.00	999.70	3,200.00	3,013.57	3.41	20.22	49.61	279.98	-9,529.69	9,725.74	9,704.90	20.84	466.643	
1,100.00	1,099.63	3,249.19	3,061.38	3.76	20.41	49.59	274.43	-9,519.50	9,702.75	9,681.31	21.44	452.632	
1,200.00	1,199.56	3,300.00	3,111.09	4.11	20.60	49.57	269.38	-9,510.33	9,681.38	9,659.34	22.04	439.229	
1,300.00	1,299.49	3,300.00	3,111.09	4.47	20.60	49.57	269.38	-9,510.33	9,660.14	9,637.77	22.37	431.780	
1,400.00	1,399.42	3,300.00	3,111.09	4.83	20.60	49.57	269.38	-9,510.33	9,639.90	9,617.19	22.70	424.572	
1,500.00	1,499.35	3,300.00	3,111.09	5.19	20.60	49.57	269.38	-9,510.33	9,620.65	9,597.61	23.04	417.606	
1,600.00	1,599.28	3,300.00	3,111.09	5.54	20.60	49.57	269.38	-9,510.33	9,602.40	9,579.03	23.37	410.878	
1,700.00	1,699.21	3,360.83	3,170.93	5.90	20.78	49.55	264.14	-9,500.78	9,584.33	9,560.35	23.98	399.667	
1,800.00	1,799.14	3,400.00	3,209.60	6.26	20.89	49.54	261.17	-9,495.29	9,567.43	9,542.94	24.49	390.623	
1,900.00	1,899.07	3,423.00	3,232.35	6.62	20.95	49.54	259.55	-9,492.22	9,551.16	9,526.24	24.92	383.275	
2,000.00	1,999.00	3,500.00	3,308.50	6.98	21.15	49.52	254.55	-9,482.02	9,535.29	9,509.72	25.57	372.942	
2,100.00	2,098.94	3,500.00	3,308.50	7.34	21.15	49.52	254.55	-9,482.02	9,520.06	9,494.16	25.90	367.561	
2,200.00	2,198.87	3,545.80	3,353.87	7.70	21.25	49.51	251.83	-9,476.35	9,505.38	9,478.96	26.42	359.749	
2,300.00	2,298.80	3,600.00	3,407.67	8.06	21.38	49.51	248.80	-9,470.61	9,491.85	9,464.87	26.98	351.830	
2,400.00	2,398.73	3,600.00	3,407.67	8.42	21.38	49.51	248.80	-9,470.61	9,478.68	9,451.37	27.31	347.086	
2,500.00	2,498.66	3,600.00	3,407.67	8.79	21.38	49.51	248.80	-9,470.61	9,466.54	9,438.90	27.64	342.513	
2,600.00	2,598.59	3,644.86	3,452.30	9.15	21.46	49.50	246.58	-9,466.55	9,455.07	9,426.93	28.14	336.015	
2,700.00	2,698.52	3,700.00	3,507.22	9.51	21.56	49.50	244.43	-9,462.26	9,444.54	9,415.86	28.68	329.329	
2,800.00	2,798.45	3,700.00	3,507.22	9.87	21.56	49.50	244.43	-9,462.26	9,434.48	9,405.48	29.00	325.283	
2,900.00	2,898.38	3,700.00	3,507.22	10.23	21.56	49.50	244.43	-9,462.26	9,425.48	9,396.15	29.33	321.386	
3,000.00	2,998.31	3,759.55	3,566.62	10.59	21.64	49.50	242.54	-9,458.51	9,416.88	9,387.03	29.86	315.416	
3,100.00	3,098.24	3,800.00	3,607.01	10.96	21.69	49.50	241.37	-9,456.49	9,409.23	9,378.91	30.32	310.366	
3,200.00	3,198.17	3,800.00	3,607.01	11.32	21.69	49.50	241.37	-9,456.49	9,402.33	9,371.70	30.64	306.908	
3,300.00	3,298.10	3,800.00	3,607.01	11.68	21.69	49.50	241.37	-9,456.49	9,396.49	9,365.54	30.95	303.581	
3,400.00	3,398.03	4,600.00	4,402.76	12.04	23.38	49.48	213.34	-9,406.73	9,389.42	9,355.74	33.68	278.789	
3,500.00	3,497.96	4,669.02	4,471.22	12.40	23.53	49.46	208.03	-9,399.75	9,376.70	9,342.43	34.27	273.578	
3,600.00	3,597.89	4,789.70	4,591.12	12.77	23.77	49.44	201.00	-9,388.06	9,364.45	9,329.39	35.06	267.100	
3,700.00	3,697.82	4,800.00	4,601.36	13.13	23.79	49.44	200.47	-9,387.02	9,352.25	9,316.82	35.43	263.940	
3,800.00	3,797.75	4,840.07	4,641.21	13.49	23.86	49.43	198.59	-9,383.30	9,340.69	9,304.77	35.92	260.029	
3,900.00	3,897.68	4,900.00	4,700.94	13.85	23.96	49.43	196.30	-9,378.94	9,330.47	9,293.99	36.49	255.722	
4,000.00	3,997.61	4,900.00	4,700.94	14.21	23.96	49.43	196.30	-9,378.94	9,320.38	9,283.56	36.82	253.156	
4,100.00	4,097.54	4,900.00	4,700.94	14.58	23.96	49.43	196.30	-9,378.94	9,311.35	9,274.21	37.14	250.685	
4,200.00	4,197.47	4,936.21	4,737.06	14.94	24.01	49.43	195.16	-9,376.88	9,303.18	9,265.59	37.59	247.518	
4,300.00	4,297.40	5,000.00	4,800.77	15.30	24.09	49.43	193.40	-9,373.93	9,295.86	9,257.75	38.12	243.874	
4,400.00	4,397.33	5,000.00	4,800.77	15.66	24.09	49.43	193.40	-9,373.93	9,288.97	9,250.53	38.44	241.661	
4,500.00	4,497.26	5,000.00	4,800.77	16.03	24.09	49.43	193.40	-9,373.93	9,283.14	9,244.39	38.76	239.534	
4,600.00	4,597.19	5,058.90	4,859.62	16.39	24.14	49.43	192.07	-9,372.07	9,277.73	9,238.50	39.23	236.491	
4,700.00	4,697.12	5,100.00	4,900.71	16.75	24.18	49.43	191.32	-9,371.33	9,273.30	9,233.65	39.66	233.839	
4,800.00	4,797.05	5,169.62	4,970.31	17.11	24.23	49.44	190.26	-9,370.41	9,269.43	9,229.29	40.14	230.955	
4,900.00	4,896.99	5,257.67	5,058.34	17.47	24.31	49.45	188.93	-9,369.18	9,265.55	9,224.90	40.65	227.925	
5,000.00	4,996.92	5,341.00	5,141.65	17.84	24.38	49.45	187.23	-9,368.22	9,261.91	9,220.76	41.14	225.108	
5,100.00	5,096.85	5,400.00	5,200.63	18.20	24.45	49.46	186.01	-9,367.60	9,258.43	9,216.85	41.58	222.689	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 100-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,447.46	5,248.08	18.56	24.48	49.46	185.21	-9,367.32	9,255.48	9,213.56	41.92	220.796	
5,300.00	5,296.71	5,500.00	5,300.62	18.92	24.53	49.46	184.70	-9,367.55	9,253.31	9,211.05	42.26	218.938	
5,400.00	5,396.64	5,534.46	5,335.09	19.29	24.54	49.47	184.52	-9,367.90	9,251.71	9,209.16	42.54	217.470	
5,500.00	5,496.57	5,608.36	5,408.97	19.65	24.58	49.48	184.31	-9,368.82	9,250.51	9,207.72	42.79	216.185	
5,600.00	5,596.50	5,767.78	5,568.38	20.01	24.66	49.50	183.36	-9,370.74	9,249.36	9,206.35	43.01	215.060	
5,700.00	5,696.43	5,855.39	5,655.98	20.37	24.73	49.51	182.17	-9,371.33	9,247.58	9,204.27	43.30	213.545	
5,800.00	5,796.36	5,944.53	5,745.11	20.74	24.78	49.52	181.68	-9,372.28	9,246.18	9,202.60	43.58	212.178	
5,900.00	5,896.29	6,070.57	5,871.15	21.10	24.80	49.55	181.85	-9,373.22	9,244.50	9,200.69	43.81	211.027	
6,000.00	5,996.22	6,185.32	5,985.89	21.46	24.83	49.57	181.71	-9,373.94	9,242.70	9,198.65	44.05	209.819	
6,100.00	6,096.15	6,247.68	6,048.25	21.82	24.85	49.58	181.72	-9,374.35	9,240.96	9,196.65	44.32	208.522	
6,200.00	6,196.08	6,303.92	6,104.49	22.19	24.86	49.59	181.58	-9,375.02	9,239.72	9,195.14	44.58	207.247	
6,300.00	6,296.01	6,421.28	6,221.84	22.55	24.88	49.61	181.75	-9,376.62	9,238.67	9,193.88	44.79	206.247	
6,335.60	6,331.59	6,517.62	6,318.17	22.68	24.90	49.62	181.72	-9,377.47	9,238.13	9,193.29	44.84	206.033	
6,350.00	6,345.97	6,489.36	6,289.92	22.73	24.90	31.94	181.77	-9,377.26	9,237.74	9,192.83	44.90	205.732	
6,400.00	6,395.75	6,545.07	6,345.63	22.91	24.92	14.25	181.68	-9,377.74	9,233.86	9,188.84	45.02	205.109	
6,450.00	6,445.03	6,576.55	6,377.11	23.10	24.93	9.63	181.61	-9,378.07	9,226.19	9,181.04	45.15	204.334	
6,500.00	6,493.52	6,627.02	6,427.57	23.29	24.95	7.58	181.51	-9,378.69	9,214.75	9,169.48	45.28	203.519	
6,550.00	6,540.91	6,687.45	6,488.00	23.48	24.99	6.46	181.18	-9,379.24	9,199.36	9,153.96	45.40	202.638	
6,600.00	6,586.91	6,700.00	6,500.54	23.66	24.99	5.78	181.12	-9,379.36	9,180.41	9,134.87	45.54	201.609	
6,650.00	6,631.24	6,737.57	6,538.12	23.85	25.01	5.35	180.88	-9,379.77	9,157.89	9,112.24	45.65	200.610	
6,700.00	6,673.63	6,752.75	6,553.29	24.05	25.02	5.08	180.81	-9,380.01	9,132.14	9,086.37	45.77	199.520	
6,750.00	6,713.80	6,767.22	6,567.76	24.24	25.03	4.94	180.75	-9,380.29	9,103.23	9,057.35	45.88	198.402	
6,800.00	6,751.52	6,973.93	6,774.44	24.44	25.05	4.98	181.08	-9,382.77	9,071.15	9,025.19	45.96	197.349	
6,850.00	6,786.56	7,000.00	6,800.51	24.65	25.06	5.05	181.14	-9,382.82	9,035.63	8,989.54	46.09	196.053	
6,900.00	6,818.69	7,034.00	6,834.51	24.87	25.07	5.22	181.16	-9,382.82	8,997.40	8,951.19	46.21	194.711	
6,950.00	6,847.72	7,047.31	6,847.82	25.10	25.08	5.49	181.21	-9,382.86	8,956.86	8,910.56	46.30	193.446	
7,000.00	6,873.46	7,059.18	6,859.69	25.34	25.08	5.91	181.27	-9,382.92	8,914.21	8,867.82	46.38	192.192	
7,050.00	6,895.77	7,069.54	6,870.04	25.60	25.09	6.55	181.34	-9,382.99	8,869.67	8,823.22	46.45	190.953	
7,100.00	6,914.50	7,142.51	6,943.01	25.87	25.14	7.65	180.93	-9,383.33	8,823.48	8,776.81	46.67	189.045	
7,150.00	6,929.54	7,244.01	7,044.44	26.15	25.27	9.60	178.12	-9,383.11	8,775.86	8,728.88	46.98	186.799	
7,200.00	6,940.80	7,254.25	7,054.68	26.44	25.28	12.95	177.70	-9,383.04	8,727.10	8,680.08	47.02	185.590	
7,250.00	6,948.20	7,260.87	7,061.30	26.75	25.29	21.19	177.44	-9,382.99	8,677.64	8,630.59	47.05	184.423	
7,300.00	6,951.70	7,263.83	7,064.25	27.07	25.29	59.04	177.32	-9,382.97	8,627.78	8,580.71	47.07	183.297	
7,321.06	6,952.00	7,263.97	7,064.39	27.20	25.29	106.77	177.31	-9,382.97	8,606.74	8,559.66	47.07	182.834	
7,400.00	6,951.82	7,263.27	7,063.69	27.74	25.29	106.65	177.34	-9,382.98	8,527.86	8,480.77	47.08	181.118	
7,500.00	6,951.60	7,262.38	7,062.80	28.49	25.29	106.50	177.38	-9,382.98	8,427.93	8,380.83	47.10	178.941	
7,600.00	6,951.37	7,261.49	7,061.91	29.30	25.29	106.35	177.41	-9,382.99	8,328.00	8,280.89	47.11	176.761	
7,700.00	6,951.15	7,260.59	7,061.02	30.18	25.29	106.20	177.45	-9,382.99	8,228.08	8,180.95	47.13	174.577	
7,800.00	6,950.92	7,259.70	7,060.13	31.12	25.29	106.04	177.48	-9,383.00	8,128.16	8,081.01	47.15	172.390	
7,900.00	6,950.70	7,258.81	7,059.24	32.11	25.29	105.89	177.52	-9,383.01	8,028.24	7,981.07	47.17	170.200	
8,000.00	6,950.47	7,257.92	7,058.34	33.15	25.29	105.73	177.55	-9,383.01	7,928.32	7,881.13	47.19	168.007	
8,100.00	6,950.25	7,257.02	7,057.45	34.23	25.28	105.58	177.59	-9,383.02	7,828.41	7,781.19	47.21	165.812	
8,200.00	6,950.03	7,256.13	7,056.55	35.35	25.28	105.43	177.63	-9,383.03	7,728.49	7,681.26	47.24	163.614	
8,300.00	6,949.80	7,255.23	7,055.66	36.51	25.28	105.27	177.66	-9,383.03	7,628.58	7,581.32	47.26	161.413	
8,400.00	6,949.58	7,254.33	7,054.76	37.70	25.28	105.12	177.70	-9,383.04	7,528.67	7,481.38	47.29	159.210	
8,500.00	6,949.35	7,253.43	7,053.86	38.92	25.28	104.96	177.74	-9,383.04	7,428.76	7,381.45	47.32	157.005	
8,600.00	6,949.13	7,252.54	7,052.97	40.17	25.28	104.80	177.77	-9,383.05	7,328.86	7,281.51	47.34	154.797	
8,700.00	6,948.90	7,251.64	7,052.07	41.44	25.28	104.65	177.81	-9,383.06	7,228.96	7,181.58	47.38	152.588	
8,800.00	6,948.68	7,250.74	7,051.17	42.73	25.27	104.49	177.85	-9,383.06	7,129.06	7,081.65	47.41	150.376	
8,900.00	6,948.45	7,249.83	7,050.27	44.04	25.27	104.33	177.88	-9,383.07	7,029.16	6,981.72	47.44	148.163	
9,000.00	6,948.23	7,248.93	7,049.37	45.38	25.27	104.18	177.92	-9,383.08	6,929.27	6,881.79	47.48	145.948	
9,100.00	6,948.00	7,248.03	7,048.46	46.72	25.27	104.02	177.96	-9,383.08	6,829.38	6,781.86	47.51	143.731	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 100-MWD

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	7,247.13	7,047.56	48.09	25.27	103.86	177.99	-9,383.09	6,729.49	6,681.93	47.55	141.513	
9,300.00	6,947.55	7,246.22	7,046.66	49.47	25.27	103.70	178.03	-9,383.10	6,629.60	6,582.01	47.59	139.294	
9,400.00	6,947.33	7,245.32	7,045.75	50.86	25.27	103.54	178.07	-9,383.10	6,529.72	6,482.09	47.64	137.073	
9,500.00	6,947.10	7,244.41	7,044.85	52.26	25.27	103.38	178.10	-9,383.11	6,429.85	6,382.16	47.68	134.851	
9,600.00	6,946.88	7,243.50	7,043.94	53.68	25.26	103.23	178.14	-9,383.11	6,329.97	6,282.24	47.73	132.628	
9,700.00	6,946.66	7,242.59	7,043.03	55.10	25.26	103.07	178.18	-9,383.12	6,230.10	6,182.33	47.78	130.404	
9,800.00	6,946.43	7,241.68	7,042.13	56.54	25.26	102.91	178.22	-9,383.13	6,130.24	6,082.41	47.83	128.179	
9,900.00	6,946.21	7,240.77	7,041.22	57.98	25.26	102.75	178.25	-9,383.13	6,030.37	5,982.50	47.88	125.954	
10,000.00	6,945.98	7,239.86	7,040.31	59.43	25.26	102.58	178.29	-9,383.14	5,930.52	5,882.58	47.93	123.727	
10,100.00	6,945.76	7,238.95	7,039.40	60.89	25.26	102.42	178.33	-9,383.15	5,830.66	5,782.68	47.99	121.500	
10,200.00	6,945.53	7,238.04	7,038.48	62.36	25.26	102.26	178.37	-9,383.15	5,730.82	5,682.77	48.05	119.273	
10,300.00	6,945.31	7,237.13	7,037.57	63.83	25.26	102.10	178.41	-9,383.16	5,630.98	5,582.87	48.11	117.045	
10,400.00	6,945.08	7,236.21	7,036.66	65.31	25.25	101.94	178.44	-9,383.17	5,531.14	5,482.96	48.17	114.817	
10,500.00	6,944.86	7,235.30	7,035.74	66.79	25.25	101.78	178.48	-9,383.17	5,431.31	5,383.07	48.24	112.588	
10,600.00	6,944.63	7,234.38	7,034.83	68.28	25.25	101.61	178.52	-9,383.18	5,331.48	5,283.17	48.31	110.359	
10,700.00	6,944.41	7,233.47	7,033.91	69.78	25.25	101.45	178.56	-9,383.19	5,231.67	5,183.28	48.38	108.130	
10,800.00	6,944.18	7,232.55	7,033.00	71.28	25.25	101.29	178.60	-9,383.19	5,131.85	5,083.40	48.46	105.900	
10,900.00	6,943.96	7,231.63	7,032.08	72.78	25.25	101.13	178.63	-9,383.20	5,032.05	4,983.51	48.54	103.671	
11,000.00	6,943.73	7,230.71	7,031.16	74.29	25.25	100.96	178.67	-9,383.21	4,932.26	4,883.63	48.62	101.441	
11,100.00	6,943.51	7,229.79	7,030.24	75.80	25.24	100.80	178.71	-9,383.21	4,832.47	4,783.76	48.71	99.212	
11,200.00	6,943.29	7,228.87	7,029.32	77.32	25.24	100.63	178.75	-9,383.22	4,732.69	4,683.89	48.80	96.982	
11,300.00	6,943.06	7,227.95	7,028.40	78.84	25.24	100.47	178.79	-9,383.23	4,632.92	4,584.02	48.89	94.753	
11,400.00	6,942.84	7,227.02	7,027.48	80.36	25.24	100.30	178.83	-9,383.23	4,533.16	4,484.16	48.99	92.523	
11,500.00	6,942.61	7,226.10	7,026.56	81.88	25.24	100.14	178.87	-9,383.24	4,433.41	4,384.31	49.10	90.294	
11,600.00	6,942.39	7,225.18	7,025.63	83.41	25.24	99.97	178.91	-9,383.25	4,333.67	4,284.46	49.21	88.065	
11,700.00	6,942.16	7,224.25	7,024.71	84.94	25.24	99.81	178.95	-9,383.25	4,233.95	4,184.62	49.33	85.835	
11,800.00	6,941.94	7,223.32	7,023.78	86.47	25.24	99.64	178.99	-9,383.26	4,134.24	4,084.79	49.45	83.606	
11,900.00	6,941.71	7,222.40	7,022.86	88.01	25.23	99.48	179.03	-9,383.27	4,034.54	3,984.96	49.58	81.377	
12,000.00	6,941.49	7,221.47	7,021.93	89.55	25.23	99.31	179.06	-9,383.27	3,934.85	3,885.14	49.72	79.147	
12,100.00	6,941.26	7,220.54	7,021.00	91.09	25.23	99.14	179.10	-9,383.28	3,835.19	3,785.33	49.86	76.918	
12,200.00	6,941.04	7,177.51	6,978.00	92.63	25.18	91.34	180.36	-9,383.39	3,735.52	3,685.61	49.91	74.843	
12,300.00	6,940.81	7,177.45	6,977.94	94.18	25.18	91.32	180.36	-9,383.39	3,635.89	3,585.81	50.08	72.606	
12,400.00	6,940.59	7,177.39	6,977.88	95.72	25.18	91.31	180.36	-9,383.39	3,536.27	3,486.02	50.25	70.370	
12,500.00	6,940.36	7,177.33	6,977.82	97.27	25.18	91.30	180.37	-9,383.39	3,436.68	3,386.24	50.44	68.133	
12,600.00	6,940.14	7,177.28	6,977.76	98.82	25.18	91.29	180.37	-9,383.39	3,337.11	3,286.47	50.64	65.896	
12,700.00	6,939.92	7,177.22	6,977.70	100.37	25.18	91.28	180.37	-9,383.39	3,237.57	3,186.71	50.86	63.659	
12,800.00	6,939.69	7,177.16	6,977.64	101.92	25.18	91.27	180.37	-9,383.39	3,138.05	3,086.96	51.09	61.421	
12,900.00	6,939.47	7,177.10	6,977.58	103.48	25.18	91.26	180.37	-9,383.39	3,038.57	2,987.23	51.34	59.183	
13,000.00	6,939.24	7,177.04	6,977.53	105.03	25.18	91.25	180.37	-9,383.39	2,939.13	2,887.51	51.61	56.945	
13,100.00	6,939.02	7,176.98	6,977.47	106.59	25.18	91.24	180.37	-9,383.39	2,839.72	2,787.81	51.91	54.706	
13,200.00	6,938.79	7,176.92	6,977.41	108.15	25.18	91.23	180.37	-9,383.39	2,740.35	2,688.12	52.23	52.466	
13,300.00	6,938.57	7,176.86	6,977.35	109.71	25.18	91.22	180.37	-9,383.39	2,641.04	2,588.45	52.58	50.226	
13,400.00	6,938.34	7,176.80	6,977.29	111.27	25.18	91.21	180.37	-9,383.39	2,541.77	2,488.81	52.97	47.986	
13,500.00	6,938.12	7,220.17	7,020.62	112.83	25.22	99.08	178.99	-9,383.24	2,442.65	2,389.12	53.53	45.629	
13,600.00	6,937.89	7,216.80	7,017.25	114.40	25.22	98.47	179.18	-9,383.28	2,343.53	2,289.53	54.00	43.402	
13,700.00	6,937.67	7,213.72	7,014.18	115.96	25.22	97.92	179.34	-9,383.31	2,244.48	2,189.97	54.51	41.175	
13,800.00	6,937.44	7,210.91	7,011.37	117.53	25.21	97.41	179.48	-9,383.34	2,145.52	2,090.44	55.09	38.946	
13,900.00	6,937.22	7,208.32	7,008.79	119.09	25.21	96.94	179.61	-9,383.36	2,046.67	1,990.93	55.74	36.718	
14,000.00	6,936.99	7,205.93	7,006.40	120.66	25.21	96.51	179.72	-9,383.38	1,947.92	1,891.44	56.48	34.491	
14,100.00	6,936.77	7,203.72	7,004.20	122.23	25.21	96.10	179.83	-9,383.40	1,849.31	1,792.00	57.31	32.267	
14,200.00	6,936.55	7,201.67	7,002.15	123.80	25.20	95.73	179.92	-9,383.42	1,750.86	1,692.59	58.27	30.047	
14,300.00	6,936.32	7,199.76	7,000.24	125.37	25.20	95.39	180.01	-9,383.43	1,652.59	1,593.22	59.37	27.835	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 100-MWD — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	7,197.98	6,998.47	126.94	25.20	95.06	180.08	-9,383.44	1,554.54	1,493.89	60.65	25.633	
14,500.00	6,935.87	7,196.32	6,996.80	128.51	25.20	94.76	180.15	-9,383.45	1,456.75	1,394.62	62.13	23.446	
14,600.00	6,935.65	7,194.76	6,995.25	130.08	25.20	94.48	180.22	-9,383.46	1,359.29	1,295.41	63.88	21.280	
14,700.00	6,935.42	7,193.30	6,993.78	131.65	25.20	94.21	180.28	-9,383.47	1,262.22	1,196.27	65.95	19.140	
14,800.00	6,935.20	7,191.92	6,992.41	133.23	25.19	93.96	180.33	-9,383.48	1,165.64	1,097.22	68.42	17.037	
14,900.00	6,934.97	7,190.62	6,991.11	134.80	25.19	93.72	180.38	-9,383.49	1,069.69	998.29	71.41	14.981	
15,000.00	6,934.75	7,189.40	6,989.89	136.37	25.19	93.50	180.43	-9,383.50	974.56	899.51	75.05	12.985	
15,100.00	6,934.52	7,188.24	6,988.73	137.95	25.19	93.29	180.48	-9,383.50	880.51	800.95	79.56	11.067	
15,200.00	6,934.30	7,187.14	6,987.63	139.53	25.19	93.09	180.52	-9,383.51	787.92	702.72	85.20	9.248	
15,300.00	6,934.07	7,186.10	6,986.59	141.10	25.19	92.90	180.55	-9,383.51	697.38	605.04	92.34	7.552	
15,400.00	6,933.85	7,185.11	6,985.60	142.68	25.19	92.72	180.59	-9,383.52	609.80	508.30	101.50	6.008	
15,500.00	6,933.62	7,184.17	6,984.66	144.26	25.19	92.55	180.62	-9,383.52	526.66	413.38	113.28	4.649	
15,600.00	6,933.40	7,183.28	6,983.77	145.84	25.19	92.39	180.65	-9,383.53	450.43	322.17	128.26	3.512	
15,700.00	6,933.18	7,182.42	6,982.92	147.42	25.18	92.23	180.68	-9,383.53	385.23	239.03	146.20	2.635	
15,800.00	6,932.95	7,181.61	6,982.10	148.99	25.18	92.08	180.71	-9,383.53	337.51	173.24	164.28	2.055	
15,900.00	6,932.73	7,180.83	6,981.33	150.57	25.18	91.94	180.74	-9,383.54	315.32	139.99	175.33	1.798	
15,922.44	6,932.68	7,180.66	6,981.16	150.93	25.18	91.91	180.74	-9,383.54	314.52	138.52	176.00	1.787	CC, ES, SF
16,000.00	6,932.50	7,180.09	6,980.58	152.15	25.18	91.80	180.76	-9,383.54	323.95	151.36	172.59	1.877	
16,100.00	6,932.28	7,179.38	6,979.87	153.74	25.18	91.68	180.79	-9,383.54	361.18	202.64	158.54	2.278	
16,200.00	6,932.05	7,178.69	6,979.19	155.32	25.18	91.55	180.81	-9,383.54	419.48	278.34	141.14	2.972	
16,300.00	6,931.83	7,178.04	6,978.53	156.90	25.18	91.43	180.83	-9,383.55	491.40	366.04	125.36	3.920	
16,400.00	6,931.60	7,177.41	6,977.91	158.48	25.18	91.32	180.85	-9,383.55	571.82	459.29	112.53	5.081	
16,500.00	6,931.38	7,176.81	6,977.30	160.06	25.18	91.21	180.87	-9,383.55	657.64	555.19	102.45	6.419	
16,600.00	6,931.15	7,176.23	6,976.72	161.65	25.18	91.10	180.89	-9,383.55	746.99	652.44	94.55	7.900	
16,700.00	6,930.93	7,175.67	6,976.17	163.23	25.18	91.00	180.90	-9,383.55	838.75	750.42	88.33	9.496	
16,800.00	6,930.70	7,175.13	6,975.63	164.81	25.18	90.90	180.92	-9,383.55	932.21	848.85	83.36	11.183	
16,900.00	6,930.48	7,174.62	6,975.11	166.40	25.18	90.81	180.94	-9,383.56	1,026.89	947.54	79.35	12.941	
17,000.00	6,930.25	7,174.12	6,974.61	167.98	25.18	90.72	180.95	-9,383.56	1,122.51	1,046.42	76.08	14.754	
17,100.00	6,930.03	7,173.64	6,974.13	169.56	25.18	90.63	180.96	-9,383.56	1,218.82	1,145.43	73.39	16.608	
17,200.00	6,929.81	7,173.17	6,973.67	171.15	25.18	90.55	180.98	-9,383.56	1,315.68	1,244.54	71.14	18.494	
17,300.00	6,929.58	7,172.72	6,973.22	172.73	25.17	90.46	180.99	-9,383.56	1,412.99	1,343.73	69.26	20.402	
17,400.00	6,929.36	7,172.29	6,972.79	174.32	25.17	90.38	181.00	-9,383.56	1,510.64	1,442.97	67.67	22.325	
17,500.00	6,929.13	7,171.87	6,972.37	175.91	25.17	90.31	181.02	-9,383.56	1,608.58	1,542.27	66.31	24.259	
17,600.00	6,928.91	7,171.46	6,971.96	177.49	25.17	90.23	181.03	-9,383.56	1,706.76	1,641.62	65.15	26.199	
17,700.00	6,928.68	7,171.07	6,971.57	179.08	25.17	90.16	181.04	-9,383.56	1,805.14	1,741.00	64.15	28.141	
17,800.00	6,928.46	7,170.69	6,971.19	180.66	25.17	90.09	181.05	-9,383.57	1,903.69	1,840.41	63.28	30.083	
17,900.00	6,928.23	7,170.32	6,970.82	182.25	25.17	90.03	181.06	-9,383.57	2,002.38	1,939.85	62.53	32.022	
18,000.00	6,928.01	7,169.96	6,970.46	183.84	25.17	89.96	181.07	-9,383.57	2,101.20	2,039.32	61.88	33.958	
18,100.00	6,927.78	7,169.61	6,970.11	185.43	25.17	89.90	181.08	-9,383.57	2,200.12	2,138.82	61.30	35.888	
18,200.00	6,927.56	7,169.28	6,969.78	187.01	25.17	89.84	181.09	-9,383.57	2,299.14	2,238.34	60.80	37.812	
18,300.00	6,927.33	7,168.95	6,969.45	188.60	25.17	89.78	181.10	-9,383.57	2,398.24	2,337.87	60.36	39.729	
18,400.00	6,927.11	7,168.63	6,969.13	190.19	25.17	89.72	181.10	-9,383.57	2,497.41	2,437.43	59.98	41.639	
18,500.00	6,926.88	7,168.32	6,968.82	191.78	25.17	89.66	181.11	-9,383.57	2,596.64	2,537.00	59.64	43.540	
18,600.00	6,926.66	7,168.02	6,968.52	193.37	25.17	89.61	181.12	-9,383.57	2,695.93	2,636.59	59.34	45.432	
18,700.00	6,926.44	7,167.73	6,968.23	194.96	25.17	89.56	181.13	-9,383.57	2,795.27	2,736.20	59.08	47.316	
18,800.00	6,926.21	7,167.45	6,967.95	196.54	25.17	89.50	181.14	-9,383.57	2,894.66	2,835.81	58.84	49.192	
18,900.00	6,925.99	7,167.17	6,967.67	198.13	25.17	89.45	181.14	-9,383.57	2,994.08	2,935.44	58.64	51.058	
19,000.00	6,925.76	7,166.90	6,967.40	199.72	25.17	89.40	181.15	-9,383.57	3,093.55	3,035.09	58.46	52.915	
19,100.00	6,925.54	7,166.64	6,967.14	201.31	25.17	89.36	181.16	-9,383.57	3,193.05	3,134.74	58.31	54.763	
19,200.00	6,925.31	7,166.39	6,966.89	202.90	25.17	89.31	181.16	-9,383.57	3,292.57	3,234.40	58.17	56.602	
19,300.00	6,925.09	7,166.14	6,966.64	204.49	25.17	89.27	181.17	-9,383.57	3,392.13	3,334.08	58.05	58.432	
19,400.00	6,924.86	7,165.89	6,966.40	206.08	25.17	89.22	181.18	-9,383.57	3,491.71	3,433.76	57.95	60.253	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 100-MWD

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	7,165.66	6,966.16	207.67	25.17	89.18	181.18	-9,383.57	3,591.31	3,533.45	57.86	62.065	
19,600.00	6,924.41	7,165.43	6,965.93	209.26	25.17	89.14	181.19	-9,383.57	3,690.94	3,633.15	57.79	63.868	
19,700.00	6,924.19	7,165.20	6,965.70	210.85	25.17	89.10	181.19	-9,383.57	3,790.58	3,732.86	57.73	65.662	
19,800.00	6,923.96	7,164.98	6,965.48	212.44	25.17	89.06	181.20	-9,383.57	3,890.25	3,832.57	57.68	67.448	
19,900.00	6,923.74	7,164.77	6,965.27	214.04	25.17	89.02	181.20	-9,383.57	3,989.93	3,932.29	57.64	69.224	
20,000.00	6,923.51	7,164.56	6,965.06	215.63	25.17	88.98	181.21	-9,383.57	4,089.62	4,032.02	57.61	70.992	
20,100.00	6,923.29	7,164.35	6,964.85	217.22	25.17	88.94	181.21	-9,383.57	4,189.33	4,131.75	57.58	72.752	
20,200.00	6,923.07	7,164.15	6,964.65	218.81	25.17	88.90	181.22	-9,383.57	4,289.06	4,231.49	57.57	74.502	
20,300.00	6,922.84	7,163.96	6,964.46	220.40	25.17	88.87	181.22	-9,383.57	4,388.79	4,331.23	57.56	76.245	
20,400.00	6,922.62	7,163.77	6,964.27	221.99	25.17	88.83	181.23	-9,383.57	4,488.54	4,430.98	57.56	77.978	
20,500.00	6,922.39	7,163.58	6,964.08	223.59	25.17	88.80	181.23	-9,383.58	4,588.30	4,530.73	57.57	79.704	
20,600.00	6,922.17	7,163.40	6,963.90	225.18	25.17	88.77	181.24	-9,383.58	4,688.07	4,630.49	57.58	81.421	
20,674.13	6,922.00	7,163.26	6,963.77	226.36	25.17	88.74	181.24	-9,383.58	4,762.03	4,704.44	57.59	82.689	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 100-MWD, 3901-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
0.00	0.00	2,962.03	2,785.80	0.00	19.06	-88.13	313.51	-9,589.80	9,980.63				
100.00	100.00	3,000.00	2,822.02	0.25	19.26	-88.16	308.04	-9,579.79	9,953.45	9,936.30	17.15	580.395	
200.00	200.00	3,078.31	2,896.78	0.61	19.65	-88.22	296.71	-9,559.42	9,926.72	9,908.99	17.73	559.855	
300.00	300.00	3,100.00	2,917.47	0.97	19.76	-88.24	293.46	-9,553.77	9,900.21	9,882.12	18.10	547.075	
400.00	400.00	3,100.00	2,917.47	1.33	19.76	-88.24	293.46	-9,553.77	9,874.63	9,856.24	18.39	536.999	
500.00	500.00	3,150.46	2,965.78	1.68	19.99	-88.28	286.27	-9,541.11	9,849.30	9,830.32	18.99	518.754	
606.93	606.91	3,200.00	3,013.57	2.05	20.22	49.61	279.98	-9,529.69	9,822.38	9,802.78	19.60	501.091	
700.00	699.91	3,200.00	3,013.57	2.37	20.22	49.61	279.98	-9,529.69	9,798.16	9,778.27	19.89	492.621	
800.00	799.84	3,200.00	3,013.57	2.71	20.22	49.61	279.98	-9,529.69	9,773.06	9,752.86	20.20	483.795	
900.00	899.77	3,200.00	3,013.57	3.06	20.22	49.61	279.98	-9,529.69	9,748.92	9,728.40	20.52	475.118	
1,000.00	999.70	3,200.00	3,013.57	3.41	20.22	49.61	279.98	-9,529.69	9,725.74	9,704.90	20.84	466.643	
1,100.00	1,099.63	3,249.19	3,061.38	3.76	20.41	49.59	274.43	-9,519.50	9,702.75	9,681.31	21.44	452.632	
1,200.00	1,199.56	3,300.00	3,111.09	4.11	20.60	49.57	269.38	-9,510.33	9,681.38	9,659.34	22.04	439.229	
1,300.00	1,299.49	3,300.00	3,111.09	4.47	20.60	49.57	269.38	-9,510.33	9,660.14	9,637.77	22.37	431.780	
1,400.00	1,399.42	3,300.00	3,111.09	4.83	20.60	49.57	269.38	-9,510.33	9,639.90	9,617.19	22.70	424.572	
1,500.00	1,499.35	3,300.00	3,111.09	5.19	20.60	49.57	269.38	-9,510.33	9,620.65	9,597.61	23.04	417.606	
1,600.00	1,599.28	3,300.00	3,111.09	5.54	20.60	49.57	269.38	-9,510.33	9,602.40	9,579.03	23.37	410.878	
1,700.00	1,699.21	3,360.83	3,170.93	5.90	20.78	49.55	264.14	-9,500.78	9,584.33	9,560.35	23.98	399.667	
1,800.00	1,799.14	3,400.00	3,209.60	6.26	20.89	49.54	261.17	-9,495.29	9,567.43	9,542.94	24.49	390.623	
1,900.00	1,899.07	3,423.00	3,232.35	6.62	20.95	49.54	259.55	-9,492.22	9,551.16	9,526.24	24.92	383.275	
2,000.00	1,999.00	3,500.00	3,308.50	6.98	21.15	49.52	254.55	-9,482.02	9,535.29	9,509.72	25.57	372.942	
2,100.00	2,098.94	3,500.00	3,308.50	7.34	21.15	49.52	254.55	-9,482.02	9,520.06	9,494.16	25.90	367.561	
2,200.00	2,198.87	3,545.80	3,353.87	7.70	21.25	49.51	251.83	-9,476.35	9,505.38	9,478.96	26.42	359.749	
2,300.00	2,298.80	3,600.00	3,407.67	8.06	21.38	49.51	248.80	-9,470.61	9,491.85	9,464.87	26.98	351.830	
2,400.00	2,398.73	3,600.00	3,407.67	8.42	21.38	49.51	248.80	-9,470.61	9,478.68	9,451.37	27.31	347.086	
2,500.00	2,498.66	3,600.00	3,407.67	8.79	21.38	49.51	248.80	-9,470.61	9,466.54	9,438.90	27.64	342.513	
2,600.00	2,598.59	3,644.86	3,452.30	9.15	21.46	49.50	246.58	-9,466.55	9,455.07	9,426.93	28.14	336.015	
2,700.00	2,698.52	3,700.00	3,507.22	9.51	21.56	49.50	244.43	-9,462.26	9,444.54	9,415.86	28.68	329.329	
2,800.00	2,798.45	3,700.00	3,507.22	9.87	21.56	49.50	244.43	-9,462.26	9,434.48	9,405.48	29.00	325.283	
2,900.00	2,898.38	3,700.00	3,507.22	10.23	21.56	49.50	244.43	-9,462.26	9,425.48	9,396.15	29.33	321.386	
3,000.00	2,998.31	3,759.55	3,566.62	10.59	21.64	49.50	242.54	-9,458.51	9,416.88	9,387.03	29.86	315.416	
3,100.00	3,098.24	3,800.00	3,607.01	10.96	21.69	49.50	241.37	-9,456.49	9,409.23	9,378.91	30.32	310.366	
3,200.00	3,198.17	3,800.00	3,607.01	11.32	21.69	49.50	241.37	-9,456.49	9,402.33	9,371.70	30.64	306.908	
3,300.00	3,298.10	3,800.00	3,607.01	11.68	21.69	49.50	241.37	-9,456.49	9,396.49	9,365.54	30.95	303.581	
3,400.00	3,398.03	3,856.32	3,663.27	12.04	21.74	49.50	240.06	-9,454.56	9,390.94	9,359.52	31.42	298.888	
3,500.00	3,497.96	4,686.16	4,488.21	12.40	22.78	49.47	209.34	-9,400.57	9,379.26	9,346.52	32.75	286.423	
3,600.00	3,597.89	4,750.62	4,552.26	12.77	22.86	49.46	205.61	-9,394.24	9,366.86	9,333.72	33.14	282.633	
3,700.00	3,697.82	4,848.70	4,649.74	13.13	22.99	49.45	200.72	-9,384.64	9,354.50	9,320.93	33.57	278.657	
3,800.00	3,797.75	4,862.00	4,662.97	13.49	23.01	49.45	200.26	-9,383.40	9,342.75	9,308.83	33.92	275.462	
3,900.00	3,897.68	4,894.00	4,694.84	13.85	23.04	49.45	199.21	-9,380.74	9,331.86	9,297.59	34.28	272.230	
4,000.00	3,997.61	4,894.00	4,694.84	14.21	23.04	49.45	199.21	-9,380.74	9,321.84	9,287.23	34.61	269.345	
4,100.00	4,097.54	4,926.00	4,726.76	14.58	23.07	49.45	198.27	-9,378.60	9,312.68	9,277.72	34.97	266.314	
4,200.00	4,197.47	4,926.00	4,726.76	14.94	23.07	49.45	198.27	-9,378.60	9,304.45	9,269.15	35.29	263.626	
4,300.00	4,297.40	4,946.00	4,746.72	15.30	23.08	49.45	197.69	-9,377.57	9,297.09	9,261.45	35.64	260.887	
4,400.00	4,397.33	5,005.00	4,805.65	15.66	23.13	49.45	196.16	-9,375.05	9,290.36	9,254.34	36.02	257.891	
4,500.00	4,497.26	5,022.00	4,822.63	16.03	23.14	49.45	195.86	-9,374.41	9,284.35	9,247.99	36.36	255.346	
4,600.00	4,597.19	5,064.00	4,864.61	16.39	23.16	49.45	195.18	-9,373.35	9,279.23	9,242.51	36.72	252.699	
4,700.00	4,697.12	5,084.44	4,885.05	16.75	23.28	49.45	194.83	-9,373.04	9,274.85	9,237.68	37.18	249.480	
4,800.00	4,797.05	5,208.72	5,009.28	17.11	23.98	49.46	192.47	-9,370.94	9,270.68	9,232.33	38.35	241.725	
4,900.00	4,896.99	5,332.96	5,133.48	17.47	24.70	49.47	189.75	-9,368.54	9,266.24	9,226.72	39.53	234.433	
5,000.00	4,996.92	5,457.19	5,257.64	17.84	25.41	49.47	186.68	-9,365.81	9,261.54	9,220.85	40.70	227.562	
5,100.00	5,096.85	5,563.54	5,363.92	18.20	26.18	49.47	183.86	-9,363.31	9,256.68	9,214.77	41.91	220.845	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY

Offset Site Error: 0.00 usft

Survey Program: 100-MWD, 3901-MWD

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,670.06	5,470.37	18.56	26.95	49.47	180.96	-9,360.74	9,251.74	9,208.61	43.13	214.509	
5,300.00	5,296.71	5,776.57	5,576.80	18.92	27.72	49.47	177.97	-9,358.09	9,246.74	9,202.39	44.34	208.520	
5,400.00	5,396.64	5,883.07	5,683.22	19.29	28.50	49.47	174.90	-9,355.36	9,241.66	9,196.10	45.56	202.851	
5,500.00	5,496.57	5,973.31	5,773.39	19.65	29.40	49.47	172.29	-9,353.05	9,236.58	9,189.68	46.89	196.965	
5,600.00	5,596.50	6,060.04	5,860.07	20.01	30.33	49.48	169.92	-9,350.95	9,231.64	9,183.38	48.26	191.303	
5,700.00	5,696.43	6,146.78	5,946.76	20.37	31.27	49.48	167.68	-9,348.97	9,226.84	9,177.22	49.62	185.953	
5,800.00	5,796.36	6,233.54	6,033.47	20.74	32.20	49.48	165.58	-9,347.10	9,222.19	9,171.20	50.98	180.890	
5,900.00	5,896.29	6,320.30	6,120.19	21.10	33.14	49.48	163.61	-9,345.36	9,217.67	9,165.33	52.35	176.093	
6,000.00	5,996.22	6,407.07	6,206.93	21.46	34.08	49.49	161.78	-9,343.73	9,213.30	9,159.59	53.71	171.541	
6,100.00	6,096.15	6,500.33	6,300.16	21.82	34.61	49.49	159.94	-9,342.09	9,209.06	9,154.42	54.64	168.544	
6,200.00	6,196.08	6,600.24	6,400.03	22.19	34.71	49.50	157.98	-9,340.36	9,204.83	9,149.70	55.12	166.983	
6,300.00	6,296.01	6,684.96	6,484.72	22.55	34.79	49.50	156.35	-9,338.91	9,200.64	9,145.07	55.57	165.567	
6,335.60	6,331.59	6,709.31	6,509.07	22.68	34.80	49.51	155.93	-9,338.54	9,199.22	9,143.50	55.71	165.114	
6,350.00	6,345.97	6,719.15	6,518.90	22.73	34.81	31.83	155.77	-9,338.40	9,198.49	9,142.72	55.77	164.928	
6,400.00	6,395.75	6,772.00	6,571.75	22.91	34.84	14.13	155.01	-9,337.72	9,193.53	9,137.54	55.99	164.188	
6,450.00	6,445.03	6,793.73	6,593.48	23.10	34.86	9.52	154.72	-9,337.47	9,184.71	9,128.51	56.20	163.434	
6,500.00	6,493.52	6,842.09	6,641.83	23.29	34.92	7.47	154.09	-9,336.91	9,172.09	9,115.65	56.45	162.492	
6,550.00	6,540.91	6,889.31	6,689.03	23.48	34.98	6.34	153.47	-9,336.36	9,155.72	9,099.03	56.69	161.508	
6,600.00	6,586.91	6,935.09	6,734.81	23.66	35.04	5.66	152.88	-9,335.83	9,135.70	9,078.78	56.92	160.492	
6,650.00	6,631.24	6,979.16	6,778.87	23.85	35.09	5.24	152.30	-9,335.32	9,112.15	9,055.00	57.15	159.450	
6,700.00	6,673.63	7,021.24	6,820.95	24.05	35.15	4.98	151.75	-9,334.84	9,085.21	9,027.84	57.37	158.369	
6,750.00	6,713.80	7,061.08	6,860.78	24.24	35.21	4.84	151.23	-9,334.37	9,055.06	8,997.48	57.58	157.258	
6,800.00	6,751.52	7,098.43	6,898.13	24.44	35.27	4.80	150.74	-9,333.94	9,021.87	8,964.09	57.78	156.144	
6,850.00	6,786.56	7,133.06	6,932.75	24.65	35.33	4.86	150.29	-9,333.54	8,985.86	8,927.89	57.96	155.034	
6,900.00	6,818.69	7,164.75	6,964.43	24.87	35.38	5.01	149.88	-9,333.17	8,947.23	8,889.11	58.12	153.933	
6,950.00	6,847.72	7,193.31	6,992.99	25.10	35.42	5.28	149.51	-9,332.84	8,906.25	8,847.98	58.27	152.846	
7,000.00	6,873.46	7,218.56	7,018.24	25.34	35.46	5.70	149.18	-9,332.55	8,863.14	8,804.75	58.40	151.778	
7,050.00	6,895.77	7,240.36	7,040.03	25.60	35.50	6.34	148.89	-9,332.30	8,818.19	8,759.69	58.50	150.733	
7,100.00	6,914.50	7,258.55	7,058.22	25.87	35.53	7.34	148.65	-9,332.09	8,771.67	8,713.08	58.59	149.713	
7,150.00	6,929.54	7,281.34	7,081.01	26.15	35.57	9.05	148.34	-9,331.81	8,723.85	8,665.17	58.68	148.658	
7,200.00	6,940.80	7,298.23	7,097.90	26.44	35.60	12.31	148.10	-9,331.60	8,675.04	8,616.29	58.75	147.652	
7,250.00	6,948.20	7,308.90	7,108.56	26.75	35.62	20.64	147.94	-9,331.45	8,625.54	8,566.74	58.80	146.695	
7,300.00	6,951.70	7,313.34	7,113.00	27.07	35.63	64.05	147.87	-9,331.39	8,575.66	8,516.84	58.82	145.790	
7,321.06	6,952.00	7,313.36	7,113.02	27.20	35.63	116.79	147.87	-9,331.39	8,554.61	8,495.78	58.83	145.423	
7,400.00	6,951.82	7,311.36	7,111.02	27.74	35.63	116.46	147.90	-9,331.42	8,475.73	8,416.89	58.83	144.067	
7,500.00	6,951.60	7,308.87	7,108.53	28.49	35.62	116.05	147.94	-9,331.45	8,375.80	8,316.95	58.84	142.347	
7,600.00	6,951.37	7,306.40	7,106.07	29.30	35.62	115.64	147.98	-9,331.49	8,275.87	8,217.02	58.85	140.625	
7,700.00	6,951.15	7,303.97	7,103.63	30.18	35.61	115.23	148.01	-9,331.52	8,175.94	8,117.08	58.86	138.900	
7,800.00	6,950.92	7,301.57	7,101.23	31.12	35.61	114.83	148.05	-9,331.55	8,076.01	8,017.14	58.87	137.172	
7,900.00	6,950.70	7,299.20	7,098.86	32.11	35.61	114.43	148.09	-9,331.58	7,976.09	7,917.20	58.89	135.443	
8,000.00	6,950.47	7,296.85	7,096.52	33.15	35.60	114.03	148.12	-9,331.61	7,876.16	7,817.26	58.90	133.711	
8,100.00	6,950.25	7,294.54	7,094.20	34.23	35.60	113.64	148.15	-9,331.65	7,776.24	7,717.32	58.92	131.977	
8,200.00	6,950.03	7,292.25	7,091.92	35.35	35.59	113.24	148.19	-9,331.67	7,676.32	7,617.38	58.94	130.241	
8,300.00	6,949.80	7,290.00	7,089.66	36.51	35.59	112.85	148.22	-9,331.70	7,576.40	7,517.44	58.96	128.502	
8,400.00	6,949.58	7,287.77	7,087.43	37.70	35.58	112.46	148.25	-9,331.73	7,476.48	7,417.50	58.98	126.763	
8,500.00	6,949.35	7,285.56	7,085.23	38.92	35.58	112.08	148.28	-9,331.76	7,376.57	7,317.56	59.00	125.021	
8,600.00	6,949.13	7,283.38	7,083.05	40.17	35.57	111.70	148.32	-9,331.79	7,276.65	7,217.63	59.03	123.277	
8,700.00	6,948.90	7,281.23	7,080.90	41.44	35.57	111.32	148.35	-9,331.81	7,176.74	7,117.69	59.05	121.532	
8,800.00	6,948.68	7,279.11	7,078.77	42.73	35.57	110.94	148.38	-9,331.84	7,076.83	7,017.75	59.08	119.786	
8,900.00	6,948.45	7,277.01	7,076.67	44.04	35.56	110.56	148.41	-9,331.87	6,976.92	6,917.82	59.11	118.038	
9,000.00	6,948.23	7,274.93	7,074.60	45.38	35.56	110.19	148.43	-9,331.89	6,877.02	6,817.88	59.14	116.289	
9,100.00	6,948.00	7,272.88	7,072.54	46.72	35.55	109.82	148.46	-9,331.92	6,777.11	6,717.95	59.17	114.538	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY

Offset Site Error: 0.00 usft

Survey Program: 100-MWD, 3901-MWD

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	7,270.85	7,070.52	48.09	35.55	109.45	148.49	-9,331.94	6,677.21	6,618.01	59.20	112.786	
9,300.00	6,947.55	7,268.84	7,068.51	49.47	35.55	109.09	148.52	-9,331.97	6,577.32	6,518.08	59.24	111.033	
9,400.00	6,947.33	7,266.86	7,066.53	50.86	35.54	108.73	148.54	-9,331.99	6,477.42	6,418.15	59.27	109.279	
9,500.00	6,947.10	7,264.90	7,064.57	52.26	35.54	108.37	148.57	-9,332.01	6,377.53	6,318.22	59.31	107.524	
9,600.00	6,946.88	7,262.96	7,062.63	53.68	35.53	108.01	148.60	-9,332.04	6,277.64	6,218.29	59.35	105.768	
9,700.00	6,946.66	7,261.04	7,060.71	55.10	35.53	107.66	148.62	-9,332.06	6,177.75	6,118.36	59.39	104.012	
9,800.00	6,946.43	7,259.15	7,058.82	56.54	35.53	107.31	148.65	-9,332.08	6,077.87	6,018.43	59.44	102.254	
9,900.00	6,946.21	7,257.72	7,057.39	57.98	35.52	107.04	148.66	-9,332.10	5,977.99	5,918.50	59.49	100.493	
10,000.00	6,945.98	7,256.33	7,056.00	59.43	35.52	106.78	148.68	-9,332.11	5,878.11	5,818.58	59.54	98.732	
10,100.00	6,945.76	7,254.94	7,054.62	60.89	35.52	106.52	148.70	-9,332.13	5,778.24	5,718.65	59.59	96.970	
10,200.00	6,945.53	7,253.56	7,053.23	62.36	35.52	106.26	148.72	-9,332.15	5,678.37	5,618.73	59.64	95.208	
10,300.00	6,945.31	7,252.17	7,051.84	63.83	35.52	106.00	148.74	-9,332.16	5,578.51	5,518.81	59.70	93.446	
10,400.00	6,945.08	7,250.78	7,050.45	65.31	35.51	105.74	148.76	-9,332.18	5,478.65	5,418.90	59.76	91.683	
10,500.00	6,944.86	7,249.39	7,049.06	66.79	35.51	105.48	148.77	-9,332.19	5,378.80	5,318.98	59.82	89.920	
10,600.00	6,944.63	7,248.00	7,047.67	68.28	35.51	105.22	148.79	-9,332.21	5,278.95	5,219.07	59.88	88.157	
10,700.00	6,944.41	7,246.61	7,046.29	69.78	35.51	104.95	148.81	-9,332.23	5,179.11	5,119.16	59.95	86.394	
10,800.00	6,944.18	7,245.22	7,044.90	71.28	35.51	104.69	148.83	-9,332.24	5,079.27	5,019.25	60.02	84.631	
10,900.00	6,943.96	7,243.84	7,043.51	72.78	35.50	104.43	148.85	-9,332.26	4,979.44	4,919.35	60.09	82.868	
11,000.00	6,943.73	7,242.45	7,042.12	74.29	35.50	104.16	148.86	-9,332.27	4,879.61	4,819.45	60.16	81.105	
11,100.00	6,943.51	7,241.06	7,040.73	75.80	35.50	103.89	148.88	-9,332.29	4,779.80	4,719.55	60.24	79.342	
11,200.00	6,943.29	7,239.67	7,039.34	77.32	35.50	103.63	148.90	-9,332.31	4,679.98	4,619.66	60.33	77.579	
11,300.00	6,943.06	7,238.28	7,037.95	78.84	35.49	103.36	148.92	-9,332.32	4,580.18	4,519.77	60.41	75.816	
11,400.00	6,942.84	7,236.89	7,036.57	80.36	35.49	103.09	148.94	-9,332.34	4,480.39	4,419.89	60.50	74.053	
11,500.00	6,942.61	7,235.50	7,035.18	81.88	35.49	102.83	148.95	-9,332.35	4,380.60	4,320.01	60.60	72.291	
11,600.00	6,942.39	7,234.11	7,033.79	83.41	35.49	102.56	148.97	-9,332.37	4,280.83	4,220.13	60.70	70.528	
11,700.00	6,942.16	7,232.73	7,032.40	84.94	35.49	102.29	148.99	-9,332.39	4,181.06	4,120.26	60.80	68.765	
11,800.00	6,941.94	7,231.34	7,031.01	86.47	35.48	102.02	149.01	-9,332.40	4,081.31	4,020.39	60.91	67.003	
11,900.00	6,941.71	7,229.95	7,029.62	88.01	35.48	101.75	149.03	-9,332.42	3,981.56	3,920.54	61.03	65.241	
12,000.00	6,941.49	7,228.56	7,028.24	89.55	35.48	101.48	149.05	-9,332.44	3,881.83	3,820.68	61.15	63.478	
12,100.00	6,941.26	7,227.17	7,026.85	91.09	35.48	101.21	149.06	-9,332.45	3,782.12	3,720.84	61.28	61.716	
12,200.00	6,941.04	7,225.78	7,025.46	92.63	35.47	100.94	149.08	-9,332.47	3,682.42	3,621.00	61.42	59.954	
12,300.00	6,940.81	7,224.39	7,024.07	94.18	35.47	100.66	149.10	-9,332.48	3,582.73	3,521.16	61.57	58.192	
12,400.00	6,940.59	7,223.01	7,022.68	95.72	35.47	100.39	149.12	-9,332.50	3,483.06	3,421.34	61.72	56.429	
12,500.00	6,940.36	7,221.62	7,021.29	97.27	35.47	100.12	149.14	-9,332.52	3,383.42	3,321.52	61.89	54.667	
12,600.00	6,940.14	7,220.23	7,019.90	98.82	35.47	99.85	149.15	-9,332.53	3,283.79	3,221.72	62.07	52.904	
12,700.00	6,939.92	7,218.84	7,018.52	100.37	35.46	99.57	149.17	-9,332.55	3,184.18	3,121.92	62.26	51.141	
12,800.00	6,939.69	7,217.45	7,017.13	101.92	35.46	99.30	149.19	-9,332.56	3,084.60	3,022.13	62.47	49.378	
12,900.00	6,939.47	7,216.06	7,015.74	103.48	35.46	99.02	149.21	-9,332.58	2,985.05	2,922.36	62.69	47.614	
13,000.00	6,939.24	7,214.67	7,014.35	105.03	35.46	98.75	149.23	-9,332.60	2,885.53	2,822.59	62.93	45.849	
13,100.00	6,939.02	7,213.29	7,012.96	106.59	35.45	98.47	149.24	-9,332.61	2,786.04	2,722.84	63.20	44.084	
13,200.00	6,938.79	7,211.90	7,011.57	108.15	35.45	98.20	149.26	-9,332.63	2,686.59	2,623.10	63.48	42.319	
13,300.00	6,938.57	7,210.51	7,010.19	109.71	35.45	97.92	149.28	-9,332.64	2,587.18	2,523.38	63.80	40.552	
13,400.00	6,938.34	7,209.12	7,008.80	111.27	35.45	97.65	149.30	-9,332.66	2,487.81	2,423.67	64.14	38.785	
13,500.00	6,938.12	7,207.73	7,007.41	112.83	35.45	97.37	149.32	-9,332.68	2,388.50	2,323.98	64.53	37.016	
13,600.00	6,937.89	7,206.34	7,006.02	114.40	35.44	97.09	149.34	-9,332.69	2,289.25	2,224.30	64.95	35.247	
13,700.00	6,937.67	7,204.95	7,004.63	115.96	35.44	96.81	149.35	-9,332.71	2,190.07	2,124.65	65.42	33.477	
13,800.00	6,937.44	7,203.56	7,003.24	117.53	35.44	96.54	149.37	-9,332.72	2,090.96	2,025.01	65.95	31.706	
13,900.00	6,937.22	7,202.18	7,001.86	119.09	35.44	96.26	149.39	-9,332.74	1,991.94	1,925.39	66.54	29.935	
14,000.00	6,936.99	7,200.79	7,000.47	120.66	35.43	95.98	149.41	-9,332.76	1,893.02	1,825.80	67.22	28.163	
14,100.00	6,936.77	7,199.40	6,999.08	122.23	35.43	95.70	149.43	-9,332.77	1,794.22	1,726.23	67.99	26.391	
14,200.00	6,936.55	7,198.01	6,997.69	123.80	35.43	95.42	149.44	-9,332.79	1,695.56	1,626.69	68.87	24.621	
14,300.00	6,936.32	7,196.62	6,996.30	125.37	35.43	95.15	149.46	-9,332.80	1,597.07	1,527.18	69.89	22.852	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 100-MWD, 3901-MWD — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	7,195.23	6,994.91	126.94	35.43	94.87	149.48	-9,332.82	1,498.77	1,427.70	71.07	21.088	
14,500.00	6,935.87	7,193.84	6,993.52	128.51	35.42	94.59	149.50	-9,332.84	1,400.71	1,328.25	72.47	19.329	
14,600.00	6,935.65	7,192.46	6,992.14	130.08	35.42	94.31	149.52	-9,332.85	1,302.95	1,228.84	74.11	17.580	
14,700.00	6,935.42	7,191.07	6,990.75	131.65	35.42	94.03	149.53	-9,332.87	1,205.56	1,129.47	76.09	15.845	
14,800.00	6,935.20	7,189.68	6,989.36	133.23	35.42	93.75	149.55	-9,332.89	1,108.62	1,030.15	78.47	14.128	
14,900.00	6,934.97	7,188.29	6,987.97	134.80	35.41	93.47	149.57	-9,332.90	1,012.28	930.90	81.38	12.439	
15,000.00	6,934.75	7,186.90	6,986.58	136.37	35.41	93.19	149.59	-9,332.92	916.72	831.74	84.99	10.787	
15,100.00	6,934.52	7,185.51	6,985.19	137.95	35.41	92.91	149.61	-9,332.93	822.22	732.71	89.51	9.185	
15,200.00	6,934.30	7,184.12	6,983.81	139.53	35.41	92.63	149.63	-9,332.95	729.18	633.90	95.29	7.653	
15,300.00	6,934.07	7,182.73	6,982.42	141.10	35.41	92.35	149.64	-9,332.97	638.25	535.49	102.76	6.211	
15,400.00	6,933.85	7,181.35	6,981.03	142.68	35.40	92.07	149.66	-9,332.98	550.47	437.91	112.56	4.890	
15,500.00	6,933.62	7,179.96	6,979.64	144.26	35.40	91.79	149.68	-9,333.00	467.62	342.11	125.51	3.726	
15,600.00	6,933.40	7,178.57	6,978.25	145.84	35.40	91.51	149.70	-9,333.01	392.83	250.54	142.29	2.761	
15,700.00	6,933.18	7,177.18	6,976.86	147.42	35.40	91.23	149.72	-9,333.03	331.60	169.44	162.16	2.045	
15,800.00	6,932.95	7,175.79	6,975.48	148.99	35.39	90.95	149.73	-9,333.05	292.56	112.73	179.83	1.627	
15,871.83	6,932.79	7,174.79	6,974.48	150.13	35.39	90.75	149.75	-9,333.06	283.61	98.35	185.26	1.531	CC, ES, SF
15,900.00	6,932.73	7,174.40	6,974.09	150.57	35.39	90.67	149.75	-9,333.06	285.01	100.09	184.91	1.541	
16,000.00	6,932.50	7,173.01	6,972.70	152.15	35.39	90.39	149.77	-9,333.08	311.22	137.48	173.74	1.791	
16,100.00	6,932.28	7,171.63	6,971.31	153.74	35.39	90.11	149.79	-9,333.09	363.98	208.81	155.17	2.346	
16,200.00	6,932.05	7,170.24	6,969.92	155.32	35.39	89.82	149.81	-9,333.11	433.71	296.25	137.46	3.155	
16,300.00	6,931.83	7,168.85	6,968.53	156.90	35.38	89.54	149.82	-9,333.13	513.54	390.35	123.20	4.169	
16,400.00	6,931.60	7,167.46	6,967.14	158.48	35.38	89.26	149.84	-9,333.14	599.45	487.20	112.25	5.340	
16,500.00	6,931.38	7,166.07	6,965.76	160.06	35.38	88.98	149.86	-9,333.16	689.17	585.28	103.89	6.634	
16,600.00	6,931.15	7,164.68	6,964.37	161.65	35.38	88.70	149.88	-9,333.17	781.38	683.93	97.45	8.018	
16,700.00	6,930.93	7,163.29	6,962.98	163.23	35.38	88.42	149.90	-9,333.19	875.31	782.89	92.42	9.471	
16,800.00	6,930.70	7,161.91	6,961.59	164.81	35.37	88.14	149.92	-9,333.21	970.44	882.02	88.43	10.975	
16,900.00	6,930.48	7,160.52	6,960.20	166.40	35.37	87.86	149.93	-9,333.22	1,066.47	981.25	85.22	12.514	
17,000.00	6,930.25	7,159.13	6,958.81	167.98	35.37	87.58	149.95	-9,333.24	1,163.16	1,080.55	82.62	14.079	
17,100.00	6,930.03	7,157.74	6,957.43	169.56	35.37	87.30	149.97	-9,333.26	1,260.37	1,179.90	80.48	15.661	
17,200.00	6,929.81	7,156.35	6,956.04	171.15	35.36	87.02	149.99	-9,333.27	1,357.98	1,279.28	78.70	17.255	
17,300.00	6,929.58	7,154.96	6,954.65	172.73	35.36	86.75	150.01	-9,333.29	1,455.92	1,378.71	77.21	18.856	
17,400.00	6,929.36	7,153.57	6,953.26	174.32	35.36	86.47	150.02	-9,333.30	1,554.12	1,478.15	75.96	20.459	
17,500.00	6,929.13	7,152.18	6,951.87	175.91	35.36	86.19	150.04	-9,333.32	1,652.53	1,577.63	74.90	22.063	
17,600.00	6,928.91	7,150.80	6,950.48	177.49	35.36	85.91	150.06	-9,333.34	1,751.12	1,677.13	73.99	23.666	
17,700.00	6,928.68	7,149.41	6,949.09	179.08	35.35	85.63	150.08	-9,333.35	1,849.86	1,776.64	73.22	25.266	
17,800.00	6,928.46	7,148.02	6,947.71	180.66	35.35	85.35	150.10	-9,333.37	1,948.73	1,876.18	72.55	26.862	
17,900.00	6,928.23	7,146.63	6,946.32	182.25	35.35	85.07	150.12	-9,333.38	2,047.71	1,975.74	71.97	28.453	
18,000.00	6,928.01	7,145.24	6,944.93	183.84	35.35	84.80	150.13	-9,333.40	2,146.78	2,075.31	71.47	30.038	
18,100.00	6,927.78	7,143.85	6,943.54	185.43	35.34	84.52	150.15	-9,333.42	2,245.93	2,174.90	71.03	31.618	
18,200.00	6,927.56	7,142.46	6,942.15	187.01	35.34	84.24	150.17	-9,333.43	2,345.15	2,274.50	70.66	33.191	
18,300.00	6,927.33	7,141.08	6,940.76	188.60	35.34	83.97	150.19	-9,333.45	2,444.44	2,374.11	70.33	34.759	
18,400.00	6,927.11	7,139.69	6,939.38	190.19	35.34	83.69	150.21	-9,333.46	2,543.78	2,473.74	70.04	36.320	
18,500.00	6,926.88	7,138.30	6,937.99	191.78	35.34	83.41	150.22	-9,333.48	2,643.17	2,573.38	69.79	37.874	
18,600.00	6,926.66	7,136.91	6,936.60	193.37	35.33	83.14	150.24	-9,333.50	2,742.61	2,673.04	69.57	39.422	
18,700.00	6,926.44	7,135.52	6,935.21	194.96	35.33	82.86	150.26	-9,333.51	2,842.08	2,772.70	69.38	40.963	
18,800.00	6,926.21	7,134.13	6,933.82	196.54	35.33	82.59	150.28	-9,333.53	2,941.59	2,872.37	69.22	42.498	
18,900.00	6,925.99	7,132.74	6,932.43	198.13	35.33	82.31	150.30	-9,333.54	3,041.13	2,972.05	69.08	44.026	
19,000.00	6,925.76	7,131.35	6,931.05	199.72	35.32	82.04	150.31	-9,333.56	3,140.70	3,071.74	68.95	45.548	
19,100.00	6,925.54	7,129.97	6,929.66	201.31	35.32	81.76	150.33	-9,333.58	3,240.29	3,171.44	68.85	47.064	
19,200.00	6,925.31	7,128.58	6,928.27	202.90	35.32	81.49	150.35	-9,333.59	3,339.91	3,271.15	68.76	48.573	
19,300.00	6,925.09	7,127.19	6,926.88	204.49	35.32	81.22	150.37	-9,333.61	3,439.55	3,370.86	68.69	50.076	
19,400.00	6,924.86	7,125.80	6,925.49	206.08	35.32	80.94	150.39	-9,333.62	3,539.21	3,470.58	68.63	51.573	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 020D - ST01 - ST01-SVY

Offset Site Error: 0.00 usft

Survey Program: 100-MWD, 3901-MWD

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	7,124.41	6,924.10	207.67	35.31	80.67	150.41	-9,333.64	3,638.89	3,570.31	68.58	53.063	
19,600.00	6,924.41	7,123.02	6,922.71	209.26	35.31	80.40	150.42	-9,333.66	3,738.58	3,670.04	68.54	54.548	
19,700.00	6,924.19	7,121.63	6,921.33	210.85	35.31	80.13	150.44	-9,333.67	3,838.29	3,769.78	68.51	56.027	
19,800.00	6,923.96	7,120.25	6,919.94	212.44	35.31	79.86	150.46	-9,333.69	3,938.01	3,869.53	68.49	57.499	
19,900.00	6,923.74	7,118.86	6,918.55	214.04	35.31	79.59	150.48	-9,333.71	4,037.75	3,969.28	68.48	58.966	
20,000.00	6,923.51	7,117.47	6,917.16	215.63	35.30	79.32	150.50	-9,333.72	4,137.50	4,069.03	68.47	60.427	
20,100.00	6,923.29	7,116.08	6,915.77	217.22	35.30	79.05	150.51	-9,333.74	4,237.26	4,168.79	68.47	61.883	
20,200.00	6,923.07	7,114.69	6,914.38	218.81	35.30	78.78	150.53	-9,333.75	4,337.03	4,268.55	68.48	63.332	
20,300.00	6,922.84	7,113.30	6,913.00	220.40	35.30	78.51	150.55	-9,333.77	4,436.81	4,368.32	68.49	64.776	
20,400.00	6,922.62	7,111.91	6,911.61	221.99	35.29	78.25	150.57	-9,333.79	4,536.60	4,468.09	68.51	66.214	
20,500.00	6,922.39	7,110.53	6,910.22	223.59	35.29	77.98	150.59	-9,333.80	4,636.40	4,567.86	68.54	67.647	
20,600.00	6,922.17	7,109.14	6,908.83	225.18	35.29	77.71	150.60	-9,333.82	4,736.21	4,667.64	68.57	69.074	
20,674.13	6,922.00	7,108.11	6,907.80	226.36	35.29	77.51	150.62	-9,333.83	4,810.20	4,741.61	68.59	70.129	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	127.64	127.64	0.00	1.34	-57.71	1,185.27	-1,875.77	2,218.88				
100.00	100.00	222.18	222.18	0.25	2.33	-57.71	1,185.58	-1,876.07	2,219.33	2,216.75	2.58	859.902	
200.00	200.00	316.70	316.70	0.61	3.22	-57.70	1,186.08	-1,876.55	2,220.03	2,216.20	3.83	579.763	
300.00	300.00	410.93	410.92	0.97	3.63	-57.70	1,186.74	-1,877.19	2,220.98	2,216.38	4.60	483.156	
400.00	400.00	482.66	482.64	1.33	3.70	-57.69	1,187.60	-1,877.88	2,222.52	2,217.49	5.02	442.303	
500.00	500.00	530.00	529.95	1.68	3.77	-57.71	1,187.93	-1,879.56	2,225.97	2,220.52	5.45	408.647	
606.93	606.91	574.72	574.56	2.05	3.85	79.65	1,188.04	-1,882.60	2,232.05	2,226.16	5.90	378.513	
700.00	699.91	621.00	620.57	2.37	3.97	79.62	1,187.86	-1,887.61	2,239.57	2,233.27	6.31	355.130	
800.00	799.84	661.25	660.44	2.71	4.07	79.58	1,187.58	-1,893.15	2,249.96	2,243.24	6.72	334.947	
900.00	899.77	712.00	710.48	3.06	4.19	79.50	1,186.84	-1,901.51	2,262.53	2,255.38	7.16	316.143	
1,000.00	999.70	759.32	756.94	3.41	4.30	79.41	1,186.27	-1,910.47	2,277.33	2,269.74	7.59	299.965	
1,100.00	1,099.63	810.73	807.21	3.76	4.44	79.30	1,186.04	-1,921.26	2,294.29	2,286.24	8.05	285.138	
1,200.00	1,199.56	863.00	858.04	4.11	4.59	79.19	1,185.95	-1,933.42	2,313.31	2,304.80	8.52	271.653	
1,300.00	1,299.49	911.26	904.70	4.47	4.74	79.07	1,185.88	-1,945.71	2,334.31	2,325.33	8.98	259.938	
1,400.00	1,399.42	962.01	953.53	4.83	4.91	78.94	1,186.22	-1,959.57	2,357.34	2,347.88	9.46	249.174	
1,500.00	1,499.35	1,017.00	1,006.07	5.19	5.10	78.78	1,186.29	-1,975.77	2,382.10	2,372.13	9.97	238.912	
1,600.00	1,599.28	1,069.14	1,055.55	5.54	5.29	78.61	1,186.27	-1,992.24	2,408.66	2,398.18	10.48	229.853	
1,700.00	1,699.21	1,120.23	1,103.67	5.90	5.48	78.44	1,186.30	-2,009.40	2,437.05	2,426.06	10.99	221.749	
1,800.00	1,799.14	1,181.41	1,160.83	6.26	5.72	78.21	1,186.16	-2,031.18	2,467.09	2,455.53	11.56	213.400	
1,900.00	1,899.07	1,286.80	1,259.02	6.62	6.14	77.81	1,185.46	-2,069.47	2,497.71	2,485.33	12.38	201.710	
2,000.00	1,999.00	1,414.29	1,378.42	6.98	6.67	77.36	1,184.47	-2,114.16	2,527.16	2,513.80	13.35	189.269	
2,100.00	2,098.94	1,496.60	1,455.37	7.34	7.03	77.06	1,183.07	-2,143.33	2,556.67	2,542.58	14.08	181.524	
2,200.00	2,198.87	1,618.97	1,570.05	7.70	7.59	76.63	1,181.28	-2,185.99	2,585.86	2,570.80	15.07	171.641	
2,300.00	2,298.80	1,688.43	1,635.36	8.06	7.91	76.42	1,181.10	-2,209.64	2,614.99	2,599.25	15.73	166.209	
2,400.00	2,398.73	1,759.42	1,701.89	8.42	8.26	76.21	1,181.48	-2,234.38	2,645.19	2,628.78	16.42	161.134	
2,500.00	2,498.66	1,833.80	1,771.42	8.79	8.63	76.00	1,182.48	-2,260.79	2,676.36	2,659.24	17.13	156.282	
2,600.00	2,598.59	1,932.82	1,863.84	9.15	9.14	75.72	1,183.51	-2,296.32	2,707.84	2,689.84	18.00	150.425	
2,700.00	2,698.52	2,035.74	1,960.05	9.51	9.69	75.43	1,184.38	-2,332.85	2,738.92	2,720.02	18.91	144.874	
2,800.00	2,798.45	2,113.66	2,033.05	9.87	10.12	75.24	1,185.76	-2,360.09	2,770.02	2,750.38	19.65	141.000	
2,900.00	2,898.38	2,212.50	2,125.55	10.23	10.68	75.01	1,188.05	-2,394.81	2,801.50	2,780.97	20.53	136.475	
3,000.00	2,998.31	2,354.86	2,259.06	10.59	11.49	74.67	1,190.37	-2,444.19	2,832.39	2,810.69	21.70	130.525	
3,100.00	3,098.24	2,444.69	2,343.39	10.96	12.01	74.44	1,190.71	-2,475.14	2,862.52	2,839.99	22.53	127.070	
3,200.00	3,198.17	2,535.00	2,428.03	11.32	12.55	74.21	1,190.59	-2,506.61	2,892.84	2,869.48	23.36	123.833	
3,300.00	3,298.10	2,623.99	2,511.46	11.68	13.08	73.97	1,190.13	-2,537.59	2,923.04	2,898.85	24.19	120.850	
3,400.00	3,398.03	2,745.98	2,625.82	12.04	13.82	73.67	1,189.81	-2,580.05	2,953.41	2,928.18	25.24	117.017	
3,500.00	3,497.96	2,826.97	2,701.78	12.40	14.31	73.46	1,189.08	-2,608.12	2,983.40	2,957.39	26.01	114.684	
3,600.00	3,597.89	2,918.78	2,787.82	12.77	14.87	73.23	1,188.29	-2,640.14	3,013.65	2,986.79	26.86	112.180	
3,700.00	3,697.82	3,027.78	2,890.16	13.13	15.54	72.98	1,188.46	-2,677.65	3,043.94	3,016.11	27.83	109.375	
3,800.00	3,797.75	4,005.71	3,844.23	13.49	19.77	71.96	1,182.36	-2,871.15	3,066.79	3,033.60	33.18	92.415	
3,900.00	3,897.68	4,106.06	3,944.52	13.85	32.23	71.99	1,181.62	-2,874.66	3,068.51	3,022.51	46.00	66.704	
4,000.00	3,997.61	4,206.41	4,044.81	14.21	44.76	72.01	1,180.89	-2,878.16	3,070.23	3,011.33	58.89	52.132	
4,100.00	4,097.54	4,306.77	4,145.10	14.58	57.31	72.04	1,180.17	-2,881.63	3,071.93	3,000.12	71.81	42.779	
4,200.00	4,197.47	4,407.12	4,245.40	14.94	69.88	72.07	1,179.48	-2,885.08	3,073.62	2,988.88	84.74	36.272	
4,300.00	4,297.40	4,507.47	4,345.69	15.30	82.44	72.10	1,178.80	-2,888.51	3,075.30	2,977.63	97.67	31.486	
4,400.00	4,397.33	4,607.83	4,445.98	15.66	95.01	72.13	1,178.14	-2,891.92	3,076.97	2,966.36	110.61	27.818	
4,500.00	4,497.26	4,708.18	4,546.27	16.03	107.58	72.16	1,177.49	-2,895.31	3,078.63	2,955.07	123.55	24.918	
4,600.00	4,597.19	4,808.53	4,646.57	16.39	120.16	72.19	1,176.87	-2,898.68	3,080.27	2,943.78	136.49	22.567	
4,700.00	4,697.12	4,908.88	4,746.86	16.75	132.73	72.22	1,176.25	-2,902.02	3,081.90	2,932.47	149.44	20.623	
4,800.00	4,797.05	5,009.23	4,847.15	17.11	145.30	72.25	1,175.66	-2,905.35	3,083.53	2,921.15	162.38	18.989	
4,900.00	4,896.99	5,109.58	4,947.45	17.47	157.87	72.28	1,175.08	-2,908.65	3,085.14	2,909.81	175.33	17.597	
5,000.00	4,996.92	5,209.93	5,047.74	17.84	170.45	72.31	1,174.52	-2,911.93	3,086.74	2,898.47	188.27	16.395	
5,100.00	5,096.85	5,310.28	5,148.04	18.20	183.02	72.34	1,173.97	-2,915.19	3,088.33	2,887.11	201.22	15.348	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5 — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,410.63	5,248.33	18.56	195.59	72.37	1,173.45	-2,918.43	3,089.90	2,875.74	214.16	14.428	
5,300.00	5,296.71	5,510.98	5,348.63	18.92	208.17	72.40	1,172.93	-2,921.65	3,091.47	2,864.36	227.11	13.612	
5,400.00	5,396.64	5,611.33	5,448.93	19.29	220.74	72.44	1,172.44	-2,924.85	3,093.02	2,852.97	240.06	12.885	
5,500.00	5,496.57	5,711.68	5,549.22	19.65	233.31	72.47	1,171.96	-2,928.03	3,094.57	2,841.56	253.00	12.231	
5,600.00	5,596.50	5,812.02	5,649.52	20.01	245.88	72.50	1,171.50	-2,931.18	3,096.10	2,830.15	265.95	11.642	
5,700.00	5,696.43	5,912.37	5,749.82	20.37	258.46	72.54	1,171.05	-2,934.31	3,097.62	2,818.72	278.90	11.107	
5,800.00	5,796.36	6,012.72	5,850.11	20.74	271.03	72.57	1,170.63	-2,937.43	3,099.13	2,807.29	291.84	10.619	
5,900.00	5,896.29	6,113.06	5,950.41	21.10	283.60	72.61	1,170.22	-2,940.52	3,100.63	2,795.84	304.79	10.173	
6,000.00	5,996.22	6,213.41	6,050.71	21.46	296.18	72.64	1,169.82	-2,943.59	3,102.12	2,784.38	317.74	9.763	
6,100.00	6,096.15	6,313.75	6,151.01	21.82	308.76	72.68	1,169.44	-2,946.64	3,103.60	2,772.91	330.69	9.385	
6,200.00	6,196.08	6,414.10	6,251.30	22.19	321.35	72.71	1,169.08	-2,949.66	3,105.07	2,761.43	343.63	9.036	
6,300.00	6,296.01	6,514.44	6,351.60	22.55	333.93	72.75	1,168.74	-2,952.67	3,106.52	2,749.94	356.58	8.712	
6,335.60	6,331.59	6,550.17	6,387.31	22.68	338.41	72.76	1,168.62	-2,953.73	3,107.04	2,745.85	361.19	8.602	
6,350.00	6,345.97	6,564.61	6,401.75	22.73	340.22	55.09	1,168.57	-2,954.16	3,107.10	2,744.04	363.05	8.558	
6,400.00	6,395.75	6,614.69	6,451.80	22.91	346.50	37.50	1,168.41	-2,955.65	3,105.02	2,735.50	369.52	8.403	
6,450.00	6,445.03	6,664.38	6,501.48	23.10	352.74	33.14	1,168.25	-2,957.12	3,099.39	2,723.46	375.93	8.245	
6,500.00	6,493.52	6,713.39	6,550.46	23.29	358.88	31.52	1,168.10	-2,958.57	3,090.27	2,708.00	382.26	8.084	
6,550.00	6,540.91	6,761.41	6,598.46	23.48	364.90	30.99	1,167.96	-2,959.98	3,077.70	2,689.24	388.47	7.923	
6,600.00	6,586.91	6,808.13	6,645.16	23.66	370.76	31.09	1,167.82	-2,961.35	3,061.79	2,667.28	394.51	7.761	
6,650.00	6,631.24	6,853.28	6,690.29	23.85	376.43	31.65	1,167.70	-2,962.66	3,042.65	2,642.30	400.35	7.600	
6,700.00	6,673.63	6,896.57	6,733.56	24.05	381.85	32.61	1,167.58	-2,963.92	3,020.40	2,614.45	405.95	7.440	
6,750.00	6,713.80	6,937.74	6,774.71	24.24	387.02	33.94	1,167.47	-2,965.12	2,995.21	2,583.93	411.28	7.283	
6,800.00	6,751.52	6,976.52	6,813.48	24.44	391.88	35.68	1,167.37	-2,966.24	2,967.24	2,550.94	416.31	7.128	
6,850.00	6,786.56	7,012.69	6,849.64	24.65	396.42	37.84	1,167.27	-2,967.28	2,936.70	2,515.70	421.00	6.976	
6,900.00	6,818.69	7,046.02	6,882.95	24.87	400.60	40.48	1,167.19	-2,968.24	2,903.80	2,478.46	425.33	6.827	
6,950.00	6,847.72	7,076.30	6,913.22	25.10	404.40	43.67	1,167.12	-2,969.11	2,868.76	2,439.48	429.28	6.683	
7,000.00	6,873.46	7,103.35	6,940.26	25.34	407.79	47.48	1,167.05	-2,969.88	2,831.82	2,399.00	432.82	6.543	
7,050.00	6,895.77	7,127.00	6,963.90	25.60	410.75	51.97	1,167.00	-2,970.56	2,793.24	2,357.31	435.92	6.408	
7,100.00	6,914.50	7,147.11	6,984.00	25.87	413.28	57.20	1,166.95	-2,971.13	2,753.27	2,314.69	438.58	6.278	
7,150.00	6,929.54	7,163.55	7,000.43	26.15	415.34	63.18	1,166.91	-2,971.60	2,712.20	2,271.42	440.78	6.153	
7,200.00	6,940.80	7,176.22	7,013.10	26.44	416.93	69.85	1,166.88	-2,971.96	2,670.29	2,227.78	442.51	6.034	
7,250.00	6,948.20	7,185.05	7,021.92	26.75	418.03	77.04	1,166.86	-2,972.21	2,627.83	2,184.08	443.76	5.922	
7,300.00	6,951.70	7,189.97	7,026.84	27.07	418.65	84.51	1,166.85	-2,972.35	2,585.10	2,140.58	444.52	5.816	
7,321.06	6,952.00	7,190.88	7,027.75	27.20	418.77	87.66	1,166.85	-2,972.38	2,567.08	2,122.39	444.69	5.773	
7,400.00	6,951.82	7,192.95	7,029.82	27.74	419.02	87.75	1,166.85	-2,972.44	2,499.92	2,054.72	445.20	5.615	
7,500.00	6,951.60	7,195.57	7,032.44	28.49	419.35	87.86	1,166.84	-2,972.51	2,415.86	1,969.97	445.89	5.418	
7,600.00	6,951.37	7,198.19	7,035.06	29.30	419.68	87.98	1,166.83	-2,972.59	2,333.05	1,886.40	446.65	5.223	
7,700.00	6,951.15	7,200.81	7,037.67	30.18	420.01	88.09	1,166.83	-2,972.66	2,251.64	1,804.15	447.49	5.032	
7,800.00	6,950.92	7,203.43	7,040.29	31.12	420.34	88.20	1,166.82	-2,972.74	2,171.78	1,723.37	448.40	4.843	
7,900.00	6,950.70	7,206.04	7,042.91	32.11	420.67	88.31	1,166.82	-2,972.81	2,093.64	1,644.23	449.41	4.659	
8,000.00	6,950.47	7,208.66	7,045.52	33.15	421.00	88.43	1,166.81	-2,972.89	2,017.44	1,566.91	450.53	4.478	
8,100.00	6,950.25	7,211.28	7,048.14	34.23	421.32	88.54	1,166.81	-2,972.96	1,943.38	1,491.64	451.75	4.302	
8,200.00	6,950.03	7,213.89	7,050.75	35.35	421.65	88.65	1,166.80	-2,973.03	1,871.74	1,418.66	453.08	4.131	
8,300.00	6,949.80	7,216.50	7,053.36	36.51	421.98	88.76	1,166.79	-2,973.11	1,802.80	1,348.25	454.55	3.966	
8,400.00	6,949.58	7,219.11	7,055.97	37.70	422.31	88.88	1,166.79	-2,973.18	1,736.87	1,280.74	456.13	3.808	
8,500.00	6,949.35	7,221.73	7,058.58	38.92	422.63	88.99	1,166.78	-2,973.26	1,674.33	1,216.48	457.85	3.657	
8,600.00	6,949.13	7,224.34	7,061.19	40.17	422.96	89.10	1,166.78	-2,973.33	1,615.55	1,155.86	459.68	3.514	
8,700.00	6,948.90	7,226.94	7,063.80	41.44	423.29	89.21	1,166.77	-2,973.40	1,560.96	1,099.33	461.64	3.381	
8,800.00	6,948.68	7,229.55	7,066.41	42.73	423.62	89.33	1,166.77	-2,973.48	1,511.03	1,047.34	463.69	3.259	
8,900.00	6,948.45	7,232.16	7,069.01	44.04	423.94	89.44	1,166.76	-2,973.55	1,466.22	1,000.40	465.81	3.148	
9,000.00	6,948.23	7,234.76	7,071.62	45.38	424.27	89.55	1,166.75	-2,973.63	1,427.01	959.03	467.98	3.049	
9,100.00	6,948.00	7,237.37	7,074.22	46.72	424.60	89.66	1,166.75	-2,973.70	1,393.89	923.73	470.16	2.965	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	7,239.97	7,076.82	48.09	424.92	89.77	1,166.74	-2,973.77	1,367.28	894.98	472.30	2.895	
9,300.00	6,947.55	7,242.57	7,079.42	49.47	425.25	89.89	1,166.74	-2,973.85	1,347.59	873.23	474.35	2.841	
9,400.00	6,947.33	7,245.17	7,082.02	50.86	425.57	90.00	1,166.73	-2,973.92	1,335.11	858.83	476.27	2.803	
9,500.00	6,947.10	7,247.77	7,084.62	52.26	425.90	90.11	1,166.73	-2,973.99	1,330.04	852.02	478.02	2.782	
9,517.53	6,947.07	7,248.23	7,085.08	52.51	425.96	90.13	1,166.73	-2,974.01	1,329.93	851.62	478.30	2.781	CC, ES
9,600.00	6,946.88	7,250.37	7,087.22	53.68	426.23	90.22	1,166.72	-2,974.07	1,332.48	852.93	479.55	2.779	SF
9,700.00	6,946.66	7,252.97	7,089.82	55.10	426.55	90.33	1,166.72	-2,974.14	1,342.38	861.52	480.85	2.792	
9,800.00	6,946.43	7,255.57	7,092.41	56.54	426.88	90.45	1,166.71	-2,974.21	1,359.57	877.66	481.92	2.821	
9,900.00	6,946.21	7,258.16	7,095.01	57.98	427.20	90.56	1,166.70	-2,974.29	1,383.79	901.06	482.74	2.867	
10,000.00	6,945.98	7,260.76	7,097.60	59.43	427.53	90.67	1,166.70	-2,974.36	1,414.68	931.34	483.34	2.927	
10,100.00	6,945.76	7,263.35	7,100.19	60.89	427.85	90.78	1,166.69	-2,974.43	1,451.81	968.07	483.73	3.001	
10,200.00	6,945.53	7,265.94	7,102.78	62.36	428.18	90.89	1,166.69	-2,974.51	1,494.71	1,010.75	483.96	3.089	
10,300.00	6,945.31	7,268.53	7,105.37	63.83	428.50	91.00	1,166.68	-2,974.58	1,542.90	1,058.86	484.04	3.188	
10,400.00	6,945.08	7,271.12	7,107.96	65.31	428.83	91.12	1,166.68	-2,974.65	1,595.91	1,111.90	484.01	3.297	
10,500.00	6,944.86	7,273.71	7,110.55	66.79	429.15	91.23	1,166.67	-2,974.73	1,653.27	1,169.38	483.89	3.417	
10,600.00	6,944.63	7,276.30	7,113.14	68.28	429.48	91.34	1,166.67	-2,974.80	1,714.54	1,230.83	483.70	3.545	
10,700.00	6,944.41	7,278.89	7,115.72	69.78	429.80	91.45	1,166.66	-2,974.87	1,779.32	1,295.84	483.48	3.680	
10,800.00	6,944.18	7,281.47	7,118.31	71.28	430.13	91.56	1,166.66	-2,974.95	1,847.24	1,364.02	483.22	3.823	
10,900.00	6,943.96	7,284.06	7,120.89	72.78	430.45	91.67	1,166.65	-2,975.02	1,917.97	1,435.02	482.96	3.971	
11,000.00	6,943.73	7,286.64	7,123.47	74.29	430.78	91.78	1,166.64	-2,975.09	1,991.21	1,508.52	482.69	4.125	
11,100.00	6,943.51	7,289.23	7,126.06	75.80	431.10	91.89	1,166.64	-2,975.17	2,066.69	1,584.27	482.42	4.284	
11,200.00	6,943.29	7,291.81	7,128.64	77.32	431.42	92.01	1,166.63	-2,975.24	2,144.18	1,662.00	482.17	4.447	
11,300.00	6,943.06	7,294.39	7,131.22	78.84	431.75	92.12	1,166.63	-2,975.31	2,223.45	1,741.52	481.93	4.614	
11,400.00	6,942.84	7,296.97	7,133.79	80.36	432.07	92.23	1,166.62	-2,975.38	2,304.34	1,822.63	481.71	4.784	
11,500.00	6,942.61	7,299.54	7,136.37	81.88	432.39	92.34	1,166.62	-2,975.46	2,386.68	1,905.17	481.51	4.957	
11,600.00	6,942.39	7,302.12	7,138.95	83.41	432.72	92.45	1,166.61	-2,975.53	2,470.31	1,988.98	481.33	5.132	
11,700.00	6,942.16	7,304.70	7,141.52	84.94	433.04	92.56	1,166.61	-2,975.60	2,555.12	2,073.95	481.18	5.310	
11,800.00	6,941.94	7,307.27	7,144.10	86.47	433.36	92.67	1,166.60	-2,975.67	2,640.99	2,159.95	481.04	5.490	
11,900.00	6,941.71	7,309.85	7,146.67	88.01	433.69	92.78	1,166.60	-2,975.75	2,727.82	2,246.90	480.93	5.672	
12,000.00	6,941.49	7,312.42	7,149.24	89.55	434.01	92.89	1,166.59	-2,975.82	2,815.53	2,334.69	480.84	5.855	
12,100.00	6,941.26	7,314.99	7,151.81	91.09	434.33	93.00	1,166.59	-2,975.89	2,904.02	2,423.26	480.77	6.040	
12,200.00	6,941.04	7,317.56	7,154.38	92.63	434.65	93.11	1,166.58	-2,975.96	2,993.24	2,512.53	480.71	6.227	
12,300.00	6,940.81	7,320.13	7,156.95	94.18	434.98	93.22	1,166.58	-2,976.04	3,083.12	2,602.43	480.68	6.414	
12,400.00	6,940.59	7,322.70	7,159.52	95.72	435.30	93.33	1,166.57	-2,976.11	3,173.60	2,692.93	480.67	6.602	
12,500.00	6,940.36	7,325.27	7,162.08	97.27	435.62	93.44	1,166.57	-2,976.18	3,264.63	2,783.96	480.67	6.792	
12,600.00	6,940.14	7,327.83	7,164.65	98.82	435.94	93.55	1,166.56	-2,976.25	3,356.18	2,875.48	480.70	6.982	
12,700.00	6,939.92	7,330.40	7,167.21	100.37	436.26	93.66	1,166.56	-2,976.33	3,448.19	2,967.45	480.73	7.173	
12,800.00	6,939.69	7,332.96	7,169.78	101.92	436.59	93.77	1,166.55	-2,976.40	3,540.63	3,059.84	480.79	7.364	
12,900.00	6,939.47	7,335.53	7,172.34	103.48	436.91	93.88	1,166.55	-2,976.47	3,633.47	3,152.62	480.85	7.556	
13,000.00	6,939.24	7,338.09	7,174.90	105.03	437.23	93.99	1,166.54	-2,976.54	3,726.68	3,245.74	480.93	7.749	
13,100.00	6,939.02	7,340.65	7,177.46	106.59	437.55	94.10	1,166.54	-2,976.61	3,820.23	3,339.20	481.03	7.942	
13,200.00	6,938.79	7,343.21	7,180.02	108.15	437.87	94.21	1,166.53	-2,976.69	3,914.10	3,432.96	481.13	8.135	
13,300.00	6,938.57	7,345.77	7,182.58	109.71	438.19	94.32	1,166.53	-2,976.76	4,008.26	3,527.01	481.25	8.329	
13,400.00	6,938.34	7,348.33	7,185.14	111.27	438.51	94.43	1,166.52	-2,976.83	4,102.70	3,621.32	481.38	8.523	
13,500.00	6,938.12	7,350.89	7,187.69	112.83	438.83	94.54	1,166.52	-2,976.90	4,197.39	3,715.87	481.52	8.717	
13,600.00	6,937.89	7,353.44	7,190.25	114.40	439.15	94.65	1,166.51	-2,976.97	4,292.32	3,810.66	481.67	8.911	
13,700.00	6,937.67	7,356.00	7,192.80	115.96	439.47	94.76	1,166.51	-2,977.04	4,387.48	3,905.66	481.83	9.106	
13,800.00	6,937.44	7,358.55	7,195.35	117.53	439.79	94.87	1,166.50	-2,977.12	4,482.85	4,000.85	481.99	9.301	
13,900.00	6,937.22	7,361.10	7,197.90	119.09	440.11	94.98	1,166.50	-2,977.19	4,578.41	4,096.24	482.17	9.495	
14,000.00	6,936.99	7,363.65	7,200.45	120.66	440.43	95.09	1,166.49	-2,977.26	4,674.16	4,191.80	482.35	9.690	
14,100.00	6,936.77	7,366.20	7,203.00	122.23	440.75	95.20	1,166.49	-2,977.33	4,770.08	4,287.53	482.54	9.885	
14,200.00	6,936.55	7,368.75	7,205.55	123.80	441.07	95.31	1,166.48	-2,977.40	4,866.16	4,383.42	482.74	10.080	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 300-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	7,371.30	7,208.10	125.37	441.39	95.42	1,166.48	-2,977.47	4,962.39	4,479.45	482.95	10.275	
14,400.00	6,936.10	7,373.85	7,210.65	126.94	441.71	95.52	1,166.47	-2,977.55	5,058.78	4,575.61	483.16	10.470	
14,500.00	6,935.87	7,376.40	7,213.19	128.51	442.03	95.63	1,166.47	-2,977.62	5,155.29	4,671.91	483.38	10.665	
14,600.00	6,935.65	7,378.94	7,215.74	130.08	442.35	95.74	1,166.46	-2,977.69	5,251.94	4,768.33	483.60	10.860	
14,700.00	6,935.42	7,381.48	7,218.28	131.65	442.67	95.85	1,166.46	-2,977.76	5,348.71	4,864.87	483.84	11.055	
14,800.00	6,935.20	7,384.03	7,220.82	133.23	442.99	95.96	1,166.45	-2,977.83	5,445.59	4,961.52	484.07	11.250	
14,900.00	6,934.97	7,386.57	7,223.36	134.80	443.31	96.07	1,166.45	-2,977.90	5,542.59	5,058.27	484.31	11.444	
15,000.00	6,934.75	7,389.11	7,225.90	136.37	443.63	96.17	1,166.44	-2,977.97	5,639.68	5,155.12	484.56	11.639	
15,100.00	6,934.52	7,391.65	7,228.44	137.95	443.95	96.28	1,166.44	-2,978.04	5,736.88	5,252.07	484.81	11.833	
15,200.00	6,934.30	7,394.19	7,230.98	139.53	444.26	96.39	1,166.43	-2,978.12	5,834.17	5,349.10	485.07	12.028	
15,300.00	6,934.07	7,396.73	7,233.52	141.10	444.58	96.50	1,166.43	-2,978.19	5,931.55	5,446.22	485.33	12.222	
15,400.00	6,933.85	7,399.26	7,236.05	142.68	444.90	96.61	1,166.42	-2,978.26	6,029.01	5,543.42	485.59	12.416	
15,500.00	6,933.62	7,401.80	7,238.59	144.26	445.22	96.71	1,166.42	-2,978.33	6,126.56	5,640.70	485.86	12.610	
15,600.00	6,933.40	7,404.34	7,241.12	145.84	445.54	96.82	1,166.41	-2,978.40	6,224.18	5,738.05	486.13	12.803	
15,700.00	6,933.18	7,406.87	7,243.65	147.42	445.85	96.93	1,166.41	-2,978.47	6,321.87	5,835.46	486.41	12.997	
15,800.00	6,932.95	7,409.40	7,246.18	148.99	446.17	97.04	1,166.40	-2,978.54	6,419.64	5,932.95	486.69	13.190	
15,900.00	6,932.73	7,411.93	7,248.72	150.57	446.49	97.14	1,166.40	-2,978.61	6,517.47	6,030.50	486.97	13.384	
16,000.00	6,932.50	7,414.46	7,251.24	152.15	446.81	97.25	1,166.39	-2,978.68	6,615.36	6,128.10	487.26	13.577	
16,100.00	6,932.28	7,416.99	7,253.77	153.74	447.12	97.36	1,166.39	-2,978.75	6,713.32	6,225.77	487.55	13.770	
16,200.00	6,932.05	7,419.52	7,256.30	155.32	447.44	97.47	1,166.38	-2,978.82	6,811.33	6,323.49	487.84	13.962	
16,300.00	6,931.83	7,422.05	7,258.83	156.90	447.76	97.57	1,166.38	-2,978.90	6,909.40	6,421.27	488.14	14.155	
16,400.00	6,931.60	7,424.58	7,261.35	158.48	448.07	97.68	1,166.37	-2,978.97	7,007.53	6,519.09	488.43	14.347	
16,500.00	6,931.38	7,427.10	7,263.88	160.06	448.39	97.79	1,166.37	-2,979.04	7,105.70	6,616.97	488.74	14.539	
16,600.00	6,931.15	7,429.62	7,266.40	161.65	448.71	97.89	1,166.37	-2,979.11	7,203.93	6,714.89	489.04	14.731	
16,700.00	6,930.93	7,432.15	7,268.92	163.23	449.02	98.00	1,166.36	-2,979.18	7,302.20	6,812.85	489.35	14.922	
16,800.00	6,930.70	7,434.67	7,271.44	164.81	449.34	98.11	1,166.36	-2,979.25	7,400.52	6,910.86	489.66	15.114	
16,900.00	6,930.48	7,437.19	7,273.96	166.40	449.66	98.21	1,166.35	-2,979.32	7,498.88	7,008.91	489.97	15.305	
17,000.00	6,930.25	7,439.71	7,276.48	167.98	449.97	98.32	1,166.35	-2,979.39	7,597.28	7,107.00	490.28	15.496	
17,100.00	6,930.03	7,442.23	7,279.00	169.56	450.29	98.43	1,166.34	-2,979.46	7,695.73	7,205.13	490.60	15.686	
17,200.00	6,929.81	7,444.75	7,281.52	171.15	450.60	98.53	1,166.34	-2,979.53	7,794.21	7,303.29	490.92	15.877	
17,300.00	6,929.58	7,447.27	7,284.03	172.73	450.92	98.64	1,166.33	-2,979.60	7,892.73	7,401.49	491.24	16.067	
17,400.00	6,929.36	7,449.78	7,286.55	174.32	451.24	98.74	1,166.33	-2,979.67	7,991.28	7,499.72	491.56	16.257	
17,500.00	6,929.13	7,452.30	7,289.06	175.91	451.55	98.85	1,166.32	-2,979.74	8,089.87	7,597.99	491.89	16.447	
17,600.00	6,928.91	7,454.81	7,291.58	177.49	451.87	98.96	1,166.32	-2,979.81	8,188.50	7,696.28	492.21	16.636	
17,700.00	6,928.68	7,457.32	7,294.09	179.08	452.18	99.06	1,166.32	-2,979.88	8,287.15	7,794.61	492.54	16.825	
17,800.00	6,928.46	7,459.83	7,296.60	180.66	452.50	99.17	1,166.31	-2,979.95	8,385.84	7,892.97	492.87	17.014	
17,900.00	6,928.23	7,462.35	7,299.11	182.25	452.81	99.27	1,166.31	-2,980.02	8,484.56	7,991.35	493.20	17.203	
18,000.00	6,928.01	7,464.85	7,301.62	183.84	453.13	99.38	1,166.30	-2,980.09	8,583.30	8,089.77	493.54	17.391	
18,100.00	6,927.78	7,467.36	7,304.12	185.43	453.44	99.48	1,166.30	-2,980.16	8,682.08	8,188.20	493.87	17.580	
18,200.00	6,927.56	7,469.87	7,306.63	187.01	453.76	99.59	1,166.29	-2,980.23	8,780.88	8,286.67	494.21	17.767	
18,300.00	6,927.33	7,472.38	7,309.14	188.60	454.07	99.69	1,166.29	-2,980.30	8,879.70	8,385.15	494.55	17.955	
18,400.00	6,927.11	7,474.88	7,311.64	190.19	454.38	99.80	1,166.28	-2,980.37	8,978.56	8,483.67	494.89	18.143	
18,500.00	6,926.88	7,477.39	7,314.14	191.78	454.70	99.90	1,166.28	-2,980.44	9,077.43	8,582.20	495.23	18.330	
18,600.00	6,926.66	7,479.89	7,316.65	193.37	455.01	100.01	1,166.28	-2,980.51	9,176.33	8,680.76	495.58	18.517	
18,700.00	6,926.44	7,482.39	7,319.15	194.96	455.33	100.11	1,166.27	-2,980.58	9,275.26	8,779.34	495.92	18.703	
18,800.00	6,926.21	7,484.90	7,321.65	196.54	455.64	100.22	1,166.27	-2,980.65	9,374.20	8,877.94	496.27	18.889	
18,900.00	6,925.99	7,487.40	7,324.15	198.13	455.95	100.32	1,166.26	-2,980.72	9,473.17	8,976.56	496.61	19.076	
19,000.00	6,925.76	7,489.90	7,326.65	199.72	456.27	100.43	1,166.26	-2,980.79	9,572.16	9,075.19	496.96	19.261	
19,100.00	6,925.54	7,492.39	7,329.14	201.31	456.58	100.53	1,166.25	-2,980.86	9,671.16	9,173.85	497.31	19.447	
19,200.00	6,925.31	7,494.89	7,331.64	202.90	456.89	100.63	1,166.25	-2,980.92	9,770.19	9,272.53	497.66	19.632	
19,300.00	6,925.09	7,497.39	7,334.14	204.49	457.21	100.74	1,166.25	-2,980.99	9,869.24	9,371.22	498.02	19.817	
19,400.00	6,924.86	7,499.88	7,336.63	206.08	457.52	100.84	1,166.24	-2,981.06	9,968.30	9,469.93	498.37	20.002	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 022B - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 300-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	7,502.38	7,339.12	207.67	457.83	100.94	1,166.24	-2,981.13	10,067.39	9,568.66	498.73	20.186	
19,600.00	6,924.41	7,504.87	7,341.62	209.26	458.14	101.05	1,166.23	-2,981.20	10,166.49	9,667.40	499.08	20.370	
19,700.00	6,924.19	7,507.36	7,344.11	210.85	458.46	101.15	1,166.23	-2,981.27	10,265.60	9,766.16	499.44	20.554	
19,800.00	6,923.96	7,509.85	7,346.60	212.44	458.77	101.25	1,166.22	-2,981.34	10,364.74	9,864.94	499.80	20.738	
19,900.00	6,923.74	7,512.34	7,349.09	214.04	459.08	101.36	1,166.22	-2,981.41	10,463.89	9,963.73	500.16	20.921	
20,000.00	6,923.51	7,514.83	7,351.58	215.63	459.39	101.46	1,166.22	-2,981.48	10,563.05	10,062.53	500.52	21.104	
20,100.00	6,923.29	7,517.32	7,354.06	217.22	459.71	101.56	1,166.21	-2,981.55	10,662.23	10,161.35	500.88	21.287	
20,200.00	6,923.07	7,519.81	7,356.55	218.81	460.02	101.67	1,166.21	-2,981.62	10,761.42	10,260.18	501.24	21.469	
20,300.00	6,922.84	7,522.29	7,359.03	220.40	460.33	101.77	1,166.20	-2,981.69	10,860.63	10,359.03	501.61	21.652	
20,400.00	6,922.62	7,524.78	7,361.52	221.99	460.64	101.87	1,166.20	-2,981.75	10,959.85	10,457.88	501.97	21.834	
20,500.00	6,922.39	7,527.26	7,364.00	223.59	460.95	101.97	1,166.19	-2,981.82	11,059.09	10,556.75	502.34	22.015	
20,600.00	6,922.17	7,529.75	7,366.48	225.18	461.26	102.08	1,166.19	-2,981.89	11,158.34	10,655.64	502.70	22.197	
20,674.13	6,922.00	7,531.59	7,368.32	226.36	461.50	102.15	1,166.19	-2,981.94	11,231.92	10,728.94	502.97	22.331	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 530-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	156.00	156.00	0.00	1.44	-71.10	2,226.68	-6,503.74	6,874.36				
100.00	100.00	256.00	256.00	0.25	2.37	-71.10	2,226.68	-6,503.74	6,874.36	6,871.74	2.62	2,626.642	
200.00	200.00	356.00	356.00	0.61	3.29	-71.10	2,226.68	-6,503.74	6,874.36	6,870.46	3.90	1,762.714	
300.00	300.00	456.00	456.00	0.97	4.21	-71.10	2,226.68	-6,503.74	6,874.36	6,869.17	5.18	1,326.437	
400.00	400.00	556.01	556.00	1.33	5.39	-71.10	2,226.68	-6,503.74	6,874.36	6,867.64	6.72	1,023.018	
500.00	500.00	656.01	656.00	1.68	7.30	-71.10	2,226.68	-6,503.74	6,874.36	6,865.38	8.98	765.488	
606.93	606.91	762.91	762.91	2.05	9.33	66.43	2,226.68	-6,503.74	6,873.56	6,862.18	11.38	603.928	
700.00	699.91	859.85	859.84	2.37	11.17	66.46	2,227.11	-6,503.74	6,872.31	6,858.77	13.54	507.624	
800.00	799.84	964.11	964.10	2.71	13.16	66.49	2,226.82	-6,503.74	6,870.73	6,854.87	15.86	433.102	
900.00	899.77	1,055.81	1,055.77	3.06	14.94	66.51	2,226.68	-6,503.74	6,869.19	6,851.20	17.99	381.833	
1,000.00	999.70	1,155.74	1,155.70	3.41	16.90	66.54	2,226.68	-6,503.74	6,867.70	6,847.40	20.30	338.254	
1,100.00	1,099.63	1,256.35	1,256.31	3.76	18.87	66.57	2,227.48	-6,503.74	6,866.48	6,843.84	22.63	303.390	
1,200.00	1,199.56	1,362.66	1,362.62	4.11	20.96	66.60	2,227.29	-6,503.74	6,864.94	6,839.86	25.08	273.773	
1,300.00	1,299.49	1,469.00	1,468.95	4.47	23.05	66.63	2,226.81	-6,503.74	6,863.31	6,835.79	27.52	249.395	
1,400.00	1,399.42	1,555.50	1,555.42	4.83	24.89	66.65	2,226.68	-6,503.74	6,861.77	6,832.06	29.71	230.928	
1,500.00	1,499.35	1,655.43	1,655.35	5.19	27.06	66.68	2,226.68	-6,503.74	6,860.29	6,828.05	32.25	212.754	
1,600.00	1,599.28	1,756.33	1,756.25	5.54	29.26	66.72	2,227.49	-6,503.74	6,859.08	6,824.28	34.80	197.111	
1,700.00	1,699.21	1,862.55	1,862.46	5.90	31.57	66.75	2,227.30	-6,503.74	6,857.55	6,820.08	37.47	183.028	
1,800.00	1,799.14	1,968.79	1,968.70	6.26	33.88	66.77	2,226.81	-6,503.74	6,855.92	6,815.78	40.14	170.812	
1,900.00	1,899.07	2,055.25	2,055.07	6.62	35.93	66.80	2,226.68	-6,503.74	6,854.39	6,811.84	42.55	161.086	
2,000.00	1,999.00	2,155.18	2,155.00	6.98	38.37	66.83	2,226.68	-6,503.74	6,852.92	6,807.57	45.35	151.110	
2,100.00	2,098.94	2,255.52	2,255.32	7.34	40.82	66.87	2,228.39	-6,503.74	6,852.02	6,803.86	48.16	142.276	
2,200.00	2,198.87	2,368.30	2,368.09	7.70	43.58	66.90	2,228.05	-6,503.74	6,850.46	6,799.18	51.27	133.606	
2,300.00	2,298.80	2,481.13	2,480.90	8.06	46.33	66.92	2,227.08	-6,503.74	6,848.70	6,794.32	54.39	125.923	
2,400.00	2,398.73	2,555.08	2,554.73	8.42	48.15	66.94	2,226.68	-6,503.74	6,847.06	6,790.49	56.57	121.038	
2,500.00	2,498.66	2,655.01	2,654.66	8.79	50.63	66.97	2,226.68	-6,503.74	6,845.60	6,786.19	59.41	115.235	
2,600.00	2,598.59	2,756.20	2,755.83	9.15	53.13	67.01	2,228.20	-6,503.74	6,844.64	6,782.37	62.27	109.913	
2,700.00	2,698.52	2,870.95	2,870.56	9.51	55.97	67.04	2,227.76	-6,503.74	6,843.06	6,777.58	65.48	104.512	
2,800.00	2,798.45	2,985.76	2,985.34	9.87	58.82	67.06	2,226.59	-6,503.74	6,841.26	6,772.58	68.68	99.610	
2,900.00	2,898.38	3,054.89	3,054.38	10.23	60.40	67.08	2,226.68	-6,503.74	6,839.77	6,769.14	70.63	96.843	
3,000.00	2,998.31	3,154.82	3,154.31	10.59	62.71	67.11	2,226.68	-6,503.74	6,838.31	6,765.02	73.30	93.297	
3,100.00	3,098.24	3,258.45	3,257.91	10.96	65.10	67.16	2,228.28	-6,503.74	6,837.40	6,761.35	76.05	89.907	
3,200.00	3,198.17	3,372.18	3,371.63	11.32	67.73	67.18	2,227.76	-6,503.74	6,835.80	6,756.76	79.04	86.489	
3,300.00	3,298.10	3,485.97	3,485.39	11.68	70.36	67.21	2,226.56	-6,503.74	6,834.00	6,751.97	82.02	83.316	
3,400.00	3,398.03	3,554.67	3,554.03	12.04	71.80	67.23	2,226.68	-6,503.74	6,832.52	6,748.69	83.83	81.502	
3,500.00	3,497.96	3,654.60	3,653.96	12.40	73.93	67.26	2,226.68	-6,503.74	6,831.07	6,744.75	86.32	79.136	
3,600.00	3,597.89	3,766.95	3,766.30	12.77	76.32	67.29	2,227.16	-6,503.74	6,829.81	6,740.74	89.07	76.678	
3,700.00	3,697.82	3,854.51	3,853.82	13.13	78.25	67.32	2,226.68	-6,503.74	6,828.19	6,736.83	91.37	74.734	
3,800.00	3,797.75	3,954.44	3,953.75	13.49	80.75	67.34	2,226.68	-6,503.74	6,826.75	6,732.52	94.23	72.446	
3,900.00	3,897.68	4,054.37	4,053.68	13.85	83.26	67.37	2,226.68	-6,503.74	6,825.31	6,728.22	97.10	70.294	
4,000.00	3,997.61	4,154.30	4,153.61	14.21	85.76	67.40	2,226.68	-6,503.74	6,823.88	6,723.92	99.96	68.264	
4,100.00	4,097.54	4,254.23	4,253.54	14.58	88.26	67.43	2,226.68	-6,503.74	6,822.45	6,719.62	102.83	66.348	
4,200.00	4,197.47	4,354.16	4,353.47	14.94	90.77	67.46	2,226.68	-6,503.74	6,821.01	6,715.32	105.69	64.536	
4,300.00	4,297.40	4,454.09	4,453.40	15.30	93.27	67.49	2,226.68	-6,503.74	6,819.58	6,711.02	108.56	62.819	
4,400.00	4,397.33	4,554.02	4,553.33	15.66	95.77	67.52	2,226.68	-6,503.74	6,818.15	6,706.73	111.42	61.191	
4,500.00	4,497.26	4,653.95	4,653.26	16.03	98.28	67.55	2,226.68	-6,503.74	6,816.73	6,702.44	114.29	59.644	
4,600.00	4,597.19	4,753.88	4,753.19	16.39	100.78	67.58	2,226.68	-6,503.74	6,815.30	6,698.15	117.16	58.173	
4,660.50	4,657.65	4,814.34	4,813.65	16.61	102.30	67.59	2,226.68	-6,503.74	6,814.44	6,695.55	118.89	57.317	
4,700.00	4,697.12	4,854.15	4,853.42	16.75	103.29	67.64	2,231.05	-6,503.74	6,815.38	6,695.35	120.03	56.781	
4,800.00	4,797.05	4,956.18	4,955.45	17.11	105.85	67.67	2,230.99	-6,503.74	6,813.94	6,690.99	122.95	55.421	
4,900.00	4,896.99	5,058.22	5,057.48	17.47	108.40	67.70	2,230.84	-6,503.74	6,812.47	6,686.60	125.87	54.125	
5,000.00	4,996.92	5,160.27	5,159.52	17.84	110.96	67.72	2,230.59	-6,503.74	6,810.97	6,682.19	128.78	52.886	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 530-A027Ua_INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	5,262.32	5,261.57	18.20	113.52	67.75	2,230.26	-6,503.74	6,809.45	6,677.74	131.70	51.703	
5,200.00	5,196.78	5,364.37	5,363.62	18.56	116.07	67.78	2,229.84	-6,503.74	6,807.89	6,673.27	134.62	50.570	
5,300.00	5,296.71	5,466.44	5,465.68	18.92	118.63	67.80	2,229.33	-6,503.74	6,806.30	6,668.76	137.54	49.485	
5,400.00	5,396.64	5,568.51	5,567.74	19.29	121.19	67.83	2,228.72	-6,503.74	6,804.69	6,664.23	140.46	48.445	
5,500.00	5,496.57	5,670.59	5,669.81	19.65	123.75	67.85	2,228.03	-6,503.74	6,803.04	6,659.66	143.38	47.448	
5,600.00	5,596.50	5,772.68	5,771.89	20.01	126.30	67.88	2,227.24	-6,503.74	6,801.37	6,655.07	146.30	46.489	
5,700.00	5,696.43	5,853.83	5,852.43	20.37	128.34	67.89	2,226.68	-6,503.74	6,799.74	6,651.04	148.70	45.728	
5,800.00	5,796.36	5,953.76	5,952.36	20.74	130.85	67.92	2,226.68	-6,503.74	6,798.33	6,646.76	151.58	44.851	
5,900.00	5,896.29	6,053.69	6,052.29	21.10	133.37	67.95	2,226.68	-6,503.74	6,796.93	6,642.48	154.45	44.006	
6,000.00	5,996.22	6,153.62	6,152.22	21.46	135.89	67.98	2,226.68	-6,503.74	6,795.53	6,638.20	157.33	43.192	
6,100.00	6,096.15	6,253.55	6,252.15	21.82	138.40	68.01	2,226.68	-6,503.74	6,794.13	6,633.92	160.21	42.408	
6,200.00	6,196.08	6,353.48	6,352.08	22.19	140.92	68.04	2,226.68	-6,503.74	6,792.74	6,629.65	163.09	41.651	
6,300.00	6,296.01	6,453.41	6,452.01	22.55	143.43	68.07	2,226.68	-6,503.74	6,791.34	6,625.37	165.97	40.920	
6,335.60	6,331.59	6,488.99	6,487.59	22.68	144.33	68.08	2,226.68	-6,503.74	6,790.84	6,623.85	166.99	40.666	
6,350.00	6,345.97	6,503.37	6,501.97	22.73	144.69	50.42	2,226.68	-6,503.74	6,790.49	6,623.09	167.40	40.563	
6,400.00	6,395.75	6,553.15	6,551.75	22.91	145.94	32.84	2,226.68	-6,503.74	6,786.90	6,618.06	168.84	40.197	
6,450.00	6,445.03	6,602.44	6,601.03	23.10	147.18	28.46	2,226.68	-6,503.74	6,779.65	6,609.38	170.26	39.818	
6,500.00	6,493.52	6,650.92	6,649.52	23.29	148.40	26.77	2,226.68	-6,503.74	6,768.79	6,597.13	171.67	39.430	
6,550.00	6,540.91	6,698.32	6,696.91	23.48	149.60	26.14	2,226.68	-6,503.74	6,754.40	6,581.36	173.04	39.033	
6,600.00	6,586.91	6,744.32	6,742.91	23.66	150.75	26.11	2,226.68	-6,503.74	6,736.57	6,562.19	174.38	38.632	
6,650.00	6,631.24	6,788.65	6,787.24	23.85	151.87	26.49	2,226.68	-6,503.74	6,715.40	6,539.74	175.67	38.228	
6,700.00	6,673.63	6,831.03	6,829.63	24.05	152.94	27.23	2,226.68	-6,503.74	6,691.04	6,514.14	176.90	37.824	
6,750.00	6,713.80	6,871.20	6,869.80	24.24	153.95	28.31	2,226.68	-6,503.74	6,663.64	6,485.57	178.07	37.421	
6,800.00	6,751.52	6,908.93	6,907.52	24.44	154.90	29.75	2,226.68	-6,503.74	6,633.38	6,454.21	179.18	37.022	
6,850.00	6,786.56	6,943.96	6,942.56	24.65	155.78	31.61	2,226.68	-6,503.74	6,600.45	6,420.25	180.20	36.628	
6,900.00	6,818.69	6,976.09	6,974.69	24.87	156.59	33.94	2,226.68	-6,503.74	6,565.05	6,383.90	181.15	36.241	
6,950.00	6,847.72	7,005.12	7,003.72	25.10	157.32	36.85	2,226.68	-6,503.74	6,527.42	6,345.41	182.01	35.863	
7,000.00	6,873.46	7,030.87	7,029.46	25.34	157.97	40.47	2,226.68	-6,503.74	6,487.78	6,305.00	182.78	35.495	
7,050.00	6,895.77	7,053.17	7,051.77	25.60	158.53	44.96	2,226.68	-6,503.74	6,446.40	6,262.94	183.46	35.138	
7,100.00	6,914.50	7,071.91	7,070.50	25.87	159.00	50.53	2,226.68	-6,503.74	6,403.52	6,219.49	184.04	34.795	
7,150.00	6,929.54	7,086.95	7,085.54	26.15	159.38	57.37	2,226.68	-6,503.74	6,359.43	6,174.91	184.52	34.465	
7,200.00	6,940.80	7,098.20	7,096.80	26.44	159.66	65.61	2,226.68	-6,503.74	6,314.39	6,129.49	184.90	34.151	
7,250.00	6,948.20	7,105.60	7,104.20	26.75	159.85	75.19	2,226.68	-6,503.74	6,268.68	6,083.51	185.17	33.853	
7,300.00	6,951.70	7,109.10	7,107.70	27.07	159.94	85.74	2,226.68	-6,503.74	6,222.60	6,037.25	185.35	33.572	
7,321.06	6,952.00	7,109.40	7,108.00	27.20	159.95	90.31	2,226.68	-6,503.74	6,203.14	6,017.75	185.39	33.460	
7,400.00	6,951.82	7,109.23	7,107.82	27.74	159.94	90.31	2,226.68	-6,503.74	6,130.28	5,944.76	185.53	33.043	
7,500.00	6,951.60	7,109.00	7,107.60	28.49	159.94	90.30	2,226.68	-6,503.74	6,038.21	5,852.49	185.72	32.513	
7,600.00	6,951.37	7,108.78	7,107.37	29.30	159.93	90.30	2,226.68	-6,503.74	5,946.39	5,760.45	185.93	31.981	
7,700.00	6,951.15	7,108.55	7,107.15	30.18	159.92	90.29	2,226.68	-6,503.74	5,854.83	5,668.66	186.18	31.448	
7,800.00	6,950.92	7,108.33	7,106.92	31.12	159.92	90.28	2,226.68	-6,503.74	5,763.56	5,577.12	186.44	30.913	
7,900.00	6,950.70	7,108.10	7,106.70	32.11	159.91	90.28	2,226.68	-6,503.74	5,672.59	5,485.84	186.74	30.377	
8,000.00	6,950.47	7,107.88	7,106.47	33.15	159.91	90.27	2,226.68	-6,503.74	5,581.92	5,394.85	187.07	29.839	
8,100.00	6,950.25	7,107.65	7,106.25	34.23	159.90	90.27	2,226.68	-6,503.74	5,491.57	5,304.14	187.43	29.299	
8,200.00	6,950.03	7,107.43	7,106.03	35.35	159.90	90.26	2,226.68	-6,503.74	5,401.57	5,213.75	187.82	28.759	
8,300.00	6,949.80	7,107.20	7,105.80	36.51	159.89	90.26	2,226.68	-6,503.74	5,311.92	5,123.67	188.25	28.217	
8,400.00	6,949.58	7,106.98	7,105.58	37.70	159.88	90.25	2,226.68	-6,503.74	5,222.65	5,033.94	188.72	27.674	
8,500.00	6,949.35	7,106.75	7,105.35	38.92	159.88	90.25	2,226.68	-6,503.74	5,133.78	4,944.56	189.22	27.131	
8,600.00	6,949.13	7,106.53	7,105.13	40.17	159.87	90.24	2,226.68	-6,503.74	5,045.32	4,855.56	189.77	26.587	
8,700.00	6,948.90	7,106.30	7,104.90	41.44	159.87	90.24	2,226.68	-6,503.74	4,957.30	4,766.95	190.35	26.043	
8,800.00	6,948.68	7,106.08	7,104.68	42.73	159.86	90.23	2,226.68	-6,503.74	4,869.75	4,678.76	190.98	25.498	
8,900.00	6,948.45	7,105.86	7,104.45	44.04	159.86	90.23	2,226.68	-6,503.74	4,782.68	4,591.02	191.66	24.954	
9,000.00	6,948.23	7,105.63	7,104.23	45.38	159.85	90.22	2,226.68	-6,503.74	4,696.12	4,503.74	192.38	24.411	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 530-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	7,105.41	7,104.00	46.72	159.84	90.21	2,226.68	-6,503.74	4,610.11	4,416.96	193.15	23.868	
9,200.00	6,947.78	7,105.18	7,103.78	48.09	159.84	90.21	2,226.68	-6,503.74	4,524.68	4,330.71	193.97	23.326	
9,300.00	6,947.55	7,104.96	7,103.55	49.47	159.83	90.20	2,226.68	-6,503.74	4,439.85	4,245.00	194.85	22.786	
9,400.00	6,947.33	7,104.73	7,103.33	50.86	159.83	90.20	2,226.68	-6,503.74	4,355.67	4,159.89	195.78	22.248	
9,500.00	6,947.10	7,104.51	7,103.10	52.26	159.82	90.19	2,226.68	-6,503.74	4,272.17	4,075.41	196.77	21.712	
9,600.00	6,946.88	7,104.28	7,102.88	53.68	159.82	90.19	2,226.68	-6,503.74	4,189.39	3,991.58	197.81	21.179	
9,700.00	6,946.66	7,104.06	7,102.66	55.10	159.81	90.18	2,226.68	-6,503.74	4,107.38	3,908.47	198.92	20.649	
9,800.00	6,946.43	7,103.83	7,102.43	56.54	159.80	90.18	2,226.68	-6,503.74	4,026.19	3,826.10	200.09	20.122	
9,900.00	6,946.21	7,103.61	7,102.21	57.98	159.80	90.17	2,226.68	-6,503.74	3,945.85	3,744.53	201.32	19.600	
10,000.00	6,945.98	7,103.38	7,101.98	59.43	159.79	90.17	2,226.68	-6,503.74	3,866.44	3,663.82	202.62	19.082	
10,100.00	6,945.76	7,103.16	7,101.76	60.89	159.79	90.16	2,226.68	-6,503.74	3,787.99	3,584.01	203.98	18.570	
10,200.00	6,945.53	7,102.93	7,101.53	62.36	159.78	90.15	2,226.68	-6,503.74	3,710.59	3,505.17	205.42	18.064	
10,300.00	6,945.31	7,102.71	7,101.31	63.83	159.78	90.15	2,226.68	-6,503.74	3,634.29	3,427.36	206.93	17.563	
10,400.00	6,945.08	7,102.49	7,101.08	65.31	159.77	90.14	2,226.68	-6,503.74	3,559.16	3,350.66	208.50	17.070	
10,500.00	6,944.86	7,102.26	7,100.86	66.79	159.77	90.14	2,226.68	-6,503.74	3,485.28	3,275.13	210.16	16.584	
10,600.00	6,944.63	7,102.04	7,100.63	68.28	159.76	90.13	2,226.68	-6,503.74	3,412.74	3,200.85	211.88	16.107	
10,700.00	6,944.41	7,101.81	7,100.41	69.78	159.75	90.13	2,226.68	-6,503.74	3,341.61	3,127.92	213.69	15.638	
10,800.00	6,944.18	7,101.59	7,100.18	71.28	159.75	90.12	2,226.68	-6,503.74	3,271.99	3,056.43	215.56	15.179	
10,900.00	6,943.96	7,101.36	7,099.96	72.78	159.74	90.12	2,226.68	-6,503.74	3,203.98	2,986.47	217.51	14.730	
11,000.00	6,943.73	7,101.14	7,099.73	74.29	159.74	90.11	2,226.68	-6,503.74	3,137.68	2,918.15	219.54	14.292	
11,100.00	6,943.51	7,100.91	7,099.51	75.80	159.73	90.11	2,226.68	-6,503.74	3,073.21	2,851.58	221.64	13.866	
11,200.00	6,943.29	7,100.69	7,099.29	77.32	159.73	90.10	2,226.68	-6,503.74	3,010.68	2,786.88	223.80	13.452	
11,300.00	6,943.06	7,100.46	7,099.06	78.84	159.72	90.10	2,226.68	-6,503.74	2,950.22	2,724.18	226.04	13.052	
11,400.00	6,942.84	7,100.24	7,098.84	80.36	159.71	90.09	2,226.68	-6,503.74	2,891.95	2,663.62	228.33	12.666	
11,500.00	6,942.61	7,100.01	7,098.61	81.88	159.71	90.08	2,226.68	-6,503.74	2,836.01	2,605.33	230.68	12.294	
11,600.00	6,942.39	7,099.79	7,098.39	83.41	159.70	90.08	2,226.68	-6,503.74	2,782.54	2,549.46	233.08	11.938	
11,700.00	6,942.16	7,099.56	7,098.16	84.94	159.70	90.07	2,226.68	-6,503.74	2,731.68	2,496.16	235.52	11.599	
11,800.00	6,941.94	7,099.34	7,097.94	86.47	159.69	90.07	2,226.68	-6,503.74	2,683.59	2,445.60	237.99	11.276	
11,900.00	6,941.71	7,099.12	7,097.71	88.01	159.69	90.06	2,226.68	-6,503.74	2,638.41	2,397.94	240.48	10.972	
12,000.00	6,941.49	7,098.89	7,097.49	89.55	159.68	90.06	2,226.68	-6,503.74	2,596.30	2,353.33	242.97	10.686	
12,100.00	6,941.26	7,098.67	7,097.26	91.09	159.67	90.05	2,226.68	-6,503.74	2,557.41	2,311.95	245.46	10.419	
12,200.00	6,941.04	7,098.44	7,097.04	92.63	159.67	90.05	2,226.68	-6,503.74	2,521.89	2,273.97	247.92	10.172	
12,300.00	6,940.81	7,098.22	7,096.81	94.18	159.66	90.04	2,226.68	-6,503.74	2,489.88	2,239.54	250.34	9.946	
12,400.00	6,940.59	7,097.99	7,096.59	95.72	159.66	90.04	2,226.68	-6,503.74	2,461.52	2,208.81	252.71	9.741	
12,500.00	6,940.36	7,097.77	7,096.36	97.27	159.65	90.03	2,226.68	-6,503.74	2,436.94	2,181.94	254.99	9.557	
12,600.00	6,940.14	7,097.54	7,096.14	98.82	159.65	90.02	2,226.68	-6,503.74	2,416.24	2,159.06	257.18	9.395	
12,700.00	6,939.92	7,097.32	7,095.92	100.37	159.64	90.02	2,226.68	-6,503.74	2,399.54	2,140.28	259.26	9.255	
12,800.00	6,939.69	7,097.09	7,095.69	101.92	159.64	90.01	2,226.68	-6,503.74	2,386.92	2,125.71	261.21	9.138	
12,900.00	6,939.47	7,096.87	7,095.47	103.48	159.63	90.01	2,226.68	-6,503.74	2,378.43	2,115.42	263.01	9.043	
13,000.00	6,939.24	7,096.64	7,095.24	105.03	159.62	90.00	2,226.68	-6,503.74	2,374.13	2,109.48	264.66	8.971	
13,052.14	6,939.12	7,096.53	7,095.12	105.85	159.62	90.00	2,226.68	-6,503.74	2,373.56	2,108.11	265.45	8.942	CC
13,100.00	6,939.02	7,096.42	7,095.02	106.59	159.62	90.00	2,226.68	-6,503.74	2,374.04	2,107.91	266.13	8.921	ES
13,200.00	6,938.79	7,096.19	7,094.79	108.15	159.61	89.99	2,226.68	-6,503.74	2,378.16	2,110.74	267.43	8.893	
13,300.00	6,938.57	7,095.97	7,094.57	109.71	159.61	89.99	2,226.68	-6,503.74	2,386.47	2,117.93	268.54	8.887	SF
13,400.00	6,938.34	7,095.75	7,094.34	111.27	159.60	89.98	2,226.68	-6,503.74	2,398.92	2,129.45	269.47	8.902	
13,500.00	6,938.12	7,095.52	7,094.12	112.83	159.60	89.98	2,226.68	-6,503.74	2,415.44	2,145.24	270.21	8.939	
13,600.00	6,937.89	7,095.30	7,093.89	114.40	159.59	89.97	2,226.68	-6,503.74	2,435.97	2,165.20	270.77	8.996	
13,700.00	6,937.67	7,095.07	7,093.67	115.96	159.58	89.96	2,226.68	-6,503.74	2,460.39	2,189.23	271.15	9.074	
13,800.00	6,937.44	7,094.85	7,093.44	117.53	159.58	89.96	2,226.68	-6,503.74	2,488.59	2,217.22	271.37	9.170	
13,900.00	6,937.22	7,094.62	7,093.22	119.09	159.57	89.95	2,226.68	-6,503.74	2,520.45	2,249.02	271.43	9.286	
14,000.00	6,936.99	7,094.40	7,092.99	120.66	159.57	89.95	2,226.68	-6,503.74	2,555.82	2,284.48	271.35	9.419	
14,100.00	6,936.77	7,094.17	7,092.77	122.23	159.56	89.94	2,226.68	-6,503.74	2,594.57	2,323.44	271.13	9.570	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 530-A027Ua_INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
14,200.00	6,936.55	7,093.95	7,092.55	123.80	159.56	89.94	2,226.68	-6,503.74	2,636.54	2,365.76	270.79	9.737	
14,300.00	6,936.32	7,093.72	7,092.32	125.37	159.55	89.93	2,226.68	-6,503.74	2,681.59	2,411.25	270.34	9.919	
14,400.00	6,936.10	7,093.50	7,092.10	126.94	159.54	89.93	2,226.68	-6,503.74	2,729.56	2,459.77	269.79	10.117	
14,500.00	6,935.87	7,093.27	7,091.87	128.51	159.54	89.92	2,226.68	-6,503.74	2,780.30	2,511.13	269.17	10.329	
14,600.00	6,935.65	7,093.05	7,091.65	130.08	159.53	89.92	2,226.68	-6,503.74	2,833.66	2,565.19	268.47	10.555	
14,700.00	6,935.42	7,092.82	7,091.42	131.65	159.53	89.91	2,226.68	-6,503.74	2,889.50	2,621.79	267.72	10.793	
14,800.00	6,935.20	7,092.60	7,091.20	133.23	159.52	89.91	2,226.68	-6,503.74	2,947.67	2,680.76	266.91	11.044	
14,900.00	6,934.97	7,092.38	7,090.97	134.80	159.52	89.90	2,226.68	-6,503.74	3,008.05	2,741.98	266.06	11.306	
15,000.00	6,934.75	7,092.15	7,090.75	136.37	159.51	89.89	2,226.68	-6,503.74	3,070.49	2,805.31	265.19	11.579	
15,100.00	6,934.52	7,091.93	7,090.52	137.95	159.51	89.89	2,226.68	-6,503.74	3,134.88	2,870.60	264.28	11.862	
15,200.00	6,934.30	7,091.70	7,090.30	139.53	159.50	89.88	2,226.68	-6,503.74	3,201.10	2,937.74	263.37	12.155	
15,300.00	6,934.07	7,091.48	7,090.07	141.10	159.49	89.88	2,226.68	-6,503.74	3,269.04	3,006.61	262.44	12.457	
15,400.00	6,933.85	7,091.25	7,089.85	142.68	159.49	89.87	2,226.68	-6,503.74	3,338.59	3,077.09	261.50	12.767	
15,500.00	6,933.62	7,091.03	7,089.62	144.26	159.48	89.87	2,226.68	-6,503.74	3,409.66	3,149.09	260.56	13.086	
15,600.00	6,933.40	7,090.80	7,089.40	145.84	159.48	89.86	2,226.68	-6,503.74	3,482.15	3,222.52	259.63	13.412	
15,700.00	6,933.18	7,090.58	7,089.18	147.42	159.47	89.86	2,226.68	-6,503.74	3,555.97	3,297.27	258.70	13.745	
15,800.00	6,932.95	7,090.35	7,088.95	148.99	159.47	89.85	2,226.68	-6,503.74	3,631.04	3,373.26	257.78	14.086	
15,900.00	6,932.73	7,090.13	7,088.73	150.57	159.46	89.85	2,226.68	-6,503.74	3,707.30	3,450.42	256.87	14.432	
16,000.00	6,932.50	7,089.90	7,088.50	152.15	159.45	89.84	2,226.68	-6,503.74	3,784.65	3,528.68	255.98	14.785	
16,100.00	6,932.28	7,089.68	7,088.28	153.74	159.45	89.83	2,226.68	-6,503.74	3,863.05	3,607.96	255.10	15.143	
16,200.00	6,932.05	7,089.45	7,088.05	155.32	159.44	89.83	2,226.68	-6,503.74	3,942.43	3,688.20	254.23	15.507	
16,300.00	6,931.83	7,089.23	7,087.83	156.90	159.44	89.82	2,226.68	-6,503.74	4,022.73	3,769.34	253.38	15.876	
16,400.00	6,931.60	7,089.01	7,087.60	158.48	159.43	89.82	2,226.68	-6,503.74	4,103.89	3,851.33	252.55	16.250	
16,500.00	6,931.38	7,088.78	7,087.38	160.06	159.43	89.81	2,226.68	-6,503.74	4,185.86	3,934.12	251.74	16.628	
16,600.00	6,931.15	7,088.56	7,087.15	161.65	159.42	89.81	2,226.68	-6,503.74	4,268.61	4,017.66	250.95	17.010	
16,700.00	6,930.93	7,088.33	7,086.93	163.23	159.41	89.80	2,226.68	-6,503.74	4,352.08	4,101.90	250.17	17.396	
16,800.00	6,930.70	7,088.11	7,086.70	164.81	159.41	89.80	2,226.68	-6,503.74	4,436.23	4,186.81	249.42	17.786	
16,900.00	6,930.48	7,087.88	7,086.48	166.40	159.40	89.79	2,226.68	-6,503.74	4,521.03	4,272.35	248.68	18.180	
17,000.00	6,930.25	7,087.66	7,086.25	167.98	159.40	89.79	2,226.68	-6,503.74	4,606.44	4,358.48	247.96	18.577	
17,100.00	6,930.03	7,087.43	7,086.03	169.56	159.39	89.78	2,226.68	-6,503.74	4,692.43	4,445.16	247.27	18.977	
17,200.00	6,929.81	7,087.21	7,085.81	171.15	159.39	89.78	2,226.68	-6,503.74	4,778.96	4,532.37	246.59	19.380	
17,300.00	6,929.58	7,086.98	7,085.58	172.73	159.38	89.77	2,226.68	-6,503.74	4,866.00	4,620.08	245.92	19.787	
17,400.00	6,929.36	7,086.76	7,085.36	174.32	159.38	89.76	2,226.68	-6,503.74	4,953.54	4,708.26	245.28	20.195	
17,500.00	6,929.13	7,086.53	7,085.13	175.91	159.37	89.76	2,226.68	-6,503.74	5,041.54	4,796.89	244.65	20.607	
17,600.00	6,928.91	7,086.31	7,084.91	177.49	159.36	89.75	2,226.68	-6,503.74	5,129.98	4,885.93	244.05	21.021	
17,700.00	6,928.68	7,086.08	7,084.68	179.08	159.36	89.75	2,226.68	-6,503.74	5,218.84	4,975.38	243.45	21.437	
17,800.00	6,928.46	7,085.86	7,084.46	180.66	159.35	89.74	2,226.68	-6,503.74	5,308.09	5,065.21	242.88	21.855	
17,900.00	6,928.23	7,085.64	7,084.23	182.25	159.35	89.74	2,226.68	-6,503.74	5,397.72	5,155.40	242.32	22.275	
18,000.00	6,928.01	7,085.41	7,084.01	183.84	159.34	89.73	2,226.68	-6,503.74	5,487.71	5,245.93	241.78	22.697	
18,100.00	6,927.78	7,085.19	7,083.78	185.43	159.34	89.73	2,226.68	-6,503.74	5,578.04	5,336.79	241.25	23.121	
18,200.00	6,927.56	7,084.96	7,083.56	187.01	159.33	89.72	2,226.68	-6,503.74	5,668.69	5,427.96	240.74	23.547	
18,300.00	6,927.33	7,084.74	7,083.33	188.60	159.32	89.72	2,226.68	-6,503.74	5,759.66	5,519.42	240.24	23.975	
18,400.00	6,927.11	7,084.51	7,083.11	190.19	159.32	89.71	2,226.68	-6,503.74	5,850.92	5,611.16	239.76	24.404	
18,500.00	6,926.88	7,084.29	7,082.88	191.78	159.31	89.70	2,226.68	-6,503.74	5,942.46	5,703.17	239.29	24.834	
18,600.00	6,926.66	7,084.06	7,082.66	193.37	159.31	89.70	2,226.68	-6,503.74	6,034.27	5,795.44	238.83	25.266	
18,700.00	6,926.44	7,083.84	7,082.44	194.96	159.30	89.69	2,226.68	-6,503.74	6,126.33	5,887.94	238.39	25.699	
18,800.00	6,926.21	7,083.61	7,082.21	196.54	159.30	89.69	2,226.68	-6,503.74	6,218.64	5,980.69	237.95	26.134	
18,900.00	6,925.99	7,083.39	7,081.99	198.13	159.29	89.68	2,226.68	-6,503.74	6,311.18	6,073.65	237.54	26.569	
19,000.00	6,925.76	7,083.16	7,081.76	199.72	159.28	89.68	2,226.68	-6,503.74	6,403.95	6,166.82	237.13	27.006	
19,100.00	6,925.54	7,082.94	7,081.54	201.31	159.28	89.67	2,226.68	-6,503.74	6,496.94	6,260.20	236.73	27.444	
19,200.00	6,925.31	7,082.71	7,081.31	202.90	159.27	89.67	2,226.68	-6,503.74	6,590.13	6,353.78	236.35	27.883	
19,300.00	6,925.09	7,082.49	7,081.09	204.49	159.27	89.66	2,226.68	-6,503.74	6,683.51	6,447.53	235.98	28.323	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 030B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 530-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,400.00	6,924.86	7,082.27	7,080.86	206.08	159.26	89.66	2,226.68	-6,503.74	6,777.08	6,541.47	235.61	28.764	
19,500.00	6,924.64	7,082.04	7,080.64	207.67	159.26	89.65	2,226.68	-6,503.74	6,870.84	6,635.58	235.26	29.205	
19,600.00	6,924.41	7,081.82	7,080.41	209.26	159.25	89.64	2,226.68	-6,503.74	6,964.77	6,729.85	234.92	29.648	
19,700.00	6,924.19	7,081.59	7,080.19	210.85	159.25	89.64	2,226.68	-6,503.74	7,058.86	6,824.28	234.59	30.091	
19,800.00	6,923.96	7,081.37	7,079.96	212.44	159.24	89.63	2,226.68	-6,503.74	7,153.12	6,918.86	234.26	30.535	
19,900.00	6,923.74	7,081.14	7,079.74	214.04	159.23	89.63	2,226.68	-6,503.74	7,247.53	7,013.58	233.95	30.979	
20,000.00	6,923.51	7,080.92	7,079.51	215.63	159.23	89.62	2,226.68	-6,503.74	7,342.09	7,108.45	233.64	31.424	
20,100.00	6,923.29	7,080.69	7,079.29	217.22	159.22	89.62	2,226.68	-6,503.74	7,436.79	7,203.44	233.35	31.870	
20,200.00	6,923.07	7,080.47	7,079.07	218.81	159.22	89.61	2,226.68	-6,503.74	7,531.63	7,298.57	233.06	32.316	
20,300.00	6,922.84	7,080.24	7,078.84	220.40	159.21	89.61	2,226.68	-6,503.74	7,626.60	7,393.82	232.78	32.763	
20,400.00	6,922.62	7,080.02	7,078.62	221.99	159.21	89.60	2,226.68	-6,503.74	7,721.69	7,489.19	232.51	33.211	
20,500.00	6,922.39	7,079.79	7,078.39	223.59	159.20	89.60	2,226.68	-6,503.74	7,816.91	7,584.67	232.24	33.659	
20,600.00	6,922.17	7,079.57	7,078.17	225.18	159.19	89.59	2,226.68	-6,503.74	7,912.25	7,680.26	231.98	34.107	
20,674.13	6,922.00	7,079.40	7,078.00	226.36	159.19	89.59	2,226.68	-6,503.74	7,982.99	7,751.20	231.80	34.439	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	48.54	1,093.33	1,237.36	1,656.22				
100.00	100.00	0.00	0.00	0.25	0.00	48.54	1,093.33	1,237.36	1,651.44	1,651.19	0.25	6,493.571	
146.95	146.95	17.95	17.95	0.42	0.78	48.54	1,093.33	1,237.36	1,651.19	1,649.99	1.20	1,373.023	
200.00	200.00	71.00	71.00	0.61	3.10	48.54	1,093.33	1,237.36	1,651.19	1,647.48	3.71	445.358	
300.00	300.00	171.00	171.00	0.97	7.46	48.54	1,093.33	1,237.36	1,651.19	1,642.76	8.43	195.886	
400.00	400.00	271.00	271.00	1.33	11.82	48.54	1,093.33	1,237.36	1,651.19	1,638.04	13.15	125.555	
500.00	500.00	371.00	371.00	1.68	16.19	48.54	1,093.33	1,237.36	1,651.19	1,633.32	17.87	92.385	CC
606.93	606.91	477.91	477.91	2.05	20.85	-173.97	1,093.33	1,237.36	1,653.17	1,630.27	22.91	72.173	
700.00	699.91	570.91	570.91	2.37	24.91	-173.98	1,093.33	1,237.36	1,656.63	1,629.35	27.28	60.733	
800.00	799.84	670.84	670.84	2.71	29.27	-173.99	1,093.33	1,237.36	1,660.34	1,628.36	31.98	51.921	
900.00	899.77	770.77	770.77	3.06	33.63	-174.01	1,093.33	1,237.36	1,664.05	1,627.37	36.68	45.362	
1,000.00	999.70	870.70	870.70	3.41	37.99	-174.02	1,093.33	1,237.36	1,667.76	1,626.37	41.39	40.292	
1,100.00	1,099.63	970.63	970.63	3.76	42.35	-174.03	1,093.33	1,237.36	1,671.47	1,625.37	46.10	36.255	
1,200.00	1,199.56	1,070.56	1,070.56	4.11	46.71	-174.05	1,093.33	1,237.36	1,675.19	1,624.37	50.81	32.966	
1,300.00	1,299.49	1,170.49	1,170.49	4.47	51.07	-174.06	1,093.33	1,237.36	1,678.90	1,623.37	55.53	30.235	
1,400.00	1,399.42	1,270.42	1,270.42	4.83	55.43	-174.07	1,093.33	1,237.36	1,682.61	1,622.37	60.24	27.931	
1,500.00	1,499.35	1,370.35	1,370.35	5.19	59.79	-174.09	1,093.33	1,237.36	1,686.32	1,621.36	64.96	25.960	
1,600.00	1,599.28	1,470.28	1,470.28	5.54	64.15	-174.10	1,093.33	1,237.36	1,690.03	1,620.36	69.67	24.257	
1,700.00	1,699.21	1,570.21	1,570.21	5.90	68.51	-174.11	1,093.33	1,237.36	1,693.74	1,619.36	74.39	22.769	
1,800.00	1,799.14	1,670.14	1,670.14	6.26	72.87	-174.13	1,093.33	1,237.36	1,697.46	1,618.35	79.11	21.458	
1,900.00	1,899.07	1,770.07	1,770.07	6.62	77.23	-174.14	1,093.33	1,237.36	1,701.17	1,617.35	83.82	20.295	
2,000.00	1,999.00	1,870.00	1,870.00	6.98	81.59	-174.15	1,093.33	1,237.36	1,704.88	1,616.34	88.54	19.256	
2,100.00	2,098.94	1,969.94	1,969.94	7.34	85.95	-174.16	1,093.33	1,237.36	1,708.59	1,615.34	93.26	18.321	
2,200.00	2,198.87	2,069.87	2,069.87	7.70	90.32	-174.18	1,093.33	1,237.36	1,712.31	1,614.33	97.97	17.477	
2,300.00	2,298.80	2,169.80	2,169.80	8.06	94.68	-174.19	1,093.33	1,237.36	1,716.02	1,613.33	102.69	16.710	
2,400.00	2,398.73	2,269.73	2,269.73	8.42	99.04	-174.20	1,093.33	1,237.36	1,719.73	1,612.32	107.41	16.011	
2,500.00	2,498.66	2,369.66	2,369.66	8.79	103.40	-174.22	1,093.33	1,237.36	1,723.44	1,611.32	112.13	15.370	
2,600.00	2,598.59	2,469.59	2,469.59	9.15	107.76	-174.23	1,093.33	1,237.36	1,727.16	1,610.31	116.85	14.781	
2,700.00	2,698.52	2,569.52	2,569.52	9.51	112.12	-174.24	1,093.33	1,237.36	1,730.87	1,609.31	121.56	14.238	
2,800.00	2,798.45	2,669.45	2,669.45	9.87	116.48	-174.25	1,093.33	1,237.36	1,734.58	1,608.30	126.28	13.736	
2,900.00	2,898.38	2,769.38	2,769.38	10.23	120.84	-174.26	1,093.33	1,237.36	1,738.30	1,607.29	131.00	13.269	
3,000.00	2,998.31	2,869.31	2,869.31	10.59	125.20	-174.28	1,093.33	1,237.36	1,742.01	1,606.29	135.72	12.835	
3,100.00	3,098.24	2,969.24	2,969.24	10.96	129.56	-174.29	1,093.33	1,237.36	1,745.72	1,605.28	140.44	12.431	
3,200.00	3,198.17	3,069.17	3,069.17	11.32	133.92	-174.30	1,093.33	1,237.36	1,749.43	1,604.28	145.16	12.052	
3,300.00	3,298.10	3,169.10	3,169.10	11.68	138.28	-174.31	1,093.33	1,237.36	1,753.15	1,603.27	149.88	11.697	
3,400.00	3,398.03	3,269.03	3,269.03	12.04	142.64	-174.33	1,093.33	1,237.36	1,756.86	1,602.27	154.59	11.364	
3,500.00	3,497.96	3,368.96	3,368.96	12.40	147.00	-174.34	1,093.33	1,237.36	1,760.58	1,601.26	159.31	11.051	
3,600.00	3,597.89	3,468.89	3,468.89	12.77	151.36	-174.35	1,093.33	1,237.36	1,764.29	1,600.26	164.03	10.756	
3,700.00	3,697.82	3,568.82	3,568.82	13.13	155.72	-174.36	1,093.33	1,237.36	1,768.00	1,599.25	168.75	10.477	
3,800.00	3,797.75	3,668.75	3,668.75	13.49	160.08	-174.37	1,093.33	1,237.36	1,771.72	1,598.25	173.47	10.213	
3,900.00	3,897.68	3,768.68	3,768.68	13.85	164.44	-174.39	1,093.33	1,237.36	1,775.43	1,597.24	178.19	9.964	
4,000.00	3,997.61	3,868.61	3,868.61	14.21	168.80	-174.40	1,093.33	1,237.36	1,779.14	1,596.24	182.91	9.727	
4,100.00	4,097.54	3,968.54	3,968.54	14.58	173.16	-174.41	1,093.33	1,237.36	1,782.86	1,595.23	187.63	9.502	
4,200.00	4,197.47	4,068.47	4,068.47	14.94	177.52	-174.42	1,093.33	1,237.36	1,786.57	1,594.23	192.35	9.288	
4,300.00	4,297.40	4,168.40	4,168.40	15.30	181.88	-174.43	1,093.33	1,237.36	1,790.29	1,593.22	197.07	9.085	
4,400.00	4,397.33	4,268.33	4,268.33	15.66	186.24	-174.44	1,093.33	1,237.36	1,794.00	1,592.22	201.78	8.891	
4,500.00	4,497.26	4,368.26	4,368.26	16.03	190.60	-174.45	1,093.33	1,237.36	1,797.71	1,591.21	206.50	8.705	
4,600.00	4,597.19	4,468.19	4,468.19	16.39	194.96	-174.47	1,093.33	1,237.36	1,801.43	1,590.21	211.22	8.529	
4,700.00	4,697.12	4,568.12	4,568.12	16.75	199.32	-174.48	1,093.33	1,237.36	1,805.14	1,589.20	215.94	8.359	
4,800.00	4,797.05	4,668.05	4,668.05	17.11	203.68	-174.49	1,093.33	1,237.36	1,808.86	1,588.20	220.66	8.197	
4,900.00	4,896.99	4,767.99	4,767.99	17.47	208.04	-174.50	1,093.33	1,237.36	1,812.57	1,587.19	225.38	8.042	
5,000.00	4,996.92	4,867.92	4,867.92	17.84	212.40	-174.51	1,093.33	1,237.36	1,816.29	1,586.19	230.10	7.893	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	4,967.85	4,967.85	18.20	216.76	-174.52	1,093.33	1,237.36	1,820.00	1,585.18	234.82	7.751	
5,200.00	5,196.78	5,067.78	5,067.78	18.56	221.12	-174.53	1,093.33	1,237.36	1,823.72	1,584.18	239.54	7.613	
5,300.00	5,296.71	5,167.71	5,167.71	18.92	225.48	-174.55	1,093.33	1,237.36	1,827.43	1,583.17	244.26	7.482	
5,400.00	5,396.64	5,267.64	5,267.64	19.29	229.84	-174.56	1,093.33	1,237.36	1,831.15	1,582.17	248.98	7.355	
5,500.00	5,496.57	5,367.57	5,367.57	19.65	234.20	-174.57	1,093.33	1,237.36	1,834.86	1,581.16	253.70	7.233	
5,600.00	5,596.50	5,467.50	5,467.50	20.01	238.56	-174.58	1,093.33	1,237.36	1,838.58	1,580.16	258.42	7.115	
5,700.00	5,696.43	5,567.43	5,567.43	20.37	242.92	-174.59	1,093.33	1,237.36	1,842.29	1,579.16	263.14	7.001	
5,800.00	5,796.36	5,667.36	5,667.36	20.74	247.29	-174.60	1,093.33	1,237.36	1,846.01	1,578.15	267.85	6.892	
5,900.00	5,896.29	5,767.29	5,767.29	21.10	251.65	-174.61	1,093.33	1,237.36	1,849.72	1,577.15	272.57	6.786	
6,000.00	5,996.22	5,867.22	5,867.22	21.46	256.01	-174.62	1,093.33	1,237.36	1,853.44	1,576.14	277.29	6.684	
6,100.00	6,096.15	5,967.15	5,967.15	21.82	260.37	-174.63	1,093.33	1,237.36	1,857.15	1,575.14	282.01	6.585	ES, SF
6,200.00	6,196.08	5,973.00	5,973.00	22.19	260.62	-174.63	1,093.33	1,237.36	1,863.24	1,581.00	282.24	6.602	
6,300.00	6,296.01	5,973.00	5,973.00	22.55	260.62	-174.63	1,093.33	1,237.36	1,874.65	1,593.22	281.43	6.661	
6,335.60	6,331.59	5,973.00	5,973.00	22.68	260.62	-174.63	1,093.33	1,237.36	1,879.98	1,599.03	280.95	6.691	
6,350.00	6,345.97	5,973.00	5,973.00	22.73	260.62	167.54	1,093.33	1,237.36	1,882.44	1,601.70	280.73	6.705	
6,400.00	6,395.75	5,973.00	5,973.00	22.91	260.62	149.12	1,093.33	1,237.36	1,893.62	1,613.75	279.87	6.766	
6,450.00	6,445.03	5,973.00	5,973.00	23.10	260.62	143.48	1,093.33	1,237.36	1,908.78	1,629.91	278.87	6.845	
6,500.00	6,493.52	5,973.00	5,973.00	23.29	260.62	140.09	1,093.33	1,237.36	1,927.74	1,649.99	277.75	6.941	
6,550.00	6,540.91	5,973.00	5,973.00	23.48	260.62	137.26	1,093.33	1,237.36	1,950.27	1,673.72	276.55	7.052	
6,600.00	6,586.91	5,973.00	5,973.00	23.66	260.62	134.47	1,093.33	1,237.36	1,976.11	1,700.79	275.32	7.177	
6,650.00	6,631.24	5,973.00	5,973.00	23.85	260.62	131.50	1,093.33	1,237.36	2,004.98	1,730.90	274.09	7.315	
6,700.00	6,673.63	5,973.00	5,973.00	24.05	260.62	128.18	1,093.33	1,237.36	2,036.58	1,763.69	272.89	7.463	
6,750.00	6,713.80	5,973.00	5,973.00	24.24	260.62	124.42	1,093.33	1,237.36	2,070.59	1,798.83	271.76	7.619	
6,800.00	6,751.52	5,973.00	5,973.00	24.44	260.62	120.13	1,093.33	1,237.36	2,106.68	1,835.95	270.73	7.782	
6,850.00	6,786.56	5,973.00	5,973.00	24.65	260.62	115.24	1,093.33	1,237.36	2,144.54	1,874.73	269.82	7.948	
6,900.00	6,818.69	5,973.00	5,973.00	24.87	260.62	109.74	1,093.33	1,237.36	2,183.86	1,914.81	269.04	8.117	
6,950.00	6,847.72	5,973.00	5,973.00	25.10	260.62	103.65	1,093.33	1,237.36	2,224.30	1,955.88	268.43	8.286	
7,000.00	6,873.46	5,973.00	5,973.00	25.34	260.62	97.05	1,093.33	1,237.36	2,265.58	1,997.61	267.97	8.455	
7,050.00	6,895.77	5,973.00	5,973.00	25.60	260.62	90.12	1,093.33	1,237.36	2,307.40	2,039.72	267.68	8.620	
7,100.00	6,914.50	5,973.00	5,973.00	25.87	260.62	83.09	1,093.33	1,237.36	2,349.48	2,081.93	267.55	8.781	
7,150.00	6,929.54	5,973.00	5,973.00	26.15	260.62	76.20	1,093.33	1,237.36	2,391.55	2,123.97	267.58	8.938	
7,200.00	6,940.80	5,973.00	5,973.00	26.44	260.62	69.67	1,093.33	1,237.36	2,433.37	2,165.59	267.77	9.087	
7,250.00	6,948.20	5,973.00	5,973.00	26.75	260.62	63.66	1,093.33	1,237.36	2,474.68	2,206.58	268.11	9.230	
7,300.00	6,951.70	5,973.00	5,973.00	27.07	260.62	58.27	1,093.33	1,237.36	2,515.28	2,246.70	268.58	9.365	
7,321.06	6,952.00	5,973.00	5,973.00	27.20	260.62	56.19	1,093.33	1,237.36	2,532.11	2,263.30	268.81	9.420	
7,400.00	6,951.82	5,973.00	5,973.00	27.74	260.62	56.19	1,093.33	1,237.36	2,595.32	2,325.60	269.72	9.622	
7,500.00	6,951.60	5,973.00	5,973.00	28.49	260.62	56.19	1,093.33	1,237.36	2,676.59	2,405.79	270.80	9.884	
7,600.00	6,951.37	5,973.00	5,973.00	29.30	260.62	56.19	1,093.33	1,237.36	2,759.09	2,487.27	271.82	10.151	
7,700.00	6,951.15	5,973.00	5,973.00	30.18	260.62	56.19	1,093.33	1,237.36	2,842.71	2,569.94	272.77	10.422	
7,800.00	6,950.92	5,973.00	5,973.00	31.12	260.62	56.19	1,093.33	1,237.36	2,927.36	2,653.70	273.66	10.697	
7,900.00	6,950.70	5,973.00	5,973.00	32.11	260.62	56.19	1,093.33	1,237.36	3,012.95	2,738.45	274.50	10.976	
8,000.00	6,950.47	5,973.00	5,973.00	33.15	260.62	56.19	1,093.33	1,237.36	3,099.41	2,824.12	275.29	11.259	
8,100.00	6,950.25	5,973.00	5,973.00	34.23	260.62	56.19	1,093.33	1,237.36	3,186.66	2,910.63	276.02	11.545	
8,200.00	6,950.03	5,973.00	5,973.00	35.35	260.62	56.19	1,093.33	1,237.36	3,274.63	2,997.92	276.71	11.834	
8,300.00	6,949.80	5,973.00	5,973.00	36.51	260.62	56.19	1,093.33	1,237.36	3,363.28	3,085.92	277.36	12.126	
8,400.00	6,949.58	5,973.00	5,973.00	37.70	260.62	56.19	1,093.33	1,237.36	3,452.55	3,174.58	277.97	12.420	
8,500.00	6,949.35	5,973.00	5,973.00	38.92	260.62	56.19	1,093.33	1,237.36	3,542.39	3,263.84	278.55	12.717	
8,600.00	6,949.13	5,973.00	5,973.00	40.17	260.62	56.19	1,093.33	1,237.36	3,632.77	3,353.67	279.09	13.016	
8,700.00	6,948.90	5,973.00	5,973.00	41.44	260.62	56.19	1,093.33	1,237.36	3,723.63	3,444.03	279.60	13.318	
8,800.00	6,948.68	5,973.00	5,973.00	42.73	260.62	56.19	1,093.33	1,237.36	3,814.95	3,534.87	280.09	13.621	
8,900.00	6,948.45	5,973.00	5,973.00	44.04	260.62	56.19	1,093.33	1,237.36	3,906.70	3,626.16	280.54	13.925	
9,000.00	6,948.23	5,973.00	5,973.00	45.38	260.62	56.19	1,093.33	1,237.36	3,998.84	3,717.87	280.98	14.232	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	5,973.00	5,973.00	46.72	260.62	56.19	1,093.33	1,237.36	4,091.36	3,809.97	281.39	14.540	
9,200.00	6,947.78	5,973.00	5,973.00	48.09	260.62	56.19	1,093.33	1,237.36	4,184.21	3,902.44	281.78	14.849	
9,300.00	6,947.55	5,973.00	5,973.00	49.47	260.62	56.19	1,093.33	1,237.36	4,277.39	3,995.25	282.15	15.160	
9,400.00	6,947.33	5,973.00	5,973.00	50.86	260.62	56.19	1,093.33	1,237.36	4,370.87	4,088.37	282.50	15.472	
9,500.00	6,947.10	5,973.00	5,973.00	52.26	260.62	56.19	1,093.33	1,237.36	4,464.64	4,181.80	282.84	15.785	
9,600.00	6,946.88	5,973.00	5,973.00	53.68	260.62	56.19	1,093.33	1,237.36	4,558.66	4,275.51	283.16	16.099	
9,700.00	6,946.66	5,973.00	5,973.00	55.10	260.62	56.19	1,093.33	1,237.36	4,652.94	4,369.48	283.46	16.415	
9,800.00	6,946.43	5,973.00	5,973.00	56.54	260.62	56.19	1,093.33	1,237.36	4,747.45	4,463.70	283.76	16.731	
9,900.00	6,946.21	5,973.00	5,973.00	57.98	260.62	56.19	1,093.33	1,237.36	4,842.18	4,558.15	284.04	17.048	
10,000.00	6,945.98	5,973.00	5,973.00	59.43	260.62	56.19	1,093.33	1,237.36	4,937.12	4,652.82	284.30	17.366	
10,100.00	6,945.76	5,973.00	5,973.00	60.89	260.62	56.19	1,093.33	1,237.36	5,032.26	4,747.70	284.56	17.684	
10,200.00	6,945.53	5,973.00	5,973.00	62.36	260.62	56.19	1,093.33	1,237.36	5,127.58	4,842.77	284.81	18.003	
10,300.00	6,945.31	5,973.00	5,973.00	63.83	260.62	56.19	1,093.33	1,237.36	5,223.08	4,938.03	285.05	18.323	
10,400.00	6,945.08	5,973.00	5,973.00	65.31	260.62	56.19	1,093.33	1,237.36	5,318.74	5,033.46	285.28	18.644	
10,500.00	6,944.86	5,973.00	5,973.00	66.79	260.62	56.19	1,093.33	1,237.36	5,414.55	5,129.05	285.50	18.965	
10,600.00	6,944.63	5,973.00	5,973.00	68.28	260.62	56.19	1,093.33	1,237.36	5,510.52	5,224.81	285.71	19.287	
10,700.00	6,944.41	5,973.00	5,973.00	69.78	260.62	56.19	1,093.33	1,237.36	5,606.63	5,320.71	285.92	19.609	
10,800.00	6,944.18	5,973.00	5,973.00	71.28	260.62	56.19	1,093.33	1,237.36	5,702.87	5,416.75	286.12	19.932	
10,900.00	6,943.96	5,973.00	5,973.00	72.78	260.62	56.19	1,093.33	1,237.36	5,799.24	5,512.92	286.31	20.255	
11,000.00	6,943.73	5,973.00	5,973.00	74.29	260.62	56.19	1,093.33	1,237.36	5,895.73	5,609.23	286.50	20.578	
11,100.00	6,943.51	5,973.00	5,973.00	75.80	260.62	56.19	1,093.33	1,237.36	5,992.33	5,705.65	286.68	20.902	
11,200.00	6,943.29	5,973.00	5,973.00	77.32	260.62	56.19	1,093.33	1,237.36	6,089.05	5,802.19	286.86	21.226	
11,300.00	6,943.06	5,973.00	5,973.00	78.84	260.62	56.19	1,093.33	1,237.36	6,185.87	5,898.83	287.03	21.551	
11,400.00	6,942.84	5,973.00	5,973.00	80.36	260.62	56.19	1,093.33	1,237.36	6,282.78	5,995.58	287.20	21.876	
11,500.00	6,942.61	5,973.00	5,973.00	81.88	260.62	56.19	1,093.33	1,237.36	6,379.80	6,092.43	287.36	22.201	
11,600.00	6,942.39	5,973.00	5,973.00	83.41	260.62	56.19	1,093.33	1,237.36	6,476.90	6,189.38	287.52	22.527	
11,700.00	6,942.16	5,973.00	5,973.00	84.94	260.62	56.19	1,093.33	1,237.36	6,574.09	6,286.42	287.68	22.852	
11,800.00	6,941.94	5,973.00	5,973.00	86.47	260.62	56.19	1,093.33	1,237.36	6,671.37	6,383.54	287.83	23.178	
11,900.00	6,941.71	5,973.00	5,973.00	88.01	260.62	56.19	1,093.33	1,237.36	6,768.72	6,480.74	287.98	23.504	
12,000.00	6,941.49	5,973.00	5,973.00	89.55	260.62	56.19	1,093.33	1,237.36	6,866.15	6,578.03	288.12	23.831	
12,100.00	6,941.26	5,973.00	5,973.00	91.09	260.62	56.19	1,093.33	1,237.36	6,963.65	6,675.39	288.27	24.157	
12,200.00	6,941.04	5,973.00	5,973.00	92.63	260.62	56.19	1,093.33	1,237.36	7,061.23	6,772.82	288.41	24.484	
12,300.00	6,940.81	5,973.00	5,973.00	94.18	260.62	56.19	1,093.33	1,237.36	7,158.87	6,870.32	288.54	24.810	
12,400.00	6,940.59	5,973.00	5,973.00	95.72	260.62	56.19	1,093.33	1,237.36	7,256.57	6,967.89	288.68	25.137	
12,500.00	6,940.36	5,973.00	5,973.00	97.27	260.62	56.19	1,093.33	1,237.36	7,354.34	7,065.53	288.81	25.464	
12,600.00	6,940.14	5,973.00	5,973.00	98.82	260.62	56.19	1,093.33	1,237.36	7,452.16	7,163.22	288.94	25.792	
12,700.00	6,939.92	5,973.00	5,973.00	100.37	260.62	56.19	1,093.33	1,237.36	7,550.04	7,260.98	289.07	26.119	
12,800.00	6,939.69	5,973.00	5,973.00	101.92	260.62	56.19	1,093.33	1,237.36	7,647.98	7,358.79	289.19	26.446	
12,900.00	6,939.47	5,973.00	5,973.00	103.48	260.62	56.19	1,093.33	1,237.36	7,745.97	7,456.65	289.32	26.773	
13,000.00	6,939.24	5,973.00	5,973.00	105.03	260.62	56.19	1,093.33	1,237.36	7,844.01	7,554.57	289.44	27.101	
13,100.00	6,939.02	5,973.00	5,973.00	106.59	260.62	56.19	1,093.33	1,237.36	7,942.10	7,652.54	289.56	27.428	
13,200.00	6,938.79	5,973.00	5,973.00	108.15	260.62	56.19	1,093.33	1,237.36	8,040.23	7,750.56	289.68	27.756	
13,300.00	6,938.57	5,973.00	5,973.00	109.71	260.62	56.19	1,093.33	1,237.36	8,138.41	7,848.62	289.79	28.083	
13,400.00	6,938.34	5,973.00	5,973.00	111.27	260.62	56.19	1,093.33	1,237.36	8,236.64	7,946.73	289.91	28.411	
13,500.00	6,938.12	5,973.00	5,973.00	112.83	260.62	56.19	1,093.33	1,237.36	8,334.91	8,044.88	290.03	28.739	
13,600.00	6,937.89	5,973.00	5,973.00	114.40	260.62	56.19	1,093.33	1,237.36	8,433.22	8,143.08	290.14	29.066	
13,700.00	6,937.67	5,973.00	5,973.00	115.96	260.62	56.19	1,093.33	1,237.36	8,531.56	8,241.31	290.25	29.394	
13,800.00	6,937.44	5,973.00	5,973.00	117.53	260.62	56.19	1,093.33	1,237.36	8,629.95	8,339.59	290.36	29.721	
13,900.00	6,937.22	5,973.00	5,973.00	119.09	260.62	56.19	1,093.33	1,237.36	8,728.37	8,437.90	290.47	30.049	
14,000.00	6,936.99	5,973.00	5,973.00	120.66	260.62	56.19	1,093.33	1,237.36	8,826.83	8,536.25	290.58	30.376	
14,100.00	6,936.77	5,973.00	5,973.00	122.23	260.62	56.19	1,093.33	1,237.36	8,925.32	8,634.63	290.69	30.704	
14,200.00	6,936.55	5,973.00	5,973.00	123.80	260.62	56.19	1,093.33	1,237.36	9,023.84	8,733.05	290.80	31.031	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	5,973.00	5,973.00	125.37	260.62	56.19	1,093.33	1,237.36	9,122.40	8,831.50	290.91	31.359	
14,400.00	6,936.10	5,973.00	5,973.00	126.94	260.62	56.19	1,093.33	1,237.36	9,220.99	8,929.98	291.01	31.686	
14,500.00	6,935.87	5,973.00	5,973.00	128.51	260.62	56.19	1,093.33	1,237.36	9,319.61	9,028.49	291.12	32.013	
14,600.00	6,935.65	5,973.00	5,973.00	130.08	260.62	56.19	1,093.33	1,237.36	9,418.26	9,127.03	291.22	32.340	
14,700.00	6,935.42	5,973.00	5,973.00	131.65	260.62	56.19	1,093.33	1,237.36	9,516.93	9,225.61	291.33	32.668	
14,800.00	6,935.20	5,973.00	5,973.00	133.23	260.62	56.19	1,093.33	1,237.36	9,615.63	9,324.20	291.43	32.995	
14,900.00	6,934.97	5,973.00	5,973.00	134.80	260.62	56.19	1,093.33	1,237.36	9,714.36	9,422.83	291.53	33.322	
15,000.00	6,934.75	5,973.00	5,973.00	136.37	260.62	56.19	1,093.33	1,237.36	9,813.12	9,521.48	291.64	33.649	
15,100.00	6,934.52	5,973.00	5,973.00	137.95	260.62	56.19	1,093.33	1,237.36	9,911.90	9,620.16	291.74	33.975	
15,200.00	6,934.30	5,973.00	5,973.00	139.53	260.62	56.19	1,093.33	1,237.36	10,010.70	9,718.86	291.84	34.302	
15,300.00	6,934.07	5,973.00	5,973.00	141.10	260.62	56.19	1,093.33	1,237.36	10,109.53	9,817.59	291.94	34.629	
15,400.00	6,933.85	5,973.00	5,973.00	142.68	260.62	56.19	1,093.33	1,237.36	10,208.38	9,916.34	292.04	34.955	
15,500.00	6,933.62	5,973.00	5,973.00	144.26	260.62	56.19	1,093.33	1,237.36	10,307.26	10,015.11	292.14	35.282	
15,600.00	6,933.40	5,973.00	5,973.00	145.84	260.62	56.19	1,093.33	1,237.36	10,406.15	10,113.91	292.24	35.608	
15,700.00	6,933.18	5,973.00	5,973.00	147.42	260.62	56.19	1,093.33	1,237.36	10,505.07	10,212.72	292.34	35.934	
15,800.00	6,932.95	5,973.00	5,973.00	148.99	260.62	56.19	1,093.33	1,237.36	10,604.00	10,311.56	292.44	36.260	
15,900.00	6,932.73	5,973.00	5,973.00	150.57	260.62	56.19	1,093.33	1,237.36	10,702.96	10,410.41	292.54	36.586	
16,000.00	6,932.50	5,973.00	5,973.00	152.15	260.62	56.19	1,093.33	1,237.36	10,801.93	10,509.29	292.64	36.912	
16,100.00	6,932.28	5,973.00	5,973.00	153.74	260.62	56.19	1,093.33	1,237.36	10,900.93	10,608.18	292.74	37.237	
16,200.00	6,932.05	5,973.00	5,973.00	155.32	260.62	56.19	1,093.33	1,237.36	10,999.94	10,707.10	292.84	37.563	
16,300.00	6,931.83	5,973.00	5,973.00	156.90	260.62	56.19	1,093.33	1,237.36	11,098.97	10,806.03	292.94	37.888	
16,400.00	6,931.60	5,973.00	5,973.00	158.48	260.62	56.19	1,093.33	1,237.36	11,198.01	10,904.97	293.04	38.213	
16,500.00	6,931.38	5,973.00	5,973.00	160.06	260.62	56.19	1,093.33	1,237.36	11,297.08	11,003.94	293.14	38.538	
16,600.00	6,931.15	5,973.00	5,973.00	161.65	260.62	56.19	1,093.33	1,237.36	11,396.16	11,102.92	293.24	38.863	
16,700.00	6,930.93	5,973.00	5,973.00	163.23	260.62	56.19	1,093.33	1,237.36	11,495.25	11,201.92	293.33	39.188	
16,800.00	6,930.70	5,973.00	5,973.00	164.81	260.62	56.19	1,093.33	1,237.36	11,594.36	11,300.93	293.43	39.513	
16,900.00	6,930.48	5,973.00	5,973.00	166.40	260.62	56.19	1,093.33	1,237.36	11,693.49	11,399.96	293.53	39.837	
17,000.00	6,930.25	5,973.00	5,973.00	167.98	260.62	56.19	1,093.33	1,237.36	11,792.63	11,499.00	293.63	40.162	
17,100.00	6,930.03	5,973.00	5,973.00	169.56	260.62	56.19	1,093.33	1,237.36	11,891.79	11,598.06	293.73	40.486	
17,200.00	6,929.81	5,973.00	5,973.00	171.15	260.62	56.19	1,093.33	1,237.36	11,990.96	11,697.13	293.83	40.810	
17,300.00	6,929.58	5,973.00	5,973.00	172.73	260.62	56.19	1,093.33	1,237.36	12,090.14	11,796.22	293.92	41.133	
17,400.00	6,929.36	5,973.00	5,973.00	174.32	260.62	56.19	1,093.33	1,237.36	12,189.34	11,895.31	294.02	41.457	
17,500.00	6,929.13	5,973.00	5,973.00	175.91	260.62	56.19	1,093.33	1,237.36	12,288.55	11,994.43	294.12	41.780	
17,600.00	6,928.91	5,973.00	5,973.00	177.49	260.62	56.19	1,093.33	1,237.36	12,387.77	12,093.55	294.22	42.104	
17,700.00	6,928.68	5,973.00	5,973.00	179.08	260.62	56.19	1,093.33	1,237.36	12,487.00	12,192.69	294.32	42.427	
17,800.00	6,928.46	5,973.00	5,973.00	180.66	260.62	56.19	1,093.33	1,237.36	12,586.25	12,291.83	294.42	42.750	
17,900.00	6,928.23	5,973.00	5,973.00	182.25	260.62	56.19	1,093.33	1,237.36	12,685.51	12,390.99	294.52	43.072	
18,000.00	6,928.01	5,973.00	5,973.00	183.84	260.62	56.19	1,093.33	1,237.36	12,784.78	12,490.17	294.61	43.395	
18,100.00	6,927.78	5,973.00	5,973.00	185.43	260.62	56.19	1,093.33	1,237.36	12,884.06	12,589.35	294.71	43.717	
18,200.00	6,927.56	5,973.00	5,973.00	187.01	260.62	56.19	1,093.33	1,237.36	12,983.35	12,688.54	294.81	44.040	
18,300.00	6,927.33	5,973.00	5,973.00	188.60	260.62	56.19	1,093.33	1,237.36	13,082.66	12,787.75	294.91	44.361	
18,400.00	6,927.11	5,973.00	5,973.00	190.19	260.62	56.19	1,093.33	1,237.36	13,181.97	12,886.96	295.01	44.683	
18,500.00	6,926.88	5,973.00	5,973.00	191.78	260.62	56.19	1,093.33	1,237.36	13,281.30	12,986.19	295.11	45.005	
18,600.00	6,926.66	5,973.00	5,973.00	193.37	260.62	56.19	1,093.33	1,237.36	13,380.63	13,085.42	295.21	45.326	
18,700.00	6,926.44	5,973.00	5,973.00	194.96	260.62	56.19	1,093.33	1,237.36	13,479.97	13,184.67	295.31	45.647	
18,800.00	6,926.21	5,973.00	5,973.00	196.54	260.62	56.19	1,093.33	1,237.36	13,579.33	13,283.92	295.41	45.968	
18,900.00	6,925.99	5,973.00	5,973.00	198.13	260.62	56.19	1,093.33	1,237.36	13,678.69	13,383.19	295.51	46.289	
19,000.00	6,925.76	5,973.00	5,973.00	199.72	260.62	56.19	1,093.33	1,237.36	13,778.06	13,482.46	295.61	46.610	
19,100.00	6,925.54	5,973.00	5,973.00	201.31	260.62	56.19	1,093.33	1,237.36	13,877.44	13,581.74	295.70	46.930	
19,200.00	6,925.31	5,973.00	5,973.00	202.90	260.62	56.19	1,093.33	1,237.36	13,976.83	13,681.03	295.80	47.250	
19,300.00	6,925.09	5,973.00	5,973.00	204.49	260.62	56.19	1,093.33	1,237.36	14,076.23	13,780.33	295.90	47.570	
19,400.00	6,924.86	5,973.00	5,973.00	206.08	260.62	56.19	1,093.33	1,237.36	14,175.64	13,879.64	296.01	47.890	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031 - OH - OH-TD

Offset Site Error: 0.00 usft

Survey Program: 5973-A028Ua_INC-ONLY_PLANNED_5_DEG

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	5,973.00	5,973.00	207.67	260.62	56.19	1,093.33	1,237.36	14,275.06	13,978.95	296.11	48.209	
19,600.00	6,924.41	5,973.00	5,973.00	209.26	260.62	56.19	1,093.33	1,237.36	14,374.48	14,078.27	296.21	48.529	
19,700.00	6,924.19	5,973.00	5,973.00	210.85	260.62	56.19	1,093.33	1,237.36	14,473.91	14,177.60	296.31	48.848	
19,800.00	6,923.96	5,973.00	5,973.00	212.44	260.62	56.19	1,093.33	1,237.36	14,573.35	14,276.94	296.41	49.167	
19,900.00	6,923.74	5,973.00	5,973.00	214.04	260.62	56.19	1,093.33	1,237.36	14,672.80	14,376.29	296.51	49.485	
20,000.00	6,923.51	5,973.00	5,973.00	215.63	260.62	56.19	1,093.33	1,237.36	14,772.25	14,475.64	296.61	49.804	
20,100.00	6,923.29	5,973.00	5,973.00	217.22	260.62	56.19	1,093.33	1,237.36	14,871.71	14,575.00	296.71	50.122	
20,200.00	6,923.07	5,973.00	5,973.00	218.81	260.62	56.19	1,093.33	1,237.36	14,971.18	14,674.37	296.81	50.440	
20,300.00	6,922.84	5,973.00	5,973.00	220.40	260.62	56.19	1,093.33	1,237.36	15,070.66	14,773.74	296.91	50.758	
20,400.00	6,922.62	5,973.00	5,973.00	221.99	260.62	56.19	1,093.33	1,237.36	15,170.14	14,873.13	297.02	51.075	
20,500.00	6,922.39	5,973.00	5,973.00	223.59	260.62	56.19	1,093.33	1,237.36	15,269.63	14,972.51	297.12	51.392	
20,600.00	6,922.17	5,973.00	5,973.00	225.18	260.62	56.19	1,093.33	1,237.36	15,369.13	15,071.91	297.22	51.709	
20,674.13	6,922.00	5,973.00	5,973.00	226.36	260.62	56.19	1,093.33	1,237.36	15,442.89	15,145.59	297.30	51.944	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 94-A027Ua_INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	147.51	-1,038.68	661.42	1,231.54				
100.00	100.00	81.00	81.00	0.25	0.75	147.51	-1,038.68	661.42	1,231.40	1,230.40	1.00	1,231.825	
200.00	200.00	181.00	181.00	0.61	2.52	147.51	-1,038.68	661.42	1,231.40	1,228.26	3.13	392.924	
300.00	300.00	281.01	281.00	0.97	4.43	147.51	-1,038.68	661.42	1,231.40	1,226.00	5.40	228.028	
400.00	400.00	381.01	381.00	1.33	6.40	147.51	-1,038.68	661.42	1,231.40	1,223.67	7.73	159.377	
500.00	500.00	481.01	481.00	1.68	8.37	147.51	-1,038.68	661.42	1,231.40	1,221.35	10.05	122.497	
606.93	606.91	585.94	585.93	2.05	10.43	-75.10	-1,037.96	661.42	1,230.27	1,217.79	12.49	98.540	
700.00	699.91	676.43	676.41	2.37	12.21	-75.25	-1,038.24	661.42	1,229.63	1,215.05	14.58	84.345	
800.00	799.84	780.89	780.84	2.71	14.29	-75.41	-1,038.68	661.42	1,229.05	1,212.05	16.99	72.321	
900.00	899.77	880.82	880.77	3.06	16.32	-75.58	-1,038.68	661.42	1,228.11	1,208.73	19.38	63.369	
1,000.00	999.70	980.75	980.70	3.41	18.36	-75.75	-1,038.68	661.42	1,227.19	1,205.42	21.77	56.372	
1,100.00	1,099.63	1,078.75	1,078.69	3.76	20.36	-75.94	-1,037.94	661.42	1,225.65	1,201.53	24.12	50.812	
1,200.00	1,199.56	1,176.09	1,176.03	4.11	22.35	-76.09	-1,038.24	661.42	1,225.01	1,198.55	26.46	46.294	
1,300.00	1,299.49	1,280.60	1,280.49	4.47	24.48	-76.26	-1,038.68	661.42	1,224.48	1,195.53	28.95	42.296	
1,400.00	1,399.42	1,380.53	1,380.42	4.83	26.52	-76.43	-1,038.68	661.42	1,223.60	1,192.25	31.35	39.032	
1,500.00	1,499.35	1,480.47	1,480.35	5.19	28.56	-76.60	-1,038.68	661.42	1,222.73	1,188.98	33.75	36.232	
1,600.00	1,599.28	1,578.27	1,578.15	5.54	30.56	-76.79	-1,037.62	661.42	1,220.99	1,184.88	36.10	33.819	
1,700.00	1,699.21	1,674.96	1,674.83	5.90	32.54	-76.95	-1,037.98	661.42	1,220.45	1,182.01	38.44	31.751	
1,800.00	1,799.14	1,780.32	1,780.14	6.26	34.69	-77.11	-1,038.68	661.42	1,220.18	1,179.23	40.95	29.800	
1,900.00	1,899.07	1,880.25	1,880.07	6.62	36.65	-77.28	-1,038.68	661.42	1,219.35	1,176.08	43.27	28.178	
2,000.00	1,999.00	1,980.18	1,980.00	6.98	38.62	-77.45	-1,038.68	661.42	1,218.53	1,172.93	45.60	26.722	
2,100.00	2,098.94	2,078.36	2,078.18	7.34	40.55	-77.64	-1,037.96	661.42	1,217.14	1,169.24	47.89	25.413	
2,200.00	2,198.87	2,175.66	2,175.48	7.70	42.47	-77.80	-1,038.26	661.42	1,216.59	1,166.42	50.17	24.249	
2,300.00	2,298.80	2,280.01	2,279.80	8.06	44.53	-77.97	-1,038.68	661.42	1,216.15	1,163.56	52.59	23.127	
2,400.00	2,398.73	2,379.94	2,379.73	8.42	46.49	-78.14	-1,038.68	661.42	1,215.38	1,160.46	54.92	22.132	
2,500.00	2,498.66	2,479.87	2,479.66	8.79	48.46	-78.31	-1,038.68	661.42	1,214.61	1,157.37	57.24	21.218	
2,600.00	2,598.59	2,577.80	2,577.58	9.15	50.39	-78.50	-1,037.95	661.42	1,213.27	1,153.74	59.53	20.379	
2,700.00	2,698.52	2,675.23	2,675.00	9.51	52.31	-78.66	-1,038.28	661.42	1,212.80	1,150.99	61.81	19.620	
2,800.00	2,798.45	2,779.70	2,779.45	9.87	54.39	-78.83	-1,038.68	661.42	1,212.39	1,148.14	64.26	18.868	
2,900.00	2,898.38	2,879.63	2,879.38	10.23	56.43	-79.00	-1,038.68	661.42	1,211.67	1,145.01	66.66	18.177	
3,000.00	2,998.31	2,979.56	2,979.31	10.59	58.47	-79.17	-1,038.68	661.42	1,210.97	1,141.90	69.06	17.534	
3,100.00	3,098.24	3,077.49	3,077.22	10.96	60.47	-79.36	-1,037.95	661.42	1,209.69	1,138.26	71.43	16.936	
3,200.00	3,198.17	3,174.97	3,174.71	11.32	62.47	-79.52	-1,038.28	661.42	1,209.27	1,135.49	73.78	16.391	
3,300.00	3,298.10	3,279.41	3,279.10	11.68	64.62	-79.69	-1,038.68	661.42	1,208.91	1,132.62	76.30	15.845	
3,400.00	3,398.03	3,379.34	3,379.03	12.04	66.74	-79.87	-1,038.68	661.42	1,208.25	1,129.47	78.78	15.338	
3,500.00	3,497.96	3,477.20	3,476.88	12.40	68.81	-80.06	-1,037.93	661.42	1,207.01	1,125.79	81.21	14.862	
3,600.00	3,597.89	3,572.82	3,572.49	12.77	70.84	-80.22	-1,038.36	661.42	1,206.72	1,123.12	83.60	14.435	
3,700.00	3,697.82	3,679.19	3,678.82	13.13	73.10	-80.39	-1,038.68	661.42	1,206.33	1,120.11	86.22	13.992	
3,800.00	3,797.75	3,779.12	3,778.75	13.49	75.22	-80.57	-1,038.68	661.42	1,205.71	1,117.01	88.70	13.593	
3,900.00	3,897.68	3,879.05	3,878.68	13.85	77.34	-80.74	-1,038.68	661.42	1,205.11	1,113.92	91.18	13.216	
4,000.00	3,997.61	3,978.98	3,978.61	14.21	79.46	-80.92	-1,038.68	661.42	1,204.51	1,110.85	93.67	12.860	
4,100.00	4,097.54	4,078.91	4,078.54	14.58	81.58	-81.09	-1,038.68	661.42	1,203.93	1,107.78	96.15	12.522	
4,200.00	4,197.47	4,178.84	4,178.47	14.94	83.70	-81.27	-1,038.68	661.42	1,203.35	1,104.72	98.63	12.201	
4,300.00	4,297.40	4,278.29	4,277.90	15.30	85.81	-81.52	-1,035.96	661.42	1,200.68	1,099.57	101.10	11.876	
4,400.00	4,397.33	4,376.96	4,376.56	15.66	87.90	-81.69	-1,036.08	661.42	1,200.23	1,096.67	103.56	11.590	
4,500.00	4,497.26	4,475.64	4,475.23	16.03	90.00	-81.86	-1,036.34	661.42	1,199.89	1,093.88	106.02	11.318	
4,600.00	4,597.19	4,574.33	4,573.91	16.39	92.09	-82.02	-1,036.73	661.42	1,199.68	1,091.20	108.47	11.060	
4,700.00	4,697.12	4,673.02	4,672.61	16.75	94.19	-82.18	-1,037.25	661.42	1,199.57	1,088.64	110.93	10.814	
4,738.53	4,735.63	4,711.06	4,710.63	16.89	94.99	-82.24	-1,037.49	661.42	1,199.56	1,087.69	111.88	10.722	
4,800.00	4,797.05	4,771.73	4,771.31	17.11	96.28	-82.33	-1,037.92	661.42	1,199.59	1,086.20	113.39	10.580	
4,900.00	4,896.99	4,878.55	4,877.99	17.47	98.55	-82.50	-1,038.68	661.42	1,199.66	1,083.65	116.02	10.341	
5,000.00	4,996.92	4,978.48	4,977.92	17.84	100.67	-82.68	-1,038.68	661.42	1,199.18	1,080.68	118.50	10.120	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 94-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	5,078.41	5,077.85	18.20	102.79	-82.85	-1,038.68	661.42	1,198.71	1,077.72	120.99	9.908	
5,200.00	5,196.78	5,178.34	5,177.78	18.56	104.92	-83.03	-1,038.68	661.42	1,198.25	1,074.78	123.47	9.705	
5,300.00	5,296.71	5,278.27	5,277.71	18.92	107.04	-83.21	-1,038.68	661.42	1,197.80	1,071.85	125.96	9.510	
5,400.00	5,396.64	5,378.20	5,377.64	19.29	109.16	-83.38	-1,038.68	661.42	1,197.37	1,068.92	128.44	9.322	
5,500.00	5,496.57	5,478.13	5,477.57	19.65	111.29	-83.56	-1,038.68	661.42	1,196.94	1,066.01	130.93	9.142	
5,600.00	5,596.50	5,578.06	5,577.50	20.01	113.41	-83.74	-1,038.68	661.42	1,196.53	1,063.12	133.42	8.968	
5,700.00	5,696.43	5,677.99	5,677.43	20.37	115.53	-83.92	-1,038.68	661.42	1,196.13	1,060.23	135.90	8.801	
5,800.00	5,796.36	5,777.92	5,777.36	20.74	117.66	-84.09	-1,038.68	661.42	1,195.74	1,057.35	138.39	8.641	
5,900.00	5,896.29	5,877.85	5,877.29	21.10	119.78	-84.27	-1,038.68	661.42	1,195.36	1,054.49	140.87	8.485	
6,000.00	5,996.22	5,977.78	5,977.22	21.46	121.90	-84.45	-1,038.68	661.42	1,194.99	1,051.64	143.36	8.336	
6,084.35	6,080.51	6,058.00	6,057.26	21.77	123.61	-84.59	-1,038.68	661.42	1,194.70	1,049.33	145.37	8.218	CC, ES
6,100.00	6,096.15	6,058.00	6,057.26	21.82	123.61	-84.59	-1,038.68	661.42	1,194.80	1,049.40	145.41	8.217	SF
6,200.00	6,196.08	6,058.00	6,057.26	22.19	123.61	-84.59	-1,038.68	661.42	1,200.29	1,055.19	145.10	8.272	
6,300.00	6,296.01	6,058.00	6,057.26	22.55	123.61	-84.59	-1,038.68	661.42	1,214.02	1,070.15	143.87	8.438	
6,335.60	6,331.59	6,058.00	6,057.26	22.68	123.61	-84.59	-1,038.68	661.42	1,220.85	1,077.62	143.22	8.524	
6,350.00	6,345.97	6,058.00	6,057.26	22.73	123.61	-102.05	-1,038.68	661.42	1,224.00	1,081.07	142.93	8.564	
6,400.00	6,395.75	6,058.00	6,057.26	22.91	123.61	-118.80	-1,038.68	661.42	1,237.80	1,095.98	141.82	8.728	
6,450.00	6,445.03	6,058.00	6,057.26	23.10	123.61	-122.12	-1,038.68	661.42	1,255.87	1,115.29	140.58	8.933	
6,500.00	6,493.52	6,058.00	6,057.26	23.29	123.61	-122.50	-1,038.68	661.42	1,277.91	1,138.63	139.27	9.176	
6,550.00	6,540.91	6,058.00	6,057.26	23.48	123.61	-121.53	-1,038.68	661.42	1,303.58	1,165.65	137.93	9.451	
6,600.00	6,586.91	6,058.00	6,057.26	23.66	123.61	-119.65	-1,038.68	661.42	1,332.52	1,195.91	136.62	9.754	
6,650.00	6,631.24	6,058.00	6,057.26	23.85	123.61	-117.01	-1,038.68	661.42	1,364.36	1,229.00	135.37	10.079	
6,700.00	6,673.63	6,058.00	6,057.26	24.05	123.61	-113.64	-1,038.68	661.42	1,398.70	1,264.49	134.22	10.421	
6,750.00	6,713.80	6,058.00	6,057.26	24.24	123.61	-109.55	-1,038.68	661.42	1,435.17	1,301.96	133.21	10.774	
6,800.00	6,751.52	6,058.00	6,057.26	24.44	123.61	-104.74	-1,038.68	661.42	1,473.38	1,341.04	132.35	11.133	
6,850.00	6,786.56	6,058.00	6,057.26	24.65	123.61	-99.25	-1,038.68	661.42	1,512.99	1,381.33	131.65	11.492	
6,900.00	6,818.69	6,058.00	6,057.26	24.87	123.61	-93.17	-1,038.68	661.42	1,553.64	1,422.50	131.14	11.847	
6,950.00	6,847.72	6,058.00	6,057.26	25.10	123.61	-86.66	-1,038.68	661.42	1,595.02	1,464.22	130.80	12.194	
7,000.00	6,873.46	6,058.00	6,057.26	25.34	123.61	-79.91	-1,038.68	661.42	1,636.82	1,506.18	130.64	12.529	
7,050.00	6,895.77	6,058.00	6,057.26	25.60	123.61	-73.19	-1,038.68	661.42	1,678.78	1,548.13	130.64	12.850	
7,100.00	6,914.50	6,058.00	6,057.26	25.87	123.61	-66.72	-1,038.68	661.42	1,720.62	1,589.81	130.81	13.154	
7,150.00	6,929.54	6,058.00	6,057.26	26.15	123.61	-60.68	-1,038.68	661.42	1,762.10	1,630.99	131.12	13.439	
7,200.00	6,940.80	6,058.00	6,057.26	26.44	123.61	-55.19	-1,038.68	661.42	1,803.01	1,671.45	131.56	13.705	
7,250.00	6,948.20	6,058.00	6,057.26	26.75	123.61	-50.30	-1,038.68	661.42	1,843.14	1,711.02	132.12	13.951	
7,300.00	6,951.70	6,058.00	6,057.26	27.07	123.61	-45.98	-1,038.68	661.42	1,882.30	1,749.51	132.79	14.175	
7,321.06	6,952.00	6,058.00	6,057.26	27.20	123.61	-44.33	-1,038.68	661.42	1,898.46	1,765.36	133.10	14.264	
7,400.00	6,951.82	6,058.00	6,057.26	27.74	123.61	-44.33	-1,038.68	661.42	1,959.30	1,825.05	134.25	14.594	
7,500.00	6,951.60	6,058.00	6,057.26	28.49	123.61	-44.33	-1,038.68	661.42	2,038.15	1,902.55	135.60	15.031	
7,600.00	6,951.37	6,058.00	6,057.26	29.30	123.61	-44.33	-1,038.68	661.42	2,118.79	1,981.96	136.83	15.485	
7,700.00	6,951.15	6,058.00	6,057.26	30.18	123.61	-44.33	-1,038.68	661.42	2,201.02	2,063.07	137.95	15.956	
7,800.00	6,950.92	6,058.00	6,057.26	31.12	123.61	-44.33	-1,038.68	661.42	2,284.66	2,145.70	138.97	16.441	
7,900.00	6,950.70	6,058.00	6,057.26	32.11	123.61	-44.33	-1,038.68	661.42	2,369.58	2,229.68	139.90	16.938	
8,000.00	6,950.47	6,058.00	6,057.26	33.15	123.61	-44.33	-1,038.68	661.42	2,455.63	2,314.89	140.74	17.448	
8,100.00	6,950.25	6,058.00	6,057.26	34.23	123.61	-44.33	-1,038.68	661.42	2,542.70	2,401.18	141.52	17.967	
8,200.00	6,950.03	6,058.00	6,057.26	35.35	123.61	-44.33	-1,038.68	661.42	2,630.69	2,488.46	142.23	18.496	
8,300.00	6,949.80	6,058.00	6,057.26	36.51	123.61	-44.33	-1,038.68	661.42	2,719.51	2,576.63	142.88	19.033	
8,400.00	6,949.58	6,058.00	6,057.26	37.70	123.61	-44.33	-1,038.68	661.42	2,809.09	2,665.60	143.48	19.578	
8,500.00	6,949.35	6,058.00	6,057.26	38.92	123.61	-44.33	-1,038.68	661.42	2,899.34	2,755.31	144.04	20.129	
8,600.00	6,949.13	6,058.00	6,057.26	40.17	123.61	-44.33	-1,038.68	661.42	2,990.22	2,845.67	144.55	20.687	
8,700.00	6,948.90	6,058.00	6,057.26	41.44	123.61	-44.33	-1,038.68	661.42	3,081.66	2,936.64	145.02	21.250	
8,800.00	6,948.68	6,058.00	6,057.26	42.73	123.61	-44.33	-1,038.68	661.42	3,173.61	3,028.16	145.46	21.818	
8,900.00	6,948.45	6,058.00	6,057.26	44.04	123.61	-44.33	-1,038.68	661.42	3,266.04	3,120.18	145.87	22.391	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 94-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
9,000.00	6,948.23	6,058.00	6,057.26	45.38	123.61	-44.33	-1,038.68	661.42	3,358.91	3,212.66	146.25	22.967	
9,100.00	6,948.00	6,058.00	6,057.26	46.72	123.61	-44.33	-1,038.68	661.42	3,452.17	3,305.57	146.60	23.548	
9,200.00	6,947.78	6,058.00	6,057.26	48.09	123.61	-44.33	-1,038.68	661.42	3,545.80	3,398.86	146.93	24.132	
9,300.00	6,947.55	6,058.00	6,057.26	49.47	123.61	-44.33	-1,038.68	661.42	3,639.77	3,492.52	147.24	24.719	
9,400.00	6,947.33	6,058.00	6,057.26	50.86	123.61	-44.33	-1,038.68	661.42	3,734.05	3,586.51	147.54	25.309	
9,500.00	6,947.10	6,058.00	6,057.26	52.26	123.61	-44.33	-1,038.68	661.42	3,828.62	3,680.81	147.81	25.902	
9,600.00	6,946.88	6,058.00	6,057.26	53.68	123.61	-44.33	-1,038.68	661.42	3,923.46	3,775.39	148.07	26.497	
9,700.00	6,946.66	6,058.00	6,057.26	55.10	123.61	-44.33	-1,038.68	661.42	4,018.55	3,870.23	148.32	27.094	
9,800.00	6,946.43	6,058.00	6,057.26	56.54	123.61	-44.33	-1,038.68	661.42	4,113.87	3,965.32	148.55	27.694	
9,900.00	6,946.21	6,058.00	6,057.26	57.98	123.61	-44.33	-1,038.68	661.42	4,209.42	4,060.64	148.77	28.295	
10,000.00	6,945.98	6,058.00	6,057.26	59.43	123.61	-44.33	-1,038.68	661.42	4,305.16	4,156.18	148.98	28.897	
10,100.00	6,945.76	6,058.00	6,057.26	60.89	123.61	-44.33	-1,038.68	661.42	4,401.09	4,251.91	149.18	29.502	
10,200.00	6,945.53	6,058.00	6,057.26	62.36	123.61	-44.33	-1,038.68	661.42	4,497.20	4,347.83	149.37	30.107	
10,300.00	6,945.31	6,058.00	6,057.26	63.83	123.61	-44.33	-1,038.68	661.42	4,593.48	4,443.92	149.55	30.714	
10,400.00	6,945.08	6,058.00	6,057.26	65.31	123.61	-44.33	-1,038.68	661.42	4,689.91	4,540.18	149.73	31.323	
10,500.00	6,944.86	6,058.00	6,057.26	66.79	123.61	-44.33	-1,038.68	661.42	4,786.49	4,636.59	149.90	31.932	
10,600.00	6,944.63	6,058.00	6,057.26	68.28	123.61	-44.33	-1,038.68	661.42	4,883.20	4,733.14	150.06	32.542	
10,700.00	6,944.41	6,058.00	6,057.26	69.78	123.61	-44.33	-1,038.68	661.42	4,980.05	4,829.83	150.21	33.153	
10,800.00	6,944.18	6,058.00	6,057.26	71.28	123.61	-44.33	-1,038.68	661.42	5,077.02	4,926.65	150.36	33.765	
10,900.00	6,943.96	6,058.00	6,057.26	72.78	123.61	-44.33	-1,038.68	661.42	5,174.10	5,023.59	150.51	34.377	
11,000.00	6,943.73	6,058.00	6,057.26	74.29	123.61	-44.33	-1,038.68	661.42	5,271.29	5,120.64	150.65	34.990	
11,100.00	6,943.51	6,058.00	6,057.26	75.80	123.61	-44.33	-1,038.68	661.42	5,368.59	5,217.80	150.79	35.604	
11,200.00	6,943.29	6,058.00	6,057.26	77.32	123.61	-44.33	-1,038.68	661.42	5,465.98	5,315.06	150.92	36.218	
11,300.00	6,943.06	6,058.00	6,057.26	78.84	123.61	-44.33	-1,038.68	661.42	5,563.47	5,412.42	151.05	36.833	
11,400.00	6,942.84	6,058.00	6,057.26	80.36	123.61	-44.33	-1,038.68	661.42	5,661.04	5,509.87	151.17	37.448	
11,500.00	6,942.61	6,058.00	6,057.26	81.88	123.61	-44.33	-1,038.68	661.42	5,758.70	5,607.41	151.29	38.064	
11,600.00	6,942.39	6,058.00	6,057.26	83.41	123.61	-44.33	-1,038.68	661.42	5,856.43	5,705.02	151.41	38.679	
11,700.00	6,942.16	6,058.00	6,057.26	84.94	123.61	-44.33	-1,038.68	661.42	5,954.24	5,802.72	151.53	39.295	
11,800.00	6,941.94	6,058.00	6,057.26	86.47	123.61	-44.33	-1,038.68	661.42	6,052.13	5,900.49	151.64	39.911	
11,900.00	6,941.71	6,058.00	6,057.26	88.01	123.61	-44.33	-1,038.68	661.42	6,150.08	5,998.33	151.75	40.528	
12,000.00	6,941.49	6,058.00	6,057.26	89.55	123.61	-44.33	-1,038.68	661.42	6,248.09	6,096.23	151.86	41.144	
12,100.00	6,941.26	6,058.00	6,057.26	91.09	123.61	-44.33	-1,038.68	661.42	6,346.17	6,194.20	151.97	41.761	
12,200.00	6,941.04	6,058.00	6,057.26	92.63	123.61	-44.33	-1,038.68	661.42	6,444.31	6,292.24	152.07	42.377	
12,300.00	6,940.81	6,058.00	6,057.26	94.18	123.61	-44.33	-1,038.68	661.42	6,542.50	6,390.33	152.17	42.994	
12,400.00	6,940.59	6,058.00	6,057.26	95.72	123.61	-44.33	-1,038.68	661.42	6,640.75	6,488.47	152.28	43.610	
12,500.00	6,940.36	6,058.00	6,057.26	97.27	123.61	-44.33	-1,038.68	661.42	6,739.05	6,586.67	152.38	44.227	
12,600.00	6,940.14	6,058.00	6,057.26	98.82	123.61	-44.33	-1,038.68	661.42	6,837.39	6,684.92	152.47	44.843	
12,700.00	6,939.92	6,058.00	6,057.26	100.37	123.61	-44.33	-1,038.68	661.42	6,935.79	6,783.22	152.57	45.459	
12,800.00	6,939.69	6,058.00	6,057.26	101.92	123.61	-44.33	-1,038.68	661.42	7,034.23	6,881.56	152.67	46.075	
12,900.00	6,939.47	6,058.00	6,057.26	103.48	123.61	-44.33	-1,038.68	661.42	7,132.71	6,979.95	152.76	46.691	
13,000.00	6,939.24	6,058.00	6,057.26	105.03	123.61	-44.33	-1,038.68	661.42	7,231.24	7,078.38	152.86	47.307	
13,100.00	6,939.02	6,058.00	6,057.26	106.59	123.61	-44.33	-1,038.68	661.42	7,329.80	7,176.85	152.95	47.922	
13,200.00	6,938.79	6,058.00	6,057.26	108.15	123.61	-44.33	-1,038.68	661.42	7,428.41	7,275.36	153.04	48.538	
13,300.00	6,938.57	6,058.00	6,057.26	109.71	123.61	-44.33	-1,038.68	661.42	7,527.05	7,373.91	153.14	49.153	
13,400.00	6,938.34	6,058.00	6,057.26	111.27	123.61	-44.33	-1,038.68	661.42	7,625.72	7,472.50	153.23	49.768	
13,500.00	6,938.12	6,058.00	6,057.26	112.83	123.61	-44.33	-1,038.68	661.42	7,724.43	7,571.12	153.32	50.382	
13,600.00	6,937.89	6,058.00	6,057.26	114.40	123.61	-44.33	-1,038.68	661.42	7,823.18	7,669.77	153.41	50.996	
13,700.00	6,937.67	6,058.00	6,057.26	115.96	123.61	-44.33	-1,038.68	661.42	7,921.95	7,768.45	153.50	51.610	
13,800.00	6,937.44	6,058.00	6,057.26	117.53	123.61	-44.33	-1,038.68	661.42	8,020.75	7,867.17	153.59	52.223	
13,900.00	6,937.22	6,058.00	6,057.26	119.09	123.61	-44.33	-1,038.68	661.42	8,119.59	7,965.91	153.67	52.837	
14,000.00	6,936.99	6,058.00	6,057.26	120.66	123.61	-44.33	-1,038.68	661.42	8,218.45	8,064.69	153.76	53.449	
14,100.00	6,936.77	6,058.00	6,057.26	122.23	123.61	-44.33	-1,038.68	661.42	8,317.34	8,163.49	153.85	54.061	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 94-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	6,936.55	6,058.00	6,057.26	123.80	123.61	-44.33	-1,038.68	661.42	8,416.26	8,262.32	153.94	54.673	
14,300.00	6,936.32	6,058.00	6,057.26	125.37	123.61	-44.33	-1,038.68	661.42	8,515.20	8,361.17	154.02	55.285	
14,400.00	6,936.10	6,058.00	6,057.26	126.94	123.61	-44.33	-1,038.68	661.42	8,614.16	8,460.05	154.11	55.896	
14,500.00	6,935.87	6,058.00	6,057.26	128.51	123.61	-44.33	-1,038.68	661.42	8,713.15	8,558.95	154.20	56.506	
14,600.00	6,935.65	6,058.00	6,057.26	130.08	123.61	-44.33	-1,038.68	661.42	8,812.16	8,657.88	154.28	57.116	
14,700.00	6,935.42	6,058.00	6,057.26	131.65	123.61	-44.33	-1,038.68	661.42	8,911.20	8,756.83	154.37	57.726	
14,800.00	6,935.20	6,058.00	6,057.26	133.23	123.61	-44.33	-1,038.68	661.42	9,010.25	8,855.80	154.46	58.335	
14,900.00	6,934.97	6,058.00	6,057.26	134.80	123.61	-44.33	-1,038.68	661.42	9,109.33	8,954.78	154.54	58.944	
15,000.00	6,934.75	6,058.00	6,057.26	136.37	123.61	-44.33	-1,038.68	661.42	9,208.42	9,053.79	154.63	59.552	
15,100.00	6,934.52	6,058.00	6,057.26	137.95	123.61	-44.33	-1,038.68	661.42	9,307.54	9,152.82	154.72	60.159	
15,200.00	6,934.30	6,058.00	6,057.26	139.53	123.61	-44.33	-1,038.68	661.42	9,406.67	9,251.87	154.80	60.766	
15,300.00	6,934.07	6,058.00	6,057.26	141.10	123.61	-44.33	-1,038.68	661.42	9,505.83	9,350.94	154.89	61.372	
15,400.00	6,933.85	6,058.00	6,057.26	142.68	123.61	-44.33	-1,038.68	661.42	9,604.99	9,450.02	154.97	61.978	
15,500.00	6,933.62	6,058.00	6,057.26	144.26	123.61	-44.33	-1,038.68	661.42	9,704.18	9,549.12	155.06	62.584	
15,600.00	6,933.40	6,058.00	6,057.26	145.84	123.61	-44.33	-1,038.68	661.42	9,803.38	9,648.24	155.15	63.188	
15,700.00	6,933.18	6,058.00	6,057.26	147.42	123.61	-44.33	-1,038.68	661.42	9,902.60	9,747.37	155.23	63.792	
15,800.00	6,932.95	6,058.00	6,057.26	148.99	123.61	-44.33	-1,038.68	661.42	10,001.84	9,846.52	155.32	64.396	
15,900.00	6,932.73	6,058.00	6,057.26	150.57	123.61	-44.33	-1,038.68	661.42	10,101.09	9,945.68	155.40	64.999	
16,000.00	6,932.50	6,058.00	6,057.26	152.15	123.61	-44.33	-1,038.68	661.42	10,200.35	10,044.86	155.49	65.601	
16,100.00	6,932.28	6,058.00	6,057.26	153.74	123.61	-44.33	-1,038.68	661.42	10,299.63	10,144.05	155.58	66.203	
16,200.00	6,932.05	6,058.00	6,057.26	155.32	123.61	-44.33	-1,038.68	661.42	10,398.92	10,243.26	155.66	66.803	
16,300.00	6,931.83	6,058.00	6,057.26	156.90	123.61	-44.33	-1,038.68	661.42	10,498.23	10,342.48	155.75	67.404	
16,400.00	6,931.60	6,058.00	6,057.26	158.48	123.61	-44.33	-1,038.68	661.42	10,597.55	10,441.71	155.84	68.003	
16,500.00	6,931.38	6,058.00	6,057.26	160.06	123.61	-44.33	-1,038.68	661.42	10,696.88	10,540.96	155.93	68.603	
16,600.00	6,931.15	6,058.00	6,057.26	161.65	123.61	-44.33	-1,038.68	661.42	10,796.23	10,640.21	156.01	69.201	
16,700.00	6,930.93	6,058.00	6,057.26	163.23	123.61	-44.33	-1,038.68	661.42	10,895.58	10,739.48	156.10	69.799	
16,800.00	6,930.70	6,058.00	6,057.26	164.81	123.61	-44.33	-1,038.68	661.42	10,994.95	10,838.76	156.19	70.396	
16,900.00	6,930.48	6,058.00	6,057.26	166.40	123.61	-44.33	-1,038.68	661.42	11,094.33	10,938.05	156.28	70.992	
17,000.00	6,930.25	6,058.00	6,057.26	167.98	123.61	-44.33	-1,038.68	661.42	11,193.72	11,037.35	156.36	71.587	
17,100.00	6,930.03	6,058.00	6,057.26	169.56	123.61	-44.33	-1,038.68	661.42	11,293.12	11,136.67	156.45	72.182	
17,200.00	6,929.81	6,058.00	6,057.26	171.15	123.61	-44.33	-1,038.68	661.42	11,392.53	11,235.99	156.54	72.777	
17,300.00	6,929.58	6,058.00	6,057.26	172.73	123.61	-44.33	-1,038.68	661.42	11,491.95	11,335.32	156.63	73.370	
17,400.00	6,929.36	6,058.00	6,057.26	174.32	123.61	-44.33	-1,038.68	661.42	11,591.38	11,434.67	156.72	73.963	
17,500.00	6,929.13	6,058.00	6,057.26	175.91	123.61	-44.33	-1,038.68	661.42	11,690.83	11,534.02	156.81	74.555	
17,600.00	6,928.91	6,058.00	6,057.26	177.49	123.61	-44.33	-1,038.68	661.42	11,790.28	11,633.38	156.90	75.146	
17,700.00	6,928.68	6,058.00	6,057.26	179.08	123.61	-44.33	-1,038.68	661.42	11,889.74	11,732.75	156.99	75.737	
17,800.00	6,928.46	6,058.00	6,057.26	180.66	123.61	-44.33	-1,038.68	661.42	11,989.21	11,832.13	157.08	76.327	
17,900.00	6,928.23	6,058.00	6,057.26	182.25	123.61	-44.33	-1,038.68	661.42	12,088.68	11,931.52	157.17	76.916	
18,000.00	6,928.01	6,058.00	6,057.26	183.84	123.61	-44.33	-1,038.68	661.42	12,188.17	12,030.91	157.26	77.504	
18,100.00	6,927.78	6,058.00	6,057.26	185.43	123.61	-44.33	-1,038.68	661.42	12,287.66	12,130.31	157.35	78.092	
18,200.00	6,927.56	6,058.00	6,057.26	187.01	123.61	-44.33	-1,038.68	661.42	12,387.17	12,229.73	157.44	78.678	
18,300.00	6,927.33	6,058.00	6,057.26	188.60	123.61	-44.33	-1,038.68	661.42	12,486.68	12,329.15	157.53	79.265	
18,400.00	6,927.11	6,058.00	6,057.26	190.19	123.61	-44.33	-1,038.68	661.42	12,586.20	12,428.57	157.62	79.850	
18,500.00	6,926.88	6,058.00	6,057.26	191.78	123.61	-44.33	-1,038.68	661.42	12,685.72	12,528.01	157.72	80.434	
18,600.00	6,926.66	6,058.00	6,057.26	193.37	123.61	-44.33	-1,038.68	661.42	12,785.26	12,627.45	157.81	81.018	
18,700.00	6,926.44	6,058.00	6,057.26	194.96	123.61	-44.33	-1,038.68	661.42	12,884.80	12,726.90	157.90	81.601	
18,800.00	6,926.21	6,058.00	6,057.26	196.54	123.61	-44.33	-1,038.68	661.42	12,984.34	12,826.35	157.99	82.183	
18,900.00	6,925.99	6,058.00	6,057.26	198.13	123.61	-44.33	-1,038.68	661.42	13,083.90	12,925.81	158.09	82.765	
19,000.00	6,925.76	6,058.00	6,057.26	199.72	123.61	-44.33	-1,038.68	661.42	13,183.46	13,025.28	158.18	83.345	
19,100.00	6,925.54	6,058.00	6,057.26	201.31	123.61	-44.33	-1,038.68	661.42	13,283.03	13,124.76	158.27	83.925	
19,200.00	6,925.31	6,058.00	6,057.26	202.90	123.61	-44.33	-1,038.68	661.42	13,382.60	13,224.24	158.37	84.504	
19,300.00	6,925.09	6,058.00	6,057.26	204.49	123.61	-44.33	-1,038.68	661.42	13,482.18	13,323.72	158.46	85.082	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031A - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 94-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,400.00	6,924.86	6,058.00	6,057.26	206.08	123.61	-44.33	-1,038.68	661.42	13,581.77	13,423.22	158.55	85.660	
19,500.00	6,924.64	6,058.00	6,057.26	207.67	123.61	-44.33	-1,038.68	661.42	13,681.36	13,522.71	158.65	86.236	
19,600.00	6,924.41	6,058.00	6,057.26	209.26	123.61	-44.33	-1,038.68	661.42	13,780.96	13,622.22	158.74	86.812	
19,700.00	6,924.19	6,058.00	6,057.26	210.85	123.61	-44.33	-1,038.68	661.42	13,880.57	13,721.73	158.84	87.387	
19,800.00	6,923.96	6,058.00	6,057.26	212.44	123.61	-44.33	-1,038.68	661.42	13,980.18	13,821.24	158.94	87.961	
19,900.00	6,923.74	6,058.00	6,057.26	214.04	123.61	-44.33	-1,038.68	661.42	14,079.79	13,920.76	159.03	88.535	
20,000.00	6,923.51	6,058.00	6,057.26	215.63	123.61	-44.33	-1,038.68	661.42	14,179.41	14,020.29	159.13	89.107	
20,100.00	6,923.29	6,058.00	6,057.26	217.22	123.61	-44.33	-1,038.68	661.42	14,279.04	14,119.82	159.22	89.679	
20,200.00	6,923.07	6,058.00	6,057.26	218.81	123.61	-44.33	-1,038.68	661.42	14,378.67	14,219.35	159.32	90.250	
20,300.00	6,922.84	6,058.00	6,057.26	220.40	123.61	-44.33	-1,038.68	661.42	14,478.31	14,318.89	159.42	90.820	
20,400.00	6,922.62	6,058.00	6,057.26	221.99	123.61	-44.33	-1,038.68	661.42	14,577.95	14,418.43	159.51	91.389	
20,500.00	6,922.39	6,058.00	6,057.26	223.59	123.61	-44.33	-1,038.68	661.42	14,677.60	14,517.98	159.61	91.958	
20,600.00	6,922.17	6,058.00	6,057.26	225.18	123.61	-44.33	-1,038.68	661.42	14,777.25	14,617.54	159.71	92.525	
20,674.13	6,922.00	6,058.00	6,057.26	226.36	123.61	-44.33	-1,038.68	661.42	14,851.12	14,691.34	159.78	92.945	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 515-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-1.38	1,608.82	-38.88	1,609.36				
100.00	100.00	85.00	85.00	0.25	1.17	-1.38	1,608.82	-38.88	1,609.29	1,607.87	1.42	1,131.797	
200.00	200.00	185.00	185.00	0.61	2.55	-1.38	1,608.82	-38.88	1,609.29	1,606.14	3.16	509.636	
300.00	300.00	285.00	285.00	0.97	3.93	-1.38	1,608.82	-38.88	1,609.29	1,604.40	4.89	328.859	
400.00	400.00	385.00	385.00	1.33	5.30	-1.38	1,608.82	-38.88	1,609.29	1,602.66	6.63	242.751	
500.00	500.00	485.00	485.00	1.68	6.68	-1.38	1,608.82	-38.88	1,609.29	1,600.93	8.37	192.378	CC
606.93	606.91	591.99	591.91	2.05	8.95	136.14	1,608.82	-38.88	1,610.73	1,599.73	11.00	146.377	
700.00	699.91	684.99	684.91	2.37	11.19	136.23	1,608.82	-38.88	1,613.24	1,599.68	13.56	118.959	
800.00	799.84	786.59	786.48	2.71	13.65	136.32	1,610.76	-38.88	1,617.87	1,601.52	16.35	98.925	
900.00	899.77	897.35	897.23	3.06	16.32	136.42	1,610.28	-38.88	1,620.14	1,600.77	19.37	83.632	
1,000.00	999.70	1,008.18	1,008.03	3.41	18.99	136.52	1,609.06	-38.88	1,621.74	1,599.35	22.39	72.419	ES
1,100.00	1,099.63	1,084.86	1,084.63	3.76	20.71	136.59	1,608.82	-38.88	1,624.05	1,599.58	24.47	66.369	
1,200.00	1,199.56	1,184.79	1,184.56	4.11	22.92	136.68	1,608.82	-38.88	1,626.77	1,599.74	27.03	60.193	
1,300.00	1,299.49	1,286.46	1,286.22	4.47	25.16	136.78	1,609.83	-38.88	1,630.49	1,600.87	29.62	55.045	
1,400.00	1,399.42	1,392.90	1,392.65	4.83	27.50	136.87	1,609.50	-38.88	1,632.91	1,600.59	32.32	50.520	
1,500.00	1,499.35	1,499.36	1,499.11	5.19	29.85	136.97	1,608.76	-38.88	1,634.93	1,599.91	35.02	46.680	
1,600.00	1,599.28	1,584.60	1,584.28	5.54	31.83	137.04	1,608.82	-38.88	1,637.66	1,600.30	37.36	43.832	
1,700.00	1,699.21	1,684.53	1,684.21	5.90	34.15	137.13	1,608.82	-38.88	1,640.40	1,600.37	40.03	40.977	
1,800.00	1,799.14	1,787.40	1,787.06	6.26	36.53	137.22	1,610.17	-38.88	1,644.49	1,601.72	42.77	38.449	
1,900.00	1,899.07	1,894.98	1,894.63	6.62	39.02	137.32	1,609.73	-38.88	1,646.82	1,601.20	45.62	36.100	
2,000.00	1,999.00	2,002.60	2,002.24	6.98	41.51	137.41	1,608.79	-38.88	1,648.69	1,600.23	48.47	34.018	
2,100.00	2,098.94	2,084.38	2,083.94	7.34	43.49	137.48	1,608.82	-38.88	1,651.37	1,600.57	50.81	32.504	
2,200.00	2,198.87	2,184.31	2,183.87	7.70	45.90	137.57	1,608.82	-38.88	1,654.13	1,600.54	53.58	30.872	
2,300.00	2,298.80	2,287.38	2,286.92	8.06	48.40	137.66	1,610.12	-38.88	1,658.18	1,601.75	56.43	29.383	
2,400.00	2,398.73	2,395.33	2,394.87	8.42	51.01	137.75	1,609.66	-38.88	1,660.51	1,601.11	59.40	27.954	
2,500.00	2,498.66	2,503.33	2,502.84	8.79	53.62	137.85	1,608.67	-38.88	1,662.37	1,600.00	62.37	26.653	
2,600.00	2,598.59	2,584.17	2,583.59	9.15	55.67	137.92	1,608.82	-38.88	1,665.18	1,600.39	64.79	25.703	
2,700.00	2,698.52	2,684.10	2,683.52	9.51	58.20	138.00	1,608.82	-38.88	1,667.95	1,600.28	67.67	24.650	
2,800.00	2,798.45	2,786.66	2,786.05	9.87	60.78	138.09	1,610.53	-38.88	1,672.44	1,601.82	70.61	23.684	
2,900.00	2,898.38	2,895.66	2,895.04	10.23	63.53	138.18	1,610.07	-38.88	1,674.79	1,601.07	73.72	22.717	
3,000.00	2,998.31	3,004.71	3,004.07	10.59	66.29	138.28	1,609.02	-38.88	1,676.61	1,599.78	76.83	21.822	
3,100.00	3,098.24	3,084.00	3,083.24	10.96	68.15	138.34	1,608.82	-38.88	1,679.08	1,600.02	79.06	21.238	
3,200.00	3,198.17	3,183.93	3,183.17	11.32	70.47	138.43	1,608.82	-38.88	1,681.87	1,600.14	81.73	20.578	
3,300.00	3,298.10	3,283.86	3,283.10	11.68	72.78	138.51	1,608.82	-38.88	1,684.66	1,600.26	84.40	19.960	
3,400.00	3,398.03	3,386.81	3,386.02	12.04	75.16	138.60	1,610.90	-38.88	1,689.54	1,602.39	87.15	19.387	
3,500.00	3,497.96	3,494.15	3,493.34	12.40	77.64	138.69	1,610.47	-38.88	1,691.94	1,601.95	89.99	18.802	
3,600.00	3,597.89	3,601.53	3,600.71	12.77	80.13	138.78	1,609.58	-38.88	1,693.92	1,601.09	92.83	18.247	
3,700.00	3,697.82	3,683.74	3,682.82	13.13	82.00	138.85	1,608.82	-38.88	1,695.87	1,600.82	95.06	17.840	
3,800.00	3,797.75	3,783.67	3,782.75	13.49	84.11	138.93	1,608.82	-38.88	1,698.69	1,601.16	97.53	17.417	
3,900.00	3,897.68	3,883.60	3,882.68	13.85	86.22	139.01	1,608.82	-38.88	1,701.50	1,601.50	100.00	17.015	
4,000.00	3,997.61	3,983.53	3,982.61	14.21	88.33	139.09	1,608.82	-38.88	1,704.32	1,601.85	102.47	16.632	
4,100.00	4,097.54	4,083.46	4,082.54	14.58	90.44	139.17	1,608.82	-38.88	1,707.15	1,602.20	104.94	16.267	
4,200.00	4,197.47	4,183.39	4,182.47	14.94	92.55	139.26	1,608.82	-38.88	1,709.97	1,602.56	107.41	15.919	
4,300.00	4,297.40	4,283.32	4,282.40	15.30	94.66	139.34	1,608.82	-38.88	1,712.80	1,602.92	109.89	15.587	
4,400.00	4,397.33	4,383.25	4,382.33	15.66	96.77	139.42	1,608.82	-38.88	1,715.64	1,603.28	112.36	15.270	
4,500.00	4,497.26	4,483.18	4,482.26	16.03	98.89	139.50	1,608.82	-38.88	1,718.47	1,603.64	114.83	14.966	
4,600.00	4,597.19	4,584.69	4,583.73	16.39	101.03	139.58	1,612.42	-38.88	1,724.90	1,607.57	117.33	14.701	
4,700.00	4,697.12	4,686.48	4,685.52	16.75	103.18	139.66	1,612.27	-38.88	1,727.60	1,607.76	119.84	14.416	
4,800.00	4,797.05	4,788.28	4,787.31	17.11	105.33	139.74	1,612.01	-38.88	1,730.20	1,607.85	122.35	14.141	
4,900.00	4,896.99	4,890.08	4,889.11	17.47	107.48	139.82	1,611.65	-38.88	1,732.69	1,607.83	124.86	13.877	
5,000.00	4,996.92	4,991.90	4,990.92	17.84	109.63	139.90	1,611.18	-38.88	1,735.08	1,607.71	127.37	13.622	
5,100.00	5,096.85	5,093.72	5,092.74	18.20	111.79	139.99	1,610.60	-38.88	1,737.37	1,607.48	129.89	13.376	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 515-A027Ua_INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,195.56	5,194.56	18.56	113.94	140.07	1,609.91	-38.88	1,739.55	1,607.16	132.40	13.139	
5,300.00	5,296.71	5,297.40	5,296.39	18.92	116.09	140.15	1,609.11	-38.88	1,741.64	1,606.73	134.91	12.910	
5,400.00	5,396.64	5,382.81	5,381.64	19.29	117.75	140.22	1,608.82	-38.88	1,744.15	1,607.22	136.93	12.737	
5,500.00	5,496.57	5,482.74	5,481.57	19.65	119.59	140.29	1,608.82	-38.88	1,747.02	1,607.89	139.13	12.556	
5,600.00	5,596.50	5,582.67	5,581.50	20.01	121.44	140.37	1,608.82	-38.88	1,749.90	1,608.56	141.34	12.381	
5,700.00	5,696.43	5,682.60	5,681.43	20.37	123.28	140.45	1,608.82	-38.88	1,752.77	1,609.24	143.54	12.211	
5,800.00	5,796.36	5,782.53	5,781.36	20.74	125.12	140.53	1,608.82	-38.88	1,755.65	1,609.92	145.74	12.047	
5,900.00	5,896.29	5,882.46	5,881.29	21.10	126.96	140.61	1,608.82	-38.88	1,758.54	1,610.60	147.94	11.887	
6,000.00	5,996.22	5,982.39	5,981.22	21.46	128.80	140.68	1,608.82	-38.88	1,761.42	1,611.28	150.14	11.732	
6,100.00	6,096.15	6,082.32	6,081.15	21.82	130.64	140.76	1,608.82	-38.88	1,764.31	1,611.97	152.34	11.581	
6,200.00	6,196.08	6,182.25	6,181.08	22.19	132.49	140.84	1,608.82	-38.88	1,767.21	1,612.66	154.54	11.435	
6,300.00	6,296.01	6,282.18	6,281.01	22.55	134.33	140.91	1,608.82	-38.88	1,770.10	1,613.36	156.75	11.293	
6,335.60	6,331.59	6,317.76	6,316.59	22.68	134.98	140.94	1,608.82	-38.88	1,771.13	1,613.60	157.53	11.243	
6,350.00	6,345.97	6,332.14	6,330.97	22.73	135.25	123.24	1,608.82	-38.88	1,771.56	1,613.71	157.85	11.223	
6,400.00	6,395.75	6,381.92	6,380.75	22.91	136.17	105.51	1,608.82	-38.88	1,773.18	1,614.24	158.94	11.156	
6,450.00	6,445.03	6,431.21	6,430.03	23.10	137.07	100.96	1,608.82	-38.88	1,775.04	1,615.01	160.03	11.092	
6,500.00	6,493.52	6,479.70	6,478.52	23.29	137.97	99.05	1,608.82	-38.88	1,777.18	1,616.07	161.11	11.031	
6,550.00	6,540.91	6,527.09	6,525.91	23.48	138.84	98.13	1,608.82	-38.88	1,779.67	1,617.50	162.17	10.974	
6,600.00	6,586.91	6,573.09	6,571.91	23.66	139.69	97.68	1,608.82	-38.88	1,782.57	1,619.37	163.20	10.923	
6,650.00	6,631.24	6,617.42	6,616.24	23.85	140.50	97.51	1,608.82	-38.88	1,786.00	1,621.80	164.20	10.877	
6,700.00	6,673.63	6,659.80	6,658.63	24.05	141.29	97.48	1,608.82	-38.88	1,790.06	1,624.89	165.17	10.838	
6,750.00	6,713.80	6,699.98	6,698.80	24.24	142.03	97.52	1,608.82	-38.88	1,794.88	1,628.78	166.10	10.806	
6,800.00	6,751.52	6,737.70	6,736.52	24.44	142.72	97.58	1,608.82	-38.88	1,800.56	1,633.57	166.99	10.783	
6,850.00	6,786.56	6,772.73	6,771.56	24.65	143.37	97.60	1,608.82	-38.88	1,807.23	1,639.40	167.83	10.768	
6,900.00	6,818.69	6,804.86	6,803.69	24.87	143.96	97.54	1,608.82	-38.88	1,815.00	1,646.38	168.62	10.764	SF
6,950.00	6,847.72	6,833.89	6,832.72	25.10	144.49	97.36	1,608.82	-38.88	1,823.96	1,654.61	169.36	10.770	
7,000.00	6,873.46	6,859.64	6,858.46	25.34	144.97	97.04	1,608.82	-38.88	1,834.20	1,664.16	170.04	10.787	
7,050.00	6,895.77	6,881.95	6,880.77	25.60	145.38	96.54	1,608.82	-38.88	1,845.77	1,675.11	170.66	10.815	
7,100.00	6,914.50	6,900.68	6,899.50	25.87	145.72	95.83	1,608.82	-38.88	1,858.70	1,687.47	171.23	10.855	
7,150.00	6,929.54	6,915.72	6,914.54	26.15	146.00	94.91	1,608.82	-38.88	1,872.99	1,701.27	171.72	10.907	
7,200.00	6,940.80	6,926.97	6,925.80	26.44	146.21	93.75	1,608.82	-38.88	1,888.61	1,716.47	172.15	10.971	
7,250.00	6,948.20	6,934.37	6,933.20	26.75	146.35	92.35	1,608.82	-38.88	1,905.51	1,733.01	172.50	11.046	
7,300.00	6,951.70	6,937.87	6,936.70	27.07	146.41	90.71	1,608.82	-38.88	1,923.59	1,750.81	172.78	11.133	
7,321.06	6,952.00	6,938.17	6,937.00	27.20	146.42	89.95	1,608.82	-38.88	1,931.53	1,758.66	172.87	11.173	
7,400.00	6,951.82	6,938.00	6,936.82	27.74	146.41	89.94	1,608.82	-38.88	1,962.99	1,789.78	173.21	11.333	
7,500.00	6,951.60	6,937.77	6,936.60	28.49	146.41	89.93	1,608.82	-38.88	2,006.60	1,832.95	173.65	11.555	
7,600.00	6,951.37	6,937.55	6,936.37	29.30	146.40	89.93	1,608.82	-38.88	2,054.15	1,880.06	174.10	11.799	
7,700.00	6,951.15	6,937.32	6,936.15	30.18	146.40	89.92	1,608.82	-38.88	2,105.38	1,930.84	174.54	12.063	
7,800.00	6,950.92	6,937.10	6,935.92	31.12	146.40	89.91	1,608.82	-38.88	2,160.03	1,985.06	174.97	12.345	
7,900.00	6,950.70	6,936.87	6,935.70	32.11	146.39	89.91	1,608.82	-38.88	2,217.85	2,042.45	175.40	12.645	
8,000.00	6,950.47	6,936.65	6,935.47	33.15	146.39	89.90	1,608.82	-38.88	2,278.58	2,102.78	175.81	12.961	
8,100.00	6,950.25	6,936.42	6,935.25	34.23	146.38	89.89	1,608.82	-38.88	2,342.02	2,165.82	176.20	13.292	
8,200.00	6,950.03	6,936.20	6,935.03	35.35	146.38	89.88	1,608.82	-38.88	2,407.94	2,231.37	176.57	13.638	
8,300.00	6,949.80	6,935.98	6,934.80	36.51	146.38	89.88	1,608.82	-38.88	2,476.14	2,299.22	176.92	13.996	
8,400.00	6,949.58	6,935.75	6,934.58	37.70	146.37	89.87	1,608.82	-38.88	2,546.44	2,369.19	177.25	14.366	
8,500.00	6,949.35	6,935.53	6,934.35	38.92	146.37	89.86	1,608.82	-38.88	2,618.67	2,441.11	177.56	14.748	
8,600.00	6,949.13	6,935.30	6,934.13	40.17	146.36	89.85	1,608.82	-38.88	2,692.69	2,514.83	177.85	15.140	
8,700.00	6,948.90	6,935.08	6,933.90	41.44	146.36	89.85	1,608.82	-38.88	2,768.33	2,590.20	178.13	15.541	
8,800.00	6,948.68	6,934.85	6,933.68	42.73	146.35	89.84	1,608.82	-38.88	2,845.48	2,667.09	178.39	15.951	
8,900.00	6,948.45	6,934.63	6,933.45	44.04	146.35	89.83	1,608.82	-38.88	2,924.02	2,745.38	178.63	16.369	
9,000.00	6,948.23	6,934.40	6,933.23	45.38	146.35	89.83	1,608.82	-38.88	3,003.83	2,824.96	178.86	16.794	
9,100.00	6,948.00	6,934.18	6,933.00	46.72	146.34	89.82	1,608.82	-38.88	3,084.81	2,905.74	179.08	17.226	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 515-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	6,933.95	6,932.78	48.09	146.34	89.81	1,608.82	-38.88	3,166.89	2,987.61	179.28	17.665	
9,300.00	6,947.55	6,933.73	6,932.55	49.47	146.33	89.80	1,608.82	-38.88	3,249.96	3,070.50	179.47	18.109	
9,400.00	6,947.33	6,933.50	6,932.33	50.86	146.33	89.80	1,608.82	-38.88	3,333.97	3,154.33	179.65	18.559	
9,500.00	6,947.10	6,933.28	6,932.10	52.26	146.33	89.79	1,608.82	-38.88	3,418.84	3,239.03	179.81	19.013	
9,600.00	6,946.88	6,933.05	6,931.88	53.68	146.32	89.78	1,608.82	-38.88	3,504.51	3,324.53	179.97	19.472	
9,700.00	6,946.66	6,932.83	6,931.66	55.10	146.32	89.78	1,608.82	-38.88	3,590.92	3,410.79	180.12	19.936	
9,800.00	6,946.43	6,932.60	6,931.43	56.54	146.31	89.77	1,608.82	-38.88	3,678.01	3,497.75	180.27	20.403	
9,900.00	6,946.21	6,932.38	6,931.21	57.98	146.31	89.76	1,608.82	-38.88	3,765.75	3,585.35	180.40	20.874	
10,000.00	6,945.98	6,932.16	6,930.98	59.43	146.31	89.75	1,608.82	-38.88	3,854.09	3,673.55	180.53	21.349	
10,100.00	6,945.76	6,931.93	6,930.76	60.89	146.30	89.75	1,608.82	-38.88	3,942.98	3,762.32	180.65	21.826	
10,200.00	6,945.53	6,931.71	6,930.53	62.36	146.30	89.74	1,608.82	-38.88	4,032.39	3,851.62	180.77	22.307	
10,300.00	6,945.31	6,931.48	6,930.31	63.83	146.29	89.73	1,608.82	-38.88	4,122.29	3,941.41	180.88	22.790	
10,400.00	6,945.08	6,931.26	6,930.08	65.31	146.29	89.72	1,608.82	-38.88	4,212.64	4,031.66	180.99	23.276	
10,500.00	6,944.86	6,931.03	6,929.86	66.79	146.28	89.72	1,608.82	-38.88	4,303.43	4,122.33	181.09	23.764	
10,600.00	6,944.63	6,930.81	6,929.63	68.28	146.28	89.71	1,608.82	-38.88	4,394.61	4,213.42	181.19	24.254	
10,700.00	6,944.41	6,930.58	6,929.41	69.78	146.28	89.70	1,608.82	-38.88	4,486.16	4,304.88	181.29	24.746	
10,800.00	6,944.18	6,930.36	6,929.18	71.28	146.27	89.70	1,608.82	-38.88	4,578.08	4,396.70	181.38	25.241	
10,900.00	6,943.96	6,930.13	6,928.96	72.78	146.27	89.69	1,608.82	-38.88	4,670.32	4,488.85	181.47	25.737	
11,000.00	6,943.73	6,929.91	6,928.73	74.29	146.26	89.68	1,608.82	-38.88	4,762.87	4,581.32	181.55	26.234	
11,100.00	6,943.51	6,929.68	6,928.51	75.80	146.26	89.67	1,608.82	-38.88	4,855.73	4,674.09	181.63	26.734	
11,200.00	6,943.29	6,929.46	6,928.29	77.32	146.26	89.67	1,608.82	-38.88	4,948.86	4,767.14	181.71	27.234	
11,300.00	6,943.06	6,929.23	6,928.06	78.84	146.25	89.66	1,608.82	-38.88	5,042.25	4,860.46	181.79	27.736	
11,400.00	6,942.84	6,929.01	6,927.84	80.36	146.25	89.65	1,608.82	-38.88	5,135.89	4,954.02	181.87	28.240	
11,500.00	6,942.61	6,928.79	6,927.61	81.88	146.24	89.65	1,608.82	-38.88	5,229.77	5,047.82	181.94	28.744	
11,600.00	6,942.39	6,928.56	6,927.39	83.41	146.24	89.64	1,608.82	-38.88	5,323.87	5,141.85	182.02	29.249	
11,700.00	6,942.16	6,928.34	6,927.16	84.94	146.23	89.63	1,608.82	-38.88	5,418.18	5,236.09	182.09	29.756	
11,800.00	6,941.94	6,928.11	6,926.94	86.47	146.23	89.62	1,608.82	-38.88	5,512.69	5,330.53	182.16	30.263	
11,900.00	6,941.71	6,927.89	6,926.71	88.01	146.23	89.62	1,608.82	-38.88	5,607.39	5,425.17	182.23	30.772	
12,000.00	6,941.49	6,927.66	6,926.49	89.55	146.22	89.61	1,608.82	-38.88	5,702.28	5,519.98	182.29	31.281	
12,100.00	6,941.26	6,927.44	6,926.26	91.09	146.22	89.60	1,608.82	-38.88	5,797.33	5,614.97	182.36	31.791	
12,200.00	6,941.04	6,927.21	6,926.04	92.63	146.21	89.60	1,608.82	-38.88	5,892.55	5,710.13	182.42	32.301	
12,300.00	6,940.81	6,926.99	6,925.81	94.18	146.21	89.59	1,608.82	-38.88	5,987.93	5,805.44	182.49	32.813	
12,400.00	6,940.59	6,926.76	6,925.59	95.72	146.21	89.58	1,608.82	-38.88	6,083.45	5,900.90	182.55	33.324	
12,500.00	6,940.36	6,926.54	6,925.36	97.27	146.20	89.57	1,608.82	-38.88	6,179.11	5,996.50	182.62	33.837	
12,600.00	6,940.14	6,926.31	6,925.14	98.82	146.20	89.57	1,608.82	-38.88	6,274.91	6,092.24	182.68	34.350	
12,700.00	6,939.92	6,926.09	6,924.92	100.37	146.19	89.56	1,608.82	-38.88	6,370.84	6,188.10	182.74	34.863	
12,800.00	6,939.69	6,925.86	6,924.69	101.92	146.19	89.55	1,608.82	-38.88	6,466.90	6,284.10	182.80	35.377	
12,900.00	6,939.47	6,925.64	6,924.47	103.48	146.18	89.54	1,608.82	-38.88	6,563.07	6,380.21	182.86	35.891	
13,000.00	6,939.24	6,925.42	6,924.24	105.03	146.18	89.54	1,608.82	-38.88	6,659.35	6,476.43	182.92	36.406	
13,100.00	6,939.02	6,925.19	6,924.02	106.59	146.18	89.53	1,608.82	-38.88	6,755.74	6,572.76	182.98	36.921	
13,200.00	6,938.79	6,924.97	6,923.79	108.15	146.17	89.52	1,608.82	-38.88	6,852.24	6,669.20	183.04	37.436	
13,300.00	6,938.57	6,924.74	6,923.57	109.71	146.17	89.52	1,608.82	-38.88	6,948.83	6,765.73	183.10	37.951	
13,400.00	6,938.34	6,924.52	6,923.34	111.27	146.16	89.51	1,608.82	-38.88	7,045.52	6,862.36	183.16	38.467	
13,500.00	6,938.12	6,924.29	6,923.12	112.83	146.16	89.50	1,608.82	-38.88	7,142.30	6,959.08	183.22	38.983	
13,600.00	6,937.89	6,924.07	6,922.89	114.40	146.16	89.49	1,608.82	-38.88	7,239.17	7,055.89	183.28	39.499	
13,700.00	6,937.67	6,923.84	6,922.67	115.96	146.15	89.49	1,608.82	-38.88	7,336.12	7,152.78	183.33	40.015	
13,800.00	6,937.44	6,923.62	6,922.44	117.53	146.15	89.48	1,608.82	-38.88	7,433.15	7,249.76	183.39	40.531	
13,900.00	6,937.22	6,923.39	6,922.22	119.09	146.14	89.47	1,608.82	-38.88	7,530.26	7,346.81	183.45	41.048	
14,000.00	6,936.99	6,923.17	6,921.99	120.66	146.14	89.47	1,608.82	-38.88	7,627.44	7,443.93	183.51	41.564	
14,100.00	6,936.77	6,922.94	6,921.77	122.23	146.14	89.46	1,608.82	-38.88	7,724.70	7,541.13	183.57	42.081	
14,200.00	6,936.55	6,922.72	6,921.55	123.80	146.13	89.45	1,608.82	-38.88	7,822.03	7,638.40	183.63	42.597	
14,300.00	6,936.32	6,922.49	6,921.32	125.37	146.13	89.44	1,608.82	-38.88	7,919.42	7,735.73	183.69	43.114	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 515-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	6,922.27	6,921.10	126.94	146.12	89.44	1,608.82	-38.88	8,016.88	7,833.13	183.74	43.631	
14,500.00	6,935.87	6,922.05	6,920.87	128.51	146.12	89.43	1,608.82	-38.88	8,114.39	7,930.59	183.80	44.147	
14,600.00	6,935.65	6,921.82	6,920.65	130.08	146.11	89.42	1,608.82	-38.88	8,211.97	8,028.11	183.86	44.664	
14,700.00	6,935.42	6,921.60	6,920.42	131.65	146.11	89.41	1,608.82	-38.88	8,309.61	8,125.69	183.92	45.180	
14,800.00	6,935.20	6,921.37	6,920.20	133.23	146.11	89.41	1,608.82	-38.88	8,407.30	8,223.32	183.98	45.697	
14,900.00	6,934.97	6,921.15	6,919.97	134.80	146.10	89.40	1,608.82	-38.88	8,505.04	8,321.00	184.04	46.213	
15,000.00	6,934.75	6,920.92	6,919.75	136.37	146.10	89.39	1,608.82	-38.88	8,602.84	8,418.74	184.10	46.729	
15,100.00	6,934.52	6,920.70	6,919.52	137.95	146.09	89.39	1,608.82	-38.88	8,700.69	8,516.53	184.16	47.246	
15,200.00	6,934.30	6,920.47	6,919.30	139.53	146.09	89.38	1,608.82	-38.88	8,798.58	8,614.36	184.22	47.762	
15,300.00	6,934.07	6,920.25	6,919.07	141.10	146.09	89.37	1,608.82	-38.88	8,896.52	8,712.25	184.28	48.278	
15,400.00	6,933.85	6,920.02	6,918.85	142.68	146.08	89.36	1,608.82	-38.88	8,994.51	8,810.17	184.34	48.793	
15,500.00	6,933.62	6,919.80	6,918.62	144.26	146.08	89.36	1,608.82	-38.88	9,092.54	8,908.14	184.40	49.309	
15,600.00	6,933.40	6,919.57	6,918.40	145.84	146.07	89.35	1,608.82	-38.88	9,190.62	9,006.16	184.46	49.825	
15,700.00	6,933.18	6,919.35	6,918.18	147.42	146.07	89.34	1,608.82	-38.88	9,288.73	9,104.21	184.52	50.340	
15,800.00	6,932.95	6,919.12	6,917.95	148.99	146.06	89.34	1,608.82	-38.88	9,386.89	9,202.30	184.58	50.855	
15,900.00	6,932.73	6,918.90	6,917.73	150.57	146.06	89.33	1,608.82	-38.88	9,485.08	9,300.44	184.64	51.370	
16,000.00	6,932.50	6,918.68	6,917.50	152.15	146.06	89.32	1,608.82	-38.88	9,583.31	9,398.60	184.71	51.884	
16,100.00	6,932.28	6,918.45	6,917.28	153.74	146.05	89.31	1,608.82	-38.88	9,681.58	9,496.81	184.77	52.399	
16,200.00	6,932.05	6,918.23	6,917.05	155.32	146.05	89.31	1,608.82	-38.88	9,779.88	9,595.05	184.83	52.913	
16,300.00	6,931.83	6,918.00	6,916.83	156.90	146.04	89.30	1,608.82	-38.88	9,878.21	9,693.32	184.89	53.427	
16,400.00	6,931.60	6,917.78	6,916.60	158.48	146.04	89.29	1,608.82	-38.88	9,976.58	9,791.63	184.95	53.941	
16,500.00	6,931.38	6,917.55	6,916.38	160.06	146.04	89.29	1,608.82	-38.88	10,074.98	9,889.97	185.02	54.454	
16,600.00	6,931.15	6,917.33	6,916.15	161.65	146.03	89.28	1,608.82	-38.88	10,173.42	9,988.33	185.08	54.967	
16,700.00	6,930.93	6,917.10	6,915.93	163.23	146.03	89.27	1,608.82	-38.88	10,271.88	10,086.73	185.15	55.480	
16,800.00	6,930.70	6,916.88	6,915.70	164.81	146.02	89.26	1,608.82	-38.88	10,370.37	10,185.16	185.21	55.993	
16,900.00	6,930.48	6,916.65	6,915.48	166.40	146.02	89.26	1,608.82	-38.88	10,468.89	10,283.62	185.27	56.505	
17,000.00	6,930.25	6,916.43	6,915.25	167.98	146.02	89.25	1,608.82	-38.88	10,567.44	10,382.10	185.34	57.017	
17,100.00	6,930.03	6,916.20	6,915.03	169.56	146.01	89.24	1,608.82	-38.88	10,666.01	10,480.61	185.40	57.528	
17,200.00	6,929.81	6,915.98	6,914.81	171.15	146.01	89.23	1,608.82	-38.88	10,764.62	10,579.15	185.47	58.040	
17,300.00	6,929.58	6,915.75	6,914.58	172.73	146.00	89.23	1,608.82	-38.88	10,863.24	10,677.71	185.54	58.551	
17,400.00	6,929.36	6,915.53	6,914.36	174.32	146.00	89.22	1,608.82	-38.88	10,961.89	10,776.29	185.60	59.061	
17,500.00	6,929.13	6,915.31	6,914.13	175.91	145.99	89.21	1,608.82	-38.88	11,060.57	10,874.90	185.67	59.572	
17,600.00	6,928.91	6,915.08	6,913.91	177.49	145.99	89.21	1,608.82	-38.88	11,159.27	10,973.54	185.73	60.082	
17,700.00	6,928.68	6,914.86	6,913.68	179.08	145.99	89.20	1,608.82	-38.88	11,257.99	11,072.19	185.80	60.591	
17,800.00	6,928.46	6,914.63	6,913.46	180.66	145.98	89.19	1,608.82	-38.88	11,356.74	11,170.87	185.87	61.101	
17,900.00	6,928.23	6,914.41	6,913.23	182.25	145.98	89.18	1,608.82	-38.88	11,455.50	11,269.57	185.94	61.609	
18,000.00	6,928.01	6,914.18	6,913.01	183.84	145.97	89.18	1,608.82	-38.88	11,554.29	11,368.29	186.01	62.118	
18,100.00	6,927.78	6,913.96	6,912.78	185.43	145.97	89.17	1,608.82	-38.88	11,653.10	11,467.03	186.07	62.626	
18,200.00	6,927.56	6,913.73	6,912.56	187.01	145.97	89.16	1,608.82	-38.88	11,751.93	11,565.79	186.14	63.134	
18,300.00	6,927.33	6,913.51	6,912.33	188.60	145.96	89.16	1,608.82	-38.88	11,850.78	11,664.57	186.21	63.641	
18,400.00	6,927.11	6,913.28	6,912.11	190.19	145.96	89.15	1,608.82	-38.88	11,949.65	11,763.36	186.28	64.148	
18,500.00	6,926.88	6,913.06	6,911.88	191.78	145.95	89.14	1,608.82	-38.88	12,048.53	11,862.18	186.35	64.655	
18,600.00	6,926.66	6,912.83	6,911.66	193.37	145.95	89.13	1,608.82	-38.88	12,147.44	11,961.02	186.42	65.161	
18,700.00	6,926.44	6,912.61	6,911.44	194.96	145.94	89.13	1,608.82	-38.88	12,246.36	12,059.87	186.49	65.667	
18,800.00	6,926.21	6,912.38	6,911.21	196.54	145.94	89.12	1,608.82	-38.88	12,345.30	12,158.74	186.56	66.172	
18,900.00	6,925.99	6,912.16	6,910.99	198.13	145.94	89.11	1,608.82	-38.88	12,444.26	12,257.62	186.64	66.677	
19,000.00	6,925.76	6,911.94	6,910.76	199.72	145.93	89.11	1,608.82	-38.88	12,543.23	12,356.52	186.71	67.181	
19,100.00	6,925.54	6,911.71	6,910.54	201.31	145.93	89.10	1,608.82	-38.88	12,642.22	12,455.44	186.78	67.685	
19,200.00	6,925.31	6,911.49	6,910.31	202.90	145.92	89.09	1,608.82	-38.88	12,741.22	12,554.37	186.85	68.189	
19,300.00	6,925.09	6,911.26	6,910.09	204.49	145.92	89.08	1,608.82	-38.88	12,840.24	12,653.32	186.92	68.692	
19,400.00	6,924.86	6,911.04	6,909.86	206.08	145.92	89.08	1,608.82	-38.88	12,939.28	12,752.28	187.00	69.195	
19,500.00	6,924.64	6,910.81	6,909.64	207.67	145.91	89.07	1,608.82	-38.88	13,038.33	12,851.26	187.07	69.697	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 031B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 515-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,600.00	6,924.41	6,910.59	6,909.41	209.26	145.91	89.06	1,608.82	-38.88	13,137.40	12,950.25	187.15	70.199	
19,700.00	6,924.19	6,910.36	6,909.19	210.85	145.90	89.05	1,608.82	-38.88	13,236.47	13,049.25	187.22	70.700	
19,800.00	6,923.96	6,910.14	6,908.96	212.44	145.90	89.05	1,608.82	-38.88	13,335.57	13,148.27	187.29	71.201	
19,900.00	6,923.74	6,909.91	6,908.74	214.04	145.90	89.04	1,608.82	-38.88	13,434.67	13,247.30	187.37	71.701	
20,000.00	6,923.51	6,909.69	6,908.51	215.63	145.89	89.03	1,608.82	-38.88	13,533.79	13,346.35	187.45	72.201	
20,100.00	6,923.29	6,909.46	6,908.29	217.22	145.89	89.03	1,608.82	-38.88	13,632.92	13,445.40	187.52	72.701	
20,200.00	6,923.07	6,909.24	6,908.07	218.81	145.88	89.02	1,608.82	-38.88	13,732.07	13,544.47	187.60	73.200	
20,300.00	6,922.84	6,909.01	6,907.84	220.40	145.88	89.01	1,608.82	-38.88	13,831.22	13,643.55	187.67	73.698	
20,400.00	6,922.62	6,908.79	6,907.62	221.99	145.87	89.00	1,608.82	-38.88	13,930.39	13,742.64	187.75	74.196	
20,500.00	6,922.39	6,908.57	6,907.39	223.59	145.87	89.00	1,608.82	-38.88	14,029.57	13,841.75	187.83	74.694	
20,600.00	6,922.17	6,908.34	6,907.17	225.18	145.87	88.99	1,608.82	-38.88	14,128.77	13,940.86	187.90	75.191	
20,674.13	6,922.00	6,908.17	6,907.00	226.36	145.86	88.98	1,608.82	-38.88	14,202.31	14,014.34	187.96	75.559	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 321-MWD OWSG Rev5

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	45.72	2,186.33	2,242.19	3,134.77				
100.00	100.00	0.00	0.00	0.25	0.00	45.72	2,186.33	2,242.19	3,131.93	3,131.67	0.25	N/A	
147.67	147.67	8.40	8.40	0.42	0.09	45.72	2,186.33	2,242.19	3,131.68	3,131.17	0.51	6,088.042	CC
200.00	200.00	59.03	59.03	0.61	0.65	45.72	2,186.33	2,242.22	3,131.70	3,130.44	1.26	2,487.247	
300.00	300.00	155.81	155.81	0.97	1.72	45.73	2,186.31	2,242.38	3,131.82	3,129.13	2.68	1,167.571	
400.00	400.00	252.58	252.58	1.33	2.78	45.73	2,186.28	2,242.71	3,132.03	3,127.93	4.11	762.876	
500.00	500.00	321.00	321.00	1.68	3.54	45.73	2,186.26	2,243.02	3,132.49	3,127.27	5.22	600.452	ES
606.93	606.91	411.00	410.98	2.05	4.02	-176.77	2,187.46	2,243.96	3,136.25	3,130.28	5.97	524.979	
700.00	699.91	411.00	410.98	2.37	4.02	-176.77	2,187.46	2,243.96	3,142.78	3,136.49	6.29	499.846	
800.00	799.84	472.05	471.96	2.71	4.40	-176.79	2,190.09	2,245.24	3,151.35	3,144.29	7.06	446.679	
900.00	899.77	501.00	500.83	3.06	4.65	-176.80	2,192.01	2,246.07	3,162.05	3,154.40	7.64	413.624	
1,000.00	999.70	543.32	542.97	3.41	5.12	-176.83	2,195.50	2,247.81	3,174.69	3,166.27	8.42	377.054	
1,100.00	1,099.63	591.00	590.32	3.76	5.67	-176.86	2,200.30	2,250.77	3,189.52	3,180.22	9.30	343.067	
1,200.00	1,199.56	622.29	621.32	4.11	5.86	-176.87	2,203.81	2,253.16	3,206.07	3,196.25	9.82	326.345	
1,300.00	1,299.49	682.00	680.38	4.47	6.23	-176.90	2,210.83	2,258.35	3,224.13	3,213.59	10.54	305.973	
1,400.00	1,399.42	726.82	724.63	4.83	6.40	-176.92	2,216.50	2,262.73	3,243.56	3,232.53	11.04	293.872	
1,500.00	1,499.35	772.00	769.12	5.19	6.56	-176.94	2,222.70	2,267.52	3,264.49	3,252.95	11.54	282.981	
1,600.00	1,599.28	817.89	814.17	5.54	6.81	-176.97	2,229.78	2,272.64	3,286.96	3,274.85	12.11	271.395	
1,700.00	1,699.21	862.00	857.30	5.90	7.04	-177.01	2,237.58	2,277.65	3,311.07	3,298.40	12.67	261.256	
1,800.00	1,799.14	900.03	894.33	6.26	7.29	-177.05	2,244.97	2,282.18	3,336.81	3,323.57	13.24	252.055	
1,900.00	1,899.07	954.00	946.62	6.62	7.65	-177.10	2,256.33	2,289.19	3,364.26	3,350.34	13.92	241.706	
2,000.00	1,999.00	954.00	946.62	6.98	7.65	-177.10	2,256.33	2,289.19	3,393.40	3,379.21	14.19	239.150	
2,100.00	2,098.94	1,015.05	1,005.36	7.34	8.06	-177.17	2,270.47	2,297.95	3,423.83	3,408.90	14.93	229.320	
2,200.00	2,198.87	1,048.00	1,036.85	7.70	8.28	-177.22	2,278.69	2,303.05	3,456.07	3,440.62	15.45	223.728	
2,300.00	2,298.80	1,085.12	1,072.15	8.06	8.54	-177.26	2,288.47	2,309.12	3,489.93	3,473.92	16.01	217.934	
2,400.00	2,398.73	1,140.00	1,123.88	8.42	8.93	-177.34	2,304.00	2,318.77	3,525.62	3,508.89	16.73	210.701	
2,500.00	2,498.66	1,140.00	1,123.88	8.79	8.93	-177.34	2,304.00	2,318.77	3,562.57	3,545.60	16.96	210.028	
2,600.00	2,598.59	1,188.83	1,169.51	9.15	9.25	-177.41	2,318.69	2,328.08	3,601.08	3,583.49	17.59	204.724	
2,700.00	2,698.52	1,234.00	1,211.40	9.51	9.54	-177.47	2,332.84	2,337.32	3,641.09	3,622.91	18.19	200.224	
2,800.00	2,798.45	1,265.31	1,240.27	9.87	9.70	-177.51	2,342.98	2,343.99	3,682.40	3,663.79	18.61	197.867	
2,900.00	2,898.38	1,328.00	1,297.66	10.23	10.01	-177.60	2,364.10	2,357.72	3,725.09	3,705.84	19.26	193.457	
3,000.00	2,998.31	1,328.00	1,297.66	10.59	10.01	-177.60	2,364.10	2,357.72	3,768.82	3,749.37	19.45	193.810	
3,100.00	3,098.24	1,392.26	1,356.00	10.96	10.28	-177.69	2,386.64	2,372.48	3,813.55	3,793.51	20.04	190.274	
3,200.00	3,198.17	1,420.00	1,381.04	11.32	10.40	-177.73	2,396.56	2,379.13	3,859.54	3,839.14	20.40	189.195	
3,300.00	3,298.10	1,491.23	1,445.05	11.68	10.65	-177.83	2,422.40	2,396.73	3,906.26	3,885.28	20.98	186.171	
3,400.00	3,398.03	1,539.46	1,488.15	12.04	10.82	-177.89	2,440.19	2,409.03	3,953.89	3,932.46	21.43	184.476	
3,500.00	3,497.96	1,584.17	1,527.90	12.40	10.98	-177.95	2,457.06	2,420.66	4,002.45	3,980.59	21.86	183.064	
3,600.00	3,597.89	1,642.76	1,579.68	12.77	11.19	-178.03	2,479.66	2,436.13	4,051.87	4,029.49	22.38	181.030	
3,700.00	3,697.82	1,700.00	1,630.17	13.13	11.40	-178.11	2,502.05	2,451.16	4,101.71	4,078.81	22.90	179.139	
3,800.00	3,797.75	1,760.14	1,683.03	13.49	11.62	-178.20	2,525.83	2,467.19	4,152.12	4,128.70	23.42	177.298	
3,900.00	3,897.68	1,842.66	1,755.25	13.85	11.92	-178.30	2,558.65	2,489.94	4,203.23	4,179.14	24.09	174.491	
4,000.00	3,997.61	1,966.21	1,863.81	14.21	12.38	-178.46	2,607.41	2,523.16	4,253.66	4,228.63	25.04	169.892	
4,100.00	4,097.54	2,094.46	1,976.99	14.58	12.88	-178.65	2,658.25	2,555.58	4,303.15	4,277.12	26.03	165.284	
4,200.00	4,197.47	2,145.53	2,022.04	14.94	13.08	-178.72	2,678.47	2,568.61	4,352.84	4,326.31	26.53	164.076	
4,300.00	4,297.40	2,226.78	2,093.49	15.30	13.41	-178.83	2,710.85	2,589.76	4,403.08	4,375.84	27.23	161.690	
4,400.00	4,397.33	2,368.52	2,218.49	15.66	14.01	-179.03	2,767.36	2,625.42	4,452.82	4,424.46	28.36	156.997	
4,500.00	4,497.26	4,208.44	3,967.40	16.03	26.09	179.85	3,180.00	2,898.01	4,466.83	4,424.45	42.38	105.409	
4,600.00	4,597.19	4,326.68	4,085.21	16.39	27.09	179.86	3,186.89	2,905.44	4,479.08	4,435.36	43.72	102.447	
4,700.00	4,697.12	4,445.05	4,203.19	16.75	28.09	179.87	3,193.53	2,912.41	4,490.91	4,445.84	45.07	99.648	
4,800.00	4,797.05	4,567.38	4,325.16	17.11	29.23	179.88	3,199.95	2,919.27	4,502.28	4,455.74	46.54	96.742	
4,900.00	4,896.99	4,690.64	4,448.10	17.47	30.39	179.89	3,205.64	2,926.07	4,513.13	4,465.09	48.04	93.951	
5,000.00	4,996.92	4,814.02	4,571.20	17.84	31.55	179.91	3,210.53	2,932.79	4,523.45	4,473.91	49.54	91.315	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 321-MWD OWSG Rev5 — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	4,937.52	4,694.45	18.20	32.72	179.94	3,214.63	2,939.42	4,533.25	4,482.21	51.04	88.821	
5,200.00	5,196.78	5,063.69	4,820.40	18.56	33.69	179.97	3,217.93	2,946.13	4,542.49	4,490.14	52.34	86.781	
5,300.00	5,296.71	5,190.04	4,946.56	18.92	34.66	-179.98	3,220.25	2,952.82	4,551.14	4,497.50	53.65	84.838	
5,400.00	5,396.64	5,316.48	5,072.81	19.29	35.63	-179.93	3,221.60	2,959.48	4,559.21	4,504.27	54.95	82.975	
5,500.00	5,496.57	5,443.00	5,199.15	19.65	36.60	-179.87	3,221.96	2,966.10	4,566.70	4,510.45	56.25	81.188	
5,600.00	5,596.50	5,541.73	5,297.75	20.01	37.26	-179.83	3,221.99	2,971.27	4,573.99	4,516.73	57.26	79.884	
5,700.00	5,696.43	5,646.36	5,402.24	20.37	37.99	-179.78	3,221.84	2,976.73	4,581.16	4,522.83	58.33	78.538	
5,800.00	5,796.36	5,751.00	5,506.74	20.74	38.72	-179.72	3,221.54	2,982.19	4,588.22	4,528.82	59.40	77.239	
5,900.00	5,896.29	5,855.65	5,611.24	21.10	39.45	-179.67	3,221.10	2,987.64	4,595.18	4,534.70	60.48	75.983	
6,000.00	5,996.22	5,951.78	5,707.24	21.46	40.14	-179.62	3,220.64	2,992.65	4,602.11	4,540.60	61.51	74.819	
6,100.00	6,096.15	6,045.58	5,800.91	21.82	40.81	-179.57	3,220.35	2,997.53	4,609.16	4,546.63	62.53	73.709	
6,200.00	6,196.08	6,139.38	5,894.58	22.19	41.48	-179.53	3,220.23	3,002.42	4,616.34	4,552.78	63.55	72.636	
6,300.00	6,296.01	6,233.16	5,988.24	22.55	42.15	-179.48	3,220.26	3,007.31	4,623.65	4,559.07	64.58	71.600	
6,335.60	6,331.59	6,266.55	6,021.58	22.68	42.39	-179.47	3,220.31	3,009.06	4,626.29	4,561.35	64.94	71.239	
6,350.00	6,345.97	6,280.04	6,035.05	22.73	42.49	162.79	3,220.34	3,009.76	4,627.47	4,562.38	65.09	71.096	
6,400.00	6,395.75	6,326.60	6,081.55	22.91	42.82	144.72	3,220.45	3,012.19	4,633.29	4,567.69	65.60	70.634	
6,450.00	6,445.03	6,376.00	6,130.88	23.10	43.18	139.59	3,220.62	3,014.77	4,641.77	4,575.65	66.12	70.200	
6,500.00	6,493.52	6,449.94	6,204.73	23.29	43.57	136.93	3,220.74	3,018.46	4,652.70	4,586.04	66.66	69.798	
6,550.00	6,540.91	6,528.24	6,282.95	23.48	43.99	135.08	3,220.49	3,022.01	4,665.85	4,598.64	67.21	69.420	
6,600.00	6,586.91	6,604.27	6,358.92	23.66	44.40	133.52	3,219.88	3,025.10	4,681.19	4,613.44	67.75	69.096	
6,650.00	6,631.24	6,677.62	6,432.21	23.85	44.79	132.06	3,218.95	3,027.75	4,698.66	4,630.39	68.27	68.827	
6,700.00	6,673.63	6,747.88	6,502.42	24.05	45.17	130.58	3,217.75	3,029.99	4,718.23	4,649.47	68.77	68.612	
6,750.00	6,713.80	6,814.65	6,569.15	24.24	45.53	129.01	3,216.33	3,031.83	4,739.85	4,670.60	69.25	68.450	
6,800.00	6,751.52	6,877.67	6,632.14	24.44	45.85	127.31	3,214.73	3,033.32	4,763.44	4,693.75	69.69	68.356	SF
6,850.00	6,786.56	6,938.21	6,692.64	24.65	45.98	125.44	3,213.05	3,034.42	4,788.93	4,719.00	69.92	68.489	
6,900.00	6,818.69	6,994.41	6,748.81	24.87	46.09	123.34	3,211.45	3,035.08	4,816.22	4,746.07	70.15	68.657	
6,950.00	6,847.72	7,045.89	6,800.27	25.10	46.20	121.00	3,209.92	3,035.38	4,845.21	4,774.84	70.37	68.857	
7,000.00	6,873.46	7,092.29	6,846.65	25.34	46.29	118.36	3,208.52	3,035.39	4,875.79	4,805.22	70.57	69.090	
7,050.00	6,895.77	7,133.23	6,887.57	25.60	46.38	115.39	3,207.24	3,035.20	4,907.83	4,837.06	70.77	69.351	
7,100.00	6,914.50	7,168.35	6,922.67	25.87	46.45	112.07	3,206.13	3,034.89	4,941.19	4,870.24	70.95	69.641	
7,150.00	6,929.54	7,197.31	6,951.61	26.15	46.51	108.37	3,205.19	3,034.53	4,975.72	4,904.59	71.13	69.957	
7,200.00	6,940.80	7,219.75	6,974.04	26.44	46.56	104.30	3,204.46	3,034.19	5,011.23	4,939.94	71.29	70.296	
7,250.00	6,948.20	7,235.35	6,989.63	26.75	46.59	99.85	3,203.94	3,033.92	5,047.54	4,976.11	71.44	70.658	
7,300.00	6,951.70	7,243.81	6,998.08	27.07	46.61	95.09	3,203.66	3,033.76	5,084.45	5,012.88	71.57	71.039	
7,321.06	6,952.00	7,245.16	6,999.43	27.20	46.61	93.00	3,203.62	3,033.73	5,100.13	5,028.50	71.63	71.204	
7,400.00	6,951.82	7,247.78	7,002.04	27.74	46.62	93.04	3,203.53	3,033.68	5,159.24	5,087.41	71.83	71.824	
7,500.00	6,951.60	7,251.23	7,005.49	28.49	46.63	93.10	3,203.41	3,033.62	5,234.89	5,162.77	72.11	72.594	
7,600.00	6,951.37	7,254.83	7,009.10	29.30	46.63	93.16	3,203.29	3,033.54	5,311.33	5,238.92	72.41	73.350	
7,700.00	6,951.15	7,258.61	7,012.87	30.18	46.64	93.23	3,203.17	3,033.47	5,388.54	5,315.82	72.73	74.093	
7,800.00	6,950.92	7,262.56	7,016.82	31.12	46.65	93.29	3,203.03	3,033.38	5,466.50	5,393.44	73.06	74.825	
7,900.00	6,950.70	7,266.71	7,020.97	32.11	46.66	93.36	3,202.89	3,033.29	5,545.16	5,471.76	73.40	75.548	
8,000.00	6,950.47	7,271.07	7,025.32	33.15	46.67	93.44	3,202.75	3,033.20	5,624.49	5,550.74	73.75	76.264	
8,100.00	6,950.25	7,275.65	7,029.90	34.23	46.68	93.51	3,202.59	3,033.09	5,704.47	5,630.36	74.11	76.975	
8,200.00	6,950.03	7,280.47	7,034.71	35.35	46.69	93.59	3,202.43	3,032.98	5,785.08	5,710.60	74.47	77.680	
8,300.00	6,949.80	7,285.56	7,039.79	36.51	46.70	93.68	3,202.25	3,032.86	5,866.28	5,791.44	74.84	78.383	
8,400.00	6,949.58	7,290.93	7,045.16	37.70	46.71	93.77	3,202.07	3,032.74	5,948.05	5,872.83	75.21	79.082	
8,500.00	6,949.35	7,296.60	7,050.83	38.92	46.72	93.87	3,201.88	3,032.59	6,030.37	5,954.78	75.59	79.781	
8,600.00	6,949.13	7,302.61	7,056.83	40.17	46.73	93.97	3,201.67	3,032.44	6,113.21	6,037.25	75.96	80.478	
8,700.00	6,948.90	7,308.99	7,063.20	41.44	46.75	94.07	3,201.45	3,032.28	6,196.56	6,120.22	76.34	81.175	
8,800.00	6,948.68	7,315.76	7,069.97	42.73	46.76	94.19	3,201.22	3,032.10	6,280.39	6,203.68	76.71	81.872	
8,900.00	6,948.45	7,322.98	7,077.18	44.04	46.78	94.31	3,200.97	3,031.90	6,364.68	6,287.60	77.08	82.570	
9,000.00	6,948.23	7,330.68	7,084.87	45.38	46.79	94.44	3,200.70	3,031.68	6,449.42	6,371.97	77.45	83.268	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 321-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	7,338.91	7,093.09	46.72	46.81	94.58	3,200.42	3,031.44	6,534.59	6,456.77	77.82	83.968	
9,200.00	6,947.78	7,347.73	7,101.90	48.09	46.83	94.73	3,200.11	3,031.17	6,620.17	6,541.98	78.19	84.669	
9,300.00	6,947.55	7,357.20	7,111.37	49.47	46.85	94.89	3,199.77	3,030.87	6,706.15	6,627.59	78.55	85.371	
9,400.00	6,947.33	7,367.41	7,121.56	50.86	46.87	95.06	3,199.41	3,030.54	6,792.50	6,713.59	78.91	86.075	
9,500.00	6,947.10	7,378.44	7,132.58	52.26	46.90	95.24	3,199.02	3,030.18	6,879.22	6,799.95	79.27	86.779	
9,600.00	6,946.88	7,390.39	7,144.52	53.68	46.92	95.44	3,198.60	3,029.76	6,966.29	6,886.67	79.63	87.486	
9,700.00	6,946.66	7,171.51	6,925.81	55.10	46.46	91.76	3,205.67	3,032.52	7,052.45	6,972.78	79.67	88.516	
9,800.00	6,946.43	7,171.51	6,925.80	56.54	46.46	91.76	3,205.67	3,032.52	7,140.24	7,060.24	80.00	89.251	
9,900.00	6,946.21	7,171.50	6,925.80	57.98	46.46	91.76	3,205.67	3,032.52	7,228.35	7,148.02	80.32	89.989	
10,000.00	6,945.98	7,171.50	6,925.79	59.43	46.46	91.76	3,205.67	3,032.52	7,316.76	7,236.12	80.64	90.731	
10,100.00	6,945.76	7,171.49	6,925.79	60.89	46.46	91.76	3,205.67	3,032.52	7,405.47	7,324.51	80.96	91.476	
10,200.00	6,945.53	7,171.49	6,925.78	62.36	46.46	91.76	3,205.67	3,032.52	7,494.46	7,413.19	81.26	92.224	
10,300.00	6,945.31	7,171.48	6,925.78	63.83	46.46	91.76	3,205.67	3,032.52	7,583.72	7,502.15	81.57	92.975	
10,400.00	6,945.08	7,171.48	6,925.77	65.31	46.46	91.76	3,205.67	3,032.52	7,673.25	7,591.38	81.87	93.730	
10,500.00	6,944.86	7,171.47	6,925.77	66.79	46.46	91.76	3,205.67	3,032.52	7,763.04	7,680.88	82.16	94.487	
10,600.00	6,944.63	7,171.47	6,925.76	68.28	46.46	91.76	3,205.67	3,032.52	7,853.07	7,770.62	82.45	95.247	
10,700.00	6,944.41	7,171.46	6,925.75	69.78	46.46	91.76	3,205.67	3,032.52	7,943.34	7,860.60	82.73	96.011	
10,800.00	6,944.18	7,171.46	6,925.75	71.28	46.46	91.76	3,205.67	3,032.52	8,033.84	7,950.83	83.01	96.777	
10,900.00	6,943.96	7,171.45	6,925.74	72.78	46.46	91.76	3,205.67	3,032.52	8,124.56	8,041.27	83.29	97.546	
11,000.00	6,943.73	7,171.45	6,925.74	74.29	46.46	91.76	3,205.67	3,032.52	8,215.50	8,131.94	83.56	98.317	
11,100.00	6,943.51	7,312.00	7,066.21	75.80	46.75	94.13	3,201.35	3,032.20	8,307.84	8,223.79	84.05	98.846	
11,200.00	6,943.29	7,312.00	7,066.21	77.32	46.75	94.13	3,201.35	3,032.20	8,399.18	8,314.86	84.31	99.619	
11,300.00	6,943.06	7,312.00	7,066.21	78.84	46.75	94.13	3,201.35	3,032.20	8,490.71	8,406.13	84.57	100.395	
11,400.00	6,942.84	7,312.00	7,066.21	80.36	46.75	94.13	3,201.35	3,032.20	8,582.43	8,497.60	84.83	101.173	
11,500.00	6,942.61	7,312.00	7,066.21	81.88	46.75	94.13	3,201.35	3,032.20	8,674.33	8,589.25	85.08	101.953	
11,600.00	6,942.39	7,312.00	7,066.21	83.41	46.75	94.13	3,201.35	3,032.20	8,766.41	8,681.08	85.33	102.735	
11,700.00	6,942.16	7,312.00	7,066.21	84.94	46.75	94.13	3,201.35	3,032.20	8,858.66	8,773.09	85.57	103.520	
11,800.00	6,941.94	7,312.00	7,066.21	86.47	46.75	94.13	3,201.35	3,032.20	8,951.08	8,865.27	85.81	104.307	
11,900.00	6,941.71	7,312.00	7,066.21	88.01	46.75	94.13	3,201.35	3,032.20	9,043.66	8,957.61	86.05	105.096	
12,000.00	6,941.49	7,312.00	7,066.21	89.55	46.75	94.13	3,201.35	3,032.20	9,136.40	9,050.11	86.28	105.886	
12,100.00	6,941.26	7,312.00	7,066.21	91.09	46.75	94.13	3,201.35	3,032.20	9,229.29	9,142.77	86.51	106.679	
12,200.00	6,941.04	7,312.00	7,066.21	92.63	46.75	94.13	3,201.35	3,032.20	9,322.32	9,235.58	86.74	107.473	
12,300.00	6,940.81	7,312.00	7,066.21	94.18	46.75	94.13	3,201.35	3,032.20	9,415.50	9,328.54	86.96	108.269	
12,400.00	6,940.59	7,312.00	7,066.21	95.72	46.75	94.13	3,201.35	3,032.20	9,508.82	9,421.63	87.18	109.067	
12,500.00	6,940.36	7,312.00	7,066.21	97.27	46.75	94.13	3,201.35	3,032.20	9,602.27	9,514.87	87.40	109.866	
12,600.00	6,940.14	7,312.00	7,066.21	98.82	46.75	94.13	3,201.35	3,032.20	9,695.85	9,608.24	87.61	110.666	
12,700.00	6,939.92	7,312.00	7,066.21	100.37	46.75	94.13	3,201.35	3,032.20	9,789.56	9,701.73	87.82	111.468	
12,800.00	6,939.69	7,312.00	7,066.21	101.92	46.75	94.13	3,201.35	3,032.20	9,883.39	9,795.36	88.03	112.272	
12,900.00	6,939.47	7,312.00	7,066.21	103.48	46.75	94.13	3,201.35	3,032.20	9,977.34	9,889.11	88.24	113.076	
13,000.00	6,939.24	7,171.34	6,925.64	105.03	46.46	91.76	3,205.68	3,032.53	10,070.43	9,982.24	88.19	114.194	
13,100.00	6,939.02	7,171.34	6,925.63	106.59	46.46	91.76	3,205.68	3,032.53	10,164.62	10,076.23	88.38	115.005	
13,200.00	6,938.79	7,171.33	6,925.63	108.15	46.46	91.76	3,205.68	3,032.53	10,258.92	10,170.34	88.58	115.816	
13,300.00	6,938.57	7,171.33	6,925.62	109.71	46.46	91.76	3,205.68	3,032.53	10,353.33	10,264.56	88.77	116.628	
13,400.00	6,938.34	7,171.32	6,925.62	111.27	46.46	91.76	3,205.68	3,032.53	10,447.84	10,358.88	88.96	117.442	
13,500.00	6,938.12	7,171.32	6,925.61	112.83	46.46	91.76	3,205.68	3,032.53	10,542.45	10,453.30	89.15	118.256	
13,600.00	6,937.89	7,171.31	6,925.61	114.40	46.46	91.75	3,205.68	3,032.53	10,637.16	10,547.83	89.33	119.071	
13,700.00	6,937.67	7,171.31	6,925.60	115.96	46.46	91.75	3,205.68	3,032.53	10,731.97	10,642.45	89.52	119.887	
13,800.00	6,937.44	7,171.30	6,925.60	117.53	46.46	91.75	3,205.68	3,032.53	10,826.87	10,737.17	89.70	120.704	
13,900.00	6,937.22	7,171.30	6,925.59	119.09	46.46	91.75	3,205.68	3,032.53	10,921.86	10,831.99	89.88	121.521	
14,000.00	6,936.99	7,171.29	6,925.59	120.66	46.46	91.75	3,205.68	3,032.53	11,016.94	10,926.89	90.05	122.339	
14,100.00	6,936.77	7,171.29	6,925.58	122.23	46.46	91.75	3,205.68	3,032.53	11,112.11	11,021.88	90.23	123.157	
14,200.00	6,936.55	7,171.28	6,925.58	123.80	46.46	91.75	3,205.68	3,032.53	11,207.36	11,116.96	90.40	123.976	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 321-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	7,171.28	6,925.57	125.37	46.46	91.75	3,205.68	3,032.53	11,302.69	11,212.13	90.57	124.796	
14,400.00	6,936.10	7,171.27	6,925.57	126.94	46.46	91.75	3,205.68	3,032.53	11,398.11	11,307.37	90.74	125.616	
14,500.00	6,935.87	7,171.27	6,925.56	128.51	46.46	91.75	3,205.68	3,032.53	11,493.60	11,402.69	90.90	126.437	
14,600.00	6,935.65	7,171.26	6,925.56	130.08	46.46	91.75	3,205.68	3,032.53	11,589.17	11,498.10	91.07	127.257	
14,700.00	6,935.42	7,171.26	6,925.55	131.65	46.46	91.75	3,205.68	3,032.53	11,684.81	11,593.58	91.23	128.078	
14,800.00	6,935.20	7,171.25	6,925.55	133.23	46.46	91.75	3,205.68	3,032.53	11,780.52	11,689.13	91.39	128.900	
14,900.00	6,934.97	7,171.25	6,925.54	134.80	46.46	91.75	3,205.68	3,032.53	11,876.30	11,784.75	91.55	129.721	
15,000.00	6,934.75	7,171.24	6,925.54	136.37	46.46	91.75	3,205.68	3,032.53	11,972.16	11,880.45	91.71	130.543	
15,100.00	6,934.52	7,171.24	6,925.53	137.95	46.46	91.75	3,205.68	3,032.53	12,068.08	11,976.21	91.87	131.365	
15,200.00	6,934.30	7,171.23	6,925.53	139.53	46.46	91.75	3,205.68	3,032.53	12,164.06	12,072.04	92.02	132.187	
15,300.00	6,934.07	7,171.23	6,925.52	141.10	46.46	91.75	3,205.68	3,032.53	12,260.12	12,167.94	92.17	133.009	
15,400.00	6,933.85	7,171.22	6,925.52	142.68	46.46	91.75	3,205.68	3,032.53	12,356.23	12,263.90	92.33	133.832	
15,500.00	6,933.62	7,171.22	6,925.51	144.26	46.46	91.75	3,205.68	3,032.53	12,452.40	12,359.93	92.48	134.654	
15,600.00	6,933.40	7,171.21	6,925.51	145.84	46.46	91.75	3,205.68	3,032.53	12,548.64	12,456.01	92.63	135.476	
15,700.00	6,933.18	7,171.21	6,925.50	147.42	46.46	91.75	3,205.68	3,032.53	12,644.93	12,552.16	92.77	136.298	
15,800.00	6,932.95	7,171.20	6,925.50	148.99	46.46	91.75	3,205.68	3,032.53	12,741.28	12,648.36	92.92	137.121	
15,900.00	6,932.73	7,171.20	6,925.49	150.57	46.46	91.75	3,205.68	3,032.53	12,837.68	12,744.62	93.07	137.943	
16,000.00	6,932.50	7,171.19	6,925.49	152.15	46.46	91.75	3,205.68	3,032.53	12,934.14	12,840.94	93.21	138.764	
16,100.00	6,932.28	7,171.19	6,925.48	153.74	46.46	91.75	3,205.68	3,032.53	13,030.66	12,937.31	93.35	139.586	
16,200.00	6,932.05	7,171.18	6,925.47	155.32	46.46	91.75	3,205.68	3,032.53	13,127.22	13,033.73	93.49	140.408	
16,300.00	6,931.83	7,171.18	6,925.47	156.90	46.46	91.75	3,205.68	3,032.53	13,223.84	13,130.21	93.63	141.229	
16,400.00	6,931.60	7,171.17	6,925.46	158.48	46.46	91.75	3,205.68	3,032.53	13,320.51	13,226.73	93.77	142.050	
16,500.00	6,931.38	7,171.17	6,925.46	160.06	46.46	91.75	3,205.68	3,032.53	13,417.22	13,323.31	93.91	142.871	
16,600.00	6,931.15	7,171.16	6,925.45	161.65	46.46	91.75	3,205.68	3,032.53	13,513.99	13,419.94	94.05	143.691	
16,700.00	6,930.93	7,171.16	6,925.45	163.23	46.46	91.75	3,205.68	3,032.53	13,610.80	13,516.61	94.18	144.511	
16,800.00	6,930.70	7,171.15	6,925.44	164.81	46.46	91.75	3,205.68	3,032.53	13,707.65	13,613.33	94.32	145.331	
16,900.00	6,930.48	7,171.15	6,925.44	166.40	46.46	91.75	3,205.68	3,032.53	13,804.55	13,710.10	94.45	146.151	
17,000.00	6,930.25	7,171.14	6,925.43	167.98	46.46	91.75	3,205.68	3,032.53	13,901.50	13,806.91	94.59	146.969	
17,100.00	6,930.03	7,171.14	6,925.43	169.56	46.46	91.75	3,205.68	3,032.53	13,998.48	13,903.76	94.72	147.788	
17,200.00	6,929.81	7,171.13	6,925.42	171.15	46.46	91.75	3,205.68	3,032.53	14,095.51	14,000.66	94.85	148.606	
17,300.00	6,929.58	7,171.12	6,925.42	172.73	46.46	91.75	3,205.68	3,032.53	14,192.59	14,097.60	94.98	149.424	
17,400.00	6,929.36	7,171.12	6,925.41	174.32	46.46	91.75	3,205.68	3,032.53	14,289.70	14,194.58	95.11	150.241	
17,500.00	6,929.13	6,297.08	6,052.07	175.91	42.61	77.29	3,220.38	3,010.65	14,387.29	14,295.76	91.53	157.190	
17,600.00	6,928.91	6,291.97	6,046.96	177.49	42.58	77.21	3,220.36	3,010.38	14,484.31	14,392.69	91.62	158.091	
17,700.00	6,928.68	6,286.86	6,041.86	179.08	42.54	77.13	3,220.35	3,010.12	14,581.37	14,489.66	91.71	158.991	
17,800.00	6,928.46	6,281.75	6,036.76	180.66	42.50	77.04	3,220.34	3,009.85	14,678.47	14,586.66	91.80	159.892	
17,900.00	6,928.23	6,276.64	6,031.66	182.25	42.47	76.96	3,220.33	3,009.58	14,775.60	14,683.71	91.89	160.792	
18,000.00	6,928.01	6,271.53	6,026.56	183.84	42.43	76.88	3,220.32	3,009.32	14,872.77	14,780.79	91.98	161.692	
18,100.00	6,927.78	6,266.42	6,021.45	185.43	42.39	76.80	3,220.31	3,009.05	14,969.97	14,877.90	92.07	162.592	
18,200.00	6,927.56	6,261.32	6,016.35	187.01	42.36	76.72	3,220.30	3,008.78	15,067.21	14,975.05	92.16	163.492	
18,300.00	6,927.33	6,256.21	6,011.25	188.60	42.32	76.64	3,220.29	3,008.52	15,164.49	15,072.24	92.25	164.392	
18,400.00	6,927.11	6,251.10	6,006.15	190.19	42.28	76.56	3,220.28	3,008.25	15,261.79	15,169.46	92.33	165.291	
18,500.00	6,926.88	6,245.99	6,001.05	191.78	42.25	76.48	3,220.28	3,007.98	15,359.13	15,266.71	92.42	166.190	
18,600.00	6,926.66	6,240.88	5,995.95	193.37	42.21	76.40	3,220.27	3,007.72	15,456.51	15,364.00	92.50	167.088	
18,700.00	6,926.44	6,235.78	5,990.85	194.96	42.17	76.31	3,220.26	3,007.45	15,553.91	15,461.32	92.59	167.987	
18,800.00	6,926.21	6,230.67	5,985.75	196.54	42.14	76.23	3,220.26	3,007.18	15,651.34	15,558.67	92.67	168.885	
18,900.00	6,925.99	6,225.56	5,980.65	198.13	42.10	76.15	3,220.25	3,006.92	15,748.81	15,656.05	92.76	169.782	
19,000.00	6,925.76	6,220.46	5,975.55	199.72	42.06	76.07	3,220.25	3,006.65	15,846.31	15,753.46	92.84	170.680	
19,100.00	6,925.54	6,215.35	5,970.45	201.31	42.03	75.99	3,220.24	3,006.38	15,943.83	15,850.90	92.93	171.576	
19,200.00	6,925.31	6,210.24	5,965.35	202.90	41.99	75.91	3,220.24	3,006.12	16,041.38	15,948.37	93.01	172.473	
19,300.00	6,925.09	6,205.14	5,960.25	204.49	41.95	75.83	3,220.23	3,005.85	16,138.96	16,045.87	93.09	173.369	
19,400.00	6,924.86	6,200.03	5,955.15	206.08	41.92	75.75	3,220.23	3,005.59	16,236.57	16,143.40	93.17	174.265	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 046A - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 321-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	6,194.92	5,950.05	207.67	41.88	75.67	3,220.23	3,005.32	16,334.21	16,240.96	93.25	175.160	
19,600.00	6,924.41	6,189.82	5,944.95	209.26	41.84	75.59	3,220.22	3,005.05	16,431.87	16,338.54	93.33	176.054	
19,700.00	6,924.19	6,184.71	5,939.85	210.85	41.81	75.51	3,220.22	3,004.79	16,529.56	16,436.15	93.41	176.948	
19,800.00	6,923.96	6,179.60	5,934.75	212.44	41.77	75.43	3,220.22	3,004.52	16,627.28	16,533.78	93.49	177.842	
19,900.00	6,923.74	6,174.50	5,929.66	214.04	41.73	75.35	3,220.22	3,004.25	16,725.02	16,631.44	93.57	178.735	
20,000.00	6,923.51	6,169.39	5,924.56	215.63	41.70	75.27	3,220.22	3,003.99	16,822.78	16,729.13	93.65	179.628	
20,100.00	6,923.29	6,164.29	5,919.46	217.22	41.66	75.19	3,220.22	3,003.72	16,920.57	16,826.84	93.73	180.520	
20,200.00	6,923.07	6,159.18	5,914.36	218.81	41.62	75.11	3,220.22	3,003.46	17,018.39	16,924.57	93.81	181.411	
20,300.00	6,922.84	6,154.08	5,909.26	220.40	41.59	75.03	3,220.22	3,003.19	17,116.22	17,022.33	93.89	182.302	
20,400.00	6,922.62	6,148.97	5,904.16	221.99	41.55	74.95	3,220.22	3,002.92	17,214.08	17,120.12	93.97	183.192	
20,500.00	6,922.39	6,143.87	5,899.07	223.59	41.51	74.87	3,220.22	3,002.66	17,311.97	17,217.92	94.04	184.082	
20,600.00	6,922.17	6,138.76	5,893.97	225.18	41.48	74.79	3,220.23	3,002.39	17,409.87	17,315.75	94.12	184.971	
20,674.13	6,922.00	6,134.98	5,890.19	226.36	41.45	74.73	3,220.23	3,002.19	17,482.46	17,388.29	94.18	185.630	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 065 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 839-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	74.77	1,049.51	3,853.89	3,994.39				
100.00	100.00	65.00	65.00	0.25	0.58	74.77	1,049.51	3,853.89	3,994.24	3,993.41	0.83	4,830.280	
200.00	200.00	165.00	165.00	0.61	1.46	74.77	1,049.51	3,853.89	3,994.24	3,992.17	2.07	1,928.454	
300.00	300.00	265.00	265.00	0.97	2.35	74.77	1,049.51	3,853.89	3,994.24	3,990.92	3.32	1,204.713	
400.00	400.00	365.00	365.00	1.33	3.23	74.77	1,049.51	3,853.89	3,994.24	3,989.68	4.56	875.967	
500.00	500.00	465.00	465.00	1.68	4.12	74.77	1,049.51	3,853.89	3,994.24	3,988.43	5.80	688.175	CC, ES
606.93	606.91	571.91	571.91	2.05	5.07	-147.73	1,049.51	3,853.89	3,995.92	3,988.81	7.12	561.309	
700.00	699.91	664.91	664.91	2.37	5.89	-147.76	1,049.51	3,853.89	3,998.86	3,990.61	8.26	484.370	
800.00	799.84	764.84	764.84	2.71	6.78	-147.79	1,049.51	3,853.89	4,002.02	3,992.54	9.48	422.050	
900.00	899.77	864.77	864.77	3.06	7.89	-147.82	1,049.51	3,853.89	4,005.18	3,994.24	10.94	366.049	
1,000.00	999.70	965.56	965.55	3.41	9.67	-147.85	1,049.60	3,853.89	4,008.36	3,995.28	13.08	306.542	
1,100.00	1,099.63	1,064.64	1,064.63	3.76	11.46	-147.87	1,049.51	3,853.89	4,011.50	3,996.29	15.21	263.766	
1,200.00	1,199.56	1,164.57	1,164.56	4.11	13.29	-147.90	1,049.51	3,853.89	4,014.66	3,997.26	17.40	230.784	
1,300.00	1,299.49	1,264.50	1,264.49	4.47	15.12	-147.93	1,049.51	3,853.89	4,017.82	3,998.24	19.58	205.156	
1,400.00	1,399.42	1,365.05	1,365.05	4.83	16.97	-147.96	1,049.79	3,853.89	4,021.06	3,999.27	21.79	184.578	
1,500.00	1,499.35	1,465.87	1,465.86	5.19	18.82	-147.99	1,049.69	3,853.89	4,024.20	4,000.20	23.99	167.733	
1,600.00	1,599.28	1,564.31	1,564.28	5.54	20.63	-148.01	1,049.51	3,853.89	4,027.31	4,001.16	26.16	153.958	
1,700.00	1,699.21	1,664.24	1,664.21	5.90	22.61	-148.04	1,049.51	3,853.89	4,030.48	4,001.98	28.50	141.433	
1,800.00	1,799.14	1,764.17	1,764.14	6.26	24.60	-148.07	1,049.51	3,853.89	4,033.65	4,002.81	30.84	130.806	
1,900.00	1,899.07	1,866.30	1,866.27	6.62	26.62	-148.11	1,050.20	3,853.89	4,037.00	4,003.78	33.22	121.522	
2,000.00	1,999.00	1,969.42	1,969.38	6.98	28.67	-148.13	1,049.84	3,853.89	4,040.08	4,004.45	35.62	113.411	
2,100.00	2,098.94	2,064.02	2,063.94	7.34	30.55	-148.15	1,049.51	3,853.89	4,043.16	4,005.29	37.87	106.769	
2,200.00	2,198.87	2,163.95	2,163.87	7.70	32.56	-148.18	1,049.51	3,853.89	4,046.33	4,006.09	40.24	100.561	
2,300.00	2,298.80	2,265.45	2,265.36	8.06	34.61	-148.22	1,050.38	3,853.89	4,049.73	4,007.10	42.64	94.979	
2,400.00	2,398.73	2,370.32	2,370.22	8.42	36.72	-148.25	1,050.00	3,853.89	4,052.81	4,007.70	45.11	89.849	
2,500.00	2,498.66	2,463.79	2,463.66	8.79	38.60	-148.27	1,049.51	3,853.89	4,055.85	4,008.50	47.35	85.657	
2,600.00	2,598.59	2,563.72	2,563.59	9.15	40.63	-148.29	1,049.51	3,853.89	4,059.02	4,009.29	49.73	81.615	
2,700.00	2,698.52	2,663.65	2,663.52	9.51	42.65	-148.32	1,049.51	3,853.89	4,062.20	4,010.08	52.12	77.943	
2,800.00	2,798.45	2,763.58	2,763.45	9.87	44.68	-148.35	1,049.51	3,853.89	4,065.37	4,010.87	54.50	74.592	
2,900.00	2,898.38	2,865.45	2,865.32	10.23	46.74	-148.39	1,050.54	3,853.89	4,068.83	4,011.91	56.92	71.477	
3,000.00	2,998.31	2,967.61	2,967.47	10.59	48.81	-148.41	1,050.26	3,853.89	4,071.94	4,012.58	59.35	68.604	
3,100.00	3,098.24	3,069.78	3,069.63	10.96	50.88	-148.44	1,049.78	3,853.89	4,074.99	4,013.20	61.78	65.956	
3,200.00	3,198.17	3,163.38	3,163.17	11.32	52.78	-148.46	1,049.51	3,853.89	4,078.09	4,014.05	64.04	63.677	
3,300.00	3,298.10	3,263.31	3,263.10	11.68	54.81	-148.49	1,049.51	3,853.89	4,081.27	4,014.84	66.43	61.433	
3,400.00	3,398.03	3,363.24	3,363.03	12.04	56.84	-148.51	1,049.51	3,853.89	4,084.45	4,015.63	68.83	59.344	
3,500.00	3,497.96	3,466.29	3,466.06	12.40	58.94	-148.56	1,050.57	3,853.89	4,087.93	4,016.65	71.28	57.349	
3,600.00	3,597.89	3,570.08	3,569.85	12.77	61.05	-148.58	1,050.11	3,853.89	4,090.99	4,017.24	73.75	55.469	
3,700.00	3,697.82	3,663.09	3,662.82	13.13	62.94	-148.59	1,049.51	3,853.89	4,094.01	4,018.00	76.00	53.866	
3,800.00	3,797.75	3,763.02	3,762.75	13.49	64.98	-148.62	1,049.51	3,853.89	4,097.19	4,018.79	78.40	52.261	
3,900.00	3,897.68	3,862.95	3,862.68	13.85	67.01	-148.65	1,049.51	3,853.89	4,100.38	4,019.58	80.79	50.751	
4,000.00	3,997.61	3,964.83	3,964.55	14.21	69.09	-148.69	1,050.28	3,853.89	4,103.78	4,020.55	83.23	49.307	
4,100.00	4,097.54	4,067.88	4,067.59	14.58	71.19	-148.71	1,049.96	3,853.89	4,106.88	4,021.20	85.69	47.928	
4,200.00	4,197.47	4,162.80	4,162.47	14.94	73.24	-148.73	1,049.51	3,853.89	4,109.95	4,021.85	88.10	46.652	
4,300.00	4,297.40	4,262.73	4,262.40	15.30	76.18	-148.76	1,049.51	3,853.89	4,113.14	4,021.73	91.41	44.999	
4,400.00	4,397.33	4,362.66	4,362.33	15.66	79.13	-148.78	1,049.51	3,853.89	4,116.33	4,021.62	94.71	43.461	
4,500.00	4,497.26	4,465.28	4,464.94	16.03	82.16	-148.83	1,050.53	3,853.89	4,119.81	4,021.71	98.10	41.997	
4,600.00	4,597.19	4,569.48	4,569.13	16.39	85.23	-148.85	1,050.09	3,853.89	4,122.88	4,021.35	101.53	40.607	
4,700.00	4,697.12	4,662.93	4,662.12	16.75	88.15	-148.86	1,049.51	3,853.89	4,125.91	4,021.10	104.81	39.366	
4,800.00	4,797.05	4,766.54	4,765.67	17.11	92.41	-148.92	1,051.25	3,853.89	4,129.60	4,020.17	109.43	37.738	
4,900.00	4,896.99	4,862.94	4,861.99	17.47	96.37	-148.92	1,049.51	3,853.89	4,132.30	4,018.55	113.75	36.328	
5,000.00	4,996.92	4,963.21	4,961.92	17.84	100.85	-148.95	1,049.51	3,853.89	4,135.50	4,016.91	118.59	34.873	
5,100.00	5,096.85	5,063.14	5,061.85	18.20	105.31	-148.97	1,049.51	3,853.89	4,138.69	4,015.28	123.41	33.535	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 065 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 839-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,173.06	5,171.57	18.56	110.23	-149.06	1,053.62	3,853.89	4,143.07	4,014.38	128.69	32.195	
5,300.00	5,296.71	5,293.29	5,291.68	18.92	115.60	-149.06	1,051.61	3,853.89	4,145.80	4,011.38	134.42	30.842	
5,400.00	5,396.64	5,364.15	5,361.64	19.29	118.77	-149.05	1,049.51	3,853.89	4,148.29	4,010.34	137.95	30.071	
5,500.00	5,496.57	5,464.08	5,461.57	19.65	123.48	-149.08	1,049.51	3,853.89	4,151.50	4,008.48	143.02	29.028	
5,600.00	5,596.50	5,564.01	5,561.50	20.01	128.18	-149.10	1,049.51	3,853.89	4,154.70	4,006.61	148.09	28.056	
5,700.00	5,696.43	5,671.60	5,668.90	20.37	133.25	-149.19	1,053.91	3,853.89	4,159.17	4,005.65	153.52	27.093	
5,800.00	5,796.36	5,791.07	5,788.26	20.74	138.88	-149.20	1,052.20	3,853.89	4,161.96	4,002.46	159.51	26.093	
5,900.00	5,896.29	5,910.78	5,907.80	21.10	144.52	-149.18	1,048.58	3,853.89	4,164.30	3,998.80	165.50	25.161	
6,000.00	5,996.22	5,965.01	5,961.22	21.46	147.19	-149.21	1,049.51	3,853.89	4,167.52	3,998.98	168.53	24.728	
6,100.00	6,096.15	6,064.94	6,061.15	21.82	152.04	-149.24	1,049.51	3,853.89	4,170.72	3,996.98	173.74	24.005	
6,200.00	6,196.08	6,168.81	6,164.85	22.19	157.08	-149.32	1,053.99	3,853.89	4,175.23	3,996.08	179.14	23.307	
6,300.00	6,296.01	6,288.64	6,284.58	22.55	162.90	-149.34	1,052.64	3,853.89	4,178.11	3,992.79	185.32	22.546	
6,335.60	6,331.59	6,331.36	6,327.26	22.68	164.97	-149.33	1,051.69	3,853.89	4,179.02	3,991.50	187.52	22.286	
6,350.00	6,345.97	6,348.64	6,344.51	22.73	165.81	-167.02	1,051.24	3,853.89	4,179.53	3,991.12	188.41	22.183	
6,400.00	6,395.75	6,408.48	6,404.27	22.91	168.71	175.17	1,049.36	3,853.89	4,183.64	3,992.15	191.49	21.848	
6,450.00	6,445.03	6,415.09	6,410.03	23.10	169.04	170.31	1,049.51	3,853.89	4,191.73	3,999.73	192.00	21.832	
6,500.00	6,493.52	6,463.57	6,458.52	23.29	171.43	167.92	1,049.51	3,853.89	4,203.67	4,009.10	194.57	21.605	
6,550.00	6,540.91	6,510.96	6,505.91	23.48	173.77	166.33	1,049.51	3,853.89	4,219.20	4,022.13	197.08	21.409	
6,600.00	6,586.91	6,556.97	6,551.91	23.66	176.04	165.05	1,049.51	3,853.89	4,238.24	4,038.73	199.51	21.243	
6,650.00	6,631.24	6,601.30	6,596.24	23.85	178.23	163.88	1,049.51	3,853.89	4,260.67	4,058.82	201.86	21.108	
6,700.00	6,673.63	6,643.68	6,638.63	24.05	180.33	162.70	1,049.51	3,853.89	4,286.36	4,082.27	204.09	21.002	
6,750.00	6,713.80	6,690.62	6,685.39	24.24	182.64	161.37	1,053.72	3,853.89	4,316.34	4,109.79	206.55	20.897	
6,800.00	6,751.52	6,736.36	6,731.10	24.44	184.90	159.97	1,053.32	3,853.89	4,347.95	4,139.02	208.93	20.810	
6,850.00	6,786.56	6,778.88	6,773.58	24.65	187.00	158.34	1,052.68	3,853.89	4,382.25	4,171.10	211.15	20.755	
6,900.00	6,818.69	6,817.91	6,812.56	24.87	188.93	156.39	1,051.88	3,853.89	4,419.04	4,205.86	213.18	20.730 SF	
6,950.00	6,847.72	6,853.18	6,847.80	25.10	190.67	154.01	1,050.97	3,853.89	4,458.12	4,243.11	215.01	20.735	
7,000.00	6,873.46	6,884.49	6,879.06	25.34	192.21	151.02	1,050.01	3,853.89	4,499.26	4,282.62	216.63	20.769	
7,050.00	6,895.77	6,911.62	6,906.15	25.60	193.55	147.20	1,049.07	3,853.89	4,542.22	4,324.18	218.04	20.832	
7,100.00	6,914.50	6,934.41	6,928.89	25.87	194.68	142.18	1,048.20	3,853.89	4,586.76	4,367.55	219.22	20.923	
7,150.00	6,929.54	6,900.80	6,894.54	26.15	193.02	134.22	1,049.51	3,853.89	4,632.86	4,415.26	217.60	21.291	
7,200.00	6,940.80	6,912.06	6,905.80	26.44	193.57	124.67	1,049.51	3,853.89	4,679.88	4,461.70	218.18	21.450	
7,250.00	6,948.20	6,919.46	6,913.20	26.75	193.93	112.05	1,049.51	3,853.89	4,727.61	4,509.04	218.57	21.630	
7,300.00	6,951.70	6,922.96	6,916.70	27.07	194.10	96.54	1,049.51	3,853.89	4,775.76	4,557.01	218.75	21.832	
7,321.06	6,952.00	6,923.26	6,917.00	27.20	194.11	89.52	1,049.51	3,853.89	4,796.10	4,577.33	218.77	21.923	
7,400.00	6,951.82	6,923.08	6,916.82	27.74	194.10	89.51	1,049.51	3,853.89	4,872.38	4,653.59	218.78	22.270	
7,500.00	6,951.60	6,922.86	6,916.60	28.49	194.09	89.50	1,049.51	3,853.89	4,969.13	4,750.32	218.80	22.711	
7,600.00	6,951.37	6,922.63	6,916.37	29.30	194.08	89.49	1,049.51	3,853.89	5,066.00	4,847.18	218.82	23.151	
7,700.00	6,951.15	6,922.41	6,916.15	30.18	194.07	89.48	1,049.51	3,853.89	5,163.00	4,944.15	218.85	23.591	
7,800.00	6,950.92	6,922.18	6,915.92	31.12	194.06	89.47	1,049.51	3,853.89	5,260.10	5,041.22	218.88	24.032	
7,900.00	6,950.70	6,921.96	6,915.70	32.11	194.05	89.46	1,049.51	3,853.89	5,357.32	5,138.40	218.92	24.472	
8,000.00	6,950.47	6,921.73	6,915.47	33.15	194.04	89.45	1,049.51	3,853.89	5,454.63	5,235.68	218.95	24.912	
8,100.00	6,950.25	6,921.51	6,915.25	34.23	194.03	89.44	1,049.51	3,853.89	5,552.04	5,333.05	218.99	25.353	
8,200.00	6,950.03	6,921.28	6,915.03	35.35	194.02	89.43	1,049.51	3,853.89	5,649.54	5,430.51	219.03	25.793	
8,300.00	6,949.80	6,921.06	6,914.80	36.51	194.00	89.42	1,049.51	3,853.89	5,747.13	5,528.05	219.08	26.233	
8,400.00	6,949.58	6,920.83	6,914.58	37.70	193.99	89.41	1,049.51	3,853.89	5,844.80	5,625.68	219.12	26.674	
8,500.00	6,949.35	6,920.61	6,914.35	38.92	193.98	89.40	1,049.51	3,853.89	5,942.54	5,723.38	219.17	27.114	
8,600.00	6,949.13	6,920.39	6,914.13	40.17	193.97	89.39	1,049.51	3,853.89	6,040.36	5,821.15	219.22	27.554	
8,700.00	6,948.90	6,920.16	6,913.90	41.44	193.96	89.38	1,049.51	3,853.89	6,138.25	5,918.99	219.27	27.994	
8,800.00	6,948.68	6,919.94	6,913.68	42.73	193.95	89.37	1,049.51	3,853.89	6,236.21	6,016.89	219.32	28.434	
8,900.00	6,948.45	6,919.71	6,913.45	44.04	193.94	89.36	1,049.51	3,853.89	6,334.23	6,114.86	219.37	28.874	
9,000.00	6,948.23	6,919.49	6,913.23	45.38	193.93	89.35	1,049.51	3,853.89	6,432.31	6,212.89	219.43	29.314	
9,100.00	6,948.00	6,919.26	6,913.00	46.72	193.92	89.34	1,049.51	3,853.89	6,530.45	6,310.97	219.48	29.754	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 065 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 839-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	6,919.04	6,912.78	48.09	193.91	89.33	1,049.51	3,853.89	6,628.65	6,409.11	219.54	30.194	
9,300.00	6,947.55	6,918.81	6,912.55	49.47	193.90	89.32	1,049.51	3,853.89	6,726.90	6,507.30	219.59	30.633	
9,400.00	6,947.33	6,918.59	6,912.33	50.86	193.88	89.31	1,049.51	3,853.89	6,825.20	6,605.54	219.65	31.073	
9,500.00	6,947.10	6,918.36	6,912.10	52.26	193.87	89.30	1,049.51	3,853.89	6,923.54	6,703.83	219.71	31.512	
9,600.00	6,946.88	6,918.14	6,911.88	53.68	193.86	89.29	1,049.51	3,853.89	7,021.94	6,802.17	219.77	31.951	
9,700.00	6,946.66	6,917.91	6,911.66	55.10	193.85	89.27	1,049.51	3,853.89	7,120.38	6,900.55	219.83	32.391	
9,800.00	6,946.43	6,917.69	6,911.43	56.54	193.84	89.26	1,049.51	3,853.89	7,218.86	6,998.97	219.89	32.830	
9,900.00	6,946.21	6,917.46	6,911.21	57.98	193.83	89.25	1,049.51	3,853.89	7,317.38	7,097.43	219.95	33.268	
10,000.00	6,945.98	6,917.24	6,910.98	59.43	193.82	89.24	1,049.51	3,853.89	7,415.95	7,195.94	220.01	33.707	
10,100.00	6,945.76	6,917.02	6,910.76	60.89	193.81	89.23	1,049.51	3,853.89	7,514.55	7,294.48	220.07	34.146	
10,200.00	6,945.53	6,916.79	6,910.53	62.36	193.80	89.22	1,049.51	3,853.89	7,613.18	7,393.05	220.13	34.584	
10,300.00	6,945.31	6,916.57	6,910.31	63.83	193.79	89.21	1,049.51	3,853.89	7,711.86	7,491.66	220.20	35.023	
10,400.00	6,945.08	6,916.34	6,910.08	65.31	193.78	89.20	1,049.51	3,853.89	7,810.56	7,590.30	220.26	35.461	
10,500.00	6,944.86	6,916.12	6,909.86	66.79	193.76	89.19	1,049.51	3,853.89	7,909.30	7,688.98	220.32	35.899	
10,600.00	6,944.63	6,915.89	6,909.63	68.28	193.75	89.18	1,049.51	3,853.89	8,008.07	7,787.69	220.39	36.337	
10,700.00	6,944.41	6,915.67	6,909.41	69.78	193.74	89.17	1,049.51	3,853.89	8,106.87	7,886.42	220.45	36.774	
10,800.00	6,944.18	6,915.44	6,909.18	71.28	193.73	89.16	1,049.51	3,853.89	8,205.70	7,985.19	220.51	37.212	
10,900.00	6,943.96	6,915.22	6,908.96	72.78	193.72	89.15	1,049.51	3,853.89	8,304.56	8,083.98	220.58	37.649	
11,000.00	6,943.73	6,914.99	6,908.73	74.29	193.71	89.14	1,049.51	3,853.89	8,403.44	8,182.80	220.64	38.086	
11,100.00	6,943.51	6,914.77	6,908.51	75.80	193.70	89.13	1,049.51	3,853.89	8,502.35	8,281.65	220.71	38.523	
11,200.00	6,943.29	6,914.54	6,908.29	77.32	193.69	89.12	1,049.51	3,853.89	8,601.29	8,380.52	220.77	38.960	
11,300.00	6,943.06	6,914.32	6,908.06	78.84	193.68	89.11	1,049.51	3,853.89	8,700.25	8,479.41	220.84	39.396	
11,400.00	6,942.84	6,914.09	6,907.84	80.36	193.67	89.10	1,049.51	3,853.89	8,799.23	8,578.33	220.90	39.833	
11,500.00	6,942.61	6,913.87	6,907.61	81.88	193.65	89.09	1,049.51	3,853.89	8,898.24	8,677.27	220.97	40.269	
11,600.00	6,942.39	6,913.65	6,907.39	83.41	193.64	89.08	1,049.51	3,853.89	8,997.27	8,776.23	221.04	40.705	
11,700.00	6,942.16	6,913.42	6,907.16	84.94	193.63	89.07	1,049.51	3,853.89	9,096.32	8,875.21	221.10	41.140	
11,800.00	6,941.94	6,913.20	6,906.94	86.47	193.62	89.06	1,049.51	3,853.89	9,195.39	8,974.22	221.17	41.576	
11,900.00	6,941.71	6,912.97	6,906.71	88.01	193.61	89.05	1,049.51	3,853.89	9,294.48	9,073.24	221.24	42.011	
12,000.00	6,941.49	6,912.75	6,906.49	89.55	193.60	89.04	1,049.51	3,853.89	9,393.59	9,172.28	221.31	42.446	
12,100.00	6,941.26	6,912.52	6,906.26	91.09	193.59	89.03	1,049.51	3,853.89	9,492.71	9,271.34	221.37	42.881	
12,200.00	6,941.04	6,912.30	6,906.04	92.63	193.58	89.02	1,049.51	3,853.89	9,591.86	9,370.42	221.44	43.315	
12,300.00	6,940.81	6,912.07	6,905.81	94.18	193.57	89.01	1,049.51	3,853.89	9,691.02	9,469.51	221.51	43.750	
12,400.00	6,940.59	6,911.85	6,905.59	95.72	193.56	89.00	1,049.51	3,853.89	9,790.20	9,568.62	221.58	44.184	
12,500.00	6,940.36	6,911.62	6,905.36	97.27	193.55	88.99	1,049.51	3,853.89	9,889.40	9,667.75	221.65	44.618	
12,600.00	6,940.14	6,911.40	6,905.14	98.82	193.53	88.97	1,049.51	3,853.89	9,988.61	9,766.90	221.72	45.051	
12,700.00	6,939.92	6,911.17	6,904.92	100.37	193.52	88.96	1,049.51	3,853.89	10,087.84	9,866.06	221.79	45.484	
12,800.00	6,939.69	6,910.95	6,904.69	101.92	193.51	88.95	1,049.51	3,853.89	10,187.09	9,965.23	221.86	45.917	
12,900.00	6,939.47	6,910.72	6,904.47	103.48	193.50	88.94	1,049.51	3,853.89	10,286.34	10,064.42	221.93	46.350	
13,000.00	6,939.24	6,910.50	6,904.24	105.03	193.49	88.93	1,049.51	3,853.89	10,385.62	10,163.62	222.00	46.783	
13,100.00	6,939.02	6,910.27	6,904.02	106.59	193.48	88.92	1,049.51	3,853.89	10,484.90	10,262.84	222.07	47.215	
13,200.00	6,938.79	6,910.05	6,903.79	108.15	193.47	88.91	1,049.51	3,853.89	10,584.20	10,362.06	222.14	47.647	
13,300.00	6,938.57	6,909.83	6,903.57	109.71	193.46	88.90	1,049.51	3,853.89	10,683.52	10,461.31	222.21	48.079	
13,400.00	6,938.34	6,909.60	6,903.34	111.27	193.45	88.89	1,049.51	3,853.89	10,782.84	10,560.56	222.28	48.510	
13,500.00	6,938.12	6,909.38	6,903.12	112.83	193.44	88.88	1,049.51	3,853.89	10,882.18	10,659.83	222.35	48.941	
13,600.00	6,937.89	6,909.15	6,902.89	114.40	193.43	88.87	1,049.51	3,853.89	10,981.53	10,759.10	222.42	49.372	
13,700.00	6,937.67	6,908.93	6,902.67	115.96	193.41	88.86	1,049.51	3,853.89	11,080.89	10,858.39	222.50	49.803	
13,800.00	6,937.44	6,908.70	6,902.44	117.53	193.40	88.85	1,049.51	3,853.89	11,180.26	10,957.69	222.57	50.233	
13,900.00	6,937.22	6,908.48	6,902.22	119.09	193.39	88.84	1,049.51	3,853.89	11,279.65	11,057.01	222.64	50.663	
14,000.00	6,936.99	6,908.25	6,901.99	120.66	193.38	88.83	1,049.51	3,853.89	11,379.04	11,156.33	222.71	51.092	
14,100.00	6,936.77	6,908.03	6,901.77	122.23	193.37	88.82	1,049.51	3,853.89	11,478.45	11,255.66	222.79	51.522	
14,200.00	6,936.55	6,907.80	6,901.55	123.80	193.36	88.81	1,049.51	3,853.89	11,577.86	11,355.00	222.86	51.951	
14,300.00	6,936.32	6,907.58	6,901.32	125.37	193.35	88.80	1,049.51	3,853.89	11,677.29	11,454.35	222.94	52.380	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 065 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 839-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	6,907.35	6,901.10	126.94	193.34	88.79	1,049.51	3,853.89	11,776.72	11,553.71	223.01	52.808	
14,500.00	6,935.87	6,907.13	6,900.87	128.51	193.33	88.78	1,049.51	3,853.89	11,876.17	11,653.08	223.08	53.236	
14,600.00	6,935.65	6,906.90	6,900.65	130.08	193.32	88.77	1,049.51	3,853.89	11,975.62	11,752.46	223.16	53.664	
14,700.00	6,935.42	6,906.68	6,900.42	131.65	193.30	88.76	1,049.51	3,853.89	12,075.09	11,851.85	223.23	54.091	
14,800.00	6,935.20	6,906.46	6,900.20	133.23	193.29	88.75	1,049.51	3,853.89	12,174.56	11,951.25	223.31	54.519	
14,900.00	6,934.97	6,906.23	6,899.97	134.80	193.28	88.74	1,049.51	3,853.89	12,274.04	12,050.65	223.39	54.946	
15,000.00	6,934.75	6,906.01	6,899.75	136.37	193.27	88.73	1,049.51	3,853.89	12,373.53	12,150.07	223.46	55.372	
15,100.00	6,934.52	6,905.78	6,899.52	137.95	193.26	88.72	1,049.51	3,853.89	12,473.02	12,249.49	223.54	55.798	
15,200.00	6,934.30	6,905.56	6,899.30	139.53	193.25	88.71	1,049.51	3,853.89	12,572.53	12,348.91	223.61	56.224	
15,300.00	6,934.07	6,905.33	6,899.07	141.10	193.24	88.70	1,049.51	3,853.89	12,672.04	12,448.35	223.69	56.650	
15,400.00	6,933.85	6,905.11	6,898.85	142.68	193.23	88.69	1,049.51	3,853.89	12,771.56	12,547.79	223.77	57.075	
15,500.00	6,933.62	6,904.88	6,898.62	144.26	193.22	88.67	1,049.51	3,853.89	12,871.09	12,647.24	223.85	57.500	
15,600.00	6,933.40	6,904.66	6,898.40	145.84	193.21	88.66	1,049.51	3,853.89	12,970.62	12,746.70	223.92	57.924	
15,700.00	6,933.18	6,904.43	6,898.18	147.42	193.20	88.65	1,049.51	3,853.89	13,070.17	12,846.16	224.00	58.348	
15,800.00	6,932.95	6,904.21	6,897.95	148.99	193.18	88.64	1,049.51	3,853.89	13,169.72	12,945.64	224.08	58.772	
15,900.00	6,932.73	6,903.98	6,897.73	150.57	193.17	88.63	1,049.51	3,853.89	13,269.27	13,045.11	224.16	59.196	
16,000.00	6,932.50	6,903.76	6,897.50	152.15	193.16	88.62	1,049.51	3,853.89	13,368.83	13,144.60	224.24	59.619	
16,100.00	6,932.28	6,903.53	6,897.28	153.74	193.15	88.61	1,049.51	3,853.89	13,468.40	13,244.09	224.32	60.042	
16,200.00	6,932.05	6,903.31	6,897.05	155.32	193.14	88.60	1,049.51	3,853.89	13,567.98	13,343.58	224.40	60.464	
16,300.00	6,931.83	6,903.09	6,896.83	156.90	193.13	88.59	1,049.51	3,853.89	13,667.56	13,443.08	224.48	60.886	
16,400.00	6,931.60	6,902.86	6,896.60	158.48	193.12	88.58	1,049.51	3,853.89	13,767.15	13,542.59	224.56	61.308	
16,500.00	6,931.38	6,902.64	6,896.38	160.06	193.11	88.57	1,049.51	3,853.89	13,866.74	13,642.10	224.64	61.729	
16,600.00	6,931.15	6,902.41	6,896.15	161.65	193.10	88.56	1,049.51	3,853.89	13,966.34	13,741.62	224.72	62.151	
16,700.00	6,930.93	6,902.19	6,895.93	163.23	193.09	88.55	1,049.51	3,853.89	14,065.94	13,841.15	224.80	62.571	
16,800.00	6,930.70	6,901.96	6,895.70	164.81	193.08	88.54	1,049.51	3,853.89	14,165.56	13,940.67	224.88	62.991	
16,900.00	6,930.48	6,901.74	6,895.48	166.40	193.06	88.53	1,049.51	3,853.89	14,265.17	14,040.21	224.96	63.411	
17,000.00	6,930.25	6,901.51	6,895.25	167.98	193.05	88.52	1,049.51	3,853.89	14,364.79	14,139.75	225.04	63.831	
17,100.00	6,930.03	6,901.29	6,895.03	169.56	193.04	88.51	1,049.51	3,853.89	14,464.42	14,239.29	225.13	64.250	
17,200.00	6,929.81	6,901.06	6,894.81	171.15	193.03	88.50	1,049.51	3,853.89	14,564.05	14,338.84	225.21	64.669	
17,300.00	6,929.58	6,900.84	6,894.58	172.73	193.02	88.49	1,049.51	3,853.89	14,663.69	14,438.40	225.29	65.088	
17,400.00	6,929.36	6,900.61	6,894.36	174.32	193.01	88.48	1,049.51	3,853.89	14,763.33	14,537.95	225.38	65.506	
17,500.00	6,929.13	6,900.39	6,894.13	175.91	193.00	88.47	1,049.51	3,853.89	14,862.98	14,637.52	225.46	65.923	
17,600.00	6,928.91	6,900.16	6,893.91	177.49	192.99	88.46	1,049.51	3,853.89	14,962.63	14,737.08	225.54	66.341	
17,700.00	6,928.68	6,949.13	6,943.59	179.08	195.41	90.75	1,047.60	3,853.89	15,062.22	14,834.15	228.06	66.045	
17,800.00	6,928.46	6,948.84	6,943.29	180.66	195.39	90.73	1,047.61	3,853.89	15,161.88	14,933.73	228.14	66.458	
17,900.00	6,928.23	6,948.54	6,943.00	182.25	195.38	90.72	1,047.63	3,853.89	15,261.54	15,033.32	228.22	66.871	
18,000.00	6,928.01	6,948.25	6,942.71	183.84	195.36	90.71	1,047.64	3,853.89	15,361.21	15,132.91	228.30	67.284	
18,100.00	6,927.78	6,947.95	6,942.41	185.43	195.35	90.69	1,047.65	3,853.89	15,460.89	15,232.50	228.39	67.696	
18,200.00	6,927.56	6,947.66	6,942.12	187.01	195.33	90.68	1,047.66	3,853.89	15,560.57	15,332.10	228.47	68.108	
18,300.00	6,927.33	6,947.36	6,941.82	188.60	195.32	90.66	1,047.68	3,853.89	15,660.25	15,431.70	228.55	68.520	
18,400.00	6,927.11	6,947.07	6,941.53	190.19	195.30	90.65	1,047.69	3,853.89	15,759.94	15,531.30	228.63	68.931	
18,500.00	6,926.88	6,946.77	6,941.24	191.78	195.29	90.64	1,047.70	3,853.89	15,859.63	15,630.91	228.72	69.342	
18,600.00	6,926.66	6,946.48	6,940.94	193.37	195.27	90.62	1,047.71	3,853.89	15,959.32	15,730.52	228.80	69.753	
18,700.00	6,926.44	6,946.19	6,940.65	194.96	195.26	90.61	1,047.72	3,853.89	16,059.02	15,830.14	228.88	70.163	
18,800.00	6,926.21	6,945.89	6,940.35	196.54	195.25	90.60	1,047.74	3,853.89	16,158.72	15,929.76	228.97	70.573	
18,900.00	6,925.99	6,945.60	6,940.06	198.13	195.23	90.58	1,047.75	3,853.89	16,258.43	16,029.38	229.05	70.982	
19,000.00	6,925.76	6,945.30	6,939.77	199.72	195.22	90.57	1,047.76	3,853.89	16,358.14	16,129.00	229.13	71.391	
19,100.00	6,925.54	6,945.01	6,939.47	201.31	195.20	90.56	1,047.77	3,853.89	16,457.85	16,228.63	229.22	71.800	
19,200.00	6,925.31	6,944.71	6,939.18	202.90	195.19	90.54	1,047.78	3,853.89	16,557.57	16,328.26	229.30	72.208	
19,300.00	6,925.09	6,944.42	6,938.89	204.49	195.17	90.53	1,047.80	3,853.89	16,657.29	16,427.90	229.39	72.616	
19,400.00	6,924.86	6,944.13	6,938.59	206.08	195.16	90.52	1,047.81	3,853.89	16,757.01	16,527.53	229.47	73.023	
19,500.00	6,924.64	6,943.83	6,938.30	207.67	195.14	90.50	1,047.82	3,853.89	16,856.73	16,627.17	229.56	73.431	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 065 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 839-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,600.00	6,924.41	6,943.54	6,938.01	209.26	195.13	90.49	1,047.83	3,853.89	16,956.46	16,726.82	229.65	73.837	
19,700.00	6,924.19	6,943.24	6,937.71	210.85	195.11	90.48	1,047.85	3,853.89	17,056.20	16,826.46	229.73	74.244	
19,800.00	6,923.96	6,942.95	6,937.42	212.44	195.10	90.46	1,047.86	3,853.89	17,155.93	16,926.11	229.82	74.650	
19,900.00	6,923.74	6,942.66	6,937.13	214.04	195.09	90.45	1,047.87	3,853.89	17,255.67	17,025.77	229.91	75.055	
20,000.00	6,923.51	6,942.36	6,936.83	215.63	195.07	90.43	1,047.88	3,853.89	17,355.41	17,125.42	229.99	75.461	
20,100.00	6,923.29	6,942.07	6,936.54	217.22	195.06	90.42	1,047.89	3,853.89	17,455.16	17,225.08	230.08	75.865	
20,200.00	6,923.07	6,941.77	6,936.25	218.81	195.04	90.41	1,047.91	3,853.89	17,554.91	17,324.74	230.17	76.270	
20,300.00	6,922.84	6,941.48	6,935.95	220.40	195.03	90.39	1,047.92	3,853.89	17,654.66	17,424.40	230.26	76.674	
20,400.00	6,922.62	6,941.19	6,935.66	221.99	195.01	90.38	1,047.93	3,853.89	17,754.41	17,524.07	230.34	77.078	
20,500.00	6,922.39	6,940.89	6,935.37	223.59	195.00	90.37	1,047.94	3,853.89	17,854.17	17,623.73	230.43	77.481	
20,600.00	6,922.17	6,940.60	6,935.07	225.18	194.98	90.35	1,047.95	3,853.89	17,953.92	17,723.40	230.52	77.884	
20,674.13	6,922.00	6,940.38	6,934.86	226.36	194.97	90.34	1,047.96	3,853.89	18,027.88	17,797.29	230.59	78.182	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 314-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	16.00	16.00	0.00	0.15	-98.03	-1,135.10	-8,050.17	8,129.81				
100.00	100.00	116.00	116.00	0.25	1.07	-98.03	-1,135.10	-8,050.17	8,129.81	8,128.48	1.32	6,144.004	
200.00	200.00	216.00	216.00	0.61	2.00	-98.03	-1,135.10	-8,050.17	8,129.81	8,127.20	2.61	3,119.784	
300.00	300.00	316.00	316.00	0.97	2.94	-98.03	-1,135.10	-8,050.17	8,129.81	8,125.90	3.91	2,080.187	
400.00	400.00	416.00	416.00	1.33	4.84	-98.03	-1,135.10	-8,050.17	8,129.81	8,123.64	6.17	1,317.793	
488.49	488.49	504.50	504.49	1.64	6.53	-98.02	-1,134.68	-8,050.17	8,129.75	8,121.58	8.17	995.062	
500.00	500.00	515.71	515.71	1.68	6.74	-98.02	-1,134.68	-8,050.17	8,129.75	8,121.32	8.42	964.983	
606.93	606.91	619.91	619.91	2.05	8.72	39.50	-1,134.83	-8,050.17	8,128.23	8,117.46	10.77	754.362	
700.00	699.91	715.94	715.91	2.37	10.58	39.52	-1,135.10	-8,050.17	8,125.59	8,112.64	12.94	627.878	
800.00	799.84	815.87	815.84	2.71	12.60	39.53	-1,135.10	-8,050.17	8,122.71	8,107.40	15.31	530.527	
900.00	899.77	912.72	912.68	3.06	14.57	39.55	-1,134.68	-8,050.17	8,119.77	8,102.15	17.62	460.779	
1,000.00	999.70	1,015.76	1,015.70	3.41	16.67	39.57	-1,135.10	-8,050.17	8,116.95	8,096.88	20.07	404.360	
1,100.00	1,099.63	1,115.69	1,115.63	3.76	18.78	39.58	-1,135.10	-8,050.17	8,114.07	8,091.54	22.54	360.040	
1,200.00	1,199.56	1,215.63	1,215.56	4.11	20.89	39.60	-1,135.10	-8,050.17	8,111.20	8,086.20	25.00	324.431	
1,300.00	1,299.49	1,314.98	1,314.91	4.47	22.99	39.63	-1,133.81	-8,050.17	8,108.14	8,080.69	27.46	295.323	
1,400.00	1,399.42	1,411.75	1,411.67	4.83	25.04	39.64	-1,134.00	-8,050.17	8,105.30	8,075.44	29.86	271.486	
1,500.00	1,499.35	1,508.54	1,508.45	5.19	27.08	39.65	-1,134.46	-8,050.17	8,102.49	8,070.23	32.26	251.187	
1,600.00	1,599.28	1,615.44	1,615.28	5.54	29.38	39.67	-1,135.10	-8,050.17	8,099.70	8,064.79	34.91	232.026	
1,700.00	1,699.21	1,715.39	1,715.21	5.90	31.70	39.68	-1,135.10	-8,050.17	8,096.82	8,059.24	37.58	215.432	
1,800.00	1,799.14	1,815.32	1,815.14	6.26	34.24	39.70	-1,135.10	-8,050.17	8,093.95	8,053.46	40.49	199.907	
1,900.00	1,899.07	1,915.25	1,915.07	6.62	36.79	39.72	-1,135.10	-8,050.17	8,091.08	8,047.69	43.39	186.458	
2,000.00	1,999.00	2,012.03	2,011.83	6.98	39.26	39.75	-1,133.50	-8,050.17	8,087.99	8,041.78	46.22	174.995	
2,100.00	2,098.94	2,106.73	2,106.51	7.34	41.67	39.76	-1,134.00	-8,050.17	8,085.20	8,036.21	48.99	165.035	
2,200.00	2,198.87	2,215.25	2,214.87	7.70	44.43	39.77	-1,135.10	-8,050.17	8,082.47	8,030.36	52.11	155.094	
2,300.00	2,298.80	2,315.18	2,314.80	8.06	46.92	39.79	-1,135.10	-8,050.17	8,079.60	8,024.64	54.96	147.003	
2,400.00	2,398.73	2,408.00	2,407.59	8.42	49.24	39.81	-1,134.24	-8,050.17	8,076.62	8,018.99	57.63	140.136	
2,500.00	2,498.66	2,515.14	2,514.66	8.79	51.80	39.82	-1,135.10	-8,050.17	8,073.87	8,013.31	60.56	133.328	
2,600.00	2,598.59	2,615.07	2,614.59	9.15	53.93	39.84	-1,135.10	-8,050.17	8,071.00	8,007.96	63.04	128.027	
2,700.00	2,698.52	2,715.00	2,714.52	9.51	56.05	39.85	-1,135.10	-8,050.17	8,068.13	8,002.61	65.53	123.129	
2,800.00	2,798.45	2,811.38	2,810.88	9.87	58.10	39.88	-1,133.86	-8,050.17	8,065.10	7,997.17	67.94	118.717	
2,900.00	2,898.38	2,906.88	2,906.37	10.23	60.13	39.89	-1,134.38	-8,050.17	8,062.31	7,991.99	70.33	114.641	
3,000.00	2,998.31	3,014.87	3,014.31	10.59	62.32	39.90	-1,135.10	-8,050.17	8,059.54	7,986.66	72.88	110.593	
3,100.00	3,098.24	3,114.80	3,114.24	10.96	64.09	39.92	-1,135.10	-8,050.17	8,056.68	7,981.67	75.00	107.417	
3,200.00	3,198.17	3,213.11	3,212.54	11.32	65.83	39.94	-1,134.52	-8,050.17	8,053.74	7,976.64	77.10	104.454	
3,300.00	3,298.10	3,309.44	3,308.87	11.68	67.53	39.96	-1,134.83	-8,050.17	8,050.92	7,971.75	79.17	101.695	
3,400.00	3,398.03	3,414.60	3,414.03	12.04	69.45	39.97	-1,135.10	-8,050.17	8,048.09	7,966.64	81.45	98.812	
3,500.00	3,497.96	3,514.53	3,513.96	12.40	71.32	39.99	-1,135.10	-8,050.17	8,045.23	7,961.55	83.68	96.144	
3,600.00	3,597.89	3,614.46	3,613.89	12.77	73.19	40.01	-1,135.10	-8,050.17	8,042.37	7,956.46	85.91	93.616	
3,700.00	3,697.82	3,714.25	3,713.67	13.13	75.06	40.03	-1,134.73	-8,050.17	8,039.46	7,951.33	88.14	91.217	
3,800.00	3,797.75	3,813.51	3,812.93	13.49	76.92	40.04	-1,134.77	-8,050.17	8,036.61	7,946.26	90.35	88.947	
3,900.00	3,897.68	3,912.77	3,912.19	13.85	78.77	40.06	-1,134.88	-8,050.17	8,033.77	7,941.20	92.57	86.785	
4,000.00	3,997.61	4,012.04	4,011.46	14.21	80.63	40.08	-1,135.06	-8,050.17	8,030.94	7,936.15	94.79	84.725	
4,100.00	4,097.54	4,114.16	4,113.54	14.58	83.35	40.09	-1,135.10	-8,050.17	8,028.08	7,930.22	97.87	82.032	
4,200.00	4,197.47	4,214.09	4,213.47	14.94	86.17	40.11	-1,135.10	-8,050.17	8,025.23	7,924.18	101.05	79.417	
4,300.00	4,297.40	4,313.18	4,312.55	15.30	88.98	40.13	-1,133.98	-8,050.17	8,022.23	7,918.02	104.22	76.977	
4,400.00	4,397.33	4,409.77	4,409.14	15.66	91.71	40.15	-1,134.21	-8,050.17	8,019.41	7,912.10	107.31	74.732	
4,500.00	4,497.26	4,506.39	4,505.75	16.03	94.44	40.16	-1,134.76	-8,050.17	8,016.63	7,906.23	110.40	72.613	
4,600.00	4,597.19	4,614.15	4,613.19	16.39	98.14	40.18	-1,135.10	-8,050.17	8,013.82	7,899.36	114.46	70.014	
4,700.00	4,697.12	4,702.43	4,701.41	16.75	101.50	40.20	-1,133.96	-8,050.17	8,010.83	7,892.64	118.19	67.782	
4,800.00	4,797.05	4,814.36	4,813.05	17.11	105.96	40.21	-1,135.10	-8,050.17	8,008.11	7,885.11	123.01	65.103	
4,900.00	4,896.99	4,902.15	4,900.78	17.47	109.64	40.24	-1,133.81	-8,050.17	8,005.11	7,878.06	127.05	63.009	
5,000.00	4,996.92	5,014.62	5,012.92	17.84	114.51	40.25	-1,135.10	-8,050.17	8,002.41	7,870.14	132.28	60.497	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 314-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	5,110.71	5,108.92	18.20	118.83	40.28	-1,132.96	-8,050.17	7,999.30	7,862.34	136.96	58.407	
5,200.00	5,196.78	5,190.93	5,189.08	18.56	122.44	40.29	-1,134.06	-8,050.17	7,996.62	7,855.70	140.93	56.743	
5,300.00	5,296.71	5,312.18	5,309.81	18.92	127.87	40.31	-1,133.75	-8,050.17	7,993.70	7,846.99	146.71	54.485	
5,400.00	5,396.64	5,415.28	5,412.64	19.29	132.39	40.32	-1,135.10	-8,050.17	7,991.02	7,839.42	151.60	52.711	
5,500.00	5,496.57	5,515.21	5,512.57	19.65	136.59	40.33	-1,135.10	-8,050.17	7,988.18	7,832.01	156.16	51.153	
5,600.00	5,596.50	5,614.85	5,612.09	20.01	140.78	40.38	-1,131.61	-8,050.17	7,984.90	7,824.18	160.71	49.685	
5,700.00	5,696.43	5,703.25	5,700.45	20.37	144.50	40.39	-1,132.15	-8,050.17	7,982.13	7,817.34	164.79	48.438	
5,800.00	5,796.36	5,791.80	5,788.92	20.74	148.22	40.39	-1,133.75	-8,050.17	7,979.51	7,810.64	168.87	47.252	
5,900.00	5,896.29	5,915.73	5,912.29	21.10	153.65	40.40	-1,135.10	-8,050.17	7,976.80	7,802.14	174.67	45.669	
6,000.00	5,996.22	6,015.66	6,012.22	21.46	158.16	40.42	-1,135.10	-8,050.17	7,973.96	7,794.43	179.53	44.416	
6,100.00	6,096.15	6,114.88	6,111.33	21.82	162.63	40.46	-1,131.33	-8,050.17	7,970.65	7,786.29	184.36	43.234	
6,200.00	6,196.08	6,205.52	6,201.93	22.19	166.71	40.48	-1,131.83	-8,050.17	7,967.88	7,779.08	188.81	42.201	
6,300.00	6,296.01	6,296.28	6,292.62	22.55	170.80	40.48	-1,133.21	-8,050.17	7,965.23	7,771.97	193.26	41.216	
6,335.60	6,331.59	6,328.61	6,324.93	22.68	172.26	40.48	-1,133.92	-8,050.17	7,964.31	7,769.47	194.84	40.876	
6,350.00	6,345.97	6,341.69	6,337.99	22.73	172.85	22.80	-1,134.23	-8,050.17	7,963.79	7,768.30	195.48	40.739	
6,400.00	6,395.75	6,416.26	6,411.75	22.91	176.43	5.03	-1,135.10	-8,050.17	7,959.37	7,760.13	199.25	39.947	
6,450.00	6,445.03	6,465.55	6,461.03	23.10	178.92	0.30	-1,135.10	-8,050.17	7,951.03	7,749.11	201.92	39.378	
6,500.00	6,493.52	6,514.03	6,509.52	23.29	181.37	-1.95	-1,135.10	-8,050.17	7,938.88	7,734.34	204.54	38.812	
6,550.00	6,540.91	6,561.42	6,556.91	23.48	183.77	-3.34	-1,135.10	-8,050.17	7,923.00	7,715.88	207.11	38.255	
6,600.00	6,586.91	6,607.43	6,602.91	23.66	186.09	-4.37	-1,135.10	-8,050.17	7,903.47	7,693.87	209.60	37.707	
6,650.00	6,631.24	6,648.34	6,643.67	23.85	188.16	-5.20	-1,130.82	-8,050.17	7,879.91	7,668.09	211.82	37.200	
6,700.00	6,673.63	6,685.75	6,681.05	24.05	190.05	-6.01	-1,131.05	-8,050.17	7,853.53	7,639.67	213.86	36.722	
6,750.00	6,713.80	6,721.24	6,716.50	24.24	191.84	-6.84	-1,131.45	-8,050.17	7,823.97	7,608.17	215.79	36.257	
6,800.00	6,751.52	6,754.58	6,749.81	24.44	193.53	-7.75	-1,131.99	-8,050.17	7,791.40	7,573.79	217.60	35.805	
6,850.00	6,786.56	6,785.56	6,780.76	24.65	195.10	-8.78	-1,132.63	-8,050.17	7,756.01	7,536.73	219.28	35.370	
6,900.00	6,818.69	6,813.99	6,809.16	24.87	196.53	-10.01	-1,133.34	-8,050.17	7,718.03	7,497.21	220.82	34.951	
6,950.00	6,847.72	6,839.68	6,834.81	25.10	197.83	-11.53	-1,134.07	-8,050.17	7,677.69	7,455.48	222.21	34.551	
7,000.00	6,873.46	6,895.26	6,889.46	25.34	200.42	-13.59	-1,135.10	-8,050.17	7,635.20	7,410.32	224.87	33.953	
7,050.00	6,895.77	6,917.57	6,911.77	25.60	201.34	-16.25	-1,135.10	-8,050.17	7,590.77	7,364.92	225.85	33.609	
7,100.00	6,914.50	6,936.30	6,930.50	25.87	202.11	-20.00	-1,135.10	-8,050.17	7,544.77	7,318.09	226.67	33.285	
7,150.00	6,929.54	6,951.34	6,945.54	26.15	202.73	-25.63	-1,135.10	-8,050.17	7,497.46	7,270.13	227.33	32.980	
7,200.00	6,940.80	6,962.60	6,956.80	26.44	203.19	-34.73	-1,135.10	-8,050.17	7,449.15	7,221.33	227.82	32.697	
7,250.00	6,948.20	6,970.00	6,964.20	26.75	203.50	-50.55	-1,135.10	-8,050.17	7,400.13	7,171.99	228.14	32.437	
7,300.00	6,951.70	6,973.50	6,967.70	27.07	203.64	-77.21	-1,135.10	-8,050.17	7,350.71	7,122.42	228.29	32.198	
7,321.06	6,952.00	6,973.80	6,968.00	27.20	203.65	-90.94	-1,135.10	-8,050.17	7,329.85	7,101.54	228.31	32.105	
7,400.00	6,951.82	6,973.62	6,967.82	27.74	203.65	-90.93	-1,135.10	-8,050.17	7,251.65	7,023.34	228.31	31.763	
7,500.00	6,951.60	6,973.40	6,967.60	28.49	203.64	-90.92	-1,135.10	-8,050.17	7,152.61	6,924.30	228.30	31.329	
7,600.00	6,951.37	6,973.17	6,967.37	29.30	203.63	-90.90	-1,135.10	-8,050.17	7,053.59	6,825.29	228.31	30.895	
7,700.00	6,951.15	6,972.95	6,967.15	30.18	203.62	-90.89	-1,135.10	-8,050.17	6,954.61	6,726.30	228.31	30.461	
7,800.00	6,950.92	6,972.72	6,966.92	31.12	203.61	-90.88	-1,135.10	-8,050.17	6,855.65	6,627.33	228.32	30.026	
7,900.00	6,950.70	6,972.50	6,966.70	32.11	203.60	-90.86	-1,135.10	-8,050.17	6,756.73	6,528.39	228.34	29.591	
8,000.00	6,950.47	6,972.27	6,966.47	33.15	203.59	-90.85	-1,135.10	-8,050.17	6,657.84	6,429.48	228.36	29.155	
8,100.00	6,950.25	6,972.05	6,966.25	34.23	203.58	-90.84	-1,135.10	-8,050.17	6,558.98	6,330.60	228.38	28.720	
8,200.00	6,950.03	6,971.83	6,966.03	35.35	203.57	-90.83	-1,135.10	-8,050.17	6,460.15	6,231.75	228.41	28.283	
8,300.00	6,949.80	6,971.60	6,965.80	36.51	203.56	-90.81	-1,135.10	-8,050.17	6,361.37	6,132.93	228.44	27.847	
8,400.00	6,949.58	6,971.38	6,965.58	37.70	203.55	-90.80	-1,135.10	-8,050.17	6,262.62	6,034.14	228.48	27.410	
8,500.00	6,949.35	6,971.15	6,965.35	38.92	203.55	-90.79	-1,135.10	-8,050.17	6,163.91	5,935.38	228.53	26.972	
8,600.00	6,949.13	6,970.93	6,965.13	40.17	203.54	-90.77	-1,135.10	-8,050.17	6,065.24	5,836.66	228.58	26.534	
8,700.00	6,948.90	6,970.70	6,964.90	41.44	203.53	-90.76	-1,135.10	-8,050.17	5,966.62	5,737.98	228.64	26.096	
8,800.00	6,948.68	6,970.48	6,964.68	42.73	203.52	-90.75	-1,135.10	-8,050.17	5,868.05	5,639.34	228.71	25.658	
8,900.00	6,948.45	6,970.25	6,964.45	44.04	203.51	-90.73	-1,135.10	-8,050.17	5,769.52	5,540.74	228.78	25.219	
9,000.00	6,948.23	6,970.03	6,964.23	45.38	203.50	-90.72	-1,135.10	-8,050.17	5,671.05	5,442.18	228.86	24.779	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 314-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
9,100.00	6,948.00	6,969.80	6,964.00	46.72	203.49	-90.71	-1,135.10	-8,050.17	5,572.63	5,343.67	228.96	24.339	
9,200.00	6,947.78	6,969.58	6,963.78	48.09	203.48	-90.70	-1,135.10	-8,050.17	5,474.27	5,245.21	229.06	23.899	
9,300.00	6,947.55	6,969.35	6,963.55	49.47	203.47	-90.68	-1,135.10	-8,050.17	5,375.96	5,146.79	229.17	23.458	
9,400.00	6,947.33	6,969.13	6,963.33	50.86	203.46	-90.67	-1,135.10	-8,050.17	5,277.72	5,048.43	229.30	23.017	
9,500.00	6,947.10	6,968.90	6,963.10	52.26	203.45	-90.66	-1,135.10	-8,050.17	5,179.55	4,950.12	229.43	22.575	
9,600.00	6,946.88	6,968.68	6,962.88	53.68	203.44	-90.64	-1,135.10	-8,050.17	5,081.45	4,851.87	229.59	22.133	
9,700.00	6,946.66	6,968.46	6,962.66	55.10	203.43	-90.63	-1,135.10	-8,050.17	4,983.43	4,753.68	229.75	21.691	
9,800.00	6,946.43	6,968.23	6,962.43	56.54	203.43	-90.62	-1,135.10	-8,050.17	4,885.49	4,655.55	229.93	21.248	
9,900.00	6,946.21	6,968.01	6,962.21	57.98	203.42	-90.61	-1,135.10	-8,050.17	4,787.63	4,557.50	230.13	20.804	
10,000.00	6,945.98	6,967.78	6,961.98	59.43	203.41	-90.59	-1,135.10	-8,050.17	4,689.86	4,459.51	230.34	20.360	
10,100.00	6,945.76	6,967.56	6,961.76	60.89	203.40	-90.58	-1,135.10	-8,050.17	4,592.19	4,361.60	230.58	19.916	
10,200.00	6,945.53	6,967.33	6,961.53	62.36	203.39	-90.57	-1,135.10	-8,050.17	4,494.61	4,263.78	230.84	19.471	
10,300.00	6,945.31	6,967.11	6,961.31	63.83	203.38	-90.55	-1,135.10	-8,050.17	4,397.15	4,166.04	231.12	19.026	
10,400.00	6,945.08	6,966.88	6,961.08	65.31	203.37	-90.54	-1,135.10	-8,050.17	4,299.81	4,068.39	231.42	18.580	
10,500.00	6,944.86	6,966.66	6,960.86	66.79	203.36	-90.53	-1,135.10	-8,050.17	4,202.59	3,970.84	231.75	18.134	
10,600.00	6,944.63	6,966.43	6,960.63	68.28	203.35	-90.52	-1,135.10	-8,050.17	4,105.50	3,873.39	232.11	17.687	
10,700.00	6,944.41	6,966.21	6,960.41	69.78	203.34	-90.50	-1,135.10	-8,050.17	4,008.56	3,776.05	232.51	17.241	
10,800.00	6,944.18	6,965.98	6,960.18	71.28	203.33	-90.49	-1,135.10	-8,050.17	3,911.77	3,678.84	232.93	16.794	
10,900.00	6,943.96	6,965.76	6,959.96	72.78	203.32	-90.48	-1,135.10	-8,050.17	3,815.15	3,581.75	233.40	16.346	
11,000.00	6,943.73	6,965.53	6,959.73	74.29	203.31	-90.46	-1,135.10	-8,050.17	3,718.70	3,484.80	233.90	15.899	
11,100.00	6,943.51	6,965.31	6,959.51	75.80	203.31	-90.45	-1,135.10	-8,050.17	3,622.45	3,388.00	234.45	15.451	
11,200.00	6,943.29	6,965.09	6,959.29	77.32	203.30	-90.44	-1,135.10	-8,050.17	3,526.40	3,291.36	235.05	15.003	
11,300.00	6,943.06	6,964.86	6,959.06	78.84	203.29	-90.42	-1,135.10	-8,050.17	3,430.59	3,194.89	235.70	14.555	
11,400.00	6,942.84	6,964.64	6,958.84	80.36	203.28	-90.41	-1,135.10	-8,050.17	3,335.01	3,098.61	236.40	14.107	
11,500.00	6,942.61	6,964.41	6,958.61	81.88	203.27	-90.40	-1,135.10	-8,050.17	3,239.71	3,002.54	237.17	13.660	
11,600.00	6,942.39	6,964.19	6,958.39	83.41	203.26	-90.39	-1,135.10	-8,050.17	3,144.70	2,906.69	238.01	13.212	
11,700.00	6,942.16	6,963.96	6,958.16	84.94	203.25	-90.37	-1,135.10	-8,050.17	3,050.00	2,811.08	238.92	12.766	
11,800.00	6,941.94	6,963.74	6,957.94	86.47	203.24	-90.36	-1,135.10	-8,050.17	2,955.66	2,715.74	239.91	12.320	
11,900.00	6,941.71	6,963.51	6,957.71	88.01	203.23	-90.35	-1,135.10	-8,050.17	2,861.70	2,620.70	240.99	11.875	
12,000.00	6,941.49	6,963.29	6,957.49	89.55	203.22	-90.33	-1,135.10	-8,050.17	2,768.16	2,525.99	242.17	11.431	
12,100.00	6,941.26	6,963.06	6,957.26	91.09	203.21	-90.32	-1,135.10	-8,050.17	2,675.09	2,431.63	243.45	10.988	
12,200.00	6,941.04	6,962.84	6,957.04	92.63	203.20	-90.31	-1,135.10	-8,050.17	2,582.54	2,337.68	244.85	10.547	
12,300.00	6,940.81	6,962.61	6,956.81	94.18	203.19	-90.30	-1,135.10	-8,050.17	2,490.56	2,244.18	246.38	10.109	
12,400.00	6,940.59	6,962.39	6,956.59	95.72	203.18	-90.28	-1,135.10	-8,050.17	2,399.22	2,151.17	248.05	9.672	
12,500.00	6,940.36	6,962.16	6,956.36	97.27	203.18	-90.27	-1,135.10	-8,050.17	2,308.61	2,058.74	249.87	9.239	
12,600.00	6,940.14	6,961.94	6,956.14	98.82	203.17	-90.26	-1,135.10	-8,050.17	2,218.80	1,966.93	251.87	8.809	
12,700.00	6,939.92	6,961.72	6,955.92	100.37	203.16	-90.24	-1,135.10	-8,050.17	2,129.90	1,875.85	254.05	8.384	
12,800.00	6,939.69	6,961.49	6,955.69	101.92	203.15	-90.23	-1,135.10	-8,050.17	2,042.02	1,785.59	256.43	7.963	
12,900.00	6,939.47	6,961.27	6,955.47	103.48	203.14	-90.22	-1,135.10	-8,050.17	1,955.31	1,696.28	259.04	7.548	
13,000.00	6,939.24	6,961.04	6,955.24	105.03	203.13	-90.20	-1,135.10	-8,050.17	1,869.93	1,608.04	261.89	7.140	
13,100.00	6,939.02	6,960.82	6,955.02	106.59	203.12	-90.19	-1,135.10	-8,050.17	1,786.07	1,521.06	265.01	6.740	
13,200.00	6,938.79	6,960.59	6,954.79	108.15	203.11	-90.18	-1,135.10	-8,050.17	1,703.95	1,435.53	268.42	6.348	
13,300.00	6,938.57	6,960.37	6,954.57	109.71	203.10	-90.17	-1,135.10	-8,050.17	1,623.83	1,351.69	272.14	5.967	
13,400.00	6,938.34	6,960.14	6,954.34	111.27	203.09	-90.15	-1,135.10	-8,050.17	1,546.03	1,269.85	276.19	5.598	
13,500.00	6,938.12	6,959.92	6,954.12	112.83	203.08	-90.14	-1,135.10	-8,050.17	1,470.92	1,190.35	280.58	5.242	
13,600.00	6,937.89	6,959.69	6,953.89	114.40	203.07	-90.13	-1,135.10	-8,050.17	1,398.93	1,113.62	285.31	4.903	
13,700.00	6,937.67	6,959.47	6,953.67	115.96	203.06	-90.11	-1,135.10	-8,050.17	1,330.57	1,040.19	290.38	4.582	
13,800.00	6,937.44	6,959.24	6,953.44	117.53	203.06	-90.10	-1,135.10	-8,050.17	1,266.41	970.67	295.74	4.282	
13,900.00	6,937.22	6,959.02	6,953.22	119.09	203.05	-90.09	-1,135.10	-8,050.17	1,207.14	905.80	301.34	4.006	
14,000.00	6,936.99	6,958.79	6,952.99	120.66	203.04	-90.08	-1,135.10	-8,050.17	1,153.51	846.44	307.07	3.756	
14,100.00	6,936.77	6,958.57	6,952.77	122.23	203.03	-90.06	-1,135.10	-8,050.17	1,106.34	793.56	312.78	3.537	
14,200.00	6,936.55	6,958.35	6,952.55	123.80	203.02	-90.05	-1,135.10	-8,050.17	1,066.48	748.21	318.26	3.351	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 314-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	6,958.12	6,952.32	125.37	203.01	-90.04	-1,135.10	-8,050.17	1,034.78	711.50	323.28	3.201	
14,400.00	6,936.10	6,957.90	6,952.10	126.94	203.00	-90.02	-1,135.10	-8,050.17	1,012.01	684.43	327.58	3.089	
14,500.00	6,935.87	6,957.67	6,951.87	128.51	202.99	-90.01	-1,135.10	-8,050.17	998.78	667.88	330.90	3.018	
14,583.03	6,935.68	6,957.48	6,951.68	129.81	202.98	-90.00	-1,135.10	-8,050.17	995.32	662.54	332.78	2.991	CC
14,600.00	6,935.65	6,957.45	6,951.65	130.08	202.98	-90.00	-1,135.10	-8,050.17	995.46	662.40	333.06	2.989	ES, SF
14,700.00	6,935.42	6,957.22	6,951.42	131.65	202.97	-89.98	-1,135.10	-8,050.17	1,002.17	668.19	333.98	3.001	
14,800.00	6,935.20	6,957.00	6,951.20	133.23	202.96	-89.97	-1,135.10	-8,050.17	1,018.69	685.03	333.66	3.053	
14,900.00	6,934.97	6,956.77	6,950.97	134.80	202.95	-89.96	-1,135.10	-8,050.17	1,044.57	712.32	332.25	3.144	
15,000.00	6,934.75	6,956.55	6,950.75	136.37	202.94	-89.95	-1,135.10	-8,050.17	1,079.13	749.20	329.92	3.271	
15,100.00	6,934.52	6,956.32	6,950.52	137.95	202.94	-89.93	-1,135.10	-8,050.17	1,121.57	794.65	326.91	3.431	
15,200.00	6,934.30	6,956.10	6,950.30	139.53	202.93	-89.92	-1,135.10	-8,050.17	1,171.03	847.59	323.44	3.621	
15,300.00	6,934.07	6,955.87	6,950.07	141.10	202.92	-89.91	-1,135.10	-8,050.17	1,226.66	906.96	319.70	3.837	
15,400.00	6,933.85	6,955.65	6,949.85	142.68	202.91	-89.89	-1,135.10	-8,050.17	1,287.67	971.82	315.85	4.077	
15,500.00	6,933.62	6,955.42	6,949.62	144.26	202.90	-89.88	-1,135.10	-8,050.17	1,353.32	1,041.32	312.00	4.338	
15,600.00	6,933.40	6,955.20	6,949.40	145.84	202.89	-89.87	-1,135.10	-8,050.17	1,422.98	1,114.73	308.25	4.616	
15,700.00	6,933.18	6,954.98	6,949.18	147.42	202.88	-89.86	-1,135.10	-8,050.17	1,496.08	1,191.44	304.64	4.911	
15,800.00	6,932.95	6,954.75	6,948.95	148.99	202.87	-89.84	-1,135.10	-8,050.17	1,572.15	1,270.94	301.21	5.219	
15,900.00	6,932.73	6,954.53	6,948.73	150.57	202.86	-89.83	-1,135.10	-8,050.17	1,650.77	1,352.80	297.97	5.540	
16,000.00	6,932.50	6,954.30	6,948.50	152.15	202.85	-89.82	-1,135.10	-8,050.17	1,731.60	1,436.66	294.94	5.871	
16,100.00	6,932.28	6,954.08	6,948.28	153.74	202.84	-89.80	-1,135.10	-8,050.17	1,814.34	1,522.24	292.10	6.211	
16,200.00	6,932.05	6,953.85	6,948.05	155.32	202.83	-89.79	-1,135.10	-8,050.17	1,898.74	1,609.28	289.46	6.560	
16,300.00	6,931.83	6,953.63	6,947.83	156.90	202.82	-89.78	-1,135.10	-8,050.17	1,984.59	1,697.60	287.00	6.915	
16,400.00	6,931.60	6,953.40	6,947.60	158.48	202.81	-89.77	-1,135.10	-8,050.17	2,071.71	1,787.01	284.71	7.277	
16,500.00	6,931.38	6,953.18	6,947.38	160.06	202.81	-89.75	-1,135.10	-8,050.17	2,159.95	1,877.37	282.58	7.644	
16,600.00	6,931.15	6,952.95	6,947.15	161.65	202.80	-89.74	-1,135.10	-8,050.17	2,249.17	1,968.57	280.60	8.016	
16,700.00	6,930.93	6,952.73	6,946.93	163.23	202.79	-89.73	-1,135.10	-8,050.17	2,339.27	2,060.51	278.76	8.392	
16,800.00	6,930.70	6,952.50	6,946.70	164.81	202.78	-89.71	-1,135.10	-8,050.17	2,430.14	2,153.09	277.04	8.772	
16,900.00	6,930.48	6,952.28	6,946.48	166.40	202.77	-89.70	-1,135.10	-8,050.17	2,521.70	2,246.25	275.45	9.155	
17,000.00	6,930.25	6,952.05	6,946.25	167.98	202.76	-89.69	-1,135.10	-8,050.17	2,613.88	2,339.92	273.96	9.541	
17,100.00	6,930.03	6,951.83	6,946.03	169.56	202.75	-89.67	-1,135.10	-8,050.17	2,706.61	2,434.04	272.57	9.930	
17,200.00	6,929.81	6,951.61	6,945.81	171.15	202.74	-89.66	-1,135.10	-8,050.17	2,799.84	2,528.58	271.27	10.321	
17,300.00	6,929.58	6,951.38	6,945.58	172.73	202.73	-89.65	-1,135.10	-8,050.17	2,893.53	2,623.48	270.05	10.715	
17,400.00	6,929.36	6,951.16	6,945.36	174.32	202.72	-89.64	-1,135.10	-8,050.17	2,987.63	2,718.71	268.91	11.110	
17,500.00	6,929.13	6,950.93	6,945.13	175.91	202.71	-89.62	-1,135.10	-8,050.17	3,082.09	2,814.25	267.85	11.507	
17,600.00	6,928.91	6,950.71	6,944.91	177.49	202.70	-89.61	-1,135.10	-8,050.17	3,176.90	2,910.05	266.85	11.905	
17,700.00	6,928.68	6,950.48	6,944.68	179.08	202.69	-89.60	-1,135.10	-8,050.17	3,272.01	3,006.11	265.91	12.305	
17,800.00	6,928.46	6,950.26	6,944.46	180.66	202.69	-89.58	-1,135.10	-8,050.17	3,367.41	3,102.39	265.03	12.706	
17,900.00	6,928.23	6,950.03	6,944.23	182.25	202.68	-89.57	-1,135.10	-8,050.17	3,463.07	3,198.88	264.19	13.108	
18,000.00	6,928.01	6,949.81	6,944.01	183.84	202.67	-89.56	-1,135.10	-8,050.17	3,558.97	3,295.55	263.41	13.511	
18,100.00	6,927.78	6,949.58	6,943.78	185.43	202.66	-89.55	-1,135.10	-8,050.17	3,655.08	3,392.41	262.68	13.915	
18,200.00	6,927.56	6,949.36	6,943.56	187.01	202.65	-89.53	-1,135.10	-8,050.17	3,751.40	3,489.42	261.98	14.319	
18,300.00	6,927.33	6,949.13	6,943.33	188.60	202.64	-89.52	-1,135.10	-8,050.17	3,847.91	3,586.59	261.32	14.725	
18,400.00	6,927.11	6,948.91	6,943.11	190.19	202.63	-89.51	-1,135.10	-8,050.17	3,944.59	3,683.89	260.71	15.130	
18,500.00	6,926.88	6,948.68	6,942.88	191.78	202.62	-89.49	-1,135.10	-8,050.17	4,041.43	3,781.31	260.12	15.537	
18,600.00	6,926.66	6,948.46	6,942.66	193.37	202.61	-89.48	-1,135.10	-8,050.17	4,138.43	3,878.86	259.57	15.944	
18,700.00	6,926.44	6,948.24	6,942.44	194.96	202.60	-89.47	-1,135.10	-8,050.17	4,235.56	3,976.52	259.04	16.351	
18,800.00	6,926.21	6,948.01	6,942.21	196.54	202.59	-89.45	-1,135.10	-8,050.17	4,332.82	4,074.28	258.55	16.758	
18,900.00	6,925.99	6,947.79	6,941.99	198.13	202.58	-89.44	-1,135.10	-8,050.17	4,430.21	4,172.13	258.08	17.166	
19,000.00	6,925.76	6,947.56	6,941.76	199.72	202.57	-89.43	-1,135.10	-8,050.17	4,527.71	4,270.08	257.63	17.574	
19,100.00	6,925.54	6,947.34	6,941.54	201.31	202.57	-89.42	-1,135.10	-8,050.17	4,625.31	4,368.11	257.21	17.983	
19,200.00	6,925.31	6,947.11	6,941.31	202.90	202.56	-89.40	-1,135.10	-8,050.17	4,723.02	4,466.21	256.81	18.391	
19,300.00	6,925.09	6,946.89	6,941.09	204.49	202.55	-89.39	-1,135.10	-8,050.17	4,820.82	4,564.39	256.43	18.800	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 314-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,400.00	6,924.86	6,946.66	6,940.86	206.08	202.54	-89.38	-1,135.10	-8,050.17	4,918.71	4,662.64	256.06	19.209	
19,500.00	6,924.64	6,946.44	6,940.64	207.67	202.53	-89.36	-1,135.10	-8,050.17	5,016.68	4,760.96	255.72	19.618	
19,600.00	6,924.41	6,946.21	6,940.41	209.26	202.52	-89.35	-1,135.10	-8,050.17	5,114.73	4,859.33	255.40	20.027	
19,700.00	6,924.19	6,945.99	6,940.19	210.85	202.51	-89.34	-1,135.10	-8,050.17	5,212.85	4,957.77	255.09	20.436	
19,800.00	6,923.96	6,945.76	6,939.96	212.44	202.50	-89.33	-1,135.10	-8,050.17	5,311.05	5,056.26	254.79	20.845	
19,900.00	6,923.74	6,945.54	6,939.74	214.04	202.49	-89.31	-1,135.10	-8,050.17	5,409.31	5,154.80	254.51	21.254	
20,000.00	6,923.51	6,945.31	6,939.51	215.63	202.48	-89.30	-1,135.10	-8,050.17	5,507.63	5,253.39	254.25	21.663	
20,100.00	6,923.29	6,945.09	6,939.29	217.22	202.47	-89.29	-1,135.10	-8,050.17	5,606.01	5,352.02	253.99	22.071	
20,200.00	6,923.07	6,944.87	6,939.07	218.81	202.46	-89.27	-1,135.10	-8,050.17	5,704.45	5,450.70	253.75	22.480	
20,300.00	6,922.84	6,944.64	6,938.84	220.40	202.45	-89.26	-1,135.10	-8,050.17	5,802.95	5,549.42	253.53	22.889	
20,400.00	6,922.62	6,944.42	6,938.62	221.99	202.44	-89.25	-1,135.10	-8,050.17	5,901.49	5,648.18	253.31	23.298	
20,500.00	6,922.39	6,944.19	6,938.39	223.59	202.44	-89.23	-1,135.10	-8,050.17	6,000.08	5,746.98	253.10	23.706	
20,600.00	6,922.17	6,943.97	6,938.17	225.18	202.43	-89.22	-1,135.10	-8,050.17	6,098.72	5,845.81	252.91	24.115	
20,674.13	6,922.00	6,943.80	6,938.00	226.36	202.42	-89.21	-1,135.10	-8,050.17	6,171.86	5,919.10	252.77	24.417	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 74-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-93.12	-355.30	-6,514.58	6,524.27				
100.00	100.00	80.97	80.97	0.25	0.50	-93.12	-354.77	-6,514.80	6,524.52	6,523.78	0.74	8,856.878	
200.00	200.00	180.96	180.95	0.61	1.42	-93.11	-353.56	-6,515.32	6,524.97	6,522.98	1.99	3,279.434	
300.00	300.00	271.07	271.05	0.97	2.10	-93.09	-352.31	-6,515.85	6,525.48	6,522.48	3.00	2,173.560	
400.00	400.00	362.61	362.57	1.33	2.82	-93.08	-350.63	-6,516.56	6,526.16	6,522.11	4.04	1,613.857	
500.00	500.00	470.36	470.30	1.68	3.89	-93.06	-348.69	-6,517.38	6,526.83	6,521.38	5.44	1,199.110	
606.93	606.91	585.56	585.48	2.05	5.03	44.48	-346.99	-6,518.10	6,525.98	6,519.06	6.92	942.613	
700.00	699.91	680.81	680.72	2.37	6.41	44.51	-345.83	-6,518.60	6,523.93	6,515.33	8.60	758.637	
800.00	799.84	780.71	780.62	2.71	8.08	44.54	-344.62	-6,519.11	6,521.71	6,511.11	10.60	615.236	
900.00	899.77	880.61	880.51	3.06	9.75	44.58	-343.42	-6,519.62	6,519.50	6,506.90	12.61	517.192	
1,000.00	999.70	980.51	980.40	3.41	11.42	44.61	-342.22	-6,520.13	6,517.29	6,502.68	14.61	445.966	
1,100.00	1,099.63	1,080.41	1,080.30	3.76	13.09	44.64	-341.01	-6,520.64	6,515.09	6,498.46	16.62	391.898	
1,200.00	1,199.56	1,178.83	1,178.70	4.11	14.59	44.68	-339.80	-6,521.15	6,512.89	6,494.42	18.47	352.655	
1,300.00	1,299.49	1,276.81	1,276.67	4.47	16.05	44.71	-338.53	-6,521.69	6,510.73	6,490.46	20.26	321.296	
1,400.00	1,399.42	1,374.78	1,374.63	4.83	17.51	44.75	-337.17	-6,522.27	6,508.59	6,486.53	22.06	295.032	
1,500.00	1,499.35	1,472.75	1,472.59	5.19	18.97	44.78	-335.74	-6,522.88	6,506.49	6,482.63	23.86	272.716	
1,600.00	1,599.28	1,570.71	1,570.54	5.54	20.42	44.82	-334.23	-6,523.52	6,504.42	6,478.77	25.66	253.523	
1,700.00	1,699.21	1,671.31	1,671.12	5.90	21.67	44.86	-332.63	-6,524.19	6,502.37	6,475.14	27.24	238.727	
1,800.00	1,799.14	1,773.22	1,773.01	6.26	22.81	44.89	-331.09	-6,524.85	6,500.30	6,471.59	28.71	226.388	
1,900.00	1,899.07	1,875.12	1,874.91	6.62	23.95	44.93	-329.64	-6,525.46	6,498.20	6,468.01	30.19	215.251	
2,000.00	1,999.00	1,977.04	1,976.81	6.98	25.09	44.97	-328.26	-6,526.05	6,496.06	6,464.40	31.67	205.149	
2,100.00	2,098.94	2,078.96	2,078.72	7.34	26.23	45.00	-326.97	-6,526.59	6,493.90	6,460.76	33.14	195.944	
2,200.00	2,198.87	2,177.93	2,177.68	7.70	27.26	45.03	-325.76	-6,527.11	6,491.73	6,457.23	34.51	188.127	
2,300.00	2,298.80	2,275.98	2,275.73	8.06	28.26	45.07	-324.48	-6,527.65	6,489.59	6,453.75	35.84	181.079	
2,400.00	2,398.73	2,374.03	2,373.76	8.42	29.25	45.10	-323.14	-6,528.22	6,487.48	6,450.31	37.17	174.535	
2,500.00	2,498.66	2,472.07	2,471.80	8.79	30.25	45.14	-321.72	-6,528.82	6,485.40	6,446.90	38.50	168.445	
2,600.00	2,598.59	2,570.11	2,569.82	9.15	31.25	45.18	-320.22	-6,529.46	6,483.35	6,443.52	39.83	162.762	
2,700.00	2,698.52	2,669.63	2,669.32	9.51	32.18	45.21	-318.65	-6,530.13	6,481.33	6,440.22	41.11	157.674	
2,800.00	2,798.45	2,771.57	2,771.26	9.87	33.03	45.25	-317.08	-6,530.79	6,479.29	6,437.01	42.28	153.242	
2,900.00	2,898.38	2,873.53	2,873.19	10.23	33.87	45.29	-315.60	-6,531.42	6,477.22	6,433.76	43.46	149.048	
3,000.00	2,998.31	2,975.48	2,975.14	10.59	34.72	45.33	-314.21	-6,532.01	6,475.12	6,430.49	44.63	145.074	
3,100.00	3,098.24	3,077.45	3,077.09	10.96	35.56	45.36	-312.89	-6,532.57	6,473.00	6,427.19	45.81	141.304	
3,200.00	3,198.17	3,178.35	3,177.99	11.32	36.31	45.40	-311.67	-6,533.09	6,470.84	6,423.96	46.89	138.013	
3,300.00	3,298.10	3,278.25	3,277.88	11.68	36.96	45.43	-310.46	-6,533.60	6,468.69	6,420.82	47.87	135.135	
3,400.00	3,398.03	3,378.16	3,377.78	12.04	37.61	45.46	-309.26	-6,534.11	6,466.54	6,417.69	48.85	132.373	
3,500.00	3,497.96	3,478.06	3,477.67	12.40	38.27	45.50	-308.06	-6,534.62	6,464.39	6,414.56	49.83	129.720	
3,600.00	3,597.89	3,577.96	3,577.56	12.77	38.92	45.53	-306.85	-6,535.13	6,462.24	6,411.43	50.82	127.169	
3,700.00	3,697.82	3,597.00	3,596.60	13.13	39.05	45.54	-306.62	-6,535.23	6,460.60	6,409.31	51.29	125.951	
3,757.68	3,755.46	3,597.00	3,596.60	13.34	39.05	45.54	-306.62	-6,535.23	6,460.35	6,408.85	51.50	125.449	
3,800.00	3,797.75	3,597.00	3,596.60	13.49	39.05	45.54	-306.62	-6,535.23	6,460.48	6,408.84	51.64	125.096	
3,900.00	3,897.68	3,597.00	3,596.60	13.85	39.05	45.54	-306.62	-6,535.23	6,461.91	6,409.93	51.98	124.311	
4,000.00	3,997.61	3,597.00	3,596.60	14.21	39.05	45.54	-306.62	-6,535.23	6,464.89	6,412.58	52.31	123.593	
4,100.00	4,097.54	3,597.00	3,596.60	14.58	39.05	45.54	-306.62	-6,535.23	6,469.41	6,416.79	52.62	122.942	
4,200.00	4,197.47	3,597.00	3,596.60	14.94	39.05	45.54	-306.62	-6,535.23	6,475.47	6,422.55	52.92	122.356	
4,271.60	4,269.02	3,953.92	3,952.40	15.20	86.92	45.83	-283.34	-6,545.70	6,462.76	6,385.80	76.96	83.973	
4,300.00	4,297.40	3,969.25	3,967.60	15.30	89.03	45.85	-281.50	-6,546.54	6,463.49	6,385.37	78.12	82.743	
4,400.00	4,397.33	4,023.04	4,020.83	15.66	96.45	45.93	-274.46	-6,549.72	6,466.51	6,384.31	82.20	78.669	
4,500.00	4,497.26	4,076.51	4,073.61	16.03	103.85	46.01	-266.63	-6,553.27	6,470.26	6,383.93	86.32	74.953	
4,600.00	4,597.19	4,129.64	4,125.88	16.39	111.22	46.10	-258.01	-6,557.18	6,474.74	6,384.25	90.49	71.550	
4,700.00	4,697.12	4,182.38	4,177.61	16.75	118.56	46.20	-248.63	-6,561.43	6,479.97	6,385.26	94.71	68.421	
4,800.00	4,797.05	4,234.73	4,228.76	17.11	125.85	46.30	-238.53	-6,566.02	6,485.94	6,386.97	98.97	65.534	
4,900.00	4,896.99	4,286.64	4,279.30	17.47	133.09	46.41	-227.71	-6,570.93	6,492.66	6,389.38	103.28	62.864	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 74-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	4,996.92	4,338.10	4,329.19	17.84	140.27	46.52	-216.23	-6,576.15	6,500.15	6,392.51	107.64	60.386	
5,100.00	5,096.85	4,389.08	4,378.39	18.20	147.40	46.64	-204.09	-6,581.66	6,508.41	6,396.36	112.05	58.083	
5,200.00	5,196.78	4,439.56	4,426.89	18.56	154.46	46.77	-191.34	-6,587.45	6,517.45	6,400.93	116.52	55.936	
5,300.00	5,296.71	4,489.52	4,474.65	18.92	161.46	46.90	-178.00	-6,593.52	6,527.27	6,406.24	121.03	53.932	
5,400.00	5,396.64	4,538.94	4,521.66	19.29	168.38	47.03	-164.10	-6,599.83	6,537.88	6,412.29	125.59	52.057	
5,500.00	5,496.57	4,587.81	4,567.89	19.65	175.24	47.17	-149.68	-6,606.38	6,549.30	6,419.10	130.20	50.302	
5,600.00	5,596.50	4,636.11	4,613.33	20.01	182.01	47.31	-134.77	-6,613.16	6,561.53	6,426.67	134.86	48.655	
5,700.00	5,696.43	4,683.83	4,657.96	20.37	188.71	47.46	-119.40	-6,620.15	6,574.58	6,435.01	139.56	47.108	
5,800.00	5,796.36	4,730.95	4,701.76	20.74	195.32	47.61	-103.59	-6,627.34	6,588.45	6,444.13	144.31	45.654	
5,900.00	5,896.29	5,147.00	5,075.51	21.10	253.82	49.14	62.12	-6,702.72	6,623.56	6,445.57	177.99	37.214	
6,000.00	5,996.22	5,147.00	5,075.51	21.46	253.82	49.14	62.12	-6,702.72	6,634.43	6,454.75	179.67	36.925	
6,100.00	6,096.15	5,147.00	5,075.51	21.82	253.82	49.14	62.12	-6,702.72	6,646.78	6,465.46	181.32	36.657	
6,200.00	6,196.08	5,147.00	5,075.51	22.19	253.82	49.14	62.12	-6,702.72	6,660.61	6,477.67	182.94	36.409	
6,300.00	6,296.01	5,147.00	5,075.51	22.55	253.82	49.14	62.12	-6,702.72	6,675.92	6,491.40	184.52	36.181	
6,335.60	6,331.59	5,147.00	5,075.51	22.68	253.82	49.14	62.12	-6,702.72	6,681.72	6,496.65	185.07	36.104	
6,350.00	6,345.97	5,147.00	5,075.51	22.73	253.82	31.46	62.12	-6,702.72	6,683.95	6,498.66	185.29	36.073	
6,400.00	6,395.75	5,147.00	5,075.51	22.91	253.82	13.73	62.12	-6,702.72	6,689.45	6,503.39	186.06	35.953	
6,450.00	6,445.03	5,147.00	5,075.51	23.10	253.82	9.08	62.12	-6,702.72	6,691.41	6,504.58	186.83	35.815	
6,500.00	6,493.52	5,147.00	5,075.51	23.29	253.82	6.99	62.12	-6,702.72	6,689.82	6,502.23	187.59	35.661	
6,550.00	6,540.91	5,147.00	5,075.51	23.48	253.82	5.82	62.12	-6,702.72	6,684.68	6,496.34	188.35	35.491	
6,600.00	6,586.91	5,147.00	5,075.51	23.66	253.82	5.08	62.12	-6,702.72	6,676.03	6,486.94	189.09	35.307	
6,650.00	6,631.24	5,147.00	5,075.51	23.85	253.82	4.59	62.12	-6,702.72	6,663.89	6,474.09	189.81	35.109	
6,700.00	6,673.63	5,147.00	5,075.51	24.05	253.82	4.25	62.12	-6,702.72	6,648.33	6,457.82	190.51	34.898	
6,750.00	6,713.80	5,147.00	5,075.51	24.24	253.82	4.01	62.12	-6,702.72	6,629.42	6,438.24	191.18	34.676	
6,800.00	6,751.52	5,147.00	5,075.51	24.44	253.82	3.85	62.12	-6,702.72	6,607.24	6,415.41	191.83	34.443	
6,850.00	6,786.56	5,147.00	5,075.51	24.65	253.82	3.75	62.12	-6,702.72	6,581.91	6,389.46	192.45	34.201	
6,900.00	6,818.69	5,147.00	5,075.51	24.87	253.82	3.71	62.12	-6,702.72	6,553.53	6,360.50	193.03	33.950	
6,950.00	6,847.72	5,147.00	5,075.51	25.10	253.82	3.71	62.12	-6,702.72	6,522.26	6,328.67	193.58	33.692	
7,000.00	6,873.46	5,147.00	5,075.51	25.34	253.82	3.76	62.12	-6,702.72	6,488.23	6,294.13	194.10	33.428	
7,050.00	6,895.77	5,147.00	5,075.51	25.60	253.82	3.86	62.12	-6,702.72	6,451.62	6,257.05	194.57	33.158	
7,100.00	6,914.50	5,147.00	5,075.51	25.87	253.82	4.02	62.12	-6,702.72	6,412.62	6,217.61	195.01	32.884	
7,150.00	6,929.54	5,147.00	5,075.51	26.15	253.82	4.27	62.12	-6,702.72	6,371.41	6,176.01	195.40	32.607	
7,200.00	6,940.80	5,147.00	5,075.51	26.44	253.82	4.62	62.12	-6,702.72	6,328.22	6,132.47	195.75	32.329	
7,250.00	6,948.20	5,147.00	5,075.51	26.75	253.82	5.13	62.12	-6,702.72	6,283.27	6,087.22	196.05	32.049	
7,300.00	6,951.70	5,147.00	5,075.51	27.07	253.82	5.89	62.12	-6,702.72	6,236.80	6,040.49	196.31	31.771	
7,321.06	6,952.00	5,147.00	5,075.51	27.20	253.82	6.34	62.12	-6,702.72	6,216.84	6,020.43	196.40	31.653	
7,400.00	6,951.82	5,147.00	5,075.51	27.74	253.82	6.34	62.12	-6,702.72	6,141.66	5,944.92	196.74	31.217	
7,500.00	6,951.60	5,147.00	5,075.51	28.49	253.82	6.34	62.12	-6,702.72	6,046.56	5,849.38	197.18	30.665	
7,600.00	6,951.37	5,147.00	5,075.51	29.30	253.82	6.34	62.12	-6,702.72	5,951.63	5,754.00	197.63	30.115	
7,700.00	6,951.15	5,147.00	5,075.51	30.18	253.82	6.34	62.12	-6,702.72	5,856.86	5,658.76	198.10	29.566	
7,800.00	6,950.92	5,147.00	5,075.51	31.12	253.82	6.34	62.12	-6,702.72	5,762.27	5,563.69	198.58	29.018	
7,900.00	6,950.70	5,147.00	5,075.51	32.11	253.82	6.34	62.12	-6,702.72	5,667.86	5,468.79	199.07	28.471	
8,000.00	6,950.47	5,147.00	5,075.51	33.15	253.82	6.34	62.12	-6,702.72	5,573.65	5,374.07	199.58	27.926	
8,100.00	6,950.25	5,358.76	5,255.01	34.23	266.86	10.36	163.97	-6,749.93	5,470.58	5,259.19	211.39	25.879	
8,200.00	6,950.03	5,369.66	5,264.02	35.35	267.53	10.60	169.52	-6,752.54	5,375.73	5,163.09	212.64	25.281	
8,300.00	6,949.80	5,380.72	5,273.13	36.51	268.21	10.84	175.19	-6,755.22	5,281.02	5,067.09	213.93	24.686	
8,400.00	6,949.58	5,391.94	5,282.35	37.70	268.90	11.09	180.96	-6,757.95	5,186.45	4,971.19	215.27	24.093	
8,500.00	6,949.35	5,403.31	5,291.67	38.92	269.60	11.35	186.85	-6,760.74	5,092.04	4,875.39	216.65	23.503	
8,600.00	6,949.13	5,414.85	5,301.10	40.17	270.31	11.61	192.86	-6,763.59	4,997.79	4,779.70	218.09	22.916	
8,700.00	6,948.90	5,426.55	5,310.64	41.44	271.03	11.88	198.98	-6,766.50	4,903.71	4,684.13	219.58	22.332	
8,800.00	6,948.68	5,438.42	5,320.28	42.73	271.76	12.16	205.23	-6,769.47	4,809.81	4,588.68	221.12	21.752	
8,900.00	6,948.45	5,450.47	5,330.04	44.04	272.50	12.45	211.61	-6,772.51	4,716.09	4,493.36	222.73	21.174	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 74-MWD OWSG Rev5 — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,000.00	6,948.23	5,462.69	5,339.91	45.38	273.26	12.74	218.11	-6,775.62	4,622.57	4,398.17	224.40	20.600	
9,100.00	6,948.00	5,475.09	5,349.89	46.72	274.02	13.04	224.75	-6,778.79	4,529.26	4,303.12	226.13	20.029	
9,200.00	6,947.78	5,487.67	5,359.98	48.09	274.79	13.36	231.53	-6,782.03	4,436.16	4,208.22	227.94	19.462	
9,300.00	6,947.55	5,500.44	5,370.19	49.47	275.58	13.68	238.44	-6,785.35	4,343.30	4,113.48	229.82	18.899	
9,400.00	6,947.33	5,513.39	5,380.51	50.86	276.38	14.00	245.50	-6,788.74	4,250.68	4,018.90	231.78	18.339	
9,500.00	6,947.10	5,526.54	5,390.96	52.26	277.19	14.34	252.70	-6,792.20	4,158.32	3,924.50	233.82	17.784	
9,600.00	6,946.88	5,539.89	5,401.52	53.68	278.01	14.69	260.05	-6,795.75	4,066.24	3,830.28	235.96	17.233	
9,700.00	6,946.66	5,553.44	5,412.20	55.10	278.84	15.05	267.56	-6,799.37	3,974.45	3,736.26	238.19	16.686	
9,800.00	6,946.43	5,567.20	5,423.00	56.54	279.69	15.42	275.23	-6,803.08	3,882.96	3,642.45	240.52	16.144	
9,900.00	6,946.21	5,581.16	5,433.92	57.98	280.55	15.80	283.06	-6,806.87	3,791.81	3,548.86	242.95	15.607	
10,000.00	6,945.98	5,595.34	5,444.97	59.43	281.42	16.19	291.05	-6,810.75	3,701.02	3,455.51	245.50	15.075	
10,100.00	6,945.76	5,609.73	5,456.14	60.89	282.31	16.59	299.22	-6,814.71	3,610.60	3,362.42	248.18	14.549	
10,200.00	6,945.53	5,624.34	5,467.43	62.36	283.21	17.01	307.56	-6,818.77	3,520.58	3,269.60	250.98	14.027	
10,300.00	6,945.31	5,639.19	5,478.85	63.83	284.12	17.43	316.08	-6,822.92	3,431.00	3,177.08	253.92	13.512	
10,400.00	6,945.08	5,654.26	5,490.40	65.31	285.05	17.87	324.79	-6,827.17	3,341.88	3,084.87	257.01	13.003	
10,500.00	6,944.86	5,669.56	5,502.07	66.79	285.99	18.33	333.68	-6,831.52	3,253.26	2,993.00	260.26	12.500	
10,600.00	6,944.63	5,685.11	5,513.87	68.28	286.95	18.79	342.77	-6,835.97	3,165.18	2,901.50	263.68	12.004	
10,700.00	6,944.41	5,700.90	5,525.80	69.78	287.92	19.27	352.06	-6,840.53	3,077.69	2,810.41	267.28	11.515	
10,800.00	6,944.18	5,716.94	5,537.85	71.28	288.91	19.77	361.55	-6,845.19	2,990.82	2,719.75	271.07	11.033	
10,900.00	6,943.96	5,733.23	5,550.04	72.78	289.91	20.28	371.26	-6,849.97	2,904.63	2,629.57	275.06	10.560	
11,000.00	6,943.73	5,912.00	5,679.55	74.29	300.92	26.29	481.59	-6,904.77	2,827.50	2,533.75	293.75	9.625	
11,100.00	6,943.51	5,912.00	5,679.55	75.80	300.92	26.29	481.59	-6,904.77	2,741.38	2,444.28	297.10	9.227	
11,200.00	6,943.29	5,912.00	5,679.55	77.32	300.92	26.29	481.59	-6,904.77	2,656.23	2,355.64	300.60	8.837	
11,300.00	6,943.06	5,912.00	5,679.55	78.84	300.92	26.29	481.59	-6,904.77	2,572.15	2,267.90	304.25	8.454	
11,400.00	6,942.84	5,912.00	5,679.55	80.36	300.92	26.29	481.59	-6,904.77	2,489.25	2,181.19	308.06	8.080	
11,500.00	6,942.61	7,199.00	6,825.03	81.88	310.18	83.54	939.91	-7,096.39	2,401.27	2,094.68	306.59	7.832	
11,600.00	6,942.39	7,199.00	6,825.03	83.41	310.18	83.54	939.91	-7,096.39	2,312.63	2,000.92	311.71	7.419	
11,700.00	6,942.16	7,199.00	6,825.03	84.94	310.18	83.54	939.91	-7,096.39	2,224.96	1,907.78	317.18	7.015	
11,800.00	6,941.94	7,199.00	6,825.03	86.47	310.18	83.54	939.91	-7,096.39	2,138.37	1,815.37	323.00	6.620	
11,900.00	6,941.71	7,199.00	6,825.03	88.01	310.18	83.54	939.91	-7,096.39	2,053.00	1,723.80	329.19	6.236	
12,000.00	6,941.49	7,199.00	6,825.03	89.55	310.18	83.54	939.91	-7,096.39	1,969.00	1,633.22	335.78	5.864	
12,100.00	6,941.26	7,199.00	6,825.03	91.09	310.18	83.54	939.91	-7,096.39	1,886.57	1,543.80	342.78	5.504	
12,200.00	6,941.04	7,199.00	6,825.03	92.63	310.18	83.54	939.91	-7,096.39	1,805.92	1,455.75	350.17	5.157	
12,300.00	6,940.81	7,199.00	6,825.03	94.18	310.18	83.54	939.91	-7,096.39	1,727.28	1,369.34	357.95	4.826	
12,400.00	6,940.59	7,199.00	6,825.03	95.72	310.18	83.54	939.91	-7,096.39	1,650.96	1,284.88	366.09	4.510	
12,500.00	6,940.36	7,199.00	6,825.03	97.27	310.18	83.54	939.91	-7,096.39	1,577.30	1,202.77	374.53	4.211	
12,600.00	6,940.14	7,199.00	6,825.03	98.82	310.18	83.54	939.91	-7,096.39	1,506.66	1,123.49	383.18	3.932	
12,700.00	6,939.92	7,199.00	6,825.03	100.37	310.18	83.54	939.91	-7,096.39	1,439.52	1,047.61	391.90	3.673	
12,800.00	6,939.69	7,199.00	6,825.03	101.92	310.18	83.54	939.91	-7,096.39	1,376.37	975.85	400.52	3.436	
12,900.00	6,939.47	7,199.00	6,825.03	103.48	310.18	83.54	939.91	-7,096.39	1,317.79	909.03	408.75	3.224	
13,000.00	6,939.24	7,199.00	6,825.03	105.03	310.18	83.54	939.91	-7,096.39	1,264.41	848.13	416.28	3.037	
13,100.00	6,939.02	7,199.00	6,825.03	106.59	310.18	83.54	939.91	-7,096.39	1,216.93	794.24	422.69	2.879	
13,200.00	6,938.79	7,199.00	6,825.03	108.15	310.18	83.54	939.91	-7,096.39	1,176.05	748.53	427.52	2.751	
13,300.00	6,938.57	7,199.00	6,825.03	109.71	310.18	83.54	939.91	-7,096.39	1,142.49	712.23	430.26	2.655	
13,400.00	6,938.34	7,199.00	6,825.03	111.27	310.18	83.54	939.91	-7,096.39	1,116.89	686.45	430.44	2.595	
13,500.00	6,938.12	7,199.00	6,825.03	112.83	310.18	83.54	939.91	-7,096.39	1,099.83	672.12	427.72	2.571 SF	
13,600.00	6,937.89	7,199.00	6,825.03	114.40	310.18	83.54	939.91	-7,096.39	1,091.70	669.82	421.88	2.588 ES	
13,639.12	6,937.81	7,199.00	6,825.03	115.01	310.18	83.54	939.91	-7,096.39	1,091.00	672.25	418.75	2.605 CC	
13,700.00	6,937.67	7,199.00	6,825.03	115.96	310.18	83.54	939.91	-7,096.39	1,092.70	679.72	412.97	2.646	
13,800.00	6,937.44	7,199.00	6,825.03	117.53	310.18	83.54	939.91	-7,096.39	1,102.80	701.52	401.28	2.748	
13,900.00	6,937.22	7,199.00	6,825.03	119.09	310.18	83.54	939.91	-7,096.39	1,121.76	734.47	387.29	2.896	
14,000.00	6,936.99	7,199.00	6,825.03	120.66	310.18	83.54	939.91	-7,096.39	1,149.14	777.51	371.62	3.092	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 74-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
14,100.00	6,936.77	7,199.00	6,825.03	122.23	310.18	83.54	939.91	-7,096.39	1,184.35	829.38	354.97	3.337	
14,200.00	6,936.55	7,199.00	6,825.03	123.80	310.18	83.54	939.91	-7,096.39	1,226.73	888.77	337.96	3.630	
14,300.00	6,936.32	7,199.00	6,825.03	125.37	310.18	83.54	939.91	-7,096.39	1,275.56	954.41	321.14	3.972	
14,400.00	6,936.10	7,199.00	6,825.03	126.94	310.18	83.54	939.91	-7,096.39	1,330.12	1,025.17	304.95	4.362	
14,500.00	6,935.87	7,199.00	6,825.03	128.51	310.18	83.54	939.91	-7,096.39	1,389.75	1,100.04	289.70	4.797	
14,600.00	6,935.65	7,199.00	6,825.03	130.08	310.18	83.54	939.91	-7,096.39	1,453.81	1,178.23	275.59	5.275	
14,700.00	6,935.42	7,199.00	6,825.03	131.65	310.18	83.54	939.91	-7,096.39	1,521.76	1,259.05	262.71	5.792	
14,800.00	6,935.20	7,199.00	6,825.03	133.23	310.18	83.54	939.91	-7,096.39	1,593.09	1,341.97	251.11	6.344	
14,900.00	6,934.97	7,199.00	6,825.03	134.80	310.18	83.54	939.91	-7,096.39	1,667.36	1,426.59	240.78	6.925	
15,000.00	6,934.75	7,199.00	6,825.03	136.37	310.18	83.54	939.91	-7,096.39	1,744.21	1,512.57	231.64	7.530	
15,100.00	6,934.52	7,199.00	6,825.03	137.95	310.18	83.54	939.91	-7,096.39	1,823.31	1,599.67	223.64	8.153	
15,200.00	6,934.30	7,199.00	6,825.03	139.53	310.18	83.54	939.91	-7,096.39	1,904.37	1,687.70	216.68	8.789	
15,300.00	6,934.07	7,199.00	6,825.03	141.10	310.18	83.54	939.91	-7,096.39	1,987.16	1,776.51	210.65	9.434	
15,400.00	6,933.85	7,199.00	6,825.03	142.68	310.18	83.54	939.91	-7,096.39	2,071.47	1,866.01	205.46	10.082	
15,500.00	6,933.62	7,199.00	6,825.03	144.26	310.18	83.54	939.91	-7,096.39	2,157.12	1,956.10	201.02	10.731	
15,600.00	6,933.40	7,199.00	6,825.03	145.84	310.18	83.54	939.91	-7,096.39	2,243.96	2,046.72	197.24	11.377	
15,700.00	6,933.18	7,199.00	6,825.03	147.42	310.18	83.54	939.91	-7,096.39	2,331.85	2,137.82	194.03	12.018	
15,800.00	6,932.95	7,199.00	6,825.03	148.99	310.18	83.54	939.91	-7,096.39	2,420.68	2,229.37	191.31	12.653	
15,900.00	6,932.73	7,199.00	6,825.03	150.57	310.18	83.54	939.91	-7,096.39	2,510.35	2,321.33	189.02	13.281	
16,000.00	6,932.50	7,199.00	6,825.03	152.15	310.18	83.54	939.91	-7,096.39	2,600.78	2,413.68	187.10	13.900	
16,100.00	6,932.28	7,199.00	6,825.03	153.74	310.18	83.54	939.91	-7,096.39	2,691.88	2,506.38	185.50	14.511	
16,200.00	6,932.05	7,199.00	6,825.03	155.32	310.18	83.54	939.91	-7,096.39	2,783.60	2,599.42	184.17	15.114	
16,300.00	6,931.83	7,199.00	6,825.03	156.90	310.18	83.54	939.91	-7,096.39	2,875.86	2,692.79	183.07	15.709	
16,400.00	6,931.60	7,199.00	6,825.03	158.48	310.18	83.54	939.91	-7,096.39	2,968.63	2,786.45	182.18	16.295	
16,500.00	6,931.38	7,199.00	6,825.03	160.06	310.18	83.54	939.91	-7,096.39	3,061.85	2,880.40	181.45	16.875	
16,600.00	6,931.15	7,199.00	6,825.03	161.65	310.18	83.54	939.91	-7,096.39	3,155.49	2,974.62	180.87	17.447	
16,700.00	6,930.93	7,199.00	6,825.03	163.23	310.18	83.54	939.91	-7,096.39	3,249.51	3,069.10	180.41	18.012	
16,800.00	6,930.70	7,199.00	6,825.03	164.81	310.18	83.54	939.91	-7,096.39	3,343.87	3,163.82	180.05	18.571	
16,900.00	6,930.48	7,199.00	6,825.03	166.40	310.18	83.54	939.91	-7,096.39	3,438.55	3,258.76	179.79	19.125	
17,000.00	6,930.25	7,199.00	6,825.03	167.98	310.18	83.54	939.91	-7,096.39	3,533.53	3,353.92	179.61	19.673	
17,100.00	6,930.03	7,199.00	6,825.03	169.56	310.18	83.54	939.91	-7,096.39	3,628.77	3,449.28	179.49	20.217	
17,200.00	6,929.81	7,199.00	6,825.03	171.15	310.18	83.54	939.91	-7,096.39	3,724.27	3,544.84	179.43	20.756	
17,300.00	6,929.58	7,199.00	6,825.03	172.73	310.18	83.54	939.91	-7,096.39	3,819.99	3,640.57	179.42	21.291	
17,400.00	6,929.36	7,199.00	6,825.03	174.32	310.18	83.54	939.91	-7,096.39	3,915.93	3,736.48	179.45	21.822	
17,500.00	6,929.13	7,199.00	6,825.03	175.91	310.18	83.54	939.91	-7,096.39	4,012.07	3,832.55	179.52	22.349	
17,600.00	6,928.91	7,199.00	6,825.03	177.49	310.18	83.54	939.91	-7,096.39	4,108.39	3,928.78	179.61	22.873	
17,700.00	6,928.68	7,199.00	6,825.03	179.08	310.18	83.54	939.91	-7,096.39	4,204.88	4,025.15	179.74	23.395	
17,800.00	6,928.46	7,199.00	6,825.03	180.66	310.18	83.54	939.91	-7,096.39	4,301.54	4,121.66	179.88	23.913	
17,900.00	6,928.23	7,199.00	6,825.03	182.25	310.18	83.54	939.91	-7,096.39	4,398.34	4,218.29	180.05	24.429	
18,000.00	6,928.01	7,199.00	6,825.03	183.84	310.18	83.54	939.91	-7,096.39	4,495.29	4,315.06	180.23	24.942	
18,100.00	6,927.78	7,199.00	6,825.03	185.43	310.18	83.54	939.91	-7,096.39	4,592.36	4,411.94	180.42	25.453	
18,200.00	6,927.56	7,199.00	6,825.03	187.01	310.18	83.54	939.91	-7,096.39	4,689.56	4,508.93	180.63	25.962	
18,300.00	6,927.33	7,199.00	6,825.03	188.60	310.18	83.54	939.91	-7,096.39	4,786.87	4,606.02	180.85	26.469	
18,400.00	6,927.11	7,199.00	6,825.03	190.19	310.18	83.54	939.91	-7,096.39	4,884.29	4,703.22	181.07	26.974	
18,500.00	6,926.88	7,199.00	6,825.03	191.78	310.18	83.54	939.91	-7,096.39	4,981.81	4,800.51	181.30	27.478	
18,600.00	6,926.66	7,199.00	6,825.03	193.37	310.18	83.54	939.91	-7,096.39	5,079.43	4,897.89	181.54	27.979	
18,700.00	6,926.44	7,199.00	6,825.03	194.96	310.18	83.54	939.91	-7,096.39	5,177.14	4,995.36	181.78	28.480	
18,800.00	6,926.21	7,199.00	6,825.03	196.54	310.18	83.54	939.91	-7,096.39	5,274.94	5,092.91	182.03	28.978	
18,900.00	6,925.99	7,199.00	6,825.03	198.13	310.18	83.54	939.91	-7,096.39	5,372.82	5,190.54	182.28	29.476	
19,000.00	6,925.76	7,199.00	6,825.03	199.72	310.18	83.54	939.91	-7,096.39	5,470.77	5,288.24	182.53	29.972	
19,100.00	6,925.54	7,199.00	6,825.03	201.31	310.18	83.54	939.91	-7,096.39	5,568.80	5,386.01	182.79	30.466	
19,200.00	6,925.31	7,199.00	6,825.03	202.90	310.18	83.54	939.91	-7,096.39	5,666.90	5,483.85	183.04	30.960	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 066M - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 74-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,300.00	6,925.09	7,199.00	6,825.03	204.49	310.18	83.54	939.91	-7,096.39	5,765.06	5,581.76	183.30	31.452	
19,400.00	6,924.86	7,199.00	6,825.03	206.08	310.18	83.54	939.91	-7,096.39	5,863.28	5,679.73	183.55	31.943	
19,500.00	6,924.64	7,199.00	6,825.03	207.67	310.18	83.54	939.91	-7,096.39	5,961.56	5,777.75	183.81	32.433	
19,600.00	6,924.41	7,199.00	6,825.03	209.26	310.18	83.54	939.91	-7,096.39	6,059.90	5,875.83	184.07	32.922	
19,700.00	6,924.19	7,199.00	6,825.03	210.85	310.18	83.54	939.91	-7,096.39	6,158.29	5,973.97	184.32	33.410	
19,800.00	6,923.96	7,199.00	6,825.03	212.44	310.18	83.54	939.91	-7,096.39	6,256.74	6,072.16	184.58	33.897	
19,900.00	6,923.74	7,199.00	6,825.03	214.04	310.18	83.54	939.91	-7,096.39	6,355.23	6,170.39	184.84	34.383	
20,000.00	6,923.51	7,199.00	6,825.03	215.63	310.18	83.54	939.91	-7,096.39	6,453.77	6,268.68	185.09	34.868	
20,100.00	6,923.29	7,199.00	6,825.03	217.22	310.18	83.54	939.91	-7,096.39	6,552.35	6,367.01	185.34	35.353	
20,200.00	6,923.07	7,199.00	6,825.03	218.81	310.18	83.54	939.91	-7,096.39	6,650.98	6,465.38	185.59	35.836	
20,300.00	6,922.84	7,199.00	6,825.03	220.40	310.18	83.54	939.91	-7,096.39	6,749.64	6,563.80	185.85	36.319	
20,400.00	6,922.62	7,199.00	6,825.03	221.99	310.18	83.54	939.91	-7,096.39	6,848.35	6,662.25	186.10	36.800	
20,500.00	6,922.39	7,199.00	6,825.03	223.59	310.18	83.54	939.91	-7,096.39	6,947.09	6,760.74	186.34	37.281	
20,600.00	6,922.17	7,199.00	6,825.03	225.18	310.18	83.54	939.91	-7,096.39	7,045.86	6,859.27	186.59	37.761	
20,674.13	6,922.00	7,199.00	6,825.03	226.36	310.18	83.54	939.91	-7,096.39	7,119.11	6,932.34	186.77	38.117	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 328-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	35.00	35.00	0.00	0.34	-86.27	675.46	-10,367.97	10,389.95				
100.00	100.00	135.00	135.00	0.25	1.33	-86.27	675.46	-10,367.97	10,389.95	10,388.37	1.58	6,572.717	
200.00	200.00	235.00	235.00	0.61	2.31	-86.27	675.46	-10,367.97	10,389.95	10,387.03	2.92	3,553.142	
300.00	300.00	335.01	335.00	0.97	3.37	-86.27	675.46	-10,367.97	10,389.95	10,385.61	4.34	2,395.828	
400.00	400.00	435.01	435.00	1.33	5.34	-86.27	675.46	-10,367.97	10,389.95	10,383.28	6.67	1,558.856	
500.00	500.00	535.01	535.00	1.68	7.31	-86.27	675.46	-10,367.97	10,389.95	10,380.96	8.99	1,155.268	
606.93	606.91	643.14	643.12	2.05	9.44	51.26	676.20	-10,367.97	10,388.75	10,377.26	11.49	904.060	
700.00	699.91	737.86	737.84	2.37	11.30	51.27	675.91	-10,367.97	10,386.56	10,372.89	13.67	759.808	
800.00	799.84	834.89	834.84	2.71	13.21	51.28	675.46	-10,367.97	10,384.19	10,368.28	15.91	652.492	
900.00	899.77	934.82	934.77	3.06	15.11	51.30	675.46	-10,367.97	10,381.86	10,363.69	18.16	571.649	
1,000.00	999.70	1,034.75	1,034.70	3.41	17.01	51.32	675.46	-10,367.97	10,379.52	10,359.11	20.41	508.525	
1,100.00	1,099.63	1,135.83	1,135.77	3.76	18.93	51.34	676.22	-10,367.97	10,377.24	10,354.56	22.68	457.453	
1,200.00	1,199.56	1,237.61	1,237.55	4.11	20.86	51.35	675.92	-10,367.97	10,374.89	10,349.91	24.97	415.431	
1,300.00	1,299.49	1,334.57	1,334.49	4.47	22.70	51.37	675.46	-10,367.97	10,372.53	10,345.36	27.17	381.830	
1,400.00	1,399.42	1,434.50	1,434.42	4.83	24.54	51.38	675.46	-10,367.97	10,370.20	10,340.84	29.36	353.212	
1,500.00	1,499.35	1,534.44	1,534.35	5.19	26.38	51.40	675.46	-10,367.97	10,367.87	10,336.31	31.55	328.566	
1,600.00	1,599.28	1,635.13	1,635.04	5.54	28.23	51.42	675.97	-10,367.97	10,365.57	10,331.81	33.76	306.994	
1,700.00	1,699.21	1,736.31	1,736.22	5.90	30.09	51.43	675.77	-10,367.97	10,363.23	10,327.25	35.98	287.994	
1,800.00	1,799.14	1,834.25	1,834.14	6.26	31.89	51.45	675.46	-10,367.97	10,360.88	10,322.74	38.14	271.620	
1,900.00	1,899.07	1,934.18	1,934.07	6.62	33.74	51.46	675.46	-10,367.97	10,358.55	10,318.21	40.35	256.743	
2,000.00	1,999.00	2,034.11	2,034.00	6.98	35.58	51.48	675.46	-10,367.97	10,356.23	10,313.68	42.55	243.404	
2,100.00	2,098.94	2,134.65	2,134.55	7.34	37.43	51.50	676.00	-10,367.97	10,353.94	10,309.18	44.76	231.318	
2,200.00	2,198.87	2,235.80	2,235.70	7.70	39.30	51.51	675.83	-10,367.97	10,351.61	10,304.62	46.99	220.316	
2,300.00	2,298.80	2,336.97	2,336.86	8.06	41.16	51.53	675.49	-10,367.97	10,349.26	10,300.05	49.21	210.307	
2,400.00	2,398.73	2,433.85	2,433.73	8.42	42.95	51.54	675.46	-10,367.97	10,346.94	10,295.58	51.36	201.467	
2,500.00	2,498.66	2,533.78	2,533.66	8.79	44.79	51.56	675.46	-10,367.97	10,344.61	10,291.05	53.56	193.132	
2,600.00	2,598.59	2,634.18	2,634.05	9.15	46.65	51.58	676.00	-10,367.97	10,342.33	10,286.56	55.78	185.428	
2,700.00	2,698.52	2,735.39	2,735.26	9.51	48.52	51.59	675.84	-10,367.97	10,340.00	10,282.00	58.00	178.264	
2,800.00	2,798.45	2,836.61	2,836.49	9.87	50.38	51.61	675.51	-10,367.97	10,337.66	10,277.43	60.23	171.630	
2,900.00	2,898.38	2,933.52	2,933.38	10.23	52.22	51.62	675.46	-10,367.97	10,335.34	10,272.91	62.43	165.551	
3,000.00	2,998.31	3,033.45	3,033.31	10.59	54.12	51.64	675.46	-10,367.97	10,333.02	10,268.33	64.69	159.724	
3,100.00	3,098.24	3,133.91	3,133.77	10.96	56.04	51.66	675.97	-10,367.97	10,330.74	10,263.77	66.97	154.268	
3,200.00	3,198.17	3,235.20	3,235.05	11.32	57.96	51.67	675.81	-10,367.97	10,328.41	10,259.16	69.26	149.136	
3,300.00	3,298.10	3,336.50	3,336.35	11.68	59.89	51.69	675.46	-10,367.97	10,326.07	10,254.53	71.54	144.331	
3,400.00	3,398.03	3,433.20	3,433.03	12.04	61.85	51.70	675.46	-10,367.97	10,323.76	10,249.90	73.86	139.775	
3,500.00	3,497.96	3,533.15	3,532.97	12.40	63.87	51.72	676.09	-10,367.97	10,321.49	10,245.25	76.24	135.377	
3,600.00	3,597.89	3,635.70	3,635.52	12.77	65.94	51.74	675.91	-10,367.97	10,319.17	10,240.49	78.68	131.158	
3,700.00	3,697.82	3,733.04	3,732.82	13.13	67.92	51.75	675.46	-10,367.97	10,316.82	10,235.81	81.01	127.350	
3,800.00	3,797.75	3,832.97	3,832.75	13.49	70.01	51.77	675.46	-10,367.97	10,314.51	10,231.05	83.46	123.581	
3,900.00	3,897.68	3,932.90	3,932.68	13.85	72.10	51.79	675.46	-10,367.97	10,312.20	10,226.29	85.91	120.028	
4,000.00	3,997.61	4,034.14	4,033.91	14.21	74.21	51.81	676.53	-10,367.97	10,309.97	10,221.58	88.39	116.637	
4,100.00	4,097.54	4,136.78	4,136.55	14.58	76.36	51.82	676.18	-10,367.97	10,307.64	10,216.74	90.90	113.393	
4,200.00	4,197.47	4,239.45	4,239.21	14.94	78.51	51.84	675.47	-10,367.97	10,305.28	10,211.87	93.41	110.322	
4,300.00	4,297.40	4,332.70	4,332.40	15.30	80.47	51.85	675.46	-10,367.97	10,302.97	10,207.24	95.73	107.624	
4,400.00	4,397.33	4,432.63	4,432.33	15.66	82.57	51.87	675.46	-10,367.97	10,300.66	10,202.47	98.19	104.904	
4,500.00	4,497.26	4,533.32	4,533.02	16.03	84.68	51.89	676.59	-10,367.97	10,298.44	10,197.78	100.67	102.301	
4,600.00	4,597.19	4,635.94	4,635.63	16.39	86.84	51.91	676.31	-10,367.97	10,296.12	10,192.94	103.19	99.783	
4,700.00	4,697.12	4,738.59	4,738.27	16.75	88.99	51.92	675.69	-10,367.97	10,293.77	10,188.07	105.70	97.384	
4,800.00	4,797.05	4,832.43	4,832.05	17.11	90.97	51.93	675.46	-10,367.97	10,291.45	10,183.41	108.04	95.256	
4,900.00	4,896.99	4,932.36	4,931.99	17.47	93.07	51.95	675.46	-10,367.97	10,289.15	10,178.64	110.51	93.109	
5,000.00	4,996.92	5,032.29	5,031.92	17.84	95.18	51.97	675.46	-10,367.97	10,286.85	10,173.87	112.97	91.055	
5,100.00	5,096.85	5,134.10	5,133.71	18.20	97.33	51.99	676.63	-10,367.97	10,284.64	10,169.16	115.48	89.059	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 328-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,236.53	5,236.14	18.56	99.48	52.00	676.23	-10,367.97	10,282.31	10,164.31	118.00	87.138	
5,300.00	5,296.71	5,338.98	5,338.58	18.92	101.64	52.02	675.52	-10,367.97	10,279.96	10,159.44	120.52	85.296	
5,400.00	5,396.64	5,432.10	5,431.64	19.29	103.61	52.03	675.46	-10,367.97	10,277.65	10,154.80	122.85	83.661	
5,500.00	5,496.57	5,532.03	5,531.57	19.65	105.72	52.05	675.46	-10,367.97	10,275.36	10,150.04	125.32	81.993	
5,600.00	5,596.50	5,633.00	5,632.52	20.01	107.85	52.07	676.53	-10,367.97	10,273.15	10,145.33	127.81	80.376	
5,700.00	5,696.43	5,735.87	5,735.39	20.37	110.02	52.09	676.21	-10,367.97	10,270.83	10,140.48	130.35	78.796	
5,800.00	5,796.36	5,838.77	5,838.28	20.74	112.19	52.10	675.53	-10,367.97	10,268.48	10,135.60	132.88	77.276	
5,900.00	5,896.29	5,931.83	5,931.29	21.10	114.16	52.11	675.46	-10,367.97	10,266.18	10,130.97	135.21	75.927	
6,000.00	5,996.22	6,031.76	6,031.22	21.46	116.28	52.13	675.46	-10,367.97	10,263.89	10,126.20	137.69	74.544	
6,100.00	6,096.15	6,131.69	6,131.15	21.82	118.39	52.15	675.46	-10,367.97	10,261.60	10,121.43	140.17	73.211	
6,200.00	6,196.08	6,231.62	6,231.08	22.19	120.51	52.16	675.46	-10,367.97	10,259.30	10,116.66	142.64	71.923	
6,300.00	6,296.01	6,331.55	6,331.01	22.55	122.62	52.18	675.46	-10,367.97	10,257.02	10,111.90	145.12	70.680	
6,335.60	6,331.59	6,367.13	6,366.59	22.68	123.38	52.18	675.46	-10,367.97	10,256.20	10,110.20	146.00	70.248	
6,350.00	6,345.97	6,381.51	6,380.97	22.73	123.68	34.52	675.46	-10,367.97	10,255.71	10,109.35	146.36	70.073	
6,400.00	6,395.75	6,431.29	6,430.75	22.91	124.74	16.83	675.46	-10,367.97	10,251.49	10,103.89	147.59	69.458	
6,450.00	6,445.03	6,480.57	6,480.03	23.10	125.78	12.26	675.46	-10,367.97	10,243.38	10,094.56	148.82	68.833	
6,500.00	6,493.52	6,529.06	6,528.52	23.29	126.81	10.27	675.46	-10,367.97	10,231.44	10,081.42	150.02	68.200	
6,550.00	6,540.91	6,576.45	6,575.91	23.48	127.81	9.22	675.46	-10,367.97	10,215.74	10,064.54	151.20	67.565	
6,600.00	6,586.91	6,622.45	6,621.91	23.66	128.78	8.65	675.46	-10,367.97	10,196.38	10,044.04	152.34	66.931	
6,650.00	6,631.24	6,666.78	6,666.24	23.85	129.72	8.35	675.46	-10,367.97	10,173.48	10,020.04	153.44	66.302	
6,700.00	6,673.63	6,709.16	6,708.63	24.05	130.62	8.25	675.46	-10,367.97	10,147.18	9,992.68	154.49	65.681	
6,750.00	6,713.80	6,749.34	6,748.80	24.24	131.47	8.31	675.46	-10,367.97	10,117.64	9,962.15	155.49	65.070	
6,800.00	6,751.52	6,787.06	6,786.52	24.44	132.27	8.53	675.46	-10,367.97	10,085.04	9,928.62	156.42	64.474	
6,850.00	6,786.56	6,822.09	6,821.56	24.65	133.01	8.90	675.46	-10,367.97	10,049.58	9,892.30	157.28	63.895	
6,900.00	6,818.69	6,854.22	6,853.69	24.87	133.69	9.45	675.46	-10,367.97	10,011.49	9,853.42	158.07	63.334	
6,950.00	6,847.72	6,883.25	6,882.72	25.10	134.30	10.23	675.46	-10,367.97	9,971.00	9,812.22	158.79	62.795	
7,000.00	6,873.46	6,909.00	6,908.46	25.34	134.85	11.33	675.46	-10,367.97	9,928.36	9,768.94	159.42	62.279	
7,050.00	6,895.77	6,931.31	6,930.77	25.60	135.32	12.90	675.46	-10,367.97	9,883.83	9,723.87	159.96	61.789	
7,100.00	6,914.50	6,950.04	6,949.50	25.87	135.72	15.23	675.46	-10,367.97	9,837.68	9,677.27	160.42	61.325	
7,150.00	6,929.54	6,965.08	6,964.54	26.15	136.03	18.89	675.46	-10,367.97	9,790.21	9,629.42	160.79	60.890	
7,200.00	6,940.80	6,976.34	6,975.80	26.44	136.27	25.28	675.46	-10,367.97	9,741.70	9,580.64	161.06	60.484	
7,250.00	6,948.20	6,983.74	6,983.20	26.75	136.43	38.37	675.46	-10,367.97	9,692.45	9,531.20	161.25	60.110	
7,300.00	6,951.70	6,987.24	6,986.70	27.07	136.50	69.99	675.46	-10,367.97	9,642.77	9,481.43	161.34	59.767	
7,321.06	6,952.00	6,987.54	6,987.00	27.20	136.51	91.53	675.46	-10,367.97	9,621.78	9,460.43	161.35	59.632	
7,400.00	6,951.82	6,987.36	6,986.82	27.74	136.51	91.52	675.46	-10,367.97	9,543.12	9,381.75	161.37	59.139	
7,500.00	6,951.60	6,987.14	6,986.60	28.49	136.50	91.51	675.46	-10,367.97	9,443.48	9,282.09	161.39	58.513	
7,600.00	6,951.37	6,986.91	6,986.37	29.30	136.50	91.49	675.46	-10,367.97	9,343.85	9,182.43	161.42	57.886	
7,700.00	6,951.15	6,986.69	6,986.15	30.18	136.49	91.47	675.46	-10,367.97	9,244.23	9,082.78	161.45	57.259	
7,800.00	6,950.92	6,986.46	6,985.92	31.12	136.49	91.46	675.46	-10,367.97	9,144.61	8,983.13	161.48	56.632	
7,900.00	6,950.70	6,986.24	6,985.70	32.11	136.48	91.44	675.46	-10,367.97	9,045.00	8,883.49	161.51	56.004	
8,000.00	6,950.47	6,986.01	6,985.47	33.15	136.48	91.43	675.46	-10,367.97	8,945.40	8,783.86	161.54	55.375	
8,100.00	6,950.25	6,985.79	6,985.25	34.23	136.47	91.41	675.46	-10,367.97	8,845.81	8,684.23	161.58	54.746	
8,200.00	6,950.03	6,985.56	6,985.03	35.35	136.47	91.39	675.46	-10,367.97	8,746.23	8,584.61	161.62	54.116	
8,300.00	6,949.80	6,985.34	6,984.80	36.51	136.46	91.38	675.46	-10,367.97	8,646.66	8,485.00	161.66	53.486	
8,400.00	6,949.58	6,985.11	6,984.58	37.70	136.46	91.36	675.46	-10,367.97	8,547.10	8,385.39	161.71	52.855	
8,500.00	6,949.35	6,984.89	6,984.35	38.92	136.45	91.35	675.46	-10,367.97	8,447.55	8,285.79	161.76	52.224	
8,600.00	6,949.13	6,984.66	6,984.13	40.17	136.45	91.33	675.46	-10,367.97	8,348.01	8,186.20	161.81	51.592	
8,700.00	6,948.90	6,984.44	6,983.90	41.44	136.44	91.31	675.46	-10,367.97	8,248.48	8,086.62	161.86	50.960	
8,800.00	6,948.68	6,984.22	6,983.68	42.73	136.44	91.30	675.46	-10,367.97	8,148.96	7,987.04	161.92	50.327	
8,900.00	6,948.45	6,983.99	6,983.45	44.04	136.43	91.28	675.46	-10,367.97	8,049.46	7,887.48	161.98	49.694	
9,000.00	6,948.23	6,983.77	6,983.23	45.38	136.43	91.27	675.46	-10,367.97	7,949.97	7,787.92	162.05	49.060	
9,100.00	6,948.00	6,983.54	6,983.00	46.72	136.42	91.25	675.46	-10,367.97	7,850.49	7,688.37	162.11	48.426	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 328-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	6,983.32	6,982.78	48.09	136.42	91.23	675.46	-10,367.97	7,751.02	7,588.83	162.19	47.791	
9,300.00	6,947.55	6,983.09	6,982.55	49.47	136.42	91.22	675.46	-10,367.97	7,651.57	7,489.31	162.26	47.156	
9,400.00	6,947.33	6,982.87	6,982.33	50.86	136.41	91.20	675.46	-10,367.97	7,552.13	7,389.79	162.34	46.520	
9,500.00	6,947.10	6,982.64	6,982.10	52.26	136.41	91.19	675.46	-10,367.97	7,452.71	7,290.28	162.43	45.884	
9,600.00	6,946.88	6,982.42	6,981.88	53.68	136.40	91.17	675.46	-10,367.97	7,353.30	7,190.78	162.51	45.247	
9,700.00	6,946.66	6,982.19	6,981.66	55.10	136.40	91.15	675.46	-10,367.97	7,253.91	7,091.30	162.61	44.610	
9,800.00	6,946.43	6,981.97	6,981.43	56.54	136.39	91.14	675.46	-10,367.97	7,154.53	6,991.83	162.71	43.972	
9,900.00	6,946.21	6,981.74	6,981.21	57.98	136.39	91.12	675.46	-10,367.97	7,055.18	6,892.37	162.81	43.334	
10,000.00	6,945.98	6,981.52	6,980.98	59.43	136.38	91.11	675.46	-10,367.97	6,955.84	6,792.92	162.92	42.695	
10,100.00	6,945.76	6,981.29	6,980.76	60.89	136.38	91.09	675.46	-10,367.97	6,856.52	6,693.49	163.03	42.056	
10,200.00	6,945.53	6,981.07	6,980.53	62.36	136.37	91.07	675.46	-10,367.97	6,757.22	6,594.07	163.15	41.417	
10,300.00	6,945.31	6,980.85	6,980.31	63.83	136.37	91.06	675.46	-10,367.97	6,657.94	6,494.66	163.28	40.777	
10,400.00	6,945.08	6,980.62	6,980.08	65.31	136.36	91.04	675.46	-10,367.97	6,558.69	6,395.28	163.41	40.136	
10,500.00	6,944.86	6,980.40	6,979.86	66.79	136.36	91.03	675.46	-10,367.97	6,459.45	6,295.90	163.55	39.495	
10,600.00	6,944.63	6,980.17	6,979.63	68.28	136.35	91.01	675.46	-10,367.97	6,360.24	6,196.55	163.70	38.854	
10,700.00	6,944.41	6,979.95	6,979.41	69.78	136.35	90.99	675.46	-10,367.97	6,261.06	6,097.21	163.85	38.212	
10,800.00	6,944.18	6,979.72	6,979.18	71.28	136.34	90.98	675.46	-10,367.97	6,161.90	5,997.89	164.01	37.570	
10,900.00	6,943.96	6,979.50	6,978.96	72.78	136.34	90.96	675.46	-10,367.97	6,062.77	5,898.59	164.18	36.927	
11,000.00	6,943.73	6,979.27	6,978.73	74.29	136.33	90.95	675.46	-10,367.97	5,963.67	5,799.31	164.36	36.283	
11,100.00	6,943.51	6,979.05	6,978.51	75.80	136.33	90.93	675.46	-10,367.97	5,864.60	5,700.05	164.55	35.640	
11,200.00	6,943.29	6,978.82	6,978.29	77.32	136.32	90.91	675.46	-10,367.97	5,765.57	5,600.81	164.75	34.996	
11,300.00	6,943.06	6,978.60	6,978.06	78.84	136.32	90.90	675.46	-10,367.97	5,666.56	5,501.60	164.96	34.351	
11,400.00	6,942.84	6,978.37	6,977.84	80.36	136.32	90.88	675.46	-10,367.97	5,567.59	5,402.41	165.18	33.706	
11,500.00	6,942.61	6,978.15	6,977.61	81.88	136.31	90.87	675.46	-10,367.97	5,468.66	5,303.25	165.41	33.060	
11,600.00	6,942.39	6,977.92	6,977.39	83.41	136.31	90.85	675.46	-10,367.97	5,369.77	5,204.11	165.66	32.414	
11,700.00	6,942.16	6,977.70	6,977.16	84.94	136.30	90.83	675.46	-10,367.97	5,270.92	5,105.00	165.92	31.768	
11,800.00	6,941.94	6,977.48	6,976.94	86.47	136.30	90.82	675.46	-10,367.97	5,172.11	5,005.92	166.19	31.121	
11,900.00	6,941.71	6,977.25	6,976.71	88.01	136.29	90.80	675.46	-10,367.97	5,073.36	4,906.87	166.48	30.474	
12,000.00	6,941.49	6,977.03	6,976.49	89.55	136.29	90.79	675.46	-10,367.97	4,974.65	4,807.86	166.79	29.826	
12,100.00	6,941.26	6,976.80	6,976.26	91.09	136.28	90.77	675.46	-10,367.97	4,875.99	4,708.88	167.11	29.178	
12,200.00	6,941.04	6,976.58	6,976.04	92.63	136.28	90.75	675.46	-10,367.97	4,777.39	4,609.94	167.45	28.530	
12,300.00	6,940.81	6,976.35	6,975.81	94.18	136.27	90.74	675.46	-10,367.97	4,678.85	4,511.03	167.81	27.881	
12,400.00	6,940.59	6,976.13	6,975.59	95.72	136.27	90.72	675.46	-10,367.97	4,580.37	4,412.17	168.20	27.232	
12,500.00	6,940.36	6,975.90	6,975.36	97.27	136.26	90.71	675.46	-10,367.97	4,481.96	4,313.36	168.60	26.583	
12,600.00	6,940.14	6,975.68	6,975.14	98.82	136.26	90.69	675.46	-10,367.97	4,383.62	4,214.59	169.03	25.933	
12,700.00	6,939.92	6,975.45	6,974.92	100.37	136.25	90.67	675.46	-10,367.97	4,285.36	4,115.87	169.49	25.283	
12,800.00	6,939.69	6,975.23	6,974.69	101.92	136.25	90.66	675.46	-10,367.97	4,187.18	4,017.20	169.98	24.633	
12,900.00	6,939.47	6,975.00	6,974.47	103.48	136.24	90.64	675.46	-10,367.97	4,089.09	3,918.59	170.50	23.983	
13,000.00	6,939.24	6,974.78	6,974.24	105.03	136.24	90.63	675.46	-10,367.97	3,991.09	3,820.04	171.05	23.333	
13,100.00	6,939.02	6,974.55	6,974.02	106.59	136.23	90.61	675.46	-10,367.97	3,893.20	3,721.56	171.64	22.683	
13,200.00	6,938.79	6,974.33	6,973.79	108.15	136.23	90.59	675.46	-10,367.97	3,795.41	3,623.15	172.26	22.033	
13,300.00	6,938.57	6,974.11	6,973.57	109.71	136.23	90.58	675.46	-10,367.97	3,697.74	3,524.81	172.93	21.382	
13,400.00	6,938.34	6,973.88	6,973.34	111.27	136.22	90.56	675.46	-10,367.97	3,600.21	3,426.56	173.65	20.733	
13,500.00	6,938.12	6,973.66	6,973.12	112.83	136.22	90.55	675.46	-10,367.97	3,502.81	3,328.39	174.41	20.083	
13,600.00	6,937.89	6,973.43	6,972.89	114.40	136.21	90.53	675.46	-10,367.97	3,405.56	3,230.32	175.24	19.434	
13,700.00	6,937.67	6,973.21	6,972.67	115.96	136.21	90.51	675.46	-10,367.97	3,308.47	3,132.36	176.12	18.786	
13,800.00	6,937.44	6,972.98	6,972.44	117.53	136.20	90.50	675.46	-10,367.97	3,211.57	3,034.50	177.06	18.138	
13,900.00	6,937.22	6,972.76	6,972.22	119.09	136.20	90.48	675.46	-10,367.97	3,114.85	2,936.78	178.08	17.492	
14,000.00	6,936.99	6,972.53	6,971.99	120.66	136.19	90.47	675.46	-10,367.97	3,018.36	2,839.19	179.17	16.846	
14,100.00	6,936.77	6,972.31	6,971.77	122.23	136.19	90.45	675.46	-10,367.97	2,922.10	2,741.75	180.35	16.202	
14,200.00	6,936.55	6,972.08	6,971.55	123.80	136.18	90.43	675.46	-10,367.97	2,826.10	2,644.47	181.62	15.560	
14,300.00	6,936.32	6,971.86	6,971.32	125.37	136.18	90.42	675.46	-10,367.97	2,730.38	2,547.38	183.00	14.920	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 328-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	6,971.63	6,971.10	126.94	136.17	90.40	675.46	-10,367.97	2,634.99	2,450.50	184.49	14.282	
14,500.00	6,935.87	6,971.41	6,970.87	128.51	136.17	90.39	675.46	-10,367.97	2,539.95	2,353.84	186.11	13.648	
14,600.00	6,935.65	6,971.18	6,970.65	130.08	136.16	90.37	675.46	-10,367.97	2,445.30	2,257.43	187.87	13.016	
14,700.00	6,935.42	6,970.96	6,970.42	131.65	136.16	90.35	675.46	-10,367.97	2,351.10	2,161.32	189.78	12.389	
14,800.00	6,935.20	6,970.74	6,970.20	133.23	136.15	90.34	675.46	-10,367.97	2,257.39	2,065.53	191.87	11.766	
14,900.00	6,934.97	6,970.51	6,969.97	134.80	136.15	90.32	675.46	-10,367.97	2,164.25	1,970.11	194.14	11.148	
15,000.00	6,934.75	6,970.29	6,969.75	136.37	136.14	90.31	675.46	-10,367.97	2,071.75	1,875.12	196.64	10.536	
15,100.00	6,934.52	6,970.06	6,969.52	137.95	136.14	90.29	675.46	-10,367.97	1,979.98	1,780.61	199.37	9.931	
15,200.00	6,934.30	6,969.84	6,969.30	139.53	136.13	90.27	675.46	-10,367.97	1,889.05	1,686.67	202.38	9.334	
15,300.00	6,934.07	6,969.61	6,969.07	141.10	136.13	90.26	675.46	-10,367.97	1,799.07	1,593.39	205.68	8.747	
15,400.00	6,933.85	6,969.39	6,968.85	142.68	136.13	90.24	675.46	-10,367.97	1,710.21	1,500.89	209.32	8.170	
15,500.00	6,933.62	6,969.16	6,968.62	144.26	136.12	90.23	675.46	-10,367.97	1,622.65	1,409.31	213.34	7.606	
15,600.00	6,933.40	6,968.94	6,968.40	145.84	136.12	90.21	675.46	-10,367.97	1,536.61	1,318.83	217.78	7.056	
15,700.00	6,933.18	6,968.71	6,968.18	147.42	136.11	90.19	675.46	-10,367.97	1,452.35	1,229.67	222.69	6.522	
15,800.00	6,932.95	6,968.49	6,967.95	148.99	136.11	90.18	675.46	-10,367.97	1,370.22	1,142.12	228.10	6.007	
15,900.00	6,932.73	6,968.26	6,967.73	150.57	136.10	90.16	675.46	-10,367.97	1,290.61	1,056.54	234.07	5.514	
16,000.00	6,932.50	6,968.04	6,967.50	152.15	136.10	90.15	675.46	-10,367.97	1,214.01	973.40	240.61	5.046	
16,100.00	6,932.28	6,967.81	6,967.28	153.74	136.09	90.13	675.46	-10,367.97	1,141.05	893.31	247.74	4.606	
16,200.00	6,932.05	6,967.59	6,967.05	155.32	136.09	90.11	675.46	-10,367.97	1,072.46	817.04	255.41	4.199	
16,300.00	6,931.83	6,967.37	6,966.83	156.90	136.08	90.10	675.46	-10,367.97	1,009.12	745.59	263.54	3.829	
16,400.00	6,931.60	6,967.14	6,966.60	158.48	136.08	90.08	675.46	-10,367.97	952.10	680.19	271.91	3.502	
16,500.00	6,931.38	6,966.92	6,966.38	160.06	136.07	90.07	675.46	-10,367.97	902.58	622.36	280.22	3.221	
16,600.00	6,931.15	6,966.69	6,966.15	161.65	136.07	90.05	675.46	-10,367.97	861.87	573.87	288.00	2.993	
16,700.00	6,930.93	6,966.47	6,965.93	163.23	136.06	90.03	675.46	-10,367.97	831.26	536.57	294.69	2.821	
16,800.00	6,930.70	6,966.24	6,965.70	164.81	136.06	90.02	675.46	-10,367.97	811.88	512.21	299.67	2.709	
16,900.00	6,930.48	6,966.02	6,965.48	166.40	136.05	90.00	675.46	-10,367.97	804.56	502.11	302.45	2.660	
16,909.17	6,930.46	6,966.00	6,965.46	166.54	136.05	90.00	675.46	-10,367.97	804.51	501.93	302.58	2.659	CC, ES, SF
17,000.00	6,930.25	6,965.79	6,965.25	167.98	136.05	89.99	675.46	-10,367.97	809.62	506.85	302.77	2.674	
17,100.00	6,930.03	6,965.57	6,965.03	169.56	136.04	89.97	675.46	-10,367.97	826.83	526.12	300.71	2.750	
17,200.00	6,929.81	6,965.34	6,964.81	171.15	136.04	89.95	675.46	-10,367.97	855.46	558.82	296.64	2.884	
17,300.00	6,929.58	6,965.12	6,964.58	172.73	136.03	89.94	675.46	-10,367.97	894.42	603.33	291.09	3.073	
17,400.00	6,929.36	6,964.89	6,964.36	174.32	136.03	89.92	675.46	-10,367.97	942.41	657.78	284.63	3.311	
17,500.00	6,929.13	6,964.67	6,964.13	175.91	136.03	89.91	675.46	-10,367.97	998.15	720.40	277.75	3.594	
17,600.00	6,928.91	6,964.44	6,963.91	177.49	136.02	89.89	675.46	-10,367.97	1,060.41	789.58	270.83	3.915	
17,700.00	6,928.68	6,964.22	6,963.68	179.08	136.02	89.87	675.46	-10,367.97	1,128.11	864.01	264.10	4.272	
17,800.00	6,928.46	6,964.00	6,963.46	180.66	136.01	89.86	675.46	-10,367.97	1,200.33	942.61	257.73	4.657	
17,900.00	6,928.23	6,963.77	6,963.23	182.25	136.01	89.84	675.46	-10,367.97	1,276.31	1,024.53	251.78	5.069	
18,000.00	6,928.01	6,963.55	6,963.01	183.84	136.00	89.83	675.46	-10,367.97	1,355.41	1,109.12	246.29	5.503	
18,100.00	6,927.78	6,963.32	6,962.78	185.43	136.00	89.81	675.46	-10,367.97	1,437.11	1,195.86	241.25	5.957	
18,200.00	6,927.56	6,963.10	6,962.56	187.01	135.99	89.79	675.46	-10,367.97	1,521.01	1,284.36	236.65	6.427	
18,300.00	6,927.33	6,962.87	6,962.33	188.60	135.99	89.78	675.46	-10,367.97	1,606.74	1,374.29	232.45	6.912	
18,400.00	6,927.11	6,962.65	6,962.11	190.19	135.98	89.76	675.46	-10,367.97	1,694.04	1,465.42	228.62	7.410	
18,500.00	6,926.88	6,962.42	6,961.88	191.78	135.98	89.75	675.46	-10,367.97	1,782.68	1,557.55	225.13	7.918	
18,600.00	6,926.66	6,962.20	6,961.66	193.37	135.97	89.73	675.46	-10,367.97	1,872.46	1,650.51	221.95	8.436	
18,700.00	6,926.44	6,961.97	6,961.44	194.96	135.97	89.71	675.46	-10,367.97	1,963.23	1,744.19	219.04	8.963	
18,800.00	6,926.21	6,961.75	6,961.21	196.54	135.96	89.70	675.46	-10,367.97	2,054.86	1,838.47	216.39	9.496	
18,900.00	6,925.99	6,961.52	6,960.99	198.13	135.96	89.68	675.46	-10,367.97	2,147.23	1,933.28	213.95	10.036	
19,000.00	6,925.76	6,961.30	6,960.76	199.72	135.95	89.67	675.46	-10,367.97	2,240.26	2,028.55	211.71	10.582	
19,100.00	6,925.54	6,961.07	6,960.54	201.31	135.95	89.65	675.46	-10,367.97	2,333.87	2,124.21	209.66	11.132	
19,200.00	6,925.31	6,960.85	6,960.31	202.90	135.94	89.63	675.46	-10,367.97	2,427.98	2,220.21	207.77	11.686	
19,300.00	6,925.09	6,960.63	6,960.09	204.49	135.94	89.62	675.46	-10,367.97	2,522.55	2,316.52	206.02	12.244	
19,400.00	6,924.86	6,960.40	6,959.86	206.08	135.93	89.60	675.46	-10,367.97	2,617.52	2,413.11	204.41	12.805	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 067 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 328-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	6,960.18	6,959.64	207.67	135.93	89.59	675.46	-10,367.97	2,712.85	2,509.93	202.92	13.369	
19,600.00	6,924.41	6,959.95	6,959.41	209.26	135.93	89.57	675.46	-10,367.97	2,808.51	2,606.97	201.54	13.935	
19,700.00	6,924.19	6,959.73	6,959.19	210.85	135.92	89.55	675.46	-10,367.97	2,904.46	2,704.20	200.26	14.503	
19,800.00	6,923.96	6,959.50	6,958.96	212.44	135.92	89.54	675.46	-10,367.97	3,000.68	2,801.61	199.07	15.073	
19,900.00	6,923.74	6,959.28	6,958.74	214.04	135.91	89.52	675.46	-10,367.97	3,097.13	2,899.17	197.96	15.645	
20,000.00	6,923.51	6,959.05	6,958.51	215.63	135.91	89.51	675.46	-10,367.97	3,193.81	2,996.87	196.93	16.218	
20,100.00	6,923.29	6,958.83	6,958.29	217.22	135.90	89.49	675.46	-10,367.97	3,290.68	3,094.71	195.97	16.792	
20,200.00	6,923.07	6,958.60	6,958.07	218.81	135.90	89.47	675.46	-10,367.97	3,387.73	3,192.66	195.07	17.367	
20,300.00	6,922.84	6,958.38	6,957.84	220.40	135.89	89.46	675.46	-10,367.97	3,484.95	3,290.72	194.23	17.942	
20,400.00	6,922.62	6,958.15	6,957.62	221.99	135.89	89.44	675.46	-10,367.97	3,582.32	3,388.87	193.45	18.518	
20,500.00	6,922.39	6,957.93	6,957.39	223.59	135.88	89.43	675.46	-10,367.97	3,679.84	3,487.12	192.71	19.095	
20,600.00	6,922.17	6,957.70	6,957.17	225.18	135.88	89.41	675.46	-10,367.97	3,777.48	3,585.46	192.03	19.672	
20,674.13	6,922.00	6,957.54	6,957.00	226.36	135.87	89.40	675.46	-10,367.97	3,849.94	3,658.40	191.54	20.100	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 350-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	169.34	-1,258.22	236.85	1,280.46				
100.00	100.00	81.00	81.00	0.25	0.80	169.34	-1,258.22	236.85	1,280.32	1,279.27	1.05	1,220.604	
200.00	200.00	181.00	181.00	0.61	1.78	169.34	-1,258.22	236.85	1,280.32	1,277.93	2.39	535.178	
300.00	300.00	281.00	281.00	0.97	2.77	169.34	-1,258.22	236.85	1,280.32	1,276.59	3.74	342.723	
400.00	400.00	381.01	381.00	1.33	4.04	169.34	-1,258.22	236.85	1,280.32	1,274.96	5.36	238.693	
500.00	500.00	481.01	481.00	1.68	5.94	169.34	-1,258.22	236.85	1,280.32	1,272.70	7.63	167.906	
606.93	606.91	587.92	587.91	2.05	7.97	-53.25	-1,258.22	236.85	1,279.13	1,269.10	10.03	127.559	
700.00	699.91	678.68	678.66	2.37	9.70	-53.38	-1,257.44	236.85	1,276.29	1,264.22	12.07	105.756	
800.00	799.84	775.55	775.53	2.71	11.55	-53.51	-1,257.74	236.85	1,274.36	1,260.11	14.25	89.404	
900.00	899.77	880.81	880.77	3.06	13.54	-53.65	-1,258.22	236.85	1,272.61	1,256.02	16.60	76.686	
1,000.00	999.70	980.74	980.70	3.41	15.38	-53.78	-1,258.22	236.85	1,270.40	1,251.62	18.79	67.620	
1,100.00	1,099.63	1,080.67	1,080.63	3.76	17.22	-53.92	-1,258.22	236.85	1,268.20	1,247.22	20.98	60.443	
1,200.00	1,199.56	1,179.20	1,179.15	4.11	19.04	-54.06	-1,257.72	236.85	1,265.51	1,242.36	23.15	54.662	
1,300.00	1,299.49	1,277.01	1,276.97	4.47	20.84	-54.19	-1,257.91	236.85	1,263.52	1,238.21	25.31	49.922	
1,400.00	1,399.42	1,380.48	1,380.42	4.83	22.75	-54.33	-1,258.22	236.85	1,261.64	1,234.06	27.57	45.755	
1,500.00	1,499.35	1,480.41	1,480.35	5.19	24.60	-54.47	-1,258.22	236.85	1,259.46	1,229.69	29.78	42.299	
1,600.00	1,599.28	1,580.34	1,580.28	5.54	26.44	-54.61	-1,258.22	236.85	1,257.30	1,225.32	31.98	39.318	
1,700.00	1,699.21	1,678.39	1,678.32	5.90	28.25	-54.75	-1,257.78	236.85	1,254.70	1,220.56	34.15	36.745	
1,800.00	1,799.14	1,776.09	1,776.02	6.26	30.06	-54.88	-1,258.02	236.85	1,252.79	1,216.49	36.31	34.504	
1,900.00	1,899.07	1,880.15	1,880.07	6.62	31.98	-55.02	-1,258.22	236.85	1,250.84	1,212.25	38.59	32.415	
2,000.00	1,999.00	1,980.08	1,980.00	6.98	33.83	-55.16	-1,258.22	236.85	1,248.71	1,207.91	40.79	30.610	
2,100.00	2,098.94	2,079.99	2,079.91	7.34	35.67	-55.31	-1,257.68	236.85	1,246.05	1,203.05	43.00	28.979	
2,200.00	2,198.87	2,177.86	2,177.77	7.70	37.48	-55.45	-1,257.76	236.85	1,244.01	1,198.84	45.17	27.543	
2,300.00	2,298.80	2,275.73	2,275.65	8.06	39.29	-55.58	-1,258.02	236.85	1,242.15	1,194.81	47.33	26.243	
2,400.00	2,398.73	2,379.82	2,379.73	8.42	41.27	-55.73	-1,258.22	236.85	1,240.24	1,190.56	49.67	24.968	
2,500.00	2,498.66	2,479.75	2,479.66	8.79	43.23	-55.87	-1,258.22	236.85	1,238.14	1,186.15	51.99	23.815	
2,600.00	2,598.59	2,579.67	2,579.57	9.15	45.18	-56.02	-1,257.68	236.85	1,235.52	1,181.21	54.31	22.750	
2,700.00	2,698.52	2,677.56	2,677.46	9.51	47.10	-56.16	-1,257.76	236.85	1,233.52	1,176.93	56.59	21.799	
2,800.00	2,798.45	2,775.45	2,775.35	9.87	49.02	-56.30	-1,258.02	236.85	1,231.69	1,172.83	58.87	20.924	
2,900.00	2,898.38	2,879.52	2,879.38	10.23	51.12	-56.45	-1,258.22	236.85	1,229.82	1,168.49	61.33	20.052	
3,000.00	2,998.31	2,979.45	2,979.31	10.59	53.21	-56.59	-1,258.22	236.85	1,227.76	1,163.98	63.78	19.250	
3,100.00	3,098.24	3,079.38	3,079.24	10.96	55.30	-56.74	-1,258.22	236.85	1,225.71	1,159.48	66.23	18.507	
3,200.00	3,198.17	3,179.31	3,179.17	11.32	57.39	-56.88	-1,258.22	236.85	1,223.67	1,154.99	68.68	17.817	
3,300.00	3,298.10	3,278.73	3,278.57	11.68	59.47	-57.05	-1,256.36	236.85	1,219.83	1,148.71	71.12	17.152	
3,400.00	3,398.03	3,376.34	3,376.17	12.04	61.51	-57.19	-1,256.50	236.85	1,217.94	1,144.42	73.52	16.566	
3,500.00	3,497.96	3,473.96	3,473.79	12.40	63.55	-57.33	-1,256.83	236.85	1,216.25	1,140.33	75.92	16.020	
3,600.00	3,597.89	3,571.59	3,571.42	12.77	65.59	-57.47	-1,257.36	236.85	1,214.76	1,136.44	78.32	15.509	
3,700.00	3,697.82	3,669.24	3,669.06	13.13	67.63	-57.61	-1,258.08	236.85	1,213.47	1,132.74	80.73	15.032	
3,800.00	3,797.75	3,779.02	3,778.75	13.49	69.94	-57.77	-1,258.22	236.85	1,211.57	1,128.18	83.40	14.528	
3,900.00	3,897.68	3,878.95	3,878.68	13.85	72.05	-57.92	-1,258.22	236.85	1,209.59	1,123.73	85.86	14.088	
4,000.00	3,997.61	3,977.10	3,976.82	14.21	74.11	-58.08	-1,257.18	236.85	1,206.60	1,118.31	88.29	13.667	
4,100.00	4,097.54	4,073.13	4,072.84	14.58	76.13	-58.22	-1,257.49	236.85	1,204.94	1,114.27	90.67	13.290	
4,200.00	4,197.47	4,169.18	4,168.88	14.94	78.15	-58.36	-1,258.12	236.85	1,203.62	1,110.57	93.05	12.935	
4,300.00	4,297.40	4,278.75	4,278.40	15.30	80.46	-58.52	-1,258.22	236.85	1,201.72	1,106.00	95.72	12.554	
4,400.00	4,397.33	4,378.68	4,378.33	15.66	82.57	-58.67	-1,258.22	236.85	1,199.78	1,101.58	98.19	12.219	
4,500.00	4,497.26	4,476.62	4,476.26	16.03	84.64	-58.84	-1,257.19	236.85	1,196.85	1,096.23	100.62	11.895	
4,600.00	4,597.19	4,572.68	4,572.31	16.39	86.67	-58.98	-1,257.52	236.85	1,195.25	1,092.24	103.01	11.603	
4,700.00	4,697.12	4,678.55	4,678.12	16.75	88.90	-59.13	-1,258.22	236.85	1,193.99	1,088.39	105.60	11.306	
4,800.00	4,797.05	4,778.48	4,778.05	17.11	91.01	-59.29	-1,258.22	236.85	1,192.08	1,084.00	108.08	11.030	
4,900.00	4,896.99	4,878.41	4,877.99	17.47	93.12	-59.44	-1,258.22	236.85	1,190.18	1,079.62	110.55	10.766	
5,000.00	4,996.92	4,976.45	4,976.02	17.84	95.20	-59.61	-1,257.16	236.85	1,187.26	1,074.28	112.99	10.508	
5,100.00	5,096.85	5,072.67	5,072.23	18.20	97.23	-59.75	-1,257.48	236.85	1,185.70	1,070.31	115.38	10.276	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 350-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,168.90	5,168.45	18.56	99.27	-59.89	-1,258.11	236.85	1,184.45	1,066.68	117.78	10.057	
5,300.00	5,296.71	5,278.21	5,277.71	18.92	101.58	-60.06	-1,258.22	236.85	1,182.65	1,062.20	120.45	9.818	
5,400.00	5,396.64	5,378.14	5,377.64	19.29	103.69	-60.22	-1,258.22	236.85	1,180.79	1,057.87	122.93	9.605	
5,500.00	5,496.57	5,475.90	5,475.39	19.65	105.76	-60.39	-1,257.23	236.85	1,178.00	1,052.64	125.36	9.397	
5,600.00	5,596.50	5,571.96	5,571.44	20.01	107.80	-60.54	-1,257.58	236.85	1,176.51	1,048.75	127.75	9.209	
5,700.00	5,696.43	5,678.00	5,677.43	20.37	110.04	-60.69	-1,258.22	236.85	1,175.27	1,044.91	130.36	9.015	
5,800.00	5,796.36	5,777.93	5,777.36	20.74	112.16	-60.85	-1,258.22	236.85	1,173.45	1,040.61	132.84	8.834	
5,900.00	5,896.29	5,877.86	5,877.29	21.10	114.28	-61.01	-1,258.22	236.85	1,171.63	1,036.31	135.32	8.658	
6,000.00	5,996.22	5,975.62	5,975.03	21.46	116.35	-61.19	-1,257.17	236.85	1,168.83	1,031.08	137.75	8.485	
6,100.00	6,096.15	6,071.93	6,071.34	21.82	118.39	-61.33	-1,257.52	236.85	1,167.38	1,027.22	140.16	8.329	
6,200.00	6,196.08	6,177.73	6,177.08	22.19	120.63	-61.49	-1,258.22	236.85	1,166.25	1,023.49	142.76	8.169	
6,300.00	6,296.01	6,277.66	6,277.01	22.55	122.75	-61.65	-1,258.22	236.85	1,164.47	1,019.23	145.24	8.018	
6,335.60	6,331.59	6,313.24	6,312.59	22.68	123.50	-61.71	-1,258.22	236.85	1,163.84	1,017.72	146.12	7.965	
6,350.00	6,345.97	6,327.62	6,326.97	22.73	123.81	-79.43	-1,258.22	236.85	1,163.64	1,017.16	146.48	7.944	
6,369.10	6,365.02	6,346.67	6,346.02	22.80	124.21	-90.01	-1,258.22	236.85	1,163.54	1,016.59	146.95	7.918 CC	
6,400.00	6,395.75	6,377.40	6,376.75	22.91	124.86	-97.36	-1,258.22	236.85	1,163.80	1,016.08	147.72	7.878 ES	
6,450.00	6,445.03	6,426.68	6,426.03	23.10	125.91	-102.28	-1,258.22	236.85	1,165.32	1,016.37	148.95	7.823	
6,500.00	6,493.52	6,475.17	6,474.52	23.29	126.94	-104.68	-1,258.22	236.85	1,168.28	1,018.11	150.17	7.780	
6,550.00	6,540.91	6,522.53	6,521.87	23.48	127.94	-106.23	-1,256.70	236.85	1,171.33	1,019.96	151.37	7.738	
6,600.00	6,586.91	6,567.32	6,566.65	23.66	128.89	-107.28	-1,256.73	236.85	1,177.47	1,024.95	152.52	7.720	
6,650.00	6,631.24	6,610.48	6,609.81	23.85	129.81	-108.06	-1,256.80	236.85	1,185.38	1,031.75	153.63	7.716 SF	
6,700.00	6,673.63	6,651.74	6,651.08	24.05	130.68	-108.62	-1,256.92	236.85	1,195.19	1,040.49	154.71	7.726	
6,750.00	6,713.80	6,690.87	6,690.19	24.24	131.51	-108.96	-1,257.06	236.85	1,207.01	1,051.27	155.74	7.750	
6,800.00	6,751.52	6,727.60	6,726.93	24.44	132.29	-109.08	-1,257.24	236.85	1,220.92	1,064.19	156.73	7.790	
6,850.00	6,786.56	6,761.72	6,761.04	24.65	133.01	-108.96	-1,257.43	236.85	1,237.01	1,079.34	157.66	7.846	
6,900.00	6,818.69	6,793.01	6,792.33	24.87	133.68	-108.56	-1,257.63	236.85	1,255.31	1,096.77	158.54	7.918	
6,950.00	6,847.72	6,821.28	6,820.60	25.10	134.28	-107.84	-1,257.83	236.85	1,275.84	1,116.49	159.35	8.007	
7,000.00	6,873.46	6,846.36	6,845.68	25.34	134.81	-106.78	-1,258.03	236.85	1,298.58	1,138.49	160.09	8.112	
7,050.00	6,895.77	6,877.53	6,876.77	25.60	135.47	-105.75	-1,258.22	236.85	1,323.46	1,162.49	160.96	8.222	
7,100.00	6,914.50	6,896.26	6,895.50	25.87	135.87	-103.91	-1,258.22	236.85	1,350.27	1,188.71	161.56	8.357	
7,150.00	6,929.54	6,911.30	6,910.54	26.15	136.19	-101.60	-1,258.22	236.85	1,379.03	1,216.95	162.08	8.508	
7,200.00	6,940.80	6,922.56	6,921.80	26.44	136.42	-98.80	-1,258.22	236.85	1,409.55	1,247.05	162.50	8.674	
7,250.00	6,948.20	6,929.96	6,929.20	26.75	136.58	-95.47	-1,258.22	236.85	1,441.64	1,278.80	162.84	8.853	
7,300.00	6,951.70	6,933.46	6,932.70	27.07	136.66	-91.64	-1,258.22	236.85	1,475.06	1,311.99	163.07	9.045	
7,321.06	6,952.00	6,933.76	6,933.00	27.20	136.66	-89.88	-1,258.22	236.85	1,489.47	1,326.33	163.14	9.130	
7,400.00	6,951.82	6,933.58	6,932.82	27.74	136.66	-89.87	-1,258.22	236.85	1,544.88	1,381.51	163.38	9.456	
7,500.00	6,951.60	6,933.35	6,932.60	28.49	136.65	-89.86	-1,258.22	236.85	1,617.89	1,454.23	163.66	9.886	
7,600.00	6,951.37	6,933.13	6,932.37	29.30	136.65	-89.84	-1,258.22	236.85	1,693.65	1,529.73	163.93	10.332	
7,700.00	6,951.15	6,932.91	6,932.15	30.18	136.64	-89.83	-1,258.22	236.85	1,771.82	1,607.65	164.17	10.792	
7,800.00	6,950.92	6,932.68	6,931.92	31.12	136.64	-89.82	-1,258.22	236.85	1,852.10	1,687.69	164.41	11.265	
7,900.00	6,950.70	6,932.46	6,931.70	32.11	136.63	-89.81	-1,258.22	236.85	1,934.21	1,769.59	164.62	11.750	
8,000.00	6,950.47	6,932.23	6,931.47	33.15	136.63	-89.80	-1,258.22	236.85	2,017.93	1,853.11	164.82	12.243	
8,100.00	6,950.25	6,932.01	6,931.25	34.23	136.62	-89.78	-1,258.22	236.85	2,103.08	1,938.08	165.00	12.746	
8,200.00	6,950.03	6,931.78	6,931.03	35.35	136.62	-89.77	-1,258.22	236.85	2,189.48	2,024.31	165.17	13.256	
8,300.00	6,949.80	6,931.56	6,930.80	36.51	136.61	-89.76	-1,258.22	236.85	2,277.00	2,111.67	165.33	13.773	
8,400.00	6,949.58	6,931.33	6,930.58	37.70	136.61	-89.75	-1,258.22	236.85	2,365.51	2,200.03	165.48	14.295	
8,500.00	6,949.35	6,931.11	6,930.35	38.92	136.61	-89.74	-1,258.22	236.85	2,454.90	2,289.29	165.61	14.823	
8,600.00	6,949.13	6,930.88	6,930.13	40.17	136.60	-89.73	-1,258.22	236.85	2,545.08	2,379.34	165.74	15.356	
8,700.00	6,948.90	6,930.66	6,929.90	41.44	136.60	-89.71	-1,258.22	236.85	2,635.97	2,470.11	165.86	15.893	
8,800.00	6,948.68	6,930.43	6,929.68	42.73	136.59	-89.70	-1,258.22	236.85	2,727.49	2,561.52	165.97	16.434	
8,900.00	6,948.45	6,930.21	6,929.45	44.04	136.59	-89.69	-1,258.22	236.85	2,819.60	2,653.52	166.07	16.978	
9,000.00	6,948.23	6,929.98	6,929.23	45.38	136.58	-89.68	-1,258.22	236.85	2,912.22	2,746.04	166.17	17.525	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 350-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	6,929.76	6,929.00	46.72	136.58	-89.67	-1,258.22	236.85	3,005.31	2,839.05	166.27	18.075	
9,200.00	6,947.78	6,929.54	6,928.78	48.09	136.57	-89.65	-1,258.22	236.85	3,098.84	2,932.48	166.36	18.628	
9,300.00	6,947.55	6,929.31	6,928.55	49.47	136.57	-89.64	-1,258.22	236.85	3,192.76	3,026.32	166.44	19.182	
9,400.00	6,947.33	6,929.09	6,928.33	50.86	136.56	-89.63	-1,258.22	236.85	3,287.03	3,120.51	166.52	19.739	
9,500.00	6,947.10	6,928.86	6,928.10	52.26	136.56	-89.62	-1,258.22	236.85	3,381.64	3,215.04	166.60	20.298	
9,600.00	6,946.88	6,928.64	6,927.88	53.68	136.55	-89.61	-1,258.22	236.85	3,476.55	3,309.87	166.68	20.858	
9,700.00	6,946.66	6,928.41	6,927.66	55.10	136.55	-89.59	-1,258.22	236.85	3,571.73	3,404.99	166.75	21.420	
9,800.00	6,946.43	6,928.19	6,927.43	56.54	136.54	-89.58	-1,258.22	236.85	3,667.18	3,500.36	166.82	21.983	
9,900.00	6,946.21	6,927.96	6,927.21	57.98	136.54	-89.57	-1,258.22	236.85	3,762.85	3,595.97	166.88	22.548	
10,000.00	6,945.98	6,927.74	6,926.98	59.43	136.53	-89.56	-1,258.22	236.85	3,858.75	3,691.80	166.95	23.113	
10,100.00	6,945.76	6,927.51	6,926.76	60.89	136.53	-89.55	-1,258.22	236.85	3,954.85	3,787.84	167.01	23.680	
10,200.00	6,945.53	6,927.29	6,926.53	62.36	136.52	-89.53	-1,258.22	236.85	4,051.14	3,884.07	167.08	24.247	
10,300.00	6,945.31	6,927.06	6,926.31	63.83	136.52	-89.52	-1,258.22	236.85	4,147.61	3,980.47	167.14	24.816	
10,400.00	6,945.08	6,926.84	6,926.08	65.31	136.51	-89.51	-1,258.22	236.85	4,244.24	4,077.04	167.20	25.385	
10,500.00	6,944.86	6,926.61	6,925.86	66.79	136.51	-89.50	-1,258.22	236.85	4,341.02	4,173.76	167.25	25.955	
10,600.00	6,944.63	6,926.39	6,925.63	68.28	136.51	-89.49	-1,258.22	236.85	4,437.94	4,270.63	167.31	26.525	
10,700.00	6,944.41	6,926.17	6,925.41	69.78	136.50	-89.48	-1,258.22	236.85	4,535.00	4,367.63	167.37	27.096	
10,800.00	6,944.18	6,925.94	6,925.18	71.28	136.50	-89.46	-1,258.22	236.85	4,632.18	4,464.76	167.42	27.667	
10,900.00	6,943.96	6,925.72	6,924.96	72.78	136.49	-89.45	-1,258.22	236.85	4,729.48	4,562.00	167.48	28.239	
11,000.00	6,943.73	6,925.49	6,924.73	74.29	136.49	-89.44	-1,258.22	236.85	4,826.89	4,659.36	167.53	28.811	
11,100.00	6,943.51	6,925.27	6,924.51	75.80	136.48	-89.43	-1,258.22	236.85	4,924.41	4,756.82	167.59	29.384	
11,200.00	6,943.29	6,925.04	6,924.29	77.32	136.48	-89.42	-1,258.22	236.85	5,022.02	4,854.38	167.64	29.957	
11,300.00	6,943.06	6,924.82	6,924.06	78.84	136.47	-89.40	-1,258.22	236.85	5,119.73	4,952.03	167.70	30.530	
11,400.00	6,942.84	6,924.59	6,923.84	80.36	136.47	-89.39	-1,258.22	236.85	5,217.52	5,049.77	167.75	31.103	
11,500.00	6,942.61	6,924.37	6,923.61	81.88	136.46	-89.38	-1,258.22	236.85	5,315.39	5,147.59	167.80	31.677	
11,600.00	6,942.39	6,924.14	6,923.39	83.41	136.46	-89.37	-1,258.22	236.85	5,413.34	5,245.49	167.85	32.250	
11,700.00	6,942.16	6,923.92	6,923.16	84.94	136.45	-89.36	-1,258.22	236.85	5,511.37	5,343.46	167.91	32.824	
11,800.00	6,941.94	6,923.69	6,922.94	86.47	136.45	-89.34	-1,258.22	236.85	5,609.46	5,441.50	167.96	33.398	
11,900.00	6,941.71	6,923.47	6,922.71	88.01	136.44	-89.33	-1,258.22	236.85	5,707.62	5,539.61	168.01	33.971	
12,000.00	6,941.49	6,923.24	6,922.49	89.55	136.44	-89.32	-1,258.22	236.85	5,805.85	5,637.78	168.06	34.545	
12,100.00	6,941.26	6,923.02	6,922.26	91.09	136.43	-89.31	-1,258.22	236.85	5,904.13	5,736.01	168.12	35.119	
12,200.00	6,941.04	6,922.80	6,922.04	92.63	136.43	-89.30	-1,258.22	236.85	6,002.47	5,834.30	168.17	35.693	
12,300.00	6,940.81	6,922.57	6,921.81	94.18	136.42	-89.28	-1,258.22	236.85	6,100.86	5,932.64	168.22	36.267	
12,400.00	6,940.59	6,922.35	6,921.59	95.72	136.42	-89.27	-1,258.22	236.85	6,199.31	6,031.03	168.28	36.840	
12,500.00	6,940.36	6,922.12	6,921.36	97.27	136.41	-89.26	-1,258.22	236.85	6,297.80	6,129.47	168.33	37.414	
12,600.00	6,940.14	6,921.90	6,921.14	98.82	136.41	-89.25	-1,258.22	236.85	6,396.34	6,227.96	168.38	37.987	
12,700.00	6,939.92	6,921.67	6,920.92	100.37	136.41	-89.24	-1,258.22	236.85	6,494.93	6,326.49	168.44	38.560	
12,800.00	6,939.69	6,921.45	6,920.69	101.92	136.40	-89.22	-1,258.22	236.85	6,593.56	6,425.07	168.49	39.134	
12,900.00	6,939.47	6,921.22	6,920.47	103.48	136.40	-89.21	-1,258.22	236.85	6,692.22	6,523.68	168.54	39.706	
13,000.00	6,939.24	6,921.00	6,920.24	105.03	136.39	-89.20	-1,258.22	236.85	6,790.93	6,622.34	168.60	40.279	
13,100.00	6,939.02	6,920.77	6,920.02	106.59	136.39	-89.19	-1,258.22	236.85	6,889.68	6,721.03	168.65	40.852	
13,200.00	6,938.79	6,920.55	6,919.79	108.15	136.38	-89.18	-1,258.22	236.85	6,988.46	6,819.75	168.71	41.424	
13,300.00	6,938.57	6,920.32	6,919.57	109.71	136.38	-89.17	-1,258.22	236.85	7,087.27	6,918.51	168.76	41.996	
13,400.00	6,938.34	6,920.10	6,919.34	111.27	136.37	-89.15	-1,258.22	236.85	7,186.12	7,017.30	168.82	42.568	
13,500.00	6,938.12	6,919.87	6,919.12	112.83	136.37	-89.14	-1,258.22	236.85	7,285.00	7,116.13	168.87	43.139	
13,600.00	6,937.89	6,919.65	6,918.89	114.40	136.36	-89.13	-1,258.22	236.85	7,383.91	7,214.98	168.93	43.711	
13,700.00	6,937.67	6,919.43	6,918.67	115.96	136.36	-89.12	-1,258.22	236.85	7,482.85	7,313.86	168.98	44.281	
13,800.00	6,937.44	6,919.20	6,918.44	117.53	136.35	-89.11	-1,258.22	236.85	7,581.81	7,412.77	169.04	44.852	
13,900.00	6,937.22	6,918.98	6,918.22	119.09	136.35	-89.09	-1,258.22	236.85	7,680.81	7,511.71	169.10	45.422	
14,000.00	6,936.99	6,918.75	6,917.99	120.66	136.34	-89.08	-1,258.22	236.85	7,779.82	7,610.67	169.15	45.992	
14,100.00	6,936.77	6,918.53	6,917.77	122.23	136.34	-89.07	-1,258.22	236.85	7,878.87	7,709.66	169.21	46.562	
14,200.00	6,936.55	6,918.30	6,917.55	123.80	136.33	-89.06	-1,258.22	236.85	7,977.94	7,808.66	169.27	47.131	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 350-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	6,918.08	6,917.32	125.37	136.33	-89.05	-1,258.22	236.85	8,077.03	7,907.70	169.33	47.700	
14,400.00	6,936.10	6,917.85	6,917.10	126.94	136.32	-89.03	-1,258.22	236.85	8,176.14	8,006.75	169.39	48.269	
14,500.00	6,935.87	6,917.63	6,916.87	128.51	136.32	-89.02	-1,258.22	236.85	8,275.27	8,105.82	169.45	48.837	
14,600.00	6,935.65	6,917.40	6,916.65	130.08	136.31	-89.01	-1,258.22	236.85	8,374.43	8,204.92	169.51	49.405	
14,700.00	6,935.42	6,917.18	6,916.42	131.65	136.31	-89.00	-1,258.22	236.85	8,473.60	8,304.03	169.57	49.972	
14,800.00	6,935.20	6,916.95	6,916.20	133.23	136.31	-88.99	-1,258.22	236.85	8,572.79	8,403.17	169.63	50.539	
14,900.00	6,934.97	6,916.73	6,915.97	134.80	136.30	-88.97	-1,258.22	236.85	8,672.01	8,502.32	169.69	51.105	
15,000.00	6,934.75	6,916.50	6,915.75	136.37	136.30	-88.96	-1,258.22	236.85	8,771.24	8,601.49	169.75	51.672	
15,100.00	6,934.52	6,916.28	6,915.52	137.95	136.29	-88.95	-1,258.22	236.85	8,870.48	8,700.67	169.81	52.237	
15,200.00	6,934.30	6,916.06	6,915.30	139.53	136.29	-88.94	-1,258.22	236.85	8,969.75	8,799.87	169.87	52.802	
15,300.00	6,934.07	6,915.83	6,915.07	141.10	136.28	-88.93	-1,258.22	236.85	9,069.03	8,899.09	169.94	53.367	
15,400.00	6,933.85	6,915.61	6,914.85	142.68	136.28	-88.92	-1,258.22	236.85	9,168.32	8,998.32	170.00	53.931	
15,500.00	6,933.62	6,915.38	6,914.62	144.26	136.27	-88.90	-1,258.22	236.85	9,267.63	9,097.57	170.06	54.495	
15,600.00	6,933.40	6,915.16	6,914.40	145.84	136.27	-88.89	-1,258.22	236.85	9,366.96	9,196.83	170.13	55.059	
15,700.00	6,933.18	6,914.93	6,914.18	147.42	136.26	-88.88	-1,258.22	236.85	9,466.30	9,296.11	170.19	55.621	
15,800.00	6,932.95	6,914.71	6,913.95	148.99	136.26	-88.87	-1,258.22	236.85	9,565.65	9,395.39	170.26	56.184	
15,900.00	6,932.73	6,914.48	6,913.73	150.57	136.25	-88.86	-1,258.22	236.85	9,665.02	9,494.70	170.32	56.746	
16,000.00	6,932.50	6,914.26	6,913.50	152.15	136.25	-88.84	-1,258.22	236.85	9,764.40	9,594.01	170.39	57.307	
16,100.00	6,932.28	6,914.03	6,913.28	153.74	136.24	-88.83	-1,258.22	236.85	9,863.79	9,693.34	170.45	57.868	
16,200.00	6,932.05	6,913.81	6,913.05	155.32	136.24	-88.82	-1,258.22	236.85	9,963.19	9,792.67	170.52	58.428	
16,300.00	6,931.83	6,913.58	6,912.83	156.90	136.23	-88.81	-1,258.22	236.85	10,062.61	9,892.02	170.59	58.988	
16,400.00	6,931.60	6,913.36	6,912.60	158.48	136.23	-88.80	-1,258.22	236.85	10,162.04	9,991.38	170.65	59.547	
16,500.00	6,931.38	6,913.13	6,912.38	160.06	136.22	-88.78	-1,258.22	236.85	10,261.48	10,090.75	170.72	60.106	
16,600.00	6,931.15	6,912.91	6,912.15	161.65	136.22	-88.77	-1,258.22	236.85	10,360.93	10,190.14	170.79	60.664	
16,700.00	6,930.93	6,912.69	6,911.93	163.23	136.21	-88.76	-1,258.22	236.85	10,460.39	10,289.53	170.86	61.222	
16,800.00	6,930.70	6,912.46	6,911.70	164.81	136.21	-88.75	-1,258.22	236.85	10,559.86	10,388.93	170.93	61.779	
16,900.00	6,930.48	6,912.24	6,911.48	166.40	136.20	-88.74	-1,258.22	236.85	10,659.34	10,488.34	171.00	62.336	
17,000.00	6,930.25	6,912.01	6,911.25	167.98	136.20	-88.72	-1,258.22	236.85	10,758.83	10,587.76	171.07	62.892	
17,100.00	6,930.03	6,911.79	6,911.03	169.56	136.20	-88.71	-1,258.22	236.85	10,858.33	10,687.19	171.14	63.447	
17,200.00	6,929.81	6,911.56	6,910.81	171.15	136.19	-88.70	-1,258.22	236.85	10,957.83	10,786.62	171.21	64.002	
17,300.00	6,929.58	6,911.34	6,910.58	172.73	136.19	-88.69	-1,258.22	236.85	11,057.35	10,886.07	171.28	64.556	
17,400.00	6,929.36	6,911.11	6,910.36	174.32	136.18	-88.68	-1,258.22	236.85	11,156.88	10,985.52	171.35	65.110	
17,500.00	6,929.13	6,910.89	6,910.13	175.91	136.18	-88.66	-1,258.22	236.85	11,256.41	11,084.98	171.43	65.663	
17,600.00	6,928.91	6,910.66	6,909.91	177.49	136.17	-88.65	-1,258.22	236.85	11,355.95	11,184.45	171.50	66.216	
17,700.00	6,928.68	6,910.44	6,909.68	179.08	136.17	-88.64	-1,258.22	236.85	11,455.50	11,283.93	171.57	66.768	
17,800.00	6,928.46	6,910.21	6,909.46	180.66	136.16	-88.63	-1,258.22	236.85	11,555.06	11,383.42	171.65	67.319	
17,900.00	6,928.23	6,909.99	6,909.23	182.25	136.16	-88.62	-1,258.22	236.85	11,654.63	11,482.91	171.72	67.870	
18,000.00	6,928.01	6,909.76	6,909.01	183.84	136.15	-88.61	-1,258.22	236.85	11,754.20	11,582.41	171.79	68.420	
18,100.00	6,927.78	6,909.54	6,908.78	185.43	136.15	-88.59	-1,258.22	236.85	11,853.78	11,681.91	171.87	68.970	
18,200.00	6,927.56	6,909.32	6,908.56	187.01	136.14	-88.58	-1,258.22	236.85	11,953.37	11,781.42	171.94	69.519	
18,300.00	6,927.33	6,909.09	6,908.33	188.60	136.14	-88.57	-1,258.22	236.85	12,052.96	11,880.94	172.02	70.067	
18,400.00	6,927.11	6,908.87	6,908.11	190.19	136.13	-88.56	-1,258.22	236.85	12,152.56	11,980.47	172.10	70.615	
18,500.00	6,926.88	6,908.64	6,907.88	191.78	136.13	-88.55	-1,258.22	236.85	12,252.17	12,080.00	172.17	71.162	
18,600.00	6,926.66	6,908.42	6,907.66	193.37	136.12	-88.53	-1,258.22	236.85	12,351.78	12,179.53	172.25	71.708	
18,700.00	6,926.44	6,908.19	6,907.44	194.96	136.12	-88.52	-1,258.22	236.85	12,451.40	12,279.07	172.33	72.254	
18,800.00	6,926.21	6,907.97	6,907.21	196.54	136.11	-88.51	-1,258.22	236.85	12,551.03	12,378.62	172.41	72.799	
18,900.00	6,925.99	6,907.74	6,906.99	198.13	136.11	-88.50	-1,258.22	236.85	12,650.66	12,478.18	172.48	73.344	
19,000.00	6,925.76	6,907.52	6,906.76	199.72	136.10	-88.49	-1,258.22	236.85	12,750.30	12,577.73	172.56	73.888	
19,100.00	6,925.54	6,907.29	6,906.54	201.31	136.10	-88.47	-1,258.22	236.85	12,849.94	12,677.30	172.64	74.431	
19,200.00	6,925.31	6,907.07	6,906.31	202.90	136.10	-88.46	-1,258.22	236.85	12,949.59	12,776.87	172.72	74.974	
19,300.00	6,925.09	6,906.84	6,906.09	204.49	136.09	-88.45	-1,258.22	236.85	13,049.24	12,876.44	172.80	75.516	
19,400.00	6,924.86	6,906.62	6,905.86	206.08	136.09	-88.44	-1,258.22	236.85	13,148.90	12,976.02	172.88	76.057	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 068 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 350-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	6,906.39	6,905.64	207.67	136.08	-88.43	-1,258.22	236.85	13,248.57	13,075.60	172.96	76.598	
19,600.00	6,924.41	6,906.17	6,905.41	209.26	136.08	-88.41	-1,258.22	236.85	13,348.24	13,175.19	173.04	77.138	
19,700.00	6,924.19	6,905.95	6,905.19	210.85	136.07	-88.40	-1,258.22	236.85	13,447.91	13,274.78	173.13	77.677	
19,800.00	6,923.96	6,905.72	6,904.96	212.44	136.07	-88.39	-1,258.22	236.85	13,547.59	13,374.38	173.21	78.216	
19,900.00	6,923.74	6,905.50	6,904.74	214.04	136.06	-88.38	-1,258.22	236.85	13,647.27	13,473.98	173.29	78.754	
20,000.00	6,923.51	6,905.27	6,904.51	215.63	136.06	-88.37	-1,258.22	236.85	13,746.96	13,573.59	173.37	79.292	
20,100.00	6,923.29	6,905.05	6,904.29	217.22	136.05	-88.36	-1,258.22	236.85	13,846.65	13,673.20	173.46	79.828	
20,200.00	6,923.07	6,904.82	6,904.07	218.81	136.05	-88.34	-1,258.22	236.85	13,946.35	13,772.81	173.54	80.364	
20,300.00	6,922.84	6,904.60	6,903.84	220.40	136.04	-88.33	-1,258.22	236.85	14,046.05	13,872.43	173.62	80.900	
20,400.00	6,922.62	6,904.37	6,903.62	221.99	136.04	-88.32	-1,258.22	236.85	14,145.76	13,972.05	173.71	81.435	
20,500.00	6,922.39	6,904.15	6,903.39	223.59	136.03	-88.31	-1,258.22	236.85	14,245.47	14,071.68	173.79	81.969	
20,600.00	6,922.17	6,903.92	6,903.17	225.18	136.03	-88.30	-1,258.22	236.85	14,345.18	14,171.30	173.88	82.502	
20,674.13	6,922.00	6,903.76	6,903.00	226.36	136.03	-88.29	-1,258.22	236.85	14,419.10	14,245.16	173.94	82.897	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 265-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	6.00	6.00	0.00	0.05	-122.19	-2,104.12	-3,342.88	3,949.96				
100.00	100.00	106.00	106.00	0.25	0.94	-122.19	-2,104.12	-3,342.88	3,949.96	3,948.77	1.19	3,319.152	
200.00	200.00	206.00	206.00	0.61	1.82	-122.19	-2,104.12	-3,342.88	3,949.96	3,947.52	2.43	1,622.629	
300.00	300.00	306.00	306.00	0.97	3.09	-122.19	-2,104.12	-3,342.88	3,949.96	3,945.90	4.05	974.342	
346.91	346.91	352.84	352.84	1.14	3.93	-122.19	-2,104.02	-3,342.88	3,949.91	3,944.84	5.07	779.697	
400.00	400.00	403.25	403.25	1.33	4.84	-122.19	-2,104.06	-3,342.88	3,949.93	3,943.76	6.16	640.764	
500.00	500.00	506.00	506.00	1.68	6.69	-122.19	-2,104.12	-3,342.88	3,949.96	3,941.58	8.38	471.623	
606.93	606.91	609.59	609.59	2.05	8.56	15.33	-2,103.88	-3,342.88	3,947.91	3,937.30	10.61	372.040	
700.00	699.91	705.92	705.91	2.37	10.29	15.34	-2,104.12	-3,342.88	3,944.68	3,932.03	12.66	311.668	
800.00	799.84	805.85	805.84	2.71	12.06	15.36	-2,104.12	-3,342.88	3,941.08	3,926.32	14.77	266.899	
900.00	899.77	905.78	905.77	3.06	13.83	15.37	-2,104.12	-3,342.88	3,937.49	3,920.61	16.88	233.263	
1,000.00	999.70	1,004.57	1,004.56	3.41	15.58	15.39	-2,103.86	-3,342.88	3,933.75	3,914.77	18.98	207.295	
1,100.00	1,099.63	1,102.72	1,102.71	3.76	17.31	15.40	-2,103.96	-3,342.88	3,930.20	3,909.14	21.06	186.583	
1,200.00	1,199.56	1,205.58	1,205.56	4.11	19.14	15.41	-2,104.12	-3,342.88	3,926.69	3,903.45	23.25	168.926	
1,300.00	1,299.49	1,305.51	1,305.49	4.47	20.98	15.43	-2,104.12	-3,342.88	3,923.09	3,897.66	25.44	154.239	
1,400.00	1,399.42	1,405.44	1,405.42	4.83	22.82	15.44	-2,104.12	-3,342.88	3,919.50	3,891.87	27.63	141.876	
1,500.00	1,499.35	1,504.26	1,504.24	5.19	24.63	15.46	-2,103.86	-3,342.88	3,915.76	3,885.97	29.80	131.412	
1,600.00	1,599.28	1,602.41	1,602.40	5.54	26.44	15.47	-2,103.96	-3,342.88	3,912.22	3,880.26	31.96	122.420	
1,700.00	1,699.21	1,705.25	1,705.21	5.90	28.35	15.49	-2,104.12	-3,342.88	3,908.71	3,874.48	34.23	114.199	
1,800.00	1,799.14	1,805.18	1,805.14	6.26	30.38	15.50	-2,104.12	-3,342.88	3,905.11	3,868.50	36.61	106.666	
1,900.00	1,899.07	1,905.11	1,905.07	6.62	32.40	15.52	-2,104.12	-3,342.88	3,901.51	3,862.52	38.99	100.052	
2,000.00	1,999.00	2,001.96	2,001.91	6.98	34.37	15.54	-2,103.34	-3,342.88	3,897.51	3,856.19	41.32	94.333	
2,100.00	2,098.94	2,096.81	2,096.77	7.34	36.29	15.55	-2,103.60	-3,342.88	3,894.06	3,850.46	43.60	89.317	
2,200.00	2,198.87	2,204.98	2,204.87	7.70	38.50	15.56	-2,104.12	-3,342.88	3,890.73	3,844.57	46.16	84.292	
2,300.00	2,298.80	2,301.82	2,301.70	8.06	40.55	15.58	-2,103.62	-3,342.88	3,886.87	3,838.30	48.57	80.031	
2,400.00	2,398.73	2,404.88	2,404.73	8.42	42.77	15.59	-2,104.12	-3,342.88	3,883.54	3,832.39	51.14	75.932	
2,500.00	2,498.66	2,504.81	2,504.66	8.79	45.04	15.60	-2,104.12	-3,342.88	3,879.94	3,826.16	53.78	72.145	
2,600.00	2,598.59	2,604.74	2,604.59	9.15	47.32	15.62	-2,104.12	-3,342.88	3,876.35	3,819.93	56.42	68.711	
2,700.00	2,698.52	2,699.70	2,699.54	9.51	49.48	15.65	-2,103.12	-3,342.88	3,872.23	3,813.29	58.94	65.700	
2,800.00	2,798.45	2,792.97	2,792.80	9.87	51.61	15.65	-2,103.50	-3,342.88	3,868.85	3,807.43	61.42	62.988	
2,900.00	2,898.38	2,904.67	2,904.38	10.23	54.15	15.66	-2,104.12	-3,342.88	3,865.57	3,801.25	64.32	60.097	
3,000.00	2,998.31	3,004.60	3,004.31	10.59	56.41	15.68	-2,104.12	-3,342.88	3,861.97	3,795.03	66.94	57.691	
3,100.00	3,098.24	3,104.54	3,104.24	10.96	58.68	15.69	-2,104.12	-3,342.88	3,858.38	3,788.82	69.56	55.466	
3,200.00	3,198.17	3,204.47	3,204.17	11.32	60.94	15.71	-2,104.12	-3,342.88	3,854.79	3,782.60	72.18	53.402	
3,300.00	3,298.10	3,304.40	3,304.10	11.68	63.20	15.72	-2,104.12	-3,342.88	3,851.20	3,776.39	74.81	51.483	
3,400.00	3,398.03	3,403.03	3,402.68	12.04	65.43	15.79	-2,100.29	-3,342.88	3,845.59	3,768.19	77.40	49.686	
3,500.00	3,497.96	3,497.23	3,496.86	12.40	67.57	15.80	-2,100.48	-3,342.88	3,842.11	3,762.22	79.89	48.093	
3,600.00	3,597.89	3,591.46	3,591.08	12.77	69.70	15.81	-2,100.95	-3,342.88	3,838.77	3,756.39	82.38	46.597	
3,700.00	3,697.82	3,685.71	3,685.31	13.13	71.83	15.81	-2,101.68	-3,342.88	3,835.59	3,750.72	84.87	45.191	
3,800.00	3,797.75	3,779.99	3,779.56	13.49	73.97	15.81	-2,102.68	-3,342.88	3,832.56	3,745.19	87.37	43.867	
3,900.00	3,897.68	3,904.23	3,903.68	13.85	76.80	15.81	-2,104.12	-3,342.88	3,829.65	3,739.09	90.56	42.290	
4,000.00	3,997.61	4,003.51	4,002.96	14.21	79.14	15.83	-2,103.75	-3,342.88	3,825.86	3,732.60	93.26	41.023	
4,100.00	4,097.54	4,093.05	4,092.49	14.58	81.26	15.84	-2,104.01	-3,342.88	3,822.43	3,726.69	95.74	39.927	
4,200.00	4,197.47	4,194.72	4,194.05	14.94	84.24	15.86	-2,103.96	-3,342.88	3,818.80	3,719.72	99.08	38.543	
4,300.00	4,297.40	4,304.23	4,303.40	15.30	88.04	15.88	-2,104.12	-3,342.88	3,815.29	3,712.05	103.24	36.956	
4,400.00	4,397.33	4,404.29	4,403.33	15.66	91.58	15.89	-2,104.12	-3,342.88	3,811.70	3,704.56	107.14	35.578	
4,500.00	4,497.26	4,495.34	4,494.23	16.03	95.01	15.91	-2,103.88	-3,342.88	3,807.99	3,697.07	110.92	34.330	
4,600.00	4,597.19	4,603.16	4,601.88	16.39	99.15	15.93	-2,103.69	-3,342.88	3,804.29	3,688.87	115.42	32.959	
4,700.00	4,697.12	4,704.63	4,703.12	16.75	103.37	15.94	-2,104.12	-3,342.88	3,800.93	3,680.93	120.00	31.674	
4,800.00	4,797.05	4,804.71	4,803.05	17.11	107.67	15.95	-2,104.12	-3,342.88	3,797.34	3,672.69	124.66	30.462	
4,900.00	4,896.99	4,891.72	4,890.01	17.47	111.26	15.99	-2,102.64	-3,342.88	3,793.00	3,664.39	128.61	29.493	
5,000.00	4,996.92	5,004.98	5,002.92	17.84	115.97	15.98	-2,104.12	-3,342.88	3,790.17	3,656.48	133.68	28.352	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 265-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	5,094.28	5,092.06	18.20	119.81	16.01	-2,103.43	-3,342.88	3,786.23	3,648.35	137.88	27.460	
5,200.00	5,196.78	5,205.29	5,202.78	18.56	124.69	16.01	-2,104.12	-3,342.88	3,782.99	3,639.87	143.12	26.433	
5,300.00	5,296.71	5,305.42	5,302.71	18.92	129.16	16.03	-2,104.12	-3,342.88	3,779.41	3,631.45	147.95	25.545	
5,400.00	5,396.64	5,378.83	5,376.07	19.29	132.47	16.05	-2,103.27	-3,342.88	3,775.47	3,623.85	151.61	24.902	
5,500.00	5,496.57	5,500.52	5,497.48	19.65	137.68	16.08	-2,102.85	-3,342.88	3,771.57	3,614.38	157.19	23.993	
5,600.00	5,596.50	5,605.76	5,602.50	20.01	142.03	16.08	-2,104.12	-3,342.88	3,768.65	3,606.75	161.90	23.278	
5,700.00	5,696.43	5,705.83	5,702.43	20.37	146.16	16.09	-2,104.12	-3,342.88	3,765.06	3,598.67	166.39	22.628	
5,800.00	5,796.36	5,805.99	5,802.36	20.74	150.56	16.11	-2,104.12	-3,342.88	3,761.47	3,590.33	171.14	21.979	
5,900.00	5,896.29	5,880.51	5,876.83	21.10	154.07	16.13	-2,103.27	-3,342.88	3,757.53	3,582.52	175.01	21.470	
6,000.00	5,996.22	6,001.34	5,997.37	21.46	159.59	16.16	-2,102.77	-3,342.88	3,753.60	3,572.71	180.89	20.751	
6,100.00	6,096.15	6,106.38	6,102.15	21.82	164.21	16.16	-2,104.12	-3,342.88	3,750.72	3,564.85	185.87	20.179	
6,200.00	6,196.08	6,184.06	6,179.78	22.19	167.45	16.18	-2,103.19	-3,342.88	3,746.72	3,557.25	189.47	19.775	
6,300.00	6,296.01	6,306.50	6,302.01	22.55	172.74	16.19	-2,104.12	-3,342.88	3,743.55	3,548.43	195.12	19.186	
6,335.60	6,331.59	6,328.59	6,324.06	22.68	173.71	16.21	-2,103.08	-3,342.88	3,741.76	3,545.53	196.23	19.069	
6,350.00	6,345.97	6,337.04	6,332.51	22.73	174.09	-1.50	-2,103.15	-3,342.88	3,741.17	3,544.51	196.65	19.024	
6,400.00	6,395.75	6,406.53	6,401.75	22.91	177.18	-19.46	-2,104.12	-3,342.88	3,737.20	3,537.28	199.92	18.693	
6,450.00	6,445.03	6,443.46	6,438.65	23.10	178.86	-24.50	-2,103.39	-3,342.88	3,729.11	3,527.33	201.78	18.481	
6,500.00	6,493.52	6,504.49	6,499.52	23.29	181.61	-27.24	-2,104.12	-3,342.88	3,718.49	3,513.78	204.71	18.165	
6,550.00	6,540.91	6,548.26	6,543.27	23.48	183.56	-29.25	-2,103.16	-3,342.88	3,703.83	3,497.01	206.82	17.909	
6,600.00	6,586.91	6,572.10	6,567.09	23.66	184.62	-31.00	-2,103.34	-3,342.88	3,686.77	3,478.73	208.04	17.721	
6,650.00	6,631.24	6,642.44	6,637.24	23.85	187.66	-32.97	-2,104.12	-3,342.88	3,666.89	3,455.65	211.24	17.359	
6,700.00	6,673.63	6,684.83	6,679.63	24.05	189.44	-34.97	-2,104.12	-3,342.88	3,643.87	3,430.70	213.17	17.094	
6,750.00	6,713.80	6,707.88	6,702.63	24.24	190.41	-37.06	-2,103.04	-3,342.88	3,617.66	3,403.38	214.28	16.882	
6,800.00	6,751.52	6,729.33	6,724.07	24.44	191.32	-39.42	-2,103.32	-3,342.88	3,589.78	3,374.46	215.32	16.672	
6,850.00	6,786.56	6,798.01	6,792.56	24.65	194.12	-42.59	-2,104.12	-3,342.88	3,559.64	3,341.39	218.25	16.310	
6,900.00	6,818.69	6,830.14	6,824.69	24.87	195.40	-45.88	-2,104.12	-3,342.88	3,527.16	3,307.51	219.65	16.058	
6,950.00	6,847.72	6,851.99	6,846.50	25.10	196.27	-49.49	-2,103.12	-3,342.88	3,492.31	3,271.68	220.63	15.829	
7,000.00	6,873.46	6,867.62	6,862.14	25.34	196.89	-53.54	-2,103.22	-3,342.88	3,456.50	3,235.13	221.37	15.614	
7,050.00	6,895.77	6,881.18	6,875.69	25.60	197.43	-58.06	-2,103.37	-3,342.88	3,419.40	3,197.38	222.01	15.402	
7,100.00	6,914.50	6,926.17	6,920.50	25.87	199.20	-63.82	-2,104.12	-3,342.88	3,381.40	3,157.51	223.88	15.103	
7,150.00	6,929.54	6,941.21	6,935.54	26.15	199.76	-69.48	-2,104.12	-3,342.88	3,342.26	3,117.71	224.55	14.884	
7,200.00	6,940.80	6,952.46	6,946.80	26.44	200.18	-75.45	-2,104.12	-3,342.88	3,302.57	3,077.50	225.07	14.673	
7,250.00	6,948.20	6,959.86	6,954.20	26.75	200.45	-81.57	-2,104.12	-3,342.88	3,262.60	3,037.14	225.46	14.471	
7,300.00	6,951.70	6,963.36	6,957.70	27.07	200.58	-87.66	-2,104.12	-3,342.88	3,222.62	2,996.91	225.71	14.278	
7,321.06	6,952.00	6,963.67	6,958.00	27.20	200.59	-90.17	-2,104.12	-3,342.88	3,205.83	2,980.06	225.77	14.200	
7,400.00	6,951.82	6,963.49	6,957.82	27.74	200.59	-90.16	-2,104.12	-3,342.88	3,143.40	2,917.43	225.97	13.910	
7,500.00	6,951.60	6,963.26	6,957.60	28.49	200.58	-90.16	-2,104.12	-3,342.88	3,065.41	2,839.11	226.30	13.546	
7,600.00	6,951.37	6,963.04	6,957.37	29.30	200.57	-90.15	-2,104.12	-3,342.88	2,988.72	2,762.03	226.69	13.184	
7,700.00	6,951.15	6,962.81	6,957.15	30.18	200.56	-90.14	-2,104.12	-3,342.88	2,913.45	2,686.28	227.17	12.825	
7,800.00	6,950.92	6,962.59	6,956.92	31.12	200.55	-90.14	-2,104.12	-3,342.88	2,839.71	2,611.97	227.74	12.469	
7,900.00	6,950.70	6,962.36	6,956.70	32.11	200.55	-90.13	-2,104.12	-3,342.88	2,767.61	2,539.22	228.39	12.118	
8,000.00	6,950.47	6,962.14	6,956.47	33.15	200.54	-90.12	-2,104.12	-3,342.88	2,697.30	2,468.15	229.15	11.771	
8,100.00	6,950.25	6,961.92	6,956.25	34.23	200.53	-90.12	-2,104.12	-3,342.88	2,628.91	2,398.90	230.01	11.430	
8,200.00	6,950.03	6,961.69	6,956.03	35.35	200.52	-90.11	-2,104.12	-3,342.88	2,562.60	2,331.63	230.97	11.095	
8,300.00	6,949.80	6,961.47	6,955.80	36.51	200.51	-90.10	-2,104.12	-3,342.88	2,498.53	2,266.49	232.04	10.768	
8,400.00	6,949.58	6,961.24	6,955.58	37.70	200.50	-90.10	-2,104.12	-3,342.88	2,436.88	2,203.66	233.22	10.449	
8,500.00	6,949.35	6,961.02	6,955.35	38.92	200.50	-90.09	-2,104.12	-3,342.88	2,377.84	2,143.33	234.51	10.140	
8,600.00	6,949.13	6,960.79	6,955.13	40.17	200.49	-90.08	-2,104.12	-3,342.88	2,321.61	2,085.71	235.90	9.842	
8,700.00	6,948.90	6,960.57	6,954.90	41.44	200.48	-90.08	-2,104.12	-3,342.88	2,268.39	2,031.00	237.39	9.556	
8,800.00	6,948.68	6,960.34	6,954.68	42.73	200.47	-90.07	-2,104.12	-3,342.88	2,218.41	1,979.44	238.97	9.283	
8,900.00	6,948.45	6,960.12	6,954.45	44.04	200.46	-90.06	-2,104.12	-3,342.88	2,171.89	1,931.24	240.64	9.025	
9,000.00	6,948.23	6,959.89	6,954.23	45.38	200.45	-90.06	-2,104.12	-3,342.88	2,129.04	1,886.66	242.38	8.784	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 265-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
9,100.00	6,948.00	6,959.67	6,954.00	46.72	200.45	-90.05	-2,104.12	-3,342.88	2,090.11	1,845.93	244.18	8.560	
9,200.00	6,947.78	6,959.44	6,953.78	48.09	200.44	-90.04	-2,104.12	-3,342.88	2,055.31	1,809.29	246.02	8.354	
9,300.00	6,947.55	6,959.22	6,953.55	49.47	200.43	-90.04	-2,104.12	-3,342.88	2,024.86	1,776.98	247.88	8.169	
9,400.00	6,947.33	6,958.99	6,953.33	50.86	200.42	-90.03	-2,104.12	-3,342.88	1,998.95	1,749.20	249.75	8.004	
9,500.00	6,947.10	6,958.77	6,953.10	52.26	200.41	-90.02	-2,104.12	-3,342.88	1,977.76	1,726.17	251.59	7.861	
9,600.00	6,946.88	6,958.55	6,952.88	53.68	200.40	-90.02	-2,104.12	-3,342.88	1,961.44	1,708.05	253.40	7.741	
9,700.00	6,946.66	6,958.32	6,952.66	55.10	200.40	-90.01	-2,104.12	-3,342.88	1,950.13	1,694.99	255.14	7.643	
9,800.00	6,946.43	6,958.10	6,952.43	56.54	200.39	-90.00	-2,104.12	-3,342.88	1,943.90	1,687.11	256.79	7.570	
9,871.30	6,946.27	6,957.94	6,952.27	57.57	200.38	-90.00	-2,104.12	-3,342.88	1,942.59	1,684.68	257.91	7.532 CC	
9,900.00	6,946.21	6,957.87	6,952.21	57.98	200.38	-90.00	-2,104.12	-3,342.88	1,942.80	1,684.46	258.35	7.520 ES	
10,000.00	6,945.98	6,957.65	6,951.98	59.43	200.37	-89.99	-2,104.12	-3,342.88	1,946.85	1,687.07	259.78	7.494	
10,100.00	6,945.76	6,957.42	6,951.76	60.89	200.36	-89.98	-2,104.12	-3,342.88	1,956.01	1,694.92	261.09	7.492 SF	
10,200.00	6,945.53	6,957.20	6,951.53	62.36	200.35	-89.98	-2,104.12	-3,342.88	1,970.20	1,707.95	262.26	7.512	
10,300.00	6,945.31	6,956.97	6,951.31	63.83	200.35	-89.97	-2,104.12	-3,342.88	1,989.33	1,726.05	263.28	7.556	
10,400.00	6,945.08	6,956.75	6,951.08	65.31	200.34	-89.96	-2,104.12	-3,342.88	2,013.25	1,749.09	264.16	7.621	
10,500.00	6,944.86	6,956.52	6,950.86	66.79	200.33	-89.96	-2,104.12	-3,342.88	2,041.79	1,776.90	264.90	7.708	
10,600.00	6,944.63	6,956.30	6,950.63	68.28	200.32	-89.95	-2,104.12	-3,342.88	2,074.77	1,809.27	265.50	7.815	
10,700.00	6,944.41	6,956.07	6,950.41	69.78	200.31	-89.95	-2,104.12	-3,342.88	2,111.96	1,846.00	265.97	7.941	
10,800.00	6,944.18	6,955.85	6,950.18	71.28	200.30	-89.94	-2,104.12	-3,342.88	2,153.17	1,886.85	266.32	8.085	
10,900.00	6,943.96	6,955.62	6,949.96	72.78	200.29	-89.93	-2,104.12	-3,342.88	2,198.15	1,931.59	266.56	8.246	
11,000.00	6,943.73	6,955.40	6,949.73	74.29	200.29	-89.93	-2,104.12	-3,342.88	2,246.69	1,979.99	266.70	8.424	
11,100.00	6,943.51	6,955.18	6,949.51	75.80	200.28	-89.92	-2,104.12	-3,342.88	2,298.55	2,031.80	266.76	8.617	
11,200.00	6,943.29	6,954.95	6,949.29	77.32	200.27	-89.91	-2,104.12	-3,342.88	2,353.53	2,086.79	266.73	8.823	
11,300.00	6,943.06	6,954.73	6,949.06	78.84	200.26	-89.91	-2,104.12	-3,342.88	2,411.39	2,144.75	266.65	9.043	
11,400.00	6,942.84	6,954.50	6,948.84	80.36	200.25	-89.90	-2,104.12	-3,342.88	2,471.95	2,205.45	266.50	9.276	
11,500.00	6,942.61	6,954.28	6,948.61	81.88	200.24	-89.89	-2,104.12	-3,342.88	2,535.01	2,268.70	266.31	9.519	
11,600.00	6,942.39	6,954.05	6,948.39	83.41	200.24	-89.89	-2,104.12	-3,342.88	2,600.39	2,334.31	266.08	9.773	
11,700.00	6,942.16	6,953.83	6,948.16	84.94	200.23	-89.88	-2,104.12	-3,342.88	2,667.92	2,402.10	265.82	10.037	
11,800.00	6,941.94	6,953.60	6,947.94	86.47	200.22	-89.87	-2,104.12	-3,342.88	2,737.43	2,471.90	265.53	10.309	
11,900.00	6,941.71	6,953.38	6,947.71	88.01	200.21	-89.87	-2,104.12	-3,342.88	2,808.78	2,543.56	265.22	10.590	
12,000.00	6,941.49	6,953.15	6,947.49	89.55	200.20	-89.86	-2,104.12	-3,342.88	2,881.84	2,616.94	264.90	10.879	
12,100.00	6,941.26	6,952.93	6,947.26	91.09	200.19	-89.85	-2,104.12	-3,342.88	2,956.47	2,691.91	264.56	11.175	
12,200.00	6,941.04	6,952.70	6,947.04	92.63	200.19	-89.85	-2,104.12	-3,342.88	3,032.57	2,768.35	264.22	11.478	
12,300.00	6,940.81	6,952.48	6,946.81	94.18	200.18	-89.84	-2,104.12	-3,342.88	3,110.02	2,846.15	263.87	11.786	
12,400.00	6,940.59	6,952.25	6,946.59	95.72	200.17	-89.83	-2,104.12	-3,342.88	3,188.72	2,925.20	263.52	12.101	
12,500.00	6,940.36	6,952.03	6,946.36	97.27	200.16	-89.83	-2,104.12	-3,342.88	3,268.59	3,005.42	263.17	12.420	
12,600.00	6,940.14	6,951.81	6,946.14	98.82	200.15	-89.82	-2,104.12	-3,342.88	3,349.54	3,086.72	262.82	12.745	
12,700.00	6,939.92	6,951.58	6,945.92	100.37	200.14	-89.81	-2,104.12	-3,342.88	3,431.49	3,169.02	262.48	13.074	
12,800.00	6,939.69	6,951.36	6,945.69	101.92	200.14	-89.81	-2,104.12	-3,342.88	3,514.38	3,252.25	262.14	13.407	
12,900.00	6,939.47	6,951.13	6,945.47	103.48	200.13	-89.80	-2,104.12	-3,342.88	3,598.14	3,336.34	261.80	13.744	
13,000.00	6,939.24	6,950.91	6,945.24	105.03	200.12	-89.79	-2,104.12	-3,342.88	3,682.71	3,421.24	261.47	14.085	
13,100.00	6,939.02	6,950.68	6,945.02	106.59	200.11	-89.79	-2,104.12	-3,342.88	3,768.03	3,506.89	261.15	14.429	
13,200.00	6,938.79	6,950.46	6,944.79	108.15	200.10	-89.78	-2,104.12	-3,342.88	3,854.07	3,593.23	260.83	14.776	
13,300.00	6,938.57	6,950.23	6,944.57	109.71	200.09	-89.77	-2,104.12	-3,342.88	3,940.76	3,680.23	260.52	15.126	
13,400.00	6,938.34	6,950.01	6,944.34	111.27	200.09	-89.77	-2,104.12	-3,342.88	4,028.06	3,767.84	260.22	15.479	
13,500.00	6,938.12	6,949.78	6,944.12	112.83	200.08	-89.76	-2,104.12	-3,342.88	4,115.95	3,856.02	259.93	15.835	
13,600.00	6,937.89	6,949.56	6,943.89	114.40	200.07	-89.75	-2,104.12	-3,342.88	4,204.37	3,944.73	259.65	16.193	
13,700.00	6,937.67	6,949.33	6,943.67	115.96	200.06	-89.75	-2,104.12	-3,342.88	4,293.31	4,033.94	259.37	16.553	
13,800.00	6,937.44	6,949.11	6,943.44	117.53	200.05	-89.74	-2,104.12	-3,342.88	4,382.72	4,123.62	259.10	16.915	
13,900.00	6,937.22	6,948.88	6,943.22	119.09	200.04	-89.73	-2,104.12	-3,342.88	4,472.58	4,213.74	258.84	17.279	
14,000.00	6,936.99	6,948.66	6,942.99	120.66	200.03	-89.73	-2,104.12	-3,342.88	4,562.86	4,304.27	258.59	17.645	
14,100.00	6,936.77	6,948.44	6,942.77	122.23	200.03	-89.72	-2,104.12	-3,342.88	4,653.54	4,395.19	258.35	18.013	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 265-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	6,936.55	6,948.21	6,942.55	123.80	200.02	-89.71	-2,104.12	-3,342.88	4,744.59	4,486.49	258.11	18.382	
14,300.00	6,936.32	6,947.99	6,942.32	125.37	200.01	-89.71	-2,104.12	-3,342.88	4,836.00	4,578.12	257.88	18.753	
14,400.00	6,936.10	6,947.76	6,942.10	126.94	200.00	-89.70	-2,104.12	-3,342.88	4,927.74	4,670.09	257.66	19.125	
14,500.00	6,935.87	6,947.54	6,941.87	128.51	199.99	-89.69	-2,104.12	-3,342.88	5,019.80	4,762.36	257.44	19.499	
14,600.00	6,935.65	6,947.31	6,941.65	130.08	199.98	-89.69	-2,104.12	-3,342.88	5,112.15	4,854.92	257.23	19.874	
14,700.00	6,935.42	6,947.09	6,941.42	131.65	199.98	-89.68	-2,104.12	-3,342.88	5,204.79	4,947.76	257.03	20.250	
14,800.00	6,935.20	6,946.86	6,941.20	133.23	199.97	-89.67	-2,104.12	-3,342.88	5,297.70	5,040.86	256.84	20.627	
14,900.00	6,934.97	6,946.64	6,940.97	134.80	199.96	-89.67	-2,104.12	-3,342.88	5,390.86	5,134.20	256.65	21.005	
15,000.00	6,934.75	6,946.41	6,940.75	136.37	199.95	-89.66	-2,104.12	-3,342.88	5,484.25	5,227.79	256.47	21.384	
15,100.00	6,934.52	6,946.19	6,940.52	137.95	199.94	-89.65	-2,104.12	-3,342.88	5,577.88	5,321.59	256.29	21.764	
15,200.00	6,934.30	6,945.96	6,940.30	139.53	199.93	-89.65	-2,104.12	-3,342.88	5,671.73	5,415.61	256.12	22.145	
15,300.00	6,934.07	6,945.74	6,940.07	141.10	199.93	-89.64	-2,104.12	-3,342.88	5,765.78	5,509.82	255.96	22.526	
15,400.00	6,933.85	6,945.51	6,939.85	142.68	199.92	-89.63	-2,104.12	-3,342.88	5,860.03	5,604.23	255.80	22.909	
15,500.00	6,933.62	6,945.29	6,939.62	144.26	199.91	-89.63	-2,104.12	-3,342.88	5,954.47	5,698.82	255.65	23.292	
15,600.00	6,933.40	6,945.07	6,939.40	145.84	199.90	-89.62	-2,104.12	-3,342.88	6,049.09	5,793.59	255.50	23.675	
15,700.00	6,933.18	6,944.84	6,939.18	147.42	199.89	-89.61	-2,104.12	-3,342.88	6,143.87	5,888.52	255.36	24.060	
15,800.00	6,932.95	6,944.62	6,938.95	148.99	199.88	-89.61	-2,104.12	-3,342.88	6,238.82	5,983.60	255.22	24.445	
15,900.00	6,932.73	6,944.39	6,938.73	150.57	199.88	-89.60	-2,104.12	-3,342.88	6,333.93	6,078.84	255.09	24.830	
16,000.00	6,932.50	6,944.17	6,938.50	152.15	199.87	-89.59	-2,104.12	-3,342.88	6,429.18	6,174.22	254.96	25.216	
16,100.00	6,932.28	6,943.94	6,938.28	153.74	199.86	-89.59	-2,104.12	-3,342.88	6,524.58	6,269.74	254.84	25.603	
16,200.00	6,932.05	6,943.72	6,938.05	155.32	199.85	-89.58	-2,104.12	-3,342.88	6,620.11	6,365.39	254.72	25.990	
16,300.00	6,931.83	6,943.49	6,937.83	156.90	199.84	-89.57	-2,104.12	-3,342.88	6,715.77	6,461.17	254.61	26.377	
16,400.00	6,931.60	6,943.27	6,937.60	158.48	199.83	-89.57	-2,104.12	-3,342.88	6,811.56	6,557.06	254.50	26.765	
16,500.00	6,931.38	6,943.04	6,937.38	160.06	199.83	-89.56	-2,104.12	-3,342.88	6,907.46	6,653.07	254.39	27.153	
16,600.00	6,931.15	6,942.82	6,937.15	161.65	199.82	-89.55	-2,104.12	-3,342.88	7,003.48	6,749.20	254.29	27.542	
16,700.00	6,930.93	6,942.59	6,936.93	163.23	199.81	-89.55	-2,104.12	-3,342.88	7,099.61	6,845.42	254.19	27.930	
16,800.00	6,930.70	6,942.37	6,936.70	164.81	199.80	-89.54	-2,104.12	-3,342.88	7,195.85	6,941.75	254.10	28.319	
16,900.00	6,930.48	6,942.14	6,936.48	166.40	199.79	-89.53	-2,104.12	-3,342.88	7,292.19	7,038.18	254.01	28.709	
17,000.00	6,930.25	6,941.92	6,936.25	167.98	199.78	-89.53	-2,104.12	-3,342.88	7,388.62	7,134.70	253.92	29.098	
17,100.00	6,930.03	6,941.70	6,936.03	169.56	199.78	-89.52	-2,104.12	-3,342.88	7,485.15	7,231.31	253.83	29.488	
17,200.00	6,929.81	6,941.47	6,935.81	171.15	199.77	-89.51	-2,104.12	-3,342.88	7,581.77	7,328.01	253.75	29.878	
17,300.00	6,929.58	6,941.25	6,935.58	172.73	199.76	-89.51	-2,104.12	-3,342.88	7,678.47	7,424.79	253.68	30.269	
17,400.00	6,929.36	6,941.02	6,935.36	174.32	199.75	-89.50	-2,104.12	-3,342.88	7,775.26	7,521.65	253.60	30.659	
17,500.00	6,929.13	6,940.80	6,935.13	175.91	199.74	-89.49	-2,104.12	-3,342.88	7,872.13	7,618.59	253.53	31.050	
17,600.00	6,928.91	6,940.57	6,934.91	177.49	199.73	-89.49	-2,104.12	-3,342.88	7,969.07	7,715.61	253.47	31.441	
17,700.00	6,928.68	6,940.35	6,934.68	179.08	199.72	-89.48	-2,104.12	-3,342.88	8,066.09	7,812.69	253.40	31.831	
17,800.00	6,928.46	6,940.12	6,934.46	180.66	199.72	-89.47	-2,104.12	-3,342.88	8,163.18	7,909.85	253.34	32.222	
17,900.00	6,928.23	6,939.90	6,934.23	182.25	199.71	-89.47	-2,104.12	-3,342.88	8,260.35	8,007.07	253.28	32.614	
18,000.00	6,928.01	6,939.67	6,934.01	183.84	199.70	-89.46	-2,104.12	-3,342.88	8,357.57	8,104.35	253.22	33.005	
18,100.00	6,927.78	6,939.45	6,933.78	185.43	199.69	-89.45	-2,104.12	-3,342.88	8,454.87	8,201.70	253.17	33.396	
18,200.00	6,927.56	6,939.22	6,933.56	187.01	199.68	-89.45	-2,104.12	-3,342.88	8,552.22	8,299.10	253.12	33.787	
18,300.00	6,927.33	6,939.00	6,933.33	188.60	199.67	-89.44	-2,104.12	-3,342.88	8,649.64	8,396.57	253.07	34.179	
18,400.00	6,927.11	6,938.77	6,933.11	190.19	199.67	-89.43	-2,104.12	-3,342.88	8,747.11	8,494.09	253.02	34.570	
18,500.00	6,926.88	6,938.55	6,932.88	191.78	199.66	-89.43	-2,104.12	-3,342.88	8,844.64	8,591.66	252.98	34.962	
18,600.00	6,926.66	6,938.33	6,932.66	193.37	199.65	-89.42	-2,104.12	-3,342.88	8,942.23	8,689.29	252.94	35.353	
18,700.00	6,926.44	6,938.10	6,932.44	194.96	199.64	-89.41	-2,104.12	-3,342.88	9,039.86	8,786.97	252.90	35.745	
18,800.00	6,926.21	6,937.88	6,932.21	196.54	199.63	-89.41	-2,104.12	-3,342.88	9,137.55	8,884.69	252.86	36.136	
18,900.00	6,925.99	6,937.65	6,931.99	198.13	199.62	-89.40	-2,104.12	-3,342.88	9,235.29	8,982.46	252.83	36.528	
19,000.00	6,925.76	6,937.43	6,931.76	199.72	199.62	-89.40	-2,104.12	-3,342.88	9,333.08	9,080.28	252.80	36.920	
19,100.00	6,925.54	6,937.20	6,931.54	201.31	199.61	-89.39	-2,104.12	-3,342.88	9,430.91	9,178.15	252.76	37.311	
19,200.00	6,925.31	6,936.98	6,931.31	202.90	199.60	-89.38	-2,104.12	-3,342.88	9,528.79	9,276.05	252.74	37.702	
19,300.00	6,925.09	6,936.75	6,931.09	204.49	199.59	-89.38	-2,104.12	-3,342.88	9,626.71	9,374.00	252.71	38.094	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 119 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 265-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,400.00	6,924.86	6,936.53	6,930.86	206.08	199.58	-89.37	-2,104.12	-3,342.88	9,724.67	9,471.99	252.69	38.485	
19,500.00	6,924.64	6,936.30	6,930.64	207.67	199.57	-89.36	-2,104.12	-3,342.88	9,822.68	9,570.01	252.66	38.877	
19,600.00	6,924.41	6,936.08	6,930.41	209.26	199.57	-89.36	-2,104.12	-3,342.88	9,920.72	9,668.08	252.64	39.268	
19,700.00	6,924.19	6,935.85	6,930.19	210.85	199.56	-89.35	-2,104.12	-3,342.88	10,018.80	9,766.18	252.62	39.659	
19,800.00	6,923.96	6,935.63	6,929.96	212.44	199.55	-89.34	-2,104.12	-3,342.88	10,116.93	9,864.32	252.61	40.050	
19,900.00	6,923.74	6,935.40	6,929.74	214.04	199.54	-89.34	-2,104.12	-3,342.88	10,215.08	9,962.49	252.59	40.441	
20,000.00	6,923.51	6,935.18	6,929.51	215.63	199.53	-89.33	-2,104.12	-3,342.88	10,313.27	10,060.70	252.58	40.832	
20,100.00	6,923.29	6,934.96	6,929.29	217.22	199.52	-89.32	-2,104.12	-3,342.88	10,411.50	10,158.94	252.57	41.223	
20,200.00	6,923.07	6,934.73	6,929.07	218.81	199.52	-89.32	-2,104.12	-3,342.88	10,509.76	10,257.21	252.56	41.614	
20,300.00	6,922.84	6,934.51	6,928.84	220.40	199.51	-89.31	-2,104.12	-3,342.88	10,608.05	10,355.51	252.55	42.004	
20,400.00	6,922.62	6,934.28	6,928.62	221.99	199.50	-89.30	-2,104.12	-3,342.88	10,706.38	10,453.84	252.54	42.395	
20,500.00	6,922.39	6,934.06	6,928.39	223.59	199.49	-89.30	-2,104.12	-3,342.88	10,804.73	10,552.20	252.53	42.785	
20,600.00	6,922.17	6,933.83	6,928.17	225.18	199.48	-89.29	-2,104.12	-3,342.88	10,903.12	10,650.59	252.53	43.175	
20,674.13	6,922.00	6,933.67	6,928.00	226.36	199.48	-89.28	-2,104.12	-3,342.88	10,976.07	10,723.54	252.53	43.465	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 173-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	161.00	161.00	0.00	1.49	-77.66	1,221.65	-5,582.40	5,714.51				
100.00	100.00	261.00	261.00	0.25	3.27	-77.66	1,221.65	-5,582.40	5,714.51	5,710.98	3.52	1,621.432	
200.00	200.00	364.16	364.16	0.61	5.24	-77.65	1,221.82	-5,582.40	5,714.54	5,708.70	5.85	977.559	
300.00	300.00	461.02	461.00	0.97	7.11	-77.66	1,221.65	-5,582.40	5,714.51	5,706.43	8.08	707.489	
400.00	400.00	562.47	562.45	1.33	9.10	-77.65	1,222.05	-5,582.40	5,714.59	5,704.16	10.43	547.915	
500.00	500.00	669.23	669.20	1.68	11.20	-77.66	1,221.63	-5,582.40	5,714.51	5,701.62	12.89	443.450	
606.93	606.91	767.94	767.91	2.05	13.15	59.88	1,221.65	-5,582.40	5,713.51	5,698.31	15.20	375.950	
700.00	699.91	860.95	860.91	2.37	14.98	59.91	1,221.65	-5,582.40	5,711.76	5,694.42	17.34	329.373	
800.00	799.84	961.75	961.70	2.71	16.96	59.95	1,222.51	-5,582.40	5,710.08	5,690.41	19.67	290.323	
900.00	899.77	1,064.80	1,064.75	3.06	18.99	59.98	1,222.31	-5,582.40	5,708.17	5,686.12	22.04	258.948	
1,000.00	999.70	1,167.87	1,167.82	3.41	21.02	60.01	1,221.84	-5,582.40	5,706.20	5,681.78	24.42	233.642	
1,100.00	1,099.63	1,260.72	1,260.63	3.76	22.98	60.04	1,221.65	-5,582.40	5,704.29	5,677.55	26.74	213.359	
1,200.00	1,199.56	1,360.65	1,360.56	4.11	25.16	60.07	1,221.65	-5,582.40	5,702.42	5,673.15	29.28	194.788	
1,300.00	1,299.49	1,460.90	1,460.81	4.47	27.36	60.11	1,222.47	-5,582.40	5,700.74	5,668.92	31.82	179.139	
1,400.00	1,399.42	1,564.19	1,564.10	4.83	29.62	60.14	1,222.30	-5,582.40	5,698.85	5,664.41	34.44	165.480	
1,500.00	1,499.35	1,667.51	1,667.41	5.19	31.87	60.17	1,221.86	-5,582.40	5,696.89	5,659.84	37.05	153.742	
1,600.00	1,599.28	1,760.47	1,760.28	5.54	34.01	60.20	1,221.65	-5,582.40	5,694.99	5,655.44	39.55	144.012	
1,700.00	1,699.21	1,860.44	1,860.21	5.90	36.31	60.23	1,221.65	-5,582.40	5,693.13	5,650.93	42.21	134.890	
1,800.00	1,799.14	1,960.37	1,960.14	6.26	38.43	60.26	1,221.65	-5,582.40	5,691.28	5,646.59	44.69	127.355	
1,900.00	1,899.07	2,060.30	2,060.07	6.62	40.56	60.30	1,221.65	-5,582.40	5,689.43	5,642.26	47.17	120.612	
2,000.00	1,999.00	2,166.05	2,165.81	6.98	42.80	60.34	1,222.69	-5,582.40	5,687.81	5,638.03	49.78	114.263	
2,100.00	2,098.94	2,272.37	2,272.11	7.34	45.06	60.37	1,221.93	-5,582.40	5,685.81	5,633.41	52.40	108.513	
2,200.00	2,198.87	2,360.16	2,359.87	7.70	46.93	60.40	1,221.65	-5,582.40	5,683.89	5,629.26	54.62	104.054	
2,300.00	2,298.80	2,460.09	2,459.80	8.06	49.06	60.43	1,221.65	-5,582.40	5,682.04	5,624.93	57.11	99.494	
2,400.00	2,398.73	2,560.37	2,560.07	8.42	51.19	60.47	1,222.46	-5,582.40	5,680.38	5,620.78	59.60	95.305	
2,500.00	2,498.66	2,663.76	2,663.46	8.79	53.39	60.50	1,222.30	-5,582.40	5,678.51	5,616.35	62.16	91.351	
2,600.00	2,598.59	2,767.17	2,766.87	9.15	55.59	60.53	1,221.85	-5,582.40	5,676.57	5,611.85	64.72	87.709	
2,700.00	2,698.52	2,859.89	2,859.52	9.51	57.81	60.56	1,221.65	-5,582.40	5,674.69	5,607.38	67.31	84.305	
2,800.00	2,798.45	2,959.82	2,959.45	9.87	60.37	60.59	1,221.65	-5,582.40	5,672.85	5,602.63	70.23	80.779	
2,900.00	2,898.38	3,060.34	3,059.95	10.23	62.94	60.64	1,223.01	-5,582.40	5,671.33	5,598.17	73.16	77.521	
3,000.00	2,998.31	3,166.26	3,165.86	10.59	65.65	60.67	1,222.71	-5,582.40	5,669.44	5,593.21	76.23	74.375	
3,100.00	3,098.24	3,272.22	3,271.81	10.96	68.36	60.70	1,221.93	-5,582.40	5,667.44	5,588.14	79.30	71.471	
3,200.00	3,198.17	3,359.75	3,359.17	11.32	71.08	60.72	1,221.65	-5,582.40	5,665.53	5,583.16	82.38	68.774	
3,300.00	3,298.10	3,459.68	3,459.10	11.68	74.44	60.76	1,221.65	-5,582.40	5,663.71	5,577.61	86.10	65.780	
3,400.00	3,398.03	3,559.61	3,559.03	12.04	77.80	60.79	1,221.65	-5,582.40	5,661.89	5,572.06	89.82	63.035	
3,500.00	3,497.96	3,666.03	3,665.40	12.40	81.38	60.85	1,223.94	-5,582.40	5,660.60	5,566.83	93.76	60.372	
3,600.00	3,597.89	3,774.76	3,774.10	12.77	85.03	60.87	1,223.04	-5,582.40	5,658.59	5,560.81	97.78	57.871	
3,700.00	3,697.82	3,883.55	3,882.85	13.13	88.69	60.89	1,221.41	-5,582.40	5,656.43	5,554.63	101.80	55.565	
3,800.00	3,797.75	3,959.94	3,958.75	13.49	91.89	60.92	1,221.65	-5,582.40	5,654.61	5,549.26	105.36	53.671	
3,900.00	3,897.68	4,060.20	4,058.68	13.85	95.96	60.95	1,221.65	-5,582.40	5,652.80	5,543.00	109.80	51.485	
4,000.00	3,997.61	4,160.13	4,158.61	14.21	99.99	60.99	1,221.65	-5,582.40	5,650.99	5,536.80	114.18	49.491	
4,100.00	4,097.54	4,291.63	4,289.99	14.58	105.29	61.04	1,222.44	-5,582.40	5,649.45	5,529.61	119.84	47.142	
4,200.00	4,197.47	4,360.41	4,358.47	14.94	107.99	61.05	1,221.65	-5,582.40	5,647.37	5,524.46	122.90	45.949	
4,300.00	4,297.40	4,460.51	4,458.40	15.30	111.84	61.09	1,221.65	-5,582.40	5,645.56	5,518.44	127.12	44.410	
4,400.00	4,397.33	4,592.37	4,590.20	15.66	116.94	61.13	1,221.81	-5,582.40	5,643.89	5,511.31	132.58	42.569	
4,500.00	4,497.26	4,660.58	4,658.26	16.03	119.60	61.15	1,221.65	-5,582.40	5,641.96	5,506.35	135.61	41.606	
4,600.00	4,597.19	4,760.51	4,758.19	16.39	123.50	61.19	1,221.65	-5,582.40	5,640.16	5,500.29	139.86	40.326	
4,700.00	4,697.12	4,869.26	4,866.84	16.75	127.74	61.25	1,224.30	-5,582.40	5,638.99	5,494.53	144.47	39.033	
4,800.00	4,797.05	4,988.81	4,986.33	17.11	132.40	61.27	1,222.66	-5,582.40	5,636.87	5,487.38	149.49	37.708	
4,900.00	4,896.99	5,060.90	5,057.99	17.47	135.22	61.29	1,221.65	-5,582.40	5,634.77	5,482.10	152.67	36.908	
5,000.00	4,996.92	5,164.58	5,161.62	17.84	139.29	61.34	1,223.20	-5,582.40	5,633.34	5,476.24	157.10	35.857	
5,100.00	5,096.85	5,306.53	5,303.47	18.20	144.87	61.36	1,220.61	-5,582.40	5,631.12	5,468.08	163.03	34.540	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 173-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
5,200.00	5,196.78	5,361.02	5,357.78	18.56	147.02	61.39	1,221.65	-5,582.40	5,629.39	5,463.83	165.56	34.002	
5,300.00	5,296.71	5,462.20	5,458.89	18.92	151.01	61.44	1,224.05	-5,582.40	5,628.18	5,458.27	169.91	33.124	
5,400.00	5,396.64	5,586.29	5,582.92	19.29	155.91	61.47	1,222.84	-5,582.40	5,626.16	5,451.00	175.17	32.118	
5,500.00	5,496.57	5,661.31	5,657.57	19.65	158.85	61.49	1,221.65	-5,582.40	5,624.04	5,445.56	178.47	31.512	
5,600.00	5,596.50	5,761.24	5,757.50	20.01	162.69	61.52	1,221.65	-5,582.40	5,622.26	5,439.58	182.68	30.777	
5,700.00	5,696.43	5,861.17	5,857.43	20.37	166.53	61.55	1,221.65	-5,582.40	5,620.48	5,433.60	186.88	30.076	
5,800.00	5,796.36	5,973.87	5,970.00	20.74	170.86	61.62	1,224.47	-5,582.40	5,619.40	5,427.83	191.57	29.333	
5,900.00	5,896.29	6,091.09	6,087.16	21.10	175.37	61.64	1,222.66	-5,582.40	5,617.25	5,420.81	196.44	28.596	
6,000.00	5,996.22	6,161.59	6,157.22	21.46	178.08	61.65	1,221.65	-5,582.40	5,615.15	5,415.63	199.51	28.144	
6,100.00	6,096.15	6,261.52	6,257.15	21.82	181.94	61.69	1,221.65	-5,582.40	5,613.38	5,409.65	203.73	27.553	
6,200.00	6,196.08	6,361.45	6,357.08	22.19	185.79	61.72	1,221.65	-5,582.40	5,611.61	5,403.66	207.95	26.986	
6,300.00	6,296.01	6,471.00	6,466.53	22.55	190.02	61.78	1,224.53	-5,582.40	5,610.56	5,398.02	212.53	26.398	
6,335.60	6,331.59	6,511.81	6,507.33	22.68	191.59	61.79	1,224.17	-5,582.40	5,609.85	5,395.61	214.24	26.185	
6,350.00	6,345.97	6,528.32	6,523.83	22.73	192.23	44.13	1,223.98	-5,582.40	5,609.40	5,394.47	214.93	26.099	
6,400.00	6,395.75	6,585.46	6,580.94	22.91	194.43	26.52	1,223.14	-5,582.40	5,605.34	5,388.03	217.31	25.794	
6,450.00	6,445.03	6,642.07	6,637.51	23.10	196.61	22.09	1,222.01	-5,582.40	5,597.44	5,377.76	219.67	25.481	
6,500.00	6,493.52	6,659.55	6,654.52	23.29	197.29	20.27	1,221.65	-5,582.40	5,585.87	5,365.34	220.53	25.329	
6,550.00	6,540.91	6,706.94	6,701.91	23.48	199.06	19.51	1,221.65	-5,582.40	5,570.82	5,348.34	222.48	25.039	
6,600.00	6,586.91	6,752.94	6,747.91	23.66	200.78	19.30	1,221.65	-5,582.40	5,552.21	5,327.83	224.38	24.745	
6,650.00	6,631.24	6,797.27	6,792.24	23.85	202.44	19.46	1,221.65	-5,582.40	5,530.15	5,303.94	226.21	24.447	
6,700.00	6,673.63	6,839.65	6,834.63	24.05	204.03	19.94	1,221.65	-5,582.40	5,504.79	5,276.83	227.96	24.149	
6,750.00	6,713.80	6,879.83	6,874.80	24.24	205.53	20.71	1,221.65	-5,582.40	5,476.28	5,246.66	229.61	23.850	
6,800.00	6,751.52	6,919.79	6,914.68	24.44	207.03	21.84	1,224.86	-5,582.40	5,445.62	5,214.37	231.25	23.548	
6,850.00	6,786.56	6,960.97	6,955.84	24.65	208.57	23.30	1,224.71	-5,582.40	5,411.34	5,178.41	232.93	23.232	
6,900.00	6,818.69	6,998.75	6,993.61	24.87	209.98	25.20	1,224.41	-5,582.40	5,374.48	5,140.01	234.47	22.922	
6,950.00	6,847.72	7,032.90	7,027.74	25.10	211.26	27.66	1,224.01	-5,582.40	5,335.27	5,099.41	235.86	22.620	
7,000.00	6,873.46	7,063.20	7,058.02	25.34	212.39	30.84	1,223.55	-5,582.40	5,293.96	5,056.87	237.10	22.328	
7,050.00	6,895.77	7,089.47	7,084.26	25.60	213.37	35.01	1,223.07	-5,582.40	5,250.83	5,012.66	238.18	22.046	
7,100.00	6,914.50	7,111.52	7,106.30	25.87	214.20	40.53	1,222.61	-5,582.40	5,206.15	4,967.07	239.09	21.775	
7,150.00	6,929.54	7,129.23	7,123.99	26.15	214.86	47.91	1,222.21	-5,582.40	5,160.20	4,920.38	239.82	21.517	
7,200.00	6,940.80	7,142.48	7,137.24	26.44	215.36	57.72	1,221.88	-5,582.40	5,113.28	4,872.89	240.39	21.271	
7,250.00	6,948.20	7,151.19	7,145.94	26.75	215.68	70.37	1,221.66	-5,582.40	5,065.68	4,824.91	240.78	21.039	
7,300.00	6,951.70	7,155.31	7,150.05	27.07	215.84	85.38	1,221.55	-5,582.40	5,017.71	4,776.72	240.99	20.822	
7,321.06	6,952.00	7,155.66	7,150.40	27.20	215.85	92.01	1,221.54	-5,582.40	4,997.45	4,756.43	241.02	20.734	
7,400.00	6,951.82	7,155.44	7,150.18	27.74	215.84	92.00	1,221.55	-5,582.40	4,921.61	4,680.50	241.10	20.413	
7,500.00	6,951.60	7,155.16	7,149.91	28.49	215.83	91.99	1,221.55	-5,582.40	4,825.66	4,584.44	241.21	20.006	
7,600.00	6,951.37	7,154.88	7,149.63	29.30	215.82	91.98	1,221.56	-5,582.40	4,729.88	4,488.54	241.34	19.598	
7,700.00	6,951.15	7,154.60	7,149.35	30.18	215.81	91.97	1,221.57	-5,582.40	4,634.28	4,392.79	241.49	19.190	
7,800.00	6,950.92	7,154.33	7,149.07	31.12	215.80	91.96	1,221.58	-5,582.40	4,538.87	4,297.21	241.66	18.782	
7,900.00	6,950.70	7,154.05	7,148.79	32.11	215.79	91.94	1,221.58	-5,582.40	4,443.66	4,201.82	241.84	18.374	
8,000.00	6,950.47	7,153.77	7,148.52	33.15	215.78	91.93	1,221.59	-5,582.40	4,348.67	4,106.62	242.05	17.966	
8,100.00	6,950.25	7,153.49	7,148.24	34.23	215.77	91.92	1,221.60	-5,582.40	4,253.91	4,011.62	242.28	17.557	
8,200.00	6,950.03	7,153.21	7,147.96	35.35	215.76	91.91	1,221.61	-5,582.40	4,159.39	3,916.84	242.54	17.149	
8,300.00	6,949.80	7,152.94	7,147.68	36.51	215.75	91.90	1,221.61	-5,582.40	4,065.13	3,822.30	242.83	16.741	
8,400.00	6,949.58	7,152.66	7,147.41	37.70	215.74	91.89	1,221.62	-5,582.40	3,971.16	3,728.01	243.15	16.332	
8,500.00	6,949.35	7,152.00	7,146.40	38.92	215.71	91.84	1,221.65	-5,582.40	3,877.48	3,633.99	243.49	15.925	
8,600.00	6,949.13	7,152.00	7,146.40	40.17	215.71	91.84	1,221.65	-5,582.40	3,784.13	3,540.24	243.89	15.516	
8,700.00	6,948.90	7,152.00	7,146.40	41.44	215.71	91.84	1,221.65	-5,582.40	3,691.13	3,446.80	244.33	15.107	
8,800.00	6,948.68	7,151.55	7,146.29	42.73	215.70	91.84	1,221.65	-5,582.40	3,598.50	3,353.71	244.79	14.700	
8,900.00	6,948.45	7,151.27	7,146.02	44.04	215.69	91.83	1,221.66	-5,582.40	3,506.28	3,260.97	245.31	14.293	
9,000.00	6,948.23	7,150.99	7,145.74	45.38	215.68	91.82	1,221.66	-5,582.40	3,414.50	3,168.62	245.88	13.887	
9,100.00	6,948.00	7,150.71	7,145.46	46.72	215.67	91.80	1,221.67	-5,582.40	3,323.19	3,076.69	246.50	13.482	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 173-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	7,150.44	7,145.18	48.09	215.66	91.79	1,221.68	-5,582.40	3,232.39	2,985.21	247.18	13.077	
9,300.00	6,947.55	7,150.16	7,144.91	49.47	215.65	91.78	1,221.69	-5,582.40	3,142.16	2,894.23	247.93	12.674	
9,400.00	6,947.33	7,149.88	7,144.63	50.86	215.64	91.77	1,221.69	-5,582.40	3,052.53	2,803.79	248.74	12.272	
9,500.00	6,947.10	7,149.60	7,144.35	52.26	215.63	91.76	1,221.70	-5,582.40	2,963.57	2,713.94	249.63	11.872	
9,600.00	6,946.88	7,149.32	7,144.07	53.68	215.61	91.75	1,221.71	-5,582.40	2,875.33	2,624.73	250.60	11.474	
9,700.00	6,946.66	7,149.05	7,143.80	55.10	215.60	91.74	1,221.72	-5,582.40	2,787.89	2,536.24	251.65	11.078	
9,800.00	6,946.43	7,148.77	7,143.52	56.54	215.59	91.72	1,221.72	-5,582.40	2,701.31	2,448.52	252.80	10.686	
9,900.00	6,946.21	7,148.49	7,143.24	57.98	215.58	91.71	1,221.73	-5,582.40	2,615.70	2,361.65	254.04	10.296	
10,000.00	6,945.98	7,148.21	7,142.97	59.43	215.57	91.70	1,221.74	-5,582.40	2,531.14	2,275.74	255.40	9.911	
10,100.00	6,945.76	7,147.94	7,142.69	60.89	215.56	91.69	1,221.74	-5,582.40	2,447.74	2,190.88	256.87	9.529	
10,200.00	6,945.53	7,147.66	7,142.41	62.36	215.55	91.68	1,221.75	-5,582.40	2,365.64	2,107.18	258.45	9.153	
10,300.00	6,945.31	7,147.38	7,142.13	63.83	215.54	91.67	1,221.76	-5,582.40	2,284.95	2,024.78	260.17	8.783	
10,400.00	6,945.08	7,147.10	7,141.86	65.31	215.53	91.65	1,221.77	-5,582.40	2,205.86	1,943.83	262.02	8.419	
10,500.00	6,944.86	7,146.83	7,141.58	66.79	215.52	91.64	1,221.77	-5,582.40	2,128.52	1,864.50	264.02	8.062	
10,600.00	6,944.63	7,146.55	7,141.30	68.28	215.51	91.63	1,221.78	-5,582.40	2,053.14	1,786.98	266.16	7.714	
10,700.00	6,944.41	7,146.27	7,141.03	69.78	215.50	91.62	1,221.79	-5,582.40	1,979.94	1,711.48	268.45	7.375	
10,800.00	6,944.18	7,146.00	7,140.75	71.28	215.49	91.61	1,221.79	-5,582.40	1,909.17	1,638.27	270.90	7.048	
10,900.00	6,943.96	7,145.72	7,140.47	72.78	215.48	91.60	1,221.80	-5,582.40	1,841.12	1,567.63	273.49	6.732	
11,000.00	6,943.73	7,145.44	7,140.19	74.29	215.47	91.58	1,221.81	-5,582.40	1,776.09	1,499.86	276.23	6.430	
11,100.00	6,943.51	7,145.16	7,139.92	75.80	215.46	91.57	1,221.81	-5,582.40	1,714.44	1,435.33	279.10	6.143	
11,200.00	6,943.29	7,144.89	7,139.64	77.32	215.45	91.56	1,221.82	-5,582.40	1,656.53	1,374.44	282.08	5.872	
11,300.00	6,943.06	7,144.61	7,139.36	78.84	215.44	91.55	1,221.83	-5,582.40	1,602.77	1,317.62	285.15	5.621	
11,400.00	6,942.84	7,144.33	7,139.09	80.36	215.43	91.54	1,221.84	-5,582.40	1,553.59	1,265.33	288.26	5.390	
11,500.00	6,942.61	7,144.06	7,138.81	81.88	215.42	91.53	1,221.84	-5,582.40	1,509.45	1,218.08	291.37	5.181	
11,600.00	6,942.39	7,143.78	7,138.53	83.41	215.41	91.52	1,221.85	-5,582.40	1,470.79	1,176.37	294.42	4.996	
11,700.00	6,942.16	7,143.50	7,138.26	84.94	215.40	91.50	1,221.86	-5,582.40	1,438.05	1,140.71	297.34	4.836	
11,800.00	6,941.94	7,143.22	7,137.98	86.47	215.39	91.49	1,221.86	-5,582.40	1,411.66	1,111.59	300.07	4.704	
11,900.00	6,941.71	7,142.95	7,137.70	88.01	215.38	91.48	1,221.87	-5,582.40	1,391.96	1,089.44	302.52	4.601	
12,000.00	6,941.49	7,142.67	7,137.43	89.55	215.37	91.47	1,221.88	-5,582.40	1,379.25	1,074.61	304.64	4.527	
12,100.00	6,941.26	7,142.39	7,137.15	91.09	215.36	91.46	1,221.88	-5,582.40	1,373.73	1,067.36	306.36	4.484	
12,126.09	6,941.20	7,142.32	7,137.08	91.49	215.35	91.45	1,221.89	-5,582.40	1,373.48	1,066.74	306.74	4.478	CC, ES
12,200.00	6,941.04	7,142.12	7,136.87	92.63	215.35	91.45	1,221.89	-5,582.40	1,375.47	1,067.82	307.65	4.471	SF
12,300.00	6,940.81	7,141.84	7,136.60	94.18	215.33	91.43	1,221.90	-5,582.40	1,384.45	1,075.96	308.48	4.488	
12,400.00	6,940.59	7,141.56	7,136.32	95.72	215.32	91.42	1,221.91	-5,582.40	1,400.53	1,091.65	308.87	4.534	
12,500.00	6,940.36	7,141.29	7,136.04	97.27	215.31	91.41	1,221.91	-5,582.40	1,423.47	1,114.63	308.83	4.609	
12,600.00	6,940.14	7,141.01	7,135.77	98.82	215.30	91.40	1,221.92	-5,582.40	1,452.94	1,144.53	308.41	4.711	
12,700.00	6,939.92	7,140.73	7,135.49	100.37	215.29	91.39	1,221.93	-5,582.40	1,488.56	1,180.91	307.65	4.838	
12,800.00	6,939.69	7,140.46	7,135.21	101.92	215.28	91.38	1,221.93	-5,582.40	1,529.90	1,223.29	306.62	4.990	
12,900.00	6,939.47	7,140.18	7,134.94	103.48	215.27	91.37	1,221.94	-5,582.40	1,576.51	1,271.15	305.36	5.163	
13,000.00	6,939.24	7,139.90	7,134.66	105.03	215.26	91.35	1,221.95	-5,582.40	1,627.93	1,323.99	303.94	5.356	
13,100.00	6,939.02	7,139.63	7,134.39	106.59	215.25	91.34	1,221.95	-5,582.40	1,683.73	1,381.32	302.41	5.568	
13,200.00	6,938.79	7,139.35	7,134.11	108.15	215.24	91.33	1,221.96	-5,582.40	1,743.48	1,442.68	300.80	5.796	
13,300.00	6,938.57	7,139.07	7,133.83	109.71	215.23	91.32	1,221.97	-5,582.40	1,806.79	1,507.64	299.16	6.040	
13,400.00	6,938.34	7,138.80	7,133.56	111.27	215.22	91.31	1,221.97	-5,582.40	1,873.31	1,575.81	297.50	6.297	
13,500.00	6,938.12	7,138.52	7,133.28	112.83	215.21	91.30	1,221.98	-5,582.40	1,942.70	1,646.84	295.86	6.566	
13,600.00	6,937.89	7,138.24	7,133.00	114.40	215.20	91.28	1,221.99	-5,582.40	2,014.66	1,720.41	294.25	6.847	
13,700.00	6,937.67	7,137.97	7,132.73	115.96	215.19	91.27	1,222.00	-5,582.40	2,088.93	1,796.26	292.67	7.137	
13,800.00	6,937.44	7,137.69	7,132.45	117.53	215.18	91.26	1,222.00	-5,582.40	2,165.27	1,874.12	291.15	7.437	
13,900.00	6,937.22	7,137.42	7,132.18	119.09	215.17	91.25	1,222.01	-5,582.40	2,243.48	1,953.79	289.69	7.744	
14,000.00	6,936.99	7,137.14	7,131.90	120.66	215.16	91.24	1,222.02	-5,582.40	2,323.35	2,035.07	288.28	8.059	
14,100.00	6,936.77	7,136.86	7,131.62	122.23	215.15	91.23	1,222.02	-5,582.40	2,404.74	2,117.80	286.94	8.381	
14,200.00	6,936.55	7,136.59	7,131.35	123.80	215.14	91.22	1,222.03	-5,582.40	2,487.47	2,201.82	285.66	8.708	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 173-A027Ua_INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
14,300.00	6,936.32	7,136.31	7,131.07	125.37	215.13	91.20	1,222.04	-5,582.40	2,571.44	2,287.01	284.43	9.041	
14,400.00	6,936.10	7,136.03	7,130.80	126.94	215.12	91.19	1,222.04	-5,582.40	2,656.52	2,373.25	283.27	9.378	
14,500.00	6,935.87	7,135.76	7,130.52	128.51	215.11	91.18	1,222.05	-5,582.40	2,742.60	2,460.44	282.17	9.720	
14,600.00	6,935.65	7,135.48	7,130.24	130.08	215.10	91.17	1,222.06	-5,582.40	2,829.60	2,548.48	281.12	10.066	
14,700.00	6,935.42	7,135.21	7,129.97	131.65	215.09	91.16	1,222.06	-5,582.40	2,917.44	2,637.31	280.12	10.415	
14,800.00	6,935.20	7,134.93	7,129.69	133.23	215.08	91.15	1,222.07	-5,582.40	3,006.03	2,726.85	279.17	10.768	
14,900.00	6,934.97	7,134.65	7,129.42	134.80	215.07	91.14	1,222.08	-5,582.40	3,095.32	2,817.04	278.28	11.123	
15,000.00	6,934.75	7,134.38	7,129.14	136.37	215.06	91.12	1,222.08	-5,582.40	3,185.24	2,907.82	277.43	11.481	
15,100.00	6,934.52	7,134.10	7,128.87	137.95	215.05	91.11	1,222.09	-5,582.40	3,275.75	2,999.13	276.62	11.842	
15,200.00	6,934.30	7,133.83	7,128.59	139.53	215.03	91.10	1,222.10	-5,582.40	3,366.80	3,090.95	275.85	12.205	
15,300.00	6,934.07	7,133.55	7,128.31	141.10	215.02	91.09	1,222.10	-5,582.40	3,458.34	3,183.22	275.12	12.570	
15,400.00	6,933.85	7,133.27	7,128.04	142.68	215.01	91.08	1,222.11	-5,582.40	3,550.34	3,275.91	274.43	12.937	
15,500.00	6,933.62	7,133.00	7,127.76	144.26	215.00	91.07	1,222.12	-5,582.40	3,642.75	3,368.98	273.77	13.306	
15,600.00	6,933.40	7,132.72	7,127.49	145.84	214.99	91.05	1,222.12	-5,582.40	3,735.56	3,462.42	273.14	13.676	
15,700.00	6,933.18	7,132.45	7,127.21	147.42	214.98	91.04	1,222.13	-5,582.40	3,828.74	3,556.19	272.55	14.048	
15,800.00	6,932.95	7,132.17	7,126.94	148.99	214.97	91.03	1,222.14	-5,582.40	3,922.24	3,650.26	271.98	14.421	
15,900.00	6,932.73	7,131.90	7,126.66	150.57	214.96	91.02	1,222.14	-5,582.40	4,016.06	3,744.62	271.45	14.795	
16,000.00	6,932.50	7,131.62	7,126.39	152.15	214.95	91.01	1,222.15	-5,582.40	4,110.18	3,839.24	270.93	15.170	
16,100.00	6,932.28	7,131.34	7,126.11	153.74	214.94	91.00	1,222.16	-5,582.40	4,204.56	3,934.11	270.45	15.547	
16,200.00	6,932.05	7,131.07	7,125.84	155.32	214.93	90.99	1,222.16	-5,582.40	4,299.20	4,029.22	269.98	15.924	
16,300.00	6,931.83	7,130.79	7,125.56	156.90	214.92	90.97	1,222.17	-5,582.40	4,394.07	4,124.53	269.54	16.302	
16,400.00	6,931.60	7,130.52	7,125.28	158.48	214.91	90.96	1,222.18	-5,582.40	4,489.17	4,220.05	269.12	16.681	
16,500.00	6,931.38	7,130.24	7,125.01	160.06	214.90	90.95	1,222.18	-5,582.40	4,584.48	4,315.76	268.72	17.061	
16,600.00	6,931.15	7,129.97	7,124.73	161.65	214.89	90.94	1,222.19	-5,582.40	4,679.98	4,411.65	268.33	17.441	
16,700.00	6,930.93	7,129.69	7,124.46	163.23	214.88	90.93	1,222.20	-5,582.40	4,775.67	4,507.70	267.97	17.822	
16,800.00	6,930.70	7,129.42	7,124.18	164.81	214.87	90.92	1,222.20	-5,582.40	4,871.53	4,603.91	267.62	18.203	
16,900.00	6,930.48	7,129.14	7,123.91	166.40	214.86	90.91	1,222.21	-5,582.40	4,967.55	4,700.26	267.29	18.585	
17,000.00	6,930.25	7,128.87	7,123.63	167.98	214.85	90.89	1,222.22	-5,582.40	5,063.73	4,796.76	266.97	18.968	
17,100.00	6,930.03	7,128.59	7,123.36	169.56	214.84	90.88	1,222.22	-5,582.40	5,160.05	4,893.38	266.66	19.350	
17,200.00	6,929.81	7,128.31	7,123.08	171.15	214.83	90.87	1,222.23	-5,582.40	5,256.51	4,990.13	266.37	19.734	
17,300.00	6,929.58	7,128.04	7,122.81	172.73	214.82	90.86	1,222.23	-5,582.40	5,353.10	5,087.00	266.10	20.117	
17,400.00	6,929.36	7,127.76	7,122.53	174.32	214.81	90.85	1,222.24	-5,582.40	5,449.81	5,183.98	265.83	20.501	
17,500.00	6,929.13	7,127.49	7,122.26	175.91	214.80	90.84	1,222.25	-5,582.40	5,546.64	5,281.06	265.58	20.885	
17,600.00	6,928.91	7,127.21	7,121.98	177.49	214.79	90.83	1,222.25	-5,582.40	5,643.58	5,378.24	265.34	21.269	
17,700.00	6,928.68	7,126.94	7,121.71	179.08	214.78	90.81	1,222.26	-5,582.40	5,740.62	5,475.51	265.11	21.654	
17,800.00	6,928.46	7,126.66	7,121.43	180.66	214.77	90.80	1,222.27	-5,582.40	5,837.77	5,572.88	264.89	22.039	
17,900.00	6,928.23	7,126.39	7,121.16	182.25	214.76	90.79	1,222.27	-5,582.40	5,935.01	5,670.33	264.68	22.423	
18,000.00	6,928.01	7,126.11	7,120.88	183.84	214.75	90.78	1,222.28	-5,582.40	6,032.34	5,767.86	264.48	22.809	
18,100.00	6,927.78	7,125.84	7,120.61	185.43	214.74	90.77	1,222.29	-5,582.40	6,129.75	5,865.47	264.28	23.194	
18,200.00	6,927.56	7,125.56	7,120.33	187.01	214.73	90.76	1,222.29	-5,582.40	6,227.25	5,963.15	264.10	23.579	
18,300.00	6,927.33	7,125.29	7,120.06	188.60	214.72	90.74	1,222.30	-5,582.40	6,324.82	6,060.90	263.93	23.964	
18,400.00	6,927.11	7,125.01	7,119.78	190.19	214.71	90.73	1,222.31	-5,582.40	6,422.47	6,158.72	263.76	24.350	
18,500.00	6,926.88	7,124.74	7,119.51	191.78	214.69	90.72	1,222.31	-5,582.40	6,520.20	6,256.60	263.60	24.735	
18,600.00	6,926.66	7,124.46	7,119.24	193.37	214.68	90.71	1,222.32	-5,582.40	6,617.98	6,354.54	263.45	25.121	
18,700.00	6,926.44	7,124.19	7,118.96	194.96	214.67	90.70	1,222.33	-5,582.40	6,715.84	6,452.54	263.30	25.506	
18,800.00	6,926.21	7,123.91	7,118.69	196.54	214.66	90.69	1,222.33	-5,582.40	6,813.76	6,550.59	263.16	25.892	
18,900.00	6,925.99	7,123.64	7,118.41	198.13	214.65	90.68	1,222.34	-5,582.40	6,911.73	6,648.70	263.03	26.277	
19,000.00	6,925.76	7,123.36	7,118.14	199.72	214.64	90.66	1,222.34	-5,582.40	7,009.77	6,746.86	262.90	26.663	
19,100.00	6,925.54	7,123.09	7,117.86	201.31	214.63	90.65	1,222.35	-5,582.40	7,107.85	6,845.07	262.78	27.048	
19,200.00	6,925.31	7,122.82	7,117.59	202.90	214.62	90.64	1,222.36	-5,582.40	7,205.99	6,943.33	262.67	27.434	
19,300.00	6,925.09	7,122.54	7,117.31	204.49	214.61	90.63	1,222.36	-5,582.40	7,304.19	7,041.63	262.56	27.819	
19,400.00	6,924.86	7,122.27	7,117.04	206.08	214.60	90.62	1,222.37	-5,582.40	7,402.43	7,139.97	262.46	28.204	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 173-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	7,121.99	7,116.76	207.67	214.59	90.61	1,222.38	-5,582.40	7,500.71	7,238.35	262.36	28.590	
19,600.00	6,924.41	7,121.72	7,116.49	209.26	214.58	90.60	1,222.38	-5,582.40	7,599.04	7,336.78	262.27	28.975	
19,700.00	6,924.19	7,121.44	7,116.22	210.85	214.57	90.58	1,222.39	-5,582.40	7,697.42	7,435.24	262.18	29.360	
19,800.00	6,923.96	7,121.17	7,115.94	212.44	214.56	90.57	1,222.39	-5,582.40	7,795.83	7,533.74	262.09	29.745	
19,900.00	6,923.74	7,120.89	7,115.67	214.04	214.55	90.56	1,222.40	-5,582.40	7,894.29	7,632.27	262.01	30.129	
20,000.00	6,923.51	7,120.62	7,115.39	215.63	214.54	90.55	1,222.41	-5,582.40	7,992.78	7,730.84	261.94	30.514	
20,100.00	6,923.29	7,120.34	7,115.12	217.22	214.53	90.54	1,222.41	-5,582.40	8,091.31	7,829.44	261.87	30.899	
20,200.00	6,923.07	7,120.07	7,114.85	218.81	214.52	90.53	1,222.42	-5,582.40	8,189.88	7,928.08	261.80	31.283	
20,300.00	6,922.84	7,119.80	7,114.57	220.40	214.51	90.52	1,222.43	-5,582.40	8,288.48	8,026.74	261.74	31.667	
20,400.00	6,922.62	7,119.52	7,114.30	221.99	214.50	90.50	1,222.43	-5,582.40	8,387.11	8,125.43	261.68	32.051	
20,500.00	6,922.39	7,119.25	7,114.02	223.59	214.49	90.49	1,222.44	-5,582.40	8,485.78	8,224.15	261.62	32.435	
20,600.00	6,922.17	7,118.97	7,113.75	225.18	214.48	90.48	1,222.44	-5,582.40	8,584.47	8,322.90	261.57	32.819	
20,674.13	6,922.00	7,118.77	7,113.55	226.36	214.47	90.47	1,222.45	-5,582.40	8,657.66	8,396.12	261.53	33.103	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 130-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	15.00	15.00	0.00	0.15	-104.44	-1,390.58	-5,399.58	5,575.77				
100.00	100.00	115.00	115.00	0.25	1.13	-104.44	-1,390.58	-5,399.58	5,575.77	5,574.39	1.38	4,029.657	
200.00	200.00	215.00	215.00	0.61	3.02	-104.44	-1,390.58	-5,399.58	5,575.77	5,572.14	3.63	1,537.182	
215.58	215.58	230.00	230.00	0.67	3.32	-104.44	-1,390.28	-5,399.58	5,575.69	5,571.70	3.99	1,397.533	
300.00	300.00	306.97	306.97	0.97	4.90	-104.44	-1,390.52	-5,399.58	5,575.76	5,569.89	5.87	950.598	
400.00	400.00	415.03	415.00	1.33	7.11	-104.44	-1,390.58	-5,399.58	5,575.77	5,567.34	8.43	661.154	
431.73	431.73	446.38	446.35	1.44	7.75	-104.44	-1,390.04	-5,399.58	5,575.64	5,566.45	9.19	606.825	
500.00	500.00	508.59	508.56	1.68	9.02	-104.44	-1,390.19	-5,399.58	5,575.68	5,564.97	10.71	520.840	
606.93	606.91	621.96	621.91	2.05	11.34	33.09	-1,390.58	-5,399.58	5,574.10	5,560.71	13.39	416.248	
700.00	699.91	714.97	714.91	2.37	13.24	33.11	-1,390.58	-5,399.58	5,571.19	5,555.58	15.61	356.985	
800.00	799.84	814.90	814.84	2.71	15.28	33.13	-1,390.58	-5,399.58	5,568.06	5,550.07	17.99	309.490	
900.00	899.77	911.44	911.38	3.06	17.26	33.15	-1,389.88	-5,399.58	5,564.76	5,544.45	20.31	273.974	
1,000.00	999.70	1,007.92	1,007.85	3.41	19.23	33.17	-1,390.24	-5,399.58	5,561.73	5,539.10	22.63	245.735	
1,100.00	1,099.63	1,114.75	1,114.63	3.76	21.45	33.19	-1,390.58	-5,399.58	5,558.69	5,533.48	25.21	220.528	
1,200.00	1,199.56	1,214.68	1,214.56	4.11	23.58	33.21	-1,390.58	-5,399.58	5,555.56	5,527.88	27.68	200.686	
1,300.00	1,299.49	1,313.97	1,313.84	4.47	25.69	33.24	-1,389.57	-5,399.58	5,552.19	5,522.04	30.15	184.170	
1,400.00	1,399.42	1,409.06	1,408.93	4.83	27.71	33.26	-1,389.78	-5,399.58	5,549.13	5,516.60	32.52	170.621	
1,500.00	1,499.35	1,504.17	1,504.04	5.19	29.73	33.27	-1,390.33	-5,399.58	5,546.15	5,511.25	34.90	158.914	
1,600.00	1,599.28	1,614.47	1,614.28	5.54	32.08	33.30	-1,390.58	-5,399.58	5,543.08	5,505.48	37.60	147.414	
1,700.00	1,699.21	1,714.40	1,714.21	5.90	34.20	33.32	-1,390.58	-5,399.58	5,539.96	5,499.88	40.08	138.208	
1,800.00	1,799.14	1,813.63	1,813.43	6.26	36.31	33.35	-1,389.44	-5,399.58	5,536.56	5,494.01	42.55	130.112	
1,900.00	1,899.07	1,909.28	1,909.08	6.62	38.35	33.37	-1,389.64	-5,399.58	5,533.50	5,488.55	44.94	123.119	
2,000.00	1,999.00	2,004.95	2,004.75	6.98	40.38	33.38	-1,390.15	-5,399.58	5,530.51	5,483.17	47.34	116.832	
2,100.00	2,098.94	2,114.20	2,113.94	7.34	42.84	33.40	-1,390.58	-5,399.58	5,527.49	5,477.33	50.16	110.205	
2,200.00	2,198.87	2,214.13	2,213.87	7.70	45.22	33.42	-1,390.58	-5,399.58	5,524.37	5,471.48	52.90	104.433	
2,300.00	2,298.80	2,313.00	2,312.72	8.06	47.58	33.45	-1,389.58	-5,399.58	5,521.02	5,465.40	55.62	99.271	
2,400.00	2,398.73	2,408.13	2,407.85	8.42	49.85	33.47	-1,389.83	-5,399.58	5,517.97	5,459.72	58.24	94.739	
2,500.00	2,498.66	2,503.29	2,503.00	8.79	52.12	33.49	-1,390.42	-5,399.58	5,515.00	5,454.13	60.87	90.599	
2,600.00	2,598.59	2,613.99	2,613.59	9.15	54.69	33.51	-1,390.58	-5,399.58	5,511.92	5,448.12	63.80	86.393	
2,700.00	2,698.52	2,713.92	2,713.52	9.51	57.00	33.53	-1,390.58	-5,399.58	5,508.81	5,442.34	66.46	82.883	
2,800.00	2,798.45	2,810.79	2,810.36	9.87	59.23	33.57	-1,388.72	-5,399.58	5,505.25	5,436.19	69.06	79.719	
2,900.00	2,898.38	2,903.30	2,902.85	10.23	61.36	33.58	-1,389.19	-5,399.58	5,502.26	5,430.71	71.55	76.899	
3,000.00	2,998.31	2,995.85	2,995.38	10.59	63.50	33.59	-1,390.19	-5,399.58	5,499.41	5,425.37	74.05	74.270	
3,100.00	3,098.24	3,113.77	3,113.24	10.96	65.82	33.62	-1,390.58	-5,399.58	5,496.37	5,419.64	76.72	71.639	
3,200.00	3,198.17	3,213.70	3,213.17	11.32	67.68	33.64	-1,390.58	-5,399.58	5,493.26	5,414.32	78.94	69.584	
3,300.00	3,298.10	3,313.45	3,312.91	11.68	69.54	33.67	-1,389.65	-5,399.58	5,489.93	5,408.77	81.16	67.641	
3,400.00	3,398.03	3,410.46	3,409.92	12.04	71.34	33.69	-1,389.78	-5,399.58	5,486.85	5,403.52	83.33	65.844	
3,500.00	3,497.96	3,507.48	3,506.94	12.40	73.15	33.71	-1,390.11	-5,399.58	5,483.83	5,398.33	85.50	64.139	
3,600.00	3,597.89	3,613.45	3,612.89	12.77	75.13	33.72	-1,390.58	-5,399.58	5,480.84	5,393.00	87.84	62.399	
3,700.00	3,697.82	3,713.38	3,712.82	13.13	77.00	33.74	-1,390.58	-5,399.58	5,477.73	5,387.67	90.07	60.820	
3,800.00	3,797.75	3,809.17	3,808.60	13.49	78.79	33.77	-1,390.46	-5,399.58	5,474.60	5,382.38	92.22	59.366	
3,900.00	3,897.68	3,913.26	3,912.68	13.85	81.04	33.79	-1,390.58	-5,399.58	5,471.53	5,376.70	94.83	57.700	
4,000.00	3,997.61	4,012.51	4,011.93	14.21	83.32	33.82	-1,390.07	-5,399.58	5,468.30	5,370.83	97.47	56.103	
4,100.00	4,097.54	4,107.34	4,106.76	14.58	85.50	33.83	-1,390.31	-5,399.58	5,465.26	5,365.25	100.01	54.648	
4,200.00	4,197.47	4,213.13	4,212.47	14.94	88.28	33.85	-1,390.58	-5,399.58	5,462.22	5,359.07	103.15	52.955	
4,300.00	4,297.40	4,302.33	4,301.66	15.30	90.88	33.88	-1,390.08	-5,399.58	5,459.02	5,352.90	106.11	51.446	
4,400.00	4,397.33	4,411.53	4,410.73	15.66	94.20	33.90	-1,389.90	-5,399.58	5,455.86	5,346.07	109.79	49.694	
4,500.00	4,497.26	4,513.16	4,512.26	16.03	97.34	33.92	-1,390.58	-5,399.58	5,452.93	5,339.64	113.29	48.132	
4,600.00	4,597.19	4,613.18	4,612.19	16.39	100.38	33.94	-1,390.58	-5,399.58	5,449.83	5,333.14	116.69	46.705	
4,700.00	4,697.12	4,698.01	4,697.00	16.75	102.90	33.96	-1,390.19	-5,399.58	5,446.66	5,327.10	119.56	45.554	
4,800.00	4,797.05	4,813.13	4,812.05	17.11	106.33	33.98	-1,390.58	-5,399.58	5,443.64	5,320.29	123.35	44.130	
4,900.00	4,896.99	4,895.27	4,894.16	17.47	108.77	34.01	-1,390.29	-5,399.58	5,440.50	5,314.34	126.16	43.123	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 130-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	4,996.92	5,013.12	5,011.92	17.84	112.50	34.03	-1,390.58	-5,399.58	5,437.45	5,307.20	130.25	41.746	
5,100.00	5,096.85	5,100.80	5,099.55	18.20	115.30	34.06	-1,389.66	-5,399.58	5,434.16	5,300.74	133.41	40.732	
5,200.00	5,196.78	5,213.20	5,211.78	18.56	118.96	34.07	-1,390.58	-5,399.58	5,431.27	5,293.84	137.43	39.522	
5,300.00	5,296.71	5,308.46	5,307.00	18.92	122.12	34.11	-1,389.28	-5,399.58	5,427.87	5,286.92	140.95	38.509	
5,400.00	5,396.64	5,413.30	5,411.64	19.29	125.60	34.12	-1,390.58	-5,399.58	5,425.08	5,280.29	144.79	37.468	
5,500.00	5,496.57	5,501.13	5,499.44	19.65	128.53	34.14	-1,390.04	-5,399.58	5,421.88	5,273.79	148.09	36.613	
5,600.00	5,596.50	5,613.28	5,611.50	20.01	132.21	34.16	-1,390.58	-5,399.58	5,418.90	5,266.78	152.12	35.623	
5,700.00	5,696.43	5,694.74	5,692.92	20.37	134.85	34.18	-1,390.03	-5,399.58	5,415.72	5,260.59	155.13	34.911	
5,800.00	5,796.36	5,813.30	5,811.36	20.74	138.72	34.21	-1,390.58	-5,399.58	5,412.73	5,253.38	159.35	33.968	
5,900.00	5,896.29	5,894.21	5,892.23	21.10	141.35	34.23	-1,390.22	-5,399.58	5,409.59	5,247.25	162.35	33.321	
6,000.00	5,996.22	6,013.32	6,011.22	21.46	145.46	34.25	-1,390.58	-5,399.58	5,406.56	5,239.75	166.81	32.411	
6,100.00	6,096.15	6,096.06	6,093.91	21.82	148.34	34.28	-1,389.87	-5,399.58	5,403.34	5,233.28	170.06	31.774	
6,200.00	6,196.08	6,213.42	6,211.08	22.19	152.44	34.29	-1,390.58	-5,399.58	5,400.39	5,225.87	174.52	30.945	
6,300.00	6,296.01	6,293.65	6,291.26	22.55	155.25	34.32	-1,389.96	-5,399.58	5,397.20	5,219.51	177.69	30.375	
6,335.60	6,331.59	6,349.12	6,346.59	22.68	157.14	34.32	-1,390.58	-5,399.58	5,396.21	5,216.50	179.71	30.028	
6,350.00	6,345.97	6,363.50	6,360.97	22.73	157.62	16.64	-1,390.58	-5,399.58	5,395.61	5,215.37	180.23	29.937	
6,400.00	6,395.75	6,413.28	6,410.75	22.91	159.25	-1.17	-1,390.58	-5,399.58	5,391.06	5,209.01	182.05	29.613	
6,450.00	6,445.03	6,460.24	6,457.68	23.10	160.80	-5.99	-1,389.24	-5,399.58	5,382.43	5,198.65	183.77	29.288	
6,500.00	6,493.52	6,500.19	6,497.61	23.29	162.12	-8.36	-1,389.45	-5,399.58	5,370.43	5,185.16	185.27	28.988	
6,550.00	6,540.91	6,539.26	6,536.66	23.48	163.40	-9.94	-1,389.93	-5,399.58	5,354.85	5,168.12	186.72	28.678	
6,600.00	6,586.91	6,604.66	6,601.91	23.66	165.49	-11.23	-1,390.58	-5,399.58	5,335.69	5,146.71	188.97	28.235	
6,650.00	6,631.24	6,648.99	6,646.24	23.85	166.86	-12.40	-1,390.58	-5,399.58	5,312.97	5,122.48	190.49	27.891	
6,700.00	6,673.63	6,691.37	6,688.63	24.05	168.16	-13.60	-1,390.58	-5,399.58	5,286.96	5,095.02	191.94	27.544	
6,750.00	6,713.80	6,726.41	6,723.63	24.24	169.24	-14.87	-1,389.41	-5,399.58	5,257.55	5,064.39	193.16	27.219	
6,800.00	6,751.52	6,758.11	6,755.33	24.44	170.22	-16.34	-1,389.62	-5,399.58	5,225.51	5,031.25	194.26	26.900	
6,850.00	6,786.56	6,787.57	6,784.77	24.65	171.12	-18.06	-1,389.96	-5,399.58	5,190.76	4,995.48	195.28	26.581	
6,900.00	6,818.69	6,836.61	6,833.69	24.87	172.61	-20.24	-1,390.58	-5,399.58	5,153.51	4,956.64	196.86	26.178	
6,950.00	6,847.72	6,865.64	6,862.72	25.10	173.44	-22.85	-1,390.58	-5,399.58	5,113.83	4,916.05	197.78	25.856	
7,000.00	6,873.46	6,891.38	6,888.46	25.34	174.17	-26.15	-1,390.58	-5,399.58	5,072.11	4,873.52	198.59	25.540	
7,050.00	6,895.77	6,913.69	6,910.77	25.60	174.81	-30.42	-1,390.58	-5,399.58	5,028.60	4,829.31	199.30	25.232	
7,100.00	6,914.50	6,932.43	6,929.50	25.87	175.35	-36.06	-1,390.58	-5,399.58	4,983.57	4,783.69	199.88	24.932	
7,150.00	6,929.54	6,947.47	6,944.54	26.15	175.78	-43.66	-1,390.58	-5,399.58	4,937.31	4,736.96	200.36	24.643	
7,200.00	6,940.80	6,958.26	6,955.32	26.44	176.09	-53.87	-1,389.45	-5,399.58	4,889.82	4,689.12	200.70	24.364	
7,250.00	6,948.20	6,964.63	6,961.69	26.75	176.27	-67.26	-1,389.45	-5,399.58	4,841.96	4,641.05	200.91	24.101	
7,300.00	6,951.70	6,967.64	6,964.70	27.07	176.35	-83.30	-1,389.46	-5,399.58	4,793.74	4,592.73	201.01	23.848	
7,321.06	6,952.00	6,967.90	6,964.95	27.20	176.36	-90.38	-1,389.46	-5,399.58	4,773.40	4,572.37	201.02	23.745	
7,400.00	6,951.82	6,967.75	6,964.80	27.74	176.36	-90.38	-1,389.46	-5,399.58	4,697.21	4,496.16	201.04	23.364	
7,500.00	6,951.60	6,967.55	6,964.61	28.49	176.35	-90.37	-1,389.46	-5,399.58	4,600.81	4,399.73	201.08	22.880	
7,600.00	6,951.37	6,967.36	6,964.41	29.30	176.35	-90.36	-1,389.46	-5,399.58	4,504.58	4,303.45	201.13	22.396	
7,700.00	6,951.15	6,967.16	6,964.22	30.18	176.34	-90.35	-1,389.46	-5,399.58	4,408.51	4,207.32	201.19	21.912	
7,800.00	6,950.92	6,966.97	6,964.03	31.12	176.34	-90.34	-1,389.46	-5,399.58	4,312.62	4,111.35	201.27	21.427	
7,900.00	6,950.70	6,966.78	6,963.83	32.11	176.33	-90.33	-1,389.45	-5,399.58	4,216.93	4,015.56	201.37	20.941	
8,000.00	6,950.47	6,966.58	6,963.64	33.15	176.32	-90.32	-1,389.45	-5,399.58	4,121.43	3,919.95	201.49	20.455	
8,100.00	6,950.25	6,966.39	6,963.45	34.23	176.32	-90.31	-1,389.45	-5,399.58	4,026.16	3,824.53	201.63	19.969	
8,200.00	6,950.03	6,966.19	6,963.25	35.35	176.31	-90.31	-1,389.45	-5,399.58	3,931.12	3,729.33	201.79	19.481	
8,300.00	6,949.80	6,966.00	6,963.06	36.51	176.31	-90.30	-1,389.45	-5,399.58	3,836.33	3,634.36	201.98	18.994	
8,400.00	6,949.58	6,965.81	6,962.86	37.70	176.30	-90.29	-1,389.45	-5,399.58	3,741.82	3,539.62	202.20	18.506	
8,500.00	6,949.35	6,965.61	6,962.67	38.92	176.30	-90.28	-1,389.45	-5,399.58	3,647.59	3,445.15	202.45	18.018	
8,600.00	6,949.13	6,965.42	6,962.48	40.17	176.29	-90.27	-1,389.45	-5,399.58	3,553.69	3,350.95	202.73	17.529	
8,700.00	6,948.90	6,965.23	6,962.28	41.44	176.29	-90.26	-1,389.45	-5,399.58	3,460.12	3,257.06	203.06	17.040	
8,800.00	6,948.68	6,965.03	6,962.09	42.73	176.28	-90.25	-1,389.45	-5,399.58	3,366.92	3,163.49	203.43	16.551	
8,900.00	6,948.45	6,964.84	6,961.90	44.04	176.27	-90.24	-1,389.45	-5,399.58	3,274.13	3,070.28	203.85	16.061	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 130-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,000.00	6,948.23	6,964.64	6,961.70	45.38	176.27	-90.23	-1,389.45	-5,399.58	3,181.77	2,977.45	204.32	15.572	
9,100.00	6,948.00	6,964.45	6,961.51	46.72	176.26	-90.23	-1,389.45	-5,399.58	3,089.89	2,885.03	204.85	15.083	
9,200.00	6,947.78	6,964.26	6,961.32	48.09	176.26	-90.22	-1,389.45	-5,399.58	2,998.52	2,793.08	205.45	14.595	
9,300.00	6,947.55	6,964.06	6,961.12	49.47	176.25	-90.21	-1,389.45	-5,399.58	2,907.73	2,701.61	206.11	14.107	
9,400.00	6,947.33	6,963.87	6,960.93	50.86	176.25	-90.20	-1,389.45	-5,399.58	2,817.56	2,610.70	206.86	13.621	
9,500.00	6,947.10	6,963.68	6,960.73	52.26	176.24	-90.19	-1,389.45	-5,399.58	2,728.07	2,520.39	207.69	13.136	
9,600.00	6,946.88	6,963.48	6,960.54	53.68	176.24	-90.18	-1,389.45	-5,399.58	2,639.34	2,430.73	208.61	12.652	
9,700.00	6,946.66	6,963.29	6,960.35	55.10	176.23	-90.17	-1,389.45	-5,399.58	2,551.44	2,341.81	209.63	12.171	
9,800.00	6,946.43	6,963.10	6,960.15	56.54	176.22	-90.16	-1,389.45	-5,399.58	2,464.47	2,253.71	210.76	11.693	
9,900.00	6,946.21	6,962.90	6,959.96	57.98	176.22	-90.15	-1,389.45	-5,399.58	2,378.52	2,166.50	212.02	11.219	
10,000.00	6,945.98	6,962.71	6,959.77	59.43	176.21	-90.14	-1,389.45	-5,399.58	2,293.71	2,080.31	213.40	10.749	
10,100.00	6,945.76	6,962.52	6,959.57	60.89	176.21	-90.14	-1,389.45	-5,399.58	2,210.17	1,995.25	214.92	10.284	
10,200.00	6,945.53	6,962.32	6,959.38	62.36	176.20	-90.13	-1,389.45	-5,399.58	2,128.05	1,911.45	216.59	9.825	
10,300.00	6,945.31	6,962.13	6,959.19	63.83	176.20	-90.12	-1,389.45	-5,399.58	2,047.52	1,829.09	218.43	9.374	
10,400.00	6,945.08	6,961.94	6,958.99	65.31	176.19	-90.11	-1,389.45	-5,399.58	1,968.77	1,748.34	220.43	8.931	
10,500.00	6,944.86	6,961.74	6,958.80	66.79	176.19	-90.10	-1,389.45	-5,399.58	1,892.04	1,669.42	222.62	8.499	
10,600.00	6,944.63	6,961.55	6,958.61	68.28	176.18	-90.09	-1,389.45	-5,399.58	1,817.57	1,592.58	224.99	8.078	
10,700.00	6,944.41	6,961.36	6,958.41	69.78	176.18	-90.08	-1,389.45	-5,399.58	1,745.65	1,518.10	227.55	7.671	
10,800.00	6,944.18	6,961.16	6,958.22	71.28	176.17	-90.07	-1,389.45	-5,399.58	1,676.61	1,446.31	230.31	7.280	
10,900.00	6,943.96	6,960.97	6,958.03	72.78	176.16	-90.06	-1,389.45	-5,399.58	1,610.83	1,377.58	233.25	6.906	
11,000.00	6,943.73	6,960.78	6,957.83	74.29	176.16	-90.06	-1,389.45	-5,399.58	1,548.72	1,312.35	236.37	6.552	
11,100.00	6,943.51	6,960.58	6,957.64	75.80	176.15	-90.05	-1,389.45	-5,399.58	1,490.73	1,251.09	239.64	6.221	
11,200.00	6,943.29	6,960.39	6,957.45	77.32	176.15	-90.04	-1,389.45	-5,399.58	1,437.36	1,194.34	243.02	5.915	
11,300.00	6,943.06	6,960.20	6,957.26	78.84	176.14	-90.03	-1,389.45	-5,399.58	1,389.15	1,142.69	246.47	5.636	
11,400.00	6,942.84	6,960.00	6,957.06	80.36	176.14	-90.02	-1,389.45	-5,399.58	1,346.66	1,096.75	249.91	5.389	
11,500.00	6,942.61	6,959.81	6,956.87	81.88	176.13	-90.01	-1,389.45	-5,399.58	1,310.43	1,057.16	253.27	5.174	
11,600.00	6,942.39	6,959.62	6,956.68	83.41	176.13	-90.00	-1,389.45	-5,399.58	1,281.01	1,024.54	256.46	4.995	
11,700.00	6,942.16	6,959.42	6,956.48	84.94	176.12	-89.99	-1,389.45	-5,399.58	1,258.86	999.48	259.38	4.853	
11,800.00	6,941.94	6,959.23	6,956.29	86.47	176.11	-89.98	-1,389.45	-5,399.58	1,244.37	982.44	261.93	4.751	
11,900.00	6,941.71	6,959.04	6,956.10	88.01	176.11	-89.97	-1,389.45	-5,399.58	1,237.82	973.80	264.02	4.688	
11,931.29	6,941.64	6,958.98	6,956.04	88.49	176.11	-89.97	-1,389.45	-5,399.58	1,237.43	972.85	264.58	4.677	CC, ES
12,000.00	6,941.49	6,958.85	6,955.90	89.55	176.10	-89.97	-1,389.45	-5,399.58	1,239.33	973.72	265.61	4.666	SF
12,100.00	6,941.26	6,958.65	6,955.71	91.09	176.10	-89.96	-1,389.45	-5,399.58	1,248.87	982.22	266.66	4.683	
12,200.00	6,941.04	6,958.46	6,955.52	92.63	176.09	-89.95	-1,389.45	-5,399.58	1,266.26	999.10	267.17	4.740	
12,300.00	6,940.81	6,958.27	6,955.32	94.18	176.09	-89.94	-1,389.45	-5,399.58	1,291.19	1,024.01	267.18	4.833	
12,400.00	6,940.59	6,958.07	6,955.13	95.72	176.08	-89.93	-1,389.45	-5,399.58	1,323.22	1,056.48	266.74	4.961	
12,500.00	6,940.36	6,957.88	6,954.94	97.27	176.08	-89.92	-1,389.45	-5,399.58	1,361.85	1,095.94	265.92	5.121	
12,600.00	6,940.14	6,957.69	6,954.75	98.82	176.07	-89.91	-1,389.45	-5,399.58	1,406.55	1,141.76	264.79	5.312	
12,700.00	6,939.92	6,957.50	6,954.55	100.37	176.06	-89.90	-1,389.45	-5,399.58	1,456.75	1,193.31	263.44	5.530	
12,800.00	6,939.69	6,957.30	6,954.36	101.92	176.06	-89.89	-1,389.45	-5,399.58	1,511.91	1,249.98	261.93	5.772	
12,900.00	6,939.47	6,957.11	6,954.17	103.48	176.05	-89.89	-1,389.45	-5,399.58	1,571.50	1,311.19	260.31	6.037	
13,000.00	6,939.24	6,956.92	6,953.98	105.03	176.05	-89.88	-1,389.45	-5,399.58	1,635.04	1,376.40	258.64	6.322	
13,100.00	6,939.02	6,956.72	6,953.78	106.59	176.04	-89.87	-1,389.45	-5,399.58	1,702.09	1,445.14	256.95	6.624	
13,200.00	6,938.79	6,956.53	6,953.59	108.15	176.04	-89.86	-1,389.45	-5,399.58	1,772.24	1,516.97	255.27	6.943	
13,300.00	6,938.57	6,956.34	6,953.40	109.71	176.03	-89.85	-1,389.45	-5,399.58	1,845.15	1,591.53	253.62	7.275	
13,400.00	6,938.34	6,956.15	6,953.20	111.27	176.03	-89.84	-1,389.45	-5,399.58	1,920.50	1,668.48	252.01	7.621	
13,500.00	6,938.12	6,955.95	6,953.01	112.83	176.02	-89.83	-1,389.45	-5,399.58	1,998.01	1,747.54	250.47	7.977	
13,600.00	6,937.89	6,955.76	6,952.82	114.40	176.02	-89.82	-1,389.45	-5,399.58	2,077.45	1,828.46	248.99	8.343	
13,700.00	6,937.67	6,955.57	6,952.63	115.96	176.01	-89.81	-1,389.45	-5,399.58	2,158.60	1,911.02	247.58	8.719	
13,800.00	6,937.44	6,955.37	6,952.44	117.53	176.00	-89.81	-1,390.58	-5,399.58	2,241.90	1,995.63	246.27	9.103	
13,900.00	6,937.22	6,955.14	6,952.22	119.09	176.00	-89.80	-1,390.58	-5,399.58	2,325.91	2,080.92	244.99	9.494	
14,000.00	6,936.99	6,954.92	6,951.99	120.66	175.99	-89.79	-1,390.58	-5,399.58	2,411.14	2,167.36	243.78	9.891	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 130-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
14,100.00	6,936.77	6,954.69	6,951.77	122.23	175.98	-89.77	-1,390.58	-5,399.58	2,497.47	2,254.83	242.64	10.293	
14,200.00	6,936.55	6,954.47	6,951.55	123.80	175.98	-89.76	-1,390.58	-5,399.58	2,584.78	2,343.23	241.55	10.701	
14,300.00	6,936.32	6,954.24	6,951.32	125.37	175.97	-89.75	-1,390.58	-5,399.58	2,672.98	2,432.45	240.53	11.113	
14,400.00	6,936.10	6,954.02	6,951.10	126.94	175.97	-89.74	-1,390.58	-5,399.58	2,761.98	2,522.42	239.56	11.529	
14,500.00	6,935.87	6,953.79	6,950.87	128.51	175.96	-89.73	-1,390.58	-5,399.58	2,851.72	2,613.07	238.65	11.950	
14,600.00	6,935.65	6,953.57	6,950.65	130.08	175.95	-89.72	-1,390.58	-5,399.58	2,942.11	2,704.33	237.78	12.373	
14,700.00	6,935.42	6,953.34	6,950.42	131.65	175.95	-89.71	-1,390.58	-5,399.58	3,033.11	2,796.15	236.97	12.800	
14,800.00	6,935.20	6,953.12	6,950.20	133.23	175.94	-89.70	-1,390.58	-5,399.58	3,124.66	2,888.47	236.19	13.229	
14,900.00	6,934.97	6,952.89	6,949.97	134.80	175.93	-89.69	-1,390.58	-5,399.58	3,216.72	2,981.25	235.46	13.661	
15,000.00	6,934.75	6,952.67	6,949.75	136.37	175.93	-89.68	-1,390.58	-5,399.58	3,309.23	3,074.46	234.77	14.095	
15,100.00	6,934.52	6,952.44	6,949.52	137.95	175.92	-89.67	-1,390.58	-5,399.58	3,402.17	3,168.05	234.12	14.532	
15,200.00	6,934.30	6,952.22	6,949.30	139.53	175.91	-89.66	-1,390.58	-5,399.58	3,495.49	3,261.99	233.50	14.970	
15,300.00	6,934.07	6,952.00	6,949.07	141.10	175.91	-89.65	-1,390.58	-5,399.58	3,589.18	3,356.27	232.91	15.410	
15,400.00	6,933.85	6,951.77	6,948.85	142.68	175.90	-89.64	-1,390.58	-5,399.58	3,683.20	3,450.84	232.36	15.851	
15,500.00	6,933.62	6,951.55	6,948.62	144.26	175.89	-89.63	-1,390.58	-5,399.58	3,777.53	3,545.69	231.83	16.294	
15,600.00	6,933.40	6,951.32	6,948.40	145.84	175.89	-89.62	-1,390.58	-5,399.58	3,872.14	3,640.80	231.33	16.738	
15,700.00	6,933.18	6,951.10	6,948.18	147.42	175.88	-89.61	-1,390.58	-5,399.58	3,967.01	3,736.15	230.86	17.184	
15,800.00	6,932.95	6,950.87	6,947.95	148.99	175.88	-89.60	-1,390.58	-5,399.58	4,062.13	3,831.72	230.41	17.630	
15,900.00	6,932.73	6,950.65	6,947.73	150.57	175.87	-89.59	-1,390.58	-5,399.58	4,157.48	3,927.50	229.98	18.077	
16,000.00	6,932.50	6,950.42	6,947.50	152.15	175.86	-89.58	-1,390.58	-5,399.58	4,253.04	4,023.47	229.58	18.526	
16,100.00	6,932.28	6,950.20	6,947.28	153.74	175.86	-89.57	-1,390.58	-5,399.58	4,348.81	4,119.62	229.19	18.975	
16,200.00	6,932.05	6,949.97	6,947.05	155.32	175.85	-89.56	-1,390.58	-5,399.58	4,444.76	4,215.94	228.82	19.425	
16,300.00	6,931.83	6,949.75	6,946.83	156.90	175.84	-89.55	-1,390.58	-5,399.58	4,540.88	4,312.41	228.47	19.875	
16,400.00	6,931.60	6,949.52	6,946.60	158.48	175.84	-89.54	-1,390.58	-5,399.58	4,637.17	4,409.03	228.14	20.326	
16,500.00	6,931.38	6,949.30	6,946.38	160.06	175.83	-89.53	-1,390.58	-5,399.58	4,733.61	4,505.79	227.82	20.778	
16,600.00	6,931.15	6,949.07	6,946.15	161.65	175.82	-89.51	-1,390.58	-5,399.58	4,830.20	4,602.68	227.52	21.230	
16,700.00	6,930.93	6,948.85	6,945.93	163.23	175.82	-89.50	-1,390.58	-5,399.58	4,926.92	4,699.69	227.24	21.682	
16,800.00	6,930.70	6,948.63	6,945.70	164.81	175.81	-89.49	-1,390.58	-5,399.58	5,023.77	4,796.81	226.96	22.135	
16,900.00	6,930.48	6,948.40	6,945.48	166.40	175.80	-89.48	-1,390.58	-5,399.58	5,120.75	4,894.04	226.70	22.588	
17,000.00	6,930.25	6,948.18	6,945.25	167.98	175.80	-89.47	-1,390.58	-5,399.58	5,217.83	4,991.38	226.46	23.041	
17,100.00	6,930.03	6,947.95	6,945.03	169.56	175.79	-89.46	-1,390.58	-5,399.58	5,315.03	5,088.81	226.22	23.495	
17,200.00	6,929.81	6,947.73	6,944.81	171.15	175.79	-89.45	-1,390.58	-5,399.58	5,412.32	5,186.33	225.99	23.949	
17,300.00	6,929.58	6,947.50	6,944.58	172.73	175.78	-89.44	-1,390.58	-5,399.58	5,509.72	5,283.94	225.78	24.403	
17,400.00	6,929.36	6,947.28	6,944.36	174.32	175.77	-89.43	-1,390.58	-5,399.58	5,607.20	5,381.63	225.58	24.857	
17,500.00	6,929.13	6,947.05	6,944.13	175.91	175.77	-89.42	-1,390.58	-5,399.58	5,704.78	5,479.39	225.38	25.312	
17,600.00	6,928.91	6,946.83	6,943.91	177.49	175.76	-89.41	-1,390.58	-5,399.58	5,802.43	5,577.24	225.20	25.766	
17,700.00	6,928.68	6,946.60	6,943.68	179.08	175.75	-89.40	-1,390.58	-5,399.58	5,900.16	5,675.15	225.02	26.221	
17,800.00	6,928.46	6,946.38	6,943.46	180.66	175.75	-89.39	-1,390.58	-5,399.58	5,997.97	5,773.12	224.85	26.675	
17,900.00	6,928.23	6,946.15	6,943.23	182.25	175.74	-89.38	-1,390.58	-5,399.58	6,095.85	5,871.16	224.69	27.130	
18,000.00	6,928.01	6,945.93	6,943.01	183.84	175.73	-89.37	-1,390.58	-5,399.58	6,193.80	5,969.26	224.54	27.585	
18,100.00	6,927.78	6,945.70	6,942.78	185.43	175.73	-89.36	-1,390.58	-5,399.58	6,291.81	6,067.42	224.39	28.039	
18,200.00	6,927.56	6,945.48	6,942.56	187.01	175.72	-89.35	-1,390.58	-5,399.58	6,389.88	6,165.63	224.25	28.494	
18,300.00	6,927.33	6,945.26	6,942.33	188.60	175.71	-89.34	-1,390.58	-5,399.58	6,488.02	6,263.89	224.12	28.948	
18,400.00	6,927.11	6,945.03	6,942.11	190.19	175.71	-89.33	-1,390.58	-5,399.58	6,586.20	6,362.21	224.00	29.403	
18,500.00	6,926.88	6,944.81	6,941.88	191.78	175.70	-89.32	-1,390.58	-5,399.58	6,684.45	6,460.57	223.88	29.857	
18,600.00	6,926.66	6,944.58	6,941.66	193.37	175.70	-89.31	-1,390.58	-5,399.58	6,782.74	6,558.97	223.77	30.312	
18,700.00	6,926.44	6,944.36	6,941.44	194.96	175.69	-89.30	-1,390.58	-5,399.58	6,881.08	6,657.42	223.66	30.766	
18,800.00	6,926.21	6,944.13	6,941.21	196.54	175.68	-89.29	-1,390.58	-5,399.58	6,979.47	6,755.91	223.56	31.220	
18,900.00	6,925.99	6,943.91	6,940.99	198.13	175.68	-89.28	-1,390.58	-5,399.58	7,077.91	6,854.45	223.46	31.674	
19,000.00	6,925.76	6,943.68	6,940.76	199.72	175.67	-89.27	-1,390.58	-5,399.58	7,176.39	6,953.02	223.37	32.128	
19,100.00	6,925.54	6,943.46	6,940.54	201.31	175.66	-89.25	-1,390.58	-5,399.58	7,274.91	7,051.62	223.28	32.581	
19,200.00	6,925.31	6,943.23	6,940.31	202.90	175.66	-89.24	-1,390.58	-5,399.58	7,373.46	7,150.26	223.20	33.035	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 125E - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 130-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,300.00	6,925.09	6,943.01	6,940.09	204.49	175.65	-89.23	-1,390.58	-5,399.58	7,472.06	7,248.94	223.13	33.488	
19,400.00	6,924.86	6,942.78	6,939.86	206.08	175.64	-89.22	-1,390.58	-5,399.58	7,570.70	7,347.64	223.05	33.941	
19,500.00	6,924.64	6,942.56	6,939.64	207.67	175.64	-89.21	-1,390.58	-5,399.58	7,669.37	7,446.38	222.99	34.394	
19,600.00	6,924.41	6,942.33	6,939.41	209.26	175.63	-89.20	-1,390.58	-5,399.58	7,768.07	7,545.15	222.92	34.847	
19,700.00	6,924.19	6,942.11	6,939.19	210.85	175.62	-89.19	-1,390.58	-5,399.58	7,866.81	7,643.95	222.86	35.299	
19,800.00	6,923.96	6,941.89	6,938.96	212.44	175.62	-89.18	-1,390.58	-5,399.58	7,965.58	7,742.77	222.81	35.751	
19,900.00	6,923.74	6,941.66	6,938.74	214.04	175.61	-89.17	-1,390.58	-5,399.58	8,064.37	7,841.62	222.75	36.203	
20,000.00	6,923.51	6,941.44	6,938.51	215.63	175.61	-89.16	-1,390.58	-5,399.58	8,163.20	7,940.50	222.70	36.655	
20,100.00	6,923.29	6,941.21	6,938.29	217.22	175.60	-89.15	-1,390.58	-5,399.58	8,262.06	8,039.40	222.66	37.106	
20,200.00	6,923.07	6,940.99	6,938.07	218.81	175.59	-89.14	-1,390.58	-5,399.58	8,360.94	8,138.32	222.62	37.558	
20,300.00	6,922.84	6,940.76	6,937.84	220.40	175.59	-89.13	-1,390.58	-5,399.58	8,459.85	8,237.27	222.58	38.009	
20,400.00	6,922.62	6,940.54	6,937.62	221.99	175.58	-89.12	-1,390.58	-5,399.58	8,558.79	8,336.24	222.54	38.459	
20,500.00	6,922.39	6,940.31	6,937.39	223.59	175.57	-89.11	-1,390.58	-5,399.58	8,657.74	8,435.24	222.51	38.910	
20,600.00	6,922.17	6,940.09	6,937.17	225.18	175.57	-89.10	-1,390.58	-5,399.58	8,756.73	8,534.25	222.48	39.360	
20,674.13	6,922.00	6,939.92	6,937.00	226.36	175.56	-89.09	-1,390.58	-5,399.58	8,830.12	8,607.66	222.46	39.693	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 158-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	96.63	-483.90	4,161.99	4,190.04				
100.00	100.00	93.00	93.00	0.25	0.82	96.63	-483.90	4,161.99	4,190.03	4,188.96	1.07	3,898.241	
200.00	200.00	193.00	193.00	0.61	2.06	96.63	-483.90	4,161.99	4,190.03	4,187.36	2.67	1,569.254	
261.43	261.43	254.38	254.38	0.83	3.22	96.63	-483.80	4,161.99	4,190.02	4,185.97	4.05	1,034.672	CC
300.00	300.00	292.51	292.51	0.97	3.94	96.63	-483.83	4,161.99	4,190.02	4,185.11	4.91	853.716	
400.00	400.00	393.01	393.00	1.33	6.39	96.63	-483.90	4,161.99	4,190.03	4,182.32	7.71	543.173	
500.00	500.00	493.01	493.00	1.68	9.35	96.63	-483.90	4,161.99	4,190.03	4,178.99	11.04	379.594	
606.93	606.91	599.49	599.46	2.05	12.51	-125.89	-482.90	4,161.99	4,191.08	4,176.52	14.56	287.781	
700.00	699.91	690.87	690.84	2.37	15.22	-125.92	-483.14	4,161.99	4,193.15	4,175.56	17.59	238.430	
800.00	799.84	789.09	789.05	2.71	18.13	-125.95	-483.74	4,161.99	4,195.41	4,174.57	20.84	201.302	
900.00	899.77	893.13	892.77	3.06	22.15	-125.99	-483.90	4,161.99	4,197.62	4,172.42	25.20	166.554	
1,000.00	999.70	993.07	992.70	3.41	26.22	-126.03	-483.90	4,161.99	4,199.82	4,170.20	29.62	141.792	
1,100.00	1,099.63	1,086.47	1,085.99	3.76	30.02	-126.10	-481.96	4,161.99	4,201.80	4,168.03	33.77	124.412	
1,200.00	1,199.56	1,193.48	1,192.56	4.11	34.36	-126.12	-483.90	4,161.99	4,204.21	4,165.74	38.47	109.276	
1,300.00	1,299.49	1,293.41	1,292.49	4.47	38.38	-126.16	-483.90	4,161.99	4,206.41	4,163.57	42.84	98.186	
1,400.00	1,399.42	1,393.34	1,392.42	4.83	42.39	-126.20	-483.90	4,161.99	4,208.62	4,161.41	47.21	89.146	
1,500.00	1,499.35	1,489.57	1,488.54	5.19	46.25	-126.28	-481.13	4,161.99	4,210.53	4,159.09	51.43	81.867	
1,600.00	1,599.28	1,584.94	1,583.86	5.54	50.08	-126.30	-482.43	4,161.99	4,212.88	4,157.26	55.62	75.746	
1,700.00	1,699.21	1,693.77	1,692.21	5.90	55.26	-126.32	-483.90	4,161.99	4,215.24	4,154.09	61.16	68.925	
1,800.00	1,799.14	1,793.71	1,792.14	6.26	61.17	-126.36	-483.90	4,161.99	4,217.46	4,150.04	67.42	62.556	
1,900.00	1,899.07	1,893.27	1,891.62	6.62	67.05	-126.44	-480.84	4,161.99	4,219.35	4,145.69	73.66	57.282	
2,000.00	1,999.00	1,988.65	1,986.97	6.98	72.68	-126.48	-481.42	4,161.99	4,221.63	4,141.98	79.65	53.000	
2,100.00	2,098.94	2,084.15	2,082.41	7.34	78.33	-126.49	-483.03	4,161.99	4,224.03	4,138.37	85.65	49.315	
2,200.00	2,198.87	2,195.12	2,191.87	7.70	86.14	-126.53	-483.90	4,161.99	4,226.33	4,132.50	93.83	45.041	
2,300.00	2,298.80	2,292.68	2,289.15	8.06	93.59	-126.62	-479.56	4,161.99	4,228.10	4,126.47	101.64	41.599	
2,400.00	2,398.73	2,379.77	2,376.04	8.42	100.24	-126.63	-481.43	4,161.99	4,230.55	4,121.91	108.65	38.939	
2,500.00	2,498.66	2,496.76	2,491.66	8.79	108.94	-126.65	-483.90	4,161.99	4,233.00	4,115.29	117.71	35.962	
2,600.00	2,598.59	2,590.18	2,584.85	9.15	115.73	-126.72	-481.06	4,161.99	4,234.95	4,110.09	124.86	33.918	
2,700.00	2,698.52	2,697.89	2,691.52	9.51	123.50	-126.73	-483.90	4,161.99	4,237.46	4,104.48	132.99	31.864	
2,800.00	2,798.45	2,797.82	2,791.45	9.87	130.50	-126.77	-483.90	4,161.99	4,239.70	4,099.35	140.35	30.208	
2,900.00	2,898.38	2,890.67	2,884.02	10.23	137.01	-126.85	-480.41	4,161.99	4,241.60	4,094.38	147.22	28.811	
3,000.00	2,998.31	2,999.22	2,991.31	10.59	144.59	-126.85	-483.90	4,161.99	4,244.17	4,089.01	155.16	27.354	
3,100.00	3,098.24	3,099.15	3,091.24	10.96	150.89	-126.89	-483.90	4,161.99	4,246.41	4,084.59	161.83	26.241	
3,200.00	3,198.17	3,199.05	3,190.90	11.32	157.20	-127.00	-479.02	4,161.99	4,248.18	4,079.69	168.49	25.213	
3,300.00	3,298.10	3,290.75	3,282.47	11.68	162.98	-127.02	-480.01	4,161.99	4,250.53	4,075.90	174.64	24.339	
3,400.00	3,398.03	3,382.79	3,374.31	12.04	168.79	-127.02	-482.99	4,161.99	4,253.09	4,072.28	180.80	23.523	
3,500.00	3,497.96	3,500.44	3,490.96	12.40	174.84	-127.05	-483.90	4,161.99	4,255.39	4,068.17	187.22	22.730	
3,600.00	3,597.89	3,592.93	3,583.29	12.77	179.36	-127.11	-482.02	4,161.99	4,257.47	4,065.38	192.10	22.163	
3,700.00	3,697.82	3,700.85	3,690.82	13.13	183.97	-127.13	-483.90	4,161.99	4,259.90	4,062.83	197.06	21.617	
3,800.00	3,797.75	3,800.78	3,790.75	13.49	187.29	-127.17	-483.90	4,161.99	4,262.15	4,061.40	200.75	21.232	
3,900.00	3,897.68	3,900.71	3,890.68	13.85	190.61	-127.21	-483.90	4,161.99	4,264.41	4,059.98	204.43	20.860	
4,000.00	3,997.61	4,000.64	3,990.61	14.21	193.93	-127.25	-483.90	4,161.99	4,266.67	4,058.55	208.11	20.502	
4,100.00	4,097.54	4,100.57	4,090.54	14.58	197.25	-127.29	-483.90	4,161.99	4,268.93	4,057.13	211.80	20.156	
4,200.00	4,197.47	4,200.03	4,189.82	14.94	200.56	-127.42	-477.17	4,161.99	4,270.59	4,055.13	215.46	19.821	
4,300.00	4,297.40	4,298.23	4,287.98	15.30	203.82	-127.45	-477.54	4,161.99	4,272.89	4,053.80	219.09	19.503	
4,400.00	4,397.33	4,396.50	4,386.20	15.66	207.09	-127.48	-478.41	4,161.99	4,275.24	4,052.52	222.72	19.196	
4,500.00	4,497.26	4,494.82	4,484.47	16.03	210.36	-127.50	-479.76	4,161.99	4,277.63	4,051.29	226.35	18.899	
4,600.00	4,597.19	4,593.20	4,582.78	16.39	213.63	-127.52	-481.60	4,161.99	4,280.07	4,050.09	229.98	18.611	
4,700.00	4,697.12	4,701.06	4,690.12	16.75	217.07	-127.53	-483.90	4,161.99	4,282.53	4,048.76	233.78	18.319	ES
4,800.00	4,797.05	4,800.99	4,790.05	17.11	218.92	-127.57	-483.90	4,161.99	4,284.81	4,048.82	235.99	18.156	
4,900.00	4,896.99	4,900.92	4,889.99	17.47	220.78	-127.61	-483.90	4,161.99	4,287.09	4,048.88	238.21	17.997	
5,000.00	4,996.92	5,000.85	4,989.92	17.84	222.63	-127.65	-483.90	4,161.99	4,289.37	4,048.94	240.43	17.841	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 158-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	5,100.78	5,089.85	18.20	224.49	-127.69	-483.90	4,161.99	4,291.65	4,049.00	242.64	17.687	
5,200.00	5,196.78	5,200.71	5,189.78	18.56	226.35	-127.73	-483.90	4,161.99	4,293.93	4,049.07	244.86	17.536	
5,300.00	5,296.71	5,300.64	5,289.71	18.92	228.20	-127.77	-483.90	4,161.99	4,296.22	4,049.14	247.08	17.388	
5,400.00	5,396.64	5,400.57	5,389.64	19.29	230.06	-127.80	-483.90	4,161.99	4,298.50	4,049.21	249.29	17.243	
5,500.00	5,496.57	5,500.50	5,489.57	19.65	231.91	-127.84	-483.90	4,161.99	4,300.79	4,049.28	251.51	17.100	
5,600.00	5,596.50	5,600.43	5,589.50	20.01	233.77	-127.88	-483.90	4,161.99	4,303.08	4,049.36	253.73	16.959	
5,700.00	5,696.43	5,700.36	5,689.43	20.37	235.62	-127.92	-483.90	4,161.99	4,305.38	4,049.43	255.94	16.822	
5,800.00	5,796.36	5,800.29	5,789.36	20.74	237.48	-127.96	-483.90	4,161.99	4,307.67	4,049.51	258.16	16.686	
5,900.00	5,896.29	5,900.22	5,889.29	21.10	239.33	-128.00	-483.90	4,161.99	4,309.97	4,049.59	260.38	16.553	
6,000.00	5,996.22	6,000.15	5,989.22	21.46	241.19	-128.04	-483.90	4,161.99	4,312.27	4,049.68	262.59	16.422	
6,100.00	6,096.15	6,100.08	6,089.15	21.82	243.04	-128.08	-483.90	4,161.99	4,314.57	4,049.76	264.81	16.293	
6,200.00	6,196.08	6,200.01	6,189.08	22.19	244.90	-128.12	-483.90	4,161.99	4,316.88	4,049.85	267.03	16.166	
6,300.00	6,296.01	6,299.94	6,289.01	22.55	246.75	-128.16	-483.90	4,161.99	4,319.18	4,049.94	269.24	16.042	
6,335.60	6,331.59	6,335.52	6,324.59	22.68	247.41	-128.17	-483.90	4,161.99	4,320.00	4,049.97	270.03	15.998	
6,350.00	6,345.97	6,349.90	6,338.97	22.73	247.68	-145.85	-483.90	4,161.99	4,320.50	4,050.14	270.35	15.981	
6,400.00	6,395.75	6,399.68	6,388.75	22.91	248.61	-163.56	-483.90	4,161.99	4,324.73	4,053.27	271.46	15.931	
6,450.00	6,445.03	6,448.97	6,438.03	23.10	249.52	-168.18	-483.90	4,161.99	4,332.85	4,060.30	272.55	15.897	
6,500.00	6,493.52	6,497.46	6,486.52	23.29	250.42	-170.22	-483.90	4,161.99	4,344.81	4,071.17	273.63	15.878	
6,550.00	6,540.91	6,544.85	6,533.91	23.48	251.30	-171.33	-483.90	4,161.99	4,360.53	4,085.84	274.69	15.875 SF	
6,600.00	6,586.91	6,590.85	6,579.91	23.66	252.15	-171.98	-483.90	4,161.99	4,379.91	4,104.20	275.71	15.886	
6,650.00	6,631.24	6,635.18	6,624.24	23.85	252.98	-172.37	-483.90	4,161.99	4,402.84	4,126.15	276.69	15.912	
6,700.00	6,673.63	6,677.56	6,666.63	24.05	253.76	-172.57	-483.90	4,161.99	4,429.18	4,151.55	277.63	15.953	
6,750.00	6,713.80	6,717.74	6,706.80	24.24	254.51	-172.63	-483.90	4,161.99	4,458.77	4,180.24	278.52	16.009	
6,800.00	6,751.52	6,755.46	6,744.52	24.44	255.21	-172.56	-483.90	4,161.99	4,491.41	4,212.05	279.36	16.078	
6,850.00	6,786.56	6,790.49	6,779.56	24.65	255.86	-172.37	-483.90	4,161.99	4,526.91	4,246.79	280.13	16.160	
6,900.00	6,818.69	6,822.62	6,811.69	24.87	256.46	-172.04	-483.90	4,161.99	4,565.06	4,284.23	280.83	16.255	
6,950.00	6,847.72	6,851.65	6,840.72	25.10	257.00	-171.54	-483.90	4,161.99	4,605.61	4,324.15	281.47	16.363	
7,000.00	6,873.46	6,877.40	6,866.46	25.34	257.47	-170.81	-483.90	4,161.99	4,648.32	4,366.30	282.03	16.482	
7,050.00	6,895.77	6,899.71	6,888.77	25.60	257.89	-169.74	-483.90	4,161.99	4,692.93	4,410.41	282.51	16.611	
7,100.00	6,914.50	6,918.44	6,907.50	25.87	258.24	-168.13	-483.90	4,161.99	4,739.15	4,456.23	282.92	16.751	
7,150.00	6,929.54	6,933.48	6,922.54	26.15	258.52	-165.52	-483.90	4,161.99	4,786.71	4,503.46	283.24	16.900	
7,200.00	6,940.80	6,944.73	6,933.80	26.44	258.72	-160.80	-483.90	4,161.99	4,835.30	4,551.82	283.49	17.057	
7,250.00	6,948.20	6,952.13	6,941.20	26.75	258.86	-150.34	-483.90	4,161.99	4,884.64	4,600.99	283.65	17.221	
7,300.00	6,951.70	6,955.63	6,944.70	27.07	258.93	-117.45	-483.90	4,161.99	4,934.41	4,650.68	283.73	17.391	
7,321.06	6,952.00	6,955.93	6,945.00	27.20	258.93	-87.79	-483.90	4,161.99	4,955.44	4,671.70	283.74	17.465	
7,400.00	6,951.82	6,955.76	6,944.82	27.74	258.93	-87.75	-483.90	4,161.99	5,034.24	4,750.49	283.75	17.742	
7,500.00	6,951.60	6,955.53	6,944.60	28.49	258.93	-87.71	-483.90	4,161.99	5,134.08	4,850.32	283.76	18.093	
7,600.00	6,951.37	6,955.31	6,944.37	29.30	258.92	-87.66	-483.90	4,161.99	5,233.93	4,950.15	283.78	18.444	
7,700.00	6,951.15	6,955.08	6,944.15	30.18	258.92	-87.62	-483.90	4,161.99	5,333.78	5,049.99	283.79	18.795	
7,800.00	6,950.92	6,954.86	6,943.92	31.12	258.91	-87.57	-483.90	4,161.99	5,433.64	5,149.83	283.81	19.145	
7,900.00	6,950.70	6,954.63	6,943.70	32.11	258.91	-87.53	-483.90	4,161.99	5,533.50	5,249.67	283.83	19.496	
8,000.00	6,950.47	6,954.41	6,943.47	33.15	258.90	-87.48	-483.90	4,161.99	5,633.36	5,349.52	283.84	19.847	
8,100.00	6,950.25	6,954.18	6,943.25	34.23	258.90	-87.44	-483.90	4,161.99	5,733.24	5,449.37	283.86	20.197	
8,200.00	6,950.03	6,953.96	6,943.03	35.35	258.90	-87.40	-483.90	4,161.99	5,833.11	5,549.23	283.88	20.548	
8,300.00	6,949.80	6,953.74	6,942.80	36.51	258.89	-87.35	-483.90	4,161.99	5,932.99	5,649.09	283.90	20.898	
8,400.00	6,949.58	6,953.51	6,942.58	37.70	258.89	-87.31	-483.90	4,161.99	6,032.88	5,748.95	283.92	21.248	
8,500.00	6,949.35	6,953.29	6,942.35	38.92	258.88	-87.26	-483.90	4,161.99	6,132.76	5,848.82	283.95	21.598	
8,600.00	6,949.13	6,953.06	6,942.13	40.17	258.88	-87.22	-483.90	4,161.99	6,232.66	5,948.69	283.97	21.948	
8,700.00	6,948.90	6,952.84	6,941.90	41.44	258.88	-87.17	-483.90	4,161.99	6,332.55	6,048.56	283.99	22.298	
8,800.00	6,948.68	6,952.61	6,941.68	42.73	258.87	-87.13	-483.90	4,161.99	6,432.45	6,148.43	284.02	22.648	
8,900.00	6,948.45	6,952.39	6,941.45	44.04	258.87	-87.08	-483.90	4,161.99	6,532.35	6,248.31	284.04	22.998	
9,000.00	6,948.23	6,952.16	6,941.23	45.38	258.86	-87.04	-483.90	4,161.99	6,632.25	6,348.19	284.07	23.347	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 158-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	6,951.94	6,941.00	46.72	258.86	-86.99	-483.90	4,161.99	6,732.16	6,448.07	284.09	23.697	
9,200.00	6,947.78	6,951.71	6,940.78	48.09	258.85	-86.95	-483.90	4,161.99	6,832.07	6,547.95	284.12	24.046	
9,300.00	6,947.55	6,951.49	6,940.55	49.47	258.85	-86.90	-483.90	4,161.99	6,931.98	6,647.83	284.15	24.395	
9,400.00	6,947.33	6,951.26	6,940.33	50.86	258.85	-86.86	-483.90	4,161.99	7,031.90	6,747.72	284.18	24.745	
9,500.00	6,947.10	6,951.04	6,940.10	52.26	258.84	-86.82	-483.90	4,161.99	7,131.81	6,847.61	284.21	25.094	
9,600.00	6,946.88	6,950.81	6,939.88	53.68	258.84	-86.77	-483.90	4,161.99	7,231.73	6,947.49	284.24	25.442	
9,700.00	6,946.66	6,950.59	6,939.66	55.10	258.83	-86.73	-483.90	4,161.99	7,331.66	7,047.38	284.27	25.791	
9,800.00	6,946.43	6,950.37	6,939.43	56.54	258.83	-86.68	-483.90	4,161.99	7,431.58	7,147.28	284.30	26.140	
9,900.00	6,946.21	6,950.14	6,939.21	57.98	258.82	-86.64	-483.90	4,161.99	7,531.51	7,247.17	284.34	26.488	
10,000.00	6,945.98	6,949.92	6,938.98	59.43	258.82	-86.59	-483.90	4,161.99	7,631.43	7,347.06	284.37	26.836	
10,100.00	6,945.76	6,949.69	6,938.76	60.89	258.82	-86.55	-483.90	4,161.99	7,731.36	7,446.96	284.41	27.184	
10,200.00	6,945.53	6,949.47	6,938.53	62.36	258.81	-86.50	-483.90	4,161.99	7,831.29	7,546.85	284.44	27.532	
10,300.00	6,945.31	6,949.24	6,938.31	63.83	258.81	-86.46	-483.90	4,161.99	7,931.23	7,646.75	284.48	27.880	
10,400.00	6,945.08	6,949.02	6,938.08	65.31	258.80	-86.41	-483.90	4,161.99	8,031.16	7,746.65	284.51	28.228	
10,500.00	6,944.86	6,948.79	6,937.86	66.79	258.80	-86.37	-483.90	4,161.99	8,131.10	7,846.55	284.55	28.575	
10,600.00	6,944.63	6,948.57	6,937.63	68.28	258.80	-86.32	-483.90	4,161.99	8,231.04	7,946.45	284.59	28.922	
10,700.00	6,944.41	6,948.34	6,937.41	69.78	258.79	-86.28	-483.90	4,161.99	8,330.98	8,046.35	284.63	29.270	
10,800.00	6,944.18	6,948.12	6,937.18	71.28	258.79	-86.24	-483.90	4,161.99	8,430.92	8,146.25	284.67	29.617	
10,900.00	6,943.96	6,947.89	6,936.96	72.78	258.78	-86.19	-483.90	4,161.99	8,530.86	8,246.15	284.71	29.963	
11,000.00	6,943.73	6,947.67	6,936.73	74.29	258.78	-86.15	-483.90	4,161.99	8,630.80	8,346.05	284.75	30.310	
11,100.00	6,943.51	6,947.44	6,936.51	75.80	258.77	-86.10	-483.90	4,161.99	8,730.75	8,445.95	284.79	30.656	
11,200.00	6,943.29	6,947.22	6,936.29	77.32	258.77	-86.06	-483.90	4,161.99	8,830.69	8,545.86	284.84	31.003	
11,300.00	6,943.06	6,947.00	6,936.06	78.84	258.77	-86.01	-483.90	4,161.99	8,930.64	8,645.76	284.88	31.349	
11,400.00	6,942.84	6,946.77	6,935.84	80.36	258.76	-85.97	-483.90	4,161.99	9,030.59	8,745.66	284.92	31.695	
11,500.00	6,942.61	6,946.55	6,935.61	81.88	258.76	-85.92	-483.90	4,161.99	9,130.54	8,845.57	284.97	32.040	
11,600.00	6,942.39	6,946.32	6,935.39	83.41	258.75	-85.88	-483.90	4,161.99	9,230.49	8,945.47	285.02	32.386	
11,700.00	6,942.16	6,946.10	6,935.16	84.94	258.75	-85.84	-483.90	4,161.99	9,330.44	9,045.38	285.06	32.731	
11,800.00	6,941.94	6,945.87	6,934.94	86.47	258.75	-85.79	-483.90	4,161.99	9,430.39	9,145.28	285.11	33.076	
11,900.00	6,941.71	6,945.65	6,934.71	88.01	258.74	-85.75	-483.90	4,161.99	9,530.35	9,245.19	285.16	33.421	
12,000.00	6,941.49	6,945.42	6,934.49	89.55	258.74	-85.70	-483.90	4,161.99	9,630.30	9,345.09	285.21	33.766	
12,100.00	6,941.26	6,945.20	6,934.26	91.09	258.73	-85.66	-483.90	4,161.99	9,730.26	9,445.00	285.26	34.111	
12,200.00	6,941.04	6,944.97	6,934.04	92.63	258.73	-85.61	-483.90	4,161.99	9,830.21	9,544.91	285.31	34.455	
12,300.00	6,940.81	6,944.75	6,933.81	94.18	258.72	-85.57	-483.90	4,161.99	9,930.17	9,644.81	285.36	34.799	
12,400.00	6,940.59	6,944.52	6,933.59	95.72	258.72	-85.52	-483.90	4,161.99	10,030.13	9,744.72	285.41	35.143	
12,500.00	6,940.36	6,944.30	6,933.36	97.27	258.72	-85.48	-483.90	4,161.99	10,130.09	9,844.63	285.46	35.487	
12,600.00	6,940.14	6,944.07	6,933.14	98.82	258.71	-85.43	-483.90	4,161.99	10,230.05	9,944.53	285.52	35.830	
12,700.00	6,939.92	6,943.85	6,932.92	100.37	258.71	-85.39	-483.90	4,161.99	10,330.01	10,044.44	285.57	36.173	
12,800.00	6,939.69	6,943.63	6,932.69	101.92	258.70	-85.35	-483.90	4,161.99	10,429.97	10,144.35	285.62	36.516	
12,900.00	6,939.47	6,943.40	6,932.47	103.48	258.70	-85.30	-483.90	4,161.99	10,529.93	10,244.25	285.68	36.859	
13,000.00	6,939.24	6,943.18	6,932.24	105.03	258.70	-85.26	-483.90	4,161.99	10,629.89	10,344.16	285.73	37.202	
13,100.00	6,939.02	6,942.95	6,932.02	106.59	258.69	-85.21	-483.90	4,161.99	10,729.86	10,444.07	285.79	37.544	
13,200.00	6,938.79	6,942.73	6,931.79	108.15	258.69	-85.17	-483.90	4,161.99	10,829.82	10,543.97	285.85	37.887	
13,300.00	6,938.57	6,942.50	6,931.57	109.71	258.68	-85.12	-483.90	4,161.99	10,929.79	10,643.88	285.91	38.228	
13,400.00	6,938.34	6,942.28	6,931.34	111.27	258.68	-85.08	-483.90	4,161.99	11,029.75	10,743.79	285.97	38.570	
13,500.00	6,938.12	6,942.05	6,931.12	112.83	258.67	-85.03	-483.90	4,161.99	11,129.72	10,843.69	286.03	38.912	
13,600.00	6,937.89	6,941.83	6,930.89	114.40	258.67	-84.99	-483.90	4,161.99	11,229.68	10,943.60	286.09	39.253	
13,700.00	6,937.67	6,941.60	6,930.67	115.96	258.67	-84.95	-483.90	4,161.99	11,329.65	11,043.51	286.15	39.594	
13,800.00	6,937.44	6,941.38	6,930.44	117.53	258.66	-84.90	-483.90	4,161.99	11,429.62	11,143.41	286.21	39.935	
13,900.00	6,937.22	6,941.15	6,930.22	119.09	258.66	-84.86	-483.90	4,161.99	11,529.59	11,243.32	286.27	40.275	
14,000.00	6,936.99	6,940.93	6,929.99	120.66	258.65	-84.81	-483.90	4,161.99	11,629.56	11,343.22	286.33	40.616	
14,100.00	6,936.77	6,940.70	6,929.77	122.23	258.65	-84.77	-483.90	4,161.99	11,729.53	11,443.13	286.40	40.956	
14,200.00	6,936.55	6,940.48	6,929.55	123.80	258.65	-84.72	-483.90	4,161.99	11,829.50	11,543.04	286.46	41.295	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 158-A027Ua_INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	6,940.26	6,929.32	125.37	258.64	-84.68	-483.90	4,161.99	11,929.47	11,642.94	286.52	41.635	
14,400.00	6,936.10	6,940.03	6,929.10	126.94	258.64	-84.64	-483.90	4,161.99	12,029.44	11,742.85	286.59	41.974	
14,500.00	6,935.87	6,939.81	6,928.87	128.51	258.63	-84.59	-483.90	4,161.99	12,129.41	11,842.75	286.66	42.313	
14,600.00	6,935.65	6,939.58	6,928.65	130.08	258.63	-84.55	-483.90	4,161.99	12,229.38	11,942.66	286.72	42.652	
14,700.00	6,935.42	6,939.36	6,928.42	131.65	258.62	-84.50	-483.90	4,161.99	12,329.35	12,042.56	286.79	42.991	
14,800.00	6,935.20	6,939.13	6,928.20	133.23	258.62	-84.46	-483.90	4,161.99	12,429.33	12,142.47	286.86	43.329	
14,900.00	6,934.97	6,938.91	6,927.97	134.80	258.62	-84.41	-483.90	4,161.99	12,529.30	12,242.37	286.93	43.667	
15,000.00	6,934.75	6,938.68	6,927.75	136.37	258.61	-84.37	-483.90	4,161.99	12,629.27	12,342.28	287.00	44.005	
15,100.00	6,934.52	6,938.46	6,927.52	137.95	258.61	-84.33	-483.90	4,161.99	12,729.25	12,442.18	287.06	44.343	
15,200.00	6,934.30	6,938.23	6,927.30	139.53	258.60	-84.28	-483.90	4,161.99	12,829.22	12,542.09	287.14	44.680	
15,300.00	6,934.07	6,938.01	6,927.07	141.10	258.60	-84.24	-483.90	4,161.99	12,929.20	12,641.99	287.21	45.017	
15,400.00	6,933.85	6,937.78	6,926.85	142.68	258.60	-84.19	-483.90	4,161.99	13,029.17	12,741.89	287.28	45.354	
15,500.00	6,933.62	6,937.56	6,926.62	144.26	258.59	-84.15	-483.90	4,161.99	13,129.15	12,841.80	287.35	45.691	
15,600.00	6,933.40	6,937.33	6,926.40	145.84	258.59	-84.10	-483.90	4,161.99	13,229.12	12,941.70	287.42	46.027	
15,700.00	6,933.18	6,937.11	6,926.18	147.42	258.58	-84.06	-483.90	4,161.99	13,329.10	13,041.60	287.50	46.363	
15,800.00	6,932.95	6,936.89	6,925.95	148.99	258.58	-84.02	-483.90	4,161.99	13,429.08	13,141.51	287.57	46.699	
15,900.00	6,932.73	6,936.66	6,925.73	150.57	258.57	-83.97	-483.90	4,161.99	13,529.05	13,241.41	287.64	47.034	
16,000.00	6,932.50	6,936.44	6,925.50	152.15	258.57	-83.93	-483.90	4,161.99	13,629.03	13,341.31	287.72	47.369	
16,100.00	6,932.28	6,936.21	6,925.28	153.74	258.57	-83.88	-483.90	4,161.99	13,729.01	13,441.21	287.79	47.704	
16,200.00	6,932.05	6,935.99	6,925.05	155.32	258.56	-83.84	-483.90	4,161.99	13,828.98	13,541.11	287.87	48.039	
16,300.00	6,931.83	6,935.76	6,924.83	156.90	258.56	-83.79	-483.90	4,161.99	13,928.96	13,641.02	287.95	48.373	
16,400.00	6,931.60	6,935.54	6,924.60	158.48	258.55	-83.75	-483.90	4,161.99	14,028.94	13,740.92	288.02	48.707	
16,500.00	6,931.38	6,935.31	6,924.38	160.06	258.55	-83.71	-483.90	4,161.99	14,128.92	13,840.82	288.10	49.041	
16,600.00	6,931.15	6,935.09	6,924.15	161.65	258.55	-83.66	-483.90	4,161.99	14,228.90	13,940.72	288.18	49.375	
16,700.00	6,930.93	6,934.86	6,923.93	163.23	258.54	-83.62	-483.90	4,161.99	14,328.88	14,040.62	288.26	49.708	
16,800.00	6,930.70	6,934.64	6,923.70	164.81	258.54	-83.57	-483.90	4,161.99	14,428.86	14,140.52	288.34	50.041	
16,900.00	6,930.48	6,934.41	6,923.48	166.40	258.53	-83.53	-483.90	4,161.99	14,528.84	14,240.42	288.42	50.374	
17,000.00	6,930.25	6,934.19	6,923.25	167.98	258.53	-83.48	-483.90	4,161.99	14,628.82	14,340.32	288.50	50.707	
17,100.00	6,930.03	6,933.96	6,923.03	169.56	258.52	-83.44	-483.90	4,161.99	14,728.80	14,440.22	288.58	51.039	
17,200.00	6,929.81	6,933.74	6,922.81	171.15	258.52	-83.40	-483.90	4,161.99	14,828.78	14,540.12	288.66	51.371	
17,300.00	6,929.58	6,933.52	6,922.58	172.73	258.52	-83.35	-483.90	4,161.99	14,928.76	14,640.02	288.74	51.702	
17,400.00	6,929.36	6,933.29	6,922.36	174.32	258.51	-83.31	-483.90	4,161.99	15,028.74	14,739.92	288.83	52.034	
17,500.00	6,929.13	6,933.07	6,922.13	175.91	258.51	-83.26	-483.90	4,161.99	15,128.72	14,839.82	288.91	52.365	
17,600.00	6,928.91	6,932.84	6,921.91	177.49	258.50	-83.22	-483.90	4,161.99	15,228.71	14,939.71	288.99	52.696	
17,700.00	6,928.68	6,932.62	6,921.68	179.08	258.50	-83.18	-483.90	4,161.99	15,328.69	15,039.61	289.08	53.026	
17,800.00	6,928.46	6,932.39	6,921.46	180.66	258.50	-83.13	-483.90	4,161.99	15,428.67	15,139.51	289.16	53.357	
17,900.00	6,928.23	6,932.17	6,921.23	182.25	258.49	-83.09	-483.90	4,161.99	15,528.65	15,239.41	289.25	53.687	
18,000.00	6,928.01	6,931.94	6,921.01	183.84	258.49	-83.04	-483.90	4,161.99	15,628.64	15,339.30	289.33	54.016	
18,100.00	6,927.78	6,931.72	6,920.78	185.43	258.48	-83.00	-483.90	4,161.99	15,728.62	15,439.20	289.42	54.346	
18,200.00	6,927.56	6,931.49	6,920.56	187.01	258.48	-82.96	-483.90	4,161.99	15,828.60	15,539.10	289.50	54.675	
18,300.00	6,927.33	6,931.27	6,920.33	188.60	258.47	-82.91	-483.90	4,161.99	15,928.59	15,638.99	289.59	55.004	
18,400.00	6,927.11	6,931.04	6,920.11	190.19	258.47	-82.87	-483.90	4,161.99	16,028.57	15,738.89	289.68	55.332	
18,500.00	6,926.88	6,930.82	6,919.88	191.78	258.47	-82.82	-483.90	4,161.99	16,128.55	15,838.79	289.77	55.660	
18,600.00	6,926.66	6,930.59	6,919.66	193.37	258.46	-82.78	-483.90	4,161.99	16,228.54	15,938.68	289.86	55.988	
18,700.00	6,926.44	6,930.37	6,919.44	194.96	258.46	-82.74	-483.90	4,161.99	16,328.52	16,038.58	289.94	56.316	
18,800.00	6,926.21	6,930.15	6,919.21	196.54	258.45	-82.69	-483.90	4,161.99	16,428.50	16,138.47	290.03	56.644	
18,900.00	6,925.99	6,929.92	6,918.99	198.13	258.45	-82.65	-483.90	4,161.99	16,528.49	16,238.37	290.12	56.971	
19,000.00	6,925.76	6,929.70	6,918.76	199.72	258.45	-82.60	-483.90	4,161.99	16,628.47	16,338.26	290.21	57.297	
19,100.00	6,925.54	6,929.47	6,918.54	201.31	258.44	-82.56	-483.90	4,161.99	16,728.46	16,438.15	290.30	57.624	
19,200.00	6,925.31	6,929.25	6,918.31	202.90	258.44	-82.52	-483.90	4,161.99	16,828.44	16,538.05	290.39	57.950	
19,300.00	6,925.09	6,929.02	6,918.09	204.49	258.43	-82.47	-483.90	4,161.99	16,928.43	16,637.94	290.49	58.276	
19,400.00	6,924.86	6,928.80	6,917.86	206.08	258.43	-82.43	-483.90	4,161.99	17,028.41	16,737.84	290.58	58.602	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153B - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 158-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	6,928.57	6,917.64	207.67	258.42	-82.38	-483.90	4,161.99	17,128.40	16,837.73	290.67	58.927	
19,600.00	6,924.41	6,928.35	6,917.41	209.26	258.42	-82.34	-483.90	4,161.99	17,228.39	16,937.62	290.76	59.252	
19,700.00	6,924.19	6,928.12	6,917.19	210.85	258.42	-82.30	-483.90	4,161.99	17,328.37	17,037.51	290.86	59.577	
19,800.00	6,923.96	6,927.90	6,916.96	212.44	258.41	-82.25	-483.90	4,161.99	17,428.36	17,137.41	290.95	59.901	
19,900.00	6,923.74	6,927.67	6,916.74	214.04	258.41	-82.21	-483.90	4,161.99	17,528.34	17,237.30	291.04	60.226	
20,000.00	6,923.51	6,927.45	6,916.51	215.63	258.40	-82.16	-483.90	4,161.99	17,628.33	17,337.19	291.14	60.550	
20,100.00	6,923.29	6,927.22	6,916.29	217.22	258.40	-82.12	-483.90	4,161.99	17,728.32	17,437.08	291.23	60.873	
20,200.00	6,923.07	6,927.00	6,916.07	218.81	258.40	-82.08	-483.90	4,161.99	17,828.30	17,536.97	291.33	61.196	
20,300.00	6,922.84	6,926.78	6,915.84	220.40	258.39	-82.03	-483.90	4,161.99	17,928.29	17,636.87	291.42	61.519	
20,400.00	6,922.62	6,926.55	6,915.62	221.99	258.39	-81.99	-483.90	4,161.99	18,028.28	17,736.76	291.52	61.842	
20,500.00	6,922.39	6,926.33	6,915.39	223.59	258.38	-81.94	-483.90	4,161.99	18,128.26	17,836.65	291.62	62.165	
20,600.00	6,922.17	6,926.10	6,915.17	225.18	258.38	-81.90	-483.90	4,161.99	18,228.25	17,936.54	291.71	62.487	
20,674.13	6,922.00	6,925.93	6,915.00	226.36	258.38	-81.87	-483.90	4,161.99	18,302.37	18,010.59	291.79	62.725	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 349-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	48.46	1,060.92	1,197.60	1,603.58				
100.00	100.00	0.00	0.00	0.25	0.00	48.46	1,060.92	1,197.60	1,599.96	1,599.71	0.25	6,369.499	
200.00	200.00	103.54	103.54	0.61	1.14	48.45	1,060.91	1,197.11	1,599.61	1,597.86	1.74	917.298	
300.00	300.00	216.06	216.04	0.97	2.37	48.41	1,060.86	1,195.49	1,598.49	1,595.16	3.34	479.258	
400.00	400.00	328.53	328.48	1.33	3.61	48.35	1,060.77	1,192.72	1,596.60	1,591.67	4.93	324.097	
500.00	500.00	423.59	423.50	1.68	3.92	48.30	1,060.42	1,190.18	1,594.37	1,588.79	5.58	285.617	
548.08	548.07	466.78	466.68	1.85	3.96	-174.20	1,059.73	1,189.74	1,593.90	1,588.11	5.79	275.487	CC, ES
606.93	606.91	513.29	513.17	2.05	3.99	-174.15	1,058.36	1,190.12	1,594.69	1,588.66	6.03	264.322	
700.00	699.91	566.00	565.81	2.37	4.03	-174.06	1,056.32	1,191.97	1,598.33	1,591.94	6.39	250.236	
800.00	799.84	637.23	636.79	2.71	4.05	-173.87	1,053.09	1,196.97	1,604.37	1,597.62	6.75	237.711	
900.00	899.77	697.23	696.30	3.06	4.11	-173.63	1,049.71	1,203.69	1,612.79	1,605.68	7.11	226.749	
1,000.00	999.70	771.37	769.40	3.41	4.22	-173.23	1,044.35	1,214.86	1,623.21	1,615.72	7.49	216.757	
1,100.00	1,099.63	836.10	832.72	3.76	4.34	-172.81	1,038.68	1,227.00	1,635.58	1,627.71	7.87	207.723	
1,200.00	1,199.56	905.00	899.62	4.11	4.47	-172.30	1,031.99	1,242.05	1,649.95	1,641.66	8.28	199.212	
1,300.00	1,299.49	956.77	949.48	4.47	4.59	-171.88	1,026.83	1,255.00	1,666.78	1,658.10	8.68	191.955	
1,400.00	1,399.42	1,019.24	1,009.00	4.83	4.76	-171.32	1,020.10	1,272.68	1,686.10	1,676.97	9.13	184.627	
1,500.00	1,499.35	1,085.07	1,070.85	5.19	4.96	-170.66	1,011.76	1,293.65	1,707.51	1,697.89	9.63	177.388	
1,600.00	1,599.28	1,158.00	1,138.44	5.54	5.20	-169.86	1,001.33	1,318.95	1,730.77	1,720.58	10.19	169.874	
1,700.00	1,699.21	1,220.00	1,194.96	5.90	5.43	-169.12	991.15	1,342.31	1,755.89	1,745.13	10.75	163.330	
1,800.00	1,799.14	1,266.41	1,236.57	6.26	5.62	-168.53	983.09	1,361.20	1,783.57	1,772.31	11.26	158.452	
1,900.00	1,899.07	1,313.00	1,277.85	6.62	5.83	-167.93	974.93	1,381.20	1,813.87	1,802.10	11.77	154.093	
2,000.00	1,999.00	1,366.78	1,324.67	6.98	6.14	-167.21	965.15	1,405.79	1,846.83	1,834.46	12.36	149.384	
2,100.00	2,098.94	1,431.00	1,379.97	7.34	6.57	-166.34	953.22	1,436.18	1,881.74	1,868.70	13.04	144.276	
2,200.00	2,198.87	1,494.82	1,434.04	7.70	7.08	-165.45	940.39	1,467.55	1,918.41	1,904.65	13.76	139.420	
2,300.00	2,298.80	1,545.49	1,476.36	8.06	7.53	-164.73	929.87	1,493.36	1,957.12	1,942.74	14.37	136.157	
2,400.00	2,398.73	1,598.00	1,519.42	8.42	8.03	-163.97	918.54	1,521.18	1,998.08	1,983.06	15.02	133.022	
2,500.00	2,498.66	1,672.40	1,579.50	8.79	8.80	-162.88	901.50	1,561.63	2,040.70	2,024.80	15.90	128.347	
2,600.00	2,598.59	1,723.00	1,620.02	9.15	9.34	-162.15	889.54	1,589.47	2,084.61	2,068.07	16.54	126.050	
2,700.00	2,698.52	1,773.14	1,659.52	9.51	9.91	-161.41	877.46	1,617.90	2,130.60	2,113.42	17.18	124.038	
2,800.00	2,798.45	1,836.60	1,709.37	9.87	10.65	-160.51	862.61	1,654.24	2,178.11	2,160.16	17.96	121.301	
2,900.00	2,898.38	1,910.88	1,767.11	10.23	11.54	-159.47	844.61	1,697.36	2,226.89	2,208.03	18.86	118.050	
3,000.00	2,998.31	1,991.25	1,829.22	10.59	12.54	-158.34	823.90	1,743.98	2,276.09	2,256.24	19.85	114.675	
3,100.00	3,098.24	2,057.46	1,880.08	10.96	13.38	-157.44	806.64	1,782.69	2,326.38	2,305.72	20.67	112.576	
3,200.00	3,198.17	2,118.19	1,926.69	11.32	14.15	-156.63	790.79	1,818.26	2,377.54	2,356.13	21.41	111.041	
3,300.00	3,298.10	2,173.74	1,969.01	11.68	14.88	-155.91	776.67	1,851.36	2,430.24	2,408.15	22.09	110.011	
3,400.00	3,398.03	2,679.57	2,384.87	12.04	20.52	-150.77	661.22	2,113.15	2,477.92	2,450.46	27.46	90.241	
3,500.00	3,497.96	2,747.89	2,445.01	12.40	21.14	-150.26	648.15	2,142.77	2,517.95	2,489.78	28.17	89.389	
3,600.00	3,597.89	3,436.09	3,089.77	12.77	25.33	-147.00	554.29	2,354.95	2,545.73	2,513.06	32.67	77.924	
3,700.00	3,697.82	3,916.32	3,565.24	13.13	26.34	-146.36	528.51	2,408.65	2,563.01	2,528.96	34.05	75.278	
3,800.00	3,797.75	4,015.67	3,664.58	13.49	29.21	-146.39	528.21	2,409.72	2,567.08	2,529.60	37.48	68.497	
3,900.00	3,897.68	4,114.77	3,763.67	13.85	33.37	-146.43	527.91	2,410.81	2,571.18	2,528.95	42.23	60.883	
4,000.00	3,997.61	4,213.87	3,862.77	14.21	37.59	-146.46	527.60	2,411.93	2,575.32	2,528.26	47.06	54.727	
4,100.00	4,097.54	4,312.97	3,961.86	14.58	41.85	-146.49	527.28	2,413.09	2,579.49	2,527.56	51.93	49.674	
4,200.00	4,197.47	4,412.07	4,060.95	14.94	46.15	-146.52	526.96	2,414.29	2,583.69	2,526.86	56.83	45.463	
4,300.00	4,297.40	4,511.16	4,160.04	15.30	50.46	-146.55	526.62	2,415.52	2,587.92	2,526.17	61.75	41.907	
4,400.00	4,397.33	4,610.26	4,259.12	15.66	54.78	-146.58	526.27	2,416.78	2,592.19	2,525.49	66.69	38.867	
4,500.00	4,497.26	4,709.35	4,358.20	16.03	59.12	-146.61	525.91	2,418.08	2,596.48	2,524.84	71.65	36.241	
4,600.00	4,597.19	4,808.43	4,457.28	16.39	63.46	-146.64	525.55	2,419.41	2,600.81	2,524.21	76.61	33.951	
4,700.00	4,697.12	4,907.52	4,556.36	16.75	67.81	-146.67	525.17	2,420.77	2,605.17	2,523.60	81.57	31.937	
4,800.00	4,797.05	5,006.60	4,655.43	17.11	72.16	-146.70	524.79	2,422.17	2,609.56	2,523.02	86.55	30.152	
4,900.00	4,896.99	5,105.69	4,754.50	17.47	76.52	-146.73	524.39	2,423.60	2,613.99	2,522.46	91.52	28.561	
5,000.00	4,996.92	5,204.77	4,853.57	17.84	80.88	-146.76	523.99	2,425.07	2,618.44	2,521.94	96.51	27.133	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 349-MWD OWSG Rev5 — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	5,303.84	4,952.63	18.20	85.24	-146.79	523.57	2,426.57	2,622.93	2,521.44	101.49	25.844	
5,200.00	5,196.78	5,402.92	5,051.70	18.56	89.61	-146.81	523.15	2,428.11	2,627.45	2,520.97	106.48	24.676	
5,300.00	5,296.71	5,501.99	5,150.75	18.92	93.98	-146.84	522.72	2,429.68	2,632.00	2,520.53	111.47	23.613	
5,400.00	5,396.64	5,601.06	5,249.81	19.29	98.36	-146.87	522.28	2,431.28	2,636.58	2,520.12	116.46	22.640	
5,500.00	5,496.57	5,700.13	5,348.86	19.65	102.74	-146.89	521.83	2,432.92	2,641.19	2,519.74	121.45	21.747	
5,600.00	5,596.50	5,799.72	5,448.45	20.01	105.06	-146.92	521.36	2,434.59	2,645.83	2,521.60	124.24	21.297	
5,700.00	5,696.43	5,899.61	5,548.32	20.37	106.25	-146.94	520.90	2,436.27	2,650.47	2,524.65	125.82	21.065	
5,800.00	5,796.36	5,999.50	5,648.19	20.74	107.44	-146.97	520.44	2,437.95	2,655.11	2,527.70	127.41	20.839	
5,900.00	5,896.29	6,099.38	5,748.06	21.10	108.64	-146.99	519.98	2,439.63	2,659.76	2,530.75	129.00	20.618	
6,000.00	5,996.22	6,199.27	5,847.93	21.46	109.83	-147.02	519.51	2,441.31	2,664.40	2,533.81	130.59	20.403	
6,100.00	6,096.15	6,299.15	5,947.80	21.82	110.56	-147.04	519.05	2,443.00	2,669.04	2,537.32	131.72	20.263	
6,200.00	6,196.08	6,399.04	6,047.67	22.19	110.79	-147.07	518.59	2,444.68	2,673.68	2,541.35	132.34	20.204	
6,300.00	6,296.01	6,498.92	6,147.54	22.55	111.01	-147.09	518.12	2,446.36	2,678.33	2,545.37	132.95	20.145	
6,335.60	6,331.59	6,534.49	6,183.10	22.68	111.09	-147.10	517.96	2,446.95	2,679.98	2,546.81	133.17	20.124	
6,350.00	6,345.97	6,548.86	6,197.46	22.73	111.12	-164.80	517.89	2,447.20	2,680.81	2,547.54	133.26	20.117	
6,400.00	6,395.75	6,598.56	6,247.16	22.91	111.24	177.36	517.66	2,448.03	2,686.11	2,552.54	133.57	20.110 SF	
6,450.00	6,445.03	6,647.71	6,296.30	23.10	111.35	172.53	517.43	2,448.86	2,695.16	2,561.29	133.87	20.132	
6,500.00	6,493.52	6,695.99	6,344.57	23.29	111.46	170.17	517.21	2,449.67	2,707.91	2,573.74	134.17	20.183	
6,550.00	6,540.91	6,728.00	6,376.58	23.48	111.53	168.61	517.06	2,450.21	2,724.33	2,589.91	134.42	20.267	
6,600.00	6,586.91	6,784.20	6,432.77	23.66	111.66	167.43	516.79	2,451.21	2,744.23	2,609.50	134.73	20.368	
6,650.00	6,631.24	6,824.75	6,473.31	23.85	111.76	166.34	516.57	2,451.99	2,767.63	2,632.63	135.00	20.501	
6,700.00	6,673.63	6,863.38	6,511.93	24.05	111.85	165.25	516.35	2,452.79	2,794.34	2,659.10	135.25	20.661	
6,750.00	6,713.80	6,899.84	6,548.38	24.24	111.94	164.09	516.13	2,453.59	2,824.20	2,688.72	135.48	20.846	
6,800.00	6,751.52	6,933.91	6,582.44	24.44	112.02	162.77	515.92	2,454.38	2,857.01	2,721.32	135.69	21.055	
6,850.00	6,786.56	6,965.37	6,613.89	24.65	112.09	161.23	515.71	2,455.14	2,892.58	2,756.69	135.89	21.287	
6,900.00	6,818.69	6,994.03	6,642.54	24.87	112.16	159.37	515.51	2,455.86	2,930.67	2,794.61	136.06	21.539	
6,950.00	6,847.72	7,019.72	6,668.22	25.10	112.22	157.04	515.32	2,456.53	2,971.06	2,834.85	136.22	21.811	
7,000.00	6,873.46	7,042.28	6,690.77	25.34	112.27	154.05	515.16	2,457.13	3,013.50	2,877.15	136.35	22.101	
7,050.00	6,895.77	7,061.58	6,710.07	25.60	112.32	150.09	515.01	2,457.66	3,057.70	2,921.24	136.46	22.407	
7,100.00	6,914.50	7,077.52	6,726.00	25.87	112.36	144.68	514.89	2,458.11	3,103.41	2,966.86	136.55	22.727	
7,150.00	6,929.54	7,090.01	6,738.49	26.15	112.39	137.04	514.79	2,458.47	3,150.33	3,013.71	136.62	23.059	
7,200.00	6,940.80	7,098.99	6,747.46	26.44	112.41	126.04	514.72	2,458.73	3,198.18	3,061.50	136.67	23.400	
7,250.00	6,948.20	7,104.41	6,752.88	26.75	112.42	110.50	514.67	2,458.89	3,246.65	3,109.94	136.70	23.749	
7,300.00	6,951.70	7,106.27	6,754.74	27.07	112.43	90.84	514.66	2,458.94	3,295.44	3,158.72	136.72	24.104	
7,321.06	6,952.00	7,105.98	6,754.45	27.20	112.43	82.16	514.66	2,458.93	3,316.02	3,179.30	136.72	24.254	
7,400.00	6,951.82	7,103.72	6,752.19	27.74	112.42	81.98	514.68	2,458.87	3,393.17	3,256.45	136.72	24.818	
7,500.00	6,951.60	7,100.87	6,749.34	28.49	112.41	81.75	514.70	2,458.78	3,491.02	3,354.30	136.73	25.533	
7,600.00	6,951.37	7,098.04	6,746.51	29.30	112.41	81.52	514.72	2,458.70	3,588.99	3,452.25	136.74	26.248	
7,700.00	6,951.15	7,095.22	6,743.70	30.18	112.40	81.30	514.75	2,458.62	3,687.06	3,550.31	136.75	26.963	
7,800.00	6,950.92	7,092.43	6,740.90	31.12	112.39	81.08	514.77	2,458.54	3,785.23	3,648.47	136.76	27.678	
7,900.00	6,950.70	7,089.65	6,738.12	32.11	112.39	80.86	514.79	2,458.46	3,883.49	3,746.71	136.78	28.393	
8,000.00	6,950.47	7,086.88	6,735.36	33.15	112.38	80.64	514.81	2,458.38	3,981.83	3,845.04	136.79	29.109	
8,100.00	6,950.25	7,084.13	6,732.61	34.23	112.37	80.42	514.84	2,458.30	4,080.26	3,943.45	136.81	29.824	
8,200.00	6,950.03	7,081.40	6,729.88	35.35	112.37	80.20	514.86	2,458.22	4,178.75	4,041.92	136.83	30.539	
8,300.00	6,949.80	7,078.68	6,727.16	36.51	112.36	79.99	514.88	2,458.14	4,277.32	4,140.46	136.86	31.254	
8,400.00	6,949.58	7,075.98	6,724.47	37.70	112.36	79.78	514.90	2,458.07	4,375.95	4,239.07	136.88	31.969	
8,500.00	6,949.35	7,073.30	6,721.78	38.92	112.35	79.57	514.92	2,457.99	4,474.63	4,337.73	136.90	32.684	
8,600.00	6,949.13	7,070.63	6,719.11	40.17	112.34	79.36	514.94	2,457.92	4,573.38	4,436.44	136.93	33.399	
8,700.00	6,948.90	7,067.98	6,716.46	41.44	112.34	79.15	514.96	2,457.84	4,672.17	4,535.21	136.96	34.114	
8,800.00	6,948.68	7,065.34	6,713.82	42.73	112.33	78.94	514.98	2,457.77	4,771.01	4,634.02	136.99	34.828	
8,900.00	6,948.45	7,062.71	6,711.20	44.04	112.32	78.74	515.00	2,457.69	4,869.90	4,732.88	137.02	35.542	
9,000.00	6,948.23	7,060.10	6,708.59	45.38	112.32	78.53	515.02	2,457.62	4,968.83	4,831.78	137.05	36.256	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 349-MWD OWSG Rev5 — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	7,057.51	6,706.00	46.72	112.31	78.33	515.04	2,457.55	5,067.80	4,930.72	137.08	36.970	
9,200.00	6,947.78	7,054.93	6,703.42	48.09	112.31	78.13	515.06	2,457.48	5,166.81	5,029.70	137.11	37.683	
9,300.00	6,947.55	7,052.37	6,700.86	49.47	112.30	77.93	515.08	2,457.41	5,265.86	5,128.71	137.14	38.397	
9,400.00	6,947.33	7,049.82	6,698.31	50.86	112.29	77.73	515.10	2,457.34	5,364.94	5,227.76	137.18	39.109	
9,500.00	6,947.10	7,047.28	6,695.78	52.26	112.29	77.53	515.12	2,457.27	5,464.05	5,326.83	137.21	39.822	
9,600.00	6,946.88	7,044.76	6,693.26	53.68	112.28	77.34	515.14	2,457.20	5,563.19	5,425.94	137.25	40.534	
9,700.00	6,946.66	7,042.25	6,690.75	55.10	112.27	77.15	515.16	2,457.13	5,662.36	5,525.08	137.29	41.245	
9,800.00	6,946.43	7,039.76	6,688.26	56.54	112.27	76.95	515.18	2,457.06	5,761.56	5,624.24	137.32	41.956	
9,900.00	6,946.21	7,037.28	6,685.78	57.98	112.26	76.76	515.19	2,457.00	5,860.78	5,723.42	137.36	42.667	
10,000.00	6,945.98	7,034.82	6,683.31	59.43	112.26	76.57	515.21	2,456.93	5,960.03	5,822.63	137.40	43.378	
10,100.00	6,945.76	7,032.36	6,680.86	60.89	112.25	76.38	515.23	2,456.86	6,059.30	5,921.87	137.44	44.087	
10,200.00	6,945.53	7,029.93	6,678.43	62.36	112.25	76.20	515.25	2,456.80	6,158.60	6,021.12	137.48	44.797	
10,300.00	6,945.31	7,027.50	6,676.00	63.83	112.24	76.01	515.27	2,456.73	6,257.92	6,120.40	137.52	45.506	
10,400.00	6,945.08	7,025.09	6,673.59	65.31	112.23	75.83	515.28	2,456.67	6,357.25	6,219.69	137.56	46.214	
10,500.00	6,944.86	7,022.69	6,671.20	66.79	112.23	75.64	515.30	2,456.60	6,456.61	6,319.01	137.60	46.922	
10,600.00	6,944.63	7,020.31	6,668.81	68.28	112.22	75.46	515.32	2,456.54	6,555.98	6,418.34	137.65	47.629	
10,700.00	6,944.41	7,017.94	6,666.44	69.78	112.22	75.28	515.34	2,456.48	6,655.37	6,517.69	137.69	48.336	
10,800.00	6,944.18	7,015.58	6,664.08	71.28	112.21	75.10	515.35	2,456.42	6,754.78	6,617.05	137.73	49.042	
10,900.00	6,943.96	7,013.23	6,661.74	72.78	112.21	74.92	515.37	2,456.35	6,854.21	6,716.43	137.78	49.748	
11,000.00	6,943.73	7,010.90	6,659.40	74.29	112.20	74.75	515.39	2,456.29	6,953.65	6,815.83	137.82	50.453	
11,100.00	6,943.51	7,008.58	6,657.08	75.80	112.19	74.57	515.40	2,456.23	7,053.11	6,915.24	137.87	51.158	
11,200.00	6,943.29	7,006.27	6,654.78	77.32	112.19	74.40	515.42	2,456.17	7,152.58	7,014.66	137.92	51.861	
11,300.00	6,943.06	7,003.97	6,652.48	78.84	112.18	74.23	515.44	2,456.11	7,252.06	7,114.09	137.96	52.565	
11,400.00	6,942.84	7,001.69	6,650.20	80.36	112.18	74.05	515.45	2,456.05	7,351.56	7,213.54	138.01	53.267	
11,500.00	6,942.61	6,999.42	6,647.93	81.88	112.17	73.88	515.47	2,456.00	7,451.07	7,313.00	138.06	53.969	
11,600.00	6,942.39	6,997.16	6,645.67	83.41	112.17	73.71	515.49	2,455.94	7,550.59	7,412.48	138.11	54.670	
11,700.00	6,942.16	6,994.91	6,643.42	84.94	112.16	73.55	515.50	2,455.88	7,650.12	7,511.96	138.16	55.371	
11,800.00	6,941.94	6,992.67	6,641.19	86.47	112.16	73.38	515.52	2,455.82	7,749.66	7,611.45	138.21	56.070	
11,900.00	6,941.71	6,990.45	6,638.97	88.01	112.15	73.21	515.53	2,455.77	7,849.22	7,710.96	138.26	56.770	
12,000.00	6,941.49	6,988.24	6,636.75	89.55	112.15	73.05	515.55	2,455.71	7,948.79	7,810.47	138.32	57.468	
12,100.00	6,941.26	6,986.04	6,634.55	91.09	112.14	72.89	515.56	2,455.65	8,048.36	7,909.99	138.37	58.166	
12,200.00	6,941.04	6,983.85	6,632.37	92.63	112.14	72.72	515.58	2,455.60	8,147.95	8,009.52	138.42	58.863	
12,300.00	6,940.81	6,981.67	6,630.19	94.18	112.13	72.56	515.59	2,455.54	8,247.54	8,109.06	138.48	59.559	
12,400.00	6,940.59	6,979.51	6,628.02	95.72	112.13	72.40	515.61	2,455.49	8,347.14	8,208.61	138.53	60.254	
12,500.00	6,940.36	6,977.35	6,625.87	97.27	112.12	72.24	515.62	2,455.43	8,446.76	8,308.17	138.59	60.949	
12,600.00	6,940.14	6,975.21	6,623.73	98.82	112.11	72.09	515.64	2,455.38	8,546.38	8,407.73	138.64	61.643	
12,700.00	6,939.92	6,973.07	6,621.60	100.37	112.11	71.93	515.65	2,455.33	8,646.01	8,507.31	138.70	62.336	
12,800.00	6,939.69	6,970.95	6,619.47	101.92	112.10	71.77	515.67	2,455.27	8,745.64	8,606.88	138.76	63.028	
12,900.00	6,939.47	6,968.84	6,617.36	103.48	112.10	71.62	515.68	2,455.22	8,845.29	8,706.47	138.82	63.720	
13,000.00	6,939.24	6,966.74	6,615.27	105.03	112.09	71.47	515.70	2,455.17	8,944.94	8,806.06	138.87	64.410	
13,100.00	6,939.02	6,964.65	6,613.18	106.59	112.09	71.31	515.71	2,455.12	9,044.60	8,905.66	138.93	65.100	
13,200.00	6,938.79	6,962.58	6,611.10	108.15	112.08	71.16	515.73	2,455.07	9,144.26	9,005.27	138.99	65.789	
13,300.00	6,938.57	6,960.51	6,609.03	109.71	112.08	71.01	515.74	2,455.02	9,243.93	9,104.88	139.05	66.477	
13,400.00	6,938.34	6,958.45	6,606.98	111.27	112.08	70.86	515.75	2,454.97	9,343.61	9,204.50	139.12	67.165	
13,500.00	6,938.12	6,956.40	6,604.93	112.83	112.07	70.72	515.77	2,454.92	9,443.30	9,304.12	139.18	67.851	
13,600.00	6,937.89	6,954.37	6,602.89	114.40	112.07	70.57	515.78	2,454.87	9,542.99	9,403.75	139.24	68.537	
13,700.00	6,937.67	6,952.34	6,600.87	115.96	112.06	70.42	515.79	2,454.82	9,642.68	9,503.38	139.30	69.221	
13,800.00	6,937.44	6,950.32	6,598.85	117.53	112.06	70.28	515.81	2,454.77	9,742.39	9,603.02	139.37	69.905	
13,900.00	6,937.22	6,948.32	6,596.85	119.09	112.05	70.13	515.82	2,454.72	9,842.09	9,702.66	139.43	70.588	
14,000.00	6,936.99	6,946.32	6,594.85	120.66	112.05	69.99	515.83	2,454.67	9,941.81	9,802.31	139.50	71.270	
14,100.00	6,936.77	6,944.34	6,592.87	122.23	112.04	69.85	515.85	2,454.62	10,041.52	9,901.96	139.56	71.951	
14,200.00	6,936.55	6,942.36	6,590.89	123.80	112.04	69.71	515.86	2,454.58	10,141.25	10,001.62	139.63	72.631	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 349-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	6,940.40	6,588.93	125.37	112.03	69.57	515.87	2,454.53	10,240.98	10,101.28	139.69	73.311	
14,400.00	6,936.10	6,938.44	6,586.97	126.94	112.03	69.43	515.89	2,454.48	10,340.71	10,200.95	139.76	73.989	
14,500.00	6,935.87	6,936.49	6,585.02	128.51	112.02	69.29	515.90	2,454.44	10,440.45	10,300.62	139.83	74.666	
14,600.00	6,935.65	6,934.55	6,583.09	130.08	112.02	69.15	515.91	2,454.39	10,540.19	10,400.29	139.90	75.343	
14,700.00	6,935.42	6,932.63	6,581.16	131.65	112.01	69.01	515.92	2,454.35	10,639.93	10,499.97	139.97	76.018	
14,800.00	6,935.20	6,930.71	6,579.24	133.23	112.01	68.88	515.94	2,454.30	10,739.68	10,599.65	140.04	76.693	
14,900.00	6,934.97	6,928.80	6,577.34	134.80	112.00	68.74	515.95	2,454.26	10,839.44	10,699.33	140.11	77.366	
15,000.00	6,934.75	6,926.90	6,575.44	136.37	112.00	68.61	515.96	2,454.21	10,939.20	10,799.02	140.18	78.039	
15,100.00	6,934.52	6,925.01	6,573.55	137.95	112.00	68.48	515.97	2,454.17	11,038.96	10,898.71	140.25	78.711	
15,200.00	6,934.30	6,923.13	6,571.67	139.53	111.99	68.35	515.99	2,454.12	11,138.73	10,998.41	140.32	79.381	
15,300.00	6,934.07	6,921.26	6,569.79	141.10	111.99	68.22	516.00	2,454.08	11,238.50	11,098.11	140.39	80.051	
15,400.00	6,933.85	6,919.40	6,567.93	142.68	111.98	68.08	516.01	2,454.04	11,338.27	11,197.81	140.46	80.720	
15,500.00	6,933.62	6,917.54	6,566.08	144.26	111.98	67.96	516.02	2,453.99	11,438.05	11,297.51	140.54	81.387	
15,600.00	6,933.40	6,915.70	6,564.23	145.84	111.97	67.83	516.03	2,453.95	11,537.83	11,397.22	140.61	82.054	
15,700.00	6,933.18	6,913.86	6,562.40	147.42	111.97	67.70	516.04	2,453.91	11,637.61	11,496.93	140.69	82.720	
15,800.00	6,932.95	6,912.03	6,560.57	148.99	111.96	67.57	516.06	2,453.87	11,737.40	11,596.64	140.76	83.385	
15,900.00	6,932.73	6,910.21	6,558.75	150.57	111.96	67.45	516.07	2,453.83	11,837.19	11,696.35	140.84	84.048	
16,000.00	6,932.50	6,908.40	6,556.95	152.15	111.96	67.32	516.08	2,453.78	11,936.98	11,796.07	140.91	84.711	
16,100.00	6,932.28	6,906.60	6,555.14	153.74	111.95	67.20	516.09	2,453.74	12,036.78	11,895.79	140.99	85.373	
16,200.00	6,932.05	6,904.81	6,553.35	155.32	111.95	67.07	516.10	2,453.70	12,136.58	11,995.51	141.07	86.033	
16,300.00	6,931.83	6,903.03	6,551.57	156.90	111.94	66.95	516.11	2,453.66	12,236.38	12,095.24	141.15	86.693	
16,400.00	6,931.60	6,901.25	6,549.79	158.48	111.94	66.83	516.12	2,453.62	12,336.19	12,194.96	141.22	87.351	
16,500.00	6,931.38	6,899.48	6,548.03	160.06	111.93	66.71	516.13	2,453.58	12,436.00	12,294.69	141.30	88.009	
16,600.00	6,931.15	6,897.72	6,546.27	161.65	111.93	66.59	516.15	2,453.54	12,535.81	12,394.43	141.38	88.665	
16,700.00	6,930.93	6,895.97	6,544.52	163.23	111.93	66.47	516.16	2,453.50	12,635.62	12,494.16	141.46	89.321	
16,800.00	6,930.70	6,894.23	6,542.78	164.81	111.92	66.35	516.17	2,453.46	12,735.44	12,593.90	141.54	89.975	
16,900.00	6,930.48	6,892.50	6,541.04	166.40	111.92	66.23	516.18	2,453.43	12,835.26	12,693.63	141.62	90.628	
17,000.00	6,930.25	6,890.77	6,539.32	167.98	111.91	66.12	516.19	2,453.39	12,935.08	12,793.37	141.71	91.281	
17,100.00	6,930.03	6,889.05	6,537.60	169.56	111.91	66.00	516.20	2,453.35	13,034.90	12,893.11	141.79	91.932	
17,200.00	6,929.81	6,887.34	6,535.89	171.15	111.91	65.88	516.21	2,453.31	13,134.73	12,992.86	141.87	92.582	
17,300.00	6,929.58	6,885.64	6,534.18	172.73	111.90	65.77	516.22	2,453.27	13,234.56	13,092.60	141.95	93.231	
17,400.00	6,929.36	6,883.94	6,532.49	174.32	111.90	65.65	516.23	2,453.24	13,334.39	13,192.35	142.04	93.879	
17,500.00	6,929.13	6,882.26	6,530.80	175.91	111.89	65.54	516.24	2,453.20	13,434.22	13,292.10	142.12	94.526	
17,600.00	6,928.91	6,880.58	6,529.13	177.49	111.89	65.43	516.25	2,453.16	13,534.06	13,391.85	142.21	95.172	
17,700.00	6,928.68	6,878.91	6,527.45	179.08	111.89	65.32	516.26	2,453.13	13,633.89	13,491.60	142.29	95.817	
17,800.00	6,928.46	6,877.24	6,525.79	180.66	111.88	65.20	516.27	2,453.09	13,733.73	13,591.35	142.38	96.460	
17,900.00	6,928.23	6,875.59	6,524.14	182.25	111.88	65.09	516.28	2,453.05	13,833.57	13,691.11	142.46	97.103	
18,000.00	6,928.01	6,873.94	6,522.49	183.84	111.87	64.98	516.29	2,453.02	13,933.42	13,790.87	142.55	97.745	
18,100.00	6,927.78	6,872.30	6,520.85	185.43	111.87	64.88	516.30	2,452.98	14,033.26	13,890.63	142.64	98.385	
18,200.00	6,927.56	6,870.66	6,519.21	187.01	111.87	64.77	516.31	2,452.95	14,133.11	13,990.38	142.72	99.024	
18,300.00	6,927.33	6,869.04	6,517.59	188.60	111.86	64.66	516.32	2,452.91	14,232.96	14,090.15	142.81	99.663	
18,400.00	6,927.11	6,867.42	6,515.97	190.19	111.86	64.55	516.33	2,452.88	14,332.81	14,189.91	142.90	100.300	
18,500.00	6,926.88	6,865.80	6,514.36	191.78	111.85	64.45	516.34	2,452.84	14,432.66	14,289.67	142.99	100.936	
18,600.00	6,926.66	6,864.20	6,512.75	193.37	111.85	64.34	516.35	2,452.81	14,532.52	14,389.44	143.08	101.571	
18,700.00	6,926.44	6,862.60	6,511.16	194.96	111.85	64.23	516.36	2,452.78	14,632.37	14,489.20	143.17	102.205	
18,800.00	6,926.21	6,861.01	6,509.57	196.54	111.84	64.13	516.37	2,452.74	14,732.23	14,588.97	143.26	102.837	
18,900.00	6,925.99	6,859.43	6,507.98	198.13	111.84	64.03	516.38	2,452.71	14,832.09	14,688.74	143.35	103.469	
19,000.00	6,925.76	6,857.85	6,506.41	199.72	111.84	63.92	516.38	2,452.67	14,931.95	14,788.51	143.44	104.100	
19,100.00	6,925.54	6,856.28	6,504.84	201.31	111.83	63.82	516.39	2,452.64	15,031.81	14,888.28	143.53	104.729	
19,200.00	6,925.31	1,189.00	1,166.83	202.90	5.31	11.73	996.34	1,330.36	15,131.77	15,079.30	52.47	288.413	
19,300.00	6,925.09	1,189.00	1,166.83	204.49	5.31	11.73	996.34	1,330.36	15,224.17	15,171.57	52.60	289.430	
19,400.00	6,924.86	1,189.00	1,166.83	206.08	5.31	11.73	996.34	1,330.36	15,316.67	15,263.93	52.73	290.448	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 153C - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 349-MWD OWSG Rev5

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Rule Assigned: Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	1,189.00	1,166.83	207.67	5.31	11.73	996.34	1,330.36	15,409.26	15,356.39	52.87	291.467	
19,600.00	6,924.41	1,189.00	1,166.83	209.26	5.31	11.73	996.34	1,330.36	15,501.94	15,448.94	53.00	292.487	
19,700.00	6,924.19	1,189.00	1,166.83	210.85	5.31	11.73	996.34	1,330.36	15,594.72	15,541.59	53.13	293.509	
19,800.00	6,923.96	1,172.89	1,152.11	212.44	5.26	11.72	998.96	1,324.37	15,687.50	15,634.23	53.27	294.466	
19,900.00	6,923.74	1,158.00	1,138.44	214.04	5.20	11.72	1,001.33	1,318.95	15,780.45	15,727.03	53.42	295.409	
20,000.00	6,923.51	1,158.00	1,138.44	215.63	5.20	11.72	1,001.33	1,318.95	15,873.41	15,819.86	53.55	296.429	
20,100.00	6,923.29	1,158.00	1,138.44	217.22	5.20	11.72	1,001.33	1,318.95	15,966.46	15,912.78	53.68	297.449	
20,200.00	6,923.07	1,158.00	1,138.44	218.81	5.20	11.72	1,001.33	1,318.95	16,059.59	16,005.79	53.81	298.470	
20,300.00	6,922.84	1,158.00	1,138.44	220.40	5.20	11.72	1,001.33	1,318.95	16,152.81	16,098.87	53.93	299.491	
20,400.00	6,922.62	1,158.00	1,138.44	221.99	5.20	11.72	1,001.33	1,318.95	16,246.10	16,192.04	54.06	300.512	
20,500.00	6,922.39	1,139.58	1,121.47	223.59	5.14	11.71	1,004.15	1,312.36	16,339.41	16,285.20	54.21	301.400	
20,600.00	6,922.17	1,126.00	1,108.93	225.18	5.09	11.70	1,006.15	1,307.57	16,432.83	16,378.48	54.35	302.367	
20,674.13	6,922.00	1,126.00	1,108.93	226.36	5.09	11.70	1,006.15	1,307.57	16,502.11	16,447.66	54.44	303.122	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 374-B001Mb_MWD+HRGM — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-86.16	997.87	-14,874.32	14,907.88				
100.00	100.00	38.06	38.06	0.25	0.07	-86.16	997.89	-14,874.32	14,907.76	14,907.44	0.32	N/A	
200.00	200.00	138.21	138.21	0.61	0.25	-86.16	998.11	-14,874.30	14,907.75	14,906.90	0.86	N/A	
300.00	300.00	238.37	238.37	0.97	0.43	-86.16	998.56	-14,874.27	14,907.75	14,906.36	1.40	N/A	
400.00	400.00	338.52	338.52	1.33	0.61	-86.16	999.26	-14,874.22	14,907.75	14,905.82	1.93	7,712.265	
444.99	444.99	383.00	382.99	1.49	0.70	-86.16	999.66	-14,874.19	14,907.75	14,905.56	2.19	6,806.936	
500.00	500.00	414.00	413.99	1.68	0.81	-86.15	1,000.09	-14,874.19	14,907.79	14,905.29	2.50	5,966.986	
606.93	606.91	445.00	444.98	2.05	0.93	51.36	1,000.75	-14,874.25	14,906.97	14,903.99	2.98	5,007.524	
700.00	699.91	476.00	475.97	2.37	1.04	51.37	1,001.74	-14,874.48	14,905.64	14,902.24	3.40	4,383.191	
800.00	799.84	491.58	491.53	2.71	1.10	51.37	1,002.39	-14,874.67	14,904.70	14,900.90	3.80	3,923.822	
900.00	899.77	507.00	506.93	3.06	1.15	51.38	1,003.13	-14,874.90	14,904.28	14,900.08	4.20	3,548.334	
929.60	929.35	520.31	520.22	3.16	1.20	51.38	1,003.86	-14,875.14	14,904.25	14,899.90	4.35	3,424.789	
1,000.00	999.70	537.00	536.87	3.41	1.26	51.39	1,004.92	-14,875.49	14,904.39	14,899.73	4.66	3,199.680	
1,100.00	1,099.63	552.18	552.01	3.76	1.32	51.39	1,006.00	-14,875.87	14,905.04	14,899.97	5.06	2,942.804	
1,200.00	1,199.56	568.00	567.77	4.11	1.38	51.40	1,007.23	-14,876.34	14,906.25	14,900.77	5.48	2,722.326	
1,300.00	1,299.49	583.38	583.09	4.47	1.44	51.41	1,008.54	-14,876.88	14,908.02	14,902.14	5.89	2,532.692	
1,400.00	1,399.42	599.00	598.63	4.83	1.50	51.41	1,010.02	-14,877.51	14,910.37	14,904.08	6.30	2,367.316	
1,500.00	1,499.35	616.10	615.61	5.19	1.56	51.42	1,011.77	-14,878.29	14,913.29	14,906.57	6.72	2,220.131	
1,600.00	1,599.28	630.00	629.42	5.54	1.61	51.43	1,013.30	-14,878.97	14,916.75	14,909.63	7.12	2,093.687	
1,700.00	1,699.21	630.00	629.42	5.90	1.61	51.43	1,013.30	-14,878.97	14,920.85	14,913.37	7.48	1,994.553	
1,800.00	1,799.14	659.81	658.95	6.26	1.72	51.45	1,017.00	-14,880.66	14,925.39	14,917.44	7.95	1,877.408	
1,900.00	1,899.07	691.00	689.73	6.62	1.84	51.47	1,021.55	-14,882.78	14,930.67	14,922.25	8.42	1,772.312	
2,000.00	1,999.00	691.00	689.73	6.98	1.84	51.47	1,021.55	-14,882.78	14,936.37	14,927.59	8.78	1,701.118	
2,100.00	2,098.94	691.00	689.73	7.34	1.84	51.47	1,021.55	-14,882.78	14,942.74	14,933.60	9.14	1,635.578	
2,200.00	2,198.87	722.00	720.19	7.70	1.97	51.49	1,026.71	-14,885.30	14,949.73	14,940.11	9.61	1,555.193	
2,300.00	2,298.80	722.00	720.19	8.06	1.97	51.49	1,026.71	-14,885.30	14,957.22	14,947.25	9.97	1,500.586	
2,400.00	2,398.73	722.00	720.19	8.42	1.97	51.49	1,026.71	-14,885.30	14,965.38	14,955.06	10.32	1,449.855	
2,500.00	2,498.66	753.00	750.51	8.79	2.09	51.51	1,032.48	-14,888.22	14,974.07	14,963.27	10.80	1,386.444	
2,600.00	2,598.59	753.00	750.51	9.15	2.09	51.51	1,032.48	-14,888.22	14,983.35	14,972.20	11.15	1,343.366	
2,700.00	2,698.52	783.00	779.68	9.51	2.21	51.54	1,038.72	-14,891.40	14,993.26	14,981.63	11.63	1,289.139	
2,800.00	2,798.45	783.00	779.68	9.87	2.21	51.54	1,038.72	-14,891.40	15,003.67	14,991.69	11.98	1,252.145	
2,900.00	2,898.38	783.00	779.68	10.23	2.21	51.54	1,038.72	-14,891.40	15,014.74	15,002.41	12.33	1,217.384	
3,000.00	2,998.31	814.00	809.63	10.59	2.34	51.57	1,045.81	-14,895.14	15,026.42	15,013.60	12.82	1,172.398	
3,100.00	3,098.24	814.00	809.63	10.96	2.34	51.57	1,045.81	-14,895.14	15,038.61	15,025.44	13.17	1,142.191	
3,200.00	3,198.17	814.00	809.63	11.32	2.34	51.57	1,045.81	-14,895.14	15,051.45	15,037.93	13.52	1,113.663	
3,300.00	3,298.10	814.00	809.63	11.68	2.34	51.57	1,045.81	-14,895.14	15,064.94	15,051.08	13.86	1,086.684	
3,400.00	3,398.03	814.00	809.63	12.04	2.34	51.57	1,045.81	-14,895.14	15,079.09	15,064.88	14.21	1,061.139	
3,500.00	3,497.96	842.95	837.40	12.40	2.48	51.60	1,052.93	-14,899.15	15,093.55	15,078.86	14.69	1,027.634	
3,600.00	3,597.89	876.00	868.84	12.77	2.64	51.63	1,061.64	-14,904.40	15,109.03	15,093.85	15.18	995.187	
3,700.00	3,697.82	876.00	868.84	13.13	2.64	51.63	1,061.64	-14,904.40	15,124.73	15,109.20	15.53	974.143	
3,800.00	3,797.75	876.00	868.84	13.49	2.64	51.63	1,061.64	-14,904.40	15,141.07	15,125.20	15.87	954.114	
3,900.00	3,897.68	876.00	868.84	13.85	2.64	51.63	1,061.64	-14,904.40	15,158.05	15,141.84	16.21	935.033	
4,000.00	3,997.61	876.00	868.84	14.21	2.64	51.63	1,061.64	-14,904.40	15,175.68	15,159.12	16.55	916.839	
4,100.00	4,097.54	891.56	883.53	14.58	2.72	51.65	1,065.98	-14,907.11	15,193.85	15,176.88	16.97	895.521	
4,200.00	4,197.47	907.00	898.04	14.94	2.80	51.67	1,070.47	-14,909.92	15,212.64	15,195.26	17.38	875.345	
4,300.00	4,297.40	907.00	898.04	15.30	2.80	51.67	1,070.47	-14,909.92	15,231.98	15,214.26	17.72	859.770	
4,400.00	4,397.33	923.68	913.62	15.66	2.88	51.69	1,075.51	-14,913.06	15,251.89	15,233.75	18.14	840.975	
4,500.00	4,497.26	938.00	926.95	16.03	2.96	51.71	1,079.97	-14,915.83	15,272.34	15,253.80	18.54	823.641	
4,600.00	4,597.19	938.00	926.95	16.39	2.96	51.71	1,079.97	-14,915.83	15,293.38	15,274.50	18.88	810.194	
4,700.00	4,697.12	970.00	956.49	16.75	3.14	51.75	1,090.49	-14,922.19	15,314.89	15,295.52	19.38	790.407	
4,800.00	4,797.05	970.00	956.49	17.11	3.14	51.75	1,090.49	-14,922.19	15,336.98	15,317.28	19.71	778.241	
4,900.00	4,896.99	1,002.00	985.72	17.47	3.33	51.79	1,101.72	-14,928.80	15,359.61	15,339.40	20.21	759.918	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 374-B001Mb_MWD+HRGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	4,996.92	1,002.00	985.72	17.84	3.33	51.79	1,101.72	-14,928.80	15,382.75	15,362.21	20.54	748.881	
5,100.00	5,096.85	1,018.20	1,000.38	18.20	3.43	51.82	1,107.67	-14,932.24	15,406.44	15,385.48	20.96	734.999	
5,200.00	5,196.78	1,033.00	1,013.70	18.56	3.52	51.84	1,113.28	-14,935.45	15,430.67	15,409.30	21.37	722.011	
5,300.00	5,296.71	1,033.00	1,013.70	18.92	3.52	51.84	1,113.28	-14,935.45	15,455.47	15,433.77	21.70	712.342	
5,400.00	5,396.64	1,064.00	1,041.34	19.29	3.72	51.89	1,125.54	-14,942.30	15,480.72	15,458.51	22.21	697.157	
5,500.00	5,496.57	1,064.00	1,041.34	19.65	3.72	51.89	1,125.54	-14,942.30	15,506.55	15,484.02	22.53	688.329	
5,600.00	5,596.50	1,095.00	1,068.60	20.01	3.94	51.94	1,138.50	-14,949.37	15,532.92	15,509.87	23.04	674.102	
5,700.00	5,696.43	1,316.00	1,259.59	20.37	5.60	52.33	1,238.81	-14,997.25	15,559.15	15,534.27	24.88	625.308	
5,800.00	5,796.36	1,347.00	1,286.24	20.74	5.84	52.38	1,253.17	-15,003.87	15,585.35	15,559.92	25.43	612.981	
5,900.00	5,896.29	1,372.37	1,308.02	21.10	6.05	52.43	1,264.99	-15,009.35	15,611.96	15,586.03	25.93	602.070	
6,000.00	5,996.22	1,409.00	1,339.31	21.46	6.34	52.49	1,282.30	-15,017.28	15,638.98	15,612.46	26.52	589.767	
6,100.00	6,096.15	1,409.00	1,339.31	21.82	6.34	52.49	1,282.30	-15,017.28	15,666.49	15,639.65	26.83	583.865	
6,200.00	6,196.08	1,470.00	1,391.06	22.19	6.85	52.61	1,311.60	-15,030.85	15,694.44	15,666.83	27.61	568.473	
6,300.00	6,296.01	1,470.00	1,391.06	22.55	6.85	52.61	1,311.60	-15,030.85	15,722.80	15,694.88	27.92	563.128	
6,335.60	6,331.59	1,470.00	1,391.06	22.68	6.85	52.61	1,311.60	-15,030.85	15,733.04	15,705.01	28.03	561.265	
6,350.00	6,345.97	1,470.00	1,391.06	22.73	6.85	34.90	1,311.60	-15,030.85	15,737.04	15,708.97	28.08	560.525	
6,400.00	6,395.75	1,470.00	1,391.06	22.91	6.85	17.09	1,311.60	-15,030.85	15,748.61	15,720.38	28.23	557.873	
6,450.00	6,445.03	1,470.00	1,391.06	23.10	6.85	12.39	1,311.60	-15,030.85	15,756.49	15,728.11	28.38	555.111	
6,500.00	6,493.52	6,589.14	6,193.58	23.29	33.35	15.39	2,475.73	-15,606.37	15,661.19	15,607.68	53.52	292.648	
6,550.00	6,540.91	6,636.88	6,241.30	23.48	33.47	14.46	2,476.90	-15,606.90	15,646.50	15,592.68	53.81	290.746	
6,600.00	6,586.91	6,683.26	6,287.67	23.66	33.59	14.04	2,478.04	-15,607.42	15,628.16	15,574.05	54.11	288.844	
6,650.00	6,631.24	6,728.01	6,332.39	23.85	33.70	13.95	2,479.14	-15,607.92	15,606.28	15,551.89	54.39	286.955	
6,700.00	6,673.63	6,770.84	6,375.21	24.05	33.80	14.10	2,480.19	-15,608.40	15,581.01	15,526.36	54.65	285.091	
6,750.00	6,713.80	6,811.49	6,415.85	24.24	33.91	14.48	2,481.18	-15,608.85	15,552.49	15,497.59	54.91	283.261	
6,800.00	6,751.52	6,849.71	6,454.06	24.44	34.00	15.08	2,482.12	-15,609.28	15,520.92	15,465.77	55.14	281.475	
6,850.00	6,786.56	6,885.27	6,489.60	24.65	34.09	15.93	2,482.99	-15,609.67	15,486.47	15,431.11	55.36	279.741	
6,900.00	6,818.69	6,917.95	6,522.26	24.87	34.17	17.08	2,483.79	-15,610.04	15,449.36	15,393.80	55.56	278.068	
6,950.00	6,847.72	6,947.53	6,551.84	25.10	34.25	18.62	2,484.51	-15,610.37	15,409.83	15,354.09	55.74	276.460	
7,000.00	6,873.46	6,973.86	6,578.15	25.34	34.31	20.67	2,485.15	-15,610.66	15,368.12	15,312.22	55.90	274.925	
7,050.00	6,895.77	6,996.75	6,601.03	25.60	34.37	23.45	2,485.71	-15,610.91	15,324.48	15,268.44	56.04	273.466	
7,100.00	6,914.50	7,016.06	6,620.35	25.87	34.42	27.34	2,486.18	-15,611.13	15,279.18	15,223.03	56.16	272.085	
7,150.00	6,929.54	7,031.69	6,635.97	26.15	34.46	32.98	2,486.56	-15,611.30	15,232.51	15,176.26	56.25	270.787	
7,200.00	6,940.80	7,043.53	6,647.81	26.44	34.49	41.51	2,486.85	-15,611.43	15,184.75	15,128.42	56.33	269.570	
7,250.00	6,948.20	7,051.52	6,655.79	26.75	34.51	54.88	2,487.05	-15,611.52	15,136.20	15,079.81	56.39	268.434	
7,300.00	6,951.70	7,055.59	6,659.86	27.07	34.52	75.21	2,487.15	-15,611.57	15,087.15	15,030.72	56.43	267.377	
7,321.06	6,952.00	7,056.13	6,660.40	27.20	34.52	85.67	2,487.16	-15,611.57	15,066.41	15,009.97	56.44	266.954	
7,400.00	6,951.82	7,056.84	6,661.11	27.74	34.52	85.69	2,487.18	-15,611.58	14,988.66	14,932.19	56.48	265.399	
7,500.00	6,951.60	7,057.74	6,662.01	28.49	34.52	85.71	2,487.20	-15,611.59	14,890.19	14,833.66	56.53	263.413	
7,600.00	6,951.37	7,058.64	6,662.91	29.30	34.52	85.73	2,487.22	-15,611.60	14,791.74	14,735.15	56.58	261.409	
7,700.00	6,951.15	7,059.55	6,663.81	30.18	34.53	85.75	2,487.24	-15,611.61	14,693.30	14,636.66	56.65	259.387	
7,800.00	6,950.92	7,060.45	6,664.71	31.12	34.53	85.76	2,487.27	-15,611.62	14,594.89	14,538.18	56.71	257.348	
7,900.00	6,950.70	7,061.35	6,665.61	32.11	34.53	85.78	2,487.29	-15,611.63	14,496.50	14,439.71	56.78	255.291	
8,000.00	6,950.47	7,062.25	6,666.51	33.15	34.53	85.80	2,487.31	-15,611.64	14,398.13	14,341.27	56.86	253.216	
8,100.00	6,950.25	7,063.15	6,667.41	34.23	34.54	85.82	2,487.33	-15,611.65	14,299.78	14,242.84	56.94	251.123	
8,200.00	6,950.03	7,064.05	6,668.31	35.35	34.54	85.84	2,487.35	-15,611.66	14,201.46	14,144.43	57.03	249.013	
8,300.00	6,949.80	7,064.95	6,669.21	36.51	34.54	85.86	2,487.38	-15,611.67	14,103.16	14,046.04	57.12	246.887	
8,400.00	6,949.58	7,065.85	6,670.12	37.70	34.54	85.88	2,487.40	-15,611.68	14,004.89	13,947.66	57.22	244.743	
8,500.00	6,949.35	7,066.75	6,671.02	38.92	34.55	85.90	2,487.42	-15,611.69	13,906.64	13,849.31	57.33	242.582	
8,600.00	6,949.13	7,067.65	6,671.92	40.17	34.55	85.92	2,487.44	-15,611.70	13,808.41	13,750.97	57.44	240.405	
8,700.00	6,948.90	7,068.55	6,672.82	41.44	34.55	85.94	2,487.46	-15,611.71	13,710.21	13,652.66	57.55	238.211	
8,800.00	6,948.68	7,069.45	6,673.72	42.73	34.55	85.96	2,487.48	-15,611.72	13,612.04	13,554.36	57.68	236.002	
8,900.00	6,948.45	7,070.35	6,674.62	44.04	34.55	85.98	2,487.51	-15,611.73	13,513.89	13,456.08	57.81	233.776	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 374-B001Mb_MWD+HRGM — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,000.00	6,948.23	7,071.26	6,675.52	45.38	34.56	86.00	2,487.53	-15,611.74	13,415.77	13,357.83	57.94	231.536	
9,100.00	6,948.00	7,072.16	6,676.42	46.72	34.56	86.02	2,487.55	-15,611.75	13,317.68	13,259.59	58.08	229.280	
9,200.00	6,947.78	7,073.06	6,677.32	48.09	34.56	86.04	2,487.57	-15,611.76	13,219.61	13,161.38	58.23	227.009	
9,300.00	6,947.55	7,073.96	6,678.22	49.47	34.56	86.06	2,487.59	-15,611.77	13,121.58	13,063.19	58.39	224.725	
9,400.00	6,947.33	7,074.86	6,679.12	50.86	34.57	86.08	2,487.62	-15,611.78	13,023.58	12,965.02	58.55	222.426	
9,500.00	6,947.10	7,075.76	6,680.02	52.26	34.57	86.10	2,487.64	-15,611.79	12,925.60	12,866.88	58.72	220.114	
9,600.00	6,946.88	7,076.66	6,680.92	53.68	34.57	86.12	2,487.66	-15,611.80	12,827.66	12,768.76	58.90	217.788	
9,700.00	6,946.66	7,077.56	6,681.82	55.10	34.57	86.14	2,487.68	-15,611.81	12,729.75	12,670.66	59.08	215.450	
9,800.00	6,946.43	7,078.46	6,682.72	56.54	34.57	86.16	2,487.70	-15,611.82	12,631.87	12,572.59	59.28	213.100	
9,900.00	6,946.21	7,079.36	6,683.62	57.98	34.58	86.18	2,487.73	-15,611.83	12,534.03	12,474.55	59.48	210.738	
10,000.00	6,945.98	7,080.26	6,684.52	59.43	34.58	86.20	2,487.75	-15,611.84	12,436.21	12,376.53	59.68	208.365	
10,100.00	6,945.76	7,081.16	6,685.42	60.89	34.58	86.22	2,487.77	-15,611.85	12,338.44	12,278.54	59.90	205.982	
10,200.00	6,945.53	7,082.06	6,686.32	62.36	34.58	86.24	2,487.79	-15,611.86	12,240.70	12,180.57	60.12	203.588	
10,300.00	6,945.31	7,082.96	6,687.22	63.83	34.59	86.26	2,487.81	-15,611.87	12,143.00	12,082.64	60.36	201.185	
10,400.00	6,945.08	7,083.86	6,688.12	65.31	34.59	86.28	2,487.84	-15,611.88	12,045.33	11,984.73	60.60	198.773	
10,500.00	6,944.86	7,084.76	6,689.02	66.79	34.59	86.30	2,487.86	-15,611.89	11,947.71	11,886.86	60.85	196.352	
10,600.00	6,944.63	7,085.66	6,689.92	68.28	34.59	86.32	2,487.88	-15,611.90	11,850.12	11,789.01	61.11	193.924	
10,700.00	6,944.41	7,086.56	6,690.81	69.78	34.59	86.34	2,487.90	-15,611.91	11,752.57	11,691.20	61.37	191.488	
10,800.00	6,944.18	7,087.46	6,691.71	71.28	34.60	86.36	2,487.92	-15,611.92	11,655.07	11,593.41	61.65	189.046	
10,900.00	6,943.96	7,088.36	6,692.61	72.78	34.60	86.38	2,487.95	-15,611.93	11,557.60	11,495.67	61.94	186.599	
11,000.00	6,943.73	7,089.26	6,693.51	74.29	34.60	86.40	2,487.97	-15,611.94	11,460.18	11,397.95	62.23	184.145	
11,100.00	6,943.51	7,090.16	6,694.41	75.80	34.60	86.42	2,487.99	-15,611.95	11,362.81	11,300.27	62.54	181.688	
11,200.00	6,943.29	7,091.06	6,695.31	77.32	34.61	86.44	2,488.01	-15,611.96	11,265.48	11,202.63	62.86	179.226	
11,300.00	6,943.06	7,091.96	6,696.21	78.84	34.61	86.46	2,488.03	-15,611.97	11,168.20	11,105.02	63.18	176.762	
11,400.00	6,942.84	7,092.86	6,697.11	80.36	34.61	86.48	2,488.05	-15,611.98	11,070.97	11,007.45	63.52	174.294	
11,500.00	6,942.61	7,093.76	6,698.01	81.88	34.61	86.50	2,488.08	-15,611.99	10,973.79	10,909.92	63.87	171.825	
11,600.00	6,942.39	7,094.66	6,698.91	83.41	34.62	86.52	2,488.10	-15,612.00	10,876.65	10,812.43	64.22	169.355	
11,700.00	6,942.16	7,095.56	6,699.81	84.94	34.62	86.54	2,488.12	-15,612.01	10,779.57	10,714.98	64.59	166.884	
11,800.00	6,941.94	7,096.45	6,700.71	86.47	34.62	86.56	2,488.14	-15,612.02	10,682.55	10,617.57	64.97	164.414	
11,900.00	6,941.71	7,097.35	6,701.61	88.01	34.62	86.58	2,488.16	-15,612.03	10,585.58	10,520.21	65.37	161.944	
12,000.00	6,941.49	7,098.25	6,702.51	89.55	34.62	86.60	2,488.19	-15,612.04	10,488.66	10,422.89	65.77	159.476	
12,100.00	6,941.26	7,099.15	6,703.40	91.09	34.63	86.62	2,488.21	-15,612.05	10,391.81	10,325.62	66.19	157.010	
12,200.00	6,941.04	7,100.05	6,704.30	92.63	34.63	86.64	2,488.23	-15,612.06	10,295.01	10,228.40	66.61	154.548	
12,300.00	6,940.81	7,100.95	6,705.20	94.18	34.63	86.66	2,488.25	-15,612.07	10,198.28	10,131.23	67.05	152.089	
12,400.00	6,940.59	7,101.85	6,706.10	95.72	34.63	86.68	2,488.27	-15,612.08	10,101.61	10,034.10	67.51	149.635	
12,500.00	6,940.36	7,102.75	6,707.00	97.27	34.64	86.70	2,488.30	-15,612.09	10,005.01	9,937.03	67.98	147.186	
12,600.00	6,940.14	7,103.65	6,707.90	98.82	34.64	86.72	2,488.32	-15,612.10	9,908.47	9,840.01	68.46	144.742	
12,700.00	6,939.92	7,104.55	6,708.80	100.37	34.64	86.74	2,488.34	-15,612.11	9,812.00	9,743.05	68.95	142.305	
12,800.00	6,939.69	7,105.45	6,709.70	101.92	34.64	86.76	2,488.36	-15,612.12	9,715.60	9,646.14	69.46	139.876	
12,900.00	6,939.47	7,106.35	6,710.60	103.48	34.64	86.78	2,488.38	-15,612.13	9,619.28	9,549.30	69.98	137.454	
13,000.00	6,939.24	7,107.25	6,711.49	105.03	34.65	86.80	2,488.41	-15,612.14	9,523.03	9,452.51	70.52	135.041	
13,100.00	6,939.02	7,108.14	6,712.39	106.59	34.65	86.82	2,488.43	-15,612.15	9,426.86	9,355.79	71.07	132.637	
13,200.00	6,938.79	7,109.04	6,713.29	108.15	34.65	86.84	2,488.45	-15,612.16	9,330.77	9,259.13	71.64	130.243	
13,300.00	6,938.57	7,109.94	6,714.19	109.71	34.65	86.86	2,488.47	-15,612.17	9,234.77	9,162.54	72.23	127.860	
13,400.00	6,938.34	7,110.84	6,715.09	111.27	34.66	86.88	2,488.49	-15,612.18	9,138.85	9,066.02	72.83	125.488	
13,500.00	6,938.12	7,111.74	6,715.99	112.83	34.66	86.90	2,488.51	-15,612.19	9,043.02	8,969.57	73.44	123.128	
13,600.00	6,937.89	7,112.64	6,716.89	114.40	34.66	86.91	2,488.54	-15,612.20	8,947.27	8,873.20	74.08	120.780	
13,700.00	6,937.67	7,113.54	6,717.78	115.96	34.66	86.93	2,488.56	-15,612.21	8,851.63	8,776.90	74.73	118.445	
13,800.00	6,937.44	7,114.44	6,718.68	117.53	34.66	86.95	2,488.58	-15,612.22	8,756.08	8,680.68	75.40	116.125	
13,900.00	6,937.22	7,115.33	6,719.58	119.09	34.67	86.97	2,488.60	-15,612.23	8,660.63	8,584.54	76.09	113.818	
14,000.00	6,936.99	7,116.23	6,720.48	120.66	34.67	86.99	2,488.62	-15,612.24	8,565.28	8,488.48	76.80	111.526	
14,100.00	6,936.77	7,117.13	6,721.38	122.23	34.67	87.01	2,488.65	-15,612.25	8,470.04	8,392.52	77.53	109.250	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY — **Offset Site Error:** 0.00 usft

Survey Program: 374-B001Mb_MWD+HRGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	6,936.55	7,118.03	6,722.28	123.80	34.67	87.03	2,488.67	-15,612.26	8,374.92	8,296.64	78.28	106.990	
14,300.00	6,936.32	7,118.93	6,723.17	125.37	34.68	87.05	2,488.69	-15,612.27	8,279.90	8,200.86	79.05	104.747	
14,400.00	6,936.10	7,119.83	6,724.07	126.94	34.68	87.07	2,488.71	-15,612.28	8,185.01	8,105.17	79.84	102.521	
14,500.00	6,935.87	7,120.73	6,724.97	128.51	34.68	87.09	2,488.73	-15,612.29	8,090.24	8,009.59	80.65	100.312	
14,600.00	6,935.65	7,121.62	6,725.87	130.08	34.68	87.11	2,488.76	-15,612.30	7,995.59	7,914.11	81.49	98.122	
14,700.00	6,935.42	7,122.52	6,726.77	131.65	34.68	87.13	2,488.78	-15,612.31	7,901.08	7,818.74	82.34	95.951	
14,800.00	6,935.20	7,123.42	6,727.66	133.23	34.69	87.15	2,488.80	-15,612.32	7,806.71	7,723.48	83.23	93.799	
14,900.00	6,934.97	7,124.32	6,728.56	134.80	34.69	87.17	2,488.82	-15,612.33	7,712.47	7,628.34	84.14	91.667	
15,000.00	6,934.75	7,125.22	6,729.46	136.37	34.69	87.19	2,488.84	-15,612.34	7,618.39	7,533.32	85.07	89.555	
15,100.00	6,934.52	7,126.12	6,730.36	137.95	34.69	87.21	2,488.86	-15,612.35	7,524.45	7,438.42	86.03	87.464	
15,200.00	6,934.30	7,127.01	6,731.26	139.53	34.70	87.23	2,488.89	-15,612.36	7,430.68	7,343.66	87.02	85.394	
15,300.00	6,934.07	7,127.91	6,732.15	141.10	34.70	87.25	2,488.91	-15,612.37	7,337.06	7,249.03	88.03	83.346	
15,400.00	6,933.85	7,128.81	6,733.05	142.68	34.70	87.27	2,488.93	-15,612.38	7,243.62	7,154.55	89.08	81.320	
15,500.00	6,933.62	7,129.71	6,733.95	144.26	34.70	87.29	2,488.95	-15,612.39	7,150.36	7,060.21	90.15	79.316	
15,600.00	6,933.40	7,130.61	6,734.85	145.84	34.71	87.31	2,488.97	-15,612.40	7,057.28	6,966.02	91.26	77.335	
15,700.00	6,933.18	7,131.50	6,735.74	147.42	34.71	87.33	2,489.00	-15,612.41	6,964.39	6,872.00	92.39	75.378	
15,800.00	6,932.95	7,132.40	6,736.64	148.99	34.71	87.35	2,489.02	-15,612.42	6,871.70	6,778.14	93.56	73.445	
15,900.00	6,932.73	7,133.30	6,737.54	150.57	34.71	87.37	2,489.04	-15,612.43	6,779.22	6,684.46	94.77	71.535	
16,000.00	6,932.50	7,134.20	6,738.44	152.15	34.71	87.39	2,489.06	-15,612.44	6,686.96	6,590.95	96.01	69.651	
16,100.00	6,932.28	7,135.10	6,739.33	153.74	34.72	87.41	2,489.08	-15,612.45	6,594.92	6,497.64	97.28	67.791	
16,200.00	6,932.05	7,135.99	6,740.23	155.32	34.72	87.43	2,489.11	-15,612.46	6,503.12	6,404.52	98.60	65.956	
16,300.00	6,931.83	7,136.89	6,741.13	156.90	34.72	87.45	2,489.13	-15,612.47	6,411.56	6,311.61	99.95	64.147	
16,400.00	6,931.60	7,137.79	6,742.03	158.48	34.72	87.47	2,489.15	-15,612.48	6,320.25	6,218.91	101.34	62.364	
16,500.00	6,931.38	7,138.69	6,742.92	160.06	34.73	87.49	2,489.17	-15,612.49	6,229.22	6,126.44	102.78	60.607	
16,600.00	6,931.15	7,139.58	6,743.82	161.65	34.73	87.51	2,489.19	-15,612.50	6,138.46	6,034.20	104.26	58.877	
16,700.00	6,930.93	7,140.48	6,744.72	163.23	34.73	87.53	2,489.21	-15,612.51	6,047.99	5,942.21	105.78	57.173	
16,800.00	6,930.70	7,141.38	6,745.62	164.81	34.73	87.55	2,489.24	-15,612.52	5,957.83	5,850.48	107.35	55.497	
16,900.00	6,930.48	7,142.28	6,746.51	166.40	34.73	87.57	2,489.26	-15,612.53	5,867.99	5,759.02	108.97	53.848	
17,000.00	6,930.25	7,143.17	6,747.41	167.98	34.74	87.59	2,489.28	-15,612.54	5,778.48	5,667.84	110.64	52.226	
17,100.00	6,930.03	7,144.07	6,748.31	169.56	34.74	87.61	2,489.30	-15,612.55	5,689.32	5,576.96	112.36	50.633	
17,200.00	6,929.81	7,144.97	6,749.20	171.15	34.74	87.63	2,489.32	-15,612.56	5,600.53	5,486.39	114.14	49.068	
17,300.00	6,929.58	7,145.87	6,750.10	172.73	34.74	87.65	2,489.35	-15,612.57	5,512.12	5,396.15	115.97	47.531	
17,400.00	6,929.36	7,146.76	6,751.00	174.32	34.75	87.67	2,489.37	-15,612.58	5,424.11	5,306.25	117.86	46.023	
17,500.00	6,929.13	7,147.66	6,751.89	175.91	34.75	87.69	2,489.39	-15,612.59	5,336.52	5,216.72	119.81	44.543	
17,600.00	6,928.91	7,148.56	6,752.79	177.49	34.75	87.71	2,489.41	-15,612.60	5,249.38	5,127.57	121.81	43.093	
17,700.00	6,928.68	7,149.45	6,753.69	179.08	34.75	87.73	2,489.43	-15,612.61	5,162.71	5,038.82	123.89	41.672	
17,800.00	6,928.46	7,150.35	6,754.59	180.66	34.75	87.75	2,489.45	-15,612.62	5,076.52	4,950.49	126.03	40.281	
17,900.00	6,928.23	7,151.25	6,755.48	182.25	34.76	87.77	2,489.48	-15,612.63	4,990.85	4,862.61	128.24	38.919	
18,000.00	6,928.01	7,152.15	6,756.38	183.84	34.76	87.79	2,489.50	-15,612.64	4,905.72	4,775.20	130.52	37.587	
18,100.00	6,927.78	7,153.04	6,757.28	185.43	34.76	87.81	2,489.52	-15,612.65	4,821.17	4,688.29	132.87	36.284	
18,200.00	6,927.56	7,153.94	6,758.17	187.01	34.76	87.83	2,489.54	-15,612.66	4,737.21	4,601.91	135.30	35.012	
18,300.00	6,927.33	7,154.84	6,759.07	188.60	34.77	87.85	2,489.56	-15,612.67	4,653.89	4,516.08	137.81	33.771	
18,400.00	6,927.11	7,155.73	6,759.97	190.19	34.77	87.87	2,489.59	-15,612.68	4,571.23	4,430.84	140.40	32.559	
18,500.00	6,926.88	7,156.63	6,760.86	191.78	34.77	87.89	2,489.61	-15,612.69	4,489.29	4,346.22	143.07	31.378	
18,600.00	6,926.66	7,157.53	6,761.76	193.37	34.77	87.91	2,489.63	-15,612.70	4,408.08	4,262.26	145.83	30.228	
18,700.00	6,926.44	7,158.42	6,762.65	194.96	34.78	87.92	2,489.65	-15,612.71	4,327.67	4,179.00	148.67	29.109	
18,800.00	6,926.21	7,159.32	6,763.55	196.54	34.78	87.94	2,489.67	-15,612.72	4,248.08	4,096.48	151.61	28.020	
18,900.00	6,925.99	7,160.22	6,764.45	198.13	34.78	87.96	2,489.69	-15,612.73	4,169.38	4,014.74	154.64	26.962	
19,000.00	6,925.76	7,161.11	6,765.34	199.72	34.78	87.98	2,489.72	-15,612.74	4,091.60	3,933.84	157.76	25.936	
19,100.00	6,925.54	7,162.01	6,766.24	201.31	34.78	88.00	2,489.74	-15,612.75	4,014.81	3,853.83	160.98	24.940	
19,200.00	6,925.31	7,162.91	6,767.14	202.90	34.79	88.02	2,489.76	-15,612.76	3,939.06	3,774.77	164.30	23.975	
19,300.00	6,925.09	7,163.80	6,768.03	204.49	34.79	88.04	2,489.78	-15,612.77	3,864.42	3,696.71	167.71	23.042	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 181D - OH - OH-SVY

Offset Site Error: 0.00 usft

Survey Program: 374-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,400.00	6,924.86	7,164.70	6,768.93	206.08	34.79	88.06	2,489.80	-15,612.78	3,790.94	3,619.71	171.23	22.140	
19,500.00	6,924.64	7,165.60	6,769.83	207.67	34.79	88.08	2,489.83	-15,612.79	3,718.70	3,543.86	174.84	21.269	
19,600.00	6,924.41	7,166.49	6,770.72	209.26	34.80	88.10	2,489.85	-15,612.80	3,647.77	3,469.21	178.56	20.429	
19,700.00	6,924.19	7,167.39	6,771.62	210.85	34.80	88.12	2,489.87	-15,612.81	3,578.23	3,395.86	182.37	19.621	
19,800.00	6,923.96	7,168.29	6,772.51	212.44	34.80	88.14	2,489.89	-15,612.82	3,510.16	3,323.88	186.28	18.844	
19,900.00	6,923.74	7,169.18	6,773.41	214.04	34.80	88.16	2,489.91	-15,612.83	3,443.64	3,253.36	190.28	18.098	
20,000.00	6,923.51	7,170.08	6,774.31	215.63	34.80	88.18	2,489.93	-15,612.84	3,378.78	3,184.41	194.38	17.383	
20,100.00	6,923.29	7,170.98	6,775.20	217.22	34.81	88.20	2,489.96	-15,612.85	3,315.67	3,117.11	198.55	16.699	
20,200.00	6,923.07	7,171.87	6,776.10	218.81	34.81	88.22	2,489.98	-15,612.86	3,254.40	3,051.59	202.81	16.046	
20,300.00	6,922.84	7,172.77	6,776.99	220.40	34.81	88.24	2,490.00	-15,612.87	3,195.09	2,987.96	207.14	15.425	
20,400.00	6,922.62	7,173.66	6,777.89	221.99	34.81	88.26	2,490.02	-15,612.88	3,137.85	2,926.33	211.53	14.834	
20,500.00	6,922.39	7,174.56	6,778.78	223.59	34.82	88.28	2,490.04	-15,612.89	3,082.79	2,866.83	215.96	14.275	
20,600.00	6,922.17	7,175.46	6,779.68	225.18	34.82	88.30	2,490.07	-15,612.90	3,030.03	2,809.59	220.43	13.746	
20,674.13	6,922.00	7,176.12	6,780.34	226.36	34.82	88.32	2,490.08	-15,612.91	2,992.47	2,768.71	223.76	13.373	CC, ES, SF

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 241-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	151.12	-1,068.18	589.20	1,220.24				
100.00	100.00	71.00	71.00	0.25	0.76	151.12	-1,068.18	589.20	1,219.90	1,218.89	1.01	1,211.844	
200.00	200.00	171.00	171.00	0.61	1.82	151.12	-1,068.18	589.20	1,219.90	1,217.47	2.43	502.176	
300.00	300.00	271.01	271.00	0.97	3.15	151.12	-1,068.18	589.20	1,219.90	1,215.78	4.12	295.894	
400.00	400.00	371.01	371.00	1.33	5.12	151.12	-1,068.18	589.20	1,219.90	1,213.45	6.45	189.199	
500.00	500.00	471.01	471.00	1.68	7.09	151.12	-1,068.18	589.20	1,219.90	1,211.13	8.77	139.057	
606.93	606.91	574.05	574.03	2.05	9.11	-71.50	-1,067.33	589.20	1,218.53	1,207.36	11.17	109.121	
700.00	699.91	663.56	663.52	2.37	10.87	-71.63	-1,067.80	589.20	1,217.86	1,204.62	13.24	91.984	
800.00	799.84	770.89	770.84	2.71	12.94	-71.80	-1,068.18	589.20	1,216.99	1,201.34	15.65	77.746	
900.00	899.77	870.83	870.77	3.06	14.84	-71.97	-1,068.18	589.20	1,215.83	1,197.93	17.90	67.929	
1,000.00	999.70	970.62	970.56	3.41	16.74	-72.15	-1,067.63	589.20	1,214.20	1,194.06	20.14	60.276	
1,100.00	1,099.63	1,068.76	1,068.70	3.76	18.60	-72.31	-1,067.72	589.20	1,213.15	1,190.79	22.36	54.254	
1,200.00	1,199.56	1,166.92	1,166.86	4.11	20.47	-72.47	-1,067.99	589.20	1,212.25	1,187.67	24.58	49.321	
1,300.00	1,299.49	1,270.58	1,270.49	4.47	22.44	-72.64	-1,068.18	589.20	1,211.29	1,184.39	26.90	45.021	
1,400.00	1,399.42	1,370.51	1,370.42	4.83	24.34	-72.81	-1,068.18	589.20	1,210.18	1,181.02	29.16	41.498	
1,500.00	1,499.35	1,470.24	1,470.15	5.19	26.23	-73.00	-1,067.36	589.20	1,208.39	1,176.97	31.42	38.463	
1,600.00	1,599.28	1,567.51	1,567.42	5.54	28.08	-73.16	-1,067.51	589.20	1,207.43	1,173.80	33.63	35.908	
1,700.00	1,699.21	1,664.80	1,664.71	5.90	29.93	-73.32	-1,067.90	589.20	1,206.70	1,170.86	35.83	33.674	
1,800.00	1,799.14	1,770.26	1,770.14	6.26	31.94	-73.49	-1,068.18	589.20	1,205.85	1,167.65	38.20	31.567	
1,900.00	1,899.07	1,870.19	1,870.07	6.62	33.84	-73.66	-1,068.18	589.20	1,204.80	1,164.34	40.46	29.777	
2,000.00	1,999.00	1,970.12	1,970.00	6.98	35.74	-73.83	-1,068.18	589.20	1,203.75	1,161.03	42.72	28.176	
2,100.00	2,098.94	2,068.46	2,068.34	7.34	37.62	-74.01	-1,067.67	589.20	1,202.29	1,157.34	44.95	26.745	
2,200.00	2,198.87	2,166.73	2,166.62	7.70	39.49	-74.17	-1,067.91	589.20	1,201.47	1,154.28	47.18	25.463	
2,300.00	2,298.80	2,269.94	2,269.80	8.06	41.47	-74.34	-1,068.18	589.20	1,200.68	1,151.15	49.53	24.241	
2,400.00	2,398.73	2,369.87	2,369.73	8.42	43.44	-74.51	-1,068.18	589.20	1,199.68	1,147.82	51.86	23.134	
2,500.00	2,498.66	2,469.80	2,469.66	8.79	45.41	-74.68	-1,068.18	589.20	1,198.69	1,144.50	54.19	22.122	
2,600.00	2,598.59	2,567.56	2,567.41	9.15	47.33	-74.87	-1,067.45	589.20	1,197.10	1,140.62	56.47	21.198	
2,700.00	2,698.52	2,664.92	2,664.76	9.51	49.25	-75.03	-1,067.79	589.20	1,196.42	1,137.67	58.75	20.365	
2,800.00	2,798.45	2,769.64	2,769.45	9.87	51.31	-75.20	-1,068.18	589.20	1,195.78	1,134.60	61.17	19.548	
2,900.00	2,898.38	2,869.57	2,869.38	10.23	53.28	-75.37	-1,068.18	589.20	1,194.83	1,131.33	63.50	18.816	
3,000.00	2,998.31	2,969.50	2,969.31	10.59	55.24	-75.55	-1,068.18	589.20	1,193.89	1,128.06	65.83	18.136	
3,079.55	3,077.80	3,038.00	3,037.79	10.88	56.59	-75.67	-1,068.18	589.20	1,193.20	1,125.74	67.46	17.687	CC, ES
3,100.00	3,098.24	3,038.00	3,037.79	10.96	56.59	-75.67	-1,068.18	589.20	1,193.38	1,125.86	67.52	17.675	SF
3,200.00	3,198.17	3,038.00	3,037.79	11.32	56.59	-75.67	-1,068.18	589.20	1,199.27	1,131.74	67.52	17.761	
3,300.00	3,298.10	3,038.00	3,037.79	11.68	56.59	-75.67	-1,068.18	589.20	1,213.40	1,146.30	67.09	18.086	
3,400.00	3,398.03	3,038.00	3,037.79	12.04	56.59	-75.67	-1,068.18	589.20	1,235.48	1,169.22	66.27	18.644	
3,500.00	3,497.96	3,038.00	3,037.79	12.40	56.59	-75.67	-1,068.18	589.20	1,265.11	1,200.01	65.11	19.432	
3,600.00	3,597.89	3,038.00	3,037.79	12.77	56.59	-75.67	-1,068.18	589.20	1,301.77	1,238.09	63.68	20.443	
3,700.00	3,697.82	3,038.00	3,037.79	13.13	56.59	-75.67	-1,068.18	589.20	1,344.87	1,282.82	62.05	21.673	
3,800.00	3,797.75	3,038.00	3,037.79	13.49	56.59	-75.67	-1,068.18	589.20	1,393.83	1,333.53	60.30	23.114	
3,900.00	3,897.68	3,038.00	3,037.79	13.85	56.59	-75.67	-1,068.18	589.20	1,448.05	1,389.57	58.48	24.760	
4,000.00	3,997.61	3,038.00	3,037.79	14.21	56.59	-75.67	-1,068.18	589.20	1,506.97	1,450.32	56.64	26.604	
4,100.00	4,097.54	3,038.00	3,037.79	14.58	56.59	-75.67	-1,068.18	589.20	1,570.04	1,515.22	54.82	28.639	
4,200.00	4,197.47	3,038.00	3,037.79	14.94	56.59	-75.67	-1,068.18	589.20	1,636.80	1,583.76	53.04	30.857	
4,300.00	4,297.40	3,038.00	3,037.79	15.30	56.59	-75.67	-1,068.18	589.20	1,706.82	1,655.48	51.33	33.249	
4,400.00	4,397.33	3,038.00	3,037.79	15.66	56.59	-75.67	-1,068.18	589.20	1,779.69	1,729.99	49.70	35.807	
4,500.00	4,497.26	3,038.00	3,037.79	16.03	56.59	-75.67	-1,068.18	589.20	1,855.10	1,806.94	48.16	38.523	
4,600.00	4,597.19	3,038.00	3,037.79	16.39	56.59	-75.67	-1,068.18	589.20	1,932.74	1,886.04	46.70	41.386	
4,700.00	4,697.12	3,038.00	3,037.79	16.75	56.59	-75.67	-1,068.18	589.20	2,012.36	1,967.02	45.33	44.389	
4,800.00	4,797.05	3,038.00	3,037.79	17.11	56.59	-75.67	-1,068.18	589.20	2,093.72	2,049.66	44.06	47.521	
4,900.00	4,896.99	3,038.00	3,037.79	17.47	56.59	-75.67	-1,068.18	589.20	2,176.64	2,133.77	42.87	50.772	
5,000.00	4,996.92	3,038.00	3,037.79	17.84	56.59	-75.67	-1,068.18	589.20	2,260.94	2,219.17	41.77	54.134	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 241-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	3,038.00	3,037.79	18.20	56.59	-75.67	-1,068.18	589.20	2,346.47	2,305.73	40.74	57.597	
5,200.00	5,196.78	3,038.00	3,037.79	18.56	56.59	-75.67	-1,068.18	589.20	2,433.11	2,393.32	39.79	61.150	
5,300.00	5,296.71	3,038.00	3,037.79	18.92	56.59	-75.67	-1,068.18	589.20	2,520.74	2,481.83	38.91	64.784	
5,400.00	5,396.64	3,038.00	3,037.79	19.29	56.59	-75.67	-1,068.18	589.20	2,609.25	2,571.16	38.10	68.491	
5,500.00	5,496.57	3,038.00	3,037.79	19.65	56.59	-75.67	-1,068.18	589.20	2,698.57	2,661.23	37.35	72.260	
5,600.00	5,596.50	3,038.00	3,037.79	20.01	56.59	-75.67	-1,068.18	589.20	2,788.61	2,751.96	36.65	76.082	
5,700.00	5,696.43	3,038.00	3,037.79	20.37	56.59	-75.67	-1,068.18	589.20	2,879.32	2,843.30	36.01	79.948	
5,800.00	5,796.36	3,038.00	3,037.79	20.74	56.59	-75.67	-1,068.18	589.20	2,970.61	2,935.19	35.43	83.850	
5,900.00	5,896.29	3,038.00	3,037.79	21.10	56.59	-75.67	-1,068.18	589.20	3,062.46	3,027.57	34.89	87.778	
6,000.00	5,996.22	3,038.00	3,037.79	21.46	56.59	-75.67	-1,068.18	589.20	3,154.79	3,120.40	34.39	91.726	
6,100.00	6,096.15	3,038.00	3,037.79	21.82	56.59	-75.67	-1,068.18	589.20	3,247.59	3,213.65	33.94	95.685	
6,200.00	6,196.08	3,038.00	3,037.79	22.19	56.59	-75.67	-1,068.18	589.20	3,340.79	3,307.27	33.53	99.647	
6,300.00	6,296.01	3,038.00	3,037.79	22.55	56.59	-75.67	-1,068.18	589.20	3,434.38	3,401.24	33.15	103.606	
6,335.60	6,331.59	3,038.00	3,037.79	22.68	56.59	-75.67	-1,068.18	589.20	3,467.79	3,434.77	33.02	105.013	
6,350.00	6,345.97	3,038.00	3,037.79	22.73	56.59	-90.28	-1,068.18	589.20	3,481.34	3,448.37	32.98	105.575	
6,400.00	6,395.75	3,038.00	3,037.79	22.91	56.59	-95.55	-1,068.18	589.20	3,528.83	3,495.99	32.84	107.460	
6,450.00	6,445.03	3,038.00	3,037.79	23.10	56.59	-85.41	-1,068.18	589.20	3,576.74	3,543.99	32.75	109.226	
6,500.00	6,493.52	3,038.00	3,037.79	23.29	56.59	-72.07	-1,068.18	589.20	3,624.77	3,592.07	32.69	110.867	
6,550.00	6,540.91	3,038.00	3,037.79	23.48	56.59	-59.28	-1,068.18	589.20	3,672.61	3,639.93	32.68	112.368	
6,600.00	6,586.91	3,038.00	3,037.79	23.66	56.59	-48.71	-1,068.18	589.20	3,720.00	3,687.28	32.71	113.714	
6,650.00	6,631.24	3,038.00	3,037.79	23.85	56.59	-40.55	-1,068.18	589.20	3,766.65	3,733.87	32.78	114.894	
6,700.00	6,673.63	3,038.00	3,037.79	24.05	56.59	-34.37	-1,068.18	589.20	3,812.32	3,779.42	32.89	115.897	
6,750.00	6,713.80	3,038.00	3,037.79	24.24	56.59	-29.69	-1,068.18	589.20	3,856.76	3,823.71	33.05	116.711	
6,800.00	6,751.52	3,038.00	3,037.79	24.44	56.59	-26.08	-1,068.18	589.20	3,899.74	3,866.50	33.24	117.330	
6,850.00	6,786.56	3,038.00	3,037.79	24.65	56.59	-23.27	-1,068.18	589.20	3,941.05	3,907.58	33.47	117.747	
6,900.00	6,818.69	3,038.00	3,037.79	24.87	56.59	-21.03	-1,068.18	589.20	3,980.50	3,946.75	33.75	117.957	
6,950.00	6,847.72	3,038.00	3,037.79	25.10	56.59	-19.23	-1,068.18	589.20	4,017.89	3,983.83	34.06	117.958	
7,000.00	6,873.46	3,038.00	3,037.79	25.34	56.59	-17.77	-1,068.18	589.20	4,053.07	4,018.64	34.42	117.750	
7,050.00	6,895.77	3,038.00	3,037.79	25.60	56.59	-16.57	-1,068.18	589.20	4,085.86	4,051.04	34.82	117.335	
7,100.00	6,914.50	3,038.00	3,037.79	25.87	56.59	-15.58	-1,068.18	589.20	4,116.13	4,080.86	35.27	116.719	
7,150.00	6,929.54	3,038.00	3,037.79	26.15	56.59	-14.76	-1,068.18	589.20	4,143.74	4,107.99	35.75	115.908	
7,200.00	6,940.80	3,038.00	3,037.79	26.44	56.59	-14.07	-1,068.18	589.20	4,168.59	4,132.32	36.28	114.912	
7,250.00	6,948.20	3,038.00	3,037.79	26.75	56.59	-13.51	-1,068.18	589.20	4,190.57	4,153.73	36.84	113.744	
7,300.00	6,951.70	3,038.00	3,037.79	27.07	56.59	-13.04	-1,068.18	589.20	4,209.59	4,172.14	37.45	112.418	
7,321.06	6,952.00	3,038.00	3,037.79	27.20	56.59	-12.87	-1,068.18	589.20	4,216.69	4,178.98	37.71	111.824	
7,400.00	6,951.82	3,038.00	3,037.79	27.74	56.59	-12.87	-1,068.18	589.20	4,242.96	4,204.23	38.74	109.532	
7,500.00	6,951.60	3,038.00	3,037.79	28.49	56.59	-12.87	-1,068.18	589.20	4,278.11	4,238.04	40.07	106.767	
7,600.00	6,951.37	3,038.00	3,037.79	29.30	56.59	-12.87	-1,068.18	589.20	4,315.28	4,273.86	41.42	104.179	
7,700.00	6,951.15	3,038.00	3,037.79	30.18	56.59	-12.87	-1,068.18	589.20	4,354.43	4,311.65	42.79	101.773	
7,800.00	6,950.92	3,038.00	3,037.79	31.12	56.59	-12.87	-1,068.18	589.20	4,395.51	4,351.36	44.15	99.551	
7,900.00	6,950.70	3,038.00	3,037.79	32.11	56.59	-12.87	-1,068.18	589.20	4,438.46	4,392.95	45.52	97.510	
8,000.00	6,950.47	3,038.00	3,037.79	33.15	56.59	-12.87	-1,068.18	589.20	4,483.24	4,436.36	46.87	95.645	
8,100.00	6,950.25	3,038.00	3,037.79	34.23	56.59	-12.87	-1,068.18	589.20	4,529.77	4,481.56	48.22	93.947	
8,200.00	6,950.03	3,038.00	3,037.79	35.35	56.59	-12.87	-1,068.18	589.20	4,578.02	4,528.48	49.54	92.408	
8,300.00	6,949.80	3,038.00	3,037.79	36.51	56.59	-12.87	-1,068.18	589.20	4,627.93	4,577.08	50.85	91.019	
8,400.00	6,949.58	3,038.00	3,037.79	37.70	56.59	-12.87	-1,068.18	589.20	4,679.44	4,627.32	52.13	89.770	
8,500.00	6,949.35	3,038.00	3,037.79	38.92	56.59	-12.87	-1,068.18	589.20	4,732.51	4,679.13	53.38	88.653	
8,600.00	6,949.13	3,038.00	3,037.79	40.17	56.59	-12.87	-1,068.18	589.20	4,787.07	4,732.46	54.61	87.658	
8,700.00	6,948.90	3,038.00	3,037.79	41.44	56.59	-12.87	-1,068.18	589.20	4,843.09	4,787.28	55.81	86.777	
8,800.00	6,948.68	3,038.00	3,037.79	42.73	56.59	-12.87	-1,068.18	589.20	4,900.51	4,843.52	56.98	86.002	
8,900.00	6,948.45	3,038.00	3,037.79	44.04	56.59	-12.87	-1,068.18	589.20	4,959.27	4,901.15	58.12	85.325	
9,000.00	6,948.23	3,038.00	3,037.79	45.38	56.59	-12.87	-1,068.18	589.20	5,019.35	4,960.12	59.23	84.740	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 241-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	3,038.00	3,037.79	46.72	56.59	-12.87	-1,068.18	589.20	5,080.68	5,020.37	60.31	84.240	
9,200.00	6,947.78	3,038.00	3,037.79	48.09	56.59	-12.87	-1,068.18	589.20	5,143.22	5,081.86	61.36	83.819	
9,300.00	6,947.55	3,038.00	3,037.79	49.47	56.59	-12.87	-1,068.18	589.20	5,206.94	5,144.56	62.38	83.471	
9,400.00	6,947.33	3,038.00	3,037.79	50.86	56.59	-12.87	-1,068.18	589.20	5,271.78	5,208.41	63.37	83.192	
9,500.00	6,947.10	3,038.00	3,037.79	52.26	56.59	-12.87	-1,068.18	589.20	5,337.70	5,273.37	64.33	82.976	
9,600.00	6,946.88	3,038.00	3,037.79	53.68	56.59	-12.87	-1,068.18	589.20	5,404.68	5,339.42	65.26	82.820	
9,700.00	6,946.66	3,038.00	3,037.79	55.10	56.59	-12.87	-1,068.18	589.20	5,472.66	5,406.50	66.16	82.719	
9,800.00	6,946.43	3,038.00	3,037.79	56.54	56.59	-12.87	-1,068.18	589.20	5,541.61	5,474.57	67.03	82.669	
9,900.00	6,946.21	3,038.00	3,037.79	57.98	56.59	-12.87	-1,068.18	589.20	5,611.49	5,543.61	67.88	82.668	
10,000.00	6,945.98	3,038.00	3,037.79	59.43	56.59	-12.87	-1,068.18	589.20	5,682.28	5,613.58	68.70	82.712	
10,100.00	6,945.76	3,038.00	3,037.79	60.89	56.59	-12.87	-1,068.18	589.20	5,753.93	5,684.44	69.49	82.798	
10,200.00	6,945.53	3,038.00	3,037.79	62.36	56.59	-12.87	-1,068.18	589.20	5,826.42	5,756.16	70.26	82.923	
10,300.00	6,945.31	3,038.00	3,037.79	63.83	56.59	-12.87	-1,068.18	589.20	5,899.71	5,828.71	71.01	83.085	
10,400.00	6,945.08	3,038.00	3,037.79	65.31	56.59	-12.87	-1,068.18	589.20	5,973.78	5,902.05	71.73	83.282	
10,500.00	6,944.86	3,038.00	3,037.79	66.79	56.59	-12.87	-1,068.18	589.20	6,048.60	5,976.17	72.43	83.511	
10,600.00	6,944.63	3,038.00	3,037.79	68.28	56.59	-12.87	-1,068.18	589.20	6,124.13	6,051.02	73.11	83.772	
10,700.00	6,944.41	3,038.00	3,037.79	69.78	56.59	-12.87	-1,068.18	589.20	6,200.35	6,126.59	73.76	84.061	
10,800.00	6,944.18	3,038.00	3,037.79	71.28	56.59	-12.87	-1,068.18	589.20	6,277.25	6,202.85	74.40	84.377	
10,900.00	6,943.96	3,038.00	3,037.79	72.78	56.59	-12.87	-1,068.18	589.20	6,354.78	6,279.77	75.01	84.718	
11,000.00	6,943.73	3,038.00	3,037.79	74.29	56.59	-12.87	-1,068.18	589.20	6,432.94	6,357.33	75.61	85.084	
11,100.00	6,943.51	3,038.00	3,037.79	75.80	56.59	-12.87	-1,068.18	589.20	6,511.70	6,435.51	76.19	85.472	
11,200.00	6,943.29	3,038.00	3,037.79	77.32	56.59	-12.87	-1,068.18	589.20	6,591.03	6,514.28	76.75	85.882	
11,300.00	6,943.06	3,038.00	3,037.79	78.84	56.59	-12.87	-1,068.18	589.20	6,670.91	6,593.62	77.29	86.312	
11,400.00	6,942.84	3,038.00	3,037.79	80.36	56.59	-12.87	-1,068.18	589.20	6,751.33	6,673.52	77.82	86.761	
11,500.00	6,942.61	3,038.00	3,037.79	81.88	56.59	-12.87	-1,068.18	589.20	6,832.27	6,753.95	78.33	87.228	
11,600.00	6,942.39	3,038.00	3,037.79	83.41	56.59	-12.87	-1,068.18	589.20	6,913.71	6,834.89	78.82	87.712	
11,700.00	6,942.16	3,038.00	3,037.79	84.94	56.59	-12.87	-1,068.18	589.20	6,995.63	6,916.33	79.30	88.213	
11,800.00	6,941.94	3,038.00	3,037.79	86.47	56.59	-12.87	-1,068.18	589.20	7,078.01	6,998.24	79.77	88.729	
11,900.00	6,941.71	3,038.00	3,037.79	88.01	56.59	-12.87	-1,068.18	589.20	7,160.85	7,080.62	80.23	89.259	
12,000.00	6,941.49	3,038.00	3,037.79	89.55	56.59	-12.87	-1,068.18	589.20	7,244.11	7,163.45	80.67	89.803	
12,100.00	6,941.26	3,038.00	3,037.79	91.09	56.59	-12.87	-1,068.18	589.20	7,327.80	7,246.70	81.09	90.361	
12,200.00	6,941.04	3,038.00	3,037.79	92.63	56.59	-12.87	-1,068.18	589.20	7,411.89	7,330.37	81.51	90.931	
12,300.00	6,940.81	3,038.00	3,037.79	94.18	56.59	-12.87	-1,068.18	589.20	7,496.37	7,414.45	81.92	91.512	
12,400.00	6,940.59	3,038.00	3,037.79	95.72	56.59	-12.87	-1,068.18	589.20	7,581.22	7,498.91	82.31	92.105	
12,500.00	6,940.36	3,038.00	3,037.79	97.27	56.59	-12.87	-1,068.18	589.20	7,666.45	7,583.75	82.69	92.709	
12,600.00	6,940.14	3,038.00	3,037.79	98.82	56.59	-12.87	-1,068.18	589.20	7,752.02	7,668.95	83.07	93.322	
12,700.00	6,939.92	3,038.00	3,037.79	100.37	56.59	-12.87	-1,068.18	589.20	7,837.94	7,754.51	83.43	93.946	
12,800.00	6,939.69	3,038.00	3,037.79	101.92	56.59	-12.87	-1,068.18	589.20	7,924.19	7,840.40	83.78	94.578	
12,900.00	6,939.47	3,038.00	3,037.79	103.48	56.59	-12.87	-1,068.18	589.20	8,010.75	7,926.62	84.13	95.219	
13,000.00	6,939.24	3,038.00	3,037.79	105.03	56.59	-12.87	-1,068.18	589.20	8,097.63	8,013.16	84.47	95.869	
13,100.00	6,939.02	3,038.00	3,037.79	106.59	56.59	-12.87	-1,068.18	589.20	8,184.81	8,100.01	84.79	96.526	
13,200.00	6,938.79	3,038.00	3,037.79	108.15	56.59	-12.87	-1,068.18	589.20	8,272.27	8,187.16	85.11	97.191	
13,300.00	6,938.57	3,038.00	3,037.79	109.71	56.59	-12.87	-1,068.18	589.20	8,360.02	8,274.60	85.43	97.863	
13,400.00	6,938.34	3,038.00	3,037.79	111.27	56.59	-12.87	-1,068.18	589.20	8,448.04	8,362.31	85.73	98.542	
13,500.00	6,938.12	3,038.00	3,037.79	112.83	56.59	-12.87	-1,068.18	589.20	8,536.32	8,450.30	86.03	99.228	
13,600.00	6,937.89	3,038.00	3,037.79	114.40	56.59	-12.87	-1,068.18	589.20	8,624.86	8,538.55	86.32	99.920	
13,700.00	6,937.67	3,038.00	3,037.79	115.96	56.59	-12.87	-1,068.18	589.20	8,713.65	8,627.05	86.60	100.617	
13,800.00	6,937.44	3,038.00	3,037.79	117.53	56.59	-12.87	-1,068.18	589.20	8,802.68	8,715.80	86.88	101.321	
13,900.00	6,937.22	3,038.00	3,037.79	119.09	56.59	-12.87	-1,068.18	589.20	8,891.94	8,804.79	87.15	102.029	
14,000.00	6,936.99	3,038.00	3,037.79	120.66	56.59	-12.87	-1,068.18	589.20	8,981.43	8,894.01	87.42	102.743	
14,100.00	6,936.77	3,038.00	3,037.79	122.23	56.59	-12.87	-1,068.18	589.20	9,071.14	8,983.46	87.68	103.462	
14,200.00	6,936.55	3,038.00	3,037.79	123.80	56.59	-12.87	-1,068.18	589.20	9,161.06	9,073.13	87.93	104.185	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 241-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	3,038.00	3,037.79	125.37	56.59	-12.87	-1,068.18	589.20	9,251.18	9,163.00	88.18	104.912	
14,400.00	6,936.10	3,038.00	3,037.79	126.94	56.59	-12.87	-1,068.18	589.20	9,341.51	9,253.09	88.42	105.644	
14,500.00	6,935.87	3,038.00	3,037.79	128.51	56.59	-12.87	-1,068.18	589.20	9,432.03	9,343.37	88.66	106.380	
14,600.00	6,935.65	3,038.00	3,037.79	130.08	56.59	-12.87	-1,068.18	589.20	9,522.75	9,433.85	88.90	107.120	
14,700.00	6,935.42	3,038.00	3,037.79	131.65	56.59	-12.87	-1,068.18	589.20	9,613.64	9,524.52	89.13	107.863	
14,800.00	6,935.20	3,038.00	3,037.79	133.23	56.59	-12.87	-1,068.18	589.20	9,704.72	9,615.37	89.35	108.610	
14,900.00	6,934.97	3,038.00	3,037.79	134.80	56.59	-12.87	-1,068.18	589.20	9,795.97	9,706.40	89.58	109.360	
15,000.00	6,934.75	3,038.00	3,037.79	136.37	56.59	-12.87	-1,068.18	589.20	9,887.39	9,797.60	89.79	110.113	
15,100.00	6,934.52	3,038.00	3,037.79	137.95	56.59	-12.87	-1,068.18	589.20	9,978.97	9,888.97	90.01	110.869	
15,200.00	6,934.30	3,038.00	3,037.79	139.53	56.59	-12.87	-1,068.18	589.20	10,070.72	9,980.50	90.22	111.628	
15,300.00	6,934.07	3,038.00	3,037.79	141.10	56.59	-12.87	-1,068.18	589.20	10,162.62	10,072.20	90.42	112.390	
15,400.00	6,933.85	3,038.00	3,037.79	142.68	56.59	-12.87	-1,068.18	589.20	10,254.67	10,164.04	90.63	113.154	
15,500.00	6,933.62	3,038.00	3,037.79	144.26	56.59	-12.87	-1,068.18	589.20	10,346.87	10,256.04	90.83	113.920	
15,600.00	6,933.40	3,038.00	3,037.79	145.84	56.59	-12.87	-1,068.18	589.20	10,439.21	10,348.19	91.02	114.689	
15,700.00	6,933.18	3,038.00	3,037.79	147.42	56.59	-12.87	-1,068.18	589.20	10,531.70	10,440.48	91.22	115.460	
15,800.00	6,932.95	3,038.00	3,037.79	148.99	56.59	-12.87	-1,068.18	589.20	10,624.31	10,532.91	91.41	116.233	
15,900.00	6,932.73	3,038.00	3,037.79	150.57	56.59	-12.87	-1,068.18	589.20	10,717.07	10,625.47	91.59	117.008	
16,000.00	6,932.50	3,038.00	3,037.79	152.15	56.59	-12.87	-1,068.18	589.20	10,809.95	10,718.17	91.78	117.784	
16,100.00	6,932.28	3,038.00	3,037.79	153.74	56.59	-12.87	-1,068.18	589.20	10,902.95	10,810.99	91.96	118.563	
16,200.00	6,932.05	3,038.00	3,037.79	155.32	56.59	-12.87	-1,068.18	589.20	10,996.08	10,903.94	92.14	119.343	
16,300.00	6,931.83	3,038.00	3,037.79	156.90	56.59	-12.87	-1,068.18	589.20	11,089.33	10,997.02	92.32	120.124	
16,400.00	6,931.60	3,038.00	3,037.79	158.48	56.59	-12.87	-1,068.18	589.20	11,182.70	11,090.21	92.49	120.907	
16,500.00	6,931.38	3,038.00	3,037.79	160.06	56.59	-12.87	-1,068.18	589.20	11,276.18	11,183.51	92.66	121.691	
16,600.00	6,931.15	3,038.00	3,037.79	161.65	56.59	-12.87	-1,068.18	589.20	11,369.77	11,276.94	92.83	122.477	
16,700.00	6,930.93	3,038.00	3,037.79	163.23	56.59	-12.87	-1,068.18	589.20	11,463.47	11,370.47	93.00	123.263	
16,800.00	6,930.70	3,038.00	3,037.79	164.81	56.59	-12.87	-1,068.18	589.20	11,557.27	11,464.10	93.17	124.051	
16,900.00	6,930.48	3,038.00	3,037.79	166.40	56.59	-12.87	-1,068.18	589.20	11,651.18	11,557.85	93.33	124.840	
17,000.00	6,930.25	3,038.00	3,037.79	167.98	56.59	-12.87	-1,068.18	589.20	11,745.19	11,651.69	93.49	125.629	
17,100.00	6,930.03	3,038.00	3,037.79	169.56	56.59	-12.87	-1,068.18	589.20	11,839.29	11,745.64	93.65	126.420	
17,200.00	6,929.81	3,038.00	3,037.79	171.15	56.59	-12.87	-1,068.18	589.20	11,933.49	11,839.68	93.81	127.211	
17,300.00	6,929.58	3,038.00	3,037.79	172.73	56.59	-12.87	-1,068.18	589.20	12,027.79	11,933.82	93.97	128.003	
17,400.00	6,929.36	3,038.00	3,037.79	174.32	56.59	-12.87	-1,068.18	589.20	12,122.18	12,028.06	94.12	128.795	
17,500.00	6,929.13	3,038.00	3,037.79	175.91	56.59	-12.87	-1,068.18	589.20	12,216.65	12,122.38	94.27	129.588	
17,600.00	6,928.91	3,038.00	3,037.79	177.49	56.59	-12.87	-1,068.18	589.20	12,311.22	12,216.79	94.42	130.382	
17,700.00	6,928.68	3,038.00	3,037.79	179.08	56.59	-12.87	-1,068.18	589.20	12,405.87	12,311.29	94.57	131.176	
17,800.00	6,928.46	3,038.00	3,037.79	180.66	56.59	-12.87	-1,068.18	589.20	12,500.60	12,405.87	94.72	131.970	
17,900.00	6,928.23	3,038.00	3,037.79	182.25	56.59	-12.87	-1,068.18	589.20	12,595.41	12,500.54	94.87	132.765	
18,000.00	6,928.01	3,038.00	3,037.79	183.84	56.59	-12.87	-1,068.18	589.20	12,690.30	12,595.29	95.02	133.560	
18,100.00	6,927.78	3,038.00	3,037.79	185.43	56.59	-12.87	-1,068.18	589.20	12,785.28	12,690.12	95.16	134.355	
18,200.00	6,927.56	3,038.00	3,037.79	187.01	56.59	-12.87	-1,068.18	589.20	12,880.32	12,785.02	95.30	135.151	
18,300.00	6,927.33	3,038.00	3,037.79	188.60	56.59	-12.87	-1,068.18	589.20	12,975.44	12,880.00	95.45	135.946	
18,400.00	6,927.11	3,038.00	3,037.79	190.19	56.59	-12.87	-1,068.18	589.20	13,070.64	12,975.05	95.59	136.742	
18,500.00	6,926.88	3,038.00	3,037.79	191.78	56.59	-12.87	-1,068.18	589.20	13,165.90	13,070.18	95.73	137.537	
18,600.00	6,926.66	3,038.00	3,037.79	193.37	56.59	-12.87	-1,068.18	589.20	13,261.24	13,165.38	95.86	138.333	
18,700.00	6,926.44	3,038.00	3,037.79	194.96	56.59	-12.87	-1,068.18	589.20	13,356.64	13,260.64	96.00	139.128	
18,800.00	6,926.21	3,038.00	3,037.79	196.54	56.59	-12.87	-1,068.18	589.20	13,452.11	13,355.98	96.14	139.924	
18,900.00	6,925.99	3,038.00	3,037.79	198.13	56.59	-12.87	-1,068.18	589.20	13,547.65	13,451.38	96.27	140.719	
19,000.00	6,925.76	3,038.00	3,037.79	199.72	56.59	-12.87	-1,068.18	589.20	13,643.25	13,546.84	96.41	141.514	
19,100.00	6,925.54	3,038.00	3,037.79	201.31	56.59	-12.87	-1,068.18	589.20	13,738.91	13,642.37	96.54	142.309	
19,200.00	6,925.31	3,038.00	3,037.79	202.90	56.59	-12.87	-1,068.18	589.20	13,834.64	13,737.96	96.68	143.104	
19,300.00	6,925.09	3,038.00	3,037.79	204.49	56.59	-12.87	-1,068.18	589.20	13,930.42	13,833.61	96.81	143.898	
19,400.00	6,924.86	3,038.00	3,037.79	206.08	56.59	-12.87	-1,068.18	589.20	14,026.26	13,929.32	96.94	144.692	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 241-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	3,038.00	3,037.79	207.67	56.59	-12.87	-1,068.18	589.20	14,122.16	14,025.09	97.07	145.485	
19,600.00	6,924.41	3,038.00	3,037.79	209.26	56.59	-12.87	-1,068.18	589.20	14,218.12	14,120.92	97.20	146.279	
19,700.00	6,924.19	3,038.00	3,037.79	210.85	56.59	-12.87	-1,068.18	589.20	14,314.13	14,216.80	97.33	147.071	
19,800.00	6,923.96	3,038.00	3,037.79	212.44	56.59	-12.87	-1,068.18	589.20	14,410.20	14,312.74	97.46	147.864	
19,900.00	6,923.74	3,038.00	3,037.79	214.04	56.59	-12.87	-1,068.18	589.20	14,506.32	14,408.73	97.58	148.655	
20,000.00	6,923.51	3,038.00	3,037.79	215.63	56.59	-12.87	-1,068.18	589.20	14,602.49	14,504.78	97.71	149.447	
20,100.00	6,923.29	3,038.00	3,037.79	217.22	56.59	-12.87	-1,068.18	589.20	14,698.71	14,600.88	97.84	150.237	
20,200.00	6,923.07	3,038.00	3,037.79	218.81	56.59	-12.87	-1,068.18	589.20	14,794.99	14,697.02	97.96	151.027	
20,300.00	6,922.84	3,038.00	3,037.79	220.40	56.59	-12.87	-1,068.18	589.20	14,891.31	14,793.22	98.09	151.817	
20,400.00	6,922.62	3,038.00	3,037.79	221.99	56.59	-12.87	-1,068.18	589.20	14,987.68	14,889.47	98.21	152.606	
20,500.00	6,922.39	3,038.00	3,037.79	223.59	56.59	-12.87	-1,068.18	589.20	15,084.10	14,985.76	98.34	153.394	
20,600.00	6,922.17	3,038.00	3,037.79	225.18	56.59	-12.87	-1,068.18	589.20	15,180.56	15,082.10	98.46	154.181	
20,674.13	6,922.00	3,038.00	3,037.79	226.36	56.59	-12.87	-1,068.18	589.20	15,252.10	15,153.55	98.55	154.764	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 343-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-10.12	837.36	-149.40	850.70				
100.00	100.00	86.00	86.00	0.25	0.80	-10.12	837.36	-149.40	850.58	849.54	1.05	813.211	
200.00	200.00	186.00	186.00	0.61	1.72	-10.12	837.36	-149.40	850.58	848.26	2.33	365.270	
300.00	300.00	286.00	286.00	0.97	2.64	-10.12	837.36	-149.40	850.58	846.97	3.61	235.532	
400.00	400.00	386.00	386.00	1.33	4.04	-10.12	837.36	-149.40	850.58	845.21	5.37	158.356	
500.00	500.00	486.00	486.00	1.68	6.08	-10.12	837.36	-149.40	850.58	842.82	7.76	109.557 CC	
606.93	606.91	592.93	592.93	2.05	8.25	127.48	837.90	-149.40	852.33	842.02	10.31	82.695	
700.00	699.91	687.34	687.33	2.37	10.17	127.66	837.82	-149.40	854.37	841.83	12.54	68.129	
800.00	799.84	788.78	788.77	2.71	12.24	127.86	837.56	-149.40	856.40	841.46	14.95	57.299	
900.00	899.77	885.84	885.77	3.06	14.37	128.05	837.36	-149.40	858.50	841.07	17.42	49.275	
1,000.00	999.70	985.77	985.70	3.41	16.74	128.24	837.36	-149.40	860.80	840.66	20.14	42.734	
1,100.00	1,099.63	1,085.93	1,085.85	3.76	19.12	128.45	838.67	-149.40	864.41	841.54	22.87	37.793	
1,200.00	1,199.56	1,189.94	1,189.85	4.11	21.58	128.65	838.39	-149.40	866.48	840.78	25.69	33.724	
1,300.00	1,299.49	1,293.99	1,293.89	4.47	24.05	128.84	837.63	-149.40	868.09	839.57	28.52	30.442	
1,400.00	1,399.42	1,385.63	1,385.42	4.83	26.12	129.02	837.36	-149.40	870.13	839.18	30.94	28.118	
1,500.00	1,499.35	1,485.56	1,485.35	5.19	28.34	129.21	837.36	-149.40	872.48	838.96	33.52	26.031	
1,600.00	1,599.28	1,586.23	1,586.00	5.54	30.57	129.41	838.99	-149.40	876.46	840.35	36.11	24.274	
1,700.00	1,699.21	1,690.98	1,690.74	5.90	32.90	129.61	838.61	-149.40	878.48	839.69	38.79	22.649	
1,800.00	1,799.14	1,795.78	1,795.52	6.26	35.22	129.79	837.66	-149.40	879.96	838.50	41.47	21.221	
1,900.00	1,899.07	1,885.38	1,885.07	6.62	36.98	129.96	837.36	-149.40	882.00	838.41	43.58	20.237 ES	
2,000.00	1,999.00	1,985.31	1,985.00	6.98	38.84	130.14	837.36	-149.40	884.40	838.59	45.81	19.306	
2,100.00	2,098.94	2,085.24	2,084.94	7.34	40.71	130.33	837.36	-149.40	886.81	838.78	48.03	18.462	
2,200.00	2,198.87	2,186.71	2,186.39	7.70	42.61	130.52	838.24	-149.40	890.11	839.82	50.29	17.700	
2,300.00	2,298.80	2,288.69	2,288.38	8.06	44.51	130.70	837.95	-149.40	892.25	839.70	52.55	16.979	
2,400.00	2,398.73	2,390.70	2,390.38	8.42	46.41	130.88	837.42	-149.40	894.18	839.36	54.81	16.313	
2,500.00	2,498.66	2,485.00	2,484.66	8.79	48.40	131.05	837.36	-149.40	896.55	839.39	57.16	15.686	
2,600.00	2,598.59	2,584.93	2,584.59	9.15	50.52	131.23	837.36	-149.40	899.00	839.36	59.64	15.074	
2,700.00	2,698.52	2,684.86	2,684.52	9.51	52.65	131.41	837.36	-149.40	901.47	839.34	62.13	14.510	
2,800.00	2,798.45	2,784.79	2,784.45	9.87	54.78	131.59	837.36	-149.40	903.94	839.33	64.61	13.990	
2,900.00	2,898.38	2,809.00	2,808.59	10.23	55.29	131.63	837.36	-149.40	909.59	844.33	65.25	13.939 SF	
3,000.00	2,998.31	2,809.00	2,808.59	10.59	55.29	131.63	837.36	-149.40	925.74	861.07	64.67	14.315	
3,100.00	3,098.24	2,809.00	2,808.59	10.96	55.29	131.63	837.36	-149.40	952.18	888.73	63.45	15.007	
3,200.00	3,198.17	2,809.00	2,808.59	11.32	55.29	131.63	837.36	-149.40	988.08	926.34	61.74	16.004	
3,300.00	3,298.10	2,809.00	2,808.59	11.68	55.29	131.63	837.36	-149.40	1,032.45	972.76	59.69	17.296	
3,400.00	3,398.03	2,809.00	2,808.59	12.04	55.29	131.63	837.36	-149.40	1,084.26	1,026.81	57.45	18.872	
3,500.00	3,497.96	2,809.00	2,808.59	12.40	55.29	131.63	837.36	-149.40	1,142.48	1,087.34	55.14	20.719	
3,600.00	3,597.89	2,809.00	2,808.59	12.77	55.29	131.63	837.36	-149.40	1,206.20	1,153.36	52.85	22.825	
3,700.00	3,697.82	2,809.00	2,808.59	13.13	55.29	131.63	837.36	-149.40	1,274.59	1,223.96	50.63	25.175	
3,800.00	3,797.75	2,809.00	2,808.59	13.49	55.29	131.63	837.36	-149.40	1,346.93	1,298.41	48.53	27.757	
3,900.00	3,897.68	2,809.00	2,808.59	13.85	55.29	131.63	837.36	-149.40	1,422.63	1,376.08	46.56	30.556	
4,000.00	3,997.61	2,809.00	2,808.59	14.21	55.29	131.63	837.36	-149.40	1,501.18	1,456.45	44.73	33.558	
4,100.00	4,097.54	2,809.00	2,808.59	14.58	55.29	131.63	837.36	-149.40	1,582.15	1,539.10	43.05	36.748	
4,200.00	4,197.47	2,809.00	2,808.59	14.94	55.29	131.63	837.36	-149.40	1,665.19	1,623.67	41.51	40.112	
4,300.00	4,297.40	2,809.00	2,808.59	15.30	55.29	131.63	837.36	-149.40	1,750.00	1,709.90	40.10	43.636	
4,400.00	4,397.33	2,809.00	2,808.59	15.66	55.29	131.63	837.36	-149.40	1,836.34	1,797.52	38.82	47.304	
4,500.00	4,497.26	2,809.00	2,808.59	16.03	55.29	131.63	837.36	-149.40	1,924.01	1,886.36	37.65	51.102	
4,600.00	4,597.19	2,809.00	2,808.59	16.39	55.29	131.63	837.36	-149.40	2,012.83	1,976.24	36.59	55.016	
4,700.00	4,697.12	2,809.00	2,808.59	16.75	55.29	131.63	837.36	-149.40	2,102.65	2,067.03	35.62	59.034	
4,800.00	4,797.05	2,809.00	2,808.59	17.11	55.29	131.63	837.36	-149.40	2,193.35	2,158.61	34.74	63.140	
4,900.00	4,896.99	2,809.00	2,808.59	17.47	55.29	131.63	837.36	-149.40	2,284.83	2,250.89	33.94	67.322	
5,000.00	4,996.92	2,809.00	2,808.59	17.84	55.29	131.63	837.36	-149.40	2,376.99	2,343.78	33.21	71.568	
5,100.00	5,096.85	2,809.00	2,808.59	18.20	55.29	131.63	837.36	-149.40	2,469.76	2,437.21	32.55	75.865	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 343-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	2,809.00	2,808.59	18.56	55.29	131.63	837.36	-149.40	2,563.08	2,531.12	31.96	80.202	
5,300.00	5,296.71	2,809.00	2,808.59	18.92	55.29	131.63	837.36	-149.40	2,656.89	2,625.47	31.42	84.568	
5,400.00	5,396.64	2,809.00	2,808.59	19.29	55.29	131.63	837.36	-149.40	2,751.13	2,720.20	30.93	88.953	
5,500.00	5,496.57	2,809.00	2,808.59	19.65	55.29	131.63	837.36	-149.40	2,845.76	2,815.27	30.49	93.346	
5,600.00	5,596.50	2,809.00	2,808.59	20.01	55.29	131.63	837.36	-149.40	2,940.75	2,910.66	30.09	97.739	
5,700.00	5,696.43	2,809.00	2,808.59	20.37	55.29	131.63	837.36	-149.40	3,036.06	3,006.33	29.73	102.122	
5,800.00	5,796.36	2,809.00	2,808.59	20.74	55.29	131.63	837.36	-149.40	3,131.66	3,102.25	29.41	106.488	
5,900.00	5,896.29	2,809.00	2,808.59	21.10	55.29	131.63	837.36	-149.40	3,227.53	3,198.41	29.12	110.829	
6,000.00	5,996.22	2,809.00	2,808.59	21.46	55.29	131.63	837.36	-149.40	3,323.65	3,294.78	28.87	115.139	
6,100.00	6,096.15	2,809.00	2,808.59	21.82	55.29	131.63	837.36	-149.40	3,419.98	3,391.34	28.64	119.410	
6,200.00	6,196.08	2,809.00	2,808.59	22.19	55.29	131.63	837.36	-149.40	3,516.52	3,488.08	28.44	123.637	
6,300.00	6,296.01	2,809.00	2,808.59	22.55	55.29	131.63	837.36	-149.40	3,613.25	3,584.98	28.27	127.815	
6,335.60	6,331.59	2,809.00	2,808.59	22.68	55.29	131.63	837.36	-149.40	3,647.73	3,619.52	28.21	129.290	
6,350.00	6,345.97	2,809.00	2,808.59	22.73	55.29	108.97	837.36	-149.40	3,661.68	3,633.48	28.19	129.885	
6,400.00	6,395.75	2,809.00	2,808.59	22.91	55.29	75.47	837.36	-149.40	3,709.96	3,681.85	28.12	131.941	
6,450.00	6,445.03	2,809.00	2,808.59	23.10	55.29	58.39	837.36	-149.40	3,757.82	3,729.77	28.05	133.977	
6,500.00	6,493.52	2,809.00	2,808.59	23.29	55.29	47.12	837.36	-149.40	3,804.97	3,776.99	27.98	135.974	
6,550.00	6,540.91	2,809.00	2,808.59	23.48	55.29	39.24	837.36	-149.40	3,851.15	3,823.23	27.92	137.913	
6,600.00	6,586.91	2,809.00	2,808.59	23.66	55.29	33.53	837.36	-149.40	3,896.13	3,868.25	27.87	139.773	
6,650.00	6,631.24	2,809.00	2,808.59	23.85	55.29	29.27	837.36	-149.40	3,939.66	3,911.82	27.84	141.531	
6,700.00	6,673.63	2,809.00	2,808.59	24.05	55.29	26.02	837.36	-149.40	3,981.53	3,953.72	27.81	143.161	
6,750.00	6,713.80	2,809.00	2,808.59	24.24	55.29	23.48	837.36	-149.40	4,021.55	3,993.74	27.80	144.636	
6,800.00	6,751.52	2,809.00	2,808.59	24.44	55.29	21.46	837.36	-149.40	4,059.51	4,031.69	27.82	145.928	
6,850.00	6,786.56	2,809.00	2,808.59	24.65	55.29	19.83	837.36	-149.40	4,095.25	4,067.40	27.86	147.010	
6,900.00	6,818.69	2,809.00	2,808.59	24.87	55.29	18.51	837.36	-149.40	4,128.61	4,100.69	27.92	147.855	
6,950.00	6,847.72	2,809.00	2,808.59	25.10	55.29	17.43	837.36	-149.40	4,159.44	4,131.42	28.02	148.437	
7,000.00	6,873.46	2,809.00	2,808.59	25.34	55.29	16.54	837.36	-149.40	4,187.61	4,159.46	28.15	148.737	
7,050.00	6,895.77	2,809.00	2,808.59	25.60	55.29	15.81	837.36	-149.40	4,213.00	4,184.67	28.33	148.736	
7,100.00	6,914.50	2,809.00	2,808.59	25.87	55.29	15.21	837.36	-149.40	4,235.50	4,206.97	28.54	148.425	
7,150.00	6,929.54	2,809.00	2,808.59	26.15	55.29	14.73	837.36	-149.40	4,255.03	4,226.24	28.79	147.799	
7,200.00	6,940.80	2,809.00	2,808.59	26.44	55.29	14.35	837.36	-149.40	4,271.50	4,242.41	29.09	146.860	
7,250.00	6,948.20	2,809.00	2,808.59	26.75	55.29	14.06	837.36	-149.40	4,284.85	4,255.42	29.43	145.618	
7,300.00	6,951.70	2,809.00	2,808.59	27.07	55.29	13.85	837.36	-149.40	4,295.03	4,265.22	29.81	144.091	
7,321.06	6,952.00	2,809.00	2,808.59	27.20	55.29	13.79	837.36	-149.40	4,298.35	4,268.37	29.98	143.374	
7,400.00	6,951.82	2,809.00	2,808.59	27.74	55.29	13.79	837.36	-149.40	4,310.45	4,279.76	30.69	140.465	
7,500.00	6,951.60	2,809.00	2,808.59	28.49	55.29	13.79	837.36	-149.40	4,327.80	4,296.12	31.68	136.614	
7,600.00	6,951.37	2,809.00	2,808.59	29.30	55.29	13.79	837.36	-149.40	4,347.38	4,314.62	32.76	132.693	
7,700.00	6,951.15	2,809.00	2,808.59	30.18	55.29	13.79	837.36	-149.40	4,369.16	4,335.24	33.92	128.796	
7,800.00	6,950.92	2,809.00	2,808.59	31.12	55.29	13.79	837.36	-149.40	4,393.11	4,357.96	35.15	124.996	
7,900.00	6,950.70	2,809.00	2,808.59	32.11	55.29	13.79	837.36	-149.40	4,419.19	4,382.77	36.42	121.344	
8,000.00	6,950.47	2,809.00	2,808.59	33.15	55.29	13.79	837.36	-149.40	4,447.37	4,409.64	37.73	117.876	
8,100.00	6,950.25	2,809.00	2,808.59	34.23	55.29	13.79	837.36	-149.40	4,477.61	4,438.54	39.07	114.611	
8,200.00	6,950.03	2,809.00	2,808.59	35.35	55.29	13.79	837.36	-149.40	4,509.86	4,469.44	40.42	111.561	
8,300.00	6,949.80	2,809.00	2,808.59	36.51	55.29	13.79	837.36	-149.40	4,544.08	4,502.29	41.79	108.730	
8,400.00	6,949.58	2,809.00	2,808.59	37.70	55.29	13.79	837.36	-149.40	4,580.23	4,537.07	43.16	106.113	
8,500.00	6,949.35	2,809.00	2,808.59	38.92	55.29	13.79	837.36	-149.40	4,618.27	4,573.74	44.53	103.705	
8,600.00	6,949.13	2,809.00	2,808.59	40.17	55.29	13.79	837.36	-149.40	4,658.14	4,612.25	45.89	101.498	
8,700.00	6,948.90	2,809.00	2,808.59	41.44	55.29	13.79	837.36	-149.40	4,699.80	4,652.56	47.24	99.481	
8,800.00	6,948.68	2,809.00	2,808.59	42.73	55.29	13.79	837.36	-149.40	4,743.20	4,694.63	48.58	97.643	
8,900.00	6,948.45	2,809.00	2,808.59	44.04	55.29	13.79	837.36	-149.40	4,788.30	4,738.41	49.89	95.974	
9,000.00	6,948.23	2,809.00	2,808.59	45.38	55.29	13.79	837.36	-149.40	4,835.05	4,783.86	51.19	94.462	
9,100.00	6,948.00	2,809.00	2,808.59	46.72	55.29	13.79	837.36	-149.40	4,883.39	4,830.94	52.46	93.096	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 343-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	2,809.00	2,808.59	48.09	55.29	13.79	837.36	-149.40	4,933.29	4,879.59	53.70	91.868	
9,300.00	6,947.55	2,809.00	2,808.59	49.47	55.29	13.79	837.36	-149.40	4,984.70	4,929.78	54.92	90.766	
9,400.00	6,947.33	2,809.00	2,808.59	50.86	55.29	13.79	837.36	-149.40	5,037.57	4,981.46	56.11	89.782	
9,500.00	6,947.10	2,809.00	2,808.59	52.26	55.29	13.79	837.36	-149.40	5,091.85	5,034.58	57.27	88.907	
9,600.00	6,946.88	2,809.00	2,808.59	53.68	55.29	13.79	837.36	-149.40	5,147.51	5,089.10	58.40	88.135	
9,700.00	6,946.66	2,809.00	2,808.59	55.10	55.29	13.79	837.36	-149.40	5,204.49	5,144.98	59.51	87.457	
9,800.00	6,946.43	2,809.00	2,808.59	56.54	55.29	13.79	837.36	-149.40	5,262.75	5,202.17	60.58	86.867	
9,900.00	6,946.21	2,809.00	2,808.59	57.98	55.29	13.79	837.36	-149.40	5,322.25	5,260.62	61.63	86.358	
10,000.00	6,945.98	2,809.00	2,808.59	59.43	55.29	13.79	837.36	-149.40	5,382.96	5,320.31	62.65	85.926	
10,100.00	6,945.76	2,809.00	2,808.59	60.89	55.29	13.79	837.36	-149.40	5,444.82	5,381.19	63.63	85.564	
10,200.00	6,945.53	2,809.00	2,808.59	62.36	55.29	13.79	837.36	-149.40	5,507.81	5,443.22	64.59	85.269	
10,300.00	6,945.31	2,809.00	2,808.59	63.83	55.29	13.79	837.36	-149.40	5,571.88	5,506.35	65.52	85.035	
10,400.00	6,945.08	2,809.00	2,808.59	65.31	55.29	13.79	837.36	-149.40	5,636.99	5,570.56	66.43	84.859	
10,500.00	6,944.86	2,809.00	2,808.59	66.79	55.29	13.79	837.36	-149.40	5,703.12	5,635.81	67.30	84.736	
10,600.00	6,944.63	2,809.00	2,808.59	68.28	55.29	13.79	837.36	-149.40	5,770.22	5,702.06	68.15	84.664	
10,700.00	6,944.41	2,809.00	2,808.59	69.78	55.29	13.79	837.36	-149.40	5,838.26	5,769.28	68.98	84.639	
10,800.00	6,944.18	2,809.00	2,808.59	71.28	55.29	13.79	837.36	-149.40	5,907.21	5,837.43	69.78	84.658	
10,900.00	6,943.96	2,809.00	2,808.59	72.78	55.29	13.79	837.36	-149.40	5,977.04	5,906.48	70.55	84.718	
11,000.00	6,943.73	2,809.00	2,808.59	74.29	55.29	13.79	837.36	-149.40	6,047.71	5,976.41	71.30	84.817	
11,100.00	6,943.51	2,809.00	2,808.59	75.80	55.29	13.79	837.36	-149.40	6,119.20	6,047.17	72.03	84.953	
11,200.00	6,943.29	2,809.00	2,808.59	77.32	55.29	13.79	837.36	-149.40	6,191.49	6,118.75	72.74	85.122	
11,300.00	6,943.06	2,809.00	2,808.59	78.84	55.29	13.79	837.36	-149.40	6,264.53	6,191.11	73.42	85.325	
11,400.00	6,942.84	2,809.00	2,808.59	80.36	55.29	13.79	837.36	-149.40	6,338.31	6,264.23	74.08	85.557	
11,500.00	6,942.61	2,809.00	2,808.59	81.88	55.29	13.79	837.36	-149.40	6,412.81	6,338.08	74.73	85.819	
11,600.00	6,942.39	2,809.00	2,808.59	83.41	55.29	13.79	837.36	-149.40	6,487.98	6,412.64	75.35	86.107	
11,700.00	6,942.16	2,809.00	2,808.59	84.94	55.29	13.79	837.36	-149.40	6,563.83	6,487.87	75.95	86.421	
11,800.00	6,941.94	2,809.00	2,808.59	86.47	55.29	13.79	837.36	-149.40	6,640.31	6,563.77	76.54	86.759	
11,900.00	6,941.71	2,809.00	2,808.59	88.01	55.29	13.79	837.36	-149.40	6,717.40	6,640.30	77.11	87.119	
12,000.00	6,941.49	2,809.00	2,808.59	89.55	55.29	13.79	837.36	-149.40	6,795.10	6,717.44	77.66	87.502	
12,100.00	6,941.26	2,809.00	2,808.59	91.09	55.29	13.79	837.36	-149.40	6,873.37	6,795.18	78.19	87.904	
12,200.00	6,941.04	2,809.00	2,808.59	92.63	55.29	13.79	837.36	-149.40	6,952.20	6,873.49	78.71	88.327	
12,300.00	6,940.81	2,809.00	2,808.59	94.18	55.29	13.79	837.36	-149.40	7,031.57	6,952.35	79.21	88.767	
12,400.00	6,940.59	2,809.00	2,808.59	95.72	55.29	13.79	837.36	-149.40	7,111.45	7,031.75	79.70	89.225	
12,500.00	6,940.36	2,809.00	2,808.59	97.27	55.29	13.79	837.36	-149.40	7,191.85	7,111.67	80.18	89.699	
12,600.00	6,940.14	2,809.00	2,808.59	98.82	55.29	13.79	837.36	-149.40	7,272.72	7,192.08	80.64	90.189	
12,700.00	6,939.92	2,809.00	2,808.59	100.37	55.29	13.79	837.36	-149.40	7,354.07	7,272.98	81.09	90.693	
12,800.00	6,939.69	2,809.00	2,808.59	101.92	55.29	13.79	837.36	-149.40	7,435.87	7,354.35	81.52	91.212	
12,900.00	6,939.47	2,809.00	2,808.59	103.48	55.29	13.79	837.36	-149.40	7,518.12	7,436.17	81.95	91.745	
13,000.00	6,939.24	2,809.00	2,808.59	105.03	55.29	13.79	837.36	-149.40	7,600.78	7,518.43	82.36	92.290	
13,100.00	6,939.02	2,809.00	2,808.59	106.59	55.29	13.79	837.36	-149.40	7,683.87	7,601.11	82.76	92.847	
13,200.00	6,938.79	2,809.00	2,808.59	108.15	55.29	13.79	837.36	-149.40	7,767.34	7,684.20	83.15	93.416	
13,300.00	6,938.57	2,809.00	2,808.59	109.71	55.29	13.79	837.36	-149.40	7,851.21	7,767.68	83.53	93.995	
13,400.00	6,938.34	2,809.00	2,808.59	111.27	55.29	13.79	837.36	-149.40	7,935.45	7,851.55	83.90	94.586	
13,500.00	6,938.12	2,809.00	2,808.59	112.83	55.29	13.79	837.36	-149.40	8,020.05	7,935.79	84.26	95.186	
13,600.00	6,937.89	2,809.00	2,808.59	114.40	55.29	13.79	837.36	-149.40	8,105.00	8,020.39	84.61	95.795	
13,700.00	6,937.67	2,809.00	2,808.59	115.96	55.29	13.79	837.36	-149.40	8,190.29	8,105.35	84.95	96.414	
13,800.00	6,937.44	2,809.00	2,808.59	117.53	55.29	13.79	837.36	-149.40	8,275.92	8,190.63	85.28	97.042	
13,900.00	6,937.22	2,809.00	2,808.59	119.09	55.29	13.79	837.36	-149.40	8,361.86	8,276.25	85.61	97.677	
14,000.00	6,936.99	2,809.00	2,808.59	120.66	55.29	13.79	837.36	-149.40	8,448.11	8,362.18	85.92	98.321	
14,100.00	6,936.77	2,809.00	2,808.59	122.23	55.29	13.79	837.36	-149.40	8,534.66	8,448.42	86.23	98.972	
14,200.00	6,936.55	2,809.00	2,808.59	123.80	55.29	13.79	837.36	-149.40	8,621.50	8,534.96	86.54	99.630	
14,300.00	6,936.32	2,809.00	2,808.59	125.37	55.29	13.79	837.36	-149.40	8,708.62	8,621.79	86.83	100.295	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 343-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	2,809.00	2,808.59	126.94	55.29	13.79	837.36	-149.40	8,796.02	8,708.90	87.12	100.966	
14,500.00	6,935.87	2,809.00	2,808.59	128.51	55.29	13.79	837.36	-149.40	8,883.68	8,796.28	87.40	101.644	
14,600.00	6,935.65	2,809.00	2,808.59	130.08	55.29	13.79	837.36	-149.40	8,971.60	8,883.93	87.68	102.328	
14,700.00	6,935.42	2,809.00	2,808.59	131.65	55.29	13.79	837.36	-149.40	9,059.77	8,971.83	87.94	103.017	
14,800.00	6,935.20	2,809.00	2,808.59	133.23	55.29	13.79	837.36	-149.40	9,148.19	9,059.98	88.21	103.712	
14,900.00	6,934.97	2,809.00	2,808.59	134.80	55.29	13.79	837.36	-149.40	9,236.84	9,148.37	88.47	104.412	
15,000.00	6,934.75	2,809.00	2,808.59	136.37	55.29	13.79	837.36	-149.40	9,325.72	9,237.00	88.72	105.117	
15,100.00	6,934.52	2,809.00	2,808.59	137.95	55.29	13.79	837.36	-149.40	9,414.82	9,325.86	88.97	105.826	
15,200.00	6,934.30	2,809.00	2,808.59	139.53	55.29	13.79	837.36	-149.40	9,504.14	9,414.94	89.21	106.540	
15,300.00	6,934.07	2,809.00	2,808.59	141.10	55.29	13.79	837.36	-149.40	9,593.68	9,504.23	89.44	107.258	
15,400.00	6,933.85	2,809.00	2,808.59	142.68	55.29	13.79	837.36	-149.40	9,683.41	9,593.73	89.68	107.981	
15,500.00	6,933.62	2,809.00	2,808.59	144.26	55.29	13.79	837.36	-149.40	9,773.35	9,683.44	89.91	108.707	
15,600.00	6,933.40	2,809.00	2,808.59	145.84	55.29	13.79	837.36	-149.40	9,863.48	9,773.35	90.13	109.437	
15,700.00	6,933.18	2,809.00	2,808.59	147.42	55.29	13.79	837.36	-149.40	9,953.80	9,863.45	90.35	110.170	
15,800.00	6,932.95	2,809.00	2,808.59	148.99	55.29	13.79	837.36	-149.40	10,044.30	9,953.73	90.56	110.907	
15,900.00	6,932.73	2,809.00	2,808.59	150.57	55.29	13.79	837.36	-149.40	10,134.98	10,044.20	90.78	111.647	
16,000.00	6,932.50	2,809.00	2,808.59	152.15	55.29	13.79	837.36	-149.40	10,225.83	10,134.85	90.99	112.390	
16,100.00	6,932.28	2,809.00	2,808.59	153.74	55.29	13.79	837.36	-149.40	10,316.85	10,225.66	91.19	113.136	
16,200.00	6,932.05	2,809.00	2,808.59	155.32	55.29	13.79	837.36	-149.40	10,408.04	10,316.65	91.39	113.885	
16,300.00	6,931.83	2,809.00	2,808.59	156.90	55.29	13.79	837.36	-149.40	10,499.39	10,407.80	91.59	114.636	
16,400.00	6,931.60	2,809.00	2,808.59	158.48	55.29	13.79	837.36	-149.40	10,590.89	10,499.11	91.78	115.390	
16,500.00	6,931.38	2,809.00	2,808.59	160.06	55.29	13.79	837.36	-149.40	10,682.55	10,590.58	91.97	116.147	
16,600.00	6,931.15	2,809.00	2,808.59	161.65	55.29	13.79	837.36	-149.40	10,774.36	10,682.19	92.16	116.905	
16,700.00	6,930.93	2,809.00	2,808.59	163.23	55.29	13.79	837.36	-149.40	10,866.31	10,773.96	92.35	117.666	
16,800.00	6,930.70	2,809.00	2,808.59	164.81	55.29	13.79	837.36	-149.40	10,958.40	10,865.86	92.53	118.428	
16,900.00	6,930.48	2,809.00	2,808.59	166.40	55.29	13.79	837.36	-149.40	11,050.63	10,957.91	92.71	119.193	
17,000.00	6,930.25	2,809.00	2,808.59	167.98	55.29	13.79	837.36	-149.40	11,142.99	11,050.10	92.89	119.959	
17,100.00	6,930.03	2,809.00	2,808.59	169.56	55.29	13.79	837.36	-149.40	11,235.48	11,142.42	93.06	120.727	
17,200.00	6,929.81	2,809.00	2,808.59	171.15	55.29	13.79	837.36	-149.40	11,328.10	11,234.86	93.24	121.497	
17,300.00	6,929.58	2,809.00	2,808.59	172.73	55.29	13.79	837.36	-149.40	11,420.85	11,327.44	93.41	122.268	
17,400.00	6,929.36	2,809.00	2,808.59	174.32	55.29	13.79	837.36	-149.40	11,513.71	11,420.14	93.58	123.041	
17,500.00	6,929.13	2,809.00	2,808.59	175.91	55.29	13.79	837.36	-149.40	11,606.70	11,512.96	93.74	123.815	
17,600.00	6,928.91	2,809.00	2,808.59	177.49	55.29	13.79	837.36	-149.40	11,699.80	11,605.89	93.91	124.590	
17,700.00	6,928.68	2,809.00	2,808.59	179.08	55.29	13.79	837.36	-149.40	11,793.01	11,698.94	94.07	125.366	
17,800.00	6,928.46	2,809.00	2,808.59	180.66	55.29	13.79	837.36	-149.40	11,886.34	11,792.11	94.23	126.144	
17,900.00	6,928.23	2,809.00	2,808.59	182.25	55.29	13.79	837.36	-149.40	11,979.77	11,885.38	94.39	126.922	
18,000.00	6,928.01	2,809.00	2,808.59	183.84	55.29	13.79	837.36	-149.40	12,073.31	11,978.76	94.54	127.702	
18,100.00	6,927.78	2,809.00	2,808.59	185.43	55.29	13.79	837.36	-149.40	12,166.95	12,072.25	94.70	128.482	
18,200.00	6,927.56	2,809.00	2,808.59	187.01	55.29	13.79	837.36	-149.40	12,260.69	12,165.84	94.85	129.263	
18,300.00	6,927.33	2,809.00	2,808.59	188.60	55.29	13.79	837.36	-149.40	12,354.53	12,259.52	95.00	130.045	
18,400.00	6,927.11	2,809.00	2,808.59	190.19	55.29	13.79	837.36	-149.40	12,448.46	12,353.31	95.15	130.827	
18,500.00	6,926.88	2,809.00	2,808.59	191.78	55.29	13.79	837.36	-149.40	12,542.49	12,447.19	95.30	131.610	
18,600.00	6,926.66	2,809.00	2,808.59	193.37	55.29	13.79	837.36	-149.40	12,636.61	12,541.16	95.45	132.394	
18,700.00	6,926.44	2,809.00	2,808.59	194.96	55.29	13.79	837.36	-149.40	12,730.82	12,635.23	95.59	133.178	
18,800.00	6,926.21	2,809.00	2,808.59	196.54	55.29	13.79	837.36	-149.40	12,825.12	12,729.38	95.74	133.962	
18,900.00	6,925.99	2,809.00	2,808.59	198.13	55.29	13.79	837.36	-149.40	12,919.50	12,823.62	95.88	134.747	
19,000.00	6,925.76	2,809.00	2,808.59	199.72	55.29	13.79	837.36	-149.40	13,013.97	12,917.94	96.02	135.532	
19,100.00	6,925.54	2,809.00	2,808.59	201.31	55.29	13.79	837.36	-149.40	13,108.51	13,012.35	96.16	136.318	
19,200.00	6,925.31	2,809.00	2,808.59	202.90	55.29	13.79	837.36	-149.40	13,203.14	13,106.84	96.30	137.103	
19,300.00	6,925.09	2,809.00	2,808.59	204.49	55.29	13.79	837.36	-149.40	13,297.85	13,201.41	96.44	137.889	
19,400.00	6,924.86	2,809.00	2,808.59	206.08	55.29	13.79	837.36	-149.40	13,392.64	13,296.06	96.58	138.675	
19,500.00	6,924.64	2,809.00	2,808.59	207.67	55.29	13.79	837.36	-149.40	13,487.50	13,390.79	96.71	139.461	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 207A - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 343-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,600.00	6,924.41	2,809.00	2,808.59	209.26	55.29	13.79	837.36	-149.40	13,582.43	13,485.58	96.85	140.247	
19,700.00	6,924.19	2,809.00	2,808.59	210.85	55.29	13.79	837.36	-149.40	13,677.44	13,580.46	96.98	141.033	
19,800.00	6,923.96	2,809.00	2,808.59	212.44	55.29	13.79	837.36	-149.40	13,772.51	13,675.40	97.11	141.819	
19,900.00	6,923.74	2,809.00	2,808.59	214.04	55.29	13.79	837.36	-149.40	13,867.66	13,770.41	97.25	142.604	
20,000.00	6,923.51	2,809.00	2,808.59	215.63	55.29	13.79	837.36	-149.40	13,962.87	13,865.50	97.38	143.390	
20,100.00	6,923.29	2,809.00	2,808.59	217.22	55.29	13.79	837.36	-149.40	14,058.15	13,960.65	97.51	144.176	
20,200.00	6,923.07	2,809.00	2,808.59	218.81	55.29	13.79	837.36	-149.40	14,153.50	14,055.86	97.64	144.961	
20,300.00	6,922.84	2,809.00	2,808.59	220.40	55.29	13.79	837.36	-149.40	14,248.91	14,151.14	97.77	145.746	
20,400.00	6,922.62	2,809.00	2,808.59	221.99	55.29	13.79	837.36	-149.40	14,344.38	14,246.49	97.89	146.530	
20,500.00	6,922.39	2,809.00	2,808.59	223.59	55.29	13.79	837.36	-149.40	14,439.91	14,341.89	98.02	147.315	
20,600.00	6,922.17	2,809.00	2,808.59	225.18	55.29	13.79	837.36	-149.40	14,535.51	14,437.36	98.15	148.099	
20,674.13	6,922.00	2,809.00	2,808.59	226.36	55.29	13.79	837.36	-149.40	14,606.41	14,508.17	98.24	148.680	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	85.72	270.39	3,616.72	3,626.92				
100.00	100.00	72.00	72.00	0.25	3.14	85.72	270.39	3,616.72	3,626.81	3,623.42	3.39	1,068.999	
200.00	200.00	172.00	172.00	0.61	7.51	85.72	270.39	3,616.72	3,626.81	3,618.70	8.11	446.954	
300.00	300.00	272.00	272.00	0.97	11.87	85.72	270.39	3,616.72	3,626.81	3,613.98	12.84	282.543	
400.00	400.00	372.00	372.00	1.33	16.23	85.72	270.39	3,616.72	3,626.81	3,609.26	17.56	206.561	
500.00	500.00	472.00	472.00	1.68	20.60	85.72	270.39	3,616.72	3,626.81	3,604.53	22.28	162.784	CC
606.93	606.91	578.91	578.91	2.05	25.26	-136.78	270.39	3,616.72	3,628.27	3,600.96	27.31	132.844	
700.00	699.91	671.91	671.91	2.37	29.32	-136.82	270.39	3,616.72	3,630.80	3,599.12	31.68	114.597	
800.00	799.84	771.84	771.84	2.71	33.68	-136.86	270.39	3,616.72	3,633.52	3,597.14	36.39	99.863	
900.00	899.77	871.77	871.77	3.06	38.04	-136.90	270.39	3,616.72	3,636.25	3,595.16	41.09	88.491	
1,000.00	999.70	971.70	971.70	3.41	42.40	-136.94	270.39	3,616.72	3,638.98	3,593.17	45.80	79.451	
1,100.00	1,099.63	1,071.63	1,071.63	3.76	46.76	-136.98	270.39	3,616.72	3,641.70	3,591.19	50.51	72.094	
1,200.00	1,199.56	1,171.56	1,171.56	4.11	51.12	-137.02	270.39	3,616.72	3,644.43	3,589.21	55.23	65.990	
1,300.00	1,299.49	1,271.49	1,271.49	4.47	55.48	-137.06	270.39	3,616.72	3,647.17	3,587.22	59.94	60.845	
1,400.00	1,399.42	1,371.42	1,371.42	4.83	59.84	-137.10	270.39	3,616.72	3,649.90	3,585.24	64.66	56.450	
1,500.00	1,499.35	1,471.35	1,471.35	5.19	64.20	-137.14	270.39	3,616.72	3,652.63	3,583.26	69.37	52.651	
1,600.00	1,599.28	1,571.28	1,571.28	5.54	68.56	-137.18	270.39	3,616.72	3,655.37	3,581.28	74.09	49.336	
1,700.00	1,699.21	1,671.21	1,671.21	5.90	72.92	-137.22	270.39	3,616.72	3,658.11	3,579.30	78.81	46.417	
1,800.00	1,799.14	1,771.14	1,771.14	6.26	77.28	-137.26	270.39	3,616.72	3,660.85	3,577.32	83.53	43.828	
1,900.00	1,899.07	1,871.07	1,871.07	6.62	81.64	-137.30	270.39	3,616.72	3,663.59	3,575.35	88.25	41.516	
2,000.00	1,999.00	1,971.00	1,971.00	6.98	86.00	-137.34	270.39	3,616.72	3,666.34	3,573.37	92.96	39.438	
2,100.00	2,098.94	2,070.94	2,070.94	7.34	90.36	-137.37	270.39	3,616.72	3,669.08	3,571.40	97.68	37.561	
2,200.00	2,198.87	2,170.87	2,170.87	7.70	94.72	-137.41	270.39	3,616.72	3,671.83	3,569.43	102.40	35.857	
2,300.00	2,298.80	2,270.80	2,270.80	8.06	99.08	-137.45	270.39	3,616.72	3,674.58	3,567.46	107.12	34.303	
2,400.00	2,398.73	2,370.73	2,370.73	8.42	103.44	-137.49	270.39	3,616.72	3,677.33	3,565.49	111.84	32.880	
2,500.00	2,498.66	2,470.66	2,470.66	8.79	107.80	-137.53	270.39	3,616.72	3,680.08	3,563.52	116.56	31.572	
2,600.00	2,598.59	2,570.59	2,570.59	9.15	112.16	-137.57	270.39	3,616.72	3,682.84	3,561.56	121.28	30.366	
2,700.00	2,698.52	2,670.52	2,670.52	9.51	116.52	-137.61	270.39	3,616.72	3,685.59	3,559.59	126.00	29.250	
2,800.00	2,798.45	2,770.45	2,770.45	9.87	120.88	-137.65	270.39	3,616.72	3,688.35	3,557.63	130.72	28.215	
2,900.00	2,898.38	2,870.38	2,870.38	10.23	125.24	-137.69	270.39	3,616.72	3,691.11	3,555.67	135.44	27.252	
3,000.00	2,998.31	2,970.31	2,970.31	10.59	129.60	-137.73	270.39	3,616.72	3,693.87	3,553.71	140.16	26.354	
3,100.00	3,098.24	3,070.24	3,070.24	10.96	133.96	-137.77	270.39	3,616.72	3,696.64	3,551.75	144.88	25.515	
3,200.00	3,198.17	3,170.17	3,170.17	11.32	138.32	-137.80	270.39	3,616.72	3,699.40	3,549.80	149.60	24.728	
3,300.00	3,298.10	3,270.10	3,270.10	11.68	142.69	-137.84	270.39	3,616.72	3,702.17	3,547.84	154.32	23.990	
3,400.00	3,398.03	3,370.03	3,370.03	12.04	147.05	-137.88	270.39	3,616.72	3,704.93	3,545.89	159.04	23.295	
3,500.00	3,497.96	3,469.96	3,469.96	12.40	151.41	-137.92	270.39	3,616.72	3,707.70	3,543.94	163.77	22.640	
3,600.00	3,597.89	3,569.89	3,569.89	12.77	155.77	-137.96	270.39	3,616.72	3,710.48	3,541.99	168.49	22.022	
3,700.00	3,697.82	3,669.82	3,669.82	13.13	160.13	-138.00	270.39	3,616.72	3,713.25	3,540.04	173.21	21.438	
3,800.00	3,797.75	3,769.75	3,769.75	13.49	164.49	-138.04	270.39	3,616.72	3,716.02	3,538.10	177.93	20.885	
3,900.00	3,897.68	3,869.68	3,869.68	13.85	168.85	-138.08	270.39	3,616.72	3,718.80	3,536.15	182.65	20.360	
4,000.00	3,997.61	3,969.61	3,969.61	14.21	173.21	-138.11	270.39	3,616.72	3,721.58	3,534.21	187.37	19.862	
4,100.00	4,097.54	4,069.54	4,069.54	14.58	177.57	-138.15	270.39	3,616.72	3,724.36	3,532.27	192.09	19.389	
4,200.00	4,197.47	4,169.47	4,169.47	14.94	181.93	-138.19	270.39	3,616.72	3,727.14	3,530.33	196.81	18.938	
4,300.00	4,297.40	4,269.40	4,269.40	15.30	186.29	-138.23	270.39	3,616.72	3,729.92	3,528.39	201.53	18.508	
4,400.00	4,397.33	4,369.33	4,369.33	15.66	190.65	-138.27	270.39	3,616.72	3,732.71	3,526.46	206.25	18.098	
4,500.00	4,497.26	4,469.26	4,469.26	16.03	195.01	-138.30	270.39	3,616.72	3,735.49	3,524.52	210.97	17.706	
4,600.00	4,597.19	4,569.19	4,569.19	16.39	199.37	-138.34	270.39	3,616.72	3,738.28	3,522.59	215.69	17.331	
4,700.00	4,697.12	4,669.12	4,669.12	16.75	203.73	-138.38	270.39	3,616.72	3,741.07	3,520.66	220.42	16.973	
4,800.00	4,797.05	4,769.05	4,769.05	17.11	208.09	-138.42	270.39	3,616.72	3,743.86	3,518.73	225.14	16.629	
4,900.00	4,896.99	4,868.99	4,868.99	17.47	212.45	-138.46	270.39	3,616.72	3,746.66	3,516.80	229.86	16.300	
5,000.00	4,996.92	4,968.92	4,968.92	17.84	216.81	-138.49	270.39	3,616.72	3,749.45	3,514.87	234.58	15.984	
5,100.00	5,096.85	5,068.85	5,068.85	18.20	221.17	-138.53	270.39	3,616.72	3,752.25	3,512.95	239.30	15.680	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,168.78	5,168.78	18.56	225.53	-138.57	270.39	3,616.72	3,755.05	3,511.03	244.02	15.388	
5,300.00	5,296.71	5,268.71	5,268.71	18.92	229.89	-138.61	270.39	3,616.72	3,757.85	3,509.10	248.74	15.107	
5,400.00	5,396.64	5,368.64	5,368.64	19.29	234.25	-138.64	270.39	3,616.72	3,760.65	3,507.18	253.46	14.837	
5,500.00	5,496.57	5,468.57	5,468.57	19.65	238.61	-138.68	270.39	3,616.72	3,763.45	3,505.27	258.18	14.577	
5,600.00	5,596.50	5,568.50	5,568.50	20.01	242.97	-138.72	270.39	3,616.72	3,766.25	3,503.35	262.90	14.326	
5,700.00	5,696.43	5,668.43	5,668.43	20.37	247.33	-138.76	270.39	3,616.72	3,769.06	3,501.43	267.63	14.083	
5,800.00	5,796.36	5,768.36	5,768.36	20.74	251.69	-138.79	270.39	3,616.72	3,771.87	3,499.52	272.35	13.850	
5,900.00	5,896.29	5,868.29	5,868.29	21.10	256.05	-138.83	270.39	3,616.72	3,774.68	3,497.61	277.07	13.624	
6,000.00	5,996.22	5,968.22	5,968.22	21.46	260.41	-138.87	270.39	3,616.72	3,777.49	3,495.70	281.79	13.405	
6,100.00	6,096.15	6,068.15	6,068.15	21.82	264.77	-138.91	270.39	3,616.72	3,780.30	3,493.79	286.51	13.194	
6,200.00	6,196.08	6,168.08	6,168.08	22.19	269.13	-138.94	270.39	3,616.72	3,783.11	3,491.88	291.23	12.990	
6,300.00	6,296.01	6,268.01	6,268.01	22.55	273.49	-138.98	270.39	3,616.72	3,785.93	3,489.98	295.95	12.792	
6,335.60	6,331.59	6,303.59	6,303.59	22.68	275.05	-138.99	270.39	3,616.72	3,786.93	3,489.30	297.63	12.724	
6,350.00	6,345.97	6,317.97	6,317.97	22.73	275.67	-156.68	270.39	3,616.72	3,787.50	3,489.19	298.31	12.696 ES	
6,400.00	6,395.75	6,367.75	6,367.75	22.91	277.85	-174.46	270.39	3,616.72	3,791.97	3,491.31	300.66	12.612	
6,450.00	6,445.03	6,417.03	6,417.03	23.10	280.00	-179.20	270.39	3,616.72	3,800.31	3,497.32	302.99	12.543	
6,500.00	6,493.52	6,465.52	6,465.52	23.29	282.11	178.57	270.39	3,616.72	3,812.47	3,507.18	305.29	12.488	
6,550.00	6,540.91	6,512.91	6,512.91	23.48	284.18	177.21	270.39	3,616.72	3,828.36	3,520.83	307.52	12.449	
6,600.00	6,586.91	6,558.91	6,558.91	23.66	286.19	176.22	270.39	3,616.72	3,847.89	3,538.19	309.70	12.425	
6,650.00	6,631.24	6,603.24	6,603.24	23.85	288.12	175.42	270.39	3,616.72	3,870.94	3,559.15	311.79	12.415 SF	
6,700.00	6,673.63	6,645.63	6,645.63	24.05	289.97	174.69	270.39	3,616.72	3,897.37	3,583.59	313.79	12.420	
6,750.00	6,713.80	6,685.80	6,685.80	24.24	291.72	173.97	270.39	3,616.72	3,927.02	3,611.34	315.68	12.440	
6,800.00	6,751.52	6,723.52	6,723.52	24.44	293.37	173.20	270.39	3,616.72	3,959.70	3,642.25	317.45	12.474	
6,850.00	6,786.56	6,758.56	6,758.56	24.65	294.90	172.35	270.39	3,616.72	3,995.22	3,676.13	319.09	12.521	
6,900.00	6,818.69	6,790.69	6,790.69	24.87	296.30	171.35	270.39	3,616.72	4,033.35	3,712.76	320.60	12.581	
6,950.00	6,847.72	6,819.72	6,819.72	25.10	297.57	170.12	270.39	3,616.72	4,073.87	3,751.92	321.95	12.654	
7,000.00	6,873.46	6,845.46	6,845.46	25.34	298.69	168.54	270.39	3,616.72	4,116.51	3,793.36	323.15	12.739	
7,050.00	6,895.77	6,867.77	6,867.77	25.60	299.66	166.43	270.39	3,616.72	4,161.03	3,836.85	324.19	12.835	
7,100.00	6,914.50	6,886.50	6,886.50	25.87	300.48	163.43	270.39	3,616.72	4,207.15	3,882.09	325.05	12.943	
7,150.00	6,929.54	6,901.54	6,901.54	26.15	301.14	158.84	270.39	3,616.72	4,254.58	3,928.83	325.75	13.061	
7,200.00	6,940.80	6,912.80	6,912.80	26.44	301.63	151.12	270.39	3,616.72	4,303.03	3,976.76	326.27	13.189	
7,250.00	6,948.20	6,920.20	6,920.20	26.75	301.95	136.35	270.39	3,616.72	4,352.20	4,025.59	326.61	13.325	
7,300.00	6,951.70	6,923.70	6,923.70	27.07	302.10	106.35	270.39	3,616.72	4,401.79	4,075.02	326.77	13.471	
7,321.06	6,952.00	6,924.00	6,924.00	27.20	302.12	88.78	270.39	3,616.72	4,422.74	4,095.95	326.78	13.534	
7,400.00	6,951.82	6,923.82	6,923.82	27.74	302.11	88.76	270.39	3,616.72	4,501.25	4,174.47	326.78	13.775	
7,500.00	6,951.60	6,923.60	6,923.60	28.49	302.10	88.73	270.39	3,616.72	4,600.72	4,273.95	326.78	14.079	
7,600.00	6,951.37	6,923.37	6,923.37	29.30	302.09	88.70	270.39	3,616.72	4,700.22	4,373.45	326.78	14.384	
7,700.00	6,951.15	6,923.15	6,923.15	30.18	302.08	88.68	270.39	3,616.72	4,799.75	4,472.97	326.78	14.688	
7,800.00	6,950.92	6,922.92	6,922.92	31.12	302.07	88.65	270.39	3,616.72	4,899.29	4,572.51	326.78	14.993	
7,900.00	6,950.70	6,922.70	6,922.70	32.11	302.06	88.62	270.39	3,616.72	4,998.85	4,672.06	326.78	15.297	
8,000.00	6,950.47	6,922.47	6,922.47	33.15	302.05	88.59	270.39	3,616.72	5,098.42	4,771.64	326.79	15.602	
8,100.00	6,950.25	6,922.25	6,922.25	34.23	302.04	88.56	270.39	3,616.72	5,198.02	4,871.22	326.79	15.906	
8,200.00	6,950.03	6,922.03	6,922.03	35.35	302.03	88.54	270.39	3,616.72	5,297.62	4,970.82	326.80	16.211	
8,300.00	6,949.80	6,921.80	6,921.80	36.51	302.02	88.51	270.39	3,616.72	5,397.25	5,070.44	326.81	16.515	
8,400.00	6,949.58	6,921.58	6,921.58	37.70	302.01	88.48	270.39	3,616.72	5,496.88	5,170.06	326.82	16.819	
8,500.00	6,949.35	6,921.35	6,921.35	38.92	302.00	88.45	270.39	3,616.72	5,596.53	5,269.70	326.83	17.124	
8,600.00	6,949.13	6,921.13	6,921.13	40.17	301.99	88.43	270.39	3,616.72	5,696.19	5,369.35	326.84	17.428	
8,700.00	6,948.90	6,920.90	6,920.90	41.44	301.98	88.40	270.39	3,616.72	5,795.87	5,469.01	326.86	17.732	
8,800.00	6,948.68	6,920.68	6,920.68	42.73	301.97	88.37	270.39	3,616.72	5,895.55	5,568.68	326.87	18.036	
8,900.00	6,948.45	6,920.45	6,920.45	44.04	301.96	88.34	270.39	3,616.72	5,995.24	5,668.36	326.89	18.340	
9,000.00	6,948.23	6,920.23	6,920.23	45.38	301.95	88.31	270.39	3,616.72	6,094.95	5,768.04	326.90	18.644	
9,100.00	6,948.00	6,920.00	6,920.00	46.72	301.94	88.29	270.39	3,616.72	6,194.66	5,867.74	326.92	18.948	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	6,919.78	6,919.78	48.09	301.93	88.26	270.39	3,616.72	6,294.39	5,967.44	326.94	19.252	
9,300.00	6,947.55	6,919.55	6,919.55	49.47	301.92	88.23	270.39	3,616.72	6,394.12	6,067.16	326.96	19.556	
9,400.00	6,947.33	6,919.33	6,919.33	50.86	301.91	88.20	270.39	3,616.72	6,493.86	6,166.88	326.98	19.860	
9,500.00	6,947.10	6,919.10	6,919.10	52.26	301.90	88.18	270.39	3,616.72	6,593.61	6,266.60	327.00	20.164	
9,600.00	6,946.88	6,918.88	6,918.88	53.68	301.89	88.15	270.39	3,616.72	6,693.36	6,366.33	327.03	20.467	
9,700.00	6,946.66	6,918.66	6,918.66	55.10	301.88	88.12	270.39	3,616.72	6,793.12	6,466.07	327.05	20.771	
9,800.00	6,946.43	6,918.43	6,918.43	56.54	301.87	88.09	270.39	3,616.72	6,892.89	6,565.82	327.08	21.074	
9,900.00	6,946.21	6,918.21	6,918.21	57.98	301.86	88.07	270.39	3,616.72	6,992.67	6,665.57	327.10	21.378	
10,000.00	6,945.98	6,917.98	6,917.98	59.43	301.85	88.04	270.39	3,616.72	7,092.45	6,765.32	327.13	21.681	
10,100.00	6,945.76	6,917.76	6,917.76	60.89	301.84	88.01	270.39	3,616.72	7,192.24	6,865.08	327.16	21.984	
10,200.00	6,945.53	6,917.53	6,917.53	62.36	301.83	87.98	270.39	3,616.72	7,292.04	6,964.85	327.19	22.287	
10,300.00	6,945.31	6,917.31	6,917.31	63.83	301.82	87.95	270.39	3,616.72	7,391.84	7,064.62	327.21	22.590	
10,400.00	6,945.08	6,917.08	6,917.08	65.31	301.81	87.93	270.39	3,616.72	7,491.64	7,164.40	327.25	22.893	
10,500.00	6,944.86	6,916.86	6,916.86	66.79	301.80	87.90	270.39	3,616.72	7,591.45	7,264.17	327.28	23.196	
10,600.00	6,944.63	6,916.63	6,916.63	68.28	301.80	87.87	270.39	3,616.72	7,691.27	7,363.96	327.31	23.499	
10,700.00	6,944.41	6,916.41	6,916.41	69.78	301.79	87.84	270.39	3,616.72	7,791.09	7,463.74	327.34	23.801	
10,800.00	6,944.18	6,916.18	6,916.18	71.28	301.78	87.82	270.39	3,616.72	7,890.91	7,563.54	327.37	24.104	
10,900.00	6,943.96	6,915.96	6,915.96	72.78	301.77	87.79	270.39	3,616.72	7,990.74	7,663.33	327.41	24.406	
11,000.00	6,943.73	6,915.73	6,915.73	74.29	301.76	87.76	270.39	3,616.72	8,090.57	7,763.13	327.44	24.708	
11,100.00	6,943.51	6,915.51	6,915.51	75.80	301.75	87.73	270.39	3,616.72	8,190.41	7,862.93	327.48	25.010	
11,200.00	6,943.29	6,915.29	6,915.29	77.32	301.74	87.71	270.39	3,616.72	8,290.25	7,962.73	327.52	25.312	
11,300.00	6,943.06	6,915.06	6,915.06	78.84	301.73	87.68	270.39	3,616.72	8,390.10	8,062.54	327.56	25.614	
11,400.00	6,942.84	6,914.84	6,914.84	80.36	301.72	87.65	270.39	3,616.72	8,489.94	8,162.35	327.59	25.916	
11,500.00	6,942.61	6,914.61	6,914.61	81.88	301.71	87.62	270.39	3,616.72	8,589.80	8,262.16	327.63	26.218	
11,600.00	6,942.39	6,914.39	6,914.39	83.41	301.70	87.59	270.39	3,616.72	8,689.65	8,361.98	327.67	26.519	
11,700.00	6,942.16	6,914.16	6,914.16	84.94	301.69	87.57	270.39	3,616.72	8,789.51	8,461.79	327.72	26.821	
11,800.00	6,941.94	6,913.94	6,913.94	86.47	301.68	87.54	270.39	3,616.72	8,889.37	8,561.61	327.76	27.122	
11,900.00	6,941.71	6,913.71	6,913.71	88.01	301.67	87.51	270.39	3,616.72	8,989.24	8,661.44	327.80	27.423	
12,000.00	6,941.49	6,913.49	6,913.49	89.55	301.66	87.48	270.39	3,616.72	9,089.10	8,761.26	327.84	27.724	
12,100.00	6,941.26	6,913.26	6,913.26	91.09	301.65	87.46	270.39	3,616.72	9,188.98	8,861.09	327.89	28.025	
12,200.00	6,941.04	6,913.04	6,913.04	92.63	301.64	87.43	270.39	3,616.72	9,288.85	8,960.92	327.93	28.326	
12,300.00	6,940.81	6,912.81	6,912.81	94.18	301.63	87.40	270.39	3,616.72	9,388.73	9,060.75	327.98	28.626	
12,400.00	6,940.59	6,912.59	6,912.59	95.72	301.62	87.37	270.39	3,616.72	9,488.60	9,160.58	328.02	28.927	
12,500.00	6,940.36	6,912.36	6,912.36	97.27	301.61	87.35	270.39	3,616.72	9,588.49	9,260.41	328.07	29.227	
12,600.00	6,940.14	6,912.14	6,912.14	98.82	301.60	87.32	270.39	3,616.72	9,688.37	9,360.25	328.12	29.527	
12,700.00	6,939.92	6,911.92	6,911.92	100.37	301.59	87.29	270.39	3,616.72	9,788.26	9,460.09	328.17	29.827	
12,800.00	6,939.69	6,911.69	6,911.69	101.92	301.58	87.26	270.39	3,616.72	9,888.14	9,559.93	328.22	30.127	
12,900.00	6,939.47	6,911.47	6,911.47	103.48	301.57	87.23	270.39	3,616.72	9,988.03	9,659.77	328.27	30.427	
13,000.00	6,939.24	6,911.24	6,911.24	105.03	301.56	87.21	270.39	3,616.72	10,087.93	9,759.61	328.32	30.726	
13,100.00	6,939.02	6,911.02	6,911.02	106.59	301.55	87.18	270.39	3,616.72	10,187.82	9,859.45	328.37	31.026	
13,200.00	6,938.79	6,910.79	6,910.79	108.15	301.54	87.15	270.39	3,616.72	10,287.72	9,959.30	328.42	31.325	
13,300.00	6,938.57	6,910.57	6,910.57	109.71	301.53	87.12	270.39	3,616.72	10,387.62	10,059.14	328.47	31.624	
13,400.00	6,938.34	6,910.34	6,910.34	111.27	301.52	87.10	270.39	3,616.72	10,487.52	10,158.99	328.53	31.923	
13,500.00	6,938.12	6,910.12	6,910.12	112.83	301.51	87.07	270.39	3,616.72	10,587.42	10,258.84	328.58	32.222	
13,600.00	6,937.89	6,909.89	6,909.89	114.40	301.50	87.04	270.39	3,616.72	10,687.33	10,358.69	328.64	32.520	
13,700.00	6,937.67	6,909.67	6,909.67	115.96	301.49	87.01	270.39	3,616.72	10,787.23	10,458.54	328.69	32.819	
13,800.00	6,937.44	6,909.44	6,909.44	117.53	301.48	86.99	270.39	3,616.72	10,887.14	10,558.39	328.75	33.117	
13,900.00	6,937.22	6,909.22	6,909.22	119.09	301.47	86.96	270.39	3,616.72	10,987.05	10,658.24	328.81	33.415	
14,000.00	6,936.99	6,908.99	6,908.99	120.66	301.46	86.93	270.39	3,616.72	11,086.96	10,758.10	328.86	33.713	
14,100.00	6,936.77	6,908.77	6,908.77	122.23	301.45	86.90	270.39	3,616.72	11,186.87	10,857.95	328.92	34.011	
14,200.00	6,936.55	6,908.55	6,908.55	123.80	301.44	86.87	270.39	3,616.72	11,286.79	10,957.81	328.98	34.308	
14,300.00	6,936.32	6,908.32	6,908.32	125.37	301.43	86.85	270.39	3,616.72	11,386.70	11,057.66	329.04	34.606	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD — **Offset Site Error:** 0.00 usft

Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	6,908.10	6,908.10	126.94	301.42	86.82	270.39	3,616.72	11,486.62	11,157.52	329.10	34.903	
14,500.00	6,935.87	6,907.87	6,907.87	128.51	301.41	86.79	270.39	3,616.72	11,586.54	11,257.38	329.16	35.200	
14,600.00	6,935.65	6,907.65	6,907.65	130.08	301.40	86.76	270.39	3,616.72	11,686.46	11,357.24	329.22	35.497	
14,700.00	6,935.42	6,907.42	6,907.42	131.65	301.39	86.74	270.39	3,616.72	11,786.38	11,457.10	329.29	35.794	
14,800.00	6,935.20	6,907.20	6,907.20	133.23	301.38	86.71	270.39	3,616.72	11,886.31	11,556.96	329.35	36.090	
14,900.00	6,934.97	6,906.97	6,906.97	134.80	301.37	86.68	270.39	3,616.72	11,986.23	11,656.82	329.41	36.387	
15,000.00	6,934.75	6,906.75	6,906.75	136.37	301.36	86.65	270.39	3,616.72	12,086.16	11,756.68	329.48	36.683	
15,100.00	6,934.52	6,906.52	6,906.52	137.95	301.35	86.63	270.39	3,616.72	12,186.08	11,856.54	329.54	36.979	
15,200.00	6,934.30	6,906.30	6,906.30	139.53	301.34	86.60	270.39	3,616.72	12,286.01	11,956.40	329.61	37.275	
15,300.00	6,934.07	6,906.07	6,906.07	141.10	301.33	86.57	270.39	3,616.72	12,385.94	12,056.27	329.67	37.570	
15,400.00	6,933.85	6,905.85	6,905.85	142.68	301.32	86.54	270.39	3,616.72	12,485.87	12,156.13	329.74	37.866	
15,500.00	6,933.62	6,905.62	6,905.62	144.26	301.31	86.52	270.39	3,616.72	12,585.80	12,255.99	329.81	38.161	
15,600.00	6,933.40	6,905.40	6,905.40	145.84	301.30	86.49	270.39	3,616.72	12,685.73	12,355.86	329.87	38.456	
15,700.00	6,933.18	6,905.18	6,905.18	147.42	301.30	86.46	270.39	3,616.72	12,785.67	12,455.72	329.94	38.751	
15,800.00	6,932.95	6,904.95	6,904.95	148.99	301.29	86.43	270.39	3,616.72	12,885.60	12,555.59	330.01	39.046	
15,900.00	6,932.73	6,904.73	6,904.73	150.57	301.28	86.40	270.39	3,616.72	12,985.54	12,655.45	330.08	39.340	
16,000.00	6,932.50	6,904.50	6,904.50	152.15	301.27	86.38	270.39	3,616.72	13,085.47	12,755.32	330.15	39.635	
16,100.00	6,932.28	6,904.28	6,904.28	153.74	301.26	86.35	270.39	3,616.72	13,185.41	12,855.19	330.22	39.929	
16,200.00	6,932.05	6,904.05	6,904.05	155.32	301.25	86.32	270.39	3,616.72	13,285.35	12,955.05	330.29	40.223	
16,300.00	6,931.83	6,903.83	6,903.83	156.90	301.24	86.29	270.39	3,616.72	13,385.29	13,054.92	330.37	40.517	
16,400.00	6,931.60	6,903.60	6,903.60	158.48	301.23	86.27	270.39	3,616.72	13,485.23	13,154.79	330.44	40.810	
16,500.00	6,931.38	6,903.38	6,903.38	160.06	301.22	86.24	270.39	3,616.72	13,585.17	13,254.66	330.51	41.104	
16,600.00	6,931.15	6,903.15	6,903.15	161.65	301.21	86.21	270.39	3,616.72	13,685.11	13,354.53	330.58	41.397	
16,700.00	6,930.93	6,902.93	6,902.93	163.23	301.20	86.18	270.39	3,616.72	13,785.05	13,454.39	330.66	41.690	
16,800.00	6,930.70	6,902.70	6,902.70	164.81	301.19	86.16	270.39	3,616.72	13,885.00	13,554.26	330.73	41.983	
16,900.00	6,930.48	6,902.48	6,902.48	166.40	301.18	86.13	270.39	3,616.72	13,984.94	13,654.13	330.81	42.275	
17,000.00	6,930.25	6,902.25	6,902.25	167.98	301.17	86.10	270.39	3,616.72	14,084.89	13,754.00	330.88	42.568	
17,100.00	6,930.03	6,902.03	6,902.03	169.56	301.16	86.07	270.39	3,616.72	14,184.83	13,853.87	330.96	42.860	
17,200.00	6,929.81	6,901.81	6,901.81	171.15	301.15	86.05	270.39	3,616.72	14,284.78	13,953.74	331.04	43.152	
17,300.00	6,929.58	6,901.58	6,901.58	172.73	301.14	86.02	270.39	3,616.72	14,384.72	14,053.61	331.11	43.444	
17,400.00	6,929.36	6,901.36	6,901.36	174.32	301.13	85.99	270.39	3,616.72	14,484.67	14,153.48	331.19	43.735	
17,500.00	6,929.13	6,901.13	6,901.13	175.91	301.12	85.96	270.39	3,616.72	14,584.62	14,253.35	331.27	44.026	
17,600.00	6,928.91	6,900.91	6,900.91	177.49	301.11	85.94	270.39	3,616.72	14,684.57	14,353.22	331.35	44.318	
17,700.00	6,928.68	6,900.68	6,900.68	179.08	301.10	85.91	270.39	3,616.72	14,784.52	14,453.09	331.43	44.609	
17,800.00	6,928.46	6,900.46	6,900.46	180.66	301.09	85.88	270.39	3,616.72	14,884.47	14,552.97	331.51	44.899	
17,900.00	6,928.23	6,900.23	6,900.23	182.25	301.08	85.85	270.39	3,616.72	14,984.42	14,652.84	331.59	45.190	
18,000.00	6,928.01	6,900.01	6,900.01	183.84	301.07	85.82	270.39	3,616.72	15,084.38	14,752.71	331.67	45.480	
18,100.00	6,927.78	6,899.78	6,899.78	185.43	301.06	85.80	270.39	3,616.72	15,184.33	14,852.58	331.75	45.771	
18,200.00	6,927.56	6,899.56	6,899.56	187.01	301.05	85.77	270.39	3,616.72	15,284.28	14,952.45	331.83	46.060	
18,300.00	6,927.33	6,899.33	6,899.33	188.60	301.04	85.74	270.39	3,616.72	15,384.24	15,052.32	331.91	46.350	
18,400.00	6,927.11	6,899.11	6,899.11	190.19	301.03	85.71	270.39	3,616.72	15,484.19	15,152.19	332.00	46.640	
18,500.00	6,926.88	6,898.88	6,898.88	191.78	301.02	85.69	270.39	3,616.72	15,584.15	15,252.07	332.08	46.929	
18,600.00	6,926.66	6,898.66	6,898.66	193.37	301.01	85.66	270.39	3,616.72	15,684.10	15,351.94	332.16	47.218	
18,700.00	6,926.44	6,898.44	6,898.44	194.96	301.00	85.63	270.39	3,616.72	15,784.06	15,451.81	332.25	47.507	
18,800.00	6,926.21	6,898.21	6,898.21	196.54	300.99	85.60	270.39	3,616.72	15,884.01	15,551.68	332.33	47.796	
18,900.00	6,925.99	6,897.99	6,897.99	198.13	300.98	85.58	270.39	3,616.72	15,983.97	15,651.56	332.42	48.084	
19,000.00	6,925.76	6,897.76	6,897.76	199.72	300.97	85.55	270.39	3,616.72	16,083.93	15,751.43	332.50	48.373	
19,100.00	6,925.54	6,897.54	6,897.54	201.31	300.96	85.52	270.39	3,616.72	16,183.89	15,851.30	332.59	48.661	
19,200.00	6,925.31	6,897.31	6,897.31	202.90	300.95	85.49	270.39	3,616.72	16,283.85	15,951.17	332.67	48.949	
19,300.00	6,925.09	6,897.09	6,897.09	204.49	300.94	85.47	270.39	3,616.72	16,383.81	16,051.05	332.76	49.236	
19,400.00	6,924.86	6,896.86	6,896.86	206.08	300.93	85.44	270.39	3,616.72	16,483.77	16,150.92	332.85	49.524	
19,500.00	6,924.64	6,896.64	6,896.64	207.67	300.92	85.41	270.39	3,616.72	16,583.73	16,250.79	332.93	49.811	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 251 - OH - OH-TD

Offset Site Error: 0.00 usft

Survey Program: 8300-A028Ua_INC-ONLY_PLANNED_5_DEG

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,600.00	6,924.41	6,896.41	6,896.41	209.26	300.91	85.38	270.39	3,616.72	16,683.69	16,350.66	333.02	50.098	
19,700.00	6,924.19	6,896.19	6,896.19	210.85	300.90	85.36	270.39	3,616.72	16,783.65	16,450.54	333.11	50.385	
19,800.00	6,923.96	6,895.96	6,895.96	212.44	300.89	85.33	270.39	3,616.72	16,883.61	16,550.41	333.20	50.671	
19,900.00	6,923.74	6,895.74	6,895.74	214.04	300.88	85.30	270.39	3,616.72	16,983.57	16,650.28	333.29	50.958	
20,000.00	6,923.51	6,895.51	6,895.51	215.63	300.87	85.27	270.39	3,616.72	17,083.53	16,750.16	333.38	51.244	
20,100.00	6,923.29	6,895.29	6,895.29	217.22	300.86	85.25	270.39	3,616.72	17,183.50	16,850.03	333.47	51.530	
20,200.00	6,923.07	6,895.07	6,895.07	218.81	300.85	85.22	270.39	3,616.72	17,283.46	16,949.90	333.56	51.815	
20,300.00	6,922.84	6,894.84	6,894.84	220.40	300.84	85.19	270.39	3,616.72	17,383.43	17,049.78	333.65	52.101	
20,400.00	6,922.62	6,894.62	6,894.62	221.99	300.83	85.16	270.39	3,616.72	17,483.39	17,149.65	333.74	52.386	
20,500.00	6,922.39	6,894.39	6,894.39	223.59	300.82	85.14	270.39	3,616.72	17,583.35	17,249.52	333.83	52.671	
20,600.00	6,922.17	6,894.17	6,894.17	225.18	300.81	85.11	270.39	3,616.72	17,683.32	17,349.40	333.92	52.956	
20,674.13	6,922.00	6,894.00	6,894.00	226.36	300.81	85.09	270.39	3,616.72	17,757.42	17,423.43	333.99	53.167	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 166-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	312.76	312.76	0.00	4.24	82.44	1,020.49	7,687.02	7,754.47				
100.00	100.00	411.01	411.00	0.25	6.52	82.44	1,020.45	7,687.02	7,754.46	7,747.69	6.77	1,145.480	
200.00	200.00	514.62	514.60	0.61	9.02	82.43	1,020.93	7,687.02	7,754.52	7,744.90	9.63	805.508	
300.00	300.00	611.10	611.00	0.97	11.48	82.44	1,020.45	7,687.02	7,754.46	7,742.02	12.44	623.185	
400.00	400.00	711.10	711.00	1.33	14.61	82.44	1,020.45	7,687.02	7,754.46	7,738.53	15.94	486.610 CC	
500.00	500.00	814.29	814.15	1.68	17.84	82.43	1,022.04	7,687.02	7,754.67	7,735.14	19.53	397.107	
504.76	504.76	819.55	819.41	1.70	18.01	-140.07	1,022.02	7,687.02	7,754.67	7,734.96	19.71	393.456	
606.93	606.91	932.52	932.35	2.05	21.55	-140.06	1,021.02	7,687.02	7,756.08	7,732.48	23.60	328.639	
700.00	699.91	1,011.31	1,010.91	2.37	24.25	-140.07	1,020.45	7,687.02	7,758.65	7,732.04	26.62	291.464	
800.00	799.84	1,111.24	1,110.84	2.71	27.95	-140.09	1,020.45	7,687.02	7,761.52	7,730.87	30.65	253.213	
900.00	899.77	1,216.90	1,216.45	3.06	31.85	-140.12	1,022.47	7,687.02	7,764.65	7,729.75	34.90	222.477	
1,000.00	999.70	1,329.86	1,329.36	3.41	36.02	-140.13	1,021.15	7,687.02	7,767.36	7,727.94	39.42	197.030	
1,100.00	1,099.63	1,411.49	1,410.63	3.76	39.17	-140.14	1,020.45	7,687.02	7,770.11	7,727.19	42.92	181.019	
1,200.00	1,199.56	1,518.51	1,517.61	4.11	43.44	-140.17	1,021.94	7,687.02	7,773.18	7,725.63	47.54	163.496	
1,300.00	1,299.49	1,611.68	1,610.49	4.47	47.15	-140.18	1,020.45	7,687.02	7,775.84	7,724.23	51.61	150.659	
1,400.00	1,399.42	1,711.61	1,710.42	4.83	51.16	-140.19	1,020.45	7,687.02	7,778.71	7,722.74	55.97	138.972	
1,500.00	1,499.35	1,825.84	1,824.57	5.19	55.74	-140.22	1,021.82	7,687.02	7,781.77	7,720.87	60.91	127.762	
1,600.00	1,599.28	1,911.86	1,910.28	5.54	59.23	-140.23	1,020.45	7,687.02	7,784.45	7,719.69	64.76	120.206	
1,700.00	1,699.21	2,011.79	2,010.21	5.90	63.51	-140.25	1,020.45	7,687.02	7,787.32	7,717.92	69.39	112.219	
1,800.00	1,799.14	2,137.24	2,135.55	6.26	68.88	-140.27	1,020.72	7,687.02	7,790.26	7,715.14	75.12	103.703	
1,900.00	1,899.07	2,212.06	2,210.07	6.62	72.34	-140.28	1,020.45	7,687.02	7,793.06	7,714.11	78.94	98.718	
2,000.00	1,999.00	2,325.12	2,323.04	6.98	77.64	-140.31	1,022.07	7,687.02	7,796.16	7,711.56	84.60	92.154	
2,100.00	2,098.94	2,412.43	2,409.94	7.34	81.70	-140.32	1,020.45	7,687.02	7,798.80	7,709.78	89.02	87.606	
2,200.00	2,198.87	2,512.36	2,509.87	7.70	86.13	-140.33	1,020.45	7,687.02	7,801.67	7,707.86	93.81	83.162	
2,300.00	2,298.80	2,648.73	2,646.06	8.06	92.18	-140.36	1,020.32	7,687.02	7,804.61	7,704.39	100.22	77.874	
2,400.00	2,398.73	2,712.64	2,709.73	8.42	94.57	-140.37	1,020.45	7,687.02	7,807.42	7,704.45	102.97	75.824	
2,500.00	2,498.66	2,829.51	2,826.52	8.79	98.98	-140.40	1,021.42	7,687.02	7,810.45	7,702.71	107.74	72.494	
2,600.00	2,598.59	2,912.77	2,909.59	9.15	102.27	-140.40	1,020.45	7,687.02	7,813.17	7,701.78	111.39	70.143	
2,700.00	2,698.52	3,012.70	3,009.52	9.51	106.45	-140.42	1,020.45	7,687.02	7,816.05	7,700.13	115.92	67.426	
2,800.00	2,798.45	3,115.79	3,112.55	9.87	110.75	-140.46	1,022.72	7,687.02	7,819.24	7,698.66	120.59	64.844	
2,900.00	2,898.38	3,228.46	3,225.18	10.23	115.46	-140.47	1,021.74	7,687.02	7,822.00	7,696.35	125.65	62.252	
3,000.00	2,998.31	3,313.13	3,309.31	10.59	119.06	-140.47	1,020.45	7,687.02	7,824.68	7,695.07	129.62	60.368	
3,100.00	3,098.24	3,413.06	3,409.24	10.96	123.77	-140.49	1,020.45	7,687.02	7,827.56	7,692.88	134.69	58.116	
3,200.00	3,198.17	3,512.99	3,509.17	11.32	128.49	-140.51	1,020.45	7,687.02	7,830.44	7,690.68	139.76	56.027	
3,300.00	3,298.10	3,574.00	3,569.63	11.68	131.36	-140.52	1,020.45	7,687.02	7,833.42	7,690.43	143.00	54.781 ES	
3,400.00	3,398.03	3,574.00	3,569.63	12.04	131.36	-140.52	1,020.45	7,687.02	7,837.45	7,694.11	143.33	54.681	
3,500.00	3,497.96	3,574.00	3,569.63	12.40	131.36	-140.52	1,020.45	7,687.02	7,842.74	7,699.10	143.65	54.598	
3,600.00	3,597.89	3,574.00	3,569.63	12.77	131.36	-140.52	1,020.45	7,687.02	7,849.31	7,705.37	143.94	54.534	
3,700.00	3,697.82	3,574.00	3,569.63	13.13	131.36	-140.52	1,020.45	7,687.02	7,857.14	7,712.94	144.20	54.487	
3,800.00	3,797.75	3,574.00	3,569.63	13.49	131.36	-140.52	1,020.45	7,687.02	7,866.24	7,721.79	144.45	54.458	
3,900.00	3,897.68	3,574.00	3,569.63	13.85	131.36	-140.52	1,020.45	7,687.02	7,876.59	7,731.93	144.67	54.446 SF	
4,000.00	3,997.61	3,574.00	3,569.63	14.21	131.36	-140.52	1,020.45	7,687.02	7,888.20	7,743.34	144.87	54.452	
4,100.00	4,097.54	3,574.00	3,569.63	14.58	131.36	-140.52	1,020.45	7,687.02	7,901.06	7,756.02	145.04	54.475	
4,200.00	4,197.47	3,574.00	3,569.63	14.94	131.36	-140.52	1,020.45	7,687.02	7,915.16	7,769.97	145.19	54.515	
4,300.00	4,297.40	3,574.00	3,569.63	15.30	131.36	-140.52	1,020.45	7,687.02	7,930.50	7,785.18	145.32	54.571	
4,400.00	4,397.33	3,574.00	3,569.63	15.66	131.36	-140.52	1,020.45	7,687.02	7,947.07	7,801.63	145.43	54.645	
4,500.00	4,497.26	3,574.00	3,569.63	16.03	131.36	-140.52	1,020.45	7,687.02	7,964.85	7,819.34	145.52	54.734	
4,600.00	4,597.19	3,574.00	3,569.63	16.39	131.36	-140.52	1,020.45	7,687.02	7,983.85	7,838.27	145.58	54.840	
4,700.00	4,697.12	3,574.00	3,569.63	16.75	131.36	-140.52	1,020.45	7,687.02	8,004.06	7,858.43	145.63	54.963	
4,800.00	4,797.05	3,574.00	3,569.63	17.11	131.36	-140.52	1,020.45	7,687.02	8,025.46	7,879.81	145.65	55.101	
4,900.00	4,896.99	3,574.00	3,569.63	17.47	131.36	-140.52	1,020.45	7,687.02	8,048.04	7,902.39	145.65	55.256	
5,000.00	4,996.92	3,574.00	3,569.63	17.84	131.36	-140.52	1,020.45	7,687.02	8,071.81	7,926.17	145.63	55.426	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 166-A027Ua_INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	3,574.00	3,569.63	18.20	131.36	-140.52	1,020.45	7,687.02	8,096.73	7,951.14	145.60	55.611	
5,200.00	5,196.78	3,574.00	3,569.63	18.56	131.36	-140.52	1,020.45	7,687.02	8,122.81	7,977.28	145.54	55.812	
5,300.00	5,296.71	3,574.00	3,569.63	18.92	131.36	-140.52	1,020.45	7,687.02	8,150.04	8,004.58	145.46	56.028	
5,400.00	5,396.64	3,574.00	3,569.63	19.29	131.36	-140.52	1,020.45	7,687.02	8,178.40	8,033.03	145.37	56.260	
5,500.00	5,496.57	3,574.00	3,569.63	19.65	131.36	-140.52	1,020.45	7,687.02	8,207.87	8,062.62	145.26	56.506	
5,600.00	5,596.50	3,574.00	3,569.63	20.01	131.36	-140.52	1,020.45	7,687.02	8,238.46	8,093.33	145.13	56.767	
5,700.00	5,696.43	3,574.00	3,569.63	20.37	131.36	-140.52	1,020.45	7,687.02	8,270.14	8,125.16	144.98	57.043	
5,800.00	5,796.36	3,574.00	3,569.63	20.74	131.36	-140.52	1,020.45	7,687.02	8,302.91	8,158.09	144.82	57.333	
5,900.00	5,896.29	3,574.00	3,569.63	21.10	131.36	-140.52	1,020.45	7,687.02	8,336.74	8,192.10	144.64	57.637	
6,000.00	5,996.22	3,574.00	3,569.63	21.46	131.36	-140.52	1,020.45	7,687.02	8,371.64	8,227.19	144.45	57.956	
6,100.00	6,096.15	3,574.00	3,569.63	21.82	131.36	-140.52	1,020.45	7,687.02	8,407.58	8,263.34	144.24	58.288	
6,200.00	6,196.08	3,574.00	3,569.63	22.19	131.36	-140.52	1,020.45	7,687.02	8,444.55	8,300.53	144.02	58.635	
6,300.00	6,296.01	3,574.00	3,569.63	22.55	131.36	-140.52	1,020.45	7,687.02	8,482.54	8,338.75	143.78	58.995	
6,335.60	6,331.59	3,574.00	3,569.63	22.68	131.36	-140.52	1,020.45	7,687.02	8,496.31	8,352.61	143.70	59.126	
6,350.00	6,345.97	3,574.00	3,569.63	22.73	131.36	-158.27	1,020.45	7,687.02	8,502.06	8,358.39	143.66	59.180	
6,400.00	6,395.75	3,574.00	3,569.63	22.91	131.36	-176.33	1,020.45	7,687.02	8,524.44	8,380.90	143.55	59.384	
6,450.00	6,445.03	3,574.00	3,569.63	23.10	131.36	178.60	1,020.45	7,687.02	8,550.45	8,407.01	143.44	59.611	
6,500.00	6,493.52	3,574.00	3,569.63	23.29	131.36	175.97	1,020.45	7,687.02	8,579.88	8,436.55	143.33	59.860	
6,550.00	6,540.91	3,574.00	3,569.63	23.48	131.36	174.11	1,020.45	7,687.02	8,612.52	8,469.29	143.23	60.129	
6,600.00	6,586.91	3,574.00	3,569.63	23.66	131.36	172.50	1,020.45	7,687.02	8,648.14	8,505.00	143.14	60.417	
6,650.00	6,631.24	3,574.00	3,569.63	23.85	131.36	170.89	1,020.45	7,687.02	8,686.47	8,543.42	143.05	60.721	
6,700.00	6,673.63	3,574.00	3,569.63	24.05	131.36	169.08	1,020.45	7,687.02	8,727.25	8,584.28	142.98	61.040	
6,750.00	6,713.80	3,574.00	3,569.63	24.24	131.36	166.88	1,020.45	7,687.02	8,770.20	8,627.29	142.91	61.370	
6,800.00	6,751.52	3,574.00	3,569.63	24.44	131.36	164.00	1,020.45	7,687.02	8,815.02	8,672.17	142.85	61.709	
6,850.00	6,786.56	3,574.00	3,569.63	24.65	131.36	159.95	1,020.45	7,687.02	8,861.40	8,718.60	142.80	62.054	
6,900.00	6,818.69	3,574.00	3,569.63	24.87	131.36	153.78	1,020.45	7,687.02	8,909.04	8,766.28	142.77	62.403	
6,950.00	6,847.72	3,574.00	3,569.63	25.10	131.36	143.44	1,020.45	7,687.02	8,957.63	8,814.89	142.74	62.754	
7,000.00	6,873.46	3,574.00	3,569.63	25.34	131.36	124.62	1,020.45	7,687.02	9,006.86	8,864.12	142.73	63.102	
7,050.00	6,895.77	3,574.00	3,569.63	25.60	131.36	93.03	1,020.45	7,687.02	9,056.41	8,913.67	142.74	63.446	
7,100.00	6,914.50	3,574.00	3,569.63	25.87	131.36	60.58	1,020.45	7,687.02	9,105.98	8,963.21	142.77	63.783	
7,150.00	6,929.54	3,574.00	3,569.63	26.15	131.36	40.78	1,020.45	7,687.02	9,155.25	9,012.45	142.81	64.109	
7,200.00	6,940.80	3,574.00	3,569.63	26.44	131.36	30.00	1,020.45	7,687.02	9,203.95	9,061.08	142.87	64.422	
7,250.00	6,948.20	3,574.00	3,569.63	26.75	131.36	23.68	1,020.45	7,687.02	9,251.77	9,108.82	142.95	64.720	
7,300.00	6,951.70	3,574.00	3,569.63	27.07	131.36	19.65	1,020.45	7,687.02	9,298.44	9,155.38	143.05	64.999	
7,321.06	6,952.00	3,574.00	3,569.63	27.20	131.36	18.37	1,020.45	7,687.02	9,317.69	9,174.58	143.10	65.112	
7,400.00	6,951.82	3,574.00	3,569.63	27.74	131.36	18.37	1,020.45	7,687.02	9,389.39	9,246.08	143.31	65.518	
7,500.00	6,951.60	3,574.00	3,569.63	28.49	131.36	18.37	1,020.45	7,687.02	9,480.39	9,336.82	143.57	66.033	
7,600.00	6,951.37	3,574.00	3,569.63	29.30	131.36	18.37	1,020.45	7,687.02	9,571.57	9,427.74	143.83	66.547	
7,700.00	6,951.15	3,574.00	3,569.63	30.18	131.36	18.37	1,020.45	7,687.02	9,662.92	9,518.83	144.09	67.062	
7,800.00	6,950.92	3,574.00	3,569.63	31.12	131.36	18.37	1,020.45	7,687.02	9,754.45	9,610.10	144.35	67.576	
7,900.00	6,950.70	3,574.00	3,569.63	32.11	131.36	18.37	1,020.45	7,687.02	9,846.14	9,701.53	144.61	68.089	
8,000.00	6,950.47	3,574.00	3,569.63	33.15	131.36	18.37	1,020.45	7,687.02	9,937.98	9,793.12	144.86	68.603	
8,100.00	6,950.25	3,574.00	3,569.63	34.23	131.36	18.37	1,020.45	7,687.02	10,029.99	9,884.87	145.12	69.117	
8,200.00	6,950.03	3,574.00	3,569.63	35.35	131.36	18.37	1,020.45	7,687.02	10,122.15	9,976.78	145.37	69.630	
8,300.00	6,949.80	3,574.00	3,569.63	36.51	131.36	18.37	1,020.45	7,687.02	10,214.45	10,068.83	145.62	70.144	
8,400.00	6,949.58	3,574.00	3,569.63	37.70	131.36	18.37	1,020.45	7,687.02	10,306.90	10,161.02	145.87	70.657	
8,500.00	6,949.35	3,574.00	3,569.63	38.92	131.36	18.37	1,020.45	7,687.02	10,399.48	10,253.36	146.12	71.170	
8,600.00	6,949.13	3,574.00	3,569.63	40.17	131.36	18.37	1,020.45	7,687.02	10,492.21	10,345.84	146.37	71.683	
8,700.00	6,948.90	3,574.00	3,569.63	41.44	131.36	18.37	1,020.45	7,687.02	10,585.06	10,438.45	146.61	72.196	
8,800.00	6,948.68	3,574.00	3,569.63	42.73	131.36	18.37	1,020.45	7,687.02	10,678.05	10,531.19	146.86	72.709	
8,900.00	6,948.45	3,574.00	3,569.63	44.04	131.36	18.37	1,020.45	7,687.02	10,771.16	10,624.06	147.10	73.222	
9,000.00	6,948.23	3,574.00	3,569.63	45.38	131.36	18.37	1,020.45	7,687.02	10,864.39	10,717.05	147.34	73.735	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 166-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,100.00	6,948.00	3,574.00	3,569.63	46.72	131.36	18.37	1,020.45	7,687.02	10,957.74	10,810.16	147.58	74.248	
9,200.00	6,947.78	3,574.00	3,569.63	48.09	131.36	18.37	1,020.45	7,687.02	11,051.21	10,903.39	147.82	74.761	
9,300.00	6,947.55	3,574.00	3,569.63	49.47	131.36	18.37	1,020.45	7,687.02	11,144.79	10,996.74	148.06	75.274	
9,400.00	6,947.33	3,574.00	3,569.63	50.86	131.36	18.37	1,020.45	7,687.02	11,238.49	11,090.20	148.29	75.787	
9,500.00	6,947.10	3,574.00	3,569.63	52.26	131.36	18.37	1,020.45	7,687.02	11,332.29	11,183.76	148.52	76.300	
9,600.00	6,946.88	3,574.00	3,569.63	53.68	131.36	18.37	1,020.45	7,687.02	11,426.19	11,277.44	148.75	76.812	
9,700.00	6,946.66	3,574.00	3,569.63	55.10	131.36	18.37	1,020.45	7,687.02	11,520.20	11,371.22	148.98	77.325	
9,800.00	6,946.43	3,574.00	3,569.63	56.54	131.36	18.37	1,020.45	7,687.02	11,614.31	11,465.10	149.21	77.838	
9,900.00	6,946.21	3,574.00	3,569.63	57.98	131.36	18.37	1,020.45	7,687.02	11,708.52	11,559.08	149.44	78.351	
10,000.00	6,945.98	3,574.00	3,569.63	59.43	131.36	18.37	1,020.45	7,687.02	11,802.82	11,653.16	149.66	78.863	
10,100.00	6,945.76	3,574.00	3,569.63	60.89	131.36	18.37	1,020.45	7,687.02	11,897.21	11,747.33	149.88	79.376	
10,200.00	6,945.53	3,574.00	3,569.63	62.36	131.36	18.37	1,020.45	7,687.02	11,991.70	11,841.59	150.11	79.889	
10,300.00	6,945.31	3,574.00	3,569.63	63.83	131.36	18.37	1,020.45	7,687.02	12,086.27	11,935.95	150.32	80.401	
10,400.00	6,945.08	3,574.00	3,569.63	65.31	131.36	18.37	1,020.45	7,687.02	12,180.93	12,030.39	150.54	80.914	
10,500.00	6,944.86	3,574.00	3,569.63	66.79	131.36	18.37	1,020.45	7,687.02	12,275.68	12,124.92	150.76	81.426	
10,600.00	6,944.63	3,574.00	3,569.63	68.28	131.36	18.37	1,020.45	7,687.02	12,370.50	12,219.53	150.97	81.939	
10,700.00	6,944.41	3,574.00	3,569.63	69.78	131.36	18.37	1,020.45	7,687.02	12,465.41	12,314.23	151.19	82.451	
10,800.00	6,944.18	3,574.00	3,569.63	71.28	131.36	18.37	1,020.45	7,687.02	12,560.40	12,409.00	151.40	82.963	
10,900.00	6,943.96	3,574.00	3,569.63	72.78	131.36	18.37	1,020.45	7,687.02	12,655.47	12,503.86	151.61	83.476	
11,000.00	6,943.73	3,574.00	3,569.63	74.29	131.36	18.37	1,020.45	7,687.02	12,750.61	12,598.79	151.81	83.988	
11,100.00	6,943.51	3,574.00	3,569.63	75.80	131.36	18.37	1,020.45	7,687.02	12,845.82	12,693.80	152.02	84.500	
11,200.00	6,943.29	3,574.00	3,569.63	77.32	131.36	18.37	1,020.45	7,687.02	12,941.11	12,788.88	152.23	85.012	
11,300.00	6,943.06	3,574.00	3,569.63	78.84	131.36	18.37	1,020.45	7,687.02	13,036.46	12,884.03	152.43	85.524	
11,400.00	6,942.84	3,574.00	3,569.63	80.36	131.36	18.37	1,020.45	7,687.02	13,131.89	12,979.26	152.63	86.036	
11,500.00	6,942.61	3,574.00	3,569.63	81.88	131.36	18.37	1,020.45	7,687.02	13,227.38	13,074.55	152.83	86.548	
11,600.00	6,942.39	3,574.00	3,569.63	83.41	131.36	18.37	1,020.45	7,687.02	13,322.94	13,169.91	153.03	87.060	
11,700.00	6,942.16	3,574.00	3,569.63	84.94	131.36	18.37	1,020.45	7,687.02	13,418.57	13,265.34	153.23	87.572	
11,800.00	6,941.94	3,574.00	3,569.63	86.47	131.36	18.37	1,020.45	7,687.02	13,514.26	13,360.83	153.43	88.083	
11,900.00	6,941.71	3,574.00	3,569.63	88.01	131.36	18.37	1,020.45	7,687.02	13,610.01	13,456.39	153.62	88.595	
12,000.00	6,941.49	3,574.00	3,569.63	89.55	131.36	18.37	1,020.45	7,687.02	13,705.82	13,552.00	153.81	89.106	
12,100.00	6,941.26	3,574.00	3,569.63	91.09	131.36	18.37	1,020.45	7,687.02	13,801.69	13,647.68	154.01	89.617	
12,200.00	6,941.04	3,574.00	3,569.63	92.63	131.36	18.37	1,020.45	7,687.02	13,897.62	13,743.42	154.20	90.128	
12,300.00	6,940.81	3,574.00	3,569.63	94.18	131.36	18.37	1,020.45	7,687.02	13,993.60	13,839.21	154.39	90.639	
12,400.00	6,940.59	3,574.00	3,569.63	95.72	131.36	18.37	1,020.45	7,687.02	14,089.64	13,935.07	154.58	91.150	
12,500.00	6,940.36	3,574.00	3,569.63	97.27	131.36	18.37	1,020.45	7,687.02	14,185.74	14,030.98	154.76	91.661	
12,600.00	6,940.14	3,574.00	3,569.63	98.82	131.36	18.37	1,020.45	7,687.02	14,281.89	14,126.94	154.95	92.171	
12,700.00	6,939.92	3,574.00	3,569.63	100.37	131.36	18.37	1,020.45	7,687.02	14,378.09	14,222.96	155.13	92.681	
12,800.00	6,939.69	3,574.00	3,569.63	101.92	131.36	18.37	1,020.45	7,687.02	14,474.34	14,319.03	155.32	93.191	
12,900.00	6,939.47	3,574.00	3,569.63	103.48	131.36	18.37	1,020.45	7,687.02	14,570.65	14,415.15	155.50	93.701	
13,000.00	6,939.24	3,574.00	3,569.63	105.03	131.36	18.37	1,020.45	7,687.02	14,667.00	14,511.32	155.68	94.211	
13,100.00	6,939.02	3,574.00	3,569.63	106.59	131.36	18.37	1,020.45	7,687.02	14,763.40	14,607.54	155.86	94.721	
13,200.00	6,938.79	3,574.00	3,569.63	108.15	131.36	18.37	1,020.45	7,687.02	14,859.85	14,703.81	156.04	95.230	
13,300.00	6,938.57	3,574.00	3,569.63	109.71	131.36	18.37	1,020.45	7,687.02	14,956.35	14,800.13	156.22	95.739	
13,400.00	6,938.34	3,574.00	3,569.63	111.27	131.36	18.37	1,020.45	7,687.02	15,052.89	14,896.49	156.40	96.248	
13,500.00	6,938.12	3,574.00	3,569.63	112.83	131.36	18.37	1,020.45	7,687.02	15,149.48	14,992.90	156.57	96.757	
13,600.00	6,937.89	3,574.00	3,569.63	114.40	131.36	18.37	1,020.45	7,687.02	15,246.11	15,089.36	156.75	97.265	
13,700.00	6,937.67	3,574.00	3,569.63	115.96	131.36	18.37	1,020.45	7,687.02	15,342.78	15,185.86	156.92	97.774	
13,800.00	6,937.44	3,574.00	3,569.63	117.53	131.36	18.37	1,020.45	7,687.02	15,439.50	15,282.40	157.09	98.282	
13,900.00	6,937.22	3,574.00	3,569.63	119.09	131.36	18.37	1,020.45	7,687.02	15,536.26	15,378.99	157.27	98.789	
14,000.00	6,936.99	3,574.00	3,569.63	120.66	131.36	18.37	1,020.45	7,687.02	15,633.06	15,475.62	157.44	99.297	
14,100.00	6,936.77	3,574.00	3,569.63	122.23	131.36	18.37	1,020.45	7,687.02	15,729.89	15,572.29	157.61	99.804	
14,200.00	6,936.55	3,574.00	3,569.63	123.80	131.36	18.37	1,020.45	7,687.02	15,826.77	15,668.99	157.78	100.311	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC — **Offset Site Error:** 0.00 usft

Survey Program: 166-A027Ua_INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	3,574.00	3,569.63	125.37	131.36	18.37	1,020.45	7,687.02	15,923.69	15,765.74	157.95	100.818	
14,400.00	6,936.10	3,574.00	3,569.63	126.94	131.36	18.37	1,020.45	7,687.02	16,020.64	15,862.53	158.11	101.324	
14,500.00	6,935.87	3,574.00	3,569.63	128.51	131.36	18.37	1,020.45	7,687.02	16,117.63	15,959.36	158.28	101.830	
14,600.00	6,935.65	3,574.00	3,569.63	130.08	131.36	18.37	1,020.45	7,687.02	16,214.66	16,056.22	158.45	102.336	
14,700.00	6,935.42	3,574.00	3,569.63	131.65	131.36	18.37	1,020.45	7,687.02	16,311.73	16,153.12	158.61	102.841	
14,800.00	6,935.20	3,574.00	3,569.63	133.23	131.36	18.37	1,020.45	7,687.02	16,408.83	16,250.05	158.77	103.347	
14,900.00	6,934.97	3,574.00	3,569.63	134.80	131.36	18.37	1,020.45	7,687.02	16,505.96	16,347.02	158.94	103.851	
15,000.00	6,934.75	3,574.00	3,569.63	136.37	131.36	18.37	1,020.45	7,687.02	16,603.13	16,444.03	159.10	104.356	
15,100.00	6,934.52	3,574.00	3,569.63	137.95	131.36	18.37	1,020.45	7,687.02	16,700.33	16,541.07	159.26	104.860	
15,200.00	6,934.30	3,574.00	3,569.63	139.53	131.36	18.37	1,020.45	7,687.02	16,797.56	16,638.14	159.42	105.364	
15,300.00	6,934.07	3,574.00	3,569.63	141.10	131.36	18.37	1,020.45	7,687.02	16,894.83	16,735.25	159.58	105.868	
15,400.00	6,933.85	3,574.00	3,569.63	142.68	131.36	18.37	1,020.45	7,687.02	16,992.13	16,832.39	159.74	106.371	
15,500.00	6,933.62	3,574.00	3,569.63	144.26	131.36	18.37	1,020.45	7,687.02	17,089.46	16,929.56	159.90	106.874	
15,600.00	6,933.40	3,574.00	3,569.63	145.84	131.36	18.37	1,020.45	7,687.02	17,186.82	17,026.76	160.06	107.376	
15,700.00	6,933.18	3,574.00	3,569.63	147.42	131.36	18.37	1,020.45	7,687.02	17,284.21	17,123.99	160.22	107.879	
15,800.00	6,932.95	3,574.00	3,569.63	148.99	131.36	18.37	1,020.45	7,687.02	17,381.63	17,221.25	160.38	108.380	
15,900.00	6,932.73	3,574.00	3,569.63	150.57	131.36	18.37	1,020.45	7,687.02	17,479.08	17,318.55	160.53	108.882	
16,000.00	6,932.50	3,574.00	3,569.63	152.15	131.36	18.37	1,020.45	7,687.02	17,576.56	17,415.87	160.69	109.383	
16,100.00	6,932.28	3,574.00	3,569.63	153.74	131.36	18.37	1,020.45	7,687.02	17,674.06	17,513.22	160.84	109.883	
16,200.00	6,932.05	3,574.00	3,569.63	155.32	131.36	18.37	1,020.45	7,687.02	17,771.60	17,610.60	161.00	110.384	
16,300.00	6,931.83	3,574.00	3,569.63	156.90	131.36	18.37	1,020.45	7,687.02	17,869.16	17,708.01	161.15	110.884	
16,400.00	6,931.60	3,574.00	3,569.63	158.48	131.36	18.37	1,020.45	7,687.02	17,966.75	17,805.44	161.31	111.383	
16,500.00	6,931.38	3,574.00	3,569.63	160.06	131.36	18.37	1,020.45	7,687.02	18,064.36	17,902.90	161.46	111.882	
16,600.00	6,931.15	3,574.00	3,569.63	161.65	131.36	18.37	1,020.45	7,687.02	18,162.00	18,000.39	161.61	112.381	
16,700.00	6,930.93	3,574.00	3,569.63	163.23	131.36	18.37	1,020.45	7,687.02	18,259.67	18,097.90	161.76	112.879	
16,800.00	6,930.70	3,574.00	3,569.63	164.81	131.36	18.37	1,020.45	7,687.02	18,357.36	18,195.44	161.91	113.377	
16,900.00	6,930.48	3,574.00	3,569.63	166.40	131.36	18.37	1,020.45	7,687.02	18,455.07	18,293.01	162.06	113.875	
17,000.00	6,930.25	3,574.00	3,569.63	167.98	131.36	18.37	1,020.45	7,687.02	18,552.81	18,390.60	162.22	114.372	
17,100.00	6,930.03	3,574.00	3,569.63	169.56	131.36	18.37	1,020.45	7,687.02	18,650.58	18,488.21	162.37	114.868	
17,200.00	6,929.81	3,574.00	3,569.63	171.15	131.36	18.37	1,020.45	7,687.02	18,748.36	18,585.85	162.51	115.364	
17,300.00	6,929.58	3,574.00	3,569.63	172.73	131.36	18.37	1,020.45	7,687.02	18,846.17	18,683.51	162.66	115.860	
17,400.00	6,929.36	3,574.00	3,569.63	174.32	131.36	18.37	1,020.45	7,687.02	18,944.01	18,781.20	162.81	116.355	
17,500.00	6,929.13	3,574.00	3,569.63	175.91	131.36	18.37	1,020.45	7,687.02	19,041.86	18,878.90	162.96	116.850	
17,600.00	6,928.91	3,574.00	3,569.63	177.49	131.36	18.37	1,020.45	7,687.02	19,139.74	18,976.64	163.11	117.345	
17,700.00	6,928.68	3,574.00	3,569.63	179.08	131.36	18.37	1,020.45	7,687.02	19,237.64	19,074.39	163.25	117.839	
17,800.00	6,928.46	3,574.00	3,569.63	180.66	131.36	18.37	1,020.45	7,687.02	19,335.56	19,172.16	163.40	118.332	
17,900.00	6,928.23	3,574.00	3,569.63	182.25	131.36	18.37	1,020.45	7,687.02	19,433.51	19,269.96	163.55	118.825	
18,000.00	6,928.01	3,574.00	3,569.63	183.84	131.36	18.37	1,020.45	7,687.02	19,531.47	19,367.78	163.69	119.318	
18,100.00	6,927.78	3,574.00	3,569.63	185.43	131.36	18.37	1,020.45	7,687.02	19,629.45	19,465.62	163.84	119.810	
18,200.00	6,927.56	3,574.00	3,569.63	187.01	131.36	18.37	1,020.45	7,687.02	19,727.46	19,563.47	163.98	120.301	
18,300.00	6,927.33	3,574.00	3,569.63	188.60	131.36	18.37	1,020.45	7,687.02	19,825.48	19,661.35	164.13	120.792	
18,400.00	6,927.11	3,574.00	3,569.63	190.19	131.36	18.37	1,020.45	7,687.02	19,923.53	19,759.25	164.27	121.283	
18,500.00	6,926.88	3,574.00	3,569.63	191.78	131.36	18.37	1,020.45	7,687.02	20,021.59	19,857.17	164.42	121.773	
18,600.00	6,926.66	3,574.00	3,569.63	193.37	131.36	18.37	1,020.45	7,687.02	20,119.67	19,955.11	164.56	122.263	
18,700.00	6,926.44	3,574.00	3,569.63	194.96	131.36	18.37	1,020.45	7,687.02	20,217.77	20,053.07	164.70	122.752	
18,800.00	6,926.21	3,574.00	3,569.63	196.54	131.36	18.37	1,020.45	7,687.02	20,315.89	20,151.05	164.85	123.241	
18,900.00	6,925.99	3,574.00	3,569.63	198.13	131.36	18.37	1,020.45	7,687.02	20,414.03	20,249.04	164.99	123.729	
19,000.00	6,925.76	3,574.00	3,569.63	199.72	131.36	18.37	1,020.45	7,687.02	20,512.19	20,347.05	165.13	124.217	
19,100.00	6,925.54	3,574.00	3,569.63	201.31	131.36	18.37	1,020.45	7,687.02	20,610.36	20,445.09	165.27	124.704	
19,200.00	6,925.31	3,574.00	3,569.63	202.90	131.36	18.37	1,020.45	7,687.02	20,708.55	20,543.14	165.42	125.191	
19,300.00	6,925.09	3,574.00	3,569.63	204.49	131.36	18.37	1,020.45	7,687.02	20,806.76	20,641.20	165.56	125.677	
19,400.00	6,924.86	3,574.00	3,569.63	206.08	131.36	18.37	1,020.45	7,687.02	20,904.99	20,739.29	165.70	126.163	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - (O) RU 374 - OH - OH-INC

Offset Site Error: 0.00 usft

Survey Program: 166-A027Ua_INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	3,574.00	3,569.63	207.67	131.36	18.37	1,020.45	7,687.02	21,003.23	20,837.39	165.84	126.648	
19,600.00	6,924.41	3,574.00	3,569.63	209.26	131.36	18.37	1,020.45	7,687.02	21,101.49	20,935.51	165.98	127.133	
19,700.00	6,924.19	3,574.00	3,569.63	210.85	131.36	18.37	1,020.45	7,687.02	21,199.76	21,033.64	166.12	127.617	
19,800.00	6,923.96	3,574.00	3,569.63	212.44	131.36	18.37	1,020.45	7,687.02	21,298.05	21,131.79	166.26	128.100	
19,900.00	6,923.74	3,574.00	3,569.63	214.04	131.36	18.37	1,020.45	7,687.02	21,396.36	21,229.96	166.40	128.584	
20,000.00	6,923.51	3,574.00	3,569.63	215.63	131.36	18.37	1,020.45	7,687.02	21,494.68	21,328.14	166.54	129.066	
20,100.00	6,923.29	3,574.00	3,569.63	217.22	131.36	18.37	1,020.45	7,687.02	21,593.02	21,426.34	166.68	129.548	
20,200.00	6,923.07	3,574.00	3,569.63	218.81	131.36	18.37	1,020.45	7,687.02	21,691.37	21,524.55	166.82	130.030	
20,300.00	6,922.84	3,574.00	3,569.63	220.40	131.36	18.37	1,020.45	7,687.02	21,789.74	21,622.78	166.96	130.511	
20,400.00	6,922.62	3,574.00	3,569.63	221.99	131.36	18.37	1,020.45	7,687.02	21,888.12	21,721.03	167.10	130.991	
20,500.00	6,922.39	3,574.00	3,569.63	223.59	131.36	18.37	1,020.45	7,687.02	21,986.52	21,819.28	167.23	131.471	
20,600.00	6,922.17	3,574.00	3,569.63	225.18	131.36	18.37	1,020.45	7,687.02	22,084.93	21,917.56	167.37	131.950	
20,674.13	6,922.00	3,574.00	3,569.63	226.36	131.36	18.37	1,020.45	7,687.02	22,157.89	21,990.42	167.48	132.305	

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Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-14.45	19.29	-4.97	19.92				
100.00	100.00	100.00	100.00	0.25	0.25	-14.45	19.29	-4.97	19.92	19.42	0.50	39.699	
200.00	200.00	200.00	200.00	0.61	0.61	-14.45	19.29	-4.97	19.92	18.70	1.22	16.347	
300.00	300.00	300.00	300.00	0.97	0.97	-14.45	19.29	-4.97	19.92	17.99	1.94	10.292	
400.00	400.00	400.00	400.00	1.33	1.33	-14.45	19.29	-4.97	19.92	17.27	2.65	7.511	
500.00	500.00	500.00	500.00	1.68	1.68	-14.45	19.29	-4.97	19.92	16.55	3.37	5.913	CC, ES
606.93	606.91	606.08	606.05	2.05	2.07	127.80	21.24	-5.20	23.05	18.94	4.12	5.597	
700.00	699.91	697.98	697.82	2.37	2.40	133.45	26.09	-5.76	30.26	25.50	4.76	6.354	
800.00	799.84	796.11	795.58	2.71	2.75	136.61	34.48	-6.73	41.49	36.04	5.45	7.613	
900.00	899.77	893.38	892.15	3.06	3.11	137.96	46.08	-8.08	56.14	50.01	6.13	9.155	
1,000.00	999.70	989.59	987.21	3.41	3.47	138.40	60.75	-9.78	74.11	67.30	6.81	10.888	
1,100.00	1,099.63	1,084.54	1,080.49	3.76	3.83	138.39	78.33	-11.81	95.33	87.85	7.47	12.758	
1,200.00	1,199.56	1,178.04	1,171.73	4.11	4.21	138.19	98.63	-14.17	119.72	111.59	8.13	14.731	
1,300.00	1,299.49	1,271.18	1,261.93	4.47	4.60	137.90	121.67	-16.84	147.10	138.32	8.78	16.748	
1,400.00	1,399.42	1,367.11	1,354.63	4.83	5.01	137.66	146.20	-19.68	175.32	165.83	9.49	18.481	
1,500.00	1,499.35	1,463.05	1,447.33	5.19	5.43	137.49	170.73	-22.52	203.53	193.34	10.19	19.964	
1,600.00	1,599.28	1,558.98	1,540.03	5.54	5.86	137.36	195.25	-25.37	231.75	220.84	10.91	21.249	
1,700.00	1,699.21	1,654.92	1,632.74	5.90	6.29	137.25	219.78	-28.21	259.97	248.35	11.62	22.370	
1,800.00	1,799.14	1,750.85	1,725.44	6.26	6.72	137.17	244.31	-31.05	288.19	275.85	12.34	23.357	
1,900.00	1,899.07	1,846.79	1,818.14	6.62	7.16	137.10	268.84	-33.90	316.41	303.35	13.06	24.233	
2,000.00	1,999.00	1,942.72	1,910.85	6.98	7.60	137.05	293.37	-36.74	344.63	330.85	13.78	25.013	
2,100.00	2,098.94	2,038.66	2,003.55	7.34	8.05	137.00	317.89	-39.58	372.85	358.35	14.50	25.714	
2,200.00	2,198.87	2,134.59	2,096.25	7.70	8.49	136.96	342.42	-42.43	401.07	385.85	15.22	26.345	
2,300.00	2,298.80	2,230.53	2,188.95	8.06	8.94	136.92	366.95	-45.27	429.29	413.35	15.95	26.918	
2,400.00	2,398.73	2,326.46	2,281.66	8.42	9.39	136.89	391.48	-48.11	457.52	440.84	16.67	27.440	
2,500.00	2,498.66	2,422.40	2,374.36	8.79	9.84	136.86	416.01	-50.96	485.74	468.34	17.40	27.916	
2,600.00	2,598.59	2,518.33	2,467.06	9.15	10.29	136.84	440.53	-53.80	513.96	495.83	18.13	28.353	
2,700.00	2,698.52	2,614.27	2,559.76	9.51	10.74	136.82	465.06	-56.64	542.18	523.33	18.85	28.756	
2,800.00	2,798.45	2,710.20	2,652.47	9.87	11.19	136.80	489.59	-59.49	570.40	550.82	19.58	29.127	
2,900.00	2,898.38	2,806.14	2,745.17	10.23	11.65	136.78	514.12	-62.33	598.62	578.31	20.31	29.472	
3,000.00	2,998.31	2,902.07	2,837.87	10.59	12.10	136.76	538.65	-65.17	626.85	605.80	21.04	29.791	
3,100.00	3,098.24	2,998.01	2,930.58	10.96	12.56	136.75	563.17	-68.02	655.07	633.30	21.77	30.089	
3,200.00	3,198.17	3,093.94	3,023.28	11.32	13.01	136.73	587.70	-70.86	683.29	660.79	22.50	30.367	
3,300.00	3,298.10	3,189.87	3,115.98	11.68	13.47	136.72	612.23	-73.70	711.51	688.28	23.23	30.627	
3,400.00	3,398.03	3,285.81	3,208.68	12.04	13.92	136.71	636.76	-76.54	739.73	715.77	23.96	30.870	
3,500.00	3,497.96	3,381.74	3,301.39	12.40	14.38	136.70	661.29	-79.39	767.95	743.26	24.69	31.099	
3,600.00	3,597.89	3,477.68	3,394.09	12.77	14.83	136.69	685.81	-82.23	796.18	770.75	25.43	31.314	
3,700.00	3,697.82	3,573.61	3,486.79	13.13	15.29	136.68	710.34	-85.07	824.40	798.24	26.16	31.517	
3,800.00	3,797.75	3,669.55	3,579.49	13.49	15.75	136.67	734.87	-87.92	852.62	825.73	26.89	31.708	
3,900.00	3,897.68	3,765.48	3,672.20	13.85	16.20	136.66	759.40	-90.76	880.84	853.22	27.62	31.889	
4,000.00	3,997.61	3,861.42	3,764.90	14.21	16.66	136.65	783.93	-93.60	909.06	880.71	28.35	32.061	
4,100.00	4,097.54	3,957.35	3,857.60	14.58	17.12	136.64	808.45	-96.45	937.29	908.20	29.09	32.223	
4,200.00	4,197.47	4,053.29	3,950.31	14.94	17.58	136.64	832.98	-99.29	965.51	935.69	29.82	32.378	
4,300.00	4,297.40	4,149.22	4,043.01	15.30	18.03	136.63	857.51	-102.13	993.73	963.18	30.55	32.524	
4,400.00	4,397.33	4,245.16	4,135.71	15.66	18.49	136.63	882.04	-104.98	1,021.95	990.67	31.29	32.664	
4,500.00	4,497.26	4,341.09	4,228.41	16.03	18.95	136.62	906.57	-107.82	1,050.18	1,018.15	32.02	32.797	
4,600.00	4,597.19	4,437.03	4,321.12	16.39	19.41	136.61	931.09	-110.66	1,078.40	1,045.64	32.75	32.924	
4,700.00	4,697.12	4,532.96	4,413.82	16.75	19.87	136.61	955.62	-113.51	1,106.62	1,073.13	33.49	33.045	
4,800.00	4,797.05	4,628.90	4,506.52	17.11	20.33	136.60	980.15	-116.35	1,134.84	1,100.62	34.22	33.161	
4,900.00	4,896.99	4,724.83	4,599.23	17.47	20.78	136.60	1,004.68	-119.19	1,163.06	1,128.11	34.96	33.272	
5,000.00	4,996.92	4,820.77	4,691.93	17.84	21.24	136.60	1,029.21	-122.04	1,191.29	1,155.59	35.69	33.378	
5,100.00	5,096.85	4,916.70	4,784.63	18.20	21.70	136.59	1,053.73	-124.88	1,219.51	1,183.08	36.43	33.479	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,012.64	4,877.33	18.56	22.16	136.59	1,078.26	-127.72	1,247.73	1,210.57	37.16	33.577	
5,300.00	5,296.71	5,108.57	4,970.04	18.92	22.62	136.58	1,102.79	-130.57	1,275.95	1,238.06	37.90	33.670	
5,400.00	5,396.64	5,204.51	5,062.74	19.29	23.08	136.58	1,127.32	-133.41	1,304.17	1,265.54	38.63	33.760	
5,500.00	5,496.57	5,300.44	5,155.44	19.65	23.54	136.58	1,151.85	-136.25	1,332.40	1,293.03	39.37	33.847	
5,600.00	5,596.50	5,396.38	5,248.14	20.01	24.00	136.57	1,176.37	-139.09	1,360.62	1,320.52	40.10	33.930	
5,700.00	5,696.43	5,492.31	5,340.85	20.37	24.46	136.57	1,200.90	-141.94	1,388.84	1,348.00	40.84	34.010	
5,800.00	5,796.36	5,588.25	5,433.55	20.74	24.92	136.57	1,225.43	-144.78	1,417.06	1,375.49	41.57	34.087	
5,900.00	5,896.29	5,684.18	5,526.25	21.10	25.38	136.56	1,249.96	-147.62	1,445.29	1,402.98	42.31	34.161	
6,000.00	5,996.22	5,780.12	5,618.96	21.46	25.84	136.56	1,274.48	-150.47	1,473.51	1,430.46	43.04	34.232	
6,100.00	6,096.15	5,876.05	5,711.66	21.82	26.29	136.56	1,299.01	-153.31	1,501.73	1,457.95	43.78	34.301	
6,200.00	6,196.08	5,971.99	5,804.36	22.19	26.75	136.55	1,323.54	-156.15	1,529.95	1,485.44	44.52	34.368	
6,300.00	6,296.01	6,067.92	5,897.06	22.55	27.21	136.55	1,348.07	-159.00	1,558.17	1,512.92	45.25	34.433	
6,335.60	6,331.59	6,102.08	5,930.07	22.68	27.38	136.55	1,356.80	-160.01	1,568.22	1,522.71	45.52	34.455	
6,350.00	6,345.97	6,115.89	5,943.41	22.73	27.44	118.50	1,360.33	-160.42	1,572.28	1,526.66	45.62	34.464	
6,400.00	6,395.75	6,163.77	5,989.69	22.91	27.67	99.58	1,372.58	-161.84	1,586.30	1,540.31	45.99	34.490	
6,450.00	6,445.03	6,211.30	6,035.61	23.10	27.90	93.90	1,384.73	-163.25	1,600.16	1,553.79	46.37	34.512	
6,500.00	6,493.52	6,258.19	6,080.92	23.29	28.13	90.92	1,396.71	-164.64	1,613.81	1,567.07	46.74	34.527	
6,550.00	6,540.91	6,304.13	6,125.32	23.48	28.35	88.99	1,408.46	-166.00	1,627.25	1,580.13	47.11	34.538	
6,600.00	6,586.91	6,348.86	6,168.54	23.66	28.56	87.61	1,419.90	-167.32	1,640.49	1,593.00	47.49	34.546	
6,650.00	6,631.24	6,392.09	6,210.31	23.85	28.77	86.57	1,430.95	-168.60	1,653.57	1,605.71	47.86	34.550	
6,700.00	6,673.63	6,433.57	6,250.39	24.05	28.97	85.75	1,441.55	-169.83	1,666.53	1,618.30	48.23	34.553	
6,750.00	6,713.80	6,473.02	6,288.51	24.24	29.16	85.08	1,451.64	-171.00	1,679.44	1,630.84	48.60	34.555	
6,800.00	6,751.52	6,510.21	6,324.45	24.44	29.33	84.50	1,461.15	-172.11	1,692.38	1,643.41	48.97	34.558	
6,850.00	6,786.56	6,545.39	6,358.44	24.65	29.50	83.98	1,470.14	-173.15	1,705.41	1,656.06	49.34	34.561	
6,900.00	6,818.69	6,592.98	6,404.32	24.87	29.73	83.83	1,482.30	-176.47	1,718.46	1,668.62	49.84	34.483	
6,950.00	6,847.72	6,644.92	6,453.97	25.10	29.99	83.81	1,495.47	-184.12	1,731.36	1,680.98	50.38	34.368	
7,000.00	6,873.46	6,702.57	6,508.14	25.34	30.27	83.96	1,509.88	-197.48	1,744.01	1,693.03	50.98	34.212	
7,050.00	6,895.77	6,767.74	6,567.68	25.60	30.58	84.29	1,525.75	-218.62	1,756.27	1,704.64	51.64	34.012	
7,100.00	6,914.50	6,842.99	6,633.39	25.87	30.94	84.85	1,543.32	-250.70	1,767.98	1,715.62	52.36	33.767	
7,150.00	6,929.54	6,931.76	6,705.53	26.15	31.36	85.66	1,562.69	-298.54	1,778.87	1,725.73	53.14	33.474	
7,200.00	6,940.80	7,038.45	6,782.66	26.44	31.85	86.74	1,583.53	-369.05	1,788.57	1,734.59	53.98	33.133	
7,250.00	6,948.20	7,138.52	6,843.44	26.75	32.30	87.57	1,600.08	-446.65	1,796.54	1,741.77	54.77	32.804	
7,300.00	6,951.70	7,322.26	6,922.43	27.07	33.15	89.21	1,621.99	-610.32	1,802.09	1,746.26	55.83	32.276	
7,321.06	6,952.00	7,394.27	6,940.32	27.20	33.50	89.62	1,627.15	-679.84	1,803.51	1,747.25	56.26	32.059	
7,400.00	6,951.82	7,568.08	6,952.88	27.74	34.42	90.03	1,631.55	-852.73	1,804.54	1,746.95	57.59	31.332	
7,500.00	6,951.60	7,668.08	6,952.59	28.49	35.02	90.03	1,632.10	-952.73	1,804.63	1,745.59	59.04	30.567	
7,600.00	6,951.37	7,768.08	6,952.31	29.30	35.69	90.03	1,632.65	-1,052.73	1,804.72	1,744.10	60.62	29.773	
7,700.00	6,951.15	7,868.08	6,952.02	30.18	36.41	90.03	1,633.20	-1,152.73	1,804.80	1,742.49	62.32	28.961	
7,800.00	6,950.92	7,968.08	6,951.74	31.12	37.19	90.03	1,633.75	-1,252.73	1,804.89	1,740.76	64.13	28.142	
7,900.00	6,950.70	8,068.08	6,951.45	32.11	38.02	90.02	1,634.30	-1,352.72	1,804.98	1,738.92	66.06	27.325	
8,000.00	6,950.47	8,168.08	6,951.17	33.15	38.90	90.02	1,634.85	-1,452.72	1,805.06	1,736.99	68.08	26.516	
8,100.00	6,950.25	8,268.08	6,950.88	34.23	39.82	90.02	1,635.40	-1,552.72	1,805.15	1,734.97	70.18	25.721	
8,200.00	6,950.03	8,368.08	6,950.60	35.35	40.79	90.02	1,635.94	-1,652.72	1,805.24	1,732.87	72.37	24.945	
8,300.00	6,949.80	8,468.08	6,950.31	36.51	41.80	90.02	1,636.49	-1,752.72	1,805.33	1,730.70	74.63	24.190	
8,400.00	6,949.58	8,568.08	6,950.03	37.70	42.84	90.01	1,637.04	-1,852.72	1,805.41	1,728.45	76.96	23.460	
8,500.00	6,949.35	8,668.08	6,949.74	38.92	43.91	90.01	1,637.59	-1,952.71	1,805.50	1,726.15	79.35	22.754	
8,600.00	6,949.13	8,768.08	6,949.46	40.17	45.02	90.01	1,638.14	-2,052.71	1,805.59	1,723.80	81.79	22.075	
8,700.00	6,948.90	8,868.08	6,949.17	41.44	46.16	90.01	1,638.69	-2,152.71	1,805.67	1,721.39	84.29	21.423	
8,800.00	6,948.68	8,968.08	6,948.89	42.73	47.32	90.01	1,639.24	-2,252.71	1,805.76	1,718.93	86.83	20.797	
8,900.00	6,948.45	9,068.08	6,948.60	44.04	48.51	90.00	1,639.79	-2,352.71	1,805.85	1,716.44	89.41	20.197	
9,000.00	6,948.23	9,168.08	6,948.32	45.38	49.72	90.00	1,640.34	-2,452.70	1,805.94	1,713.90	92.04	19.622	
9,100.00	6,948.00	9,268.08	6,948.03	46.72	50.95	90.00	1,640.88	-2,552.70	1,806.02	1,711.33	94.70	19.072	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,200.00	6,947.78	9,368.08	6,947.75	48.09	52.21	90.00	1,641.43	-2,652.70	1,806.11	1,708.72	97.39	18.546	
9,300.00	6,947.55	9,468.08	6,947.46	49.47	53.48	90.00	1,641.98	-2,752.70	1,806.20	1,706.09	100.11	18.042	
9,400.00	6,947.33	9,568.08	6,947.18	50.86	54.77	90.00	1,642.53	-2,852.70	1,806.28	1,703.42	102.86	17.561	
9,500.00	6,947.10	9,668.08	6,946.89	52.26	56.07	89.99	1,643.08	-2,952.69	1,806.37	1,700.74	105.63	17.100	
9,600.00	6,946.88	9,768.08	6,946.61	53.68	57.39	89.99	1,643.63	-3,052.69	1,806.46	1,698.02	108.43	16.660	
9,700.00	6,946.66	9,868.08	6,946.32	55.10	58.73	89.99	1,644.18	-3,152.69	1,806.55	1,695.29	111.25	16.238	
9,800.00	6,946.43	9,968.08	6,946.04	56.54	60.07	89.99	1,644.73	-3,252.69	1,806.63	1,692.54	114.10	15.834	
9,900.00	6,946.21	10,068.08	6,945.75	57.98	61.43	89.99	1,645.28	-3,352.69	1,806.72	1,689.76	116.96	15.448	
10,000.00	6,945.98	10,168.08	6,945.47	59.43	62.80	89.98	1,645.82	-3,452.68	1,806.81	1,686.97	119.83	15.078	
10,100.00	6,945.76	10,268.08	6,945.18	60.89	64.18	89.98	1,646.37	-3,552.68	1,806.89	1,684.17	122.73	14.723	
10,200.00	6,945.53	10,368.08	6,944.90	62.36	65.57	89.98	1,646.92	-3,652.68	1,806.98	1,681.35	125.63	14.383	
10,300.00	6,945.31	10,468.08	6,944.61	63.83	66.97	89.98	1,647.47	-3,752.68	1,807.07	1,678.51	128.56	14.057	
10,400.00	6,945.08	10,568.08	6,944.33	65.31	68.38	89.98	1,648.02	-3,852.68	1,807.15	1,675.66	131.49	13.743	
10,500.00	6,944.86	10,668.08	6,944.04	66.79	69.80	89.97	1,648.57	-3,952.67	1,807.24	1,672.80	134.44	13.443	
10,600.00	6,944.63	10,768.08	6,943.76	68.28	71.23	89.97	1,649.12	-4,052.67	1,807.33	1,669.93	137.40	13.154	
10,700.00	6,944.41	10,868.08	6,943.47	69.78	72.66	89.97	1,649.67	-4,152.67	1,807.42	1,667.05	140.37	12.876	
10,800.00	6,944.18	10,968.08	6,943.19	71.28	74.10	89.97	1,650.22	-4,252.67	1,807.50	1,664.15	143.35	12.609	
10,900.00	6,943.96	11,068.08	6,942.90	72.78	75.55	89.97	1,650.76	-4,352.67	1,807.59	1,661.25	146.34	12.352	
11,000.00	6,943.73	11,168.08	6,942.62	74.29	77.00	89.96	1,651.31	-4,452.66	1,807.68	1,658.34	149.34	12.105	
11,100.00	6,943.51	11,268.08	6,942.33	75.80	78.46	89.96	1,651.86	-4,552.66	1,807.76	1,655.42	152.34	11.866	
11,200.00	6,943.29	11,368.08	6,942.05	77.32	79.92	89.96	1,652.41	-4,652.66	1,807.85	1,652.49	155.36	11.637	
11,300.00	6,943.06	11,468.08	6,941.76	78.84	81.39	89.96	1,652.96	-4,752.66	1,807.94	1,649.56	158.38	11.415	
11,400.00	6,942.84	11,568.08	6,941.48	80.36	82.86	89.96	1,653.51	-4,852.66	1,808.03	1,646.61	161.41	11.201	
11,500.00	6,942.61	11,668.08	6,941.19	81.88	84.34	89.95	1,654.06	-4,952.65	1,808.11	1,643.67	164.45	10.995	
11,600.00	6,942.39	11,768.08	6,940.91	83.41	85.82	89.95	1,654.61	-5,052.65	1,808.20	1,640.71	167.49	10.796	
11,700.00	6,942.16	11,868.08	6,940.62	84.94	87.31	89.95	1,655.16	-5,152.65	1,808.29	1,637.75	170.54	10.603	
11,800.00	6,941.94	11,968.08	6,940.34	86.47	88.80	89.95	1,655.70	-5,252.65	1,808.37	1,634.78	173.59	10.417	
11,900.00	6,941.71	12,068.08	6,940.05	88.01	90.30	89.95	1,656.25	-5,352.65	1,808.46	1,631.81	176.65	10.238	
12,000.00	6,941.49	12,168.08	6,939.77	89.55	91.80	89.95	1,656.80	-5,452.64	1,808.55	1,628.84	179.71	10.064	
12,100.00	6,941.26	12,268.08	6,939.48	91.09	93.30	89.94	1,657.35	-5,552.64	1,808.64	1,625.85	182.78	9.895	
12,200.00	6,941.04	12,368.08	6,939.20	92.63	94.80	89.94	1,657.90	-5,652.64	1,808.72	1,622.87	185.86	9.732	
12,300.00	6,940.81	12,468.08	6,938.91	94.18	96.31	89.94	1,658.45	-5,752.64	1,808.81	1,619.88	188.93	9.574	
12,400.00	6,940.59	12,568.08	6,938.63	95.72	97.82	89.94	1,659.00	-5,852.64	1,808.90	1,616.88	192.02	9.421	
12,500.00	6,940.36	12,668.08	6,938.34	97.27	99.34	89.94	1,659.55	-5,952.63	1,808.98	1,613.88	195.10	9.272	
12,600.00	6,940.14	12,768.08	6,938.06	98.82	100.85	89.93	1,660.10	-6,052.63	1,809.07	1,610.88	198.19	9.128	
12,700.00	6,939.92	12,868.08	6,937.77	100.37	102.37	89.93	1,660.65	-6,152.63	1,809.16	1,607.87	201.28	8.988	
12,800.00	6,939.69	12,968.08	6,937.49	101.92	103.89	89.93	1,661.19	-6,252.63	1,809.25	1,604.87	204.38	8.852	
12,900.00	6,939.47	13,068.08	6,937.20	103.48	105.42	89.93	1,661.74	-6,352.63	1,809.33	1,601.85	207.48	8.720	
13,000.00	6,939.24	13,168.08	6,936.91	105.03	106.94	89.93	1,662.29	-6,452.62	1,809.42	1,598.84	210.58	8.592	
13,100.00	6,939.02	13,268.08	6,936.63	106.59	108.47	89.92	1,662.84	-6,552.62	1,809.51	1,595.82	213.69	8.468	
13,200.00	6,938.79	13,368.08	6,936.34	108.15	110.00	89.92	1,663.39	-6,652.62	1,809.59	1,592.80	216.80	8.347	
13,300.00	6,938.57	13,468.08	6,936.06	109.71	111.54	89.92	1,663.94	-6,752.62	1,809.68	1,589.77	219.91	8.229	
13,400.00	6,938.34	13,568.08	6,935.77	111.27	113.07	89.92	1,664.49	-6,852.62	1,809.77	1,586.74	223.02	8.115	
13,500.00	6,938.12	13,668.08	6,935.49	112.83	114.61	89.92	1,665.04	-6,952.61	1,809.86	1,583.72	226.14	8.003	
13,600.00	6,937.89	13,768.08	6,935.20	114.40	116.15	89.91	1,665.59	-7,052.61	1,809.94	1,580.68	229.26	7.895	
13,700.00	6,937.67	13,868.08	6,934.92	115.96	117.69	89.91	1,666.13	-7,152.61	1,810.03	1,577.65	232.38	7.789	
13,800.00	6,937.44	13,968.08	6,934.63	117.53	119.23	89.91	1,666.68	-7,252.61	1,810.12	1,574.61	235.50	7.686	
13,900.00	6,937.22	14,068.08	6,934.35	119.09	120.77	89.91	1,667.23	-7,352.61	1,810.20	1,571.57	238.63	7.586	
14,000.00	6,936.99	14,168.08	6,934.06	120.66	122.32	89.91	1,667.78	-7,452.60	1,810.29	1,568.53	241.76	7.488	
14,100.00	6,936.77	14,268.08	6,933.78	122.23	123.86	89.91	1,668.33	-7,552.60	1,810.38	1,565.49	244.89	7.393	
14,200.00	6,936.55	14,368.08	6,933.49	123.80	125.41	89.90	1,668.88	-7,652.60	1,810.47	1,562.45	248.02	7.300	
14,300.00	6,936.32	14,468.08	6,933.21	125.37	126.96	89.90	1,669.43	-7,752.60	1,810.55	1,559.40	251.15	7.209	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	14,568.08	6,932.92	126.94	128.51	89.90	1,669.98	-7,852.60	1,810.64	1,556.35	254.29	7.120	
14,500.00	6,935.87	14,668.08	6,932.64	128.51	130.06	89.90	1,670.53	-7,952.60	1,810.73	1,553.30	257.43	7.034	
14,600.00	6,935.65	14,768.08	6,932.35	130.08	131.61	89.90	1,671.07	-8,052.59	1,810.81	1,550.25	260.56	6.950	
14,700.00	6,935.42	14,868.08	6,932.07	131.65	133.17	89.89	1,671.62	-8,152.59	1,810.90	1,547.20	263.70	6.867	
14,800.00	6,935.20	14,968.08	6,931.78	133.23	134.72	89.89	1,672.17	-8,252.59	1,810.99	1,544.14	266.85	6.787	
14,900.00	6,934.97	15,068.08	6,931.50	134.80	136.28	89.89	1,672.72	-8,352.59	1,811.08	1,541.09	269.99	6.708	
15,000.00	6,934.75	15,168.08	6,931.21	136.37	137.83	89.89	1,673.27	-8,452.59	1,811.16	1,538.03	273.13	6.631	
15,100.00	6,934.52	15,268.08	6,930.93	137.95	139.39	89.89	1,673.82	-8,552.58	1,811.25	1,534.97	276.28	6.556	
15,200.00	6,934.30	15,368.08	6,930.64	139.53	140.95	89.88	1,674.37	-8,652.58	1,811.34	1,531.91	279.43	6.482	
15,300.00	6,934.07	15,468.08	6,930.36	141.10	142.51	89.88	1,674.92	-8,752.58	1,811.42	1,528.85	282.58	6.410	
15,400.00	6,933.85	15,568.08	6,930.07	142.68	144.07	89.88	1,675.47	-8,852.58	1,811.51	1,525.79	285.73	6.340	
15,500.00	6,933.62	15,668.08	6,929.79	144.26	145.63	89.88	1,676.01	-8,952.58	1,811.60	1,522.72	288.88	6.271	
15,600.00	6,933.40	15,768.08	6,929.50	145.84	147.20	89.88	1,676.56	-9,052.57	1,811.69	1,519.66	292.03	6.204	
15,700.00	6,933.18	15,868.08	6,929.22	147.42	148.76	89.87	1,677.11	-9,152.57	1,811.77	1,516.59	295.18	6.138	
15,800.00	6,932.95	15,968.08	6,928.93	148.99	150.32	89.87	1,677.66	-9,252.57	1,811.86	1,513.52	298.34	6.073	
15,900.00	6,932.73	16,068.08	6,928.65	150.57	151.89	89.87	1,678.21	-9,352.57	1,811.95	1,510.46	301.49	6.010	
16,000.00	6,932.50	16,168.08	6,928.36	152.15	153.46	89.87	1,678.76	-9,452.57	1,812.04	1,507.39	304.65	5.948	
16,100.00	6,932.28	16,268.08	6,928.08	153.74	155.02	89.87	1,679.31	-9,552.56	1,812.12	1,504.32	307.81	5.887	
16,200.00	6,932.05	16,368.08	6,927.79	155.32	156.59	89.87	1,679.86	-9,652.56	1,812.21	1,501.25	310.96	5.828	
16,300.00	6,931.83	16,468.08	6,927.51	156.90	158.16	89.86	1,680.41	-9,752.56	1,812.30	1,498.17	314.12	5.769	
16,400.00	6,931.60	16,568.08	6,927.22	158.48	159.73	89.86	1,680.95	-9,852.56	1,812.38	1,495.10	317.28	5.712	
16,500.00	6,931.38	16,668.08	6,926.94	160.06	161.30	89.86	1,681.50	-9,952.56	1,812.47	1,492.03	320.44	5.656	
16,600.00	6,931.15	16,768.08	6,926.65	161.65	162.87	89.86	1,682.05	-10,052.55	1,812.56	1,488.95	323.61	5.601	
16,700.00	6,930.93	16,868.08	6,926.37	163.23	164.44	89.86	1,682.60	-10,152.55	1,812.65	1,485.88	326.77	5.547	
16,800.00	6,930.70	16,968.08	6,926.08	164.81	166.01	89.85	1,683.15	-10,252.55	1,812.73	1,482.80	329.93	5.494	
16,900.00	6,930.48	17,068.08	6,925.80	166.40	167.58	89.85	1,683.70	-10,352.55	1,812.82	1,479.72	333.10	5.442	
17,000.00	6,930.25	17,168.07	6,925.51	167.98	169.15	89.85	1,684.25	-10,452.55	1,812.91	1,476.65	336.26	5.391	
17,100.00	6,930.03	17,268.07	6,925.23	169.56	170.72	89.85	1,684.80	-10,552.54	1,812.99	1,473.57	339.43	5.341	
17,200.00	6,929.81	17,368.07	6,924.94	171.15	172.30	89.85	1,685.35	-10,652.54	1,813.08	1,470.49	342.59	5.292	
17,300.00	6,929.58	17,468.07	6,924.66	172.73	173.87	89.84	1,685.89	-10,752.54	1,813.17	1,467.41	345.76	5.244	
17,400.00	6,929.36	17,568.07	6,924.37	174.32	175.45	89.84	1,686.44	-10,852.54	1,813.26	1,464.33	348.93	5.197	
17,500.00	6,929.13	17,668.07	6,924.09	175.91	177.02	89.84	1,686.99	-10,952.54	1,813.34	1,461.25	352.10	5.150	
17,600.00	6,928.91	17,768.07	6,923.80	177.49	178.60	89.84	1,687.54	-11,052.53	1,813.43	1,458.16	355.27	5.104	
17,700.00	6,928.68	17,868.07	6,923.52	179.08	180.17	89.84	1,688.09	-11,152.53	1,813.52	1,455.08	358.44	5.060	
17,800.00	6,928.46	17,968.07	6,923.23	180.66	181.75	89.83	1,688.64	-11,252.53	1,813.61	1,452.00	361.61	5.015	
17,900.00	6,928.23	18,068.07	6,922.95	182.25	183.33	89.83	1,689.19	-11,352.53	1,813.69	1,448.91	364.78	4.972	
18,000.00	6,928.01	18,168.07	6,922.66	183.84	184.90	89.83	1,689.74	-11,452.53	1,813.78	1,445.83	367.95	4.929	
18,100.00	6,927.78	18,268.07	6,922.38	185.43	186.48	89.83	1,690.29	-11,552.52	1,813.87	1,442.74	371.12	4.888	
18,200.00	6,927.56	18,368.07	6,922.09	187.01	188.06	89.83	1,690.84	-11,652.52	1,813.95	1,439.66	374.30	4.846	
18,300.00	6,927.33	18,468.07	6,921.81	188.60	189.64	89.83	1,691.38	-11,752.52	1,814.04	1,436.57	377.47	4.806	
18,400.00	6,927.11	18,568.07	6,921.52	190.19	191.22	89.82	1,691.93	-11,852.52	1,814.13	1,433.49	380.64	4.766	
18,500.00	6,926.88	18,668.07	6,921.24	191.78	192.80	89.82	1,692.48	-11,952.52	1,814.22	1,430.40	383.82	4.727	
18,600.00	6,926.66	18,768.07	6,920.95	193.37	194.37	89.82	1,693.03	-12,052.51	1,814.30	1,427.31	386.99	4.688	
18,700.00	6,926.44	18,868.07	6,920.67	194.96	195.95	89.82	1,693.58	-12,152.51	1,814.39	1,424.22	390.17	4.650	
18,800.00	6,926.21	18,968.07	6,920.38	196.54	197.54	89.82	1,694.13	-12,252.51	1,814.48	1,421.14	393.34	4.613	
18,900.00	6,925.99	19,068.07	6,920.10	198.13	199.12	89.81	1,694.68	-12,352.51	1,814.57	1,418.05	396.52	4.576	
19,000.00	6,925.76	19,168.07	6,919.81	199.72	200.70	89.81	1,695.23	-12,452.51	1,814.65	1,414.96	399.69	4.540	
19,100.00	6,925.54	19,268.07	6,919.53	201.31	202.28	89.81	1,695.78	-12,552.50	1,814.74	1,411.87	402.87	4.505	
19,200.00	6,925.31	19,368.07	6,919.24	202.90	203.86	89.81	1,696.32	-12,652.50	1,814.83	1,408.78	406.05	4.469	
19,300.00	6,925.09	19,468.07	6,918.96	204.49	205.44	89.81	1,696.87	-12,752.50	1,814.91	1,405.69	409.23	4.435	
19,400.00	6,924.86	19,568.07	6,918.67	206.08	207.02	89.80	1,697.42	-12,852.50	1,815.00	1,402.60	412.41	4.401	
19,500.00	6,924.64	19,668.07	6,918.39	207.67	208.61	89.80	1,697.97	-12,952.50	1,815.09	1,399.50	415.58	4.368	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #712H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,600.00	6,924.41	19,768.07	6,918.10	209.26	210.19	89.80	1,698.52	-13,052.49	1,815.18	1,396.41	418.76	4.335	
19,700.00	6,924.19	19,868.07	6,917.81	210.85	211.77	89.80	1,699.07	-13,152.49	1,815.26	1,393.32	421.94	4.302	
19,800.00	6,923.96	19,968.07	6,917.53	212.44	213.36	89.80	1,699.62	-13,252.49	1,815.35	1,390.23	425.12	4.270	
19,900.00	6,923.74	20,068.07	6,917.24	214.04	214.94	89.79	1,700.17	-13,352.49	1,815.44	1,387.14	428.30	4.239	
20,000.00	6,923.51	20,168.07	6,916.96	215.63	216.52	89.79	1,700.72	-13,452.49	1,815.53	1,384.04	431.48	4.208	
20,100.00	6,923.29	20,268.07	6,916.67	217.22	218.11	89.79	1,701.26	-13,552.48	1,815.61	1,380.95	434.66	4.177	
20,200.00	6,923.07	20,368.07	6,916.39	218.81	219.69	89.79	1,701.81	-13,652.48	1,815.70	1,377.85	437.85	4.147	
20,300.00	6,922.84	20,468.07	6,916.10	220.40	221.28	89.79	1,702.36	-13,752.48	1,815.79	1,374.76	441.03	4.117	
20,400.00	6,922.62	20,568.07	6,915.82	221.99	222.86	89.79	1,702.91	-13,852.48	1,815.87	1,371.67	444.21	4.088	
20,500.00	6,922.39	20,668.07	6,915.53	223.59	224.45	89.78	1,703.46	-13,952.48	1,815.96	1,368.57	447.39	4.059	
20,600.00	6,922.17	20,768.07	6,915.25	225.18	226.03	89.78	1,704.01	-14,052.48	1,816.05	1,365.48	450.57	4.031	
20,674.13	6,922.00	20,842.20	6,915.04	226.36	227.21	89.78	1,704.42	-14,126.60	1,816.11	1,363.18	452.93	4.010 SF	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	164.72	-19.29	5.27	20.00				
100.00	100.00	100.00	100.00	0.25	0.25	164.72	-19.29	5.27	20.00	19.50	0.50	39.855	
200.00	200.00	200.00	200.00	0.61	0.61	164.72	-19.29	5.27	20.00	18.78	1.22	16.411	
300.00	300.00	300.00	300.00	0.97	0.97	164.72	-19.29	5.27	20.00	18.07	1.94	10.333	
400.00	400.00	400.00	400.00	1.33	1.33	164.72	-19.29	5.27	20.00	17.35	2.65	7.540	
500.00	500.00	500.00	500.00	1.68	1.68	164.72	-19.29	5.27	20.00	16.63	3.37	5.936	
606.93	606.91	607.52	607.49	2.05	2.07	-65.44	-17.28	5.31	17.16	13.04	4.12	4.162	
700.00	699.91	700.64	700.47	2.37	2.41	-90.48	-12.27	5.42	12.30	7.53	4.77	2.580	
754.27	754.14	754.67	754.34	2.55	2.60	-119.42	-7.98	5.51	10.86	5.71	5.15	2.110	CC, ES, SF
800.00	799.84	800.00	799.45	2.71	2.77	-147.50	-3.60	5.61	12.25	6.78	5.47	2.240	
900.00	899.77	898.50	897.22	3.06	3.13	176.67	8.37	5.86	23.24	17.08	6.16	3.774	
1,000.00	999.70	995.85	993.38	3.41	3.49	163.38	23.50	6.18	40.31	33.47	6.84	5.897	
1,100.00	1,099.63	1,091.87	1,087.67	3.76	3.86	157.08	41.62	6.57	61.37	53.87	7.50	8.180	
1,200.00	1,199.56	1,186.38	1,179.83	4.11	4.24	153.45	62.52	7.02	85.92	77.76	8.16	10.531	
1,300.00	1,299.49	1,280.52	1,270.96	4.47	4.63	151.08	86.14	7.52	113.53	104.71	8.82	12.869	
1,400.00	1,399.42	1,376.37	1,363.58	4.83	5.05	149.56	110.79	8.05	141.87	132.34	9.52	14.896	
1,500.00	1,499.35	1,472.21	1,456.20	5.19	5.47	148.55	135.44	8.57	170.26	160.03	10.23	16.643	
1,600.00	1,599.28	1,568.06	1,548.82	5.54	5.89	147.82	160.08	9.10	198.69	187.75	10.94	18.161	
1,700.00	1,699.21	1,663.91	1,641.45	5.90	6.33	147.28	184.73	9.63	227.15	215.49	11.65	19.491	
1,800.00	1,799.14	1,759.75	1,734.07	6.26	6.76	146.86	209.38	10.15	255.62	243.25	12.37	20.665	
1,900.00	1,899.07	1,855.60	1,826.69	6.62	7.20	146.52	234.02	10.68	284.09	271.01	13.09	21.708	
2,000.00	1,999.00	1,951.45	1,919.31	6.98	7.64	146.24	258.67	11.21	312.58	298.77	13.81	22.640	
2,100.00	2,098.94	2,047.30	2,011.94	7.34	8.08	146.01	283.32	11.73	341.07	326.54	14.53	23.478	
2,200.00	2,198.87	2,143.14	2,104.56	7.70	8.53	145.82	307.96	12.26	369.57	354.32	15.25	24.235	
2,300.00	2,298.80	2,238.99	2,197.18	8.06	8.97	145.65	332.61	12.79	398.07	382.09	15.97	24.922	
2,400.00	2,398.73	2,334.84	2,289.80	8.42	9.42	145.51	357.25	13.31	426.57	409.87	16.70	25.548	
2,500.00	2,498.66	2,430.68	2,382.43	8.79	9.87	145.38	381.90	13.84	455.07	437.65	17.42	26.121	
2,600.00	2,598.59	2,526.53	2,475.05	9.15	10.32	145.27	406.55	14.36	483.58	465.43	18.15	26.648	
2,700.00	2,698.52	2,622.38	2,567.67	9.51	10.77	145.17	431.19	14.89	512.08	493.21	18.87	27.133	
2,800.00	2,798.45	2,718.23	2,660.29	9.87	11.22	145.08	455.84	15.42	540.59	520.99	19.60	27.581	
2,900.00	2,898.38	2,814.07	2,752.92	10.23	11.67	145.00	480.49	15.94	569.10	548.77	20.33	27.996	
3,000.00	2,998.31	2,909.92	2,845.54	10.59	12.13	144.93	505.13	16.47	597.61	576.56	21.06	28.382	
3,100.00	3,098.24	3,005.77	2,938.16	10.96	12.58	144.86	529.78	17.00	626.12	604.34	21.78	28.742	
3,200.00	3,198.17	3,101.61	3,030.78	11.32	13.03	144.80	554.43	17.52	654.63	632.12	22.51	29.078	
3,300.00	3,298.10	3,197.46	3,123.41	11.68	13.49	144.75	579.07	18.05	683.15	659.90	23.24	29.393	
3,400.00	3,398.03	3,293.31	3,216.03	12.04	13.94	144.70	603.72	18.57	711.66	687.69	23.97	29.688	
3,500.00	3,497.96	3,389.16	3,308.65	12.40	14.40	144.65	628.37	19.10	740.17	715.47	24.70	29.965	
3,600.00	3,597.89	3,485.00	3,401.27	12.77	14.85	144.61	653.01	19.63	768.69	743.25	25.43	30.226	
3,700.00	3,697.82	3,580.85	3,493.90	13.13	15.31	144.57	677.66	20.15	797.20	771.04	26.16	30.472	
3,800.00	3,797.75	3,676.70	3,586.52	13.49	15.76	144.53	702.31	20.68	825.72	798.82	26.89	30.704	
3,900.00	3,897.68	3,772.54	3,679.14	13.85	16.22	144.50	726.95	21.21	854.23	826.61	27.62	30.924	
4,000.00	3,997.61	3,868.39	3,771.76	14.21	16.68	144.46	751.60	21.73	882.74	854.39	28.35	31.132	
4,100.00	4,097.54	3,964.24	3,864.39	14.58	17.13	144.43	776.25	22.26	911.26	882.17	29.09	31.329	
4,200.00	4,197.47	4,060.09	3,957.01	14.94	17.59	144.40	800.89	22.78	939.78	909.96	29.82	31.517	
4,300.00	4,297.40	4,155.93	4,049.63	15.30	18.05	144.38	825.54	23.31	968.29	937.74	30.55	31.695	
4,400.00	4,397.33	4,251.78	4,142.25	15.66	18.50	144.35	850.19	23.84	996.81	965.53	31.28	31.865	
4,500.00	4,497.26	4,347.63	4,234.88	16.03	18.96	144.33	874.83	24.36	1,025.32	993.31	32.01	32.027	
4,600.00	4,597.19	4,443.47	4,327.50	16.39	19.42	144.31	899.48	24.89	1,053.84	1,021.09	32.75	32.182	
4,700.00	4,697.12	4,539.32	4,420.12	16.75	19.88	144.28	924.13	25.42	1,082.36	1,048.88	33.48	32.329	
4,800.00	4,797.05	4,635.17	4,512.74	17.11	20.33	144.26	948.77	25.94	1,110.87	1,076.66	34.21	32.470	
4,900.00	4,896.99	4,731.01	4,605.37	17.47	20.79	144.24	973.42	26.47	1,139.39	1,104.44	34.94	32.605	
5,000.00	4,996.92	4,826.86	4,697.99	17.84	21.25	144.23	998.07	26.99	1,167.91	1,132.23	35.68	32.735	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	4,922.71	4,790.61	18.20	21.71	144.21	1,022.71	27.52	1,196.42	1,160.01	36.41	32.859	
5,200.00	5,196.78	5,018.56	4,883.23	18.56	22.16	144.19	1,047.36	28.05	1,224.94	1,187.80	37.14	32.978	
5,300.00	5,296.71	5,114.40	4,975.86	18.92	22.62	144.18	1,072.01	28.57	1,253.46	1,215.58	37.88	33.092	
5,400.00	5,396.64	5,210.25	5,068.48	19.29	23.08	144.16	1,096.65	29.10	1,281.97	1,243.36	38.61	33.202	
5,500.00	5,496.57	5,306.10	5,161.10	19.65	23.54	144.15	1,121.30	29.63	1,310.49	1,271.15	39.35	33.307	
5,600.00	5,596.50	5,401.94	5,253.72	20.01	24.00	144.13	1,145.95	30.15	1,339.01	1,298.93	40.08	33.409	
5,700.00	5,696.43	5,497.79	5,346.35	20.37	24.46	144.12	1,170.59	30.68	1,367.53	1,326.71	40.81	33.506	
5,800.00	5,796.36	5,593.64	5,438.97	20.74	24.91	144.11	1,195.24	31.20	1,396.04	1,354.50	41.55	33.601	
5,900.00	5,896.29	5,689.49	5,531.59	21.10	25.37	144.09	1,219.89	31.73	1,424.56	1,382.28	42.28	33.691	
6,000.00	5,996.22	5,785.33	5,624.22	21.46	25.83	144.08	1,244.53	32.26	1,453.08	1,410.06	43.02	33.779	
6,100.00	6,096.15	5,881.18	5,716.84	21.82	26.29	144.07	1,269.18	32.78	1,481.60	1,437.84	43.75	33.863	
6,200.00	6,196.08	5,977.03	5,809.46	22.19	26.75	144.06	1,293.82	33.31	1,510.11	1,465.63	44.49	33.945	
6,300.00	6,296.01	6,072.87	5,902.08	22.55	27.21	144.05	1,318.47	33.84	1,538.63	1,493.41	45.22	34.024	
6,335.60	6,331.59	6,107.00	5,935.06	22.68	27.37	144.04	1,327.25	34.02	1,548.78	1,503.30	45.48	34.051	
6,350.00	6,345.97	6,120.79	5,948.39	22.73	27.44	125.99	1,330.79	34.10	1,552.91	1,507.32	45.59	34.063	
6,400.00	6,395.75	6,168.52	5,994.51	22.91	27.67	107.02	1,343.07	34.36	1,567.46	1,521.50	45.96	34.105	
6,450.00	6,445.03	6,215.77	6,040.17	23.10	27.89	101.23	1,355.22	34.62	1,582.34	1,536.01	46.33	34.154	
6,500.00	6,493.52	6,262.22	6,085.06	23.29	28.11	98.10	1,367.16	34.88	1,597.49	1,550.79	46.70	34.208	
6,550.00	6,540.91	6,307.62	6,128.93	23.48	28.33	95.96	1,378.83	35.13	1,612.90	1,565.83	47.07	34.269	
6,600.00	6,586.91	6,351.66	6,171.49	23.66	28.54	94.34	1,390.16	35.37	1,628.56	1,581.13	47.43	34.336	
6,650.00	6,631.24	6,394.08	6,212.48	23.85	28.74	93.00	1,401.07	35.60	1,644.50	1,596.71	47.79	34.409	
6,700.00	6,673.63	6,434.62	6,251.66	24.05	28.94	91.84	1,411.49	35.82	1,660.75	1,612.59	48.15	34.491	
6,750.00	6,713.80	6,473.03	6,288.78	24.24	29.12	90.79	1,421.37	36.03	1,677.33	1,628.82	48.51	34.580	
6,800.00	6,751.52	6,509.07	6,323.61	24.44	29.30	89.78	1,430.64	36.23	1,694.29	1,645.43	48.86	34.678	
6,850.00	6,786.56	6,534.89	6,348.55	24.65	29.42	88.59	1,437.27	36.51	1,711.73	1,662.58	49.15	34.828	
6,900.00	6,818.69	6,550.00	6,363.15	24.87	29.49	87.12	1,441.15	37.09	1,729.84	1,680.47	49.37	35.038	
6,950.00	6,847.72	6,568.19	6,380.69	25.10	29.58	85.74	1,445.80	38.26	1,748.62	1,698.98	49.64	35.229	
7,000.00	6,873.46	6,580.21	6,392.27	25.34	29.64	84.14	1,448.87	39.32	1,768.05	1,718.18	49.87	35.453	
7,050.00	6,895.77	6,600.00	6,411.28	25.60	29.73	82.78	1,453.89	41.55	1,788.14	1,737.95	50.19	35.627	
7,100.00	6,914.50	6,600.00	6,411.28	25.87	29.73	80.73	1,453.89	41.55	1,808.65	1,758.28	50.37	35.909	
7,150.00	6,929.54	6,600.00	6,411.28	26.15	29.73	78.66	1,453.89	41.55	1,829.62	1,779.06	50.56	36.184	
7,200.00	6,940.80	6,600.00	6,411.28	26.44	29.73	76.57	1,453.89	41.55	1,850.91	1,800.13	50.78	36.449	
7,250.00	6,948.20	6,600.00	6,411.28	26.75	29.73	74.50	1,453.89	41.55	1,872.39	1,821.37	51.02	36.700	
7,300.00	6,951.70	6,600.00	6,411.28	27.07	29.73	72.45	1,453.89	41.55	1,893.91	1,842.64	51.27	36.937	
7,321.06	6,952.00	6,600.00	6,411.28	27.20	29.73	71.60	1,453.89	41.55	1,902.96	1,851.58	51.39	37.033	
7,400.00	6,951.82	6,600.00	6,411.28	27.74	29.73	71.60	1,453.89	41.55	1,938.14	1,886.32	51.83	37.397	
7,500.00	6,951.60	6,600.00	6,411.28	28.49	29.73	71.60	1,453.89	41.55	1,986.33	1,933.93	52.40	37.907	
7,600.00	6,951.37	6,600.00	6,411.28	29.30	29.73	71.60	1,453.89	41.55	2,038.28	1,985.30	52.98	38.474	
7,700.00	6,951.15	6,583.04	6,394.99	30.18	29.65	71.04	1,449.59	39.60	2,093.53	2,040.12	53.41	39.200	
7,800.00	6,950.92	6,579.63	6,391.71	31.12	29.63	70.93	1,448.72	39.26	2,152.09	2,098.15	53.94	39.898	
7,900.00	6,950.70	6,576.56	6,388.75	32.11	29.62	70.83	1,447.93	38.97	2,213.62	2,159.16	54.46	40.646	
8,000.00	6,950.47	6,573.77	6,386.07	33.15	29.60	70.73	1,447.22	38.72	2,277.86	2,222.90	54.96	41.443	
8,100.00	6,950.25	6,571.23	6,383.62	34.23	29.59	70.65	1,446.58	38.51	2,344.60	2,289.16	55.44	42.287	
8,200.00	6,950.03	6,568.91	6,381.39	35.35	29.58	70.57	1,445.99	38.32	2,413.63	2,357.73	55.90	43.175	
8,300.00	6,949.80	6,550.00	6,363.15	36.51	29.49	69.95	1,441.15	37.09	2,484.97	2,428.77	56.20	44.217	
8,400.00	6,949.58	6,550.00	6,363.15	37.70	29.49	69.95	1,441.15	37.09	2,557.98	2,501.36	56.63	45.171	
8,500.00	6,949.35	6,550.00	6,363.15	38.92	29.49	69.95	1,441.15	37.09	2,632.77	2,575.73	57.03	46.162	
8,600.00	6,949.13	6,550.00	6,363.15	40.17	29.49	69.95	1,441.15	37.09	2,709.18	2,651.77	57.41	47.187	
8,700.00	6,948.90	6,550.00	6,363.15	41.44	29.49	69.95	1,441.15	37.09	2,787.09	2,729.31	57.77	48.243	
8,800.00	6,948.68	6,550.00	6,363.15	42.73	29.49	69.95	1,441.15	37.09	2,866.36	2,808.25	58.11	49.327	
8,900.00	6,948.45	6,550.00	6,363.15	44.04	29.49	69.95	1,441.15	37.09	2,946.90	2,888.47	58.43	50.439	
9,000.00	6,948.23	6,550.00	6,363.15	45.38	29.49	69.95	1,441.15	37.09	3,028.60	2,969.88	58.72	51.575	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
9,100.00	6,948.00	6,550.00	6,363.15	46.72	29.49	69.95	1,441.15	37.09	3,111.37	3,052.36	59.00	52.733	
9,200.00	6,947.78	6,550.00	6,363.15	48.09	29.49	69.95	1,441.15	37.09	3,195.12	3,135.85	59.27	53.912	
9,300.00	6,947.55	6,550.00	6,363.15	49.47	29.49	69.95	1,441.15	37.09	3,279.78	3,220.27	59.51	55.110	
9,400.00	6,947.33	6,550.00	6,363.15	50.86	29.49	69.95	1,441.15	37.09	3,365.29	3,305.54	59.75	56.325	
9,500.00	6,947.10	6,550.00	6,363.15	52.26	29.49	69.95	1,441.15	37.09	3,451.57	3,391.60	59.97	57.556	
9,600.00	6,946.88	6,550.00	6,363.15	53.68	29.49	69.95	1,441.15	37.09	3,538.58	3,478.40	60.18	58.802	
9,700.00	6,946.66	6,550.00	6,363.15	55.10	29.49	69.95	1,441.15	37.09	3,626.25	3,565.88	60.38	60.061	
9,800.00	6,946.43	6,550.00	6,363.15	56.54	29.49	69.95	1,441.15	37.09	3,714.55	3,653.99	60.56	61.333	
9,900.00	6,946.21	6,550.00	6,363.15	57.98	29.49	69.95	1,441.15	37.09	3,803.43	3,742.69	60.74	62.616	
10,000.00	6,945.98	6,550.00	6,363.15	59.43	29.49	69.95	1,441.15	37.09	3,892.85	3,831.94	60.91	63.910	
10,100.00	6,945.76	6,550.00	6,363.15	60.89	29.49	69.95	1,441.15	37.09	3,982.77	3,921.70	61.07	65.213	
10,200.00	6,945.53	6,550.00	6,363.15	62.36	29.49	69.95	1,441.15	37.09	4,073.16	4,011.94	61.23	66.525	
10,300.00	6,945.31	6,550.00	6,363.15	63.83	29.49	69.95	1,441.15	37.09	4,163.99	4,102.62	61.38	67.845	
10,400.00	6,945.08	6,550.00	6,363.15	65.31	29.49	69.95	1,441.15	37.09	4,255.24	4,193.72	61.52	69.172	
10,500.00	6,944.86	6,550.00	6,363.15	66.79	29.49	69.95	1,441.15	37.09	4,346.86	4,285.21	61.65	70.506	
10,600.00	6,944.63	6,550.00	6,363.15	68.28	29.49	69.95	1,441.15	37.09	4,438.85	4,377.07	61.78	71.846	
10,700.00	6,944.41	6,550.00	6,363.15	69.78	29.49	69.95	1,441.15	37.09	4,531.18	4,469.27	61.91	73.192	
10,800.00	6,944.18	6,550.00	6,363.15	71.28	29.49	69.95	1,441.15	37.09	4,623.83	4,561.80	62.03	74.543	
10,900.00	6,943.96	6,550.00	6,363.15	72.78	29.49	69.95	1,441.15	37.09	4,716.78	4,654.63	62.15	75.899	
11,000.00	6,943.73	6,550.00	6,363.15	74.29	29.49	69.95	1,441.15	37.09	4,810.01	4,747.75	62.26	77.259	
11,100.00	6,943.51	6,550.00	6,363.15	75.80	29.49	69.95	1,441.15	37.09	4,903.50	4,841.14	62.37	78.623	
11,200.00	6,943.29	6,550.00	6,363.15	77.32	29.49	69.95	1,441.15	37.09	4,997.25	4,934.78	62.47	79.990	
11,300.00	6,943.06	6,550.00	6,363.15	78.84	29.49	69.95	1,441.15	37.09	5,091.24	5,028.66	62.58	81.361	
11,400.00	6,942.84	6,550.00	6,363.15	80.36	29.49	69.95	1,441.15	37.09	5,185.45	5,122.78	62.68	82.734	
11,500.00	6,942.61	6,550.00	6,363.15	81.88	29.49	69.95	1,441.15	37.09	5,279.88	5,217.10	62.77	84.110	
11,600.00	6,942.39	6,550.00	6,363.15	83.41	29.49	69.95	1,441.15	37.09	5,374.50	5,311.63	62.87	85.487	
11,700.00	6,942.16	6,550.00	6,363.15	84.94	29.49	69.95	1,441.15	37.09	5,469.32	5,406.36	62.96	86.867	
11,800.00	6,941.94	6,550.00	6,363.15	86.47	29.49	69.95	1,441.15	37.09	5,564.32	5,501.27	63.05	88.249	
11,900.00	6,941.71	6,537.27	6,350.85	88.01	29.43	69.53	1,437.89	36.58	5,659.36	5,596.31	63.05	89.760	
12,000.00	6,941.49	6,536.95	6,350.54	89.55	29.43	69.52	1,437.80	36.57	5,754.69	5,691.55	63.14	91.148	
12,100.00	6,941.26	6,536.63	6,350.24	91.09	29.43	69.51	1,437.72	36.56	5,850.17	5,786.95	63.22	92.538	
12,200.00	6,941.04	6,536.33	6,349.94	92.63	29.43	69.50	1,437.64	36.55	5,945.80	5,882.50	63.30	93.929	
12,300.00	6,940.81	6,536.03	6,349.66	94.18	29.42	69.49	1,437.57	36.54	6,041.58	5,978.19	63.38	95.320	
12,400.00	6,940.59	6,535.75	6,349.38	95.72	29.42	69.48	1,437.49	36.54	6,137.48	6,074.02	63.46	96.711	
12,500.00	6,940.36	6,535.47	6,349.12	97.27	29.42	69.47	1,437.42	36.53	6,233.52	6,169.98	63.54	98.102	
12,600.00	6,940.14	6,535.20	6,348.86	98.82	29.42	69.46	1,437.35	36.52	6,329.68	6,266.06	63.62	99.494	
12,700.00	6,939.92	6,534.94	6,348.61	100.37	29.42	69.45	1,437.29	36.51	6,425.96	6,362.26	63.70	100.885	
12,800.00	6,939.69	6,534.69	6,348.36	101.92	29.42	69.44	1,437.22	36.51	6,522.35	6,458.57	63.77	102.276	
12,900.00	6,939.47	6,521.58	6,335.69	103.48	29.36	69.01	1,433.85	36.30	6,618.98	6,555.22	63.76	103.819	
13,000.00	6,939.24	6,521.58	6,335.69	105.03	29.36	69.01	1,433.85	36.30	6,715.57	6,651.74	63.83	105.207	
13,100.00	6,939.02	6,521.58	6,335.69	106.59	29.36	69.01	1,433.85	36.30	6,812.26	6,748.36	63.91	106.595	
13,200.00	6,938.79	6,521.58	6,335.69	108.15	29.36	69.01	1,433.85	36.30	6,909.05	6,845.07	63.98	107.983	
13,300.00	6,938.57	6,521.58	6,335.69	109.71	29.36	69.01	1,433.85	36.30	7,005.92	6,941.87	64.06	109.369	
13,400.00	6,938.34	6,521.58	6,335.69	111.27	29.36	69.01	1,433.85	36.30	7,102.89	7,038.76	64.13	110.755	
13,500.00	6,938.12	6,521.58	6,335.69	112.83	29.36	69.01	1,433.85	36.30	7,199.93	7,135.73	64.21	112.139	
13,600.00	6,937.89	6,521.58	6,335.69	114.40	29.36	69.01	1,433.85	36.30	7,297.06	7,232.78	64.28	113.522	
13,700.00	6,937.67	6,521.58	6,335.69	115.96	29.36	69.01	1,433.85	36.30	7,394.26	7,329.91	64.35	114.903	
13,800.00	6,937.44	6,521.58	6,335.69	117.53	29.36	69.01	1,433.85	36.30	7,491.54	7,427.11	64.42	116.284	
13,900.00	6,937.22	6,521.58	6,335.69	119.09	29.36	69.01	1,433.85	36.30	7,588.88	7,524.38	64.50	117.662	
14,000.00	6,936.99	6,521.58	6,335.69	120.66	29.36	69.01	1,433.85	36.30	7,686.30	7,621.73	64.57	119.039	
14,100.00	6,936.77	6,521.58	6,335.69	122.23	29.36	69.01	1,433.85	36.30	7,783.78	7,719.13	64.64	120.414	
14,200.00	6,936.55	6,521.58	6,335.69	123.80	29.36	69.01	1,433.85	36.30	7,881.32	7,816.61	64.71	121.788	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.00	6,936.32	6,521.58	6,335.69	125.37	29.36	69.01	1,433.85	36.30	7,978.92	7,914.14	64.79	123.160	
14,400.00	6,936.10	6,521.58	6,335.69	126.94	29.36	69.01	1,433.85	36.30	8,076.59	8,011.73	64.86	124.529	
14,500.00	6,935.87	6,521.58	6,335.69	128.51	29.36	69.01	1,433.85	36.30	8,174.31	8,109.38	64.93	125.897	
14,600.00	6,935.65	6,521.58	6,335.69	130.08	29.36	69.01	1,433.85	36.30	8,272.08	8,207.08	65.00	127.263	
14,700.00	6,935.42	6,521.58	6,335.69	131.65	29.36	69.01	1,433.85	36.30	8,369.91	8,304.83	65.07	128.626	
14,800.00	6,935.20	6,521.58	6,335.69	133.23	29.36	69.01	1,433.85	36.30	8,467.78	8,402.64	65.14	129.987	
14,900.00	6,934.97	6,521.58	6,335.69	134.80	29.36	69.01	1,433.85	36.30	8,565.71	8,500.49	65.21	131.346	
15,000.00	6,934.75	6,521.58	6,335.69	136.37	29.36	69.01	1,433.85	36.30	8,663.68	8,598.40	65.29	132.703	
15,100.00	6,934.52	6,521.58	6,335.69	137.95	29.36	69.01	1,433.85	36.30	8,761.70	8,696.34	65.36	134.057	
15,200.00	6,934.30	6,521.58	6,335.69	139.53	29.36	69.01	1,433.85	36.30	8,859.77	8,794.34	65.43	135.409	
15,300.00	6,934.07	6,521.58	6,335.69	141.10	29.36	69.01	1,433.85	36.30	8,957.87	8,892.37	65.50	136.758	
15,400.00	6,933.85	6,521.58	6,335.69	142.68	29.36	69.01	1,433.85	36.30	9,056.02	8,990.45	65.57	138.105	
15,500.00	6,933.62	6,521.58	6,335.69	144.26	29.36	69.01	1,433.85	36.30	9,154.21	9,088.56	65.65	139.449	
15,600.00	6,933.40	6,521.58	6,335.69	145.84	29.36	69.01	1,433.85	36.30	9,252.43	9,186.72	65.72	140.791	
15,700.00	6,933.18	6,521.58	6,335.69	147.42	29.36	69.01	1,433.85	36.30	9,350.70	9,284.91	65.79	142.130	
15,800.00	6,932.95	6,521.58	6,335.69	148.99	29.36	69.01	1,433.85	36.30	9,449.00	9,383.14	65.86	143.466	
15,900.00	6,932.73	6,521.58	6,335.69	150.57	29.36	69.01	1,433.85	36.30	9,547.34	9,481.40	65.94	144.799	
16,000.00	6,932.50	6,521.58	6,335.69	152.15	29.36	69.01	1,433.85	36.30	9,645.71	9,579.70	66.01	146.129	
16,100.00	6,932.28	6,521.58	6,335.69	153.74	29.36	69.01	1,433.85	36.30	9,744.11	9,678.03	66.08	147.457	
16,200.00	6,932.05	6,521.58	6,335.69	155.32	29.36	69.01	1,433.85	36.30	9,842.54	9,776.39	66.15	148.781	
16,300.00	6,931.83	6,521.58	6,335.69	156.90	29.36	69.01	1,433.85	36.30	9,941.01	9,874.78	66.23	150.103	
16,400.00	6,931.60	6,521.58	6,335.69	158.48	29.36	69.01	1,433.85	36.30	10,039.51	9,973.21	66.30	151.422	
16,500.00	6,931.38	6,521.58	6,335.69	160.06	29.36	69.01	1,433.85	36.30	10,138.03	10,071.66	66.38	152.738	
16,600.00	6,931.15	6,521.58	6,335.69	161.65	29.36	69.01	1,433.85	36.30	10,236.59	10,170.14	66.45	154.050	
16,700.00	6,930.93	6,521.58	6,335.69	163.23	29.36	69.01	1,433.85	36.30	10,335.17	10,268.65	66.52	155.360	
16,800.00	6,930.70	6,521.58	6,335.69	164.81	29.36	69.01	1,433.85	36.30	10,433.78	10,367.18	66.60	156.666	
16,900.00	6,930.48	6,521.58	6,335.69	166.40	29.36	69.01	1,433.85	36.30	10,532.42	10,465.75	66.67	157.970	
17,000.00	6,930.25	6,521.58	6,335.69	167.98	29.36	69.01	1,433.85	36.30	10,631.08	10,564.33	66.75	159.270	
17,100.00	6,930.03	6,521.58	6,335.69	169.56	29.36	69.01	1,433.85	36.30	10,729.77	10,662.94	66.82	160.567	
17,200.00	6,929.81	6,521.58	6,335.69	171.15	29.36	69.01	1,433.85	36.30	10,828.48	10,761.58	66.90	161.860	
17,300.00	6,929.58	6,521.58	6,335.69	172.73	29.36	69.01	1,433.85	36.30	10,927.21	10,860.24	66.98	163.151	
17,400.00	6,929.36	6,521.58	6,335.69	174.32	29.36	69.01	1,433.85	36.30	11,025.97	10,958.92	67.05	164.438	
17,500.00	6,929.13	6,521.58	6,335.69	175.91	29.36	69.01	1,433.85	36.30	11,124.75	11,057.62	67.13	165.722	
17,600.00	6,928.91	6,521.58	6,335.69	177.49	29.36	69.01	1,433.85	36.30	11,223.55	11,156.34	67.21	167.002	
17,700.00	6,928.68	6,521.58	6,335.69	179.08	29.36	69.01	1,433.85	36.30	11,322.37	11,255.09	67.28	168.279	
17,800.00	6,928.46	6,521.58	6,335.69	180.66	29.36	69.01	1,433.85	36.30	11,421.21	11,353.85	67.36	169.553	
17,900.00	6,928.23	6,521.58	6,335.69	182.25	29.36	69.01	1,433.85	36.30	11,520.07	11,452.63	67.44	170.824	
18,000.00	6,928.01	6,521.58	6,335.69	183.84	29.36	69.01	1,433.85	36.30	11,618.96	11,551.44	67.52	172.091	
18,100.00	6,927.78	6,521.58	6,335.69	185.43	29.36	69.01	1,433.85	36.30	11,717.86	11,650.26	67.59	173.354	
18,200.00	6,927.56	6,521.58	6,335.69	187.01	29.36	69.01	1,433.85	36.30	11,816.77	11,749.10	67.67	174.614	
18,300.00	6,927.33	6,521.58	6,335.69	188.60	29.36	69.01	1,433.85	36.30	11,915.71	11,847.96	67.75	175.871	
18,400.00	6,927.11	6,521.58	6,335.69	190.19	29.36	69.01	1,433.85	36.30	12,014.67	11,946.83	67.83	177.124	
18,500.00	6,926.88	6,521.58	6,335.69	191.78	29.36	69.01	1,433.85	36.30	12,113.64	12,045.73	67.91	178.374	
18,600.00	6,926.66	6,521.58	6,335.69	193.37	29.36	69.01	1,433.85	36.30	12,212.63	12,144.64	67.99	179.620	
18,700.00	6,926.44	6,521.58	6,335.69	194.96	29.36	69.01	1,433.85	36.30	12,311.63	12,243.56	68.07	180.862	
18,800.00	6,926.21	6,521.58	6,335.69	196.54	29.36	69.01	1,433.85	36.30	12,410.65	12,342.50	68.15	182.101	
18,900.00	6,925.99	6,521.58	6,335.69	198.13	29.36	69.01	1,433.85	36.30	12,509.69	12,441.46	68.23	183.337	
19,000.00	6,925.76	6,521.58	6,335.69	199.72	29.36	69.01	1,433.85	36.30	12,608.74	12,540.43	68.31	184.568	
19,100.00	6,925.54	6,521.58	6,335.69	201.31	29.36	69.01	1,433.85	36.30	12,707.81	12,639.41	68.40	185.797	
19,200.00	6,925.31	6,521.58	6,335.69	202.90	29.36	69.01	1,433.85	36.30	12,806.89	12,738.41	68.48	187.021	
19,300.00	6,925.09	6,521.58	6,335.69	204.49	29.36	69.01	1,433.85	36.30	12,905.98	12,837.42	68.56	188.242	
19,400.00	6,924.86	6,521.58	6,335.69	206.08	29.36	69.01	1,433.85	36.30	13,005.09	12,936.45	68.64	189.460	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #720H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	6,521.58	6,335.69	207.67	29.36	69.01	1,433.85	36.30	13,104.22	13,035.49	68.73	190.673	
19,600.00	6,924.41	6,521.58	6,335.69	209.26	29.36	69.01	1,433.85	36.30	13,203.35	13,134.54	68.81	191.884	
19,700.00	6,924.19	6,521.58	6,335.69	210.85	29.36	69.01	1,433.85	36.30	13,302.50	13,233.61	68.89	193.090	
19,800.00	6,923.96	6,521.58	6,335.69	212.44	29.36	69.01	1,433.85	36.30	13,401.66	13,332.69	68.98	194.293	
19,900.00	6,923.74	6,521.58	6,335.69	214.04	29.36	69.01	1,433.85	36.30	13,500.84	13,431.78	69.06	195.492	
20,000.00	6,923.51	6,521.58	6,335.69	215.63	29.36	69.01	1,433.85	36.30	13,600.02	13,530.88	69.15	196.687	
20,100.00	6,923.29	6,521.58	6,335.69	217.22	29.36	69.01	1,433.85	36.30	13,699.22	13,629.99	69.23	197.879	
20,200.00	6,923.07	6,521.58	6,335.69	218.81	29.36	69.01	1,433.85	36.30	13,798.43	13,729.11	69.32	199.067	
20,300.00	6,922.84	6,521.58	6,335.69	220.40	29.36	69.01	1,433.85	36.30	13,897.65	13,828.25	69.40	200.251	
20,400.00	6,922.62	6,521.58	6,335.69	221.99	29.36	69.01	1,433.85	36.30	13,996.88	13,927.39	69.49	201.432	
20,500.00	6,922.39	6,521.58	6,335.69	223.59	29.36	69.01	1,433.85	36.30	14,096.12	14,026.55	69.57	202.609	
20,600.00	6,922.17	6,521.58	6,335.69	225.18	29.36	69.01	1,433.85	36.30	14,195.38	14,125.72	69.66	203.782	
20,674.13	6,922.00	6,521.58	6,335.69	226.36	29.36	69.01	1,433.85	36.30	14,268.96	14,199.24	69.72	204.649	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
0.00	0.00	0.00	0.00	0.00	0.00	164.73	-38.59	10.53	40.00				
100.00	100.00	100.00	100.00	0.25	0.25	164.73	-38.59	10.53	40.00	39.50	0.50	79.704	
200.00	200.00	200.00	200.00	0.61	0.61	164.73	-38.59	10.53	40.00	38.78	1.22	32.819	
300.00	300.00	300.00	300.00	0.97	0.97	164.73	-38.59	10.53	40.00	38.06	1.94	20.664	
400.00	400.00	400.00	400.00	1.33	1.33	164.73	-38.59	10.53	40.00	37.35	2.65	15.079	
500.00	500.00	500.00	500.00	1.68	1.68	164.73	-38.59	10.53	40.00	36.63	3.37	11.871	
606.93	606.91	607.32	607.31	2.05	2.07	-61.07	-37.51	10.74	38.01	33.89	4.12	9.221	
700.00	699.91	700.28	700.27	2.37	2.40	-66.88	-36.39	10.95	35.52	30.75	4.77	7.449	
800.00	799.84	800.16	800.14	2.71	2.76	-74.00	-35.20	11.17	33.31	27.84	5.47	6.091	
900.00	899.77	900.05	900.02	3.06	3.12	-81.98	-34.00	11.40	31.68	25.51	6.17	5.132	
1,000.00	999.70	999.93	999.90	3.41	3.48	-90.64	-32.80	11.62	30.73	23.85	6.88	4.465	
1,078.51	1,078.16	1,078.35	1,078.31	3.68	3.76	-97.70	-31.86	11.80	30.50	23.06	7.44	4.099	CC
1,100.00	1,099.63	1,099.82	1,099.77	3.76	3.83	-99.64	-31.60	11.85	30.51	22.92	7.59	4.019	
1,200.00	1,199.56	1,199.70	1,199.65	4.11	4.19	-108.54	-30.40	12.08	31.05	22.75	8.30	3.740	ES
1,300.00	1,299.49	1,299.58	1,299.53	4.47	4.55	-116.94	-29.20	12.30	32.31	23.29	9.02	3.583	
1,400.00	1,399.42	1,399.47	1,399.40	4.83	4.91	-124.57	-28.00	12.53	34.20	24.47	9.73	3.515	
1,500.00	1,499.35	1,499.35	1,499.28	5.19	5.27	-131.29	-26.80	12.75	36.63	26.19	10.44	3.508	SF
1,600.00	1,599.28	1,599.24	1,599.16	5.54	5.62	-137.11	-25.60	12.98	39.49	28.34	11.15	3.541	
1,700.00	1,699.21	1,699.12	1,699.03	5.90	5.98	-142.10	-24.40	13.21	42.71	30.85	11.87	3.600	
1,800.00	1,799.14	1,799.00	1,798.91	6.26	6.34	-146.37	-23.20	13.43	46.21	33.63	12.58	3.674	
1,900.00	1,899.07	1,898.89	1,898.79	6.62	6.70	-150.01	-22.00	13.66	49.93	36.63	13.29	3.756	
2,000.00	1,999.00	1,998.77	1,998.66	6.98	7.06	-153.15	-20.80	13.88	53.82	39.81	14.01	3.842	
2,100.00	2,098.94	2,098.66	2,098.54	7.34	7.42	-155.85	-19.60	14.11	57.85	43.13	14.72	3.930	
2,200.00	2,198.87	2,198.54	2,198.42	7.70	7.77	-158.20	-18.41	14.33	61.99	46.55	15.44	4.016	
2,300.00	2,298.80	2,298.43	2,298.29	8.06	8.13	-160.25	-17.21	14.56	66.22	50.07	16.15	4.100	
2,400.00	2,398.73	2,398.31	2,398.17	8.42	8.49	-162.05	-16.01	14.79	70.53	53.66	16.86	4.182	
2,500.00	2,498.66	2,498.19	2,498.05	8.79	8.85	-163.64	-14.81	15.01	74.89	57.31	17.58	4.260	
2,600.00	2,598.59	2,598.08	2,597.92	9.15	9.21	-165.06	-13.61	15.24	79.31	61.02	18.30	4.335	
2,700.00	2,698.52	2,697.96	2,697.80	9.51	9.56	-166.33	-12.41	15.46	83.78	64.77	19.01	4.407	
2,800.00	2,798.45	2,797.85	2,797.68	9.87	9.92	-167.46	-11.21	15.69	88.28	68.55	19.73	4.475	
2,900.00	2,898.38	2,897.73	2,897.55	10.23	10.28	-168.49	-10.01	15.92	92.81	72.36	20.44	4.540	
3,000.00	2,998.31	2,997.61	2,997.43	10.59	10.64	-169.42	-8.81	16.14	97.36	76.21	21.16	4.602	
3,100.00	3,098.24	3,097.50	3,097.31	10.96	11.00	-170.27	-7.61	16.37	101.94	80.07	21.87	4.661	
3,200.00	3,198.17	3,197.38	3,197.18	11.32	11.35	-171.05	-6.41	16.59	106.55	83.96	22.59	4.717	
3,300.00	3,298.10	3,297.27	3,297.06	11.68	11.71	-171.76	-5.21	16.82	111.17	87.86	23.31	4.770	
3,400.00	3,398.03	3,397.15	3,396.94	12.04	12.07	-172.41	-4.01	17.05	115.80	91.78	24.02	4.821	
3,500.00	3,497.96	3,497.04	3,496.81	12.40	12.43	-173.01	-2.81	17.27	120.45	95.71	24.74	4.869	
3,600.00	3,597.89	3,596.92	3,596.69	12.77	12.79	-173.57	-1.62	17.50	125.11	99.66	25.45	4.915	
3,700.00	3,697.82	3,696.80	3,696.57	13.13	13.15	-174.09	-0.42	17.72	129.78	103.61	26.17	4.959	
3,800.00	3,797.75	3,796.69	3,796.44	13.49	13.50	-174.57	0.78	17.95	134.47	107.58	26.89	5.001	
3,900.00	3,897.68	3,896.57	3,896.32	13.85	13.86	-175.02	1.98	18.18	139.16	111.55	27.60	5.041	
4,000.00	3,997.61	3,996.46	3,996.20	14.21	14.22	-175.44	3.18	18.40	143.86	115.54	28.32	5.080	
4,100.00	4,097.54	4,096.34	4,096.07	14.58	14.58	-175.84	4.38	18.63	148.56	119.52	29.04	5.116	
4,200.00	4,197.47	4,196.22	4,195.95	14.94	14.94	-176.21	5.58	18.85	153.27	123.52	29.75	5.152	
4,300.00	4,297.40	4,296.11	4,295.83	15.30	15.29	-176.55	6.78	19.08	157.99	127.52	30.47	5.185	
4,400.00	4,397.33	4,395.99	4,395.70	15.66	15.65	-176.88	7.98	19.31	162.72	131.53	31.19	5.218	
4,500.00	4,497.26	4,495.88	4,495.58	16.03	16.01	-177.19	9.18	19.53	167.45	135.54	31.90	5.249	
4,600.00	4,597.19	4,595.76	4,595.46	16.39	16.37	-177.48	10.38	19.76	172.18	139.56	32.62	5.278	
4,700.00	4,697.12	4,695.65	4,695.33	16.75	16.73	-177.76	11.58	19.98	176.92	143.58	33.34	5.307	
4,800.00	4,797.05	4,795.53	4,795.21	17.11	17.08	-178.02	12.78	20.21	181.66	147.61	34.05	5.335	
4,900.00	4,896.99	4,895.41	4,895.09	17.47	17.44	-178.27	13.98	20.44	186.41	151.64	34.77	5.361	
5,000.00	4,996.92	4,995.30	4,994.96	17.84	17.80	-178.51	15.17	20.66	191.15	155.67	35.49	5.387	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,096.85	5,095.18	5,094.84	18.20	18.16	-178.73	16.37	20.89	195.91	159.70	36.20	5.411	
5,200.00	5,196.78	5,195.07	5,194.72	18.56	18.52	-178.94	17.57	21.11	200.66	163.74	36.92	5.435	
5,300.00	5,296.71	5,294.95	5,294.59	18.92	18.88	-179.15	18.77	21.34	205.42	167.78	37.64	5.458	
5,400.00	5,396.64	5,394.83	5,394.47	19.29	19.23	-179.34	19.97	21.57	210.18	171.83	38.35	5.480	
5,500.00	5,496.57	5,494.72	5,494.35	19.65	19.59	-179.53	21.17	21.79	214.94	175.87	39.07	5.501	
5,600.00	5,596.50	5,594.60	5,594.22	20.01	19.95	-179.71	22.37	22.02	219.71	179.92	39.79	5.522	
5,700.00	5,696.43	5,694.49	5,694.10	20.37	20.31	-179.88	23.57	22.24	224.47	183.97	40.50	5.542	
5,800.00	5,796.36	5,794.37	5,793.98	20.74	20.67	179.96	24.77	22.47	229.24	188.02	41.22	5.561	
5,900.00	5,896.29	5,894.25	5,893.85	21.10	21.02	179.80	25.97	22.70	234.01	192.07	41.94	5.580	
6,000.00	5,996.22	5,994.14	5,993.73	21.46	21.38	179.65	27.17	22.92	238.78	196.13	42.65	5.598	
6,100.00	6,096.15	6,094.02	6,093.61	21.82	21.74	179.51	28.37	23.15	243.56	200.18	43.37	5.616	
6,200.00	6,196.08	6,193.91	6,193.48	22.19	22.10	179.37	29.57	23.37	248.33	204.24	44.09	5.633	
6,300.00	6,296.01	6,293.79	6,293.36	22.55	22.46	179.23	30.77	23.60	253.11	208.30	44.81	5.649	
6,335.60	6,331.59	6,326.44	6,326.00	22.68	22.57	179.21	31.15	23.78	254.89	209.85	45.04	5.659	
6,350.00	6,345.97	6,337.85	6,337.41	22.73	22.61	161.52	31.28	24.11	255.93	210.82	45.11	5.673	
6,400.00	6,395.75	6,376.90	6,376.36	22.91	22.75	144.14	31.66	26.79	262.52	217.19	45.33	5.791	
6,450.00	6,445.03	6,414.21	6,413.36	23.10	22.88	140.29	31.96	31.57	273.79	228.33	45.47	6.022	
6,500.00	6,493.52	6,450.00	6,448.52	23.29	23.00	139.24	32.16	38.19	289.90	244.36	45.54	6.366	
6,550.00	6,540.91	6,480.37	6,478.04	23.48	23.11	138.86	32.29	45.35	310.90	265.44	45.46	6.838	
6,600.00	6,586.91	6,508.18	6,504.73	23.66	23.21	138.64	32.36	53.13	336.72	291.39	45.33	7.428	
6,650.00	6,631.24	6,532.18	6,527.47	23.85	23.29	138.08	32.38	60.78	367.06	321.93	45.14	8.132	
6,700.00	6,673.63	6,550.00	6,544.17	24.05	23.35	136.64	32.38	67.01	401.50	356.68	44.82	8.957	
6,750.00	6,713.80	6,568.92	6,561.70	24.24	23.42	134.90	32.36	74.13	439.45	394.79	44.67	9.838	
6,800.00	6,751.52	6,582.03	6,573.72	24.44	23.46	131.72	32.33	79.37	480.37	435.93	44.44	10.809	
6,850.00	6,786.56	6,600.00	6,590.01	24.65	23.53	128.42	32.28	86.95	523.77	479.27	44.50	11.769	
6,900.00	6,818.69	6,600.00	6,590.01	24.87	23.53	120.38	32.28	86.95	568.80	524.67	44.12	12.891	
6,950.00	6,847.72	6,600.00	6,590.01	25.10	23.53	109.83	32.28	86.95	615.27	571.40	43.87	14.023	
7,000.00	6,873.46	6,600.00	6,590.01	25.34	23.53	96.68	32.28	86.95	662.65	618.90	43.75	15.147	
7,050.00	6,895.77	6,600.00	6,590.01	25.60	23.53	81.91	32.28	86.95	710.47	666.74	43.73	16.248	
7,100.00	6,914.50	6,600.00	6,590.01	25.87	23.53	67.44	32.28	86.95	758.39	714.60	43.79	17.318	
7,150.00	6,929.54	6,600.00	6,590.01	26.15	23.53	54.98	32.28	86.95	806.13	762.20	43.93	18.350	
7,200.00	6,940.80	6,600.00	6,590.01	26.44	23.53	45.12	32.28	86.95	853.44	809.32	44.13	19.341	
7,250.00	6,948.20	6,600.00	6,590.01	26.75	23.53	37.60	32.28	86.95	900.13	855.76	44.36	20.289	
7,300.00	6,951.70	6,582.43	6,574.08	27.07	23.46	30.72	32.33	79.54	945.61	901.33	44.28	21.354	
7,321.06	6,952.00	6,579.05	6,570.99	27.20	23.45	28.70	32.34	78.16	964.50	920.16	44.35	21.749	
7,400.00	6,951.82	6,566.61	6,559.57	27.74	23.41	28.00	32.36	73.23	1,035.31	990.72	44.60	23.215	
7,500.00	6,951.60	6,550.00	6,544.17	28.49	23.35	27.10	32.38	67.01	1,126.12	1,081.28	44.84	25.113	
7,600.00	6,951.37	6,550.00	6,544.17	29.30	23.35	27.10	32.38	67.01	1,218.07	1,172.78	45.29	26.897	
7,700.00	6,951.15	6,527.97	6,523.51	30.18	23.28	25.97	32.38	59.38	1,310.64	1,265.29	45.35	28.899	
7,800.00	6,950.92	6,517.48	6,513.58	31.12	23.24	25.45	32.37	56.00	1,404.08	1,358.53	45.55	30.825	
7,900.00	6,950.70	6,500.00	6,496.91	32.11	23.18	24.63	32.34	50.72	1,498.23	1,452.60	45.63	32.831	
8,000.00	6,950.47	6,500.00	6,496.91	33.15	23.18	24.63	32.34	50.72	1,592.79	1,546.90	45.89	34.707	
8,100.00	6,950.25	6,500.00	6,496.91	34.23	23.18	24.63	32.34	50.72	1,687.97	1,641.86	46.11	36.605	
8,200.00	6,950.03	6,500.00	6,496.91	35.35	23.18	24.63	32.34	50.72	1,783.68	1,737.38	46.31	38.520	
8,300.00	6,949.80	6,477.08	6,474.85	36.51	23.10	23.62	32.28	44.51	1,879.29	1,833.02	46.27	40.612	
8,400.00	6,949.58	6,470.80	6,468.77	37.70	23.08	23.35	32.25	42.94	1,975.50	1,929.12	46.38	42.591	
8,500.00	6,949.35	6,450.00	6,448.52	38.92	23.00	22.50	32.16	38.19	2,072.22	2,025.86	46.36	44.695	
8,600.00	6,949.13	6,450.00	6,448.52	40.17	23.00	22.50	32.16	38.19	2,168.84	2,122.33	46.50	46.637	
8,700.00	6,948.90	6,450.00	6,448.52	41.44	23.00	22.50	32.16	38.19	2,265.75	2,219.11	46.63	48.588	
8,800.00	6,948.68	6,450.00	6,448.52	42.73	23.00	22.50	32.16	38.19	2,362.91	2,316.16	46.75	50.545	
8,900.00	6,948.45	6,450.00	6,448.52	44.04	23.00	22.50	32.16	38.19	2,460.31	2,413.45	46.86	52.509	
9,000.00	6,948.23	6,450.00	6,448.52	45.38	23.00	22.50	32.16	38.19	2,557.90	2,510.95	46.95	54.476	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
9,100.00	6,948.00	6,450.00	6,448.52	46.72	23.00	22.50	32.16	38.19	2,655.67	2,608.63	47.05	56.448	
9,200.00	6,947.78	6,450.00	6,448.52	48.09	23.00	22.50	32.16	38.19	2,753.61	2,706.47	47.13	58.422	
9,300.00	6,947.55	6,450.00	6,448.52	49.47	23.00	22.50	32.16	38.19	2,851.68	2,804.47	47.22	60.397	
9,400.00	6,947.33	6,426.83	6,425.80	50.86	22.92	21.61	32.04	33.68	2,949.38	2,902.21	47.16	62.534	
9,500.00	6,947.10	6,423.72	6,422.74	52.26	22.91	21.49	32.02	33.14	3,047.56	3,000.33	47.23	64.532	
9,600.00	6,946.88	6,420.78	6,419.84	53.68	22.90	21.38	32.00	32.64	3,145.84	3,098.55	47.29	66.529	
9,700.00	6,946.66	6,400.00	6,399.30	55.10	22.83	20.65	31.85	29.50	3,244.51	3,197.26	47.25	68.666	
9,800.00	6,946.43	6,400.00	6,399.30	56.54	22.83	20.65	31.85	29.50	3,342.88	3,295.55	47.32	70.639	
9,900.00	6,946.21	6,400.00	6,399.30	57.98	22.83	20.65	31.85	29.50	3,441.34	3,393.94	47.39	72.611	
10,000.00	6,945.98	6,400.00	6,399.30	59.43	22.83	20.65	31.85	29.50	3,539.89	3,492.42	47.46	74.583	
10,100.00	6,945.76	6,400.00	6,399.30	60.89	22.83	20.65	31.85	29.50	3,638.51	3,590.98	47.53	76.553	
10,200.00	6,945.53	6,400.00	6,399.30	62.36	22.83	20.65	31.85	29.50	3,737.21	3,689.62	47.59	78.522	
10,300.00	6,945.31	6,400.00	6,399.30	63.83	22.83	20.65	31.85	29.50	3,835.98	3,788.32	47.66	80.489	
10,400.00	6,945.08	6,400.00	6,399.30	65.31	22.83	20.65	31.85	29.50	3,934.81	3,887.09	47.72	82.453	
10,500.00	6,944.86	6,400.00	6,399.30	66.79	22.83	20.65	31.85	29.50	4,033.70	3,985.91	47.78	84.416	
10,600.00	6,944.63	6,400.00	6,399.30	68.28	22.83	20.65	31.85	29.50	4,132.64	4,084.79	47.85	86.375	
10,700.00	6,944.41	6,400.00	6,399.30	69.78	22.83	20.65	31.85	29.50	4,231.63	4,183.72	47.91	88.332	
10,800.00	6,944.18	6,400.00	6,399.30	71.28	22.83	20.65	31.85	29.50	4,330.67	4,282.70	47.97	90.286	
10,900.00	6,943.96	6,400.00	6,399.30	72.78	22.83	20.65	31.85	29.50	4,429.75	4,381.72	48.03	92.236	
11,000.00	6,943.73	6,400.00	6,399.30	74.29	22.83	20.65	31.85	29.50	4,528.87	4,480.78	48.09	94.183	
11,100.00	6,943.51	6,400.00	6,399.30	75.80	22.83	20.65	31.85	29.50	4,628.03	4,579.88	48.15	96.126	
11,200.00	6,943.29	6,400.00	6,399.30	77.32	22.83	20.65	31.85	29.50	4,727.22	4,679.02	48.20	98.065	
11,300.00	6,943.06	6,400.00	6,399.30	78.84	22.83	20.65	31.85	29.50	4,826.45	4,778.19	48.26	100.001	
11,400.00	6,942.84	6,400.00	6,399.30	80.36	22.83	20.65	31.85	29.50	4,925.71	4,877.39	48.32	101.932	
11,500.00	6,942.61	6,400.00	6,399.30	81.88	22.83	20.65	31.85	29.50	5,025.00	4,976.61	48.38	103.859	
11,600.00	6,942.39	6,400.00	6,399.30	83.41	22.83	20.65	31.85	29.50	5,124.31	5,075.87	48.44	105.781	
11,700.00	6,942.16	6,400.00	6,399.30	84.94	22.83	20.65	31.85	29.50	5,223.65	5,175.15	48.50	107.699	
11,800.00	6,941.94	6,400.00	6,399.30	86.47	22.83	20.65	31.85	29.50	5,323.02	5,274.46	48.56	109.612	
11,900.00	6,941.71	6,400.00	6,399.30	88.01	22.83	20.65	31.85	29.50	5,422.41	5,373.79	48.62	111.521	
12,000.00	6,941.49	6,400.00	6,399.30	89.55	22.83	20.65	31.85	29.50	5,521.82	5,473.14	48.68	113.424	
12,100.00	6,941.26	6,377.51	6,376.97	91.09	22.75	19.89	31.67	26.85	5,620.81	5,572.15	48.66	115.507	
12,200.00	6,941.04	6,376.49	6,375.95	92.63	22.75	19.86	31.66	26.75	5,720.23	5,671.51	48.72	117.410	
12,300.00	6,940.81	6,375.49	6,374.96	94.18	22.75	19.83	31.65	26.65	5,819.66	5,770.88	48.78	119.307	
12,400.00	6,940.59	6,374.53	6,374.00	95.72	22.74	19.80	31.64	26.56	5,919.10	5,870.27	48.84	121.199	
12,500.00	6,940.36	6,373.59	6,373.07	97.27	22.74	19.77	31.63	26.47	6,018.57	5,969.67	48.90	123.086	
12,600.00	6,940.14	6,372.68	6,372.16	98.82	22.74	19.74	31.63	26.38	6,118.05	6,069.09	48.96	124.966	
12,700.00	6,939.92	6,350.00	6,349.55	100.37	22.66	19.03	31.41	24.69	6,217.96	6,169.01	48.94	127.045	
12,800.00	6,939.69	6,350.00	6,349.55	101.92	22.66	19.03	31.41	24.69	6,317.44	6,268.43	49.01	128.907	
12,900.00	6,939.47	6,350.00	6,349.55	103.48	22.66	19.03	31.41	24.69	6,416.93	6,367.86	49.07	130.763	
13,000.00	6,939.24	6,350.00	6,349.55	105.03	22.66	19.03	31.41	24.69	6,516.44	6,467.30	49.14	132.614	
13,100.00	6,939.02	6,350.00	6,349.55	106.59	22.66	19.03	31.41	24.69	6,615.97	6,566.76	49.20	134.459	
13,200.00	6,938.79	6,350.00	6,349.55	108.15	22.66	19.03	31.41	24.69	6,715.50	6,666.23	49.27	136.298	
13,300.00	6,938.57	6,350.00	6,349.55	109.71	22.66	19.03	31.41	24.69	6,815.06	6,765.72	49.34	138.131	
13,400.00	6,938.34	6,350.00	6,349.55	111.27	22.66	19.03	31.41	24.69	6,914.62	6,865.22	49.41	139.958	
13,500.00	6,938.12	6,350.00	6,349.55	112.83	22.66	19.03	31.41	24.69	7,014.20	6,964.73	49.47	141.778	
13,600.00	6,937.89	6,350.00	6,349.55	114.40	22.66	19.03	31.41	24.69	7,113.79	7,064.25	49.54	143.593	
13,700.00	6,937.67	6,350.00	6,349.55	115.96	22.66	19.03	31.41	24.69	7,213.39	7,163.78	49.61	145.401	
13,800.00	6,937.44	6,350.00	6,349.55	117.53	22.66	19.03	31.41	24.69	7,313.00	7,263.32	49.68	147.203	
13,900.00	6,937.22	6,350.00	6,349.55	119.09	22.66	19.03	31.41	24.69	7,412.63	7,362.88	49.75	148.999	
14,000.00	6,936.99	6,350.00	6,349.55	120.66	22.66	19.03	31.41	24.69	7,512.26	7,462.44	49.82	150.788	
14,100.00	6,936.77	6,350.00	6,349.55	122.23	22.66	19.03	31.41	24.69	7,611.90	7,562.01	49.89	152.571	
14,200.00	6,936.55	6,350.00	6,349.55	123.80	22.66	19.03	31.41	24.69	7,711.55	7,661.59	49.96	154.348	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
14,300.00	6,936.32	6,350.00	6,349.55	125.37	22.66	19.03	31.41	24.69	7,811.21	7,761.18	50.03	156.117	
14,400.00	6,936.10	6,350.00	6,349.55	126.94	22.66	19.03	31.41	24.69	7,910.88	7,860.77	50.11	157.881	
14,500.00	6,935.87	6,350.00	6,349.55	128.51	22.66	19.03	31.41	24.69	8,010.56	7,960.38	50.18	159.637	
14,600.00	6,935.65	6,350.00	6,349.55	130.08	22.66	19.03	31.41	24.69	8,110.24	8,059.99	50.25	161.387	
14,700.00	6,935.42	6,350.00	6,349.55	131.65	22.66	19.03	31.41	24.69	8,209.94	8,159.61	50.33	163.130	
14,800.00	6,935.20	6,350.00	6,349.55	133.23	22.66	19.03	31.41	24.69	8,309.64	8,259.23	50.40	164.867	
14,900.00	6,934.97	6,350.00	6,349.55	134.80	22.66	19.03	31.41	24.69	8,409.34	8,358.87	50.48	166.596	
15,000.00	6,934.75	6,350.00	6,349.55	136.37	22.66	19.03	31.41	24.69	8,509.06	8,458.50	50.55	168.319	
15,100.00	6,934.52	6,350.00	6,349.55	137.95	22.66	19.03	31.41	24.69	8,608.78	8,558.15	50.63	170.035	
15,200.00	6,934.30	6,350.00	6,349.55	139.53	22.66	19.03	31.41	24.69	8,708.51	8,657.80	50.71	171.745	
15,300.00	6,934.07	6,350.00	6,349.55	141.10	22.66	19.03	31.41	24.69	8,808.24	8,757.46	50.78	173.447	
15,400.00	6,933.85	6,350.00	6,349.55	142.68	22.66	19.03	31.41	24.69	8,907.98	8,857.12	50.86	175.143	
15,500.00	6,933.62	6,350.00	6,349.55	144.26	22.66	19.03	31.41	24.69	9,007.72	8,956.78	50.94	176.831	
15,600.00	6,933.40	6,350.00	6,349.55	145.84	22.66	19.03	31.41	24.69	9,107.47	9,056.45	51.02	178.513	
15,700.00	6,933.18	6,350.00	6,349.55	147.42	22.66	19.03	31.41	24.69	9,207.23	9,156.13	51.10	180.187	
15,800.00	6,932.95	6,350.00	6,349.55	148.99	22.66	19.03	31.41	24.69	9,306.99	9,255.81	51.18	181.855	
15,900.00	6,932.73	6,350.00	6,349.55	150.57	22.66	19.03	31.41	24.69	9,406.76	9,355.50	51.26	183.515	
16,000.00	6,932.50	6,350.00	6,349.55	152.15	22.66	19.03	31.41	24.69	9,506.53	9,455.19	51.34	185.169	
16,100.00	6,932.28	6,350.00	6,349.55	153.74	22.66	19.03	31.41	24.69	9,606.30	9,554.88	51.42	186.816	
16,200.00	6,932.05	6,350.00	6,349.55	155.32	22.66	19.03	31.41	24.69	9,706.09	9,654.58	51.50	188.455	
16,300.00	6,931.83	6,350.00	6,349.55	156.90	22.66	19.03	31.41	24.69	9,805.87	9,754.28	51.59	190.088	
16,400.00	6,931.60	6,350.00	6,349.55	158.48	22.66	19.03	31.41	24.69	9,905.66	9,853.99	51.67	191.713	
16,500.00	6,931.38	6,350.00	6,349.55	160.06	22.66	19.03	31.41	24.69	10,005.45	9,953.70	51.75	193.332	
16,600.00	6,931.15	6,350.00	6,349.55	161.65	22.66	19.03	31.41	24.69	10,105.25	10,053.41	51.84	194.943	
16,700.00	6,930.93	6,350.00	6,349.55	163.23	22.66	19.03	31.41	24.69	10,205.05	10,153.13	51.92	196.547	
16,800.00	6,930.70	6,350.00	6,349.55	164.81	22.66	19.03	31.41	24.69	10,304.86	10,252.85	52.01	198.144	
16,900.00	6,930.48	6,350.00	6,349.55	166.40	22.66	19.03	31.41	24.69	10,404.67	10,352.58	52.09	199.734	
17,000.00	6,930.25	6,350.00	6,349.55	167.98	22.66	19.03	31.41	24.69	10,504.48	10,452.30	52.18	201.317	
17,100.00	6,930.03	6,350.00	6,349.55	169.56	22.66	19.03	31.41	24.69	10,604.30	10,552.03	52.27	202.893	
17,200.00	6,929.81	6,350.00	6,349.55	171.15	22.66	19.03	31.41	24.69	10,704.12	10,651.76	52.35	204.462	
17,300.00	6,929.58	6,350.00	6,349.55	172.73	22.66	19.03	31.41	24.69	10,803.94	10,751.50	52.44	206.023	
17,400.00	6,929.36	6,350.00	6,349.55	174.32	22.66	19.03	31.41	24.69	10,903.77	10,851.24	52.53	207.578	
17,500.00	6,929.13	6,350.00	6,349.55	175.91	22.66	19.03	31.41	24.69	11,003.60	10,950.98	52.62	209.126	
17,600.00	6,928.91	6,350.00	6,349.55	177.49	22.66	19.03	31.41	24.69	11,103.43	11,050.72	52.71	210.666	
17,700.00	6,928.68	6,350.00	6,349.55	179.08	22.66	19.03	31.41	24.69	11,203.26	11,150.47	52.80	212.199	
17,800.00	6,928.46	6,350.00	6,349.55	180.66	22.66	19.03	31.41	24.69	11,303.10	11,250.22	52.89	213.726	
17,900.00	6,928.23	6,350.00	6,349.55	182.25	22.66	19.03	31.41	24.69	11,402.94	11,349.97	52.98	215.245	
18,000.00	6,928.01	6,350.00	6,349.55	183.84	22.66	19.03	31.41	24.69	11,502.79	11,449.72	53.07	216.757	
18,100.00	6,927.78	6,350.00	6,349.55	185.43	22.66	19.03	31.41	24.69	11,602.64	11,549.48	53.16	218.262	
18,200.00	6,927.56	6,350.00	6,349.55	187.01	22.66	19.03	31.41	24.69	11,702.48	11,649.23	53.25	219.760	
18,300.00	6,927.33	6,350.00	6,349.55	188.60	22.66	19.03	31.41	24.69	11,802.34	11,748.99	53.34	221.251	
18,400.00	6,927.11	6,350.00	6,349.55	190.19	22.66	19.03	31.41	24.69	11,902.19	11,848.75	53.44	222.735	
18,500.00	6,926.88	6,350.00	6,349.55	191.78	22.66	19.03	31.41	24.69	12,002.05	11,948.52	53.53	224.212	
18,600.00	6,926.66	6,350.00	6,349.55	193.37	22.66	19.03	31.41	24.69	12,101.91	12,048.28	53.62	225.682	
18,700.00	6,926.44	6,350.00	6,349.55	194.96	22.66	19.03	31.41	24.69	12,201.77	12,148.05	53.72	227.145	
18,800.00	6,926.21	6,350.00	6,349.55	196.54	22.66	19.03	31.41	24.69	12,301.63	12,247.82	53.81	228.601	
18,900.00	6,925.99	6,350.00	6,349.55	198.13	22.66	19.03	31.41	24.69	12,401.50	12,347.59	53.91	230.050	
19,000.00	6,925.76	6,350.00	6,349.55	199.72	22.66	19.03	31.41	24.69	12,501.37	12,447.36	54.00	231.493	
19,100.00	6,925.54	6,350.00	6,349.55	201.31	22.66	19.03	31.41	24.69	12,601.24	12,547.14	54.10	232.928	
19,200.00	6,925.31	6,350.00	6,349.55	202.90	22.66	19.03	31.41	24.69	12,701.11	12,646.91	54.20	234.356	
19,300.00	6,925.09	6,350.00	6,349.55	204.49	22.66	19.03	31.41	24.69	12,800.98	12,746.69	54.29	235.778	
19,400.00	6,924.86	6,350.00	6,349.55	206.08	22.66	19.03	31.41	24.69	12,900.86	12,846.47	54.39	237.192	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #722H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,924.64	6,350.00	6,349.55	207.67	22.66	19.03	31.41	24.69	13,000.74	12,946.25	54.49	238.600	
19,600.00	6,924.41	6,350.00	6,349.55	209.26	22.66	19.03	31.41	24.69	13,100.62	13,046.03	54.59	240.001	
19,700.00	6,924.19	6,350.00	6,349.55	210.85	22.66	19.03	31.41	24.69	13,200.50	13,145.82	54.68	241.395	
19,800.00	6,923.96	6,350.00	6,349.55	212.44	22.66	19.03	31.41	24.69	13,300.38	13,245.60	54.78	242.782	
19,900.00	6,923.74	6,350.00	6,349.55	214.04	22.66	19.03	31.41	24.69	13,400.27	13,345.39	54.88	244.163	
20,000.00	6,923.51	6,350.00	6,349.55	215.63	22.66	19.03	31.41	24.69	13,500.16	13,445.17	54.98	245.536	
20,100.00	6,923.29	6,350.00	6,349.55	217.22	22.66	19.03	31.41	24.69	13,600.04	13,544.96	55.08	246.903	
20,200.00	6,923.07	6,350.00	6,349.55	218.81	22.66	19.03	31.41	24.69	13,699.93	13,644.75	55.18	248.264	
20,300.00	6,922.84	6,350.00	6,349.55	220.40	22.66	19.03	31.41	24.69	13,799.83	13,744.54	55.28	249.617	
20,400.00	6,922.62	6,350.00	6,349.55	221.99	22.66	19.03	31.41	24.69	13,899.72	13,844.33	55.39	250.964	
20,500.00	6,922.39	6,350.00	6,349.55	223.59	22.66	19.03	31.41	24.69	13,999.61	13,944.13	55.49	252.304	
20,600.00	6,922.17	6,350.00	6,349.55	225.18	22.66	19.03	31.41	24.69	14,099.51	14,043.92	55.59	253.638	
20,674.13	6,922.00	6,350.00	6,349.55	226.36	22.66	19.03	31.41	24.69	14,173.57	14,117.90	55.67	254.622	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #724H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	164.74	-57.88	15.79	60.00				
100.00	100.00	100.00	100.00	0.25	0.25	164.74	-57.88	15.79	60.00	59.50	0.50	119.554	
200.00	200.00	200.00	200.00	0.61	0.61	164.74	-57.88	15.79	60.00	58.78	1.22	49.228	
300.00	300.00	300.00	300.00	0.97	0.97	164.74	-57.88	15.79	60.00	58.06	1.94	30.995	
400.00	400.00	400.00	400.00	1.33	1.33	164.74	-57.88	15.79	60.00	57.35	2.65	22.618	
500.00	500.00	500.00	500.00	1.68	1.68	164.74	-57.88	15.79	60.00	56.63	3.37	17.806	CC, ES
606.93	606.91	604.79	604.76	2.05	2.04	-58.86	-59.80	15.82	60.84	56.75	4.09	14.859	
700.00	699.91	695.90	695.74	2.37	2.35	-60.33	-64.58	15.90	63.77	59.07	4.71	13.548	
800.00	799.84	793.52	793.01	2.71	2.68	-60.92	-72.91	16.02	70.10	64.72	5.37	13.042	SF
900.00	899.77	890.65	889.44	3.06	3.02	-60.68	-84.47	16.20	79.65	73.61	6.05	13.176	
1,000.00	999.70	987.06	984.71	3.41	3.38	-59.88	-99.18	16.42	92.42	85.71	6.72	13.763	
1,100.00	1,099.63	1,082.54	1,078.53	3.76	3.75	-58.81	-116.90	16.69	108.40	101.02	7.38	14.686	
1,200.00	1,199.56	1,176.91	1,170.62	4.11	4.13	-57.65	-137.47	17.01	127.56	119.52	8.04	15.868	
1,300.00	1,299.49	1,274.54	1,265.52	4.47	4.54	-56.60	-160.43	17.36	148.43	139.69	8.74	16.986	
1,400.00	1,399.42	1,372.30	1,360.54	4.83	4.96	-55.81	-183.42	17.71	169.34	159.89	9.46	17.910	
1,500.00	1,499.35	1,470.07	1,455.57	5.19	5.39	-55.19	-206.40	18.06	190.28	180.11	10.17	18.706	
1,600.00	1,599.28	1,567.83	1,550.59	5.54	5.82	-54.69	-229.39	18.41	211.23	200.34	10.89	19.392	
1,700.00	1,699.21	1,665.60	1,645.61	5.90	6.26	-54.29	-252.38	18.76	232.19	220.58	11.62	19.990	
1,800.00	1,799.14	1,763.36	1,740.64	6.26	6.70	-53.95	-275.37	19.11	253.17	240.83	12.34	20.515	
1,900.00	1,899.07	1,861.13	1,835.66	6.62	7.15	-53.66	-298.36	19.46	274.15	261.08	13.07	20.979	
2,000.00	1,999.00	1,958.90	1,930.69	6.98	7.60	-53.42	-321.35	19.81	295.13	281.34	13.80	21.392	
2,100.00	2,098.94	2,056.66	2,025.71	7.34	8.04	-53.20	-344.33	20.16	316.12	301.60	14.53	21.762	
2,200.00	2,198.87	2,154.43	2,120.73	7.70	8.50	-53.02	-367.32	20.51	337.12	321.86	15.26	22.095	
2,300.00	2,298.80	2,252.19	2,215.76	8.06	8.95	-52.85	-390.31	20.86	358.12	342.13	15.99	22.396	
2,400.00	2,398.73	2,349.96	2,310.78	8.42	9.40	-52.70	-413.30	21.21	379.12	362.39	16.72	22.670	
2,500.00	2,498.66	2,447.73	2,405.81	8.79	9.86	-52.57	-436.29	21.57	400.12	382.66	17.46	22.920	
2,600.00	2,598.59	2,545.49	2,500.83	9.15	10.31	-52.45	-459.27	21.92	421.12	402.93	18.19	23.149	
2,700.00	2,698.52	2,643.26	2,595.85	9.51	10.77	-52.35	-482.26	22.27	442.13	423.20	18.93	23.359	
2,800.00	2,798.45	2,741.02	2,690.88	9.87	11.22	-52.25	-505.25	22.62	463.13	443.47	19.66	23.553	
2,900.00	2,898.38	2,838.79	2,785.90	10.23	11.68	-52.16	-528.24	22.97	484.14	463.74	20.40	23.733	
3,000.00	2,998.31	2,936.55	2,880.93	10.59	12.14	-52.08	-551.23	23.32	505.15	484.02	21.14	23.900	
3,100.00	3,098.24	3,034.32	2,975.95	10.96	12.60	-52.01	-574.21	23.67	526.16	504.29	21.87	24.055	
3,200.00	3,198.17	3,132.09	3,070.97	11.32	13.06	-51.94	-597.20	24.02	547.17	524.56	22.61	24.199	
3,300.00	3,298.10	3,229.85	3,166.00	11.68	13.52	-51.87	-620.19	24.37	568.18	544.83	23.35	24.334	
3,400.00	3,398.03	3,327.62	3,261.02	12.04	13.98	-51.81	-643.18	24.72	589.20	565.11	24.09	24.461	
3,500.00	3,497.96	3,425.38	3,356.05	12.40	14.44	-51.76	-666.17	25.07	610.21	585.38	24.83	24.580	
3,600.00	3,597.89	3,523.15	3,451.07	12.77	14.90	-51.71	-689.16	25.42	631.22	605.66	25.56	24.691	
3,700.00	3,697.82	3,620.91	3,546.09	13.13	15.36	-51.66	-712.14	25.77	652.24	625.93	26.30	24.797	
3,800.00	3,797.75	3,718.68	3,641.12	13.49	15.82	-51.61	-735.13	26.12	673.25	646.21	27.04	24.896	
3,900.00	3,897.68	3,816.45	3,736.14	13.85	16.28	-51.57	-758.12	26.47	694.26	666.48	27.78	24.990	
4,000.00	3,997.61	3,914.21	3,831.17	14.21	16.74	-51.53	-781.11	26.83	715.28	686.76	28.52	25.079	
4,100.00	4,097.54	4,011.98	3,926.19	14.58	17.21	-51.49	-804.10	27.18	736.29	707.03	29.26	25.163	
4,200.00	4,197.47	4,109.74	4,021.22	14.94	17.67	-51.46	-827.08	27.53	757.31	727.31	30.00	25.243	
4,300.00	4,297.40	4,207.51	4,116.24	15.30	18.13	-51.42	-850.07	27.88	778.32	747.58	30.74	25.319	
4,400.00	4,397.33	4,305.28	4,211.26	15.66	18.59	-51.39	-873.06	28.23	799.34	767.86	31.48	25.391	
4,500.00	4,497.26	4,403.04	4,306.29	16.03	19.05	-51.36	-896.05	28.58	820.36	788.13	32.22	25.460	
4,600.00	4,597.19	4,500.81	4,401.31	16.39	19.52	-51.33	-919.04	28.93	841.37	808.41	32.96	25.525	
4,700.00	4,697.12	4,598.57	4,496.34	16.75	19.98	-51.30	-942.02	29.28	862.39	828.69	33.70	25.588	
4,800.00	4,797.05	4,696.34	4,591.36	17.11	20.44	-51.28	-965.01	29.63	883.41	848.96	34.44	25.648	
4,900.00	4,896.99	4,794.10	4,686.38	17.47	20.90	-51.25	-988.00	29.98	904.42	869.24	35.18	25.705	
5,000.00	4,996.92	4,891.87	4,781.41	17.84	21.37	-51.23	-1,010.99	30.33	925.44	889.51	35.93	25.760	
5,100.00	5,096.85	4,989.64	4,876.43	18.20	21.83	-51.21	-1,033.98	30.68	946.46	909.79	36.67	25.812	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #724H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,196.78	5,087.40	4,971.46	18.56	22.29	-51.18	-1,056.96	31.03	967.47	930.06	37.41	25.862	
5,300.00	5,296.71	5,185.17	5,066.48	18.92	22.76	-51.16	-1,079.95	31.38	988.49	950.34	38.15	25.911	
5,400.00	5,396.64	5,282.93	5,161.50	19.29	23.22	-51.14	-1,102.94	31.73	1,009.51	970.62	38.89	25.957	
5,500.00	5,496.57	5,380.70	5,256.53	19.65	23.68	-51.12	-1,125.93	32.09	1,030.53	990.89	39.63	26.002	
5,600.00	5,596.50	5,478.46	5,351.55	20.01	24.15	-51.11	-1,148.92	32.44	1,051.54	1,011.17	40.37	26.045	
5,700.00	5,696.43	5,576.23	5,446.58	20.37	24.61	-51.09	-1,171.91	32.79	1,072.56	1,031.44	41.12	26.086	
5,800.00	5,796.36	5,674.00	5,541.60	20.74	25.07	-51.07	-1,194.89	33.14	1,093.58	1,051.72	41.86	26.126	
5,900.00	5,896.29	5,771.76	5,636.62	21.10	25.54	-51.05	-1,217.88	33.49	1,114.60	1,072.00	42.60	26.164	
6,000.00	5,996.22	5,869.53	5,731.65	21.46	26.00	-51.04	-1,240.87	33.84	1,135.61	1,092.27	43.34	26.201	
6,100.00	6,096.15	5,967.29	5,826.67	21.82	26.46	-51.02	-1,263.86	34.19	1,156.63	1,112.55	44.08	26.236	
6,200.00	6,196.08	6,065.06	5,921.70	22.19	26.93	-51.01	-1,286.85	34.54	1,177.65	1,132.82	44.83	26.271	
6,300.00	6,296.01	6,162.83	6,016.72	22.55	27.39	-50.99	-1,309.83	34.89	1,198.67	1,153.10	45.57	26.304	
6,335.60	6,331.59	6,197.63	6,050.55	22.68	27.56	-50.99	-1,318.02	35.02	1,206.15	1,160.32	45.83	26.316	
6,350.00	6,345.97	6,211.70	6,064.23	22.73	27.62	-68.39	-1,321.33	35.07	1,209.20	1,163.26	45.94	26.321	
6,400.00	6,395.75	6,260.39	6,111.55	22.91	27.85	-85.25	-1,332.77	35.24	1,220.15	1,173.84	46.32	26.343	
6,450.00	6,445.03	6,308.57	6,158.38	23.10	28.08	-89.16	-1,344.10	35.41	1,231.63	1,184.94	46.70	26.374	
6,500.00	6,493.52	6,355.96	6,204.44	23.29	28.31	-90.64	-1,355.25	35.58	1,243.64	1,196.55	47.08	26.413	
6,550.00	6,540.91	6,402.26	6,249.44	23.48	28.53	-91.30	-1,366.13	35.75	1,256.18	1,208.71	47.47	26.461	
6,600.00	6,586.91	6,447.18	6,293.10	23.66	28.74	-91.60	-1,376.69	35.91	1,269.30	1,221.44	47.86	26.518	
6,650.00	6,631.24	6,490.44	6,335.15	23.85	28.94	-91.72	-1,386.87	36.07	1,283.07	1,234.81	48.26	26.587	
6,700.00	6,673.63	6,517.19	6,361.13	24.05	29.07	-91.36	-1,393.18	36.70	1,297.79	1,249.24	48.55	26.733	
6,750.00	6,713.80	6,550.00	6,392.91	24.24	29.23	-91.08	-1,400.98	39.02	1,313.82	1,264.92	48.90	26.868	
6,800.00	6,751.52	6,561.25	6,403.78	24.44	29.28	-90.02	-1,403.66	40.20	1,331.05	1,281.96	49.09	27.113	
6,850.00	6,786.56	6,578.58	6,420.46	24.65	29.36	-89.01	-1,407.80	42.41	1,349.68	1,300.32	49.36	27.345	
6,900.00	6,818.69	6,600.00	6,440.98	24.87	29.46	-88.02	-1,412.93	45.78	1,369.66	1,319.98	49.68	27.568	
6,950.00	6,847.72	6,600.00	6,440.98	25.10	29.46	-86.02	-1,412.93	45.78	1,390.87	1,341.03	49.84	27.909	
7,000.00	6,873.46	6,613.05	6,453.42	25.34	29.52	-84.40	-1,416.06	48.18	1,413.29	1,363.15	50.14	28.190	
7,050.00	6,895.77	6,619.33	6,459.38	25.60	29.55	-82.35	-1,417.56	49.42	1,436.80	1,386.40	50.40	28.510	
7,100.00	6,914.50	6,623.35	6,463.20	25.87	29.57	-80.08	-1,418.52	50.26	1,461.26	1,410.60	50.66	28.842	
7,150.00	6,929.54	6,625.33	6,465.08	26.15	29.58	-77.61	-1,419.00	50.68	1,486.51	1,435.57	50.94	29.184	
7,200.00	6,940.80	6,625.47	6,465.21	26.44	29.58	-74.99	-1,419.03	50.71	1,512.36	1,461.15	51.21	29.530	
7,250.00	6,948.20	6,623.95	6,463.77	26.75	29.58	-72.26	-1,418.67	50.38	1,538.64	1,487.14	51.50	29.877	
7,300.00	6,951.70	6,620.95	6,460.92	27.07	29.56	-69.45	-1,417.95	49.76	1,565.16	1,513.37	51.79	30.222	
7,321.06	6,952.00	6,619.27	6,459.33	27.20	29.55	-68.26	-1,417.55	49.41	1,576.35	1,524.44	51.91	30.367	
7,400.00	6,951.82	6,600.00	6,440.98	27.74	29.46	-67.46	-1,412.93	45.78	1,619.78	1,567.54	52.25	31.003	
7,500.00	6,951.60	6,600.00	6,440.98	28.49	29.46	-67.46	-1,412.93	45.78	1,678.18	1,625.27	52.91	31.715	
7,600.00	6,951.37	6,600.00	6,440.98	29.30	29.46	-67.46	-1,412.93	45.78	1,740.37	1,686.82	53.56	32.497	
7,700.00	6,951.15	6,600.00	6,440.98	30.18	29.46	-67.46	-1,412.93	45.78	1,805.96	1,751.80	54.16	33.344	
7,800.00	6,950.92	6,600.00	6,440.98	31.12	29.46	-67.46	-1,412.93	45.78	1,874.59	1,819.86	54.73	34.251	
7,900.00	6,950.70	6,600.00	6,440.98	32.11	29.46	-67.46	-1,412.93	45.78	1,945.94	1,890.68	55.26	35.213	
8,000.00	6,950.47	6,578.97	6,420.83	33.15	29.36	-66.58	-1,407.90	42.46	2,019.34	1,963.78	55.56	36.343	
8,100.00	6,950.25	6,575.00	6,417.02	34.23	29.35	-66.42	-1,406.95	41.91	2,095.14	2,039.15	55.99	37.422	
8,200.00	6,950.03	6,571.35	6,413.51	35.35	29.33	-66.26	-1,406.08	41.43	2,172.87	2,116.49	56.38	38.540	
8,300.00	6,949.80	6,550.00	6,392.91	36.51	29.23	-65.38	-1,400.98	39.02	2,252.62	2,196.04	56.58	39.812	
8,400.00	6,949.58	6,550.00	6,392.91	37.70	29.23	-65.38	-1,400.98	39.02	2,333.56	2,276.61	56.95	40.978	
8,500.00	6,949.35	6,550.00	6,392.91	38.92	29.23	-65.38	-1,400.98	39.02	2,415.93	2,358.65	57.28	42.175	
8,600.00	6,949.13	6,550.00	6,392.91	40.17	29.23	-65.38	-1,400.98	39.02	2,499.59	2,441.99	57.59	43.400	
8,700.00	6,948.90	6,550.00	6,392.91	41.44	29.23	-65.38	-1,400.98	39.02	2,584.40	2,526.52	57.88	44.650	
8,800.00	6,948.68	6,550.00	6,392.91	42.73	29.23	-65.38	-1,400.98	39.02	2,670.27	2,612.13	58.15	45.923	
8,900.00	6,948.45	6,550.00	6,392.91	44.04	29.23	-65.38	-1,400.98	39.02	2,757.09	2,698.70	58.39	47.217	
9,000.00	6,948.23	6,550.00	6,392.91	45.38	29.23	-65.38	-1,400.98	39.02	2,844.78	2,786.16	58.62	48.528	
9,100.00	6,948.00	6,550.00	6,392.91	46.72	29.23	-65.38	-1,400.98	39.02	2,933.26	2,874.42	58.83	49.857	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #724H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
9,200.00	6,947.78	6,550.00	6,392.91	48.09	29.23	-65.38	-1,400.98	39.02	3,022.45	2,963.42	59.03	51.200	
9,300.00	6,947.55	6,550.00	6,392.91	49.47	29.23	-65.38	-1,400.98	39.02	3,112.30	3,053.08	59.22	52.557	
9,400.00	6,947.33	6,550.00	6,392.91	50.86	29.23	-65.38	-1,400.98	39.02	3,202.75	3,143.36	59.39	53.927	
9,500.00	6,947.10	6,550.00	6,392.91	52.26	29.23	-65.38	-1,400.98	39.02	3,293.76	3,234.20	59.55	55.307	
9,600.00	6,946.88	6,550.00	6,392.91	53.68	29.23	-65.38	-1,400.98	39.02	3,385.27	3,325.56	59.71	56.697	
9,700.00	6,946.66	6,550.00	6,392.91	55.10	29.23	-65.38	-1,400.98	39.02	3,477.25	3,417.40	59.85	58.096	
9,800.00	6,946.43	6,550.00	6,392.91	56.54	29.23	-65.38	-1,400.98	39.02	3,569.66	3,509.67	59.99	59.504	
9,900.00	6,946.21	6,550.00	6,392.91	57.98	29.23	-65.38	-1,400.98	39.02	3,662.47	3,602.35	60.12	60.919	
10,000.00	6,945.98	6,550.00	6,392.91	59.43	29.23	-65.38	-1,400.98	39.02	3,755.65	3,695.40	60.24	62.340	
10,100.00	6,945.76	6,550.00	6,392.91	60.89	29.23	-65.38	-1,400.98	39.02	3,849.17	3,788.81	60.36	63.767	
10,200.00	6,945.53	6,550.00	6,392.91	62.36	29.23	-65.38	-1,400.98	39.02	3,943.01	3,882.53	60.48	65.200	
10,300.00	6,945.31	6,550.00	6,392.91	63.83	29.23	-65.38	-1,400.98	39.02	4,037.14	3,976.56	60.58	66.637	
10,400.00	6,945.08	6,550.00	6,392.91	65.31	29.23	-65.38	-1,400.98	39.02	4,131.56	4,070.87	60.69	68.079	
10,500.00	6,944.86	6,550.00	6,392.91	66.79	29.23	-65.38	-1,400.98	39.02	4,226.22	4,165.43	60.79	69.524	
10,600.00	6,944.63	6,550.00	6,392.91	68.28	29.23	-65.38	-1,400.98	39.02	4,321.13	4,260.25	60.88	70.973	
10,700.00	6,944.41	6,528.24	6,371.85	69.78	29.12	-64.47	-1,395.80	37.30	4,415.85	4,355.03	60.82	72.604	
10,800.00	6,944.18	6,527.40	6,371.04	71.28	29.12	-64.44	-1,395.60	37.24	4,511.16	4,450.26	60.91	74.067	
10,900.00	6,943.96	6,526.60	6,370.26	72.78	29.12	-64.40	-1,395.41	37.20	4,606.67	4,545.68	60.99	75.533	
11,000.00	6,943.73	6,525.83	6,369.52	74.29	29.11	-64.37	-1,395.23	37.15	4,702.37	4,641.30	61.07	77.001	
11,100.00	6,943.51	6,525.09	6,368.80	75.80	29.11	-64.34	-1,395.05	37.11	4,798.24	4,737.09	61.15	78.470	
11,200.00	6,943.29	6,524.38	6,368.11	77.32	29.11	-64.31	-1,394.89	37.07	4,894.27	4,833.05	61.22	79.940	
11,300.00	6,943.06	6,523.69	6,367.44	78.84	29.10	-64.28	-1,394.72	37.03	4,990.46	4,929.16	61.30	81.412	
11,400.00	6,942.84	6,523.03	6,366.80	80.36	29.10	-64.26	-1,394.56	36.99	5,086.79	5,025.42	61.37	82.884	
11,500.00	6,942.61	6,522.39	6,366.18	81.88	29.10	-64.23	-1,394.41	36.96	5,183.27	5,121.82	61.44	84.357	
11,600.00	6,942.39	6,500.00	6,344.44	83.41	28.99	-63.31	-1,389.12	36.17	5,280.28	5,218.92	61.36	86.051	
11,700.00	6,942.16	6,500.00	6,344.44	84.94	28.99	-63.31	-1,389.12	36.17	5,376.98	5,315.55	61.44	87.521	
11,800.00	6,941.94	6,500.00	6,344.44	86.47	28.99	-63.31	-1,389.12	36.17	5,473.81	5,412.30	61.51	88.990	
11,900.00	6,941.71	6,500.00	6,344.44	88.01	28.99	-63.31	-1,389.12	36.17	5,570.74	5,509.16	61.58	90.460	
12,000.00	6,941.49	6,500.00	6,344.44	89.55	28.99	-63.31	-1,389.12	36.17	5,667.79	5,606.13	61.65	91.929	
12,100.00	6,941.26	6,500.00	6,344.44	91.09	28.99	-63.31	-1,389.12	36.17	5,764.93	5,703.20	61.72	93.398	
12,200.00	6,941.04	6,500.00	6,344.44	92.63	28.99	-63.31	-1,389.12	36.17	5,862.17	5,800.37	61.79	94.866	
12,300.00	6,940.81	6,500.00	6,344.44	94.18	28.99	-63.31	-1,389.12	36.17	5,959.50	5,897.63	61.86	96.333	
12,400.00	6,940.59	6,500.00	6,344.44	95.72	28.99	-63.31	-1,389.12	36.17	6,056.92	5,994.98	61.93	97.800	
12,500.00	6,940.36	6,500.00	6,344.44	97.27	28.99	-63.31	-1,389.12	36.17	6,154.42	6,092.42	62.00	99.265	
12,600.00	6,940.14	6,500.00	6,344.44	98.82	28.99	-63.31	-1,389.12	36.17	6,251.99	6,189.93	62.07	100.729	
12,700.00	6,939.92	6,500.00	6,344.44	100.37	28.99	-63.31	-1,389.12	36.17	6,349.65	6,287.51	62.13	102.192	
12,800.00	6,939.69	6,500.00	6,344.44	101.92	28.99	-63.31	-1,389.12	36.17	6,447.38	6,385.17	62.20	103.653	
12,900.00	6,939.47	6,500.00	6,344.44	103.48	28.99	-63.31	-1,389.12	36.17	6,545.17	6,482.90	62.27	105.113	
13,000.00	6,939.24	6,500.00	6,344.44	105.03	28.99	-63.31	-1,389.12	36.17	6,643.03	6,580.70	62.33	106.571	
13,100.00	6,939.02	6,500.00	6,344.44	106.59	28.99	-63.31	-1,389.12	36.17	6,740.96	6,678.56	62.40	108.027	
13,200.00	6,938.79	6,500.00	6,344.44	108.15	28.99	-63.31	-1,389.12	36.17	6,838.94	6,776.47	62.47	109.482	
13,300.00	6,938.57	6,500.00	6,344.44	109.71	28.99	-63.31	-1,389.12	36.17	6,936.98	6,874.45	62.53	110.935	
13,400.00	6,938.34	6,500.00	6,344.44	111.27	28.99	-63.31	-1,389.12	36.17	7,035.08	6,972.48	62.60	112.385	
13,500.00	6,938.12	6,500.00	6,344.44	112.83	28.99	-63.31	-1,389.12	36.17	7,133.23	7,070.56	62.66	113.834	
13,600.00	6,937.89	6,500.00	6,344.44	114.40	28.99	-63.31	-1,389.12	36.17	7,231.43	7,168.70	62.73	115.280	
13,700.00	6,937.67	6,500.00	6,344.44	115.96	28.99	-63.31	-1,389.12	36.17	7,329.67	7,266.88	62.80	116.724	
13,800.00	6,937.44	6,500.00	6,344.44	117.53	28.99	-63.31	-1,389.12	36.17	7,427.97	7,365.11	62.86	118.165	
13,900.00	6,937.22	6,500.00	6,344.44	119.09	28.99	-63.31	-1,389.12	36.17	7,526.31	7,463.38	62.93	119.604	
14,000.00	6,936.99	6,500.00	6,344.44	120.66	28.99	-63.31	-1,389.12	36.17	7,624.69	7,561.70	62.99	121.041	
14,100.00	6,936.77	6,500.00	6,344.44	122.23	28.99	-63.31	-1,389.12	36.17	7,723.12	7,660.06	63.06	122.475	
14,200.00	6,936.55	6,500.00	6,344.44	123.80	28.99	-63.31	-1,389.12	36.17	7,821.58	7,758.46	63.12	123.907	
14,300.00	6,936.32	6,500.00	6,344.44	125.37	28.99	-63.31	-1,389.12	36.17	7,920.09	7,856.90	63.19	125.336	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #724H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.00	6,936.10	6,500.00	6,344.44	126.94	28.99	-63.31	-1,389.12	36.17	8,018.63	7,955.37	63.26	126.762	
14,500.00	6,935.87	6,500.00	6,344.44	128.51	28.99	-63.31	-1,389.12	36.17	8,117.20	8,053.88	63.32	128.185	
14,600.00	6,935.65	6,500.00	6,344.44	130.08	28.99	-63.31	-1,389.12	36.17	8,215.81	8,152.42	63.39	129.606	
14,700.00	6,935.42	6,500.00	6,344.44	131.65	28.99	-63.31	-1,389.12	36.17	8,314.46	8,251.00	63.46	131.023	
14,800.00	6,935.20	6,500.00	6,344.44	133.23	28.99	-63.31	-1,389.12	36.17	8,413.13	8,349.61	63.53	132.438	
14,900.00	6,934.97	6,500.00	6,344.44	134.80	28.99	-63.31	-1,389.12	36.17	8,511.84	8,448.25	63.59	133.849	
15,000.00	6,934.75	6,500.00	6,344.44	136.37	28.99	-63.31	-1,389.12	36.17	8,610.58	8,546.92	63.66	135.258	
15,100.00	6,934.52	6,500.00	6,344.44	137.95	28.99	-63.31	-1,389.12	36.17	8,709.34	8,645.61	63.73	136.663	
15,200.00	6,934.30	6,500.00	6,344.44	139.53	28.99	-63.31	-1,389.12	36.17	8,808.14	8,744.34	63.80	138.065	
15,300.00	6,934.07	6,500.00	6,344.44	141.10	28.99	-63.31	-1,389.12	36.17	8,906.96	8,843.09	63.87	139.465	
15,400.00	6,933.85	6,500.00	6,344.44	142.68	28.99	-63.31	-1,389.12	36.17	9,005.80	8,941.87	63.93	140.860	
15,500.00	6,933.62	6,500.00	6,344.44	144.26	28.99	-63.31	-1,389.12	36.17	9,104.67	9,040.67	64.00	142.253	
15,600.00	6,933.40	6,500.00	6,344.44	145.84	28.99	-63.31	-1,389.12	36.17	9,203.57	9,139.50	64.07	143.642	
15,700.00	6,933.18	6,500.00	6,344.44	147.42	28.99	-63.31	-1,389.12	36.17	9,302.49	9,238.35	64.14	145.028	
15,800.00	6,932.95	6,500.00	6,344.44	148.99	28.99	-63.31	-1,389.12	36.17	9,401.43	9,337.22	64.21	146.411	
15,900.00	6,932.73	6,500.00	6,344.44	150.57	28.99	-63.31	-1,389.12	36.17	9,500.40	9,436.11	64.28	147.790	
16,000.00	6,932.50	6,500.00	6,344.44	152.15	28.99	-63.31	-1,389.12	36.17	9,599.38	9,535.03	64.35	149.166	
16,100.00	6,932.28	6,500.00	6,344.44	153.74	28.99	-63.31	-1,389.12	36.17	9,698.39	9,633.96	64.42	150.538	
16,200.00	6,932.05	6,500.00	6,344.44	155.32	28.99	-63.31	-1,389.12	36.17	9,797.42	9,732.92	64.50	151.906	
16,300.00	6,931.83	6,500.00	6,344.44	156.90	28.99	-63.31	-1,389.12	36.17	9,896.46	9,831.89	64.57	153.272	
16,400.00	6,931.60	6,500.00	6,344.44	158.48	28.99	-63.31	-1,389.12	36.17	9,995.53	9,930.89	64.64	154.633	
16,500.00	6,931.38	6,500.00	6,344.44	160.06	28.99	-63.31	-1,389.12	36.17	10,094.61	10,029.90	64.71	155.991	
16,600.00	6,931.15	6,500.00	6,344.44	161.65	28.99	-63.31	-1,389.12	36.17	10,193.71	10,128.93	64.79	157.346	
16,700.00	6,930.93	6,500.00	6,344.44	163.23	28.99	-63.31	-1,389.12	36.17	10,292.83	10,227.97	64.86	158.696	
16,800.00	6,930.70	6,500.00	6,344.44	164.81	28.99	-63.31	-1,389.12	36.17	10,391.97	10,327.04	64.93	160.043	
16,900.00	6,930.48	6,500.00	6,344.44	166.40	28.99	-63.31	-1,389.12	36.17	10,491.12	10,426.11	65.01	161.387	
17,000.00	6,930.25	6,500.00	6,344.44	167.98	28.99	-63.31	-1,389.12	36.17	10,590.29	10,525.21	65.08	162.726	
17,100.00	6,930.03	6,500.00	6,344.44	169.56	28.99	-63.31	-1,389.12	36.17	10,689.47	10,624.32	65.16	164.062	
17,200.00	6,929.81	6,500.00	6,344.44	171.15	28.99	-63.31	-1,389.12	36.17	10,788.67	10,723.44	65.23	165.394	
17,300.00	6,929.58	6,500.00	6,344.44	172.73	28.99	-63.31	-1,389.12	36.17	10,887.88	10,822.58	65.31	166.722	
17,400.00	6,929.36	6,500.00	6,344.44	174.32	28.99	-63.31	-1,389.12	36.17	10,987.11	10,921.73	65.38	168.047	
17,500.00	6,929.13	6,500.00	6,344.44	175.91	28.99	-63.31	-1,389.12	36.17	11,086.35	11,020.90	65.46	169.368	
17,600.00	6,928.91	6,500.00	6,344.44	177.49	28.99	-63.31	-1,389.12	36.17	11,185.61	11,120.08	65.53	170.684	
17,700.00	6,928.68	6,500.00	6,344.44	179.08	28.99	-63.31	-1,389.12	36.17	11,284.88	11,219.27	65.61	171.997	
17,800.00	6,928.46	6,500.00	6,344.44	180.66	28.99	-63.31	-1,389.12	36.17	11,384.16	11,318.47	65.69	173.307	
17,900.00	6,928.23	6,500.00	6,344.44	182.25	28.99	-63.31	-1,389.12	36.17	11,483.45	11,417.69	65.77	174.612	
18,000.00	6,928.01	6,500.00	6,344.44	183.84	28.99	-63.31	-1,389.12	36.17	11,582.76	11,516.91	65.84	175.913	
18,100.00	6,927.78	6,500.00	6,344.44	185.43	28.99	-63.31	-1,389.12	36.17	11,682.08	11,616.15	65.92	177.210	
18,200.00	6,927.56	6,500.00	6,344.44	187.01	28.99	-63.31	-1,389.12	36.17	11,781.41	11,715.40	66.00	178.504	
18,300.00	6,927.33	6,500.00	6,344.44	188.60	28.99	-63.31	-1,389.12	36.17	11,880.75	11,814.67	66.08	179.793	
18,400.00	6,927.11	6,500.00	6,344.44	190.19	28.99	-63.31	-1,389.12	36.17	11,980.10	11,913.94	66.16	181.079	
18,500.00	6,926.88	6,500.00	6,344.44	191.78	28.99	-63.31	-1,389.12	36.17	12,079.46	12,013.22	66.24	182.360	
18,600.00	6,926.66	6,500.00	6,344.44	193.37	28.99	-63.31	-1,389.12	36.17	12,178.83	12,112.51	66.32	183.638	
18,700.00	6,926.44	6,500.00	6,344.44	194.96	28.99	-63.31	-1,389.12	36.17	12,278.21	12,211.81	66.40	184.911	
18,800.00	6,926.21	6,500.00	6,344.44	196.54	28.99	-63.31	-1,389.12	36.17	12,377.61	12,311.13	66.48	186.181	
18,900.00	6,925.99	6,500.00	6,344.44	198.13	28.99	-63.31	-1,389.12	36.17	12,477.01	12,410.45	66.56	187.446	
19,000.00	6,925.76	6,500.00	6,344.44	199.72	28.99	-63.31	-1,389.12	36.17	12,576.42	12,509.78	66.64	188.708	
19,100.00	6,925.54	6,500.00	6,344.44	201.31	28.99	-63.31	-1,389.12	36.17	12,675.84	12,609.12	66.73	189.965	
19,200.00	6,925.31	6,500.00	6,344.44	202.90	28.99	-63.31	-1,389.12	36.17	12,775.27	12,708.46	66.81	191.219	
19,300.00	6,925.09	6,500.00	6,344.44	204.49	28.99	-63.31	-1,389.12	36.17	12,874.71	12,807.82	66.89	192.468	
19,400.00	6,924.86	6,500.00	6,344.44	206.08	28.99	-63.31	-1,389.12	36.17	12,974.16	12,907.18	66.98	193.713	
19,500.00	6,924.64	6,500.00	6,344.44	207.67	28.99	-63.31	-1,389.12	36.17	13,073.62	13,006.56	67.06	194.955	

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

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Offset Design: Rosa Pad 26 - 5 Well - Rosa Unit #724H - OH - Prelim #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM+MS

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,600.00	6,924.41	6,500.00	6,344.44	209.26	28.99	-63.31	-1,389.12	36.17	13,173.08	13,105.94	67.14	196.192	
19,700.00	6,924.19	6,500.00	6,344.44	210.85	28.99	-63.31	-1,389.12	36.17	13,272.55	13,205.32	67.23	197.425	
19,800.00	6,923.96	6,500.00	6,344.44	212.44	28.99	-63.31	-1,389.12	36.17	13,372.03	13,304.72	67.31	198.654	
19,900.00	6,923.74	6,500.00	6,344.44	214.04	28.99	-63.31	-1,389.12	36.17	13,471.52	13,404.12	67.40	199.879	
20,000.00	6,923.51	6,500.00	6,344.44	215.63	28.99	-63.31	-1,389.12	36.17	13,571.02	13,503.53	67.48	201.100	
20,100.00	6,923.29	6,500.00	6,344.44	217.22	28.99	-63.31	-1,389.12	36.17	13,670.52	13,602.95	67.57	202.316	
20,200.00	6,923.07	6,500.00	6,344.44	218.81	28.99	-63.31	-1,389.12	36.17	13,770.03	13,702.37	67.66	203.529	
20,300.00	6,922.84	6,500.00	6,344.44	220.40	28.99	-63.31	-1,389.12	36.17	13,869.55	13,801.80	67.74	204.738	
20,400.00	6,922.62	6,500.00	6,344.44	221.99	28.99	-63.31	-1,389.12	36.17	13,969.07	13,901.24	67.83	205.942	
20,500.00	6,922.39	6,500.00	6,344.44	223.59	28.99	-63.31	-1,389.12	36.17	14,068.60	14,000.68	67.92	207.143	
20,600.00	6,922.17	6,500.00	6,344.44	225.18	28.99	-63.31	-1,389.12	36.17	14,168.14	14,100.13	68.01	208.339	
20,674.13	6,922.00	6,500.00	6,344.44	226.36	28.99	-63.31	-1,389.12	36.17	14,241.93	14,173.86	68.07	209.223	

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

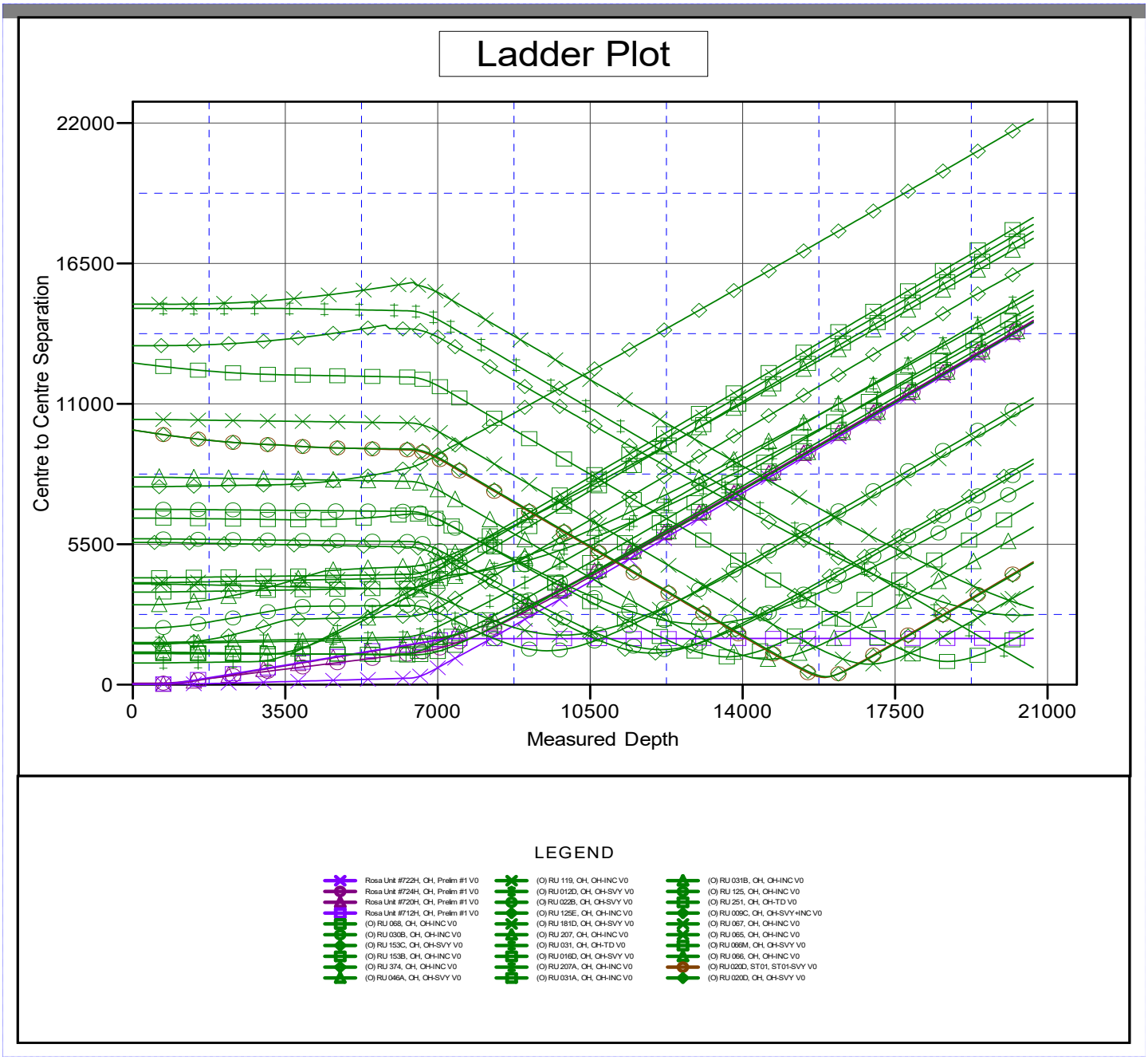
SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to 6300+30 @ 6330.00usft (H&P 530)
Offset Depths are relative to Offset Datum
Central Meridian is -107.833334

Coordinates are relative to: Rosa Unit #714H - Slot B03
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.26°



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

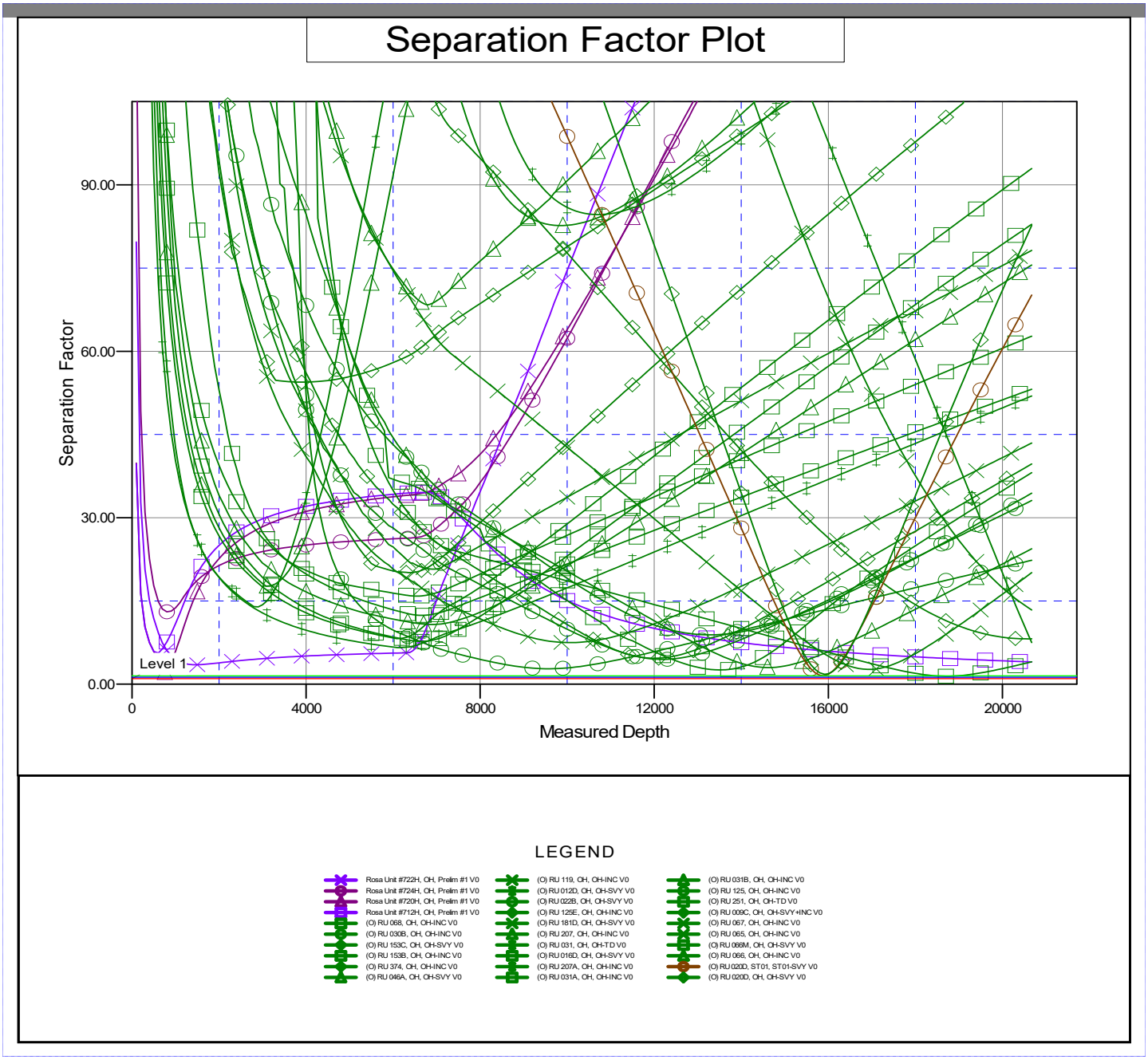
SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Project:	Rio Arriba, NM (NAD83)	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Reference Site:	Rosa Pad 26 - 5 Well	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000 Multi User Db
Reference Design:	Prelim 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to 6300+30 @ 6330.00usft (H&P 530)
Offset Depths are relative to Offset Datum
Central Meridian is -107.833334

Coordinates are relative to: Rosa Unit #714H - Slot B03
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.26°



Logos Operating LLC

Rio Arriba, NM (NAD83)
Rosa Pad 26 - 5 Well
Rosa Unit #714H - Slot B03

OH

Plan: Prelim 1

Standard Planning Report

30 August, 2024

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Company:	Logos Operating LLC	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	**North Reference:**	True
Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 1		

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 Pad 26 - 5 Well

Site Position:		**Northing:**	2,147,556.27 usft	**Latitude:**	36.900914
From:	Lat/Long	**Easting:**	2,851,875.56 usft	**Longitude:**	-107.392877
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "		

Well Rosa Unit #714H - Slot B03

Well Position	**+N/-S**	0.00 usft	**Northing:**	2,147,517.73 usft	**Latitude:**	36.900808
	+E/-W	0.00 usft	**Easting:**	2,851,885.96 usft	**Longitude:**	-107.392842
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	6,300.00 usft
Grid Convergence:		0.26 °				

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/11/2023	8.55	63.46	49,574.77322997

Design Prelim 1

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	270.26

Plan Survey Tool Program **Date** 8/30/2024

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,674.13	Prelim 1 (OH)	MWD+HRGM+MS	
				MWD + HRGM + Multi-Station	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
606.93	2.14	222.50	606.91	-1.47	-1.35	2.00	2.00	0.00	222.50	
6,335.60	2.14	222.50	6,331.59	-159.08	-145.78	0.00	0.00	0.00	0.00	
7,321.06	90.13	270.26	6,952.00	-173.33	-783.70	9.00	8.93	4.85	47.78	RU 714H POE-5
20,674.13	90.13	270.26	6,922.00	-111.66	-14,136.59	0.00	0.00	0.00	0.00	RU 714H PBHL-5

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Company:	Logos Operating LLC	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	**North Reference:**	True
Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
606.93	2.14	222.50	606.91	-1.47	-1.35	1.34	2.00	2.00	0.00
Start 5728.67 hold at 606.93 MD									
700.00	2.14	222.50	699.91	-4.03	-3.69	3.68	0.00	0.00	0.00
800.00	2.14	222.50	799.84	-6.78	-6.22	6.18	0.00	0.00	0.00
900.00	2.14	222.50	899.77	-9.53	-8.74	8.69	0.00	0.00	0.00
1,000.00	2.14	222.50	999.70	-12.29	-11.26	11.20	0.00	0.00	0.00
1,100.00	2.14	222.50	1,099.63	-15.04	-13.78	13.71	0.00	0.00	0.00
1,200.00	2.14	222.50	1,199.56	-17.79	-16.30	16.22	0.00	0.00	0.00
1,300.00	2.14	222.50	1,299.49	-20.54	-18.82	18.73	0.00	0.00	0.00
1,400.00	2.14	222.50	1,399.42	-23.29	-21.34	21.24	0.00	0.00	0.00
1,500.00	2.14	222.50	1,499.35	-26.04	-23.86	23.75	0.00	0.00	0.00
1,600.00	2.14	222.50	1,599.28	-28.79	-26.39	26.25	0.00	0.00	0.00
1,700.00	2.14	222.50	1,699.21	-31.54	-28.91	28.76	0.00	0.00	0.00
1,800.00	2.14	222.50	1,799.14	-34.30	-31.43	31.27	0.00	0.00	0.00
1,900.00	2.14	222.50	1,899.07	-37.05	-33.95	33.78	0.00	0.00	0.00
2,000.00	2.14	222.50	1,999.00	-39.80	-36.47	36.29	0.00	0.00	0.00
2,100.00	2.14	222.50	2,098.94	-42.55	-38.99	38.80	0.00	0.00	0.00
2,200.00	2.14	222.50	2,198.87	-45.30	-41.51	41.31	0.00	0.00	0.00
2,300.00	2.14	222.50	2,298.80	-48.05	-44.03	43.82	0.00	0.00	0.00
2,400.00	2.14	222.50	2,398.73	-50.80	-46.55	46.32	0.00	0.00	0.00
2,437.30	2.14	222.50	2,436.00	-51.83	-47.50	47.26	0.00	0.00	0.00
Ojo Alamo									
2,500.00	2.14	222.50	2,498.66	-53.55	-49.08	48.83	0.00	0.00	0.00
2,547.38	2.14	222.50	2,546.00	-54.86	-50.27	50.02	0.00	0.00	0.00
Kirtland									
2,600.00	2.14	222.50	2,598.59	-56.31	-51.60	51.34	0.00	0.00	0.00
2,700.00	2.14	222.50	2,698.52	-59.06	-54.12	53.85	0.00	0.00	0.00
2,800.00	2.14	222.50	2,798.45	-61.81	-56.64	56.36	0.00	0.00	0.00
2,881.61	2.14	222.50	2,880.00	-64.05	-58.70	58.41	0.00	0.00	0.00
Fruitland									
2,900.00	2.14	222.50	2,898.38	-64.56	-59.16	58.87	0.00	0.00	0.00
3,000.00	2.14	222.50	2,998.31	-67.31	-61.68	61.38	0.00	0.00	0.00
3,036.72	2.14	222.50	3,035.00	-68.32	-62.61	62.30	0.00	0.00	0.00
T/Coals									
3,100.00	2.14	222.50	3,098.24	-70.06	-64.20	63.88	0.00	0.00	0.00
3,186.82	2.14	222.50	3,185.00	-72.45	-66.39	66.06	0.00	0.00	0.00
B/Coals									
3,200.00	2.14	222.50	3,198.17	-72.81	-66.72	66.39	0.00	0.00	0.00
3,300.00	2.14	222.50	3,298.10	-75.56	-69.25	68.90	0.00	0.00	0.00
3,359.94	2.14	222.50	3,358.00	-77.21	-70.76	70.41	0.00	0.00	0.00
Pictured Cliffs									
3,400.00	2.14	222.50	3,398.03	-78.32	-71.77	71.41	0.00	0.00	0.00
3,465.02	2.14	222.50	3,463.00	-80.10	-73.41	73.04	0.00	0.00	0.00
Lewis									
3,500.00	2.14	222.50	3,497.96	-81.07	-74.29	73.92	0.00	0.00	0.00
3,600.00	2.14	222.50	3,597.89	-83.82	-76.81	76.43	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Company:	Logos Operating LLC	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	**North Reference:**	True
Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,700.00	2.14	222.50	3,697.82	-86.57	-79.33	78.94	0.00	0.00	0.00
3,800.00	2.14	222.50	3,797.75	-89.32	-81.85	81.45	0.00	0.00	0.00
3,900.00	2.14	222.50	3,897.68	-92.07	-84.37	83.95	0.00	0.00	0.00
4,000.00	2.14	222.50	3,997.61	-94.82	-86.89	86.46	0.00	0.00	0.00
4,100.00	2.14	222.50	4,097.54	-97.57	-89.42	88.97	0.00	0.00	0.00
4,200.00	2.14	222.50	4,197.47	-100.33	-91.94	91.48	0.00	0.00	0.00
4,300.00	2.14	222.50	4,297.40	-103.08	-94.46	93.99	0.00	0.00	0.00
4,400.00	2.14	222.50	4,397.33	-105.83	-96.98	96.50	0.00	0.00	0.00
4,500.00	2.14	222.50	4,497.26	-108.58	-99.50	99.01	0.00	0.00	0.00
4,589.80	2.14	222.50	4,587.00	-111.05	-101.76	101.26	0.00	0.00	0.00
Chacra									
4,600.00	2.14	222.50	4,597.19	-111.33	-102.02	101.52	0.00	0.00	0.00
4,700.00	2.14	222.50	4,697.12	-114.08	-104.54	104.02	0.00	0.00	0.00
4,800.00	2.14	222.50	4,797.05	-116.83	-107.06	106.53	0.00	0.00	0.00
4,900.00	2.14	222.50	4,896.99	-119.58	-109.58	109.04	0.00	0.00	0.00
5,000.00	2.14	222.50	4,996.92	-122.34	-112.11	111.55	0.00	0.00	0.00
5,065.13	2.14	222.50	5,062.00	-124.13	-113.75	113.18	0.00	0.00	0.00
U/Cliff House									
5,100.00	2.14	222.50	5,096.85	-125.09	-114.63	114.06	0.00	0.00	0.00
5,200.00	2.14	222.50	5,196.78	-127.84	-117.15	116.57	0.00	0.00	0.00
5,300.00	2.14	222.50	5,296.71	-130.59	-119.67	119.08	0.00	0.00	0.00
5,368.34	2.14	222.50	5,365.00	-132.47	-121.39	120.79	0.00	0.00	0.00
Cliff House									
5,400.00	2.14	222.50	5,396.64	-133.34	-122.19	121.58	0.00	0.00	0.00
5,408.37	2.14	222.50	5,405.00	-133.57	-122.40	121.79	0.00	0.00	0.00
Menefee									
5,500.00	2.14	222.50	5,496.57	-136.09	-124.71	124.09	0.00	0.00	0.00
5,600.00	2.14	222.50	5,596.50	-138.84	-127.23	126.60	0.00	0.00	0.00
5,637.53	2.14	222.50	5,634.00	-139.88	-128.18	127.54	0.00	0.00	0.00
Point Lookout									
5,700.00	2.14	222.50	5,696.43	-141.59	-129.75	129.11	0.00	0.00	0.00
5,800.00	2.14	222.50	5,796.36	-144.35	-132.28	131.62	0.00	0.00	0.00
5,900.00	2.14	222.50	5,896.29	-147.10	-134.80	134.13	0.00	0.00	0.00
6,000.00	2.14	222.50	5,996.22	-149.85	-137.32	136.64	0.00	0.00	0.00
6,100.00	2.14	222.50	6,096.15	-152.60	-139.84	139.15	0.00	0.00	0.00
6,174.90	2.14	222.50	6,171.00	-154.66	-141.73	141.02	0.00	0.00	0.00
Mancos									
6,200.00	2.14	222.50	6,196.08	-155.35	-142.36	141.65	0.00	0.00	0.00
6,300.00	2.14	222.50	6,296.01	-158.10	-144.88	144.16	0.00	0.00	0.00
6,335.60	2.14	222.50	6,331.59	-159.08	-145.78	145.06	0.00	0.00	0.00
Start DLS 9.00 TFO 47.78									
6,350.00	3.16	240.19	6,345.97	-159.48	-146.30	145.58	9.00	7.08	122.90
6,400.00	7.40	257.98	6,395.75	-160.83	-150.65	149.92	9.00	8.49	35.57
6,450.00	11.84	262.68	6,445.03	-162.16	-158.89	158.16	9.00	8.87	9.41
6,500.00	16.31	264.84	6,493.52	-163.44	-170.98	170.24	9.00	8.94	4.31
6,550.00	20.79	266.09	6,540.91	-164.68	-186.83	186.08	9.00	8.97	2.49
6,600.00	25.28	266.91	6,586.91	-165.86	-206.36	205.60	9.00	8.98	1.64
6,650.00	29.77	267.49	6,631.24	-166.98	-229.43	228.67	9.00	8.98	1.17
6,700.00	34.27	267.94	6,673.63	-168.04	-255.91	255.15	9.00	8.99	0.89
6,750.00	38.76	268.29	6,713.80	-169.01	-285.64	284.87	9.00	8.99	0.70
6,800.00	43.26	268.58	6,751.52	-169.90	-318.43	317.65	9.00	8.99	0.58
6,837.41	46.62	268.76	6,778.00	-170.52	-344.84	344.06	9.00	8.99	0.50
Black Top									

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Company:	Logos Operating LLC	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	**North Reference:**	True
Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,850.00	47.75	268.82	6,786.56	-170.71	-354.07	353.29	9.00	8.99	0.46
6,900.00	52.25	269.03	6,818.69	-171.42	-392.36	391.58	9.00	8.99	0.42
6,950.00	56.75	269.22	6,847.72	-172.04	-433.05	432.26	9.00	8.99	0.38
7,000.00	61.25	269.39	6,873.46	-172.56	-475.89	475.10	9.00	9.00	0.34
7,050.00	65.74	269.55	6,895.77	-172.97	-520.62	519.83	9.00	9.00	0.31
7,100.00	70.24	269.69	6,914.50	-173.28	-566.97	566.17	9.00	9.00	0.29
7,150.00	74.74	269.83	6,929.54	-173.48	-614.64	613.84	9.00	9.00	0.27
7,200.00	79.24	269.96	6,940.80	-173.57	-663.34	662.55	9.00	9.00	0.26
7,250.00	83.74	270.09	6,948.20	-173.54	-712.78	711.98	9.00	9.00	0.25
7,300.00	88.23	270.21	6,951.70	-173.41	-762.64	761.85	9.00	9.00	0.25
7,321.06	90.13	270.26	6,952.00	-173.33	-783.70	782.91	9.00	9.00	0.25
Start 13353.07 hold at 7321.06 MD									
7,400.00	90.13	270.26	6,951.82	-172.96	-862.64	861.84	0.00	0.00	0.00
7,500.00	90.13	270.26	6,951.60	-172.50	-962.64	961.84	0.00	0.00	0.00
7,600.00	90.13	270.26	6,951.37	-172.04	-1,062.63	1,061.84	0.00	0.00	0.00
7,700.00	90.13	270.26	6,951.15	-171.58	-1,162.63	1,161.84	0.00	0.00	0.00
7,800.00	90.13	270.26	6,950.92	-171.11	-1,262.63	1,261.84	0.00	0.00	0.00
7,900.00	90.13	270.26	6,950.70	-170.65	-1,362.63	1,361.84	0.00	0.00	0.00
8,000.00	90.13	270.26	6,950.47	-170.19	-1,462.63	1,461.84	0.00	0.00	0.00
8,100.00	90.13	270.26	6,950.25	-169.73	-1,562.63	1,561.84	0.00	0.00	0.00
8,200.00	90.13	270.26	6,950.03	-169.27	-1,662.63	1,661.84	0.00	0.00	0.00
8,300.00	90.13	270.26	6,949.80	-168.81	-1,762.63	1,761.84	0.00	0.00	0.00
8,400.00	90.13	270.26	6,949.58	-168.34	-1,862.62	1,861.84	0.00	0.00	0.00
8,500.00	90.13	270.26	6,949.35	-167.88	-1,962.62	1,961.84	0.00	0.00	0.00
8,600.00	90.13	270.26	6,949.13	-167.42	-2,062.62	2,061.84	0.00	0.00	0.00
8,700.00	90.13	270.26	6,948.90	-166.96	-2,162.62	2,161.84	0.00	0.00	0.00
8,800.00	90.13	270.26	6,948.68	-166.50	-2,262.62	2,261.84	0.00	0.00	0.00
8,900.00	90.13	270.26	6,948.45	-166.03	-2,362.62	2,361.84	0.00	0.00	0.00
9,000.00	90.13	270.26	6,948.23	-165.57	-2,462.62	2,461.84	0.00	0.00	0.00
9,100.00	90.13	270.26	6,948.00	-165.11	-2,562.61	2,561.84	0.00	0.00	0.00
9,200.00	90.13	270.26	6,947.78	-164.65	-2,662.61	2,661.84	0.00	0.00	0.00
9,300.00	90.13	270.26	6,947.55	-164.19	-2,762.61	2,761.84	0.00	0.00	0.00
9,400.00	90.13	270.26	6,947.33	-163.73	-2,862.61	2,861.84	0.00	0.00	0.00
9,500.00	90.13	270.26	6,947.10	-163.26	-2,962.61	2,961.84	0.00	0.00	0.00
9,600.00	90.13	270.26	6,946.88	-162.80	-3,062.61	3,061.84	0.00	0.00	0.00
9,700.00	90.13	270.26	6,946.66	-162.34	-3,162.61	3,161.84	0.00	0.00	0.00
9,800.00	90.13	270.26	6,946.43	-161.88	-3,262.61	3,261.84	0.00	0.00	0.00
9,900.00	90.13	270.26	6,946.21	-161.42	-3,362.60	3,361.84	0.00	0.00	0.00
10,000.00	90.13	270.26	6,945.98	-160.95	-3,462.60	3,461.84	0.00	0.00	0.00
10,100.00	90.13	270.26	6,945.76	-160.49	-3,562.60	3,561.84	0.00	0.00	0.00
10,200.00	90.13	270.26	6,945.53	-160.03	-3,662.60	3,661.84	0.00	0.00	0.00
10,300.00	90.13	270.26	6,945.31	-159.57	-3,762.60	3,761.84	0.00	0.00	0.00
10,400.00	90.13	270.26	6,945.08	-159.11	-3,862.60	3,861.84	0.00	0.00	0.00
10,500.00	90.13	270.26	6,944.86	-158.65	-3,962.60	3,961.84	0.00	0.00	0.00
10,600.00	90.13	270.26	6,944.63	-158.18	-4,062.59	4,061.84	0.00	0.00	0.00
10,700.00	90.13	270.26	6,944.41	-157.72	-4,162.59	4,161.84	0.00	0.00	0.00
10,800.00	90.13	270.26	6,944.18	-157.26	-4,262.59	4,261.83	0.00	0.00	0.00
10,900.00	90.13	270.26	6,943.96	-156.80	-4,362.59	4,361.83	0.00	0.00	0.00
11,000.00	90.13	270.26	6,943.73	-156.34	-4,462.59	4,461.83	0.00	0.00	0.00
11,100.00	90.13	270.26	6,943.51	-155.87	-4,562.59	4,561.83	0.00	0.00	0.00
11,200.00	90.13	270.26	6,943.29	-155.41	-4,662.59	4,661.83	0.00	0.00	0.00
11,300.00	90.13	270.26	6,943.06	-154.95	-4,762.59	4,761.83	0.00	0.00	0.00
11,400.00	90.13	270.26	6,942.84	-154.49	-4,862.58	4,861.83	0.00	0.00	0.00

SDT
Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Company:	Logos Operating LLC	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	**North Reference:**	True
Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,500.00	90.13	270.26	6,942.61	-154.03	-4,962.58	4,961.83	0.00	0.00	0.00
11,600.00	90.13	270.26	6,942.39	-153.57	-5,062.58	5,061.83	0.00	0.00	0.00
11,700.00	90.13	270.26	6,942.16	-153.10	-5,162.58	5,161.83	0.00	0.00	0.00
11,800.00	90.13	270.26	6,941.94	-152.64	-5,262.58	5,261.83	0.00	0.00	0.00
11,900.00	90.13	270.26	6,941.71	-152.18	-5,362.58	5,361.83	0.00	0.00	0.00
12,000.00	90.13	270.26	6,941.49	-151.72	-5,462.58	5,461.83	0.00	0.00	0.00
12,100.00	90.13	270.26	6,941.26	-151.26	-5,562.58	5,561.83	0.00	0.00	0.00
12,200.00	90.13	270.26	6,941.04	-150.79	-5,662.57	5,661.83	0.00	0.00	0.00
12,300.00	90.13	270.26	6,940.81	-150.33	-5,762.57	5,761.83	0.00	0.00	0.00
12,400.00	90.13	270.26	6,940.59	-149.87	-5,862.57	5,861.83	0.00	0.00	0.00
12,500.00	90.13	270.26	6,940.36	-149.41	-5,962.57	5,961.83	0.00	0.00	0.00
12,600.00	90.13	270.26	6,940.14	-148.95	-6,062.57	6,061.83	0.00	0.00	0.00
12,700.00	90.13	270.26	6,939.92	-148.48	-6,162.57	6,161.83	0.00	0.00	0.00
12,800.00	90.13	270.26	6,939.69	-148.02	-6,262.57	6,261.83	0.00	0.00	0.00
12,900.00	90.13	270.26	6,939.47	-147.56	-6,362.56	6,361.83	0.00	0.00	0.00
13,000.00	90.13	270.26	6,939.24	-147.10	-6,462.56	6,461.83	0.00	0.00	0.00
13,100.00	90.13	270.26	6,939.02	-146.64	-6,562.56	6,561.83	0.00	0.00	0.00
13,200.00	90.13	270.26	6,938.79	-146.18	-6,662.56	6,661.83	0.00	0.00	0.00
13,300.00	90.13	270.26	6,938.57	-145.71	-6,762.56	6,761.83	0.00	0.00	0.00
13,400.00	90.13	270.26	6,938.34	-145.25	-6,862.56	6,861.83	0.00	0.00	0.00
13,500.00	90.13	270.26	6,938.12	-144.79	-6,962.56	6,961.83	0.00	0.00	0.00
13,600.00	90.13	270.26	6,937.89	-144.33	-7,062.56	7,061.83	0.00	0.00	0.00
13,700.00	90.13	270.26	6,937.67	-143.87	-7,162.55	7,161.83	0.00	0.00	0.00
13,800.00	90.13	270.26	6,937.44	-143.40	-7,262.55	7,261.83	0.00	0.00	0.00
13,900.00	90.13	270.26	6,937.22	-142.94	-7,362.55	7,361.83	0.00	0.00	0.00
14,000.00	90.13	270.26	6,936.99	-142.48	-7,462.55	7,461.83	0.00	0.00	0.00
14,100.00	90.13	270.26	6,936.77	-142.02	-7,562.55	7,561.83	0.00	0.00	0.00
14,200.00	90.13	270.26	6,936.55	-141.56	-7,662.55	7,661.83	0.00	0.00	0.00
14,300.00	90.13	270.26	6,936.32	-141.10	-7,762.55	7,761.83	0.00	0.00	0.00
14,400.00	90.13	270.26	6,936.10	-140.63	-7,862.54	7,861.83	0.00	0.00	0.00
14,500.00	90.13	270.26	6,935.87	-140.17	-7,962.54	7,961.83	0.00	0.00	0.00
14,600.00	90.13	270.26	6,935.65	-139.71	-8,062.54	8,061.83	0.00	0.00	0.00
14,700.00	90.13	270.26	6,935.42	-139.25	-8,162.54	8,161.82	0.00	0.00	0.00
14,800.00	90.13	270.26	6,935.20	-138.79	-8,262.54	8,261.82	0.00	0.00	0.00
14,900.00	90.13	270.26	6,934.97	-138.32	-8,362.54	8,361.82	0.00	0.00	0.00
15,000.00	90.13	270.26	6,934.75	-137.86	-8,462.54	8,461.82	0.00	0.00	0.00
15,100.00	90.13	270.26	6,934.52	-137.40	-8,562.54	8,561.82	0.00	0.00	0.00
15,200.00	90.13	270.26	6,934.30	-136.94	-8,662.53	8,661.82	0.00	0.00	0.00
15,300.00	90.13	270.26	6,934.07	-136.48	-8,762.53	8,761.82	0.00	0.00	0.00
15,400.00	90.13	270.26	6,933.85	-136.02	-8,862.53	8,861.82	0.00	0.00	0.00
15,500.00	90.13	270.26	6,933.62	-135.55	-8,962.53	8,961.82	0.00	0.00	0.00
15,600.00	90.13	270.26	6,933.40	-135.09	-9,062.53	9,061.82	0.00	0.00	0.00
15,700.00	90.13	270.26	6,933.18	-134.63	-9,162.53	9,161.82	0.00	0.00	0.00
15,800.00	90.13	270.26	6,932.95	-134.17	-9,262.53	9,261.82	0.00	0.00	0.00
15,900.00	90.13	270.26	6,932.73	-133.71	-9,362.53	9,361.82	0.00	0.00	0.00
16,000.00	90.13	270.26	6,932.50	-133.24	-9,462.52	9,461.82	0.00	0.00	0.00
16,100.00	90.13	270.26	6,932.28	-132.78	-9,562.52	9,561.82	0.00	0.00	0.00
16,200.00	90.13	270.26	6,932.05	-132.32	-9,662.52	9,661.82	0.00	0.00	0.00
16,300.00	90.13	270.26	6,931.83	-131.86	-9,762.52	9,761.82	0.00	0.00	0.00
16,400.00	90.13	270.26	6,931.60	-131.40	-9,862.52	9,861.82	0.00	0.00	0.00
16,500.00	90.13	270.26	6,931.38	-130.93	-9,962.52	9,961.82	0.00	0.00	0.00
16,600.00	90.13	270.26	6,931.15	-130.47	-10,062.52	10,061.82	0.00	0.00	0.00
16,700.00	90.13	270.26	6,930.93	-130.01	-10,162.51	10,161.82	0.00	0.00	0.00
16,800.00	90.13	270.26	6,930.70	-129.55	-10,262.51	10,261.82	0.00	0.00	0.00

SDT
Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Company:	Logos Operating LLC	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	**North Reference:**	True
Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,900.00	90.13	270.26	6,930.48	-129.09	-10,362.51	10,361.82	0.00	0.00	0.00
17,000.00	90.13	270.26	6,930.25	-128.63	-10,462.51	10,461.82	0.00	0.00	0.00
17,100.00	90.13	270.26	6,930.03	-128.16	-10,562.51	10,561.82	0.00	0.00	0.00
17,200.00	90.13	270.26	6,929.81	-127.70	-10,662.51	10,661.82	0.00	0.00	0.00
17,300.00	90.13	270.26	6,929.58	-127.24	-10,762.51	10,761.82	0.00	0.00	0.00
17,400.00	90.13	270.26	6,929.36	-126.78	-10,862.51	10,861.82	0.00	0.00	0.00
17,500.00	90.13	270.26	6,929.13	-126.32	-10,962.50	10,961.82	0.00	0.00	0.00
17,600.00	90.13	270.26	6,928.91	-125.85	-11,062.50	11,061.82	0.00	0.00	0.00
17,700.00	90.13	270.26	6,928.68	-125.39	-11,162.50	11,161.82	0.00	0.00	0.00
17,800.00	90.13	270.26	6,928.46	-124.93	-11,262.50	11,261.82	0.00	0.00	0.00
17,900.00	90.13	270.26	6,928.23	-124.47	-11,362.50	11,361.82	0.00	0.00	0.00
18,000.00	90.13	270.26	6,928.01	-124.01	-11,462.50	11,461.82	0.00	0.00	0.00
18,100.00	90.13	270.26	6,927.78	-123.55	-11,562.50	11,561.82	0.00	0.00	0.00
18,200.00	90.13	270.26	6,927.56	-123.08	-11,662.49	11,661.82	0.00	0.00	0.00
18,300.00	90.13	270.26	6,927.33	-122.62	-11,762.49	11,761.82	0.00	0.00	0.00
18,400.00	90.13	270.26	6,927.11	-122.16	-11,862.49	11,861.82	0.00	0.00	0.00
18,500.00	90.13	270.26	6,926.88	-121.70	-11,962.49	11,961.82	0.00	0.00	0.00
18,600.00	90.13	270.26	6,926.66	-121.24	-12,062.49	12,061.82	0.00	0.00	0.00
18,700.00	90.13	270.26	6,926.44	-120.77	-12,162.49	12,161.81	0.00	0.00	0.00
18,800.00	90.13	270.26	6,926.21	-120.31	-12,262.49	12,261.81	0.00	0.00	0.00
18,900.00	90.13	270.26	6,925.99	-119.85	-12,362.49	12,361.81	0.00	0.00	0.00
19,000.00	90.13	270.26	6,925.76	-119.39	-12,462.48	12,461.81	0.00	0.00	0.00
19,100.00	90.13	270.26	6,925.54	-118.93	-12,562.48	12,561.81	0.00	0.00	0.00
19,200.00	90.13	270.26	6,925.31	-118.47	-12,662.48	12,661.81	0.00	0.00	0.00
19,300.00	90.13	270.26	6,925.09	-118.00	-12,762.48	12,761.81	0.00	0.00	0.00
19,400.00	90.13	270.26	6,924.86	-117.54	-12,862.48	12,861.81	0.00	0.00	0.00
19,500.00	90.13	270.26	6,924.64	-117.08	-12,962.48	12,961.81	0.00	0.00	0.00
19,600.00	90.13	270.26	6,924.41	-116.62	-13,062.48	13,061.81	0.00	0.00	0.00
19,700.00	90.13	270.26	6,924.19	-116.16	-13,162.48	13,161.81	0.00	0.00	0.00
19,800.00	90.13	270.26	6,923.96	-115.69	-13,262.47	13,261.81	0.00	0.00	0.00
19,900.00	90.13	270.26	6,923.74	-115.23	-13,362.47	13,361.81	0.00	0.00	0.00
20,000.00	90.13	270.26	6,923.51	-114.77	-13,462.47	13,461.81	0.00	0.00	0.00
20,100.00	90.13	270.26	6,923.29	-114.31	-13,562.47	13,561.81	0.00	0.00	0.00
20,200.00	90.13	270.26	6,923.07	-113.85	-13,662.47	13,661.81	0.00	0.00	0.00
20,300.00	90.13	270.26	6,922.84	-113.39	-13,762.47	13,761.81	0.00	0.00	0.00
20,400.00	90.13	270.26	6,922.62	-112.92	-13,862.47	13,861.81	0.00	0.00	0.00
20,500.00	90.13	270.26	6,922.39	-112.46	-13,962.46	13,961.81	0.00	0.00	0.00
20,600.00	90.13	270.26	6,922.17	-112.00	-14,062.46	14,061.81	0.00	0.00	0.00
20,674.13	90.13	270.26	6,922.00	-111.66	-14,136.59	14,135.94	0.00	0.00	0.00
TD at 20674.13									

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #714H - Slot B03
Company:	Logos Operating LLC	**TVD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Project:	Rio Arriba, NM (NAD83)	**MD Reference:**	6300+30 @ 6330.00usft (H&P 530)
Site:	Rosa Pad 26 - 5 Well	**North Reference:**	True
Well:	Rosa Unit #714H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim 1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RU 714H SHL-5 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	2,147,517.73	2,851,885.97	36.900808	-107.392842
RU 714H PBHL-5 - plan hits target center - Point	0.00	0.00	6,922.00	-111.66	-14,136.59	2,147,340.81	2,837,750.04	36.900492	-107.441190
RU 714H POE-5 - plan hits target center - Point	0.00	0.00	6,952.00	-173.33	-783.70	2,147,340.79	2,851,103.07	36.900332	-107.395523

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,437.30	2,436.00	Ojo Alamo			
2,547.38	2,546.00	Kirtland			
2,881.61	2,880.00	Fruitland			
3,036.72	3,035.00	T/Coals			
3,186.82	3,185.00	B/Coals			
3,359.94	3,358.00	Pictured Cliffs			
3,465.02	3,463.00	Lewis			
4,589.80	4,587.00	Chacra			
5,065.13	5,062.00	U/Cliff House			
5,368.34	5,365.00	Cliff House			
5,408.37	5,405.00	Menefee			
5,637.53	5,634.00	Point Lookout			
6,174.90	6,171.00	Mancos			
6,837.41	6,778.00	Black Top			

Plan Annotations

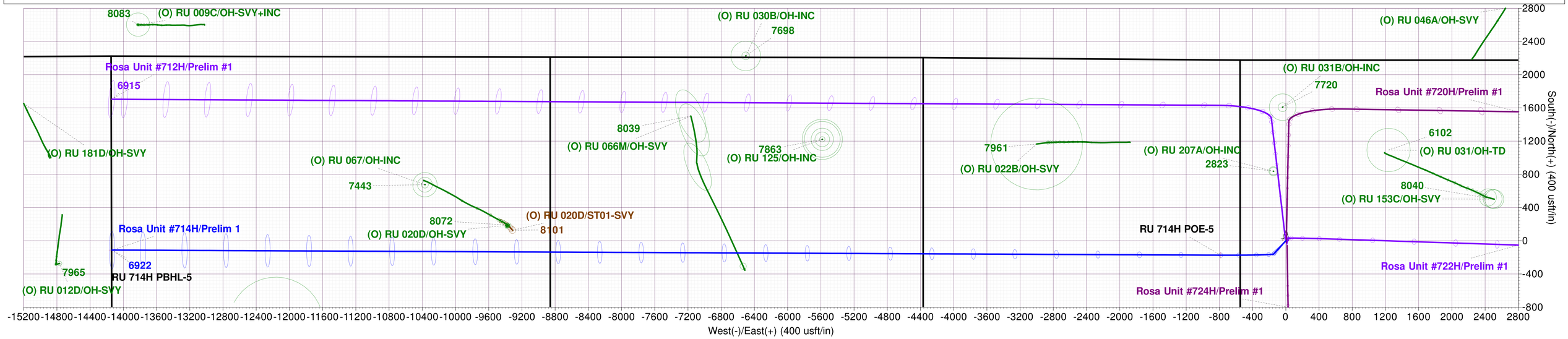
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.00	500.00	0.00	0.00	Start Build 2.00
606.93	606.91	-1.47	-1.35	Start 5728.67 hold at 606.93 MD
6,335.60	6,331.59	-159.08	-145.78	Start DLS 9.00 TFO 47.78
7,321.06	6,952.00	-173.33	-783.70	Start 13353.07 hold at 7321.06 MD
20,674.13	6,922.00	-111.66	-14,136.59	TD at 20674.13

Received by OCD: 9/27/2024 11:13:22 AM

LOGOS ENERGY

County: Rio Arriba, NM (NAD83)
Site: Rosa Pad 26 - 5 Well
Well: Rosa Unit #714H
Depth Reference: 6300+30 @ 6330.00usft (H&P 530)
Rig: H&P 530
Plan: Prelim 1
Job #: Prelim

SCOUT DRILLING TECHNOLOGIES



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
3	606.93	2.14	222.50	606.91	-1.47	-1.35	2.00	222.50	1.34	Start 5728.67 hold at 606.93 MD
4	6335.60	2.14	222.50	6331.59	-159.08	-145.78	0.00	0.00	145.06	Start DLS 9.00 TFO 47.78
5	7321.06	90.13	270.26	6952.00	-173.33	-783.70	9.00	47.78	782.91	Start 13353.07 hold at 7321.06 MD
6	20674.13	90.13	270.26	6922.00	-111.66	-14136.59	0.00	0.00	14135.94	TD at 20674.13

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RU 714H SHL-5	0.00	0.00	0.00	2147517.73	2851885.96	36.900808	-107.392842
RU 714H PBHL-5	6922.00	-111.66	-14136.59	2147340.81	2837750.03	36.900491	-107.441190
RU 714H POE-5	6952.00	-173.33	-783.70	2147340.79	2851103.07	36.900332	-107.395522

FORMATION TOP DETAILS

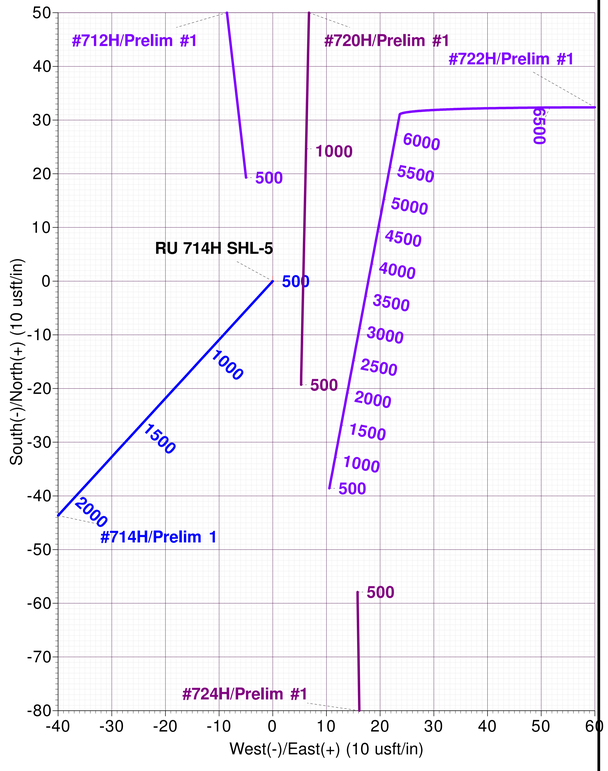
TVDPath	MDPath	Formation
2436.00	2437.30	Ojo Alamo
2546.00	2547.38	Kirtland
2880.00	2881.61	Fruitland
3035.00	3036.72	T/Coals
3185.00	3186.82	B/Coals
3358.00	3359.94	Pictured Cliffs
3463.00	3465.02	Lewis
4587.00	4589.80	Chacra
5062.00	5065.13	U/Cliff House
5365.00	5368.34	Cliff House
5405.00	5408.37	Menefee
5634.00	5637.53	Point Lookout
6171.00	6174.90	Mancos
6778.00	6837.41	Black Top

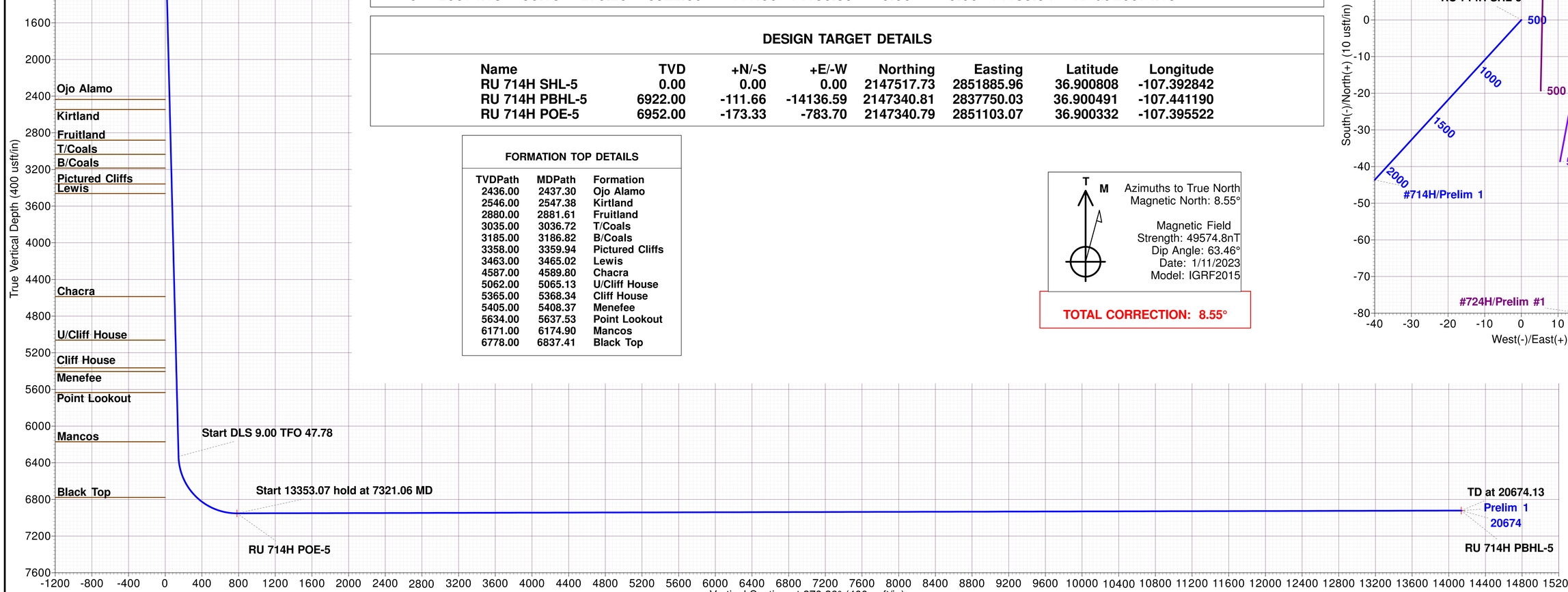
T M

Azimuths to True North
Magnetic North: 8.55°

Magnetic Field
Strength: 49574.8nT
Dip Angle: 63.46°
Date: 1/11/2023
Model: IGRF2015

TOTAL CORRECTION: 8.55°





Released to Imaging: 10/2/2024 7:49:15 AM

LOGOS Operating, LLC
Operations Plan

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

Date:	September 25, 2024	Pool:	Basin Mancos
Well Name:	**Rosa Unit 714H**	GL Elevation:	6,300’
Surface Location:	Sec 17, T31N, R5W 2175’ FNL, 549’ FWL (36.900808º N, -107.392842º W – NAD83)	KB:	30’
Bottom Hole Location:	Sec 14, T31N, R6W 2335’ FNL, 5’ FWL (36.900491º N, -107.441190º W – NAD83)	Measured Depth:	20,674’ (KB)
Lease Serial CA Serial	**# NMSF078764 # NMNM78407E**	County:	Rio Arriba

I. GEOLOGY

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

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	2437’	2436’	*POINT LOOKOUT	5638’	5634’
KIRTLAND	2547’	2546’	*MANCOS	6175’	6171’
*FRUITLAND	2882’	2880’	KICKOFF POINT	6336’	6332’
*PICTURED CLIFFS	3360’	3358’	LANDING POINT	7321’	6952’
LEWIS	3465’	3463’	TD	20674’	6922’
CHACRA	4590’	4587’			
*CLIFF HOUSE	5368’	5365’			
MENEFEE	5408’	5405’			

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

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

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

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

II. DRILLING

A. **MUD PROGRAM:** LSND mud (WBM) will be used to drill the 26”/24” surface hole and 12-1/4” intermediate hole. A LSND (WBM) or (OBM) will be used to drill the 8-1/2” curve and lateral portion of the wellbore. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

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

B. **BOP TESTING:** The BOPE will be tested to **250 psi (Low) for 5 minutes** and **3000 psi (High) for 10 minutes.** Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes.** Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. BOP equipment will be tested every 30 days, after any repairs are made to the BOP equipment, and after the BOP equipment is subjected to pressure. Annular preventers will be functionally operated at least once per week. Pipe and blind rams shall be activated each trip or but not more than once a day. The New Mexico Oil & Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of BOPE. **All tests and inspections will be recorded and logged with time and results.** A full BOP test will be conducted when initially installed for the first well on the pad or if seals subject to test pressure are broken, following related repairs and at a minimum of 30 day intervals. A BOPE Shell Test only will be conducted for subsequent wells on the pad when seals subject to pressure have not been broken or repaired and fall within the 30 day interval of first full test.

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

D. **Maximum Anticipated Pressure:** 6,952' TVD x 0.43 = 2,990 psi

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

III. MATERIALS

A. CASING EQUIPMENT:

CASING TYPE	OH SIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	26" or 24"	320' or greater (GL)	20"	94 LBS	J-55 or equiv	LTC/BTC
INTERMEDIATE	12.25"	6,250'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	20,674'	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:

1. SURFACE CASING: 20" cement nose guide shoe. Place float shoe 1 joint above shoe. Run (1) standard centralizer on each of the bottom (3) joints of Surface Casing.
2. INTERMEDIATE CASING: 9-5/8" cement float shoe. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. Optional use of DV Tools (2) will be strategically placed above loss circulation zones anticipated in the Mesaverde and Fruitland Coal. Optional use of cancelation plugs for DV tools may be used if losses while cementing are not encountered. Optional use of an ICP may be used in conjunction with DV Tools.
3. PRODUCTION CASING: Run 5-1/2" casing with cement nose guide Float Shoe, 5-1/2" full or pup joints as necessary, Landing Collar, 5-1/2" full or pup joints as necessary, at least (1) one Toe Sleeve (Sliding Sleeve) positioned inside the applicable production area. Centralizer program will be determined by wellbore conditions. Production casing to be pressure tested during completion operations with frac stack installed.

C. CEMENTING:

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

1. SURFACE: Casing shall be set at ~ 320'(GL) and cemented to surface. TOC at Surface.

Conductor - 20"	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Type G	-	320	0.9599	1.3	449	80	1.10	408	15.8
Type III		320	0.9599	1.3	449	80	1.39	323	14.6
			24" hole						
Set Depth (GL)	320								

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

Intermediate - 9-5/8" csg	Top	Footage	Cement (ft3/ft) Annular Capacity	Excess (30%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Stage 1 Tail	5,750	500	0.3132	1.3	221	39	1.10	201	15.8
Stage 1 Lead	4,665	1,085	0.3132	1.3	442	79	1.90	233	12.4
					663	**118**		**434**	
Stage 2 Tail	4,065	600	0.3132	1.3	244	44	1.58	155	13.2
Stage 2 Lead	3,410	655	0.3132	1.3	267	48	1.90	140	12.4
					511	**91**		**295**	
Stage 3 Tail	2,760	650	0.3132	1.3	265	47	1.58	168	13.2
Stage 3 Lead	320	2,440	0.3132	1.3	994	177	1.58	629	12.4
Stage 3 Lead	-	320	1.4895	1	477	85	1.90	251	12.4
					1,735	**309**		**1047**	
					2,909	**518**		**1,776**	
Set Depth, ft RKB	6250								

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

3. PRODUCTION: Production casing will be cemented in 1 stage with 100' of cement overlap above intermediate shoe. A CBL, or alternatively, a Temperature Survey will be used to determine TOC.

Production - 5-1/2"	Top	ft	Cement (ft3/ft) Annular Capacity	Excess (15%)	Total (ft3)	Total (bbl)	Slurry Yield (ft3/sk)	Sacks Cement	Density (PPG)
Cased hole Tail	**6,150**	**100**	**0.2531**	**1**	**25**	**5**	1.98	**13**	13.2
Open Hole Tail	**6,250**	**14,424**	**0.2291**	**1.15**	**3,811**	**679**	1.98	**1,925**	13.2
					3,836	**683**		**1,937**	
Set Depth, ft RKB	20674								

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

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

IV. COMPLETION

A. CBL

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

B. PRESSURE TEST

Pressure test 5-1/2" casing to 0.22 psi/ft * 6,952' TVD = 1530 psi for 30 minutes. Increase pressure to Open RSI sleeves.

C. STIMULATION

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

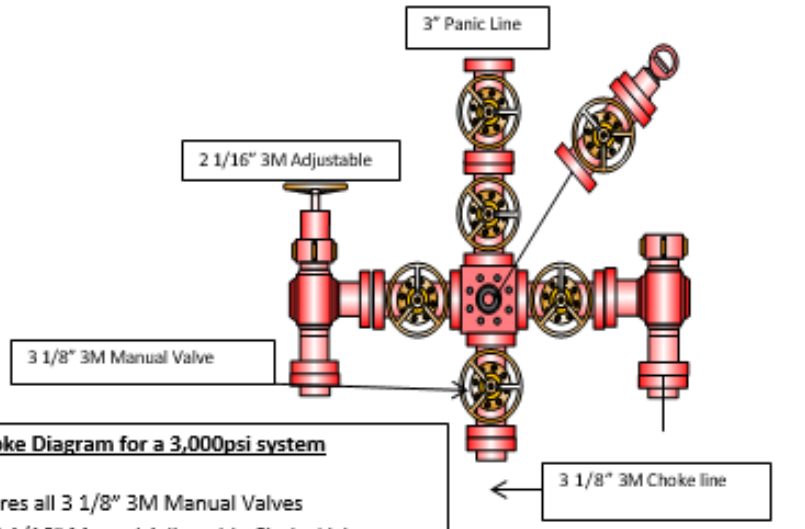
D. PRODUCTION TUBING

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 12-36 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.

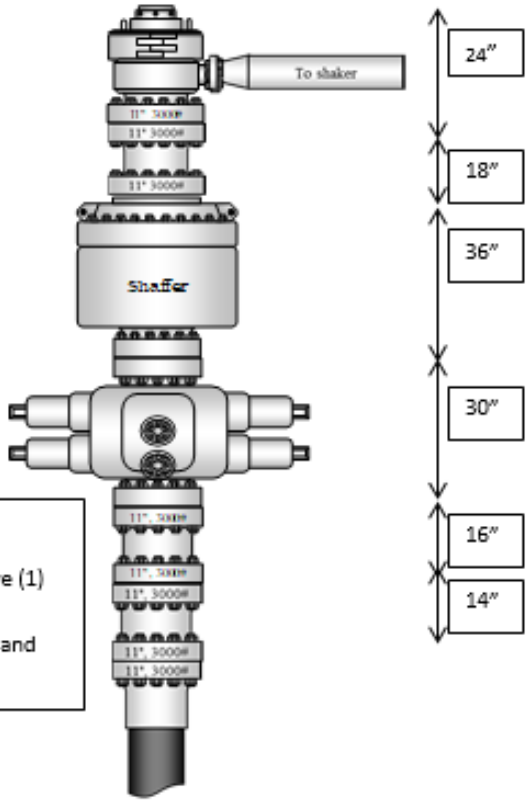
BOP Equipment

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



Choke Diagram for a 3,000psi system

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



11" 3,000psi BOP

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 387903

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 387903
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	10/27/2024