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 / 36.900716 / -107.392811

County or Parish/State: RIO ARRIBA / NM

Well Number: 722H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMSF078764

Unit or CA Name: ROSA UNIT

Unit or CA Number: NMNM78407E

US Well Number:

Operator: LOGOS OPERATING LLC

Notice of Intent

Sundry ID: 2814060

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 09/26/2024

Time Sundry Submitted: 02:23

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 2209' FNL, 558' FWL to Sec 17, T31N, R5W 2214’ FNL, 560’ FWL Original BHL: Sec 13, T31N, R6W 1323' FSL, 16' FWL to Sec 15, T31N, R5W 2588’ FNL, 1302’ FEL Original TD @ 15,562’ (MD) 6,940’ (TVD) to new TD @ 20,626’ (MD) 6,938’ (TVD) Geology tops have been updated per changes. Original KOP @ 6,638’(MD) 6,411’ (TVD) to new KOP @ 6,315’(MD) 6,315’ (TVD) Original Landing point @ 7516’ (MD) 6940’ (TVD) to new Landing point @ 7314’ (MD) 6950’ (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 6,243’ Original production depth 15,562’ to 20,626’ 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__722H_5_AC_Report_Prelim_1_20240926142158.pdf

722H_ROSA_UNIT_CIP_1_20240926_signed_20240926142158.PDF

Rosa_Unit_722H_Operations_Plan_3_string_Prelim_WP1_9.25.2024_20240926142158.pdf

Logos___Rosa_Unit__722H_5_Plan_Data_Prelim_1_20240926142157.pdf

Logos___Rosa_Unit__722H_5_Wall_Prelim_1_20240926142157.pdf

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Well Name: ROSA UNIT

Well Location: T31N / R5W / SEC 17 / SWNW / 36.900716 / -107.392811

County or Parish/State: RIO ARRIBA / NM

Well Number: 722H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMSF078764

Unit or CA Name: ROSA UNIT

Unit or CA Number: NMNM78407E

US Well Number:

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 02:23 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
30-039-31472	97232	BASIN MANCOS

Property Code	Property Name	Well Number
320608	ROSA UNIT	722H

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		2214' NORTH	560' WEST	36.900702 °N	-107.392806 °W	RIO ARRIBA

Bottom Hole Location

UL	Section	Township	Range	Lot	Feet from N/S Line	Feet from E/W Line	Latitude	Longitude	County
H	15	31N	5W		2588' NORTH	1302' EAST	36.899656 °N	-107.345081 °W	RIO ARRIBA

Penetrated Spacing Unit:

Dedicated Acres		Infill or Defining Well	Defining Well API	Overlapping Spacing Unit	Consolidation Code
960.00	N/2 - Section 15, T31N, R5W N/2 - Section 16, T31N, R5W N/2 - Section 17, 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		2145' NORTH	573' WEST	36.900893 °N	-107.392761 °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
E	17	31N	5W		2157' NORTH	1210' WEST	36.900857 °N	-107.390582 °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
H	15	31N	5W		2588' NORTH	1302' EAST	36.899656 °N	-107.345081 °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
NEW MEXICO
15269
9/18/2024
REGISTERED PROFESSIONAL SURVEYOR

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.

SURFACE LOCATION (A)
2214' FNL 560' FWL
SECTION 17, T31N, R5W
LAT 36.900696 °N
LONG -107.392203 °W
DATUM: NAD1927

LAT 36.900702 °N
LONG -107.392806 °W
DATUM: NAD1983

KICK OFF POINT (B)
2145' FNL 573' FWL
SECTION 17, T31N, R5W
LAT 36.900887 °N
LONG -107.392158 °W
DATUM: NAD1927

LAT 36.900893 °N
LONG -107.392761 °W
DATUM: NAD1983

FIRST TAKE POINT (C)
2157' FNL 1210' FWL
SECTION 17, T31N, R5W
LAT 36.900851 °N
LONG -107.389980 °W
DATUM: NAD1927

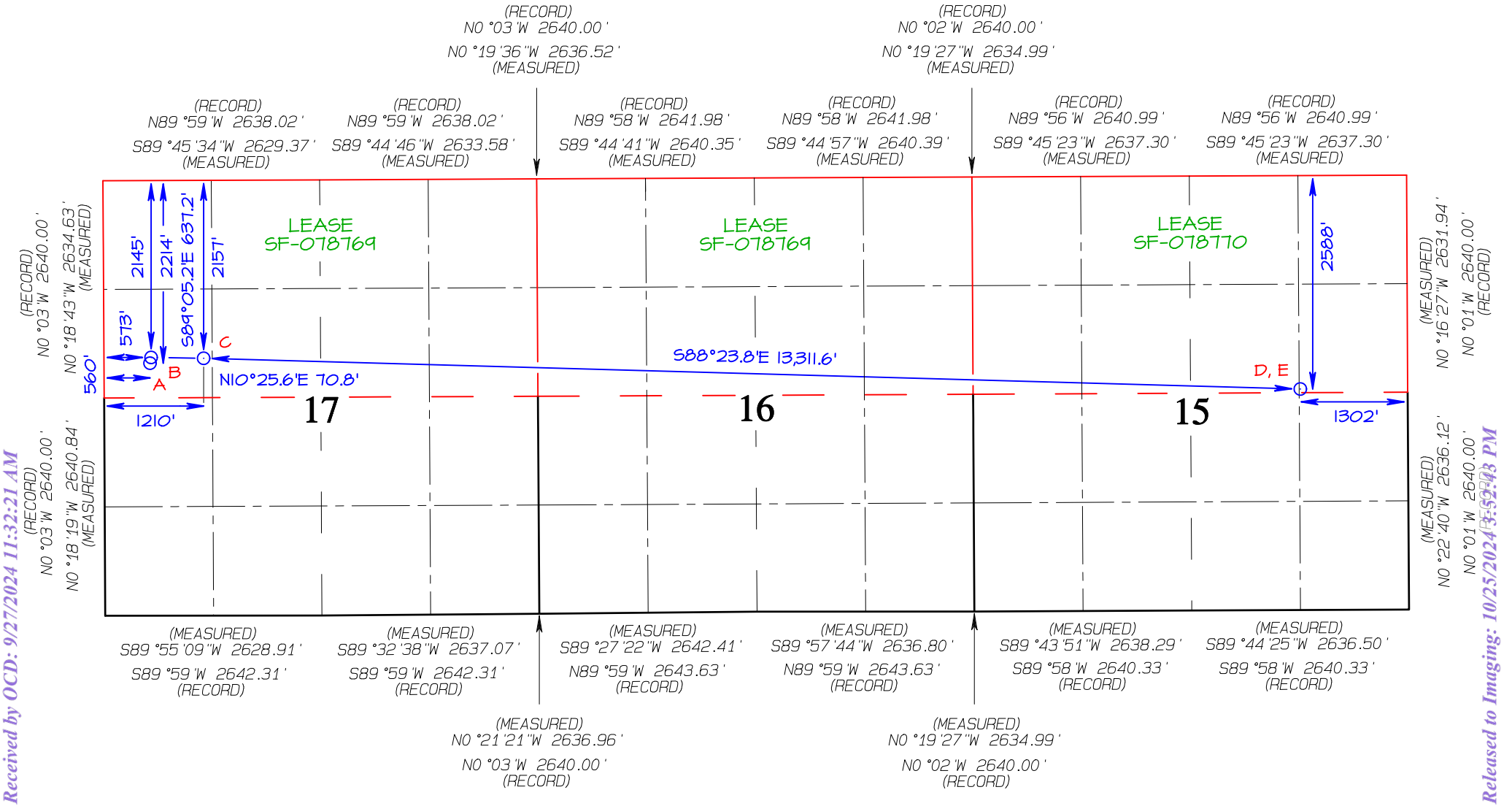
LAT 36.900857 °N
LONG -107.390582 °W
DATUM: NAD1983

LAST TAKE POINT (D)
2588' FNL 1302' FEL
SECTION 15, T31N, R5W
LAT 36.899649 °N
LONG -107.344479 °W
DATUM: NAD1927

LAT 36.899656 °N
LONG -107.345081 °W
DATUM: NAD1983

BOTTOM HOLE LOCATION (E)
2588' FNL 1302' FEL
SECTION 15, T31N, R5W
LAT 36.899649 °N
LONG -107.344479 °W
DATUM: NAD1927

LAT 36.899656 °N
LONG -107.345081 °W
DATUM: NAD1983



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LAT 36.900893 °N
LONG -107.392761 °W
DATUM: NAD1983

FIRST TAKE POINT (C)
2157' FNL 1210' FWL
SECTION 17, T31N, R5W
LAT 36.900851 °N
LONG -107.389980 °W
DATUM: NAD1927

LAT 36.900857 °N
LONG -107.390582 °W
DATUM: NAD1983

LEASE X-ING (1)
2460' FNL 0' FEL
SECTION 16, T31N, R5W
LAT 36.900010 °N
LONG -107.358056 °W
DATUM: NAD1927

LAT 36.900016 °N
LONG -107.358658 °W
DATUM: NAD1983

LAST TAKE POINT (D)
2588' FNL 1302' FEL
SECTION 15, T31N, R5W
LAT 36.899649 °N
LONG -107.344479 °W
DATUM: NAD1927

LAT 36.899656 °N
LONG -107.345081 °W
DATUM: NAD1983

BOTTOM HOLE LOCATION (E)
2588' FNL 1302' FEL
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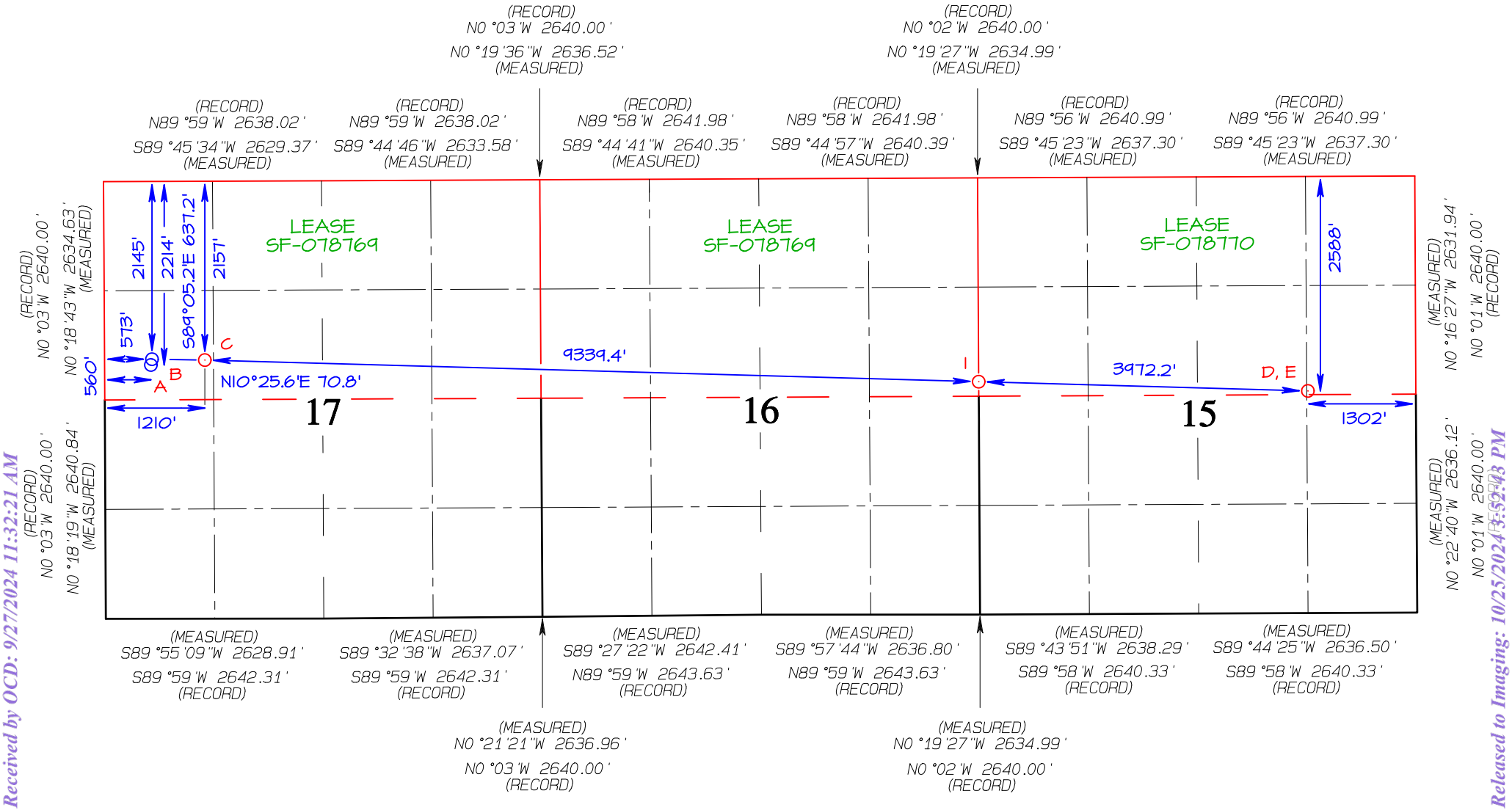
LONG -107.344479 °W
DATUM: NAD1927

LAT 36.899656 °N
LONG -107.345081 °W
DATUM: NAD1983



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Logos Operating LLC

Rio Arriba, NM (NAD83)
Rosa Pad 26 - 5 Well
Rosa Unit #722H

OH
Prelim #1

Anticollision Report

30 August, 2024

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	20,625.82	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	0.00	0.00	13,295.98			
(O) RU 009C - OH - OH-SVY+INC	400.00	300.03	13,298.65	13,294.18	2,977.974	ES
(O) RU 009C - OH - OH-SVY+INC	7,100.00	6,997.43	14,492.48	14,361.48	110.629	SF
(O) RU 012D - OH - OH-SVY	541.57	540.00	14,750.73	14,747.60	4,706.317	CC
(O) RU 012D - OH - OH-SVY	700.00	596.69	14,751.29	14,747.38	3,770.247	ES
(O) RU 012D - OH - OH-SVY	7,000.00	7,120.19	15,145.73	15,095.43	301.100	SF
(O) RU 016D - OH - OH-SVY	6,315.05	6,629.93	12,234.90	11,847.48	31.581	CC
(O) RU 016D - OH - OH-SVY	6,400.00	6,714.68	12,240.51	11,841.98	30.714	ES
(O) RU 016D - OH - OH-SVY	7,150.00	7,245.46	12,704.97	12,237.00	27.149	SF
(O) RU 020D - OH - OH-SVY	5,187.11	5,443.36	9,389.95	9,348.05	224.128	CC
(O) RU 020D - OH - OH-SVY	5,200.00	5,447.82	9,389.95	9,348.01	223.903	ES
(O) RU 020D - OH - OH-SVY	6,600.00	6,700.00	9,468.34	9,422.87	208.241	SF
(O) RU 020D - ST01 - ST01-SVY	6,323.44	6,702.97	9,364.26	9,308.58	168.167	CC, ES
(O) RU 020D - ST01 - ST01-SVY	6,750.00	7,066.13	9,503.10	9,445.59	165.250	SF
(O) RU 022B - OH - OH-SVY	0.00	127.53	2,248.55			
(O) RU 022B - OH - OH-SVY	200.00	316.42	2,249.71	2,245.88	587.689	ES
(O) RU 022B - OH - OH-SVY	6,850.00	6,996.91	3,400.43	2,981.73	8.121	SF
(O) RU 030B - OH - OH-INC	6,316.62	6,473.59	6,886.78	6,720.31	41.371	CC
(O) RU 030B - OH - OH-INC	6,350.00	6,506.95	6,887.64	6,720.22	41.139	ES
(O) RU 030B - OH - OH-INC	6,850.00	6,945.77	7,089.18	6,909.21	39.391	SF
(O) RU 031 - OH - OH-TD	6,117.90	5,973.00	1,614.92	1,332.49	5.718	SF
(O) RU 031 - OH - OH-TD	7,856.44	5,973.00	1,383.58	1,151.47	5.961	CC, ES
(O) RU 031A - OH - OH-INC	535.00	516.00	1,192.74	1,181.88	109.764	CC
(O) RU 031A - OH - OH-INC	6,100.00	6,058.00	1,243.65	1,098.31	8.557	ES, SF
(O) RU 031B - OH - OH-INC	6,412.60	6,397.94	1,578.44	1,419.11	9.906	CC
(O) RU 031B - OH - OH-INC	6,550.00	6,530.35	1,580.00	1,417.74	9.738	ES
(O) RU 031B - OH - OH-INC	6,850.00	6,774.54	1,602.84	1,435.01	9.550	SF
(O) RU 046A - OH - OH-SVY	147.68	8.41	3,151.28	3,150.76	6,124.492	CC
(O) RU 046A - OH - OH-SVY	535.00	354.13	3,152.20	3,146.70	573.863	ES
(O) RU 046A - OH - OH-SVY	10,600.00	7,150.41	3,420.44	3,313.22	31.900	SF
(O) RU 065 - OH - OH-INC	10,472.24	6,918.41	1,135.14	876.05	4.381	CC
(O) RU 065 - OH - OH-INC	10,500.00	6,918.39	1,135.48	875.98	4.376	ES, SF
(O) RU 066 - OH - OH-INC	488.49	504.49	8,134.89	8,126.72	995.694	CC
(O) RU 066 - OH - OH-INC	6,350.00	6,340.64	8,158.61	7,963.16	41.745	ES
(O) RU 066 - OH - OH-INC	7,000.00	6,895.99	8,489.08	8,264.29	37.764	SF
(O) RU 066M - OH - OH-SVY	0.00	0.00	6,532.80			
(O) RU 066M - OH - OH-SVY	4,251.47	3,947.92	6,578.31	6,502.15	86.374	ES

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 #722H - Slot B05
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 #722H	**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 066M - OH - OH-SVY	6,500.00	5,147.00	6,903.53	6,721.39	37.901	SF
(O) RU 067 - OH - OH-INC	500.00	535.01	10,403.04	10,394.04	1,156.723	CC
(O) RU 067 - OH - OH-INC	6,315.05	6,350.16	10,411.58	10,266.04	71.538	ES
(O) RU 067 - OH - OH-INC	6,950.00	6,884.36	10,703.53	10,544.92	67.487	SF
(O) RU 068 - OH - OH-INC	500.00	481.01	1,240.46	1,232.83	162.677	CC
(O) RU 068 - OH - OH-INC	6,900.00	6,793.12	1,287.16	1,128.85	8.131	ES
(O) RU 068 - OH - OH-INC	7,050.00	6,877.86	1,294.70	1,133.95	8.054	SF
(O) RU 119 - OH - OH-INC	346.90	352.83	3,938.45	3,933.39	777.471	CC
(O) RU 119 - OH - OH-INC	6,315.05	6,318.25	3,985.94	3,790.16	20.359	ES
(O) RU 119 - OH - OH-INC	6,800.00	6,765.10	4,136.71	3,919.85	19.075	SF
(O) RU 125 - OH - OH-INC	6,230.50	6,395.44	5,731.11	5,521.79	27.380	CC
(O) RU 125 - OH - OH-INC	6,350.00	6,529.73	5,732.52	5,517.60	26.672	ES
(O) RU 125 - OH - OH-INC	6,850.00	6,961.68	5,940.27	5,707.56	25.526	SF
(O) RU 125E - OH - OH-INC	431.70	446.36	5,576.36	5,567.17	606.932	CC
(O) RU 125E - OH - OH-INC	6,350.00	6,367.08	5,607.56	5,427.18	31.088	ES
(O) RU 125E - OH - OH-INC	6,900.00	6,838.08	5,849.45	5,652.59	29.714	SF
(O) RU 153B - OH - OH-INC	10,830.18	6,950.77	387.42	58.02	1.176	Level 3, CC, ES, SF
(O) RU 153C - OH - OH-SVY	9,098.26	7,196.32	554.44	396.31	3.506	CC
(O) RU 153C - OH - OH-SVY	9,100.00	7,196.37	554.44	396.29	3.506	ES, SF
(O) RU 181D - OH - OH-SVY	444.99	383.00	14,920.89	14,918.70	6,812.938	CC
(O) RU 181D - OH - OH-SVY	535.00	425.60	14,921.04	14,918.38	5,598.233	ES
(O) RU 181D - OH - OH-SVY	6,950.00	6,945.18	16,116.38	16,060.74	289.695	SF
(O) RU 207 - OH - OH-INC	513.23	483.94	1,180.19	1,171.12	130.059	CC
(O) RU 207 - OH - OH-INC	3,100.00	3,038.00	1,205.85	1,138.28	17.846	ES, SF
(O) RU 207A - OH - OH-INC	2,832.58	2,809.00	864.14	798.81	13.227	CC, ES, SF
(O) RU 251 - OH - OH-TD	10,260.61	6,919.34	348.70	-15.30	0.958	Level 3, CC, ES, SF
(O) RU 374 - OH - OH-INC	14,307.61	3,574.00	3,885.26	3,772.82	34.554	CC, ES
(O) RU 374 - OH - OH-INC	16,500.00	3,574.00	4,461.15	4,307.69	29.070	SF
Rosa Pad 26 - 5 Well						
Rosa Unit #712H - OH - Prelim #1	500.00	500.00	59.92	56.55	17.783	CC
Rosa Unit #712H - OH - Prelim #1	535.00	534.29	59.94	56.32	16.566	ES
Rosa Unit #712H - OH - Prelim #1	800.00	793.20	72.02	66.53	13.129	SF
Rosa Unit #714H - OH - Prelim 1	1,078.35	1,078.51	30.50	23.06	4.099	CC
Rosa Unit #714H - OH - Prelim 1	1,200.00	1,200.02	31.05	22.75	3.739	ES
Rosa Unit #714H - OH - Prelim 1	1,500.00	1,499.67	36.63	26.19	3.509	SF
Rosa Unit #720H - OH - Prelim #1	500.00	500.00	20.00	16.63	5.935	CC
Rosa Unit #720H - OH - Prelim #1	535.00	534.77	20.01	16.39	5.528	ES
Rosa Unit #720H - OH - Prelim #1	20,626.08	20,808.89	1,792.90	1,343.97	3.994	SF
Rosa Unit #724H - OH - Prelim #1	500.00	500.00	20.00	16.63	5.935	CC, ES
Rosa Unit #724H - OH - Prelim #1	20,626.08	20,709.25	1,802.66	1,354.07	4.018	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

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	-78.56	2,636.35	-13,031.87	13,295.98				
100.00	100.00	100.52	100.52	0.25	1.06	-78.56	2,636.71	-13,032.01	13,296.19	13,294.89	1.30	N/A	
200.00	200.00	164.96	164.95	0.61	1.74	-78.56	2,637.33	-13,032.25	13,296.74	13,294.41	2.34	5,693.273	
300.00	300.00	229.38	229.37	0.97	2.41	-78.56	2,638.23	-13,032.60	13,297.56	13,294.19	3.37	3,948.165	

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 #722H - Slot B05
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 #722H	**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
400.00	400.00	300.03	300.00	1.33	3.16	-78.55	2,639.57	-13,033.13	13,298.65	13,294.18	4.47	2,977.974	ES
500.00	500.00	364.00	363.95	1.68	3.33	-78.54	2,641.09	-13,033.72	13,300.00	13,295.02	4.98	2,670.310	
535.00	535.00	376.93	376.88	1.81	3.35	-89.20	2,641.42	-13,033.86	13,300.54	13,295.42	5.12	2,600.112	
600.00	599.99	421.00	420.93	2.04	3.39	-89.20	2,642.38	-13,034.44	13,301.64	13,296.25	5.38	2,471.188	
700.00	699.99	452.00	451.93	2.40	3.43	-89.20	2,642.80	-13,034.92	13,303.58	13,297.81	5.77	2,306.438	
800.00	799.98	482.00	481.92	2.76	3.46	-89.20	2,643.06	-13,035.60	13,306.06	13,299.91	6.16	2,161.277	
900.00	899.97	512.00	511.90	3.12	3.50	-89.21	2,643.19	-13,036.57	13,309.17	13,302.62	6.55	2,032.099	
1,000.00	999.96	525.77	525.66	3.48	3.51	-89.21	2,643.21	-13,037.09	13,312.83	13,305.91	6.92	1,922.699	
1,100.00	1,099.96	542.00	541.88	3.84	3.53	-89.21	2,643.21	-13,037.80	13,317.10	13,309.80	7.30	1,823.908	
1,200.00	1,199.95	572.00	571.83	4.19	3.57	-89.21	2,643.15	-13,039.37	13,322.03	13,314.32	7.70	1,729.498	
1,300.00	1,299.94	572.00	571.83	4.55	3.57	-89.21	2,643.15	-13,039.37	13,327.52	13,319.46	8.06	1,653.875	
1,400.00	1,399.93	602.00	601.77	4.91	3.61	-89.22	2,642.97	-13,041.32	13,333.68	13,325.22	8.46	1,575.339	
1,500.00	1,499.93	602.00	601.77	5.27	3.61	-89.22	2,642.97	-13,041.32	13,340.45	13,331.63	8.82	1,512.807	
1,600.00	1,599.92	633.00	632.68	5.63	3.66	-89.22	2,642.72	-13,043.69	13,347.82	13,338.59	9.23	1,446.638	
1,700.00	1,699.91	648.39	648.02	5.99	3.68	-89.22	2,642.59	-13,044.98	13,355.80	13,346.19	9.61	1,390.110	
1,800.00	1,799.90	663.00	662.57	6.34	3.70	-89.23	2,642.46	-13,046.28	13,364.38	13,354.39	9.99	1,338.234	
1,900.00	1,899.90	693.00	692.42	6.70	3.76	-89.23	2,642.16	-13,049.19	13,373.59	13,363.19	10.40	1,286.195	
2,000.00	1,999.89	693.00	692.42	7.06	3.76	-89.23	2,642.16	-13,049.19	13,383.39	13,372.64	10.75	1,245.141	
2,100.00	2,099.88	722.00	721.26	7.42	3.81	-89.24	2,641.96	-13,052.26	13,393.77	13,382.61	11.16	1,200.370	
2,200.00	2,199.87	722.00	721.26	7.78	3.81	-89.24	2,641.96	-13,052.26	13,404.83	13,393.32	11.51	1,164.930	
2,300.00	2,299.87	753.00	752.05	8.14	3.88	-89.24	2,641.96	-13,055.88	13,416.45	13,404.52	11.93	1,124.809	
2,400.00	2,399.86	753.00	752.05	8.50	3.88	-89.24	2,641.96	-13,055.88	13,428.75	13,416.48	12.27	1,094.010	
2,500.00	2,499.85	783.00	781.79	8.85	3.96	-89.24	2,642.21	-13,059.74	13,441.63	13,428.93	12.70	1,058.654	
2,600.00	2,599.85	796.51	795.18	9.21	3.99	-89.25	2,642.39	-13,061.57	13,455.13	13,442.05	13.08	1,028.841	
2,700.00	2,699.84	814.00	812.49	9.57	4.04	-89.25	2,642.66	-13,064.05	13,469.26	13,455.79	13.47	1,000.043	
2,800.00	2,799.83	814.00	812.49	9.93	4.04	-89.25	2,642.66	-13,064.05	13,484.04	13,470.22	13.81	976.291	
2,900.00	2,899.82	844.00	842.14	10.29	4.12	-89.25	2,643.02	-13,068.62	13,499.35	13,485.11	14.24	947.997	
3,000.00	2,999.82	857.43	855.39	10.65	4.16	-89.25	2,643.11	-13,070.79	13,515.31	13,500.69	14.62	924.339	
3,100.00	3,099.81	875.00	872.71	11.01	4.21	-89.26	2,643.15	-13,073.77	13,531.89	13,516.87	15.01	901.227	
3,200.00	3,199.80	875.00	872.71	11.36	4.21	-89.26	2,643.15	-13,073.77	13,549.10	13,533.75	15.35	882.501	
3,300.00	3,299.79	888.95	886.43	11.72	4.25	-89.26	2,643.13	-13,076.28	13,566.95	13,551.21	15.74	861.927	
3,400.00	3,399.79	905.00	902.18	12.08	4.31	-89.26	2,643.05	-13,079.38	13,585.49	13,569.36	16.13	842.053	
3,500.00	3,499.78	905.00	902.18	12.44	4.31	-89.26	2,643.05	-13,079.38	13,604.63	13,588.16	16.47	826.130	
3,600.00	3,599.77	936.00	932.51	12.80	4.41	-89.27	2,642.64	-13,085.75	13,624.42	13,607.51	16.91	805.466	
3,700.00	3,699.76	936.00	932.51	13.16	4.41	-89.27	2,642.64	-13,085.75	13,644.75	13,627.50	17.25	791.163	
3,800.00	3,799.76	967.00	962.76	13.52	4.51	-89.28	2,641.89	-13,092.48	13,665.65	13,647.96	17.68	772.791	
3,900.00	3,899.75	979.64	975.07	13.87	4.55	-89.29	2,641.56	-13,095.32	13,687.12	13,669.06	18.06	757.994	
4,000.00	3,999.74	997.00	991.97	14.23	4.60	-89.29	2,641.18	-13,099.29	13,709.17	13,690.72	18.44	743.254	
4,100.00	4,099.73	1,014.11	1,008.60	14.59	4.66	-89.30	2,640.84	-13,103.30	13,731.79	13,712.96	18.83	729.201	
4,200.00	4,199.73	1,027.00	1,021.11	14.95	4.70	-89.30	2,640.59	-13,106.38	13,754.98	13,735.78	19.20	716.242	
4,300.00	4,299.72	1,027.00	1,021.11	15.31	4.70	-89.30	2,640.59	-13,106.38	13,778.83	13,759.30	19.53	705.609	
4,400.00	4,399.71	1,058.00	1,051.11	15.67	4.82	-89.31	2,639.78	-13,114.18	13,803.18	13,783.21	19.97	691.049	
4,500.00	4,499.70	1,058.00	1,051.11	16.03	4.82	-89.31	2,639.78	-13,114.18	13,828.18	13,807.88	20.29	681.374	
4,600.00	4,599.70	1,089.00	1,080.96	16.38	4.93	-89.33	2,638.70	-13,122.45	13,853.75	13,833.01	20.74	667.841	
4,700.00	4,699.69	1,089.00	1,080.96	16.74	4.93	-89.33	2,638.70	-13,122.45	13,879.88	13,858.82	21.06	659.018	
4,800.00	4,799.68	1,103.78	1,095.16	17.10	4.99	-89.33	2,638.15	-13,126.55	13,906.60	13,885.16	21.44	648.623	
4,900.00	4,899.67	1,119.00	1,109.73	17.46	5.05	-89.34	2,637.62	-13,130.91	13,933.94	13,912.12	21.82	638.594	
5,000.00	4,999.67	1,119.00	1,109.73	17.82	5.05	-89.34	2,637.62	-13,130.91	13,961.86	13,939.73	22.13	630.831	
5,100.00	5,099.66	1,135.77	1,125.74	18.18	5.11	-89.35	2,637.07	-13,135.84	13,990.36	13,967.84	22.52	621.262	
5,200.00	5,199.65	1,150.00	1,139.30	18.53	5.17	-89.35	2,636.63	-13,140.14	14,019.44	13,996.55	22.89	612.376	
5,300.00	5,299.64	1,186.74	1,174.24	18.89	5.31	-89.37	2,635.48	-13,151.43	14,049.03	14,025.67	23.36	601.313	
5,400.00	5,399.64	1,234.07	1,219.20	19.25	5.49	-89.39	2,633.61	-13,166.13	14,078.92	14,055.03	23.88	589.508	

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 #722H - Slot B05
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 #722H	**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
5,500.00	5,499.63	1,245.00	1,229.56	19.61	5.53	-89.40	2,633.16	-13,169.56	14,109.26	14,085.02	24.24	582.111	
5,600.00	5,599.62	1,277.00	1,259.84	19.97	5.66	-89.41	2,631.95	-13,179.85	14,140.17	14,115.47	24.69	572.615	
5,700.00	5,699.61	1,277.00	1,259.84	20.33	5.66	-89.41	2,631.95	-13,179.85	14,171.56	14,146.57	25.00	566.924	
5,800.00	5,799.61	1,277.00	1,259.84	20.69	5.66	-89.41	2,631.95	-13,179.85	14,203.59	14,178.30	25.30	561.432	
5,884.74	5,884.34	6,058.50	5,931.80	20.99	79.87	-90.10	2,644.44	-13,816.91	14,067.66	13,967.04	100.62	139.811	
5,900.00	5,899.60	6,072.44	5,945.75	21.04	80.27	-90.10	2,644.44	-13,816.91	14,067.67	13,966.60	101.07	139.184	
6,000.00	5,999.59	6,163.85	6,037.14	21.40	82.89	-90.11	2,644.42	-13,817.01	14,067.77	13,963.72	104.05	135.204	
6,100.00	6,099.58	6,255.26	6,128.54	21.76	85.51	-90.11	2,644.40	-13,817.16	14,067.93	13,960.91	107.02	131.447	
6,200.00	6,199.58	6,346.67	6,219.94	22.12	88.13	-90.12	2,644.36	-13,817.38	14,068.16	13,958.16	110.00	127.893	
6,300.00	6,299.57	6,438.08	6,311.34	22.48	90.76	-90.12	2,644.32	-13,817.65	14,068.44	13,955.47	112.97	124.527	
6,315.05	6,314.62	6,451.84	6,325.10	22.53	91.15	-90.12	2,644.31	-13,817.69	14,068.49	13,955.07	113.42	124.036	
6,350.00	6,349.55	6,483.77	6,357.02	22.66	92.07	-159.29	2,644.29	-13,817.80	14,069.56	13,955.10	114.46	122.921	
6,400.00	6,399.30	6,529.24	6,402.48	22.83	93.37	-166.13	2,644.27	-13,817.98	14,074.38	13,958.45	115.93	121.399	
6,450.00	6,448.52	6,574.21	6,447.44	23.00	94.66	-167.88	2,644.24	-13,818.16	14,083.07	13,965.68	117.39	119.965	
6,500.00	6,496.91	6,618.39	6,491.62	23.18	95.93	-168.56	2,644.21	-13,818.35	14,095.56	13,976.73	118.82	118.625	
6,550.00	6,544.17	6,661.52	6,534.74	23.35	97.16	-168.82	2,644.17	-13,818.56	14,111.78	13,991.56	120.22	117.381	
6,600.00	6,590.01	6,703.32	6,576.54	23.53	98.36	-168.83	2,644.14	-13,818.77	14,131.62	14,010.05	121.57	116.239	
6,650.00	6,634.14	6,743.54	6,616.75	23.70	99.52	-168.66	2,644.11	-13,818.98	14,154.97	14,032.10	122.87	115.200	
6,700.00	6,676.30	6,781.92	6,655.13	23.88	100.62	-168.34	2,644.07	-13,819.19	14,181.68	14,057.57	124.11	114.267	
6,750.00	6,716.21	6,818.23	6,691.43	24.06	101.66	-167.86	2,644.04	-13,819.41	14,211.57	14,086.29	125.28	113.440	
6,800.00	6,753.65	6,852.24	6,725.43	24.24	102.63	-167.20	2,644.00	-13,819.61	14,244.48	14,118.11	126.37	112.720	
6,850.00	6,788.37	6,883.74	6,756.92	24.44	103.54	-166.32	2,643.97	-13,819.81	14,280.19	14,152.81	127.38	112.107	
6,900.00	6,820.16	6,912.53	6,785.72	24.63	104.36	-165.18	2,643.94	-13,820.00	14,318.47	14,190.17	128.30	111.601	
6,950.00	6,848.83	6,938.45	6,811.63	24.84	105.11	-163.66	2,643.91	-13,820.17	14,359.11	14,229.98	129.13	111.201	
7,000.00	6,874.19	6,961.33	6,834.50	25.06	105.76	-161.64	2,643.89	-13,820.33	14,401.83	14,271.97	129.85	110.907	
7,050.00	6,896.10	6,981.03	6,854.20	25.29	106.33	-158.84	2,643.87	-13,820.47	14,446.38	14,315.90	130.48	110.717	
7,100.00	6,914.42	6,997.43	6,870.60	25.53	106.80	-154.83	2,643.85	-13,820.59	14,492.48	14,361.48	131.00	110.629 SF	
7,150.00	6,929.03	7,010.44	6,883.60	25.78	107.17	-148.76	2,643.83	-13,820.68	14,539.85	14,408.44	131.41	110.641	
7,200.00	6,939.85	7,019.97	6,893.14	26.05	107.45	-138.97	2,643.82	-13,820.75	14,588.19	14,456.47	131.72	110.753	
7,250.00	6,946.80	7,025.98	6,899.14	26.32	107.62	-122.28	2,643.81	-13,820.79	14,637.21	14,505.29	131.91	110.960	
7,300.00	6,949.85	7,028.42	6,901.58	26.61	107.69	-95.72	2,643.81	-13,820.81	14,686.60	14,554.59	132.00	111.261	
7,314.43	6,950.00	7,028.46	6,901.62	26.69	107.69	-86.82	2,643.81	-13,820.81	14,700.88	14,568.87	132.01	111.364	
7,400.00	6,949.92	7,027.81	6,900.97	27.21	107.67	-86.80	2,643.81	-13,820.81	14,785.56	14,653.55	132.01	112.002	
7,500.00	6,949.83	7,027.06	6,900.22	27.90	107.65	-86.78	2,643.81	-13,820.80	14,884.53	14,752.52	132.02	112.746	
7,600.00	6,949.74	7,026.30	6,899.47	28.66	107.63	-86.76	2,643.81	-13,820.80	14,983.52	14,851.50	132.03	113.487	
7,700.00	6,949.65	7,025.55	6,898.71	29.49	107.61	-86.74	2,643.82	-13,820.79	15,082.53	14,950.49	132.04	114.226	
7,800.00	6,949.56	7,024.80	6,897.96	30.38	107.58	-86.72	2,643.82	-13,820.79	15,181.54	15,049.49	132.06	114.963	
7,900.00	6,949.47	7,024.05	6,897.21	31.33	107.56	-86.70	2,643.82	-13,820.78	15,280.57	15,148.50	132.07	115.698	
8,000.00	6,949.38	7,023.30	6,896.46	32.33	107.54	-86.68	2,643.82	-13,820.77	15,379.61	15,247.52	132.09	116.431	
8,100.00	6,949.29	7,022.55	6,895.71	33.38	107.52	-86.66	2,643.82	-13,820.77	15,478.67	15,346.55	132.11	117.161	
8,200.00	6,949.20	7,021.80	6,894.97	34.47	107.50	-86.64	2,643.82	-13,820.76	15,577.73	15,445.59	132.14	117.890	
8,300.00	6,949.11	7,021.06	6,894.22	35.60	107.48	-86.62	2,643.82	-13,820.76	15,676.81	15,544.65	132.16	118.617	
8,400.00	6,949.02	7,020.31	6,893.47	36.76	107.45	-86.60	2,643.82	-13,820.75	15,775.90	15,643.71	132.19	119.341	
8,500.00	6,948.93	7,019.57	6,892.73	37.96	107.43	-86.58	2,643.82	-13,820.75	15,875.00	15,742.78	132.22	120.064	
8,600.00	6,948.84	7,018.82	6,891.99	39.18	107.41	-86.56	2,643.82	-13,820.74	15,974.11	15,841.86	132.25	120.785	
8,700.00	6,948.75	7,018.08	6,891.24	40.43	107.39	-86.54	2,643.82	-13,820.74	16,073.23	15,940.95	132.29	121.504	
8,800.00	6,948.66	7,017.34	6,890.50	41.71	107.37	-86.52	2,643.83	-13,820.73	16,172.37	16,040.05	132.32	122.221	
8,900.00	6,948.57	7,016.60	6,889.76	43.00	107.35	-86.50	2,643.83	-13,820.73	16,271.51	16,139.15	132.36	122.936	
9,000.00	6,948.48	7,015.86	6,889.02	44.32	107.33	-86.48	2,643.83	-13,820.72	16,370.66	16,238.27	132.40	123.649	
9,100.00	6,948.39	7,015.12	6,888.28	45.66	107.31	-86.46	2,643.83	-13,820.71	16,469.83	16,337.39	132.44	124.360	
9,200.00	6,948.30	7,014.38	6,887.54	47.01	107.28	-86.44	2,643.83	-13,820.71	16,569.00	16,436.52	132.48	125.069	
9,300.00	6,948.21	7,013.64	6,886.81	48.38	107.26	-86.42	2,643.83	-13,820.70	16,668.19	16,535.67	132.52	125.777	

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 #722H - Slot B05
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 #722H	**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
9,400.00	6,948.12	7,012.90	6,886.07	49.76	107.24	-86.40	2,643.83	-13,820.70	16,767.38	16,634.82	132.57	126.483	
9,500.00	6,948.03	7,012.17	6,885.34	51.16	107.22	-86.38	2,643.83	-13,820.69	16,866.59	16,733.97	132.61	127.187	
9,600.00	6,947.94	7,011.43	6,884.60	52.56	107.20	-86.36	2,643.83	-13,820.69	16,965.80	16,833.14	132.66	127.889	
9,700.00	6,947.85	7,010.70	6,883.87	53.98	107.18	-86.34	2,643.83	-13,820.68	17,065.02	16,932.31	132.71	128.590	
9,800.00	6,947.76	7,009.97	6,883.13	55.41	107.16	-86.32	2,643.83	-13,820.68	17,164.25	17,031.49	132.76	129.289	
9,900.00	6,947.67	7,009.24	6,882.40	56.85	107.14	-86.30	2,643.83	-13,820.67	17,263.49	17,130.68	132.81	129.986	
10,000.00	6,947.58	7,008.51	6,881.67	58.29	107.12	-86.28	2,643.84	-13,820.67	17,362.74	17,229.88	132.86	130.682	
10,100.00	6,947.49	7,007.78	6,880.94	59.75	107.10	-86.26	2,643.84	-13,820.66	17,462.00	17,329.08	132.92	131.376	
10,200.00	6,947.40	7,007.05	6,880.21	61.21	107.07	-86.24	2,643.84	-13,820.66	17,561.26	17,428.29	132.97	132.068	
10,300.00	6,947.31	7,006.32	6,879.49	62.68	107.05	-86.22	2,643.84	-13,820.65	17,660.53	17,527.51	133.03	132.758	
10,400.00	6,947.22	7,005.59	6,878.76	64.15	107.03	-86.20	2,643.84	-13,820.65	17,759.82	17,626.73	133.08	133.447	
10,500.00	6,947.13	7,004.87	6,878.03	65.63	107.01	-86.18	2,643.84	-13,820.64	17,859.11	17,725.96	133.14	134.135	
10,600.00	6,947.04	7,004.14	6,877.31	67.12	106.99	-86.16	2,643.84	-13,820.63	17,958.40	17,825.20	133.20	134.820	
10,700.00	6,946.95	7,003.42	6,876.58	68.61	106.97	-86.14	2,643.84	-13,820.63	18,057.71	17,924.45	133.26	135.504	
10,800.00	6,946.86	7,002.69	6,875.86	70.11	106.95	-86.12	2,643.84	-13,820.62	18,157.02	18,023.70	133.32	136.187	
10,900.00	6,946.77	7,001.97	6,875.14	71.61	106.93	-86.10	2,643.84	-13,820.62	18,256.34	18,122.96	133.39	136.868	
11,000.00	6,946.68	7,001.25	6,874.41	73.11	106.91	-86.08	2,643.84	-13,820.61	18,355.67	18,222.22	133.45	137.548	
11,100.00	6,946.59	7,000.53	6,873.69	74.62	106.89	-86.07	2,643.84	-13,820.61	18,455.01	18,321.49	133.51	138.226	
11,200.00	6,946.50	6,999.81	6,872.97	76.14	106.87	-86.05	2,643.85	-13,820.60	18,554.35	18,420.77	133.58	138.902	
11,300.00	6,946.41	6,999.09	6,872.26	77.65	106.85	-86.03	2,643.85	-13,820.60	18,653.70	18,520.05	133.64	139.577	
11,400.00	6,946.32	6,998.37	6,871.54	79.18	106.83	-86.01	2,643.85	-13,820.59	18,753.05	18,619.34	133.71	140.251	
11,500.00	6,946.23	6,997.65	6,870.82	80.70	106.80	-85.99	2,643.85	-13,820.59	18,852.41	18,718.64	133.78	140.923	
11,600.00	6,946.14	6,996.94	6,870.10	82.23	106.78	-85.97	2,643.85	-13,820.58	18,951.78	18,817.94	133.85	141.593	
11,700.00	6,946.05	6,996.22	6,869.39	83.76	106.76	-85.95	2,643.85	-13,820.58	19,051.16	18,917.24	133.92	142.262	
11,800.00	6,945.96	6,995.50	6,868.67	85.29	106.74	-85.93	2,643.85	-13,820.57	19,150.54	19,016.56	133.99	142.930	
11,900.00	6,945.87	6,994.79	6,867.96	86.82	106.72	-85.91	2,643.85	-13,820.57	19,249.93	19,115.88	134.06	143.596	
12,000.00	6,945.78	6,994.08	6,867.25	88.36	106.70	-85.89	2,643.85	-13,820.56	19,349.33	19,215.20	134.13	144.261	
12,100.00	6,945.69	6,993.37	6,866.54	89.90	106.68	-85.87	2,643.85	-13,820.56	19,448.73	19,314.53	134.20	144.925	
12,200.00	6,945.60	6,992.66	6,865.82	91.44	106.66	-85.85	2,643.85	-13,820.55	19,548.13	19,413.86	134.27	145.587	
12,300.00	6,945.51	6,991.94	6,865.11	92.99	106.64	-85.83	2,643.85	-13,820.55	19,647.55	19,513.20	134.34	146.247	
12,400.00	6,945.42	6,991.24	6,864.40	94.53	106.62	-85.81	2,643.86	-13,820.54	19,746.97	19,612.55	134.42	146.907	
12,500.00	6,945.33	6,990.53	6,863.70	96.08	106.60	-85.80	2,643.86	-13,820.54	19,846.39	19,711.90	134.49	147.564	
12,600.00	6,945.24	6,989.82	6,862.99	97.63	106.58	-85.78	2,643.86	-13,820.53	19,945.82	19,811.26	134.57	148.221	
12,700.00	6,945.15	6,989.11	6,862.28	99.18	106.56	-85.76	2,643.86	-13,820.53	20,045.26	19,910.62	134.64	148.876	
12,800.00	6,945.06	6,988.41	6,861.58	100.74	106.54	-85.74	2,643.86	-13,820.52	20,144.70	20,009.98	134.72	149.530	
12,900.00	6,944.96	6,987.70	6,860.87	102.29	106.52	-85.72	2,643.86	-13,820.52	20,244.15	20,109.35	134.80	150.183	
13,000.00	6,944.87	6,987.00	6,860.17	103.85	106.50	-85.70	2,643.86	-13,820.51	20,343.60	20,208.73	134.87	150.834	
13,100.00	6,944.78	6,986.29	6,859.46	105.40	106.48	-85.68	2,643.86	-13,820.51	20,443.06	20,308.11	134.95	151.484	
13,200.00	6,944.69	6,985.59	6,858.76	106.96	106.46	-85.66	2,643.86	-13,820.50	20,542.52	20,407.49	135.03	152.132	
13,300.00	6,944.60	6,984.89	6,858.06	108.52	106.44	-85.64	2,643.86	-13,820.50	20,641.99	20,506.88	135.11	152.780	
13,400.00	6,944.51	6,984.19	6,857.36	110.08	106.42	-85.62	2,643.86	-13,820.49	20,741.47	20,606.28	135.19	153.425	
13,500.00	6,944.42	6,983.49	6,856.66	111.65	106.40	-85.61	2,643.86	-13,820.49	20,840.94	20,705.67	135.27	154.070	
13,600.00	6,944.33	6,982.79	6,855.96	113.21	106.38	-85.59	2,643.87	-13,820.48	20,940.43	20,805.08	135.35	154.714	
13,700.00	6,944.24	6,982.09	6,855.26	114.78	106.36	-85.57	2,643.87	-13,820.48	21,039.92	20,904.49	135.43	155.356	
13,800.00	6,944.15	6,981.40	6,854.57	116.34	106.34	-85.55	2,643.87	-13,820.47	21,139.41	21,003.90	135.51	155.997	
13,900.00	6,944.06	6,980.70	6,853.87	117.91	106.32	-85.53	2,643.87	-13,820.47	21,238.91	21,103.31	135.59	156.636	
14,000.00	6,943.97	6,980.00	6,853.17	119.48	106.30	-85.51	2,643.87	-13,820.46	21,338.41	21,202.73	135.68	157.275	
14,100.00	6,943.88	6,979.31	6,852.48	121.05	106.28	-85.49	2,643.87	-13,820.46	21,437.92	21,302.16	135.76	157.912	
14,200.00	6,943.79	6,978.61	6,851.79	122.62	106.26	-85.47	2,643.87	-13,820.45	21,537.43	21,401.59	135.84	158.548	
14,300.00	6,943.70	6,977.92	6,851.09	124.19	106.24	-85.46	2,643.87	-13,820.45	21,636.94	21,501.02	135.93	159.182	
14,400.00	6,943.61	6,977.23	6,850.40	125.76	106.22	-85.44	2,643.87	-13,820.44	21,736.47	21,600.46	136.01	159.816	
14,500.00	6,943.52	6,976.54	6,849.71	127.33	106.20	-85.42	2,643.87	-13,820.44	21,835.99	21,699.90	136.09	160.448	

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 #722H - Slot B05
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 #722H	**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
14,600.00	6,943.43	6,975.85	6,849.02	128.90	106.18	-85.40	2,643.87	-13,820.43	21,935.52	21,799.34	136.18	161.079	
14,700.00	6,943.34	6,975.16	6,848.33	130.48	106.16	-85.38	2,643.87	-13,820.43	22,035.05	21,898.79	136.26	161.709	
14,800.00	6,943.25	6,974.47	6,847.64	132.05	106.14	-85.36	2,643.87	-13,820.42	22,134.59	21,998.24	136.35	162.337	
14,900.00	6,943.16	6,973.78	6,846.95	133.63	106.12	-85.34	2,643.88	-13,820.42	22,234.13	22,097.70	136.44	162.964	
15,000.00	6,943.07	6,973.09	6,846.27	135.20	106.10	-85.33	2,643.88	-13,820.41	22,333.68	22,197.16	136.52	163.591	
15,100.00	6,942.98	6,972.41	6,845.58	136.78	106.08	-85.31	2,643.88	-13,820.41	22,433.23	22,296.62	136.61	164.216	
15,200.00	6,942.89	6,971.72	6,844.89	138.36	106.06	-85.29	2,643.88	-13,820.40	22,532.78	22,396.09	136.70	164.839	
15,300.00	6,942.80	6,971.04	6,844.21	139.93	106.04	-85.27	2,643.88	-13,820.40	22,632.34	22,495.56	136.78	165.462	
15,400.00	6,942.71	6,970.35	6,843.53	141.51	106.02	-85.25	2,643.88	-13,820.39	22,731.90	22,595.03	136.87	166.083	
15,500.00	6,942.62	6,969.67	6,842.84	143.09	106.00	-85.23	2,643.88	-13,820.39	22,831.47	22,694.51	136.96	166.704	
15,600.00	6,942.53	6,968.99	6,842.16	144.67	105.98	-85.22	2,643.88	-13,820.38	22,931.04	22,793.99	137.05	167.323	
15,700.00	6,942.44	6,968.31	6,841.48	146.25	105.96	-85.20	2,643.88	-13,820.38	23,030.61	22,893.47	137.14	167.940	
15,800.00	6,942.35	6,967.63	6,840.80	147.83	105.94	-85.18	2,643.88	-13,820.37	23,130.19	22,992.96	137.22	168.557	
15,900.00	6,942.26	6,966.95	6,840.12	149.41	105.92	-85.16	2,643.88	-13,820.37	23,229.77	23,092.45	137.31	169.173	
16,000.00	6,942.17	6,966.27	6,839.44	150.99	105.90	-85.14	2,643.88	-13,820.36	23,329.35	23,191.95	137.40	169.787	
16,100.00	6,942.08	6,965.59	6,838.76	152.57	105.89	-85.12	2,643.88	-13,820.36	23,428.94	23,291.44	137.49	170.400	
16,200.00	6,941.99	6,964.91	6,838.09	154.16	105.87	-85.11	2,643.89	-13,820.35	23,528.53	23,390.94	137.58	171.013	
16,300.00	6,941.90	6,964.24	6,837.41	155.74	105.85	-85.09	2,643.89	-13,820.35	23,628.12	23,490.45	137.67	171.624	
16,400.00	6,941.81	6,963.56	6,836.73	157.32	105.83	-85.07	2,643.89	-13,820.35	23,727.72	23,589.95	137.76	172.233	
16,500.00	6,941.72	6,962.89	6,836.06	158.91	105.81	-85.05	2,643.89	-13,820.34	23,827.32	23,689.46	137.86	172.842	
16,600.00	6,941.63	6,962.21	6,835.39	160.49	105.79	-85.03	2,643.89	-13,820.34	23,926.92	23,788.98	137.95	173.450	
16,700.00	6,941.54	6,961.54	6,834.71	162.07	105.77	-85.02	2,643.89	-13,820.33	24,026.53	23,888.49	138.04	174.056	
16,800.00	6,941.45	6,960.87	6,834.04	163.66	105.75	-85.00	2,643.89	-13,820.33	24,126.14	23,988.01	138.13	174.662	
16,900.00	6,941.36	6,960.19	6,833.37	165.24	105.73	-84.98	2,643.89	-13,820.32	24,225.76	24,087.53	138.22	175.266	
17,000.00	6,941.27	6,959.52	6,832.70	166.83	105.71	-84.96	2,643.89	-13,820.32	24,325.37	24,187.06	138.32	175.869	
17,100.00	6,941.18	1,027.00	1,021.11	168.42	4.70	-19.59	2,640.59	-13,106.38	24,456.70	24,414.42	42.27	578.534	
17,200.00	6,941.09	1,027.00	1,021.11	170.00	4.70	-19.59	2,640.59	-13,106.38	24,553.26	24,510.83	42.43	578.617	
17,300.00	6,941.00	1,027.00	1,021.11	171.59	4.70	-19.59	2,640.59	-13,106.38	24,649.86	24,607.26	42.59	578.705	
17,400.00	6,940.91	1,027.00	1,021.11	173.18	4.70	-19.59	2,640.59	-13,106.38	24,746.48	24,703.72	42.76	578.796	
17,500.00	6,940.82	1,027.00	1,021.11	174.76	4.70	-19.59	2,640.59	-13,106.38	24,843.13	24,800.21	42.91	578.892	
17,600.00	6,940.73	1,027.00	1,021.11	176.35	4.70	-19.59	2,640.59	-13,106.38	24,939.80	24,896.73	43.07	578.992	
17,700.00	6,940.64	1,027.00	1,021.11	177.94	4.70	-19.59	2,640.59	-13,106.38	25,036.50	24,993.27	43.23	579.096	
17,800.00	6,940.55	1,027.00	1,021.11	179.53	4.70	-19.59	2,640.59	-13,106.38	25,133.23	25,089.84	43.39	579.204	
17,900.00	6,940.46	1,027.00	1,021.11	181.11	4.70	-19.59	2,640.59	-13,106.38	25,229.98	25,186.43	43.55	579.316	
18,000.00	6,940.37	1,027.00	1,021.11	182.70	4.70	-19.59	2,640.59	-13,106.38	25,326.76	25,283.05	43.71	579.431	
18,100.00	6,940.28	1,027.00	1,021.11	184.29	4.70	-19.59	2,640.59	-13,106.38	25,423.56	25,379.69	43.87	579.550	
18,200.00	6,940.19	1,027.00	1,021.11	185.88	4.70	-19.59	2,640.59	-13,106.38	25,520.39	25,476.36	44.03	579.673	
18,300.00	6,940.10	1,027.00	1,021.11	187.47	4.70	-19.59	2,640.59	-13,106.38	25,617.24	25,573.06	44.18	579.800	
18,400.00	6,940.01	1,012.79	1,007.32	189.06	4.66	-19.55	2,640.87	-13,102.98	25,714.07	25,669.76	44.31	580.269	
18,500.00	6,939.92	997.00	991.97	190.65	4.60	-19.51	2,641.18	-13,099.29	25,810.99	25,766.55	44.45	580.729	
18,600.00	6,939.83	997.00	991.97	192.24	4.60	-19.51	2,641.18	-13,099.29	25,907.89	25,863.29	44.60	580.858	
18,700.00	6,939.74	997.00	991.97	193.83	4.60	-19.51	2,641.18	-13,099.29	26,004.81	25,960.05	44.76	580.991	
18,800.00	6,939.65	997.00	991.97	195.42	4.60	-19.51	2,641.18	-13,099.29	26,101.75	26,056.84	44.92	581.128	
18,900.00	6,939.56	997.00	991.97	197.01	4.60	-19.51	2,641.18	-13,099.29	26,198.72	26,153.64	45.07	581.267	
19,000.00	6,939.47	997.00	991.97	198.60	4.60	-19.51	2,641.18	-13,099.29	26,295.70	26,250.48	45.23	581.410	
19,100.00	6,939.38	997.00	991.97	200.19	4.60	-19.51	2,641.18	-13,099.29	26,392.71	26,347.33	45.38	581.557	
19,200.00	6,939.29	997.00	991.97	201.78	4.60	-19.51	2,641.18	-13,099.29	26,489.75	26,444.21	45.54	581.706	
19,300.00	6,939.20	997.00	991.97	203.37	4.60	-19.51	2,641.18	-13,099.29	26,586.80	26,541.11	45.69	581.859	
19,400.00	6,939.11	997.00	991.97	204.97	4.60	-19.51	2,641.18	-13,099.29	26,683.88	26,638.03	45.85	582.014	
19,500.00	6,939.02	997.00	991.97	206.56	4.60	-19.51	2,641.18	-13,099.29	26,780.98	26,734.97	46.00	582.173	
19,600.00	6,938.93	997.00	991.97	208.15	4.60	-19.51	2,641.18	-13,099.29	26,878.09	26,831.94	46.16	582.334	
19,700.00	6,938.83	981.93	977.31	209.74	4.56	-19.47	2,641.51	-13,095.84	26,975.20	26,928.91	46.29	582.764	

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 #722H - Slot B05
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 #722H	**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
19,800.00	6,938.74	967.00	962.76	211.33	4.51	-19.43	2,641.89	-13,092.48	27,072.37	27,025.95	46.42	583.202	
19,900.00	6,938.65	967.00	962.76	212.93	4.51	-19.43	2,641.89	-13,092.48	27,169.53	27,122.95	46.57	583.366	
20,000.00	6,938.56	967.00	962.76	214.52	4.51	-19.43	2,641.89	-13,092.48	27,266.70	27,219.98	46.73	583.532	
20,100.00	6,938.47	967.00	962.76	216.11	4.51	-19.43	2,641.89	-13,092.48	27,363.90	27,317.02	46.88	583.701	
20,200.00	6,938.38	967.00	962.76	217.71	4.51	-19.43	2,641.89	-13,092.48	27,461.12	27,414.09	47.03	583.873	
20,300.00	6,938.29	967.00	962.76	219.30	4.51	-19.43	2,641.89	-13,092.48	27,558.36	27,511.17	47.19	584.047	
20,400.00	6,938.20	967.00	962.76	220.89	4.51	-19.43	2,641.89	-13,092.48	27,655.61	27,608.28	47.34	584.224	
20,500.00	6,938.11	967.00	962.76	222.49	4.51	-19.43	2,641.89	-13,092.48	27,752.89	27,705.40	47.49	584.403	
20,600.00	6,938.02	967.00	962.76	224.08	4.51	-19.43	2,641.89	-13,092.48	27,850.19	27,802.55	47.64	584.585	
20,626.08	6,938.00	967.00	962.76	224.49	4.51	-19.43	2,641.89	-13,092.48	27,875.57	27,827.89	47.68	584.633	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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
0.00	0.00	0.00	0.00	0.00	0.00	-88.62	354.65	-14,748.83	14,753.12				
100.00	100.00	95.22	95.22	0.25	0.17	-88.62	354.50	-14,748.75	14,753.03	14,752.61	0.42	N/A	
200.00	200.00	233.21	233.20	0.61	0.42	-88.63	353.75	-14,748.34	14,752.72	14,751.69	1.03	N/A	
300.00	300.00	371.32	371.31	0.97	0.69	-88.63	352.34	-14,747.59	14,752.16	14,750.50	1.66	8,910.287	
400.00	400.00	478.00	477.92	1.33	1.08	-88.65	348.80	-14,746.88	14,751.40	14,749.00	2.40	6,147.632	
500.00	500.00	525.45	525.26	1.68	1.25	-88.66	345.72	-14,746.64	14,750.80	14,747.86	2.93	5,031.173	
535.00	535.00	540.00	539.78	1.81	1.30	-99.33	344.63	-14,746.63	14,750.73	14,747.62	3.11	4,741.856	
541.57	541.57	540.00	539.78	1.83	1.30	-99.33	344.63	-14,746.63	14,750.73	14,747.60	3.13	4,706.317	CC
600.00	599.99	559.94	559.66	2.04	1.38	-99.34	343.06	-14,746.66	14,750.82	14,747.40	3.42	4,316.684	
700.00	699.99	596.69	596.27	2.40	1.51	-99.35	339.86	-14,746.83	14,751.29	14,747.38	3.91	3,770.247	ES
800.00	799.98	626.00	625.43	2.76	1.62	-99.37	336.94	-14,747.10	14,752.21	14,747.83	4.38	3,367.745	
900.00	899.97	671.06	670.18	3.12	1.80	-99.39	331.79	-14,747.70	14,753.53	14,748.62	4.91	3,004.252	
1,000.00	999.96	720.00	718.63	3.48	1.99	-99.42	324.90	-14,748.63	14,755.30	14,749.84	5.46	2,702.067	
1,100.00	1,099.96	751.00	749.21	3.84	2.11	-99.44	319.84	-14,749.30	14,757.40	14,751.46	5.94	2,482.897	
1,200.00	1,199.95	794.73	792.14	4.19	2.30	-99.47	311.60	-14,750.48	14,759.95	14,753.47	6.48	2,276.369	
1,300.00	1,299.94	866.91	862.60	4.55	2.61	-99.54	296.09	-14,752.68	14,762.83	14,755.67	7.16	2,062.983	
1,400.00	1,399.93	960.80	953.70	4.91	3.04	-99.63	273.59	-14,755.57	14,765.75	14,757.80	7.95	1,858.225	
1,500.00	1,499.93	1,138.50	1,125.79	5.27	3.89	-99.81	229.64	-14,760.98	14,768.80	14,759.64	9.15	1,613.351	
1,600.00	1,599.92	1,162.00	1,148.56	5.63	4.01	-99.83	223.85	-14,761.63	14,771.57	14,761.94	9.63	1,534.651	
1,700.00	1,699.91	1,224.00	1,208.63	5.99	4.31	-99.89	208.65	-14,763.68	14,774.80	14,764.52	10.28	1,436.627	
1,800.00	1,799.90	1,234.62	1,218.93	6.34	4.36	-99.90	206.09	-14,764.09	14,778.46	14,767.76	10.69	1,382.169	
1,900.00	1,899.90	1,368.58	1,349.26	6.70	5.00	-100.03	175.54	-14,769.26	14,782.38	14,770.69	11.69	1,264.484	
2,000.00	1,999.89	1,471.07	1,449.19	7.06	5.49	-100.12	153.12	-14,773.02	14,786.13	14,773.60	12.53	1,179.737	
2,100.00	2,099.88	1,539.00	1,515.33	7.42	5.81	-100.18	137.83	-14,775.50	14,789.93	14,776.71	13.22	1,119.096	
2,200.00	2,199.87	1,791.00	1,760.45	7.78	7.04	-100.42	79.96	-14,783.63	14,793.20	14,778.40	14.80	999.785	
2,300.00	2,299.87	1,854.00	1,821.59	8.14	7.35	-100.48	64.85	-14,785.44	14,796.30	14,780.84	15.46	956.793	
2,400.00	2,399.86	1,854.00	1,821.59	8.50	7.35	-100.48	64.85	-14,785.44	14,799.88	14,784.06	15.82	935.508	
2,500.00	2,499.85	1,917.00	1,882.54	8.85	7.67	-100.54	49.11	-14,787.78	14,803.90	14,787.41	16.49	897.571	
2,600.00	2,599.85	2,284.29	2,239.23	9.21	9.48	-100.90	-37.64	-14,799.17	14,807.68	14,789.02	18.66	793.368	
2,700.00	2,699.84	2,316.23	2,270.34	9.57	9.64	-100.93	-44.83	-14,799.88	14,810.35	14,791.17	19.18	772.358	
2,800.00	2,799.83	2,355.00	2,308.09	9.93	9.82	-100.96	-53.61	-14,801.00	14,813.55	14,793.83	19.72	751.204	
2,900.00	2,899.82	2,400.37	2,352.26	10.29	10.04	-101.00	-63.87	-14,802.48	14,817.17	14,796.87	20.30	730.061	
3,000.00	2,999.82	2,505.19	2,454.30	10.65	10.55	-101.10	-87.60	-14,805.79	14,820.81	14,799.65	21.16	700.370	
3,100.00	3,099.81	2,626.60	2,572.56	11.01	11.14	-101.21	-114.81	-14,809.75	14,824.62	14,802.52	22.11	670.618	
3,200.00	3,199.80	2,839.66	2,780.56	11.36	12.16	-101.40	-160.65	-14,815.09	14,827.50	14,804.02	23.48	631.524	
3,300.00	3,299.79	3,202.47	3,138.05	11.72	13.73	-101.65	-221.44	-14,819.83	14,828.89	14,803.48	25.41	583.638	
3,400.00	3,399.79	3,256.59	3,191.75	12.08	13.94	-101.68	-228.10	-14,820.28	14,830.19	14,804.21	25.98	570.858	
3,500.00	3,499.78	3,320.45	3,255.22	12.44	14.19	-101.71	-235.11	-14,820.99	14,831.75	14,805.17	26.58	557.989	
3,600.00	3,599.77	3,683.92	3,618.17	12.80	15.32	-101.77	-248.42	-14,822.18	14,831.98	14,803.91	28.07	528.346	
3,700.00	3,699.76	3,788.42	3,722.68	13.16	15.64	-101.78	-248.30	-14,821.82	14,831.88	14,803.13	28.75	515.839	
3,800.00	3,799.76	3,893.22	3,827.48	13.52	15.96	-101.78	-248.16	-14,821.42	14,831.75	14,802.31	29.44	503.846	
3,900.00	3,899.75	3,998.02	3,932.28	13.87	16.29	-101.79	-248.02	-14,820.99	14,831.59	14,801.47	30.12	492.398	
4,000.00	3,999.74	4,102.82	4,037.08	14.23	16.61	-101.79	-247.87	-14,820.53	14,831.39	14,800.59	30.81	481.457	
4,100.00	4,099.73	4,207.62	4,141.87	14.59	16.94	-101.80	-247.70	-14,820.03	14,831.17	14,799.68	31.49	470.990	
4,200.00	4,199.73	4,312.42	4,246.67	14.95	17.26	-101.80	-247.52	-14,819.50	14,830.91	14,798.73	32.17	460.968	
4,300.00	4,299.72	4,417.22	4,351.47	15.31	17.58	-101.80	-247.33	-14,818.94	14,830.62	14,797.76	32.86	451.363	
4,400.00	4,399.71	4,522.02	4,456.27	15.67	17.91	-101.81	-247.13	-14,818.34	14,830.29	14,796.75	33.54	442.148	
4,500.00	4,499.70	4,626.82	4,561.07	16.03	18.23	-101.81	-246.92	-14,817.71	14,829.93	14,795.71	34.23	433.301	
4,600.00	4,599.70	4,731.62	4,665.86	16.38	18.56	-101.82	-246.70	-14,817.04	14,829.55	14,794.64	34.91	424.800	
4,700.00	4,699.69	4,836.42	4,770.66	16.74	18.88	-101.82	-246.47	-14,816.34	14,829.12	14,793.53	35.59	416.624	
4,800.00	4,799.68	4,941.22	4,875.46	17.10	19.21	-101.82	-246.22	-14,815.61	14,828.67	14,792.39	36.28	408.757	
4,900.00	4,899.67	5,046.02	4,980.25	17.46	19.53	-101.83	-245.96	-14,814.84	14,828.19	14,791.22	36.96	401.179	

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 #722H - Slot B05
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 #722H	**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)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	4,999.67	5,150.82	5,085.05	17.82	19.86	-101.83	-245.70	-14,814.04	14,827.67	14,790.02	37.65	393.877	
5,100.00	5,099.66	5,255.62	5,189.84	18.18	20.18	-101.84	-245.42	-14,813.21	14,827.12	14,788.79	38.33	386.834	
5,200.00	5,199.65	5,360.41	5,294.64	18.53	20.51	-101.84	-245.13	-14,812.34	14,826.53	14,787.52	39.01	380.037	
5,300.00	5,299.64	5,465.21	5,399.43	18.89	20.83	-101.84	-244.82	-14,811.44	14,825.92	14,786.22	39.70	373.474	
5,400.00	5,399.64	5,570.01	5,504.23	19.25	21.16	-101.85	-244.51	-14,810.51	14,825.27	14,784.89	40.38	367.133	
5,500.00	5,499.63	5,674.81	5,609.02	19.61	21.48	-101.85	-244.19	-14,809.54	14,824.59	14,783.53	41.07	361.002	
5,600.00	5,599.62	5,779.61	5,713.81	19.97	21.81	-101.85	-243.85	-14,808.53	14,823.88	14,782.13	41.75	355.071	
5,700.00	5,699.61	5,884.41	5,818.60	20.33	22.13	-101.86	-243.50	-14,807.50	14,823.13	14,780.70	42.43	349.331	
5,800.00	5,799.61	5,989.20	5,923.40	20.69	22.46	-101.86	-243.15	-14,806.43	14,822.36	14,779.24	43.12	343.772	
5,900.00	5,899.60	6,094.00	6,028.19	21.04	22.78	-101.87	-242.78	-14,805.32	14,821.55	14,777.75	43.80	338.386	
6,000.00	5,999.59	6,198.80	6,132.98	21.40	23.11	-101.87	-242.40	-14,804.19	14,820.71	14,776.22	44.48	333.165	
6,100.00	6,099.58	6,303.59	6,237.76	21.76	23.43	-101.87	-242.00	-14,803.01	14,819.83	14,774.66	45.17	328.102	
6,200.00	6,199.58	6,408.39	6,342.55	22.12	23.76	-101.88	-241.60	-14,801.81	14,818.93	14,773.07	45.85	323.189	
6,300.00	6,299.57	6,513.18	6,447.34	22.48	24.08	-101.88	-241.19	-14,800.57	14,817.99	14,771.45	46.54	318.420	
6,315.05	6,314.62	6,528.95	6,463.11	22.53	24.13	-101.88	-241.12	-14,800.38	14,817.84	14,771.20	46.64	317.714	
6,321.17	6,320.73	6,535.36	6,469.52	22.55	24.15	-136.62	-241.10	-14,800.30	14,817.81	14,771.13	46.68	317.431	
6,350.00	6,349.55	6,565.57	6,499.72	22.66	24.24	-171.07	-240.97	-14,799.94	14,818.46	14,771.59	46.88	316.122	
6,400.00	6,399.30	6,617.78	6,551.92	22.83	24.41	-177.99	-240.76	-14,799.30	14,822.67	14,775.46	47.21	313.969	
6,450.00	6,448.52	6,669.47	6,603.62	23.00	24.57	-179.89	-240.55	-14,798.66	14,830.76	14,783.21	47.54	311.953	
6,500.00	6,496.91	6,720.35	6,654.49	23.18	24.72	179.20	-240.33	-14,798.02	14,842.68	14,794.81	47.87	310.086	
6,550.00	6,544.17	6,770.10	6,704.24	23.35	24.88	178.62	-240.12	-14,797.39	14,858.35	14,810.17	48.18	308.378	
6,600.00	6,590.01	6,818.41	6,752.54	23.53	25.03	178.20	-239.91	-14,796.77	14,877.69	14,829.21	48.49	306.839	
6,650.00	6,634.14	6,864.99	6,799.11	23.70	25.17	177.85	-239.71	-14,796.16	14,900.58	14,851.80	48.78	305.476	
6,700.00	6,676.30	6,909.54	6,843.67	23.88	25.31	177.52	-239.51	-14,795.58	14,926.87	14,877.82	49.05	304.294	
6,750.00	6,716.21	6,951.81	6,885.92	24.06	25.44	177.18	-239.33	-14,795.02	14,956.40	14,907.09	49.31	303.296	
6,800.00	6,753.65	6,991.52	6,925.63	24.24	25.57	176.83	-239.15	-14,794.49	14,989.00	14,939.44	49.55	302.485	
6,850.00	6,788.37	7,028.43	6,962.54	24.44	25.68	176.42	-238.98	-14,793.99	15,024.45	14,974.68	49.77	301.861	
6,900.00	6,820.16	7,062.31	6,996.42	24.63	25.79	175.94	-238.83	-14,793.53	15,062.55	15,012.58	49.97	301.424	
6,950.00	6,848.83	7,092.97	7,027.07	24.84	25.88	175.34	-238.69	-14,793.11	15,103.06	15,052.91	50.15	301.171	
7,000.00	6,874.19	7,120.19	7,054.29	25.06	25.96	174.56	-238.56	-14,792.73	15,145.73	15,095.43	50.30	301.100 SF	
7,050.00	6,896.10	7,143.83	7,077.92	25.29	26.04	173.51	-238.45	-14,792.40	15,190.30	15,139.87	50.43	301.204	
7,100.00	6,914.42	7,163.72	7,097.81	25.53	26.10	172.00	-238.36	-14,792.12	15,236.50	15,185.96	50.54	301.479	
7,150.00	6,929.03	7,179.75	7,113.84	25.78	26.15	169.63	-238.28	-14,791.90	15,284.03	15,233.41	50.62	301.915	
7,200.00	6,939.85	7,191.81	7,125.90	26.05	26.19	165.42	-238.23	-14,791.73	15,332.62	15,281.93	50.69	302.503	
7,250.00	6,946.80	7,199.84	7,133.93	26.32	26.21	156.06	-238.19	-14,791.62	15,381.95	15,331.23	50.73	303.231	
7,300.00	6,949.85	7,203.77	7,137.86	26.61	26.22	124.93	-238.17	-14,791.56	15,431.74	15,380.99	50.75	304.085	
7,314.43	6,950.00	7,204.14	7,138.23	26.69	26.23	104.43	-238.17	-14,791.56	15,446.14	15,395.39	50.75	304.351	
7,400.00	6,949.92	7,205.31	7,139.40	27.21	26.23	104.51	-238.16	-14,791.54	15,531.59	15,480.83	50.76	305.973	
7,500.00	6,949.83	7,206.68	7,140.77	27.90	26.23	104.60	-238.16	-14,791.52	15,631.45	15,580.68	50.77	307.861	
7,600.00	6,949.74	7,208.05	7,142.14	28.66	26.24	104.69	-238.15	-14,791.50	15,731.31	15,680.52	50.79	309.741	
7,700.00	6,949.65	7,209.42	7,143.51	29.49	26.24	104.79	-238.14	-14,791.48	15,831.17	15,780.37	50.80	311.612	
7,800.00	6,949.56	7,210.80	7,144.89	30.38	26.25	104.88	-238.14	-14,791.46	15,931.04	15,880.22	50.82	313.475	
7,900.00	6,949.47	7,212.17	7,146.26	31.33	26.25	104.97	-238.13	-14,791.44	16,030.91	15,980.07	50.84	315.329	
8,000.00	6,949.38	7,213.55	7,147.64	32.33	26.25	105.06	-238.12	-14,791.42	16,130.77	16,079.92	50.86	317.175	
8,100.00	6,949.29	7,214.92	7,149.01	33.38	26.26	105.15	-238.12	-14,791.40	16,230.64	16,179.77	50.88	319.012	
8,200.00	6,949.20	7,216.30	7,150.39	34.47	26.26	105.25	-238.11	-14,791.39	16,330.51	16,279.62	50.90	320.840	
8,300.00	6,949.11	7,217.68	7,151.77	35.60	26.27	105.34	-238.10	-14,791.37	16,430.39	16,379.47	50.92	322.660	
8,400.00	6,949.02	7,219.06	7,153.15	36.76	26.27	105.43	-238.10	-14,791.35	16,530.26	16,479.32	50.95	324.470	
8,500.00	6,948.93	7,220.44	7,154.53	37.96	26.28	105.52	-238.09	-14,791.33	16,630.14	16,579.17	50.97	326.272	
8,600.00	6,948.84	7,221.82	7,155.91	39.18	26.28	105.62	-238.09	-14,791.31	16,730.01	16,679.02	51.00	328.065	
8,700.00	6,948.75	7,223.20	7,157.29	40.43	26.28	105.71	-238.08	-14,791.29	16,829.89	16,778.87	51.02	329.849	
8,800.00	6,948.66	7,224.58	7,158.67	41.71	26.29	105.80	-238.07	-14,791.27	16,929.77	16,878.72	51.05	331.624	

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 #722H - Slot B05
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 #722H	**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	6,948.57	7,225.96	7,160.05	43.00	26.29	105.89	-238.07	-14,791.25	17,029.65	16,978.57	51.08	333.390	
9,000.00	6,948.48	7,227.35	7,161.44	44.32	26.30	105.98	-238.06	-14,791.23	17,129.53	17,078.42	51.11	335.147	
9,100.00	6,948.39	7,228.73	7,162.82	45.66	26.30	106.08	-238.05	-14,791.21	17,229.42	17,178.27	51.14	336.895	
9,200.00	6,948.30	7,230.12	7,164.21	47.01	26.31	106.17	-238.05	-14,791.19	17,329.30	17,278.13	51.17	338.633	
9,300.00	6,948.21	7,231.51	7,165.59	48.38	26.31	106.26	-238.04	-14,791.17	17,429.19	17,377.98	51.21	340.363	
9,400.00	6,948.12	7,232.89	7,166.98	49.76	26.31	106.35	-238.03	-14,791.15	17,529.07	17,477.83	51.24	342.083	
9,500.00	6,948.03	7,234.28	7,168.37	51.16	26.32	106.44	-238.03	-14,791.13	17,628.96	17,577.68	51.28	343.794	
9,600.00	6,947.94	7,235.67	7,169.76	52.56	26.32	106.54	-238.02	-14,791.11	17,728.85	17,677.54	51.31	345.496	
9,700.00	6,947.85	7,237.06	7,171.15	53.98	26.33	106.63	-238.01	-14,791.09	17,828.74	17,777.39	51.35	347.188	
9,800.00	6,947.76	7,238.45	7,172.54	55.41	26.33	106.72	-238.01	-14,791.07	17,928.63	17,877.24	51.39	348.871	
9,900.00	6,947.67	7,239.84	7,173.93	56.85	26.34	106.81	-238.00	-14,791.05	18,028.52	17,977.09	51.43	350.545	
10,000.00	6,947.58	7,241.24	7,175.32	58.29	26.34	106.90	-237.99	-14,791.03	18,128.42	18,076.95	51.47	352.209	
10,100.00	6,947.49	7,242.63	7,176.72	59.75	26.34	106.99	-237.99	-14,791.01	18,228.31	18,176.80	51.51	353.864	
10,200.00	6,947.40	7,244.03	7,178.11	61.21	26.35	107.09	-237.98	-14,790.99	18,328.21	18,276.65	51.55	355.509	
10,300.00	6,947.31	7,245.42	7,179.51	62.68	26.35	107.18	-237.97	-14,790.97	18,428.11	18,376.51	51.60	357.145	
10,400.00	6,947.22	7,246.82	7,180.90	64.15	26.36	107.27	-237.97	-14,790.95	18,528.00	18,476.36	51.64	358.772	
10,500.00	6,947.13	7,248.22	7,182.30	65.63	26.36	107.36	-237.96	-14,790.93	18,627.90	18,576.21	51.69	360.389	
10,600.00	6,947.04	7,249.61	7,183.70	67.12	26.37	107.45	-237.95	-14,790.91	18,727.80	18,676.07	51.73	361.997	
10,700.00	6,946.95	7,251.01	7,185.10	68.61	26.37	107.54	-237.95	-14,790.89	18,827.70	18,775.92	51.78	363.595	
10,800.00	6,946.86	7,252.41	7,186.50	70.11	26.38	107.64	-237.94	-14,790.87	18,927.60	18,875.77	51.83	365.184	
10,900.00	6,946.77	7,253.81	7,187.90	71.61	26.38	107.73	-237.93	-14,790.85	19,027.51	18,975.63	51.88	366.763	
11,000.00	6,946.68	7,255.22	7,189.30	73.11	26.38	107.82	-237.93	-14,790.83	19,127.41	19,075.48	51.93	368.333	
11,100.00	6,946.59	7,256.62	7,190.70	74.62	26.39	107.91	-237.92	-14,790.81	19,227.31	19,175.33	51.98	369.893	
11,200.00	6,946.50	7,258.02	7,192.11	76.14	26.39	108.00	-237.91	-14,790.79	19,327.22	19,275.19	52.03	371.444	
11,300.00	6,946.41	7,259.43	7,193.51	77.65	26.40	108.09	-237.91	-14,790.77	19,427.13	19,375.04	52.09	372.986	
11,400.00	6,946.32	7,260.83	7,194.92	79.18	26.40	108.18	-237.90	-14,790.75	19,527.03	19,474.89	52.14	374.517	
11,500.00	6,946.23	7,262.24	7,196.32	80.70	26.41	108.28	-237.89	-14,790.73	19,626.94	19,574.75	52.19	376.040	
11,600.00	6,946.14	7,263.65	7,197.73	82.23	26.41	108.37	-237.89	-14,790.71	19,726.85	19,674.60	52.25	377.553	
11,700.00	6,946.05	7,265.06	7,199.14	83.76	26.41	108.46	-237.88	-14,790.69	19,826.76	19,774.45	52.31	379.056	
11,800.00	6,945.96	7,266.46	7,200.55	85.29	26.42	108.55	-237.87	-14,790.67	19,926.67	19,874.31	52.36	380.550	
11,900.00	6,945.87	7,267.88	7,201.96	86.82	26.42	108.64	-237.87	-14,790.65	20,026.58	19,974.16	52.42	382.034	
12,000.00	6,945.78	7,269.29	7,203.37	88.36	26.43	108.73	-237.86	-14,790.63	20,126.49	20,074.01	52.48	383.509	
12,100.00	6,945.69	7,270.70	7,204.78	89.90	26.43	108.82	-237.85	-14,790.61	20,226.41	20,173.87	52.54	384.975	
12,200.00	6,945.60	7,272.11	7,206.19	91.44	26.44	108.91	-237.85	-14,790.59	20,326.32	20,273.72	52.60	386.431	
12,300.00	6,945.51	7,273.52	7,207.61	92.99	26.44	109.00	-237.84	-14,790.57	20,426.23	20,373.57	52.66	387.878	
12,400.00	6,945.42	7,274.94	7,209.02	94.53	26.45	109.10	-237.83	-14,790.55	20,526.15	20,473.43	52.72	389.315	
12,500.00	6,945.33	7,276.36	7,210.44	96.08	26.45	109.19	-237.83	-14,790.53	20,626.06	20,573.28	52.79	390.743	
12,600.00	6,945.24	7,277.77	7,211.85	97.63	26.45	109.28	-237.82	-14,790.51	20,725.98	20,673.13	52.85	392.162	
12,700.00	6,945.15	7,279.19	7,213.27	99.18	26.46	109.37	-237.81	-14,790.49	20,825.90	20,772.98	52.92	393.571	
12,800.00	6,945.06	7,280.61	7,214.69	100.74	26.46	109.46	-237.80	-14,790.47	20,925.82	20,872.84	52.98	394.971	
12,900.00	6,944.96	7,282.03	7,216.11	102.29	26.47	109.55	-237.80	-14,790.45	21,025.74	20,972.69	53.05	396.362	
13,000.00	6,944.87	7,283.45	7,217.53	103.85	26.47	109.64	-237.79	-14,790.43	21,125.65	21,072.54	53.11	397.744	
13,100.00	6,944.78	7,284.87	7,218.95	105.40	26.48	109.73	-237.78	-14,790.41	21,225.57	21,172.39	53.18	399.116	
13,200.00	6,944.69	7,286.29	7,220.37	106.96	26.48	109.82	-237.78	-14,790.39	21,325.50	21,272.25	53.25	400.479	
13,300.00	6,944.60	7,287.71	7,221.79	108.52	26.48	109.91	-237.77	-14,790.37	21,425.42	21,372.10	53.32	401.833	
13,400.00	6,944.51	7,289.14	7,223.22	110.08	26.49	110.00	-237.76	-14,790.35	21,525.34	21,471.95	53.39	403.177	
13,500.00	6,944.42	7,290.56	7,224.64	111.65	26.49	110.09	-237.76	-14,790.33	21,625.26	21,571.80	53.46	404.513	
13,600.00	6,944.33	7,291.99	7,226.07	113.21	26.50	110.18	-237.75	-14,790.31	21,725.18	21,671.65	53.53	405.839	
13,700.00	6,944.24	7,293.41	7,227.50	114.78	26.50	110.27	-237.74	-14,790.29	21,825.11	21,771.50	53.60	407.157	
13,800.00	6,944.15	7,294.84	7,228.92	116.34	26.51	110.36	-237.74	-14,790.26	21,925.03	21,871.36	53.68	408.465	
13,900.00	6,944.06	7,296.27	7,230.35	117.91	26.51	110.46	-237.73	-14,790.24	22,024.96	21,971.21	53.75	409.765	
14,000.00	6,943.97	7,297.70	7,231.78	119.48	26.52	110.55	-237.72	-14,790.22	22,124.88	22,071.06	53.82	411.055	

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 #722H - Slot B05
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 #722H	**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	6,943.88	7,299.13	7,233.21	121.05	26.52	110.64	-237.72	-14,790.20	22,224.81	22,170.91	53.90	412.337	
14,200.00	6,943.79	7,300.56	7,234.64	122.62	26.52	110.73	-237.71	-14,790.18	22,324.74	22,270.76	53.98	413.609	
14,300.00	6,943.70	7,301.99	7,236.07	124.19	26.53	110.82	-237.70	-14,790.16	22,424.66	22,370.61	54.05	414.873	
14,400.00	6,943.61	7,303.43	7,237.51	125.76	26.53	110.91	-237.69	-14,790.14	22,524.59	22,470.46	54.13	416.128	
14,500.00	6,943.52	7,304.86	7,238.94	127.33	26.54	111.00	-237.69	-14,790.12	22,624.52	22,570.31	54.21	417.374	
14,600.00	6,943.43	7,306.30	7,240.38	128.90	26.54	111.09	-237.68	-14,790.10	22,724.45	22,670.16	54.29	418.611	
14,700.00	6,943.34	7,307.73	7,241.81	130.48	26.55	111.18	-237.67	-14,790.08	22,824.38	22,770.01	54.36	419.840	
14,800.00	6,943.25	7,309.17	7,243.25	132.05	26.55	111.27	-237.67	-14,790.06	22,924.31	22,869.86	54.44	421.060	
14,900.00	6,943.16	7,310.61	7,244.69	133.63	26.56	111.36	-237.66	-14,790.04	23,024.24	22,969.71	54.52	422.271	
15,000.00	6,943.07	7,312.05	7,246.13	135.20	26.56	111.45	-237.65	-14,790.02	23,124.17	23,069.56	54.61	423.474	
15,100.00	6,942.98	7,313.49	7,247.57	136.78	26.56	111.54	-237.65	-14,790.00	23,224.10	23,169.41	54.69	424.668	
15,200.00	6,942.89	7,314.93	7,249.01	138.36	26.57	111.63	-237.64	-14,789.98	23,324.03	23,269.26	54.77	425.854	
15,300.00	6,942.80	7,316.37	7,250.45	139.93	26.57	111.71	-237.63	-14,789.95	23,423.97	23,369.11	54.85	427.031	
15,400.00	6,942.71	7,317.81	7,251.89	141.51	26.58	111.80	-237.63	-14,789.93	23,523.90	23,468.96	54.94	428.200	
15,500.00	6,942.62	7,319.26	7,253.33	143.09	26.58	111.89	-237.62	-14,789.91	23,623.83	23,568.81	55.02	429.360	
15,600.00	6,942.53	7,320.70	7,254.78	144.67	26.59	111.98	-237.61	-14,789.89	23,723.77	23,668.66	55.11	430.513	
15,700.00	6,942.44	7,322.15	7,256.22	146.25	26.59	112.07	-237.60	-14,789.87	23,823.70	23,768.51	55.19	431.656	
15,800.00	6,942.35	7,323.59	7,257.67	147.83	26.60	112.16	-237.60	-14,789.85	23,923.64	23,868.36	55.28	432.792	
15,900.00	6,942.26	7,325.04	7,259.12	149.41	26.60	112.25	-237.59	-14,789.83	24,023.57	23,968.21	55.36	433.919	
16,000.00	6,942.17	7,326.49	7,260.56	150.99	26.61	112.34	-237.58	-14,789.81	24,123.51	24,068.06	55.45	435.039	
16,100.00	6,942.08	7,327.94	7,262.01	152.57	26.61	112.43	-237.58	-14,789.79	24,223.44	24,167.90	55.54	436.150	
16,200.00	6,941.99	7,329.39	7,263.46	154.16	26.61	112.52	-237.57	-14,789.77	24,323.38	24,267.75	55.63	437.253	
16,300.00	6,941.90	7,330.84	7,264.91	155.74	26.62	112.61	-237.56	-14,789.75	24,423.32	24,367.60	55.72	438.348	
16,400.00	6,941.81	7,332.29	7,266.37	157.32	26.62	112.70	-237.56	-14,789.72	24,523.26	24,467.45	55.81	439.435	
16,500.00	6,941.72	7,333.74	7,267.82	158.91	26.63	112.79	-237.55	-14,789.70	24,623.19	24,567.30	55.90	440.514	
16,600.00	6,941.63	7,335.20	7,269.27	160.49	26.63	112.88	-237.54	-14,789.68	24,723.13	24,667.15	55.99	441.585	
16,700.00	6,941.54	7,336.65	7,270.73	162.07	26.64	112.96	-237.53	-14,789.66	24,823.07	24,766.99	56.08	442.649	
16,800.00	6,941.45	7,338.11	7,272.18	163.66	26.64	113.05	-237.53	-14,789.64	24,923.01	24,866.84	56.17	443.704	
16,900.00	6,941.36	7,339.57	7,273.64	165.24	26.65	113.14	-237.52	-14,789.62	25,022.95	24,966.69	56.26	444.752	
17,000.00	6,941.27	7,341.02	7,275.10	166.83	26.65	113.23	-237.51	-14,789.60	25,122.89	25,066.53	56.36	445.792	
17,100.00	6,941.18	7,342.48	7,276.56	168.42	26.65	113.32	-237.51	-14,789.58	25,222.83	25,166.38	56.45	446.825	
17,200.00	6,941.09	7,343.94	7,278.02	170.00	26.66	113.41	-237.50	-14,789.55	25,322.77	25,266.23	56.54	447.850	
17,300.00	6,941.00	7,345.40	7,279.48	171.59	26.66	113.50	-237.49	-14,789.53	25,422.71	25,366.08	56.64	448.867	
17,400.00	6,940.91	7,346.86	7,280.94	173.18	26.67	113.58	-237.48	-14,789.51	25,522.66	25,465.92	56.73	449.877	
17,500.00	6,940.82	7,348.33	7,282.40	174.76	26.67	113.67	-237.48	-14,789.49	25,622.60	25,565.77	56.83	450.880	
17,600.00	6,940.73	7,349.79	7,283.86	176.35	26.68	113.76	-237.47	-14,789.47	25,722.54	25,665.62	56.92	451.875	
17,700.00	6,940.64	7,351.26	7,285.33	177.94	26.68	113.85	-237.46	-14,789.45	25,822.48	25,765.46	57.02	452.863	
17,800.00	6,940.55	7,352.72	7,286.79	179.53	26.69	113.94	-237.46	-14,789.43	25,922.43	25,865.31	57.12	453.843	
17,900.00	6,940.46	7,354.19	7,288.26	181.11	26.69	114.03	-237.45	-14,789.41	26,022.37	25,965.15	57.22	454.817	
18,000.00	6,940.37	7,355.65	7,289.73	182.70	26.70	114.11	-237.44	-14,789.38	26,122.31	26,065.00	57.31	455.783	
18,100.00	6,940.28	7,357.12	7,291.20	184.29	26.70	114.20	-237.43	-14,789.36	26,222.26	26,164.85	57.41	456.742	
18,200.00	6,940.19	7,358.59	7,292.67	185.88	26.70	114.29	-237.43	-14,789.34	26,322.20	26,264.69	57.51	457.693	
18,300.00	6,940.10	7,360.06	7,294.14	187.47	26.71	114.38	-237.42	-14,789.32	26,422.15	26,364.54	57.61	458.638	
18,400.00	6,940.01	7,361.53	7,295.61	189.06	26.71	114.47	-237.41	-14,789.30	26,522.09	26,464.38	57.71	459.576	
18,500.00	6,939.92	7,363.01	7,297.08	190.65	26.72	114.55	-237.41	-14,789.28	26,622.04	26,564.23	57.81	460.507	
18,600.00	6,939.83	7,364.48	7,298.55	192.24	26.72	114.64	-237.40	-14,789.26	26,721.98	26,664.07	57.91	461.431	
18,700.00	6,939.74	7,365.95	7,300.03	193.83	26.73	114.73	-237.39	-14,789.23	26,821.93	26,763.92	58.01	462.348	
18,800.00	6,939.65	7,367.43	7,301.50	195.42	26.73	114.82	-237.38	-14,789.21	26,921.88	26,863.76	58.11	463.258	
18,900.00	6,939.56	7,368.91	7,302.98	197.01	26.74	114.90	-237.38	-14,789.19	27,021.82	26,963.61	58.22	464.161	
19,000.00	6,939.47	7,370.38	7,304.46	198.60	26.74	114.99	-237.37	-14,789.17	27,121.77	27,063.45	58.32	465.058	
19,100.00	6,939.38	7,371.86	7,305.93	200.19	26.75	115.08	-237.36	-14,789.15	27,221.72	27,163.30	58.42	465.948	
19,200.00	6,939.29	7,373.34	7,307.41	201.78	26.75	115.17	-237.36	-14,789.13	27,321.67	27,263.14	58.53	466.832	

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 #722H - Slot B05
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 #722H	**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
19,300.00	6,939.20	7,374.82	7,308.89	203.37	26.76	115.25	-237.35	-14,789.10	27,421.61	27,362.99	58.63	467.709	
19,400.00	6,939.11	7,376.30	7,310.37	204.97	26.76	115.34	-237.34	-14,789.08	27,521.56	27,462.83	58.73	468.579	
19,500.00	6,939.02	7,377.78	7,311.86	206.56	26.76	115.43	-237.33	-14,789.06	27,621.51	27,562.67	58.84	469.443	
19,600.00	6,938.93	7,379.27	7,313.34	208.15	26.77	115.52	-237.33	-14,789.04	27,721.46	27,662.52	58.94	470.301	
19,700.00	6,938.83	7,380.75	7,314.82	209.74	26.77	115.60	-237.32	-14,789.02	27,821.41	27,762.36	59.05	471.152	
19,800.00	6,938.74	7,382.24	7,316.31	211.33	26.78	115.69	-237.31	-14,789.00	27,921.36	27,862.20	59.16	471.997	
19,900.00	6,938.65	7,383.72	7,317.79	212.93	26.78	115.78	-237.30	-14,788.97	28,021.31	27,962.05	59.26	472.835	
20,000.00	6,938.56	7,385.21	7,319.28	214.52	26.79	115.86	-237.30	-14,788.95	28,121.26	28,061.89	59.37	473.668	
20,100.00	6,938.47	7,386.70	7,320.77	216.11	26.79	115.95	-237.29	-14,788.93	28,221.21	28,161.73	59.48	474.494	
20,200.00	6,938.38	7,388.19	7,322.26	217.71	26.80	116.04	-237.28	-14,788.91	28,321.16	28,261.58	59.58	475.314	
20,300.00	6,938.29	7,389.68	7,323.75	219.30	26.80	116.12	-237.28	-14,788.89	28,421.11	28,361.42	59.69	476.128	
20,400.00	6,938.20	7,391.17	7,325.24	220.89	26.81	116.21	-237.27	-14,788.87	28,521.06	28,461.26	59.80	476.936	
20,500.00	6,938.11	7,392.66	7,326.73	222.49	26.81	116.30	-237.26	-14,788.84	28,621.02	28,561.11	59.91	477.738	
20,600.00	6,938.02	7,394.15	7,328.22	224.08	26.82	116.38	-237.25	-14,788.82	28,720.97	28,660.95	60.02	478.534	
20,626.08	6,938.00	7,394.54	7,328.61	224.49	26.82	116.41	-237.25	-14,788.82	28,747.04	28,686.99	60.05	478.741	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-95.56	-1,196.13	-12,287.03	12,611.75				
100.00	100.00	3,021.00	2,785.43	0.25	18.62	-95.34	-1,144.77	-12,253.73	12,591.36	12,573.03	18.33	686.955	
200.00	200.00	3,052.00	2,814.99	0.61	18.78	-95.31	-1,137.31	-12,248.16	12,570.55	12,551.85	18.70	672.175	
300.00	300.00	3,052.00	2,814.99	0.97	18.78	-95.31	-1,137.31	-12,248.16	12,550.33	12,531.34	18.99	660.834	
400.00	400.00	3,083.00	2,844.59	1.33	18.93	-95.27	-1,129.75	-12,242.88	12,530.72	12,511.25	19.47	643.717	
500.00	500.00	3,101.82	2,862.60	1.68	19.01	-95.25	-1,125.21	-12,239.80	12,511.73	12,491.84	19.89	629.042	
535.00	535.00	3,115.00	2,875.23	1.81	19.07	-106.04	-1,122.10	-12,237.71	12,505.29	12,485.22	20.07	623.040	
600.00	599.99	3,131.66	2,891.24	2.04	19.15	-106.02	-1,118.29	-12,235.08	12,493.61	12,473.24	20.37	613.333	
700.00	699.99	3,179.00	2,936.92	2.40	19.35	-105.98	-1,108.40	-12,227.62	12,476.01	12,455.08	20.93	596.036	
800.00	799.98	3,179.00	2,936.92	2.76	19.35	-105.98	-1,108.40	-12,227.62	12,459.00	12,437.73	21.28	585.599	
900.00	899.97	3,211.00	2,967.96	3.12	19.48	-105.95	-1,102.16	-12,222.93	12,442.67	12,420.90	21.76	571.742	
1,000.00	999.96	3,211.00	2,967.96	3.48	19.48	-105.95	-1,102.16	-12,222.93	12,426.97	12,404.86	22.11	562.077	
1,100.00	1,099.96	3,211.00	2,967.96	3.84	19.48	-105.95	-1,102.16	-12,222.93	12,412.06	12,389.60	22.46	552.734	
1,200.00	1,199.95	3,241.00	2,997.14	4.19	19.59	-105.93	-1,096.30	-12,219.18	12,397.85	12,374.91	22.93	540.656	
1,300.00	1,299.94	3,241.00	2,997.14	4.55	19.59	-105.93	-1,096.30	-12,219.18	12,384.28	12,361.00	23.28	532.015	
1,400.00	1,399.93	3,254.16	3,009.96	4.91	19.64	-105.92	-1,093.73	-12,217.71	12,371.46	12,347.78	23.68	522.468	
1,500.00	1,499.93	3,272.00	3,027.37	5.27	19.71	-105.91	-1,090.30	-12,215.83	12,359.32	12,335.22	24.10	512.864	
1,600.00	1,599.92	3,303.00	3,057.71	5.63	19.81	-105.88	-1,084.76	-12,212.70	12,347.79	12,323.22	24.57	502.636	
1,700.00	1,699.91	3,398.00	3,151.44	5.99	20.07	-105.84	-1,073.11	-12,202.70	12,336.47	12,311.22	25.25	488.558	
1,800.00	1,799.90	3,429.00	3,182.12	6.34	20.14	-105.83	-1,070.08	-12,199.51	12,325.55	12,299.85	25.70	479.640	
1,900.00	1,899.90	3,461.00	3,213.81	6.70	20.22	-105.82	-1,066.96	-12,196.36	12,315.15	12,289.01	26.15	471.019	
2,000.00	1,999.89	3,493.00	3,245.52	7.06	20.29	-105.80	-1,063.78	-12,193.39	12,305.29	12,278.70	26.59	462.736	
2,100.00	2,099.88	3,493.00	3,245.52	7.42	20.29	-105.80	-1,063.78	-12,193.39	12,296.11	12,269.17	26.94	456.487	
2,200.00	2,199.87	3,524.00	3,276.27	7.78	20.35	-105.79	-1,060.85	-12,190.83	12,287.52	12,260.15	27.37	448.862	
2,300.00	2,299.87	3,524.00	3,276.27	8.14	20.35	-105.79	-1,060.85	-12,190.83	12,279.70	12,251.98	27.72	443.040	
2,400.00	2,399.86	3,556.00	3,308.08	8.50	20.41	-105.78	-1,058.16	-12,188.64	12,272.52	12,244.37	28.15	435.958	
2,500.00	2,499.85	3,556.00	3,308.08	8.85	20.41	-105.78	-1,058.16	-12,188.64	12,266.06	12,237.57	28.49	430.529	
2,600.00	2,599.85	3,587.00	3,338.95	9.21	20.46	-105.78	-1,055.85	-12,186.90	12,260.25	12,231.34	28.91	424.050	
2,700.00	2,699.84	3,587.00	3,338.95	9.57	20.46	-105.78	-1,055.85	-12,186.90	12,255.16	12,225.91	29.25	418.980	
2,800.00	2,799.83	3,619.00	3,370.85	9.93	20.50	-105.77	-1,053.79	-12,185.50	12,250.69	12,221.03	29.66	412.977	
2,900.00	2,899.82	3,634.58	3,386.40	10.29	20.52	-105.76	-1,052.93	-12,184.95	12,246.93	12,216.89	30.03	407.772	
3,000.00	2,999.82	3,651.00	3,402.79	10.65	20.54	-105.76	-1,052.14	-12,184.44	12,243.82	12,213.41	30.40	402.707	
3,100.00	3,099.81	3,746.00	3,497.69	11.01	20.62	-105.75	-1,048.96	-12,181.66	12,240.94	12,210.01	30.93	395.711	
3,200.00	3,199.80	3,778.00	3,529.67	11.36	20.65	-105.75	-1,048.25	-12,180.82	12,238.49	12,207.15	31.33	390.612	
3,300.00	3,299.79	3,792.96	3,544.63	11.72	20.66	-105.75	-1,047.98	-12,180.53	12,236.68	12,204.99	31.69	386.155	
3,400.00	3,399.79	3,810.00	3,561.67	12.08	20.66	-105.75	-1,047.71	-12,180.30	12,235.55	12,203.51	32.05	381.791	
3,500.00	3,499.78	3,841.00	3,592.66	12.44	20.68	-105.75	-1,047.24	-12,180.07	12,235.04	12,202.62	32.42	377.427	
3,566.25	3,566.03	3,880.00	3,631.66	12.68	20.69	-105.75	-1,046.62	-12,179.94	12,234.95	12,202.28	32.67	374.449	
3,600.00	3,599.77	3,913.04	3,664.69	12.80	20.70	-105.75	-1,046.09	-12,179.88	12,234.96	12,202.14	32.82	372.828	
3,700.00	3,699.76	4,013.10	3,764.73	13.16	31.03	-105.75	-1,044.47	-12,179.70	12,234.96	12,191.10	43.86	278.953	
3,800.00	3,799.76	4,113.16	3,864.79	13.52	43.68	-105.75	-1,042.85	-12,179.51	12,234.97	12,177.93	57.03	214.534	
3,900.00	3,899.75	4,213.23	3,964.84	13.87	56.41	-105.74	-1,041.23	-12,179.33	12,234.97	12,164.79	70.18	174.328	
4,000.00	3,999.74	4,313.30	4,064.90	14.23	69.16	-105.74	-1,039.61	-12,179.14	12,234.97	12,151.64	83.33	146.826	
4,100.00	4,099.73	4,413.37	4,164.95	14.59	81.93	-105.74	-1,037.99	-12,178.96	12,234.98	12,138.50	96.47	126.825	
4,200.00	4,199.73	4,513.44	4,265.01	14.95	94.70	-105.74	-1,036.36	-12,178.77	12,234.98	12,125.37	109.61	111.622	
4,300.00	4,299.72	4,613.51	4,365.06	15.31	107.47	-105.74	-1,034.73	-12,178.58	12,234.98	12,112.23	122.75	99.675	
4,400.00	4,399.71	4,713.57	4,465.12	15.67	120.24	-105.73	-1,033.09	-12,178.40	12,234.98	12,099.10	135.89	90.039	
4,500.00	4,499.70	4,813.64	4,565.17	16.03	133.02	-105.73	-1,031.45	-12,178.21	12,234.98	12,085.96	149.02	82.102	
4,600.00	4,599.70	4,913.71	4,665.23	16.38	145.79	-105.73	-1,029.81	-12,178.02	12,234.98	12,072.82	162.16	75.451	
4,700.00	4,699.69	5,013.78	4,765.28	16.74	158.57	-105.73	-1,028.17	-12,177.84	12,234.98	12,059.69	175.29	69.797	
4,800.00	4,799.68	5,113.85	4,865.34	17.10	171.34	-105.73	-1,026.53	-12,177.65	12,234.98	12,046.55	188.43	64.932	
4,900.00	4,899.67	5,213.92	4,965.39	17.46	184.12	-105.72	-1,024.88	-12,177.46	12,234.98	12,033.42	201.56	60.701	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	5,313.98	5,065.45	17.82	196.89	-105.72	-1,023.23	-12,177.27	12,234.98	12,020.28	214.70	56.987	
5,100.00	5,099.66	5,414.05	5,165.50	18.18	209.67	-105.72	-1,021.57	-12,177.08	12,234.98	12,007.14	227.83	53.702	
5,200.00	5,199.65	5,514.12	5,265.55	18.53	222.44	-105.72	-1,019.92	-12,176.89	12,234.97	11,994.01	240.97	50.775	
5,300.00	5,299.64	5,614.19	5,365.61	18.89	235.22	-105.72	-1,018.26	-12,176.70	12,234.97	11,980.87	254.10	48.150	
5,400.00	5,399.64	5,714.26	5,465.66	19.25	247.99	-105.71	-1,016.59	-12,176.51	12,234.96	11,967.73	267.23	45.784	
5,500.00	5,499.63	5,814.32	5,565.72	19.61	260.77	-105.71	-1,014.93	-12,176.32	12,234.96	11,954.59	280.37	43.639	
5,600.00	5,599.62	5,914.39	5,665.77	19.97	273.54	-105.71	-1,013.26	-12,176.13	12,234.95	11,941.45	293.50	41.686	
5,700.00	5,699.61	6,014.46	5,765.82	20.33	286.32	-105.71	-1,011.59	-12,175.94	12,234.95	11,928.31	306.64	39.901	
5,800.00	5,799.61	6,114.53	5,865.88	20.69	299.10	-105.70	-1,009.92	-12,175.75	12,234.94	11,915.17	319.77	38.262	
5,900.00	5,899.60	6,214.60	5,965.93	21.04	311.87	-105.70	-1,008.24	-12,175.56	12,234.94	11,902.03	332.90	36.752	
6,000.00	5,999.59	6,314.66	6,065.99	21.40	324.65	-105.70	-1,006.56	-12,175.37	12,234.93	11,888.89	346.04	35.357	
6,100.00	6,099.58	6,414.73	6,166.04	21.76	337.42	-105.70	-1,004.88	-12,175.17	12,234.92	11,875.75	359.17	34.064	
6,200.00	6,199.58	6,514.80	6,266.09	22.12	350.20	-105.70	-1,003.20	-12,174.98	12,234.91	11,862.60	372.31	32.862	
6,300.00	6,299.57	6,614.87	6,366.15	22.48	362.97	-105.69	-1,001.51	-12,174.79	12,234.90	11,849.46	385.44	31.743	
6,315.05	6,314.62	6,629.93	6,381.20	22.53	364.89	-105.69	-1,001.25	-12,174.76	12,234.90	11,847.48	387.42	31.581 CC	
6,316.62	6,316.19	6,631.50	6,382.78	22.54	365.10	-116.66	-1,001.23	-12,174.76	12,234.90	11,847.28	387.62	31.564	
6,350.00	6,349.55	6,664.88	6,416.16	22.66	369.36	-174.89	-1,000.66	-12,174.69	12,235.85	11,843.85	392.00	31.214	
6,400.00	6,399.30	6,714.68	6,465.95	22.83	375.71	178.17	-999.82	-12,174.60	12,240.51	11,841.98	398.53	30.714 ES	
6,450.00	6,448.52	6,763.95	6,515.21	23.00	382.01	176.22	-998.99	-12,174.50	12,249.04	11,844.04	405.00	30.245	
6,500.00	6,496.91	6,812.40	6,563.65	23.18	388.19	175.23	-998.17	-12,174.41	12,261.37	11,850.02	411.35	29.808	
6,550.00	6,544.17	6,859.72	6,610.96	23.35	394.23	174.56	-997.37	-12,174.32	12,277.44	11,859.89	417.55	29.404	
6,600.00	6,590.01	6,905.61	6,656.85	23.53	400.09	174.00	-996.59	-12,174.23	12,297.14	11,873.57	423.56	29.033	
6,650.00	6,634.14	6,949.81	6,701.04	23.70	405.73	173.48	-995.84	-12,174.14	12,320.35	11,891.00	429.35	28.695	
6,700.00	6,676.30	6,992.03	6,743.26	23.88	411.12	172.94	-995.12	-12,174.06	12,346.94	11,912.06	434.88	28.392	
6,750.00	6,716.21	7,032.02	6,783.24	24.06	416.23	172.35	-994.44	-12,173.98	12,376.73	11,936.62	440.11	28.122	
6,800.00	6,753.65	7,069.53	6,820.74	24.24	421.02	171.67	-993.81	-12,173.91	12,409.55	11,964.53	445.02	27.886	
6,850.00	6,788.37	7,104.33	6,855.54	24.44	425.46	170.85	-993.21	-12,173.84	12,445.19	11,995.63	449.56	27.683	
6,900.00	6,820.16	7,136.20	6,887.40	24.63	429.53	169.85	-992.67	-12,173.78	12,483.43	12,029.71	453.73	27.513	
6,950.00	6,848.83	7,164.94	6,916.14	24.84	433.20	168.57	-992.18	-12,173.72	12,524.04	12,066.57	457.48	27.376	
7,000.00	6,874.19	7,190.39	6,941.58	25.06	436.45	166.90	-991.75	-12,173.67	12,566.77	12,105.98	460.79	27.272	
7,050.00	6,896.10	7,212.38	6,963.57	25.29	439.26	164.63	-991.37	-12,173.63	12,611.35	12,147.69	463.66	27.200	
7,100.00	6,914.42	7,230.77	6,981.96	25.53	441.61	161.37	-991.06	-12,173.60	12,657.51	12,191.46	466.05	27.159	
7,150.00	6,929.03	7,245.46	6,996.65	25.78	443.48	156.36	-990.81	-12,173.57	12,704.97	12,237.00	467.96	27.149 SF	
7,200.00	6,939.85	7,256.35	7,007.54	26.05	444.87	147.97	-990.62	-12,173.55	12,753.42	12,284.05	469.38	27.171	
7,250.00	6,946.80	7,263.38	7,014.57	26.32	445.77	132.25	-990.50	-12,173.53	12,802.59	12,332.29	470.29	27.223	
7,300.00	6,949.85	7,266.50	7,017.69	26.61	446.17	102.38	-990.45	-12,173.53	12,852.15	12,381.45	470.70	27.304	
7,314.43	6,950.00	7,266.67	7,017.86	26.69	446.19	91.23	-990.45	-12,173.53	12,866.48	12,395.76	470.73	27.333	
7,400.00	6,949.92	7,266.72	7,017.90	27.21	446.19	91.23	-990.45	-12,173.53	12,951.50	12,480.76	470.74	27.513	
7,500.00	6,949.83	7,266.76	7,017.95	27.90	446.20	91.23	-990.45	-12,173.53	13,050.86	12,580.10	470.76	27.723	
7,600.00	6,949.74	7,266.81	7,018.00	28.66	446.21	91.23	-990.44	-12,173.53	13,150.24	12,679.45	470.78	27.933	
7,700.00	6,949.65	7,266.86	7,018.05	29.49	446.21	91.23	-990.44	-12,173.53	13,249.62	12,778.81	470.80	28.143	
7,800.00	6,949.56	7,266.91	7,018.10	30.38	446.22	91.24	-990.44	-12,173.53	13,349.01	12,878.18	470.83	28.352	
7,900.00	6,949.47	7,266.96	7,018.14	31.33	446.23	91.24	-990.44	-12,173.53	13,448.41	12,977.55	470.86	28.562	
8,000.00	6,949.38	7,267.01	7,018.19	32.33	446.23	91.24	-990.44	-12,173.53	13,547.82	13,076.93	470.89	28.771	
8,100.00	6,949.29	7,267.06	7,018.24	33.38	446.24	91.24	-990.44	-12,173.53	13,647.24	13,176.32	470.92	28.980	
8,200.00	6,949.20	7,267.11	7,018.29	34.47	446.24	91.24	-990.44	-12,173.53	13,746.66	13,275.72	470.95	29.189	
8,300.00	6,949.11	7,267.16	7,018.34	35.60	446.25	91.24	-990.44	-12,173.53	13,846.10	13,375.12	470.98	29.398	
8,400.00	6,949.02	7,267.21	7,018.39	36.76	446.26	91.25	-990.44	-12,173.53	13,945.54	13,474.52	471.02	29.607	
8,500.00	6,948.93	7,267.26	7,018.44	37.96	446.26	91.25	-990.44	-12,173.53	14,044.99	13,573.94	471.06	29.816	
8,600.00	6,948.84	7,267.30	7,018.49	39.18	446.27	91.25	-990.44	-12,173.52	14,144.45	13,673.36	471.09	30.025	
8,700.00	6,948.75	7,267.35	7,018.54	40.43	446.28	91.25	-990.44	-12,173.52	14,243.92	13,772.78	471.13	30.233	
8,800.00	6,948.66	7,267.40	7,018.59	41.71	446.28	91.25	-990.43	-12,173.52	14,343.39	13,872.21	471.18	30.442	

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 #722H - Slot B05
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 #722H	**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
8,900.00	6,948.57	7,267.45	7,018.64	43.00	446.29	91.26	-990.43	-12,173.52	14,442.87	13,971.65	471.22	30.650	
9,000.00	6,948.48	7,267.50	7,018.68	44.32	446.30	91.26	-990.43	-12,173.52	14,542.36	14,071.09	471.27	30.858	
9,100.00	6,948.39	7,267.55	7,018.73	45.66	446.30	91.26	-990.43	-12,173.52	14,641.85	14,170.54	471.31	31.066	
9,200.00	6,948.30	7,267.60	7,018.78	47.01	446.31	91.26	-990.43	-12,173.52	14,741.36	14,270.00	471.36	31.274	
9,300.00	6,948.21	7,267.65	7,018.83	48.38	446.31	91.26	-990.43	-12,173.52	14,840.86	14,369.46	471.41	31.482	
9,400.00	6,948.12	7,267.70	7,018.88	49.76	446.32	91.27	-990.43	-12,173.52	14,940.38	14,468.92	471.46	31.690	
9,500.00	6,948.03	7,267.75	7,018.93	51.16	446.33	91.27	-990.43	-12,173.52	15,039.90	14,568.39	471.51	31.897	
9,600.00	6,947.94	7,267.79	7,018.98	52.56	446.33	91.27	-990.43	-12,173.52	15,139.43	14,667.86	471.56	32.105	
9,700.00	6,947.85	7,267.84	7,019.03	53.98	446.34	91.27	-990.43	-12,173.52	15,238.96	14,767.34	471.62	32.312	
9,800.00	6,947.76	7,267.89	7,019.08	55.41	446.35	91.27	-990.43	-12,173.52	15,338.50	14,866.83	471.67	32.519	
9,900.00	6,947.67	7,267.94	7,019.13	56.85	446.35	91.28	-990.43	-12,173.52	15,438.05	14,966.32	471.73	32.726	
10,000.00	6,947.58	7,267.99	7,019.17	58.29	446.36	91.28	-990.42	-12,173.52	15,537.60	15,065.81	471.79	32.933	
10,100.00	6,947.49	7,268.04	7,019.22	59.75	446.36	91.28	-990.42	-12,173.52	15,637.16	15,165.31	471.85	33.140	
10,200.00	6,947.40	7,268.09	7,019.27	61.21	446.37	91.28	-990.42	-12,173.52	15,736.72	15,264.81	471.91	33.347	
10,300.00	6,947.31	7,268.14	7,019.32	62.68	446.38	91.28	-990.42	-12,173.52	15,836.29	15,364.32	471.97	33.554	
10,400.00	6,947.22	7,268.19	7,019.37	64.15	446.38	91.28	-990.42	-12,173.52	15,935.86	15,463.83	472.03	33.760	
10,500.00	6,947.13	7,268.24	7,019.42	65.63	446.39	91.29	-990.42	-12,173.52	16,035.44	15,563.35	472.09	33.967	
10,600.00	6,947.04	7,268.29	7,019.47	67.12	446.40	91.29	-990.42	-12,173.52	16,135.03	15,662.87	472.16	34.173	
10,700.00	6,946.95	7,268.33	7,019.52	68.61	446.40	91.29	-990.42	-12,173.52	16,234.62	15,762.39	472.22	34.379	
10,800.00	6,946.86	7,268.38	7,019.57	70.11	446.41	91.29	-990.42	-12,173.52	16,334.21	15,861.92	472.29	34.585	
10,900.00	6,946.77	7,268.43	7,019.62	71.61	446.41	91.29	-990.42	-12,173.52	16,433.81	15,961.46	472.35	34.791	
11,000.00	6,946.68	7,268.48	7,019.67	73.11	446.42	91.30	-990.42	-12,173.52	16,533.41	16,060.99	472.42	34.997	
11,100.00	6,946.59	7,268.53	7,019.71	74.62	446.43	91.30	-990.42	-12,173.52	16,633.02	16,160.53	472.49	35.203	
11,200.00	6,946.50	7,268.58	7,019.76	76.14	446.43	91.30	-990.41	-12,173.52	16,732.64	16,260.08	472.56	35.408	
11,300.00	6,946.41	7,268.63	7,019.81	77.65	446.44	91.30	-990.41	-12,173.52	16,832.26	16,359.62	472.63	35.614	
11,400.00	6,946.32	7,268.68	7,019.86	79.18	446.45	91.30	-990.41	-12,173.52	16,931.88	16,459.17	472.70	35.819	
11,500.00	6,946.23	7,268.73	7,019.91	80.70	446.45	91.31	-990.41	-12,173.52	17,031.51	16,558.73	472.78	36.024	
11,600.00	6,946.14	7,268.78	7,019.96	82.23	446.46	91.31	-990.41	-12,173.52	17,131.14	16,658.29	472.85	36.230	
11,700.00	6,946.05	7,268.83	7,020.01	83.76	446.46	91.31	-990.41	-12,173.52	17,230.77	16,757.85	472.92	36.435	
11,800.00	6,945.96	7,268.87	7,020.06	85.29	446.47	91.31	-990.41	-12,173.52	17,330.41	16,857.41	473.00	36.639	
11,900.00	6,945.87	7,268.92	7,020.11	86.82	446.48	91.31	-990.41	-12,173.52	17,430.06	16,956.98	473.07	36.844	
12,000.00	6,945.78	7,268.97	7,020.16	88.36	446.48	91.32	-990.41	-12,173.52	17,529.71	17,056.55	473.15	37.049	
12,100.00	6,945.69	7,269.02	7,020.20	89.90	446.49	91.32	-990.41	-12,173.52	17,629.36	17,156.13	473.23	37.253	
12,200.00	6,945.60	7,269.07	7,020.25	91.44	446.50	91.32	-990.41	-12,173.52	17,729.01	17,255.71	473.31	37.458	
12,300.00	6,945.51	7,269.12	7,020.30	92.99	446.50	91.32	-990.41	-12,173.52	17,828.67	17,355.29	473.39	37.662	
12,400.00	6,945.42	7,269.17	7,020.35	94.53	446.51	91.32	-990.40	-12,173.52	17,928.34	17,454.87	473.47	37.866	
12,500.00	6,945.33	7,269.22	7,020.40	96.08	446.51	91.33	-990.40	-12,173.52	18,028.01	17,554.46	473.55	38.070	
12,600.00	6,945.24	7,269.27	7,020.45	97.63	446.52	91.33	-990.40	-12,173.52	18,127.68	17,654.05	473.63	38.274	
12,700.00	6,945.15	7,269.32	7,020.50	99.18	446.53	91.33	-990.40	-12,173.52	18,227.35	17,753.64	473.71	38.478	
12,800.00	6,945.06	7,269.36	7,020.55	100.74	446.53	91.33	-990.40	-12,173.52	18,327.03	17,853.24	473.79	38.682	
12,900.00	6,944.96	7,269.41	7,020.60	102.29	446.54	91.33	-990.40	-12,173.52	18,426.71	17,952.84	473.87	38.885	
13,000.00	6,944.87	7,269.46	7,020.65	103.85	446.55	91.33	-990.40	-12,173.52	18,526.40	18,052.44	473.96	39.089	
13,100.00	6,944.78	7,269.51	7,020.70	105.40	446.55	91.34	-990.40	-12,173.52	18,626.09	18,152.04	474.04	39.292	
13,200.00	6,944.69	7,269.56	7,020.74	106.96	446.56	91.34	-990.40	-12,173.52	18,725.78	18,251.65	474.13	39.495	
13,300.00	6,944.60	7,269.61	7,020.79	108.52	446.56	91.34	-990.40	-12,173.52	18,825.47	18,351.26	474.21	39.698	
13,400.00	6,944.51	7,269.66	7,020.84	110.08	446.57	91.34	-990.40	-12,173.52	18,925.17	18,450.87	474.30	39.901	
13,500.00	6,944.42	7,269.71	7,020.89	111.65	446.58	91.34	-990.40	-12,173.52	19,024.87	18,550.49	474.39	40.104	
13,600.00	6,944.33	7,269.76	7,020.94	113.21	446.58	91.35	-990.39	-12,173.52	19,124.58	18,650.10	474.47	40.307	
13,700.00	6,944.24	7,269.81	7,020.99	114.78	446.59	91.35	-990.39	-12,173.52	19,224.28	18,749.72	474.56	40.510	
13,800.00	6,944.15	7,269.86	7,021.04	116.34	446.60	91.35	-990.39	-12,173.52	19,324.00	18,849.34	474.65	40.712	
13,900.00	6,944.06	7,269.90	7,021.09	117.91	446.60	91.35	-990.39	-12,173.52	19,423.71	18,948.97	474.74	40.914	
14,000.00	6,943.97	7,269.95	7,021.14	119.48	446.61	91.35	-990.39	-12,173.52	19,523.43	19,048.60	474.83	41.117	

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 #722H - Slot B05
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 #722H	**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
14,100.00	6,943.88	7,270.00	7,021.19	121.05	446.61	91.36	-990.39	-12,173.52	19,623.15	19,148.22	474.92	41.319	
14,200.00	6,943.79	7,270.05	7,021.23	122.62	446.62	91.36	-990.39	-12,173.52	19,722.87	19,247.86	475.01	41.521	
14,300.00	6,943.70	7,270.10	7,021.28	124.19	446.63	91.36	-990.39	-12,173.52	19,822.59	19,347.49	475.10	41.723	
14,400.00	6,943.61	7,270.15	7,021.33	125.76	446.63	91.36	-990.39	-12,173.52	19,922.32	19,447.13	475.20	41.924	
14,500.00	6,943.52	7,270.20	7,021.38	127.33	446.64	91.36	-990.39	-12,173.52	20,022.05	19,546.76	475.29	42.126	
14,600.00	6,943.43	7,270.25	7,021.43	128.90	446.65	91.37	-990.39	-12,173.52	20,121.79	19,646.40	475.38	42.328	
14,700.00	6,943.34	7,270.30	7,021.48	130.48	446.65	91.37	-990.39	-12,173.52	20,221.52	19,746.05	475.48	42.529	
14,800.00	6,943.25	7,270.35	7,021.53	132.05	446.66	91.37	-990.38	-12,173.52	20,321.26	19,845.69	475.57	42.730	
14,900.00	6,943.16	7,270.40	7,021.58	133.63	446.66	91.37	-990.38	-12,173.52	20,421.00	19,945.34	475.67	42.931	
15,000.00	6,943.07	7,270.44	7,021.63	135.20	446.67	91.37	-990.38	-12,173.52	20,520.74	20,044.98	475.76	43.133	
15,100.00	6,942.98	7,270.49	7,021.68	136.78	446.68	91.38	-990.38	-12,173.52	20,620.49	20,144.63	475.86	43.333	
15,200.00	6,942.89	7,270.54	7,021.73	138.36	446.68	91.38	-990.38	-12,173.52	20,720.24	20,244.29	475.95	43.534	
15,300.00	6,942.80	7,270.59	7,021.77	139.93	446.69	91.38	-990.38	-12,173.52	20,819.99	20,343.94	476.05	43.735	
15,400.00	6,942.71	7,270.64	7,021.82	141.51	446.70	91.38	-990.38	-12,173.52	20,919.74	20,443.60	476.15	43.935	
15,500.00	6,942.62	7,270.69	7,021.87	143.09	446.70	91.38	-990.38	-12,173.52	21,019.50	20,543.25	476.24	44.136	
15,600.00	6,942.53	7,270.74	7,021.92	144.67	446.71	91.38	-990.38	-12,173.52	21,119.26	20,642.91	476.34	44.336	
15,700.00	6,942.44	7,270.79	7,021.97	146.25	446.71	91.39	-990.38	-12,173.52	21,219.02	20,742.58	476.44	44.536	
15,800.00	6,942.35	7,270.84	7,022.02	147.83	446.72	91.39	-990.38	-12,173.52	21,318.78	20,842.24	476.54	44.737	
15,900.00	6,942.26	7,270.89	7,022.07	149.41	446.73	91.39	-990.38	-12,173.52	21,418.55	20,941.90	476.64	44.936	
16,000.00	6,942.17	7,270.93	7,022.12	150.99	446.73	91.39	-990.37	-12,173.52	21,518.31	21,041.57	476.74	45.136	
16,100.00	6,942.08	7,270.98	7,022.17	152.57	446.74	91.39	-990.37	-12,173.52	21,618.08	21,141.24	476.84	45.336	
16,200.00	6,941.99	7,271.03	7,022.22	154.16	446.75	91.40	-990.37	-12,173.52	21,717.85	21,240.91	476.94	45.536	
16,300.00	6,941.90	7,271.08	7,022.27	155.74	446.75	91.40	-990.37	-12,173.52	21,817.63	21,340.58	477.04	45.735	
16,400.00	6,941.81	7,271.13	7,022.31	157.32	446.76	91.40	-990.37	-12,173.52	21,917.40	21,440.26	477.15	45.934	
16,500.00	6,941.72	7,271.18	7,022.36	158.91	446.76	91.40	-990.37	-12,173.52	22,017.18	21,539.93	477.25	46.134	
16,600.00	6,941.63	7,271.23	7,022.41	160.49	446.77	91.40	-990.37	-12,173.52	22,116.96	21,639.61	477.35	46.333	
16,700.00	6,941.54	7,271.28	7,022.46	162.07	446.78	91.41	-990.37	-12,173.52	22,216.74	21,739.29	477.45	46.532	
16,800.00	6,941.45	7,271.33	7,022.51	163.66	446.78	91.41	-990.37	-12,173.52	22,316.52	21,838.97	477.56	46.731	
16,900.00	6,941.36	7,271.38	7,022.56	165.24	446.79	91.41	-990.37	-12,173.52	22,416.31	21,938.65	477.66	46.929	
17,000.00	6,941.27	7,271.43	7,022.61	166.83	446.80	91.41	-990.37	-12,173.52	22,516.10	22,038.33	477.77	47.128	
17,100.00	6,941.18	7,271.47	7,022.66	168.42	446.80	91.41	-990.37	-12,173.52	22,615.88	22,138.01	477.87	47.326	
17,200.00	6,941.09	7,271.52	7,022.71	170.00	446.81	91.42	-990.36	-12,173.52	22,715.68	22,237.70	477.98	47.525	
17,300.00	6,941.00	7,271.57	7,022.76	171.59	446.82	91.42	-990.36	-12,173.52	22,815.47	22,337.39	478.08	47.723	
17,400.00	6,940.91	7,271.62	7,022.80	173.18	446.82	91.42	-990.36	-12,173.52	22,915.26	22,437.08	478.19	47.921	
17,500.00	6,940.82	7,271.67	7,022.85	174.76	446.83	91.42	-990.36	-12,173.52	23,015.06	22,536.77	478.29	48.119	
17,600.00	6,940.73	7,271.72	7,022.90	176.35	446.83	91.42	-990.36	-12,173.52	23,114.86	22,636.46	478.40	48.317	
17,700.00	6,940.64	7,271.77	7,022.95	177.94	446.84	91.43	-990.36	-12,173.52	23,214.66	22,736.15	478.51	48.515	
17,800.00	6,940.55	7,271.82	7,023.00	179.53	446.85	91.43	-990.36	-12,173.52	23,314.46	22,835.85	478.61	48.712	
17,900.00	6,940.46	7,271.87	7,023.05	181.11	446.85	91.43	-990.36	-12,173.52	23,414.26	22,935.54	478.72	48.910	
18,000.00	6,940.37	7,271.92	7,023.10	182.70	446.86	91.43	-990.36	-12,173.52	23,514.07	23,035.24	478.83	49.107	
18,100.00	6,940.28	7,271.97	7,023.15	184.29	446.87	91.43	-990.36	-12,173.52	23,613.87	23,134.94	478.94	49.305	
18,200.00	6,940.19	7,272.01	7,023.20	185.88	446.87	91.43	-990.36	-12,173.52	23,713.68	23,234.64	479.05	49.502	
18,300.00	6,940.10	7,272.06	7,023.25	187.47	446.88	91.44	-990.36	-12,173.52	23,813.49	23,334.34	479.16	49.699	
18,400.00	6,940.01	7,272.11	7,023.30	189.06	446.88	91.44	-990.35	-12,173.52	23,913.30	23,434.04	479.26	49.896	
18,500.00	6,939.92	7,272.16	7,023.34	190.65	446.89	91.44	-990.35	-12,173.52	24,013.12	23,533.74	479.37	50.093	
18,600.00	6,939.83	7,272.21	7,023.39	192.24	446.90	91.44	-990.35	-12,173.52	24,112.93	23,633.45	479.48	50.289	
18,700.00	6,939.74	7,272.26	7,023.44	193.83	446.90	91.44	-990.35	-12,173.52	24,212.75	23,733.15	479.60	50.486	
18,800.00	6,939.65	7,272.31	7,023.49	195.42	446.91	91.45	-990.35	-12,173.52	24,312.56	23,832.86	479.71	50.682	
18,900.00	6,939.56	7,272.36	7,023.54	197.01	446.92	91.45	-990.35	-12,173.52	24,412.38	23,932.57	479.82	50.878	
19,000.00	6,939.47	7,272.41	7,023.59	198.60	446.92	91.45	-990.35	-12,173.52	24,512.20	24,032.27	479.93	51.075	
19,100.00	6,939.38	7,272.46	7,023.64	200.19	446.93	91.45	-990.35	-12,173.51	24,612.03	24,131.99	480.04	51.271	
19,200.00	6,939.29	7,272.51	7,023.69	201.78	446.93	91.45	-990.35	-12,173.51	24,711.85	24,231.70	480.15	51.467	

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 #722H - Slot B05
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 #722H	**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	Warning
19,300.00	6,939.20	7,272.55	7,023.74	203.37	446.94	91.46	-990.35	-12,173.51	24,811.67	24,331.41	480.26	51.662	
19,400.00	6,939.11	7,272.60	7,023.79	204.97	446.95	91.46	-990.35	-12,173.51	24,911.50	24,431.12	480.38	51.858	
19,500.00	6,939.02	7,272.65	7,023.84	206.56	446.95	91.46	-990.35	-12,173.51	25,011.33	24,530.84	480.49	52.054	
19,600.00	6,938.93	7,272.70	7,023.88	208.15	446.96	91.46	-990.34	-12,173.51	25,111.16	24,630.55	480.60	52.249	
19,700.00	6,938.83	7,272.75	7,023.93	209.74	446.97	91.46	-990.34	-12,173.51	25,210.99	24,730.27	480.72	52.444	
19,800.00	6,938.74	7,272.80	7,023.98	211.33	446.97	91.47	-990.34	-12,173.51	25,310.82	24,829.99	480.83	52.640	
19,900.00	6,938.65	7,272.85	7,024.03	212.93	446.98	91.47	-990.34	-12,173.51	25,410.65	24,929.71	480.95	52.835	
20,000.00	6,938.56	7,272.90	7,024.08	214.52	446.98	91.47	-990.34	-12,173.51	25,510.49	25,029.43	481.06	53.030	
20,100.00	6,938.47	7,272.95	7,024.13	216.11	446.99	91.47	-990.34	-12,173.51	25,610.32	25,129.15	481.17	53.225	
20,200.00	6,938.38	7,273.00	7,024.18	217.71	447.00	91.47	-990.34	-12,173.51	25,710.16	25,228.87	481.29	53.419	
20,300.00	6,938.29	7,273.04	7,024.23	219.30	447.00	91.47	-990.34	-12,173.51	25,810.00	25,328.59	481.41	53.614	
20,400.00	6,938.20	7,273.09	7,024.28	220.89	447.01	91.48	-990.34	-12,173.51	25,909.84	25,428.32	481.52	53.808	
20,500.00	6,938.11	7,273.14	7,024.33	222.49	447.02	91.48	-990.34	-12,173.51	26,009.68	25,528.04	481.64	54.003	
20,600.00	6,938.02	7,273.19	7,024.38	224.08	447.02	91.48	-990.34	-12,173.51	26,109.52	25,627.77	481.75	54.197	
20,626.08	6,938.00	7,273.21	7,024.39	224.49	447.02	91.48	-990.34	-12,173.51	26,135.56	25,653.78	481.78	54.248	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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
0.00	0.00	3,000.00	2,822.02	0.00	19.26	-87.93	346.64	-9,590.32	9,992.25				
100.00	100.00	3,000.00	2,822.02	0.25	19.26	-87.93	346.64	-9,590.32	9,964.85	9,947.72	17.14	581.509	
200.00	200.00	3,089.67	2,907.62	0.61	19.71	-88.00	333.61	-9,566.99	9,938.08	9,920.31	17.78	559.031	
300.00	300.00	3,100.00	2,917.47	0.97	19.76	-88.01	332.06	-9,564.30	9,911.59	9,893.51	18.08	548.104	
400.00	400.00	3,100.00	2,917.47	1.33	19.76	-88.01	332.06	-9,564.30	9,886.04	9,867.67	18.38	538.007	
500.00	500.00	3,151.90	2,967.16	1.68	20.00	-88.05	324.67	-9,551.29	9,860.70	9,841.72	18.98	519.489	
535.00	535.00	3,158.18	2,973.20	1.81	20.03	-98.90	323.83	-9,549.80	9,852.16	9,833.03	19.13	515.063	
600.00	599.99	3,200.00	3,013.57	2.04	20.22	-98.94	318.57	-9,540.23	9,836.85	9,817.28	19.57	502.544	
700.00	699.99	3,200.00	3,013.57	2.40	20.22	-98.94	318.57	-9,540.23	9,813.37	9,793.47	19.90	493.088	
800.00	799.98	3,200.00	3,013.57	2.76	20.22	-98.94	318.57	-9,540.23	9,790.85	9,770.61	20.23	483.892	
900.00	899.97	3,200.00	3,013.57	3.12	20.22	-98.94	318.57	-9,540.23	9,769.30	9,748.73	20.57	474.983	
1,000.00	999.96	3,200.00	3,013.57	3.48	20.22	-98.94	318.57	-9,540.23	9,748.72	9,727.82	20.90	466.373	
1,100.00	1,099.96	3,250.29	3,062.45	3.84	20.41	-98.97	312.91	-9,529.82	9,728.30	9,706.79	21.51	452.188	
1,200.00	1,199.95	3,300.00	3,111.09	4.19	20.60	-99.00	307.98	-9,520.86	9,709.52	9,687.39	22.12	438.915	
1,300.00	1,299.94	3,300.00	3,111.09	4.55	20.60	-99.00	307.98	-9,520.86	9,690.91	9,668.45	22.46	431.487	
1,400.00	1,399.93	3,300.00	3,111.09	4.91	20.60	-99.00	307.98	-9,520.86	9,673.30	9,650.50	22.80	424.328	
1,500.00	1,499.93	3,300.00	3,111.09	5.27	20.60	-99.00	307.98	-9,520.86	9,656.69	9,633.56	23.13	417.429	
1,600.00	1,599.92	3,339.58	3,150.00	5.63	20.71	-99.03	304.47	-9,514.51	9,640.74	9,617.09	23.65	407.633	
1,700.00	1,699.91	3,400.00	3,209.60	5.99	20.89	-99.06	299.77	-9,505.82	9,625.95	9,601.69	24.26	396.752	
1,800.00	1,799.90	3,400.00	3,209.60	6.34	20.89	-99.06	299.77	-9,505.82	9,611.36	9,586.76	24.60	390.743	
1,900.00	1,899.90	3,428.03	3,237.32	6.70	20.96	-99.07	297.80	-9,502.09	9,597.74	9,572.69	25.05	383.189	
2,000.00	1,999.89	3,500.00	3,308.50	7.06	21.15	-99.10	293.14	-9,492.55	9,584.49	9,558.82	25.68	373.288	
2,100.00	2,099.88	3,500.00	3,308.50	7.42	21.15	-99.10	293.14	-9,492.55	9,571.94	9,545.93	26.01	368.019	
2,200.00	2,199.87	3,547.13	3,355.19	7.78	21.26	-99.12	290.34	-9,486.73	9,559.90	9,533.36	26.54	360.249	
2,300.00	2,299.87	3,600.00	3,407.67	8.14	21.38	-99.14	287.39	-9,481.14	9,549.02	9,521.93	27.09	352.521	
2,400.00	2,399.86	3,600.00	3,407.67	8.50	21.38	-99.14	287.39	-9,481.14	9,538.53	9,511.11	27.42	347.891	
2,500.00	2,499.85	3,600.00	3,407.67	8.85	21.38	-99.14	287.39	-9,481.14	9,529.07	9,501.32	27.75	343.433	
2,600.00	2,599.85	3,646.29	3,453.71	9.21	21.46	-99.16	285.11	-9,476.96	9,520.26	9,492.01	28.25	336.983	
2,700.00	2,699.84	3,700.00	3,507.22	9.57	21.56	-99.17	283.02	-9,472.80	9,512.38	9,483.59	28.78	330.472	
2,800.00	2,799.83	3,700.00	3,507.22	9.93	21.56	-99.17	283.02	-9,472.80	9,505.01	9,475.90	29.11	326.538	
2,900.00	2,899.82	3,700.00	3,507.22	10.29	21.56	-99.17	283.02	-9,472.80	9,498.68	9,469.25	29.43	322.753	
3,000.00	2,999.82	3,760.72	3,567.79	10.65	21.64	-99.19	281.10	-9,468.98	9,492.73	9,462.77	29.96	316.844	
3,100.00	3,099.81	3,800.00	3,607.01	11.01	21.69	-99.20	279.96	-9,467.02	9,487.74	9,457.32	30.42	311.941	
3,200.00	3,199.80	3,800.00	3,607.01	11.36	21.69	-99.20	279.96	-9,467.02	9,483.51	9,452.78	30.73	308.589	
3,300.00	3,299.79	3,800.00	3,607.01	11.72	21.69	-99.20	279.96	-9,467.02	9,480.34	9,449.30	31.05	305.367	
3,400.00	3,399.79	4,600.00	4,402.76	12.08	23.38	-99.42	251.93	-9,417.26	9,475.55	9,441.78	33.78	280.534	
3,500.00	3,499.78	4,671.60	4,473.78	12.44	23.53	-99.46	246.45	-9,410.03	9,465.53	9,431.15	34.38	275.329	
3,600.00	3,599.77	4,808.89	4,610.19	12.80	23.81	-99.51	238.62	-9,396.65	9,455.92	9,420.70	35.22	268.454	
3,700.00	3,699.76	4,800.00	4,601.36	13.16	23.79	-99.51	239.07	-9,397.55	9,446.45	9,410.93	35.52	265.931	
3,800.00	3,799.76	4,841.41	4,642.55	13.52	23.86	-99.52	237.12	-9,393.71	9,437.60	9,401.58	36.01	262.065	
3,900.00	3,899.75	4,900.00	4,700.94	13.87	23.96	-99.54	234.89	-9,389.47	9,430.06	9,393.50	36.57	257.874	
4,000.00	3,999.74	4,900.00	4,700.94	14.23	23.96	-99.54	234.89	-9,389.47	9,422.70	9,385.81	36.89	255.397	
4,100.00	4,099.73	4,900.00	4,700.94	14.59	23.96	-99.54	234.89	-9,389.47	9,416.39	9,379.17	37.22	253.014	
4,200.00	4,199.73	4,937.85	4,738.71	14.95	24.01	-99.55	233.71	-9,387.33	9,410.91	9,373.25	37.66	249.889	
4,300.00	4,299.72	5,000.00	4,800.77	15.31	24.09	-99.57	231.99	-9,384.46	9,406.28	9,368.10	38.18	246.352	
4,400.00	4,399.71	5,000.00	4,800.77	15.67	24.09	-99.57	231.99	-9,384.46	9,402.09	9,363.59	38.50	244.222	
4,500.00	4,499.70	5,000.00	4,800.77	16.03	24.09	-99.57	231.99	-9,384.46	9,398.96	9,360.15	38.81	242.176	
4,600.00	4,599.70	5,059.72	4,860.44	16.38	24.14	-99.58	230.64	-9,382.59	9,396.22	9,356.93	39.28	239.190	
4,700.00	4,699.69	5,100.00	4,900.71	16.74	24.18	-99.59	229.92	-9,381.87	9,394.46	9,354.76	39.70	236.623	
4,800.00	4,799.68	5,172.97	4,973.66	17.10	24.24	-99.60	228.80	-9,380.90	9,393.25	9,353.06	40.18	233.758	
4,900.00	4,899.67	5,259.11	5,059.78	17.46	24.31	-99.61	227.50	-9,379.69	9,392.03	9,351.34	40.69	230.818	
5,000.00	4,999.67	5,342.22	5,142.87	17.82	24.38	-99.63	225.80	-9,378.74	9,391.05	9,349.87	41.18	228.070	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	5,400.00	5,200.63	18.18	24.45	-99.64	224.60	-9,378.13	9,390.24	9,348.64	41.60	225.730	
5,187.11	5,186.76	5,443.36	5,243.99	18.49	24.48	-99.65	223.86	-9,377.86	9,389.95	9,348.05	41.90	224.128	CC
5,200.00	5,199.65	5,447.82	5,248.45	18.53	24.48	-99.65	223.80	-9,377.86	9,389.95	9,348.01	41.94	223.903	ES
5,300.00	5,299.64	5,500.00	5,300.62	18.89	24.53	-99.65	223.29	-9,378.08	9,390.44	9,348.16	42.28	222.111	
5,400.00	5,399.64	5,535.00	5,335.62	19.25	24.55	-99.66	223.11	-9,378.44	9,391.48	9,348.93	42.55	220.711	
5,500.00	5,499.63	5,609.18	5,409.80	19.61	24.58	-99.67	222.90	-9,379.36	9,392.92	9,350.13	42.79	219.487	
5,600.00	5,599.62	5,767.52	5,568.12	19.97	24.66	-99.68	221.96	-9,381.27	9,394.41	9,351.40	43.01	218.410	
5,700.00	5,699.61	5,855.48	5,656.07	20.33	24.73	-99.70	220.76	-9,381.86	9,395.28	9,351.97	43.31	216.955	
5,800.00	5,799.61	5,947.36	5,747.94	20.69	24.78	-99.71	220.26	-9,382.84	9,396.52	9,352.95	43.57	215.651	
5,900.00	5,899.60	6,072.70	5,873.28	21.04	24.80	-99.72	220.44	-9,383.77	9,397.46	9,353.66	43.80	214.541	
6,000.00	5,999.59	6,188.52	5,989.09	21.40	24.83	-99.72	220.31	-9,384.49	9,398.29	9,354.24	44.04	213.380	
6,100.00	6,099.58	6,248.59	6,049.17	21.76	24.85	-99.73	220.32	-9,384.89	9,399.19	9,354.88	44.31	212.130	
6,200.00	6,199.58	6,304.48	6,105.05	22.12	24.86	-99.73	220.17	-9,385.56	9,400.58	9,356.01	44.57	210.908	
6,300.00	6,299.57	6,427.10	6,227.66	22.48	24.88	-99.74	220.36	-9,387.22	9,402.16	9,357.38	44.78	209.964	
6,315.05	6,314.62	6,467.49	6,268.04	22.53	24.89	-99.74	220.42	-9,387.64	9,402.34	9,357.54	44.80	209.875	
6,350.00	6,349.55	6,491.43	6,291.99	22.66	24.90	-168.93	220.36	-9,387.81	9,403.65	9,358.76	44.89	209.492	
6,400.00	6,399.30	6,545.97	6,346.52	22.83	24.92	-175.84	220.27	-9,388.28	9,408.87	9,363.87	45.00	209.090	
6,450.00	6,448.52	6,577.10	6,377.65	23.00	24.93	-177.72	220.21	-9,388.61	9,418.08	9,372.96	45.12	208.721	
6,500.00	6,496.91	6,627.57	6,428.12	23.18	24.95	-178.60	220.10	-9,389.22	9,431.20	9,385.96	45.24	208.487	
6,550.00	6,544.17	6,687.27	6,487.81	23.35	24.99	-179.12	219.77	-9,389.77	9,447.89	9,402.54	45.35	208.352	
6,600.00	6,590.01	6,700.00	6,500.54	23.53	24.99	-179.48	219.72	-9,389.89	9,468.34	9,422.87	45.47	208.241	SF
6,650.00	6,634.14	6,736.50	6,537.04	23.70	25.01	-179.75	219.48	-9,390.29	9,492.31	9,446.74	45.57	208.310	
6,700.00	6,676.30	6,750.99	6,551.52	23.88	25.02	-179.97	219.41	-9,390.51	9,519.83	9,474.16	45.67	208.441	
6,750.00	6,716.21	6,764.62	6,565.15	24.06	25.03	179.84	219.36	-9,390.77	9,550.65	9,504.88	45.77	208.683	
6,800.00	6,753.65	6,975.71	6,776.22	24.24	25.05	179.66	219.68	-9,393.31	9,584.47	9,538.62	45.85	209.051	
6,850.00	6,788.37	7,000.00	6,800.51	24.44	25.06	179.47	219.73	-9,393.35	9,620.49	9,574.54	45.95	209.355	
6,900.00	6,820.16	7,034.20	6,834.71	24.63	25.07	179.27	219.75	-9,393.35	9,659.06	9,613.00	46.06	209.705	
6,950.00	6,848.83	7,046.85	6,847.36	24.84	25.08	179.04	219.80	-9,393.39	9,700.11	9,653.97	46.14	210.248	
7,000.00	6,874.19	7,057.98	6,858.49	25.06	25.08	178.75	219.86	-9,393.45	9,743.30	9,697.10	46.20	210.892	
7,050.00	6,896.10	7,067.52	6,868.03	25.29	25.09	178.36	219.92	-9,393.50	9,788.36	9,742.10	46.25	211.628	
7,100.00	6,914.42	7,137.43	6,937.93	25.53	25.14	177.83	219.61	-9,393.85	9,835.00	9,788.54	46.46	211.695	
7,150.00	6,929.03	7,151.99	6,952.48	25.78	25.15	176.96	219.37	-9,393.88	9,882.82	9,836.28	46.54	212.360	
7,200.00	6,939.85	7,253.97	7,054.40	26.05	25.28	175.47	216.31	-9,393.57	9,931.55	9,884.72	46.82	212.110	
7,250.00	6,946.80	7,260.94	7,061.36	26.32	25.29	171.76	216.03	-9,393.52	9,980.99	9,934.14	46.85	213.061	
7,300.00	6,949.85	7,264.21	7,064.63	26.61	25.29	150.73	215.90	-9,393.50	10,030.85	9,983.99	46.86	214.069	
7,314.43	6,950.00	7,264.47	7,064.89	26.69	25.29	111.97	215.89	-9,393.50	10,045.28	9,998.42	46.86	214.368	
7,400.00	6,949.92	7,265.07	7,065.49	27.21	25.30	112.14	215.86	-9,393.49	10,130.83	10,083.96	46.87	216.161	
7,500.00	6,949.83	7,265.77	7,066.19	27.90	25.30	112.34	215.83	-9,393.49	10,230.81	10,183.94	46.88	218.253	
7,600.00	6,949.74	7,266.46	7,066.88	28.66	25.30	112.54	215.81	-9,393.48	10,330.80	10,283.91	46.89	220.338	
7,700.00	6,949.65	7,267.16	7,067.58	29.49	25.30	112.74	215.78	-9,393.48	10,430.78	10,383.89	46.90	222.418	
7,800.00	6,949.56	7,267.86	7,068.28	30.38	25.30	112.94	215.75	-9,393.47	10,530.77	10,483.86	46.91	224.493	
7,900.00	6,949.47	7,268.55	7,068.97	31.33	25.30	113.14	215.72	-9,393.47	10,630.75	10,583.83	46.92	226.561	
8,000.00	6,949.38	7,269.25	7,069.67	32.33	25.30	113.33	215.70	-9,393.46	10,730.74	10,683.80	46.94	228.624	
8,100.00	6,949.29	7,269.94	7,070.36	33.38	25.30	113.53	215.67	-9,393.46	10,830.72	10,783.77	46.95	230.680	
8,200.00	6,949.20	7,270.64	7,071.05	34.47	25.30	113.72	215.64	-9,393.46	10,930.71	10,883.74	46.97	232.730	
8,300.00	6,949.11	7,271.33	7,071.75	35.60	25.30	113.92	215.61	-9,393.45	11,030.70	10,983.71	46.98	234.774	
8,400.00	6,949.02	7,272.02	7,072.44	36.76	25.31	114.11	215.59	-9,393.45	11,130.68	11,083.68	47.00	236.812	
8,500.00	6,948.93	7,272.71	7,073.13	37.96	25.31	114.30	215.56	-9,393.44	11,230.67	11,183.65	47.02	238.843	
8,600.00	6,948.84	7,273.40	7,073.82	39.18	25.31	114.49	215.53	-9,393.44	11,330.65	11,283.61	47.04	240.867	
8,700.00	6,948.75	7,274.09	7,074.50	40.43	25.31	114.68	215.51	-9,393.43	11,430.64	11,383.58	47.06	242.885	
8,800.00	6,948.66	7,274.78	7,075.19	41.71	25.31	114.87	215.48	-9,393.43	11,530.63	11,483.54	47.08	244.896	
8,900.00	6,948.57	7,275.47	7,075.88	43.00	25.31	115.06	215.45	-9,393.42	11,630.62	11,583.51	47.11	246.900	

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 #722H - Slot B05
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 #722H	**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
9,000.00	6,948.48	7,276.15	7,076.56	44.32	25.31	115.25	215.43	-9,393.42	11,730.60	11,683.47	47.13	248.897	
9,100.00	6,948.39	7,276.84	7,077.25	45.66	25.31	115.43	215.40	-9,393.41	11,830.59	11,783.44	47.15	250.887	
9,200.00	6,948.30	7,277.52	7,077.93	47.01	25.31	115.62	215.37	-9,393.41	11,930.58	11,883.40	47.18	252.870	
9,300.00	6,948.21	7,278.21	7,078.62	48.38	25.31	115.80	215.35	-9,393.40	12,030.57	11,983.36	47.21	254.846	
9,400.00	6,948.12	7,278.89	7,079.30	49.76	25.32	115.99	215.32	-9,393.40	12,130.55	12,083.32	47.23	256.814	
9,500.00	6,948.03	7,279.57	7,079.98	51.16	25.32	116.17	215.29	-9,393.39	12,230.54	12,183.28	47.26	258.775	
9,600.00	6,947.94	7,280.25	7,080.66	52.56	25.32	116.35	215.27	-9,393.39	12,330.53	12,283.24	47.29	260.728	
9,700.00	6,947.85	7,280.93	7,081.34	53.98	25.32	116.53	215.24	-9,393.38	12,430.52	12,383.20	47.32	262.674	
9,800.00	6,947.76	7,281.61	7,082.02	55.41	25.32	116.72	215.21	-9,393.38	12,530.51	12,483.15	47.35	264.612	
9,900.00	6,947.67	7,282.29	7,082.70	56.85	25.32	116.90	215.19	-9,393.37	12,630.50	12,583.11	47.39	266.542	
10,000.00	6,947.58	7,282.97	7,083.37	58.29	25.32	117.07	215.16	-9,393.37	12,730.48	12,683.06	47.42	268.465	
10,100.00	6,947.49	7,283.64	7,084.05	59.75	25.32	117.25	215.13	-9,393.36	12,830.47	12,783.02	47.45	270.379	
10,200.00	6,947.40	7,284.32	7,084.72	61.21	25.32	117.43	215.11	-9,393.36	12,930.46	12,882.97	47.49	272.286	
10,300.00	6,947.31	7,284.99	7,085.40	62.68	25.32	117.61	215.08	-9,393.36	13,030.45	12,982.93	47.52	274.184	
10,400.00	6,947.22	7,285.67	7,086.07	64.15	25.33	117.78	215.06	-9,393.35	13,130.44	13,082.88	47.56	276.075	
10,500.00	6,947.13	7,286.34	7,086.75	65.63	25.33	117.96	215.03	-9,393.35	13,230.43	13,182.83	47.60	277.957	
10,600.00	6,947.04	7,287.01	7,087.42	67.12	25.33	118.13	215.01	-9,393.34	13,330.42	13,282.78	47.64	279.831	
10,700.00	6,946.95	7,287.69	7,088.09	68.61	25.33	118.30	214.98	-9,393.34	13,430.41	13,382.73	47.68	281.697	
10,800.00	6,946.86	7,288.36	7,088.76	70.11	25.33	118.47	214.95	-9,393.33	13,530.40	13,482.68	47.72	283.555	
10,900.00	6,946.77	7,289.03	7,089.43	71.61	25.33	118.65	214.93	-9,393.33	13,630.39	13,582.63	47.76	285.404	
11,000.00	6,946.68	7,289.70	7,090.10	73.11	25.33	118.82	214.90	-9,393.32	13,730.38	13,682.58	47.80	287.245	
11,100.00	6,946.59	7,290.36	7,090.76	74.62	25.33	118.99	214.88	-9,393.32	13,830.37	13,782.53	47.84	289.077	
11,200.00	6,946.50	7,291.03	7,091.43	76.14	25.33	119.16	214.85	-9,393.31	13,930.36	13,882.47	47.89	290.900	
11,300.00	6,946.41	7,291.70	7,092.10	77.65	25.33	119.32	214.83	-9,393.31	14,030.35	13,982.42	47.93	292.715	
11,400.00	6,946.32	7,292.36	7,092.76	79.18	25.34	119.49	214.80	-9,393.30	14,130.34	14,082.36	47.98	294.522	
11,500.00	6,946.23	7,293.03	7,093.43	80.70	25.34	119.66	214.78	-9,393.30	14,230.33	14,182.31	48.02	296.320	
11,600.00	6,946.14	7,293.69	7,094.09	82.23	25.34	119.82	214.75	-9,393.30	14,330.32	14,282.25	48.07	298.109	
11,700.00	6,946.05	7,294.36	7,094.75	83.76	25.34	119.99	214.73	-9,393.29	14,430.31	14,382.19	48.12	299.889	
11,800.00	6,945.96	7,295.02	7,095.42	85.29	25.34	120.15	214.70	-9,393.29	14,530.30	14,482.14	48.17	301.660	
11,900.00	6,945.87	7,295.68	7,096.08	86.82	25.34	120.32	214.68	-9,393.28	14,630.29	14,582.08	48.22	303.423	
12,000.00	6,945.78	7,300.00	7,100.39	88.36	25.35	121.37	214.51	-9,393.25	14,730.29	14,682.01	48.27	305.141	
12,100.00	6,945.69	7,300.00	7,100.39	89.90	25.35	121.37	214.51	-9,393.25	14,830.28	14,781.95	48.32	306.892	
12,200.00	6,945.60	7,300.00	7,100.39	91.44	25.35	121.37	214.51	-9,393.25	14,930.27	14,881.89	48.38	308.635	
12,300.00	6,945.51	7,300.00	7,100.39	92.99	25.35	121.37	214.51	-9,393.25	15,030.26	14,981.83	48.43	310.368	
12,400.00	6,945.42	7,300.00	7,100.39	94.53	25.35	121.37	214.51	-9,393.25	15,130.25	15,081.77	48.48	312.093	
12,500.00	6,945.33	7,300.00	7,100.39	96.08	25.35	121.37	214.51	-9,393.25	15,230.24	15,181.71	48.53	313.808	
12,600.00	6,945.24	7,300.00	7,100.39	97.63	25.35	121.37	214.51	-9,393.25	15,330.23	15,281.65	48.59	315.515	
12,700.00	6,945.15	7,300.00	7,100.39	99.18	25.35	121.37	214.51	-9,393.25	15,430.23	15,381.58	48.64	317.212	
12,800.00	6,945.06	7,300.00	7,100.39	100.74	25.35	121.37	214.51	-9,393.25	15,530.22	15,481.52	48.70	318.901	
12,900.00	6,944.96	7,300.00	7,100.39	102.29	25.35	121.37	214.51	-9,393.25	15,630.21	15,581.45	48.76	320.580	
13,000.00	6,944.87	7,300.00	7,100.39	103.85	25.35	121.37	214.51	-9,393.25	15,730.20	15,681.39	48.81	322.251	
13,100.00	6,944.78	7,300.00	7,100.39	105.40	25.35	121.37	214.51	-9,393.25	15,830.19	15,781.32	48.87	323.912	
13,200.00	6,944.69	7,300.00	7,100.39	106.96	25.35	121.37	214.51	-9,393.25	15,930.19	15,881.25	48.93	325.565	
13,300.00	6,944.60	7,300.00	7,100.39	108.52	25.35	121.37	214.51	-9,393.25	16,030.18	15,981.19	48.99	327.208	
13,400.00	6,944.51	7,300.00	7,100.39	110.08	25.35	121.37	214.51	-9,393.25	16,130.17	16,081.12	49.05	328.842	
13,500.00	6,944.42	7,300.00	7,100.39	111.65	25.35	121.37	214.51	-9,393.25	16,230.16	16,181.05	49.11	330.468	
13,600.00	6,944.33	7,300.00	7,100.39	113.21	25.35	121.37	214.51	-9,393.25	16,330.16	16,280.98	49.17	332.084	
13,700.00	6,944.24	7,300.00	7,100.39	114.78	25.35	121.37	214.51	-9,393.25	16,430.15	16,380.91	49.24	333.691	
13,800.00	6,944.15	7,300.00	7,100.39	116.34	25.35	121.37	214.51	-9,393.25	16,530.14	16,480.84	49.30	335.288	
13,900.00	6,944.06	7,300.00	7,100.39	117.91	25.35	121.37	214.51	-9,393.25	16,630.13	16,580.77	49.37	336.877	
14,000.00	6,943.97	7,300.00	7,100.39	119.48	25.35	121.37	214.51	-9,393.25	16,730.13	16,680.70	49.43	338.457	
14,100.00	6,943.88	7,300.00	7,100.39	121.05	25.35	121.37	214.51	-9,393.25	16,830.12	16,780.62	49.50	340.027	

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 #722H - Slot B05
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 #722H	**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
14,200.00	6,943.79	7,300.00	7,100.39	122.62	25.35	121.37	214.51	-9,393.25	16,930.11	16,880.55	49.56	341.589	
14,300.00	6,943.70	7,300.00	7,100.39	124.19	25.35	121.37	214.51	-9,393.25	17,030.11	16,980.48	49.63	343.141	
14,400.00	6,943.61	7,300.00	7,100.39	125.76	25.35	121.37	214.51	-9,393.25	17,130.10	17,080.40	49.70	344.685	
14,500.00	6,943.52	7,300.00	7,100.39	127.33	25.35	121.37	214.51	-9,393.25	17,230.09	17,180.33	49.77	346.219	
14,600.00	6,943.43	7,300.00	7,100.39	128.90	25.35	121.37	214.51	-9,393.25	17,330.09	17,280.25	49.84	347.744	
14,700.00	6,943.34	7,300.00	7,100.39	130.48	25.35	121.37	214.51	-9,393.25	17,430.08	17,380.17	49.91	349.261	
14,800.00	6,943.25	7,300.00	7,100.39	132.05	25.35	121.37	214.51	-9,393.25	17,530.07	17,480.10	49.98	350.768	
14,900.00	6,943.16	7,300.00	7,100.39	133.63	25.35	121.37	214.51	-9,393.25	17,630.07	17,580.02	50.05	352.266	
15,000.00	6,943.07	7,300.00	7,100.39	135.20	25.35	121.37	214.51	-9,393.25	17,730.06	17,679.94	50.12	353.755	
15,100.00	6,942.98	7,300.00	7,100.39	136.78	25.35	121.37	214.51	-9,393.25	17,830.05	17,779.86	50.19	355.235	
15,200.00	6,942.89	7,300.00	7,100.39	138.36	25.35	121.37	214.51	-9,393.25	17,930.05	17,879.78	50.27	356.706	
15,300.00	6,942.80	7,300.00	7,100.39	139.93	25.35	121.37	214.51	-9,393.25	18,030.04	17,979.70	50.34	358.169	
15,400.00	6,942.71	7,300.00	7,100.39	141.51	25.35	121.37	214.51	-9,393.25	18,130.04	18,079.62	50.41	359.622	
15,500.00	6,942.62	7,300.00	7,100.39	143.09	25.35	121.37	214.51	-9,393.25	18,230.03	18,179.54	50.49	361.066	
15,600.00	6,942.53	7,300.00	7,100.39	144.67	25.35	121.37	214.51	-9,393.25	18,330.02	18,279.46	50.57	362.502	
15,700.00	6,942.44	7,300.00	7,100.39	146.25	25.35	121.37	214.51	-9,393.25	18,430.02	18,379.38	50.64	363.929	
15,800.00	6,942.35	7,300.00	7,100.39	147.83	25.35	121.37	214.51	-9,393.25	18,530.01	18,479.29	50.72	365.347	
15,900.00	6,942.26	7,300.00	7,100.39	149.41	25.35	121.37	214.51	-9,393.25	18,630.01	18,579.21	50.80	366.756	
16,000.00	6,942.17	7,300.00	7,100.39	150.99	25.35	121.37	214.51	-9,393.25	18,730.00	18,679.13	50.88	368.156	
16,100.00	6,942.08	7,300.00	7,100.39	152.57	25.35	121.37	214.51	-9,393.25	18,830.00	18,779.04	50.95	369.548	
16,200.00	6,941.99	7,300.00	7,100.39	154.16	25.35	121.37	214.51	-9,393.25	18,929.99	18,878.96	51.03	370.930	
16,300.00	6,941.90	7,300.00	7,100.39	155.74	25.35	121.37	214.51	-9,393.25	19,029.98	18,978.87	51.11	372.304	
16,400.00	6,941.81	8,065.46	7,865.14	157.32	25.91	169.22	218.08	-9,372.91	19,129.85	19,077.22	52.63	363.491	
16,500.00	6,941.72	8,067.83	7,867.50	158.91	25.91	169.25	218.13	-9,372.80	19,229.74	19,177.02	52.72	364.770	
16,600.00	6,941.63	8,070.18	7,869.85	160.49	25.91	169.28	218.18	-9,372.69	19,329.64	19,276.83	52.81	366.042	
16,700.00	6,941.54	8,072.52	7,872.19	162.07	25.91	169.31	218.23	-9,372.58	19,429.53	19,376.63	52.90	367.305	
16,800.00	6,941.45	8,074.84	7,874.51	163.66	25.91	169.35	218.28	-9,372.48	19,529.43	19,476.44	52.99	368.561	
16,900.00	6,941.36	8,100.00	7,899.64	165.24	25.92	169.67	218.83	-9,371.33	19,629.35	19,576.20	53.15	369.330	
17,000.00	6,941.27	8,100.00	7,899.64	166.83	25.92	169.67	218.83	-9,371.33	19,729.24	19,676.01	53.23	370.616	
17,100.00	6,941.18	8,100.00	7,899.64	168.42	25.92	169.67	218.83	-9,371.33	19,829.13	19,775.81	53.32	371.895	
17,200.00	6,941.09	8,100.00	7,899.64	170.00	25.92	169.67	218.83	-9,371.33	19,929.02	19,875.62	53.41	373.166	
17,300.00	6,941.00	8,100.00	7,899.64	171.59	25.92	169.67	218.83	-9,371.33	20,028.92	19,975.43	53.49	374.429	
17,400.00	6,940.91	8,100.00	7,899.64	173.18	25.92	169.67	218.83	-9,371.33	20,128.81	20,075.24	53.58	375.684	
17,500.00	6,940.82	8,100.00	7,899.64	174.76	25.92	169.67	218.83	-9,371.33	20,228.71	20,175.04	53.67	376.932	
17,600.00	6,940.73	8,100.00	7,899.64	176.35	25.92	169.67	218.83	-9,371.33	20,328.61	20,274.85	53.75	378.172	
17,700.00	6,940.64	8,100.00	7,899.64	177.94	25.92	169.67	218.83	-9,371.33	20,428.51	20,374.66	53.84	379.404	
17,800.00	6,940.55	8,100.00	7,899.64	179.53	25.92	169.67	218.83	-9,371.33	20,528.41	20,474.47	53.93	380.629	
17,900.00	6,940.46	8,100.00	7,899.64	181.11	25.92	169.67	218.83	-9,371.33	20,628.31	20,574.29	54.02	381.846	
18,000.00	6,940.37	8,100.00	7,899.64	182.70	25.92	169.67	218.83	-9,371.33	20,728.21	20,674.10	54.11	383.055	
18,100.00	6,940.28	8,100.00	7,899.64	184.29	25.92	169.67	218.83	-9,371.33	20,828.11	20,773.91	54.20	384.257	
18,200.00	6,940.19	8,100.00	7,899.64	185.88	25.92	169.67	218.83	-9,371.33	20,928.02	20,873.72	54.29	385.452	
18,300.00	6,940.10	8,100.00	7,899.64	187.47	25.92	169.67	218.83	-9,371.33	21,027.92	20,973.53	54.39	386.639	
18,400.00	6,940.01	8,100.00	7,899.64	189.06	25.92	169.67	218.83	-9,371.33	21,127.82	21,073.35	54.48	387.819	
18,500.00	6,939.92	8,100.00	7,899.64	190.65	25.92	169.67	218.83	-9,371.33	21,227.73	21,173.16	54.57	388.991	
18,600.00	6,939.83	8,100.00	7,899.64	192.24	25.92	169.67	218.83	-9,371.33	21,327.64	21,272.97	54.66	390.156	
18,700.00	6,939.74	8,100.00	7,899.64	193.83	25.92	169.67	218.83	-9,371.33	21,427.55	21,372.79	54.76	391.313	
18,800.00	6,939.65	8,100.00	7,899.64	195.42	25.92	169.67	218.83	-9,371.33	21,527.45	21,472.60	54.85	392.464	
18,900.00	6,939.56	8,100.00	7,899.64	197.01	25.92	169.67	218.83	-9,371.33	21,627.36	21,572.42	54.95	393.607	
19,000.00	6,939.47	8,100.00	7,899.64	198.60	25.92	169.67	218.83	-9,371.33	21,727.27	21,672.23	55.04	394.743	
19,100.00	6,939.38	8,100.00	7,899.64	200.19	25.92	169.67	218.83	-9,371.33	21,827.19	21,772.05	55.14	395.872	
19,200.00	6,939.29	8,100.00	7,899.64	201.78	25.92	169.67	218.83	-9,371.33	21,927.10	21,871.86	55.23	396.993	
19,300.00	6,939.20	8,100.00	7,899.64	203.37	25.92	169.67	218.83	-9,371.33	22,027.01	21,971.68	55.33	398.108	

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 #722H - Slot B05
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 #722H	**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
19,400.00	6,939.11	8,100.00	7,899.64	204.97	25.92	169.67	218.83	-9,371.33	22,126.92	22,071.50	55.43	399.216	
19,500.00	6,939.02	8,100.00	7,899.64	206.56	25.92	169.67	218.83	-9,371.33	22,226.84	22,171.32	55.52	400.316	
19,600.00	6,938.93	8,100.00	7,899.64	208.15	25.92	169.67	218.83	-9,371.33	22,326.75	22,271.13	55.62	401.410	
19,700.00	6,938.83	8,100.00	7,899.64	209.74	25.92	169.67	218.83	-9,371.33	22,426.67	22,370.95	55.72	402.497	
19,800.00	6,938.74	8,100.00	7,899.64	211.33	25.92	169.67	218.83	-9,371.33	22,526.59	22,470.77	55.82	403.576	
19,900.00	6,938.65	8,100.00	7,899.64	212.93	25.92	169.67	218.83	-9,371.33	22,626.50	22,570.59	55.92	404.649	
20,000.00	6,938.56	8,100.00	7,899.64	214.52	25.92	169.67	218.83	-9,371.33	22,726.42	22,670.41	56.02	405.716	
20,100.00	6,938.47	8,100.00	7,899.64	216.11	25.92	169.67	218.83	-9,371.33	22,826.34	22,770.23	56.12	406.775	
20,200.00	6,938.38	8,100.00	7,899.64	217.71	25.92	169.67	218.83	-9,371.33	22,926.26	22,870.04	56.22	407.828	
20,300.00	6,938.29	8,100.00	7,899.64	219.30	25.92	169.67	218.83	-9,371.33	23,026.18	22,969.86	56.32	408.874	
20,400.00	6,938.20	8,100.00	7,899.64	220.89	25.92	169.67	218.83	-9,371.33	23,126.10	23,069.68	56.42	409.913	
20,500.00	6,938.11	8,100.00	7,899.64	222.49	25.92	169.67	218.83	-9,371.33	23,226.02	23,169.50	56.52	410.946	
20,600.00	6,938.02	8,100.00	7,899.64	224.08	25.92	169.67	218.83	-9,371.33	23,325.95	23,269.32	56.62	411.972	
20,626.08	6,938.00	8,100.00	7,899.64	224.49	25.92	169.67	218.83	-9,371.33	23,352.01	23,295.36	56.65	412.239	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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
0.00	0.00	3,000.00	2,822.02	0.00	19.26	-87.93	346.64	-9,590.32	9,992.25				
100.00	100.00	3,000.00	2,822.02	0.25	19.26	-87.93	346.64	-9,590.32	9,964.85	9,947.72	17.14	581.509	
200.00	200.00	3,089.67	2,907.62	0.61	19.71	-88.00	333.61	-9,566.99	9,938.08	9,920.31	17.78	559.031	
300.00	300.00	3,100.00	2,917.47	0.97	19.76	-88.01	332.06	-9,564.30	9,911.59	9,893.51	18.08	548.104	
400.00	400.00	3,100.00	2,917.47	1.33	19.76	-88.01	332.06	-9,564.30	9,886.04	9,867.67	18.38	538.007	
500.00	500.00	3,151.90	2,967.16	1.68	20.00	-88.05	324.67	-9,551.29	9,860.70	9,841.72	18.98	519.489	
535.00	535.00	3,158.18	2,973.20	1.81	20.03	-98.90	323.83	-9,549.80	9,852.16	9,833.03	19.13	515.063	
600.00	599.99	3,200.00	3,013.57	2.04	20.22	-98.94	318.57	-9,540.23	9,836.85	9,817.28	19.57	502.544	
700.00	699.99	3,200.00	3,013.57	2.40	20.22	-98.94	318.57	-9,540.23	9,813.37	9,793.47	19.90	493.088	
800.00	799.98	3,200.00	3,013.57	2.76	20.22	-98.94	318.57	-9,540.23	9,790.85	9,770.61	20.23	483.892	
900.00	899.97	3,200.00	3,013.57	3.12	20.22	-98.94	318.57	-9,540.23	9,769.30	9,748.73	20.57	474.983	
1,000.00	999.96	3,200.00	3,013.57	3.48	20.22	-98.94	318.57	-9,540.23	9,748.72	9,727.82	20.90	466.373	
1,100.00	1,099.96	3,250.29	3,062.45	3.84	20.41	-98.97	312.91	-9,529.82	9,728.30	9,706.79	21.51	452.188	
1,200.00	1,199.95	3,300.00	3,111.09	4.19	20.60	-99.00	307.98	-9,520.86	9,709.52	9,687.39	22.12	438.915	
1,300.00	1,299.94	3,300.00	3,111.09	4.55	20.60	-99.00	307.98	-9,520.86	9,690.91	9,668.45	22.46	431.487	
1,400.00	1,399.93	3,300.00	3,111.09	4.91	20.60	-99.00	307.98	-9,520.86	9,673.30	9,650.50	22.80	424.328	
1,500.00	1,499.93	3,300.00	3,111.09	5.27	20.60	-99.00	307.98	-9,520.86	9,656.69	9,633.56	23.13	417.429	
1,600.00	1,599.92	3,339.58	3,150.00	5.63	20.71	-99.03	304.47	-9,514.51	9,640.74	9,617.09	23.65	407.633	
1,700.00	1,699.91	3,400.00	3,209.60	5.99	20.89	-99.06	299.77	-9,505.82	9,625.95	9,601.69	24.26	396.752	
1,800.00	1,799.90	3,400.00	3,209.60	6.34	20.89	-99.06	299.77	-9,505.82	9,611.36	9,586.76	24.60	390.743	
1,900.00	1,899.90	3,428.03	3,237.32	6.70	20.96	-99.07	297.80	-9,502.09	9,597.74	9,572.69	25.05	383.189	
2,000.00	1,999.89	3,500.00	3,308.50	7.06	21.15	-99.10	293.14	-9,492.55	9,584.49	9,558.82	25.68	373.288	
2,100.00	2,099.88	3,500.00	3,308.50	7.42	21.15	-99.10	293.14	-9,492.55	9,571.94	9,545.93	26.01	368.019	
2,200.00	2,199.87	3,547.13	3,355.19	7.78	21.26	-99.12	290.34	-9,486.73	9,559.90	9,533.36	26.54	360.249	
2,300.00	2,299.87	3,600.00	3,407.67	8.14	21.38	-99.14	287.39	-9,481.14	9,549.02	9,521.93	27.09	352.521	
2,400.00	2,399.86	3,600.00	3,407.67	8.50	21.38	-99.14	287.39	-9,481.14	9,538.53	9,511.11	27.42	347.891	
2,500.00	2,499.85	3,600.00	3,407.67	8.85	21.38	-99.14	287.39	-9,481.14	9,529.07	9,501.32	27.75	343.433	
2,600.00	2,599.85	3,646.29	3,453.71	9.21	21.46	-99.16	285.11	-9,476.96	9,520.26	9,492.01	28.25	336.983	
2,700.00	2,699.84	3,700.00	3,507.22	9.57	21.56	-99.17	283.02	-9,472.80	9,512.38	9,483.59	28.78	330.472	
2,800.00	2,799.83	3,700.00	3,507.22	9.93	21.56	-99.17	283.02	-9,472.80	9,505.01	9,475.90	29.11	326.538	
2,900.00	2,899.82	3,700.00	3,507.22	10.29	21.56	-99.17	283.02	-9,472.80	9,498.68	9,469.25	29.43	322.753	
3,000.00	2,999.82	3,760.72	3,567.79	10.65	21.64	-99.19	281.10	-9,468.98	9,492.73	9,462.77	29.96	316.844	
3,100.00	3,099.81	3,800.00	3,607.01	11.01	21.69	-99.20	279.96	-9,467.02	9,487.74	9,457.32	30.42	311.941	
3,200.00	3,199.80	3,800.00	3,607.01	11.36	21.69	-99.20	279.96	-9,467.02	9,483.51	9,452.78	30.73	308.589	
3,300.00	3,299.79	3,800.00	3,607.01	11.72	21.69	-99.20	279.96	-9,467.02	9,480.34	9,449.30	31.05	305.367	
3,400.00	3,399.79	3,856.85	3,663.80	12.08	21.74	-99.21	278.64	-9,465.08	9,477.43	9,445.92	31.51	300.759	
3,500.00	3,499.78	4,689.08	4,491.11	12.44	22.78	-99.45	247.76	-9,410.81	9,468.06	9,435.20	32.86	288.169	
3,600.00	3,599.77	4,752.78	4,554.41	12.80	22.87	-99.48	244.07	-9,404.57	9,458.34	9,425.09	33.25	284.464	
3,700.00	3,699.76	4,862.00	4,662.97	13.16	23.01	-99.52	238.86	-9,393.93	9,448.68	9,414.99	33.69	280.469	
3,800.00	3,799.76	4,862.00	4,662.97	13.52	23.01	-99.52	238.86	-9,393.93	9,439.61	9,405.59	34.02	277.472	
3,900.00	3,899.75	4,894.00	4,694.84	13.87	23.04	-99.52	237.80	-9,391.28	9,431.43	9,397.05	34.38	274.326	
4,000.00	3,999.74	4,894.00	4,694.84	14.23	23.04	-99.52	237.80	-9,391.28	9,424.13	9,389.43	34.71	271.534	
4,100.00	4,099.73	4,926.00	4,726.76	14.59	23.07	-99.53	236.86	-9,389.14	9,417.68	9,382.61	35.06	268.585	
4,200.00	4,199.73	4,934.84	4,735.58	14.95	23.08	-99.53	236.62	-9,388.65	9,412.13	9,376.73	35.39	265.919	
4,300.00	4,299.72	4,946.00	4,746.72	15.31	23.08	-99.54	236.28	-9,388.10	9,407.49	9,371.77	35.73	263.330	
4,400.00	4,399.71	5,005.00	4,805.65	15.67	23.13	-99.55	234.75	-9,385.58	9,403.45	9,367.34	36.11	260.406	
4,500.00	4,499.70	5,022.00	4,822.63	16.03	23.14	-99.55	234.45	-9,384.94	9,400.12	9,363.68	36.44	257.942	
4,600.00	4,599.70	5,064.00	4,864.61	16.38	23.16	-99.56	233.78	-9,383.89	9,397.68	9,360.88	36.80	255.369	
4,700.00	4,699.69	5,087.30	4,887.90	16.74	23.29	-99.56	233.37	-9,383.53	9,395.97	9,358.70	37.27	252.087	
4,800.00	4,799.68	5,211.55	5,012.12	17.10	24.00	-99.59	231.00	-9,381.43	9,394.45	9,356.00	38.45	244.360	
4,900.00	4,899.67	5,335.78	5,136.29	17.46	24.71	-99.61	228.28	-9,379.01	9,392.67	9,353.05	39.62	237.091	
5,000.00	4,999.67	5,459.96	5,260.41	17.82	25.42	-99.64	225.20	-9,376.28	9,390.63	9,349.84	40.79	230.241	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	5,565.93	5,366.31	18.18	26.20	-99.66	222.39	-9,373.79	9,388.43	9,346.43	42.00	223.536	
5,200.00	5,199.65	5,672.45	5,472.76	18.53	26.97	-99.69	219.48	-9,371.21	9,386.17	9,342.96	43.21	217.216	
5,300.00	5,299.64	5,778.96	5,579.19	18.89	27.74	-99.72	216.49	-9,368.56	9,383.83	9,339.41	44.42	211.240	
5,400.00	5,399.64	5,885.46	5,685.61	19.25	28.52	-99.74	213.42	-9,365.83	9,381.43	9,335.80	45.63	205.581	
5,500.00	5,499.63	5,975.29	5,775.38	19.61	29.42	-99.76	210.83	-9,363.53	9,379.04	9,332.07	46.97	199.685	
5,600.00	5,599.62	6,062.08	5,862.11	19.97	30.35	-99.79	208.46	-9,361.43	9,376.78	9,328.45	48.33	194.025	
5,700.00	5,699.61	6,148.89	5,948.86	20.33	31.29	-99.80	206.22	-9,359.45	9,374.66	9,324.98	49.69	188.676	
5,800.00	5,799.61	6,235.71	6,035.64	20.69	32.23	-99.82	204.12	-9,357.59	9,372.69	9,321.64	51.05	183.612	
5,900.00	5,899.60	6,322.54	6,122.43	21.04	33.16	-99.84	202.16	-9,355.84	9,370.85	9,318.45	52.41	178.813	
6,000.00	5,999.59	6,409.38	6,209.24	21.40	34.11	-99.86	200.32	-9,354.22	9,369.16	9,315.39	53.77	174.259	
6,100.00	6,099.58	6,503.05	6,302.88	21.76	34.61	-99.88	198.47	-9,352.58	9,367.59	9,312.92	54.67	171.352	
6,200.00	6,199.58	6,602.99	6,402.78	22.12	34.72	-99.90	196.52	-9,350.84	9,366.03	9,310.88	55.15	169.826	
6,300.00	6,299.57	6,686.91	6,486.68	22.48	34.79	-99.91	194.91	-9,349.41	9,364.52	9,308.93	55.59	168.454	
6,315.05	6,314.62	6,697.23	6,496.99	22.53	34.79	-99.91	194.73	-9,349.25	9,364.32	9,308.67	55.65	168.268	
6,323.44	6,323.00	6,702.97	6,502.73	22.56	34.80	-142.36	194.63	-9,349.17	9,364.26	9,308.58	55.68	168.167 CC, ES	
6,350.00	6,349.55	6,721.17	6,520.93	22.66	34.81	-169.10	194.33	-9,348.90	9,364.83	9,309.04	55.79	167.862	
6,400.00	6,399.30	6,772.00	6,571.75	22.83	34.84	-176.02	193.60	-9,348.25	9,368.99	9,312.99	56.00	167.305	
6,450.00	6,448.52	6,796.97	6,596.71	23.00	34.87	-177.89	193.27	-9,347.96	9,377.07	9,320.88	56.20	166.856	
6,500.00	6,496.91	6,845.49	6,645.23	23.18	34.93	-178.78	192.64	-9,347.40	9,389.03	9,332.60	56.44	166.366	
6,550.00	6,544.17	6,892.93	6,692.66	23.35	34.99	-179.31	192.02	-9,346.85	9,404.76	9,348.09	56.67	165.968	
6,600.00	6,590.01	6,939.00	6,738.72	23.53	35.04	-179.67	191.42	-9,346.32	9,424.16	9,367.27	56.89	165.662	
6,650.00	6,634.14	6,983.40	6,783.11	23.70	35.10	-179.95	190.84	-9,345.81	9,447.12	9,390.02	57.10	165.452	
6,700.00	6,676.30	7,025.86	6,825.57	23.88	35.16	179.83	190.28	-9,345.31	9,473.48	9,416.18	57.31	165.310	
6,750.00	6,716.21	7,066.13	6,865.83	24.06	35.22	179.62	189.76	-9,344.85	9,503.10	9,445.59	57.51	165.250 SF	
6,800.00	6,753.65	7,103.95	6,903.64	24.24	35.28	179.42	189.26	-9,344.41	9,535.79	9,478.09	57.69	165.287	
6,850.00	6,788.37	7,139.09	6,938.78	24.44	35.34	179.22	188.81	-9,344.00	9,571.34	9,513.48	57.86	165.419	
6,900.00	6,820.16	7,171.33	6,971.02	24.63	35.39	178.99	188.38	-9,343.63	9,609.53	9,551.52	58.01	165.646	
6,950.00	6,848.83	7,200.48	7,000.16	24.84	35.43	178.73	188.00	-9,343.29	9,650.14	9,592.00	58.15	165.963	
7,000.00	6,874.19	7,226.36	7,026.03	25.06	35.48	178.40	187.67	-9,342.99	9,692.91	9,634.65	58.26	166.368	
7,050.00	6,896.10	7,248.80	7,048.47	25.29	35.51	177.97	187.37	-9,342.73	9,737.57	9,679.22	58.36	166.855	
7,100.00	6,914.42	7,273.60	7,073.26	25.53	35.56	177.37	187.04	-9,342.44	9,783.86	9,725.40	58.46	167.368	
7,150.00	6,929.03	7,299.29	7,098.96	25.78	35.61	176.43	186.68	-9,342.11	9,831.46	9,772.91	58.55	167.911	
7,200.00	6,939.85	7,318.76	7,118.42	26.05	35.64	174.75	186.38	-9,341.85	9,880.11	9,821.48	58.62	168.539	
7,250.00	6,946.80	7,331.81	7,131.46	26.32	35.67	170.83	186.17	-9,341.66	9,929.49	9,870.82	58.67	169.247	
7,300.00	6,949.85	7,338.30	7,137.95	26.61	35.68	152.21	186.06	-9,341.57	9,979.33	9,920.63	58.69	170.027	
7,314.43	6,950.00	7,338.93	7,138.59	26.69	35.68	125.80	186.05	-9,341.56	9,993.75	9,935.06	58.70	170.263	
7,400.00	6,949.92	7,341.06	7,140.72	27.21	35.69	126.21	186.01	-9,341.53	10,079.29	10,020.59	58.71	171.687	
7,500.00	6,949.83	7,343.59	7,143.24	27.90	35.69	126.68	185.97	-9,341.49	10,179.27	10,120.54	58.72	173.348	
7,600.00	6,949.74	7,346.15	7,145.81	28.66	35.70	127.15	185.93	-9,341.45	10,279.24	10,220.50	58.74	175.005	
7,700.00	6,949.65	7,348.75	7,148.41	29.49	35.70	127.62	185.88	-9,341.41	10,379.21	10,320.45	58.75	176.657	
7,800.00	6,949.56	7,351.39	7,151.05	30.38	35.71	128.10	185.84	-9,341.37	10,479.18	10,420.41	58.77	178.305	
7,900.00	6,949.47	7,354.07	7,153.72	31.33	35.71	128.57	185.79	-9,341.33	10,579.15	10,520.36	58.79	179.949	
8,000.00	6,949.38	7,356.80	7,156.45	32.33	35.72	129.05	185.74	-9,341.29	10,679.12	10,620.31	58.81	181.589	
8,100.00	6,949.29	7,359.56	7,159.21	33.38	35.72	129.52	185.69	-9,341.24	10,779.09	10,720.26	58.83	183.223	
8,200.00	6,949.20	7,362.36	7,162.01	34.47	35.73	130.00	185.64	-9,341.20	10,879.07	10,820.21	58.85	184.854	
8,300.00	6,949.11	7,365.21	7,164.86	35.60	35.73	130.47	185.59	-9,341.15	10,979.04	10,920.16	58.88	186.479	
8,400.00	6,949.02	7,368.11	7,167.75	36.76	35.74	130.95	185.54	-9,341.11	11,079.01	11,020.11	58.90	188.100	
8,500.00	6,948.93	7,371.05	7,170.69	37.96	35.75	131.43	185.49	-9,341.06	11,178.98	11,120.06	58.92	189.716	
8,600.00	6,948.84	7,374.03	7,173.68	39.18	35.75	131.90	185.43	-9,341.01	11,278.96	11,220.00	58.95	191.327	
8,700.00	6,948.75	7,377.07	7,176.71	40.43	35.76	132.38	185.38	-9,340.96	11,378.93	11,319.95	58.98	192.933	
8,800.00	6,948.66	7,380.15	7,179.80	41.71	35.76	132.86	185.32	-9,340.91	11,478.90	11,419.89	59.01	194.533	
8,900.00	6,948.57	7,383.29	7,182.93	43.00	35.77	133.34	185.26	-9,340.86	11,578.87	11,519.84	59.04	196.129	

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 #722H - Slot B05
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 #722H	**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	Warning
9,000.00	6,948.48	7,386.48	7,186.12	44.32	35.78	133.82	185.20	-9,340.81	11,678.85	11,619.78	59.07	197.719	
9,100.00	6,948.39	7,389.72	7,189.36	45.66	35.78	134.29	185.14	-9,340.75	11,778.82	11,719.72	59.10	199.304	
9,200.00	6,948.30	7,393.01	7,192.65	47.01	35.79	134.77	185.08	-9,340.70	11,878.79	11,819.66	59.13	200.884	
9,300.00	6,948.21	7,396.36	7,196.00	48.38	35.79	135.25	185.01	-9,340.64	11,978.76	11,919.60	59.17	202.458	
9,400.00	6,948.12	7,399.77	7,199.41	49.76	35.80	135.72	184.95	-9,340.58	12,078.74	12,019.54	59.20	204.026	
9,500.00	6,948.03	7,403.23	7,202.87	51.16	35.81	136.20	184.88	-9,340.52	12,178.71	12,119.47	59.24	205.589	
9,600.00	6,947.94	7,406.76	7,206.39	52.56	35.82	136.68	184.81	-9,340.46	12,278.68	12,219.41	59.28	207.146	
9,700.00	6,947.85	7,410.35	7,209.98	53.98	35.82	137.15	184.74	-9,340.39	12,378.65	12,319.34	59.31	208.697	
9,800.00	6,947.76	7,414.00	7,213.63	55.41	35.83	137.63	184.66	-9,340.33	12,478.63	12,419.27	59.35	210.242	
9,900.00	6,947.67	7,417.72	7,217.35	56.85	35.84	138.10	184.59	-9,340.26	12,578.60	12,519.21	59.39	211.781	
10,000.00	6,947.58	7,421.50	7,221.13	58.29	35.84	138.57	184.51	-9,340.19	12,678.57	12,619.14	59.44	213.315	
10,100.00	6,947.49	7,425.35	7,224.98	59.75	35.85	139.05	184.43	-9,340.12	12,778.54	12,719.07	59.48	214.842	
10,200.00	6,947.40	7,429.27	7,228.90	61.21	35.86	139.52	184.35	-9,340.05	12,878.52	12,818.99	59.52	216.363	
10,300.00	6,947.31	7,433.27	7,232.89	62.68	35.87	139.99	184.26	-9,339.98	12,978.49	12,918.92	59.57	217.877	
10,400.00	6,947.22	7,437.34	7,236.96	64.15	35.88	140.46	184.18	-9,339.90	13,078.46	13,018.85	59.61	219.385	
10,500.00	6,947.13	7,441.48	7,241.11	65.63	35.88	140.93	184.09	-9,339.82	13,178.43	13,118.77	59.66	220.887	
10,600.00	6,947.04	7,445.71	7,245.33	67.12	35.89	141.40	184.00	-9,339.74	13,278.40	13,218.69	59.71	222.383	
10,700.00	6,946.95	7,450.02	7,249.63	68.61	35.90	141.86	183.90	-9,339.66	13,378.37	13,318.61	59.76	223.872	
10,800.00	6,946.86	7,454.40	7,254.02	70.11	35.91	142.33	183.81	-9,339.57	13,478.35	13,418.54	59.81	225.354	
10,900.00	6,946.77	7,458.88	7,258.49	71.61	35.92	142.79	183.71	-9,339.48	13,578.32	13,518.45	59.86	226.829	
11,000.00	6,946.68	7,463.44	7,263.06	73.11	35.93	143.25	183.61	-9,339.39	13,678.29	13,618.37	59.91	228.298	
11,100.00	6,946.59	7,468.10	7,267.71	74.62	35.94	143.71	183.50	-9,339.30	13,778.26	13,718.29	59.97	229.759	
11,200.00	6,946.50	7,472.85	7,272.46	76.14	35.95	144.17	183.39	-9,339.20	13,878.23	13,818.20	60.02	231.214	
11,300.00	6,946.41	7,477.69	7,277.30	77.65	35.95	144.63	183.28	-9,339.10	13,978.20	13,918.12	60.08	232.662	
11,400.00	6,946.32	7,482.64	7,282.24	79.18	35.96	145.09	183.17	-9,339.00	14,078.17	14,018.03	60.14	234.103	
11,500.00	6,946.23	7,487.69	7,287.29	80.70	35.97	145.54	183.05	-9,338.90	14,178.14	14,117.94	60.20	235.536	
11,600.00	6,946.14	7,492.84	7,292.44	82.23	35.98	146.00	182.93	-9,338.79	14,278.11	14,217.85	60.25	236.963	
11,700.00	6,946.05	7,498.11	7,297.70	83.76	36.00	146.45	182.80	-9,338.68	14,378.07	14,317.76	60.32	238.382	
11,800.00	6,945.96	7,503.48	7,303.08	85.29	36.01	146.90	182.67	-9,338.56	14,478.04	14,417.66	60.38	239.793	
11,900.00	6,945.87	7,508.98	7,308.57	86.82	36.02	147.34	182.53	-9,338.44	14,578.01	14,517.57	60.44	241.197	
12,000.00	6,945.78	7,514.59	7,314.18	88.36	36.03	147.79	182.40	-9,338.32	14,677.98	14,617.47	60.50	242.594	
12,100.00	6,945.69	7,520.33	7,319.91	89.90	36.04	148.23	182.25	-9,338.19	14,777.94	14,717.38	60.57	243.983	
12,200.00	6,945.60	7,526.20	7,325.78	91.44	36.05	148.67	182.10	-9,338.06	14,877.91	14,817.28	60.64	245.364	
12,300.00	6,945.51	7,532.20	7,331.77	92.99	36.06	149.11	181.95	-9,337.92	14,977.88	14,917.17	60.70	246.737	
12,400.00	6,945.42	7,538.34	7,337.91	94.53	36.07	149.55	181.79	-9,337.78	15,077.84	15,017.07	60.77	248.103	
12,500.00	6,945.33	7,544.62	7,344.19	96.08	36.09	149.99	181.63	-9,337.64	15,177.81	15,116.97	60.84	249.460	
12,600.00	6,945.24	7,551.05	7,350.61	97.63	36.10	150.42	181.46	-9,337.49	15,277.77	15,216.86	60.91	250.810	
12,700.00	6,945.15	7,557.63	7,357.19	99.18	36.11	150.85	181.28	-9,337.33	15,377.74	15,316.75	60.99	252.151	
12,800.00	6,945.06	7,564.37	7,363.92	100.74	36.13	151.28	181.10	-9,337.17	15,477.70	15,416.64	61.06	253.484	
12,900.00	6,944.96	7,571.27	7,370.82	102.29	36.14	151.70	180.91	-9,337.00	15,577.67	15,516.53	61.13	254.809	
13,000.00	6,944.87	7,578.34	7,377.89	103.85	36.15	152.13	180.72	-9,336.83	15,677.63	15,616.42	61.21	256.125	
13,100.00	6,944.78	7,585.59	7,385.13	105.40	36.17	152.55	180.52	-9,336.65	15,777.59	15,716.30	61.29	257.432	
13,200.00	6,944.69	7,593.02	7,392.56	106.96	36.18	152.96	180.31	-9,336.46	15,877.55	15,816.18	61.37	258.731	
13,300.00	6,944.60	7,466.82	7,266.41	108.52	35.93	143.54	183.17	-9,339.00	15,977.37	15,916.27	61.10	261.487	
13,400.00	6,944.51	7,468.53	7,268.12	110.08	35.94	143.71	183.14	-9,338.98	16,077.35	16,016.18	61.17	262.842	
13,500.00	6,944.42	7,470.23	7,269.83	111.65	35.94	143.87	183.10	-9,338.95	16,177.33	16,116.09	61.23	264.192	
13,600.00	6,944.33	7,471.94	7,271.54	113.21	35.94	144.04	183.07	-9,338.92	16,277.30	16,216.00	61.30	265.536	
13,700.00	6,944.24	7,473.65	7,273.25	114.78	35.95	144.20	183.04	-9,338.89	16,377.28	16,315.92	61.37	266.873	
13,800.00	6,944.15	7,475.36	7,274.96	116.34	35.95	144.37	183.00	-9,338.86	16,477.26	16,415.83	61.44	268.205	
13,900.00	6,944.06	7,477.07	7,276.67	117.91	35.95	144.53	182.97	-9,338.83	16,577.24	16,515.74	61.50	269.530	
14,000.00	6,943.97	7,478.78	7,278.38	119.48	35.96	144.69	182.94	-9,338.80	16,677.22	16,615.64	61.57	270.849	
14,100.00	6,943.88	7,480.49	7,280.09	121.05	35.96	144.85	182.90	-9,338.77	16,777.20	16,715.55	61.64	272.162	

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 #722H - Slot B05
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 #722H	**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)	Rule Assigned: Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	6,943.79	7,482.20	7,281.79	122.62	35.96	145.01	182.87	-9,338.74	16,877.18	16,815.46	61.72	273.468	
14,300.00	6,943.70	7,483.91	7,283.50	124.19	35.97	145.16	182.84	-9,338.71	16,977.15	16,915.37	61.79	274.769	
14,400.00	6,943.61	7,485.62	7,285.21	125.76	35.97	145.32	182.80	-9,338.68	17,077.13	17,015.27	61.86	276.063	
14,500.00	6,943.52	7,487.33	7,286.92	127.33	35.97	145.47	182.77	-9,338.65	17,177.11	17,115.18	61.93	277.352	
14,600.00	6,943.43	7,489.04	7,288.63	128.90	35.98	145.63	182.74	-9,338.62	17,277.09	17,215.09	62.01	278.634	
14,700.00	6,943.34	7,490.75	7,290.34	130.48	35.98	145.78	182.70	-9,338.59	17,377.07	17,314.99	62.08	279.910	
14,800.00	6,943.25	7,492.46	7,292.05	132.05	35.98	145.93	182.67	-9,338.56	17,477.05	17,414.89	62.16	281.179	
14,900.00	6,943.16	7,494.17	7,293.76	133.63	35.99	146.08	182.63	-9,338.53	17,577.03	17,514.80	62.23	282.443	
15,000.00	6,943.07	7,495.88	7,295.47	135.20	35.99	146.22	182.60	-9,338.50	17,677.01	17,614.70	62.31	283.701	
15,100.00	6,942.98	7,497.59	7,297.18	136.78	35.99	146.37	182.57	-9,338.47	17,776.99	17,714.60	62.39	284.952	
15,200.00	6,942.89	7,499.30	7,298.89	138.36	36.00	146.52	182.53	-9,338.44	17,876.97	17,814.50	62.46	286.197	
15,300.00	6,942.80	7,501.01	7,300.59	139.93	36.00	146.66	182.50	-9,338.41	17,976.95	17,914.40	62.54	287.436	
15,400.00	6,942.71	7,502.72	7,302.30	141.51	36.00	146.80	182.47	-9,338.38	18,076.93	18,014.30	62.62	288.669	
15,500.00	6,942.62	7,504.43	7,304.01	143.09	36.01	146.95	182.43	-9,338.35	18,176.91	18,114.20	62.70	289.896	
15,600.00	6,942.53	7,506.14	7,305.72	144.67	36.01	147.09	182.40	-9,338.32	18,276.89	18,214.10	62.78	291.117	
15,700.00	6,942.44	7,507.85	7,307.43	146.25	36.01	147.23	182.37	-9,338.29	18,376.87	18,314.00	62.86	292.332	
15,800.00	6,942.35	7,509.56	7,309.14	147.83	36.02	147.37	182.33	-9,338.26	18,476.85	18,413.90	62.94	293.541	
15,900.00	6,942.26	7,511.27	7,310.85	149.41	36.02	147.50	182.30	-9,338.23	18,576.83	18,513.80	63.03	294.743	
16,000.00	6,942.17	7,512.98	7,312.56	150.99	36.02	147.64	182.27	-9,338.20	18,676.81	18,613.70	63.11	295.940	
16,100.00	6,942.08	7,514.69	7,314.27	152.57	36.03	147.78	182.23	-9,338.17	18,776.79	18,713.59	63.19	297.131	
16,200.00	6,941.99	7,516.40	7,315.98	154.16	36.03	147.91	182.20	-9,338.14	18,876.77	18,813.49	63.28	298.315	
16,300.00	6,941.90	7,518.11	7,317.69	155.74	36.03	148.04	182.17	-9,338.11	18,976.75	18,913.38	63.36	299.494	
16,400.00	6,941.81	7,519.82	7,319.39	157.32	36.04	148.18	182.13	-9,338.08	19,076.73	19,013.28	63.45	300.666	
16,500.00	6,941.72	7,521.53	7,321.10	158.91	36.04	148.31	182.10	-9,338.05	19,176.71	19,113.17	63.53	301.833	
16,600.00	6,941.63	7,523.24	7,322.81	160.49	36.04	148.44	182.07	-9,338.02	19,276.69	19,213.07	63.62	302.994	
16,700.00	6,941.54	7,524.95	7,324.52	162.07	36.05	148.57	182.03	-9,338.00	19,376.67	19,312.96	63.71	304.149	
16,800.00	6,941.45	7,526.66	7,326.23	163.66	36.05	148.70	182.00	-9,337.97	19,476.65	19,412.85	63.80	305.297	
16,900.00	6,941.36	7,528.37	7,327.94	165.24	36.06	148.82	181.96	-9,337.94	19,576.63	19,512.74	63.88	306.440	
17,000.00	6,941.27	7,530.08	7,329.65	166.83	36.06	148.95	181.93	-9,337.91	19,676.61	19,612.64	63.97	307.577	
17,100.00	6,941.18	7,531.78	7,331.36	168.42	36.06	149.07	181.90	-9,337.88	19,776.59	19,712.53	64.06	308.709	
17,200.00	6,941.09	7,533.49	7,333.07	170.00	36.07	149.20	181.86	-9,337.85	19,876.57	19,812.42	64.15	309.834	
17,300.00	6,941.00	7,535.20	7,334.78	171.59	36.07	149.32	181.83	-9,337.82	19,976.55	19,912.31	64.24	310.953	
17,400.00	6,940.91	7,536.91	7,336.49	173.18	36.07	149.45	181.80	-9,337.79	20,076.53	20,012.20	64.33	312.067	
17,500.00	6,940.82	7,538.62	7,338.19	174.76	36.08	149.57	181.76	-9,337.76	20,176.51	20,112.09	64.43	313.175	
17,600.00	6,940.73	7,540.33	7,339.90	176.35	36.08	149.69	181.73	-9,337.73	20,276.49	20,211.97	64.52	314.277	
17,700.00	6,940.64	7,624.04	7,423.56	177.94	36.69	154.61	179.64	-9,335.88	20,376.23	20,310.94	65.29	312.086	
17,800.00	6,940.55	7,625.47	7,425.00	179.53	36.70	154.68	179.61	-9,335.85	20,476.20	20,410.81	65.39	313.134	
17,900.00	6,940.46	7,626.90	7,426.42	181.11	36.71	154.75	179.57	-9,335.82	20,576.18	20,510.68	65.49	314.177	
18,000.00	6,940.37	7,628.32	7,427.84	182.70	36.72	154.82	179.54	-9,335.78	20,676.15	20,610.56	65.59	315.214	
18,100.00	6,940.28	7,629.74	7,429.26	184.29	36.73	154.88	179.51	-9,335.75	20,776.12	20,710.43	65.70	316.246	
18,200.00	6,940.19	7,631.16	7,430.68	185.88	36.74	154.95	179.47	-9,335.72	20,876.10	20,810.30	65.80	317.272	
18,300.00	6,940.10	7,632.56	7,432.08	187.47	36.75	155.02	179.44	-9,335.70	20,976.07	20,910.17	65.90	318.292	
18,400.00	6,940.01	7,633.97	7,433.49	189.06	36.76	155.09	179.40	-9,335.67	21,076.04	21,010.04	66.01	319.308	
18,500.00	6,939.92	7,635.37	7,434.89	190.65	36.77	155.15	179.37	-9,335.64	21,176.02	21,109.91	66.11	320.317	
18,600.00	6,939.83	7,636.77	7,436.28	192.24	36.78	155.22	179.34	-9,335.61	21,275.99	21,209.78	66.21	321.322	
18,700.00	6,939.74	7,638.16	7,437.67	193.83	36.79	155.29	179.31	-9,335.58	21,375.97	21,309.65	66.32	322.321	
18,800.00	6,939.65	7,639.54	7,439.06	195.42	36.80	155.35	179.27	-9,335.55	21,475.94	21,409.52	66.42	323.315	
18,900.00	6,939.56	7,640.93	7,440.44	197.01	36.81	155.41	179.24	-9,335.52	21,575.92	21,509.39	66.53	324.304	
19,000.00	6,939.47	7,642.31	7,441.82	198.60	36.82	155.48	179.21	-9,335.49	21,675.89	21,609.25	66.64	325.287	
19,100.00	6,939.38	7,643.68	7,443.20	200.19	36.83	155.54	179.18	-9,335.46	21,775.86	21,709.12	66.74	326.265	
19,200.00	6,939.29	7,645.05	7,444.56	201.78	36.84	155.60	179.14	-9,335.43	21,875.84	21,808.99	66.85	327.238	
19,300.00	6,939.20	7,646.42	7,445.93	203.37	36.85	155.67	179.11	-9,335.41	21,975.81	21,908.86	66.96	328.205	

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 #722H - Slot B05
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 #722H	**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

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
19,400.00	6,939.11	7,647.78	7,447.29	204.97	36.86	155.73	179.08	-9,335.38	22,075.79	22,008.72	67.07	329.168	
19,500.00	6,939.02	7,649.14	7,448.65	206.56	36.87	155.79	179.05	-9,335.35	22,175.76	22,108.59	67.17	330.125	
19,600.00	6,938.93	7,650.49	7,450.00	208.15	36.88	155.85	179.02	-9,335.32	22,275.74	22,208.46	67.28	331.078	
19,700.00	6,938.83	7,651.84	7,451.35	209.74	36.89	155.91	178.98	-9,335.29	22,375.71	22,308.32	67.39	332.025	
19,800.00	6,938.74	7,653.18	7,452.69	211.33	36.90	155.97	178.95	-9,335.27	22,475.69	22,408.19	67.50	332.967	
19,900.00	6,938.65	7,654.52	7,454.03	212.93	36.91	156.03	178.92	-9,335.24	22,575.66	22,508.05	67.61	333.904	
20,000.00	6,938.56	7,655.86	7,455.37	214.52	36.92	156.09	178.89	-9,335.21	22,675.64	22,607.92	67.72	334.836	
20,100.00	6,938.47	7,657.19	7,456.70	216.11	36.93	156.15	178.86	-9,335.18	22,775.62	22,707.78	67.83	335.763	
20,200.00	6,938.38	7,658.52	7,458.03	217.71	36.94	156.21	178.83	-9,335.16	22,875.59	22,807.65	67.94	336.685	
20,300.00	6,938.29	7,659.84	7,459.35	219.30	36.95	156.26	178.80	-9,335.13	22,975.57	22,907.51	68.06	337.603	
20,400.00	6,938.20	7,661.16	7,460.67	220.89	36.96	156.32	178.77	-9,335.10	23,075.54	23,007.38	68.17	338.515	
20,500.00	6,938.11	7,662.48	7,461.99	222.49	36.97	156.38	178.74	-9,335.07	23,175.52	23,107.24	68.28	339.423	
20,600.00	6,938.02	7,663.79	7,463.30	224.08	36.98	156.43	178.71	-9,335.05	23,275.50	23,207.10	68.39	340.325	
20,626.08	6,938.00	7,664.13	7,463.64	224.49	36.98	156.45	178.70	-9,335.04	23,301.57	23,233.15	68.42	340.560	

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 #722H - Slot B05
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 #722H	**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	127.53	127.52	0.00	1.34	-57.02	1,223.86	-1,886.30	2,248.55				
100.00	100.00	221.99	221.99	0.25	2.33	-57.02	1,224.17	-1,886.60	2,249.01	2,246.43	2.58	872.078	
200.00	200.00	316.42	316.42	0.61	3.22	-57.02	1,224.66	-1,887.08	2,249.71	2,245.88	3.83	587.689	ES
300.00	300.00	410.56	410.55	0.97	3.63	-57.01	1,225.33	-1,887.71	2,250.66	2,246.07	4.60	489.624	
400.00	400.00	482.37	482.35	1.33	3.70	-57.00	1,226.19	-1,888.40	2,252.20	2,247.17	5.02	448.209	
500.00	500.00	530.00	529.95	1.68	3.77	-57.02	1,226.51	-1,890.09	2,255.62	2,250.17	5.45	414.067	
535.00	535.00	546.90	546.82	1.81	3.79	-67.67	1,226.55	-1,891.04	2,257.27	2,251.67	5.60	403.004	
600.00	599.99	571.57	571.42	2.04	3.85	-67.70	1,226.63	-1,892.86	2,261.10	2,255.22	5.88	384.539	
700.00	699.99	621.00	620.57	2.40	3.97	-67.79	1,226.45	-1,898.14	2,269.21	2,262.86	6.34	357.833	
800.00	799.98	660.04	659.24	2.76	4.06	-67.89	1,226.18	-1,903.50	2,279.69	2,272.93	6.76	336.987	
900.00	899.97	712.00	710.48	3.12	4.19	-68.03	1,225.43	-1,912.04	2,292.37	2,285.15	7.22	317.606	
1,000.00	999.96	757.35	755.01	3.48	4.30	-68.17	1,224.88	-1,920.61	2,307.26	2,299.61	7.66	301.383	
1,100.00	1,099.96	802.00	798.69	3.84	4.42	-68.31	1,224.67	-1,929.88	2,324.35	2,316.25	8.09	287.168	
1,200.00	1,199.95	863.00	858.04	4.19	4.59	-68.52	1,224.54	-1,943.96	2,343.48	2,334.89	8.59	272.669	
1,300.00	1,299.94	907.52	901.10	4.55	4.73	-68.69	1,224.46	-1,955.26	2,364.60	2,355.55	9.05	261.318	
1,400.00	1,399.93	954.00	945.84	4.91	4.88	-68.86	1,224.75	-1,967.84	2,387.78	2,378.26	9.51	251.015	
1,500.00	1,499.93	1,017.00	1,006.07	5.27	5.10	-69.11	1,224.88	-1,986.30	2,412.73	2,402.67	10.06	239.908	
1,600.00	1,599.92	1,062.50	1,049.27	5.63	5.26	-69.31	1,224.86	-2,000.62	2,439.47	2,428.93	10.53	231.562	
1,700.00	1,699.91	1,113.00	1,096.88	5.99	5.46	-69.53	1,224.89	-2,017.45	2,468.07	2,457.03	11.04	223.535	
1,800.00	1,799.90	1,169.88	1,150.09	6.34	5.68	-69.80	1,224.80	-2,037.54	2,498.39	2,486.81	11.59	215.614	
1,900.00	1,899.90	1,265.11	1,238.79	6.70	6.05	-70.26	1,224.16	-2,072.19	2,529.61	2,517.26	12.35	204.850	
2,000.00	1,999.89	1,398.00	1,363.13	7.06	6.60	-70.87	1,223.20	-2,119.05	2,559.92	2,546.58	13.34	191.863	
2,100.00	2,099.88	1,475.21	1,435.40	7.42	6.93	-71.22	1,222.11	-2,146.19	2,590.01	2,575.97	14.04	184.498	
2,200.00	2,199.87	1,583.39	1,536.65	7.78	7.42	-71.72	1,220.24	-2,184.25	2,620.09	2,605.16	14.93	175.502	
2,300.00	2,299.87	1,680.00	1,627.44	8.14	7.87	-72.11	1,219.65	-2,217.28	2,649.90	2,634.14	15.76	168.188	
2,400.00	2,399.86	1,743.00	1,686.51	8.50	8.18	-72.36	1,219.92	-2,239.17	2,680.71	2,664.33	16.38	163.617	
2,500.00	2,499.85	1,807.00	1,746.39	8.85	8.49	-72.60	1,220.66	-2,261.75	2,712.50	2,695.48	17.02	159.371	
2,600.00	2,599.85	1,908.58	1,841.20	9.21	9.01	-72.98	1,221.84	-2,298.21	2,744.90	2,726.99	17.91	153.297	
2,700.00	2,699.84	2,004.70	1,931.03	9.57	9.52	-73.33	1,222.67	-2,332.38	2,776.95	2,758.19	18.76	148.037	
2,800.00	2,799.83	2,101.84	2,021.99	9.93	10.05	-73.67	1,224.10	-2,366.46	2,808.91	2,789.29	19.62	143.169	
2,900.00	2,899.82	2,196.32	2,110.41	10.29	10.58	-73.97	1,226.30	-2,399.66	2,841.35	2,820.88	20.47	138.830	
3,000.00	2,999.82	2,315.80	2,222.34	10.65	11.27	-74.35	1,228.61	-2,441.41	2,873.62	2,852.14	21.48	133.776	
3,100.00	3,099.81	2,423.32	2,323.32	11.01	11.89	-74.70	1,229.28	-2,478.30	2,904.76	2,882.34	22.42	129.578	
3,200.00	3,199.80	2,509.77	2,404.38	11.36	12.40	-74.99	1,229.22	-2,508.36	2,936.13	2,912.91	23.22	126.463	
3,300.00	3,299.79	2,605.42	2,494.06	11.72	12.97	-75.31	1,228.79	-2,541.63	2,967.46	2,943.38	24.08	123.227	
3,400.00	3,399.79	2,707.64	2,589.81	12.08	13.59	-75.64	1,228.64	-2,577.42	2,999.24	2,974.25	24.99	120.007	
3,500.00	3,499.78	2,800.11	2,676.61	12.44	14.15	-75.95	1,227.93	-2,609.29	3,030.33	3,004.49	25.84	117.290	
3,600.00	3,599.77	2,891.89	2,762.62	12.80	14.71	-76.25	1,227.11	-2,641.29	3,061.82	3,035.14	26.68	114.768	
3,700.00	3,699.76	2,988.54	2,853.26	13.16	15.30	-76.54	1,226.88	-2,674.83	3,093.47	3,065.91	27.55	112.271	
3,800.00	3,799.76	3,529.73	3,372.28	13.52	17.97	-77.86	1,223.64	-2,825.95	3,121.98	3,090.99	31.00	100.723	
3,900.00	3,899.75	4,103.84	3,942.31	13.87	31.95	-78.47	1,220.22	-2,885.12	3,125.40	3,079.67	45.73	68.343	
4,000.00	3,999.74	4,204.17	4,042.57	14.23	44.48	-78.53	1,219.49	-2,888.61	3,128.11	3,069.49	58.62	53.365	
4,100.00	4,099.73	4,304.50	4,142.84	14.59	57.03	-78.58	1,218.78	-2,892.08	3,130.81	3,059.28	71.53	43.770	
4,200.00	4,199.73	4,404.84	4,243.11	14.95	69.59	-78.64	1,218.09	-2,895.54	3,133.50	3,049.05	84.45	37.104	
4,300.00	4,299.72	4,505.17	4,343.39	15.31	82.16	-78.70	1,217.41	-2,898.97	3,136.18	3,038.79	97.38	32.205	
4,400.00	4,399.71	4,605.51	4,443.67	15.67	94.72	-78.75	1,216.74	-2,902.38	3,138.84	3,028.53	110.31	28.454	
4,500.00	4,499.70	4,705.85	4,543.95	16.03	107.29	-78.81	1,216.10	-2,905.76	3,141.50	3,018.25	123.25	25.489	
4,600.00	4,599.70	4,806.19	4,644.23	16.38	119.86	-78.87	1,215.47	-2,909.13	3,144.15	3,007.96	136.19	23.087	
4,700.00	4,699.69	4,906.54	4,744.52	16.74	132.44	-78.92	1,214.86	-2,912.48	3,146.78	2,997.66	149.13	21.101	
4,800.00	4,799.68	5,006.88	4,844.81	17.10	145.01	-78.97	1,214.26	-2,915.80	3,149.41	2,987.34	162.07	19.433	
4,900.00	4,899.67	5,107.23	4,945.10	17.46	157.58	-79.03	1,213.68	-2,919.11	3,152.02	2,977.01	175.01	18.011	
5,000.00	4,999.67	5,207.58	5,045.40	17.82	170.15	-79.08	1,213.12	-2,922.39	3,154.63	2,966.68	187.95	16.784	

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 #722H - Slot B05
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 #722H	**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)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
5,100.00	5,099.66	5,307.94	5,145.69	18.18	182.73	-79.13	1,212.58	-2,925.65	3,157.22	2,956.33	200.89	15.716	
5,200.00	5,199.65	5,408.29	5,245.99	18.53	195.30	-79.19	1,212.05	-2,928.89	3,159.80	2,945.97	213.84	14.777	
5,300.00	5,299.64	5,508.65	5,346.30	18.89	207.87	-79.24	1,211.54	-2,932.11	3,162.37	2,935.59	226.78	13.945	
5,400.00	5,399.64	5,609.01	5,446.61	19.25	220.45	-79.29	1,211.04	-2,935.31	3,164.93	2,925.21	239.73	13.202	
5,500.00	5,499.63	5,709.37	5,546.91	19.61	233.02	-79.34	1,210.56	-2,938.48	3,167.48	2,914.81	252.67	12.536	
5,600.00	5,599.62	5,809.73	5,647.23	19.97	245.60	-79.39	1,210.10	-2,941.64	3,170.02	2,904.40	265.62	11.935	
5,700.00	5,699.61	5,910.10	5,747.54	20.33	258.17	-79.44	1,209.65	-2,944.77	3,172.55	2,893.98	278.56	11.389	
5,800.00	5,799.61	6,010.46	5,847.86	20.69	270.75	-79.49	1,209.23	-2,947.89	3,175.06	2,883.55	291.51	10.892	
5,900.00	5,899.60	6,110.83	5,948.18	21.04	283.32	-79.54	1,208.81	-2,950.98	3,177.57	2,873.11	304.46	10.437	
6,000.00	5,999.59	6,211.20	6,048.50	21.40	295.90	-79.59	1,208.42	-2,954.05	3,180.06	2,862.66	317.40	10.019	
6,100.00	6,099.58	6,311.57	6,148.83	21.76	308.49	-79.64	1,208.04	-2,957.10	3,182.54	2,852.19	330.35	9.634	
6,200.00	6,199.58	6,411.95	6,249.16	22.12	321.08	-79.68	1,207.68	-2,960.13	3,185.01	2,841.71	343.30	9.278	
6,300.00	6,299.57	6,512.33	6,349.49	22.48	333.66	-79.73	1,207.33	-2,963.14	3,187.47	2,831.22	356.25	8.947	
6,315.05	6,314.62	6,527.43	6,364.59	22.53	335.56	-79.74	1,207.28	-2,963.59	3,187.84	2,829.64	358.20	8.900	
6,350.00	6,349.55	6,562.47	6,399.61	22.66	339.95	-148.89	1,207.17	-2,964.63	3,189.60	2,826.88	362.71	8.794	
6,400.00	6,399.30	6,612.27	6,449.39	22.83	346.20	-155.67	1,207.01	-2,966.11	3,195.26	2,826.12	369.13	8.656	
6,450.00	6,448.52	6,661.43	6,498.53	23.00	352.37	-157.32	1,206.85	-2,967.57	3,204.58	2,829.11	375.47	8.535	
6,500.00	6,496.91	6,709.65	6,546.72	23.18	358.41	-157.87	1,206.70	-2,968.99	3,217.52	2,835.83	381.69	8.430	
6,550.00	6,544.17	6,756.62	6,593.67	23.35	364.30	-157.95	1,206.56	-2,970.37	3,233.99	2,846.25	387.74	8.341	
6,600.00	6,590.01	6,802.06	6,639.09	23.53	370.00	-157.72	1,206.43	-2,971.70	3,253.91	2,860.31	393.60	8.267	
6,650.00	6,634.14	6,845.68	6,682.70	23.70	375.47	-157.26	1,206.31	-2,972.97	3,277.15	2,877.93	399.22	8.209	
6,700.00	6,676.30	6,887.23	6,724.23	23.88	380.68	-156.57	1,206.19	-2,974.18	3,303.59	2,899.02	404.57	8.166	
6,750.00	6,716.21	6,926.44	6,763.42	24.06	385.60	-155.63	1,206.09	-2,975.32	3,333.07	2,923.45	409.62	8.137	
6,800.00	6,753.65	6,963.08	6,800.04	24.24	390.20	-154.41	1,205.99	-2,976.38	3,365.41	2,951.07	414.34	8.122	
6,850.00	6,788.37	6,996.91	6,833.86	24.44	394.44	-152.86	1,205.90	-2,977.36	3,400.43	2,981.73	418.70	8.121	SF
6,900.00	6,820.16	7,027.73	6,864.67	24.63	398.30	-150.87	1,205.83	-2,978.25	3,437.91	3,015.24	422.67	8.134	
6,950.00	6,848.83	7,055.35	6,892.28	24.84	401.77	-148.34	1,205.76	-2,979.04	3,477.63	3,051.40	426.23	8.159	
7,000.00	6,874.19	7,079.60	6,916.52	25.06	404.81	-145.06	1,205.70	-2,979.74	3,519.35	3,089.99	429.35	8.197	
7,050.00	6,896.10	7,100.32	6,937.23	25.29	407.41	-140.77	1,205.65	-2,980.33	3,562.81	3,130.79	432.03	8.247	
7,100.00	6,914.42	7,117.40	6,954.30	25.53	409.55	-135.08	1,205.61	-2,980.82	3,607.76	3,173.53	434.23	8.308	
7,150.00	6,929.03	7,130.71	6,967.61	25.78	411.22	-127.46	1,205.58	-2,981.20	3,653.92	3,217.96	435.95	8.381	
7,200.00	6,939.85	7,140.19	6,977.08	26.05	412.41	-117.29	1,205.56	-2,981.47	3,701.00	3,263.81	437.19	8.465	
7,250.00	6,946.80	7,145.76	6,982.65	26.32	413.11	-104.21	1,205.54	-2,981.63	3,748.71	3,310.78	437.93	8.560	
7,300.00	6,949.85	7,147.40	6,984.29	26.61	413.31	-88.83	1,205.54	-2,981.67	3,796.76	3,358.60	438.16	8.665	
7,314.43	6,950.00	7,147.14	6,984.03	26.69	413.28	-84.22	1,205.54	-2,981.67	3,810.65	3,372.51	438.14	8.697	
7,400.00	6,949.92	7,144.61	6,981.50	27.21	412.96	-84.08	1,205.55	-2,981.59	3,893.07	3,455.20	437.87	8.891	
7,500.00	6,949.83	7,141.66	6,978.55	27.90	412.59	-83.92	1,205.55	-2,981.51	3,989.55	3,551.99	437.56	9.118	
7,600.00	6,949.74	7,138.71	6,975.60	28.66	412.22	-83.76	1,205.56	-2,981.43	4,086.20	3,648.95	437.26	9.345	
7,700.00	6,949.65	7,135.75	6,972.65	29.49	411.85	-83.59	1,205.57	-2,981.34	4,183.01	3,746.06	436.95	9.573	
7,800.00	6,949.56	7,132.80	6,969.69	30.38	411.48	-83.43	1,205.57	-2,981.26	4,279.96	3,843.32	436.65	9.802	
7,900.00	6,949.47	7,129.84	6,966.74	31.33	411.11	-83.27	1,205.58	-2,981.17	4,377.05	3,940.71	436.35	10.031	
8,000.00	6,949.38	7,126.89	6,963.78	32.33	410.74	-83.11	1,205.59	-2,981.09	4,474.26	4,038.22	436.05	10.261	
8,100.00	6,949.29	7,123.93	6,960.82	33.38	410.37	-82.95	1,205.59	-2,981.00	4,571.60	4,135.85	435.75	10.491	
8,200.00	6,949.20	7,120.97	6,957.87	34.47	410.00	-82.78	1,205.60	-2,980.92	4,669.04	4,233.59	435.45	10.722	
8,300.00	6,949.11	7,118.00	6,954.91	35.60	409.63	-82.62	1,205.61	-2,980.83	4,766.59	4,331.44	435.15	10.954	
8,400.00	6,949.02	7,115.04	6,951.94	36.76	409.25	-82.46	1,205.61	-2,980.75	4,864.23	4,429.38	434.85	11.186	
8,500.00	6,948.93	7,112.08	6,948.98	37.96	408.88	-82.30	1,205.62	-2,980.66	4,961.97	4,527.41	434.55	11.419	
8,600.00	6,948.84	7,109.11	6,946.02	39.18	408.51	-82.14	1,205.63	-2,980.58	5,059.79	4,625.54	434.26	11.652	
8,700.00	6,948.75	7,106.15	6,943.05	40.43	408.14	-81.97	1,205.64	-2,980.50	5,157.70	4,723.74	433.96	11.885	
8,800.00	6,948.66	7,103.18	6,940.09	41.71	407.77	-81.81	1,205.64	-2,980.41	5,255.68	4,822.02	433.66	12.119	
8,900.00	6,948.57	7,100.21	6,937.12	43.00	407.39	-81.65	1,205.65	-2,980.33	5,353.73	4,920.37	433.36	12.354	
9,000.00	6,948.48	7,097.24	6,934.15	44.32	407.02	-81.49	1,205.66	-2,980.24	5,451.86	5,018.79	433.07	12.589	

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 #722H - Slot B05
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 #722H	**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
9,100.00	6,948.39	7,094.27	6,931.18	45.66	406.65	-81.33	1,205.66	-2,980.16	5,550.05	5,117.28	432.77	12.825	
9,200.00	6,948.30	7,091.30	6,928.21	47.01	406.28	-81.17	1,205.67	-2,980.07	5,648.30	5,215.83	432.47	13.061	
9,300.00	6,948.21	7,088.32	6,925.24	48.38	405.90	-81.01	1,205.68	-2,979.99	5,746.61	5,314.44	432.17	13.297	
9,400.00	6,948.12	7,085.35	6,922.26	49.76	405.53	-80.84	1,205.68	-2,979.90	5,844.98	5,413.10	431.87	13.534	
9,500.00	6,948.03	7,082.37	6,919.29	51.16	405.16	-80.68	1,205.69	-2,979.81	5,943.40	5,511.82	431.58	13.771	
9,600.00	6,947.94	7,079.40	6,916.31	52.56	404.78	-80.52	1,205.70	-2,979.73	6,041.87	5,610.59	431.28	14.009	
9,700.00	6,947.85	7,076.42	6,913.33	53.98	404.41	-80.36	1,205.71	-2,979.64	6,140.39	5,709.41	430.98	14.248	
9,800.00	6,947.76	7,073.44	6,910.36	55.41	404.04	-80.20	1,205.71	-2,979.56	6,238.95	5,808.27	430.68	14.486	
9,900.00	6,947.67	7,070.46	6,907.38	56.85	403.66	-80.04	1,205.72	-2,979.47	6,337.56	5,907.18	430.38	14.725	
10,000.00	6,947.58	7,067.47	6,904.39	58.29	403.29	-79.88	1,205.73	-2,979.39	6,436.21	6,006.12	430.08	14.965	
10,100.00	6,947.49	7,064.49	6,901.41	59.75	402.91	-79.72	1,205.74	-2,979.30	6,534.89	6,105.11	429.78	15.205	
10,200.00	6,947.40	7,061.51	6,898.43	61.21	402.54	-79.56	1,205.74	-2,979.22	6,633.62	6,204.14	429.48	15.446	
10,300.00	6,947.31	7,058.52	6,895.44	62.68	402.17	-79.40	1,205.75	-2,979.13	6,732.38	6,303.20	429.18	15.687	
10,400.00	6,947.22	7,055.53	6,892.46	64.15	401.79	-79.24	1,205.76	-2,979.04	6,831.18	6,402.30	428.88	15.928	
10,500.00	6,947.13	7,052.54	6,889.47	65.63	401.42	-79.08	1,205.76	-2,978.96	6,930.01	6,501.43	428.58	16.170	
10,600.00	6,947.04	7,049.55	6,886.48	67.12	401.04	-78.92	1,205.77	-2,978.87	7,028.87	6,600.59	428.28	16.412	
10,700.00	6,946.95	7,046.56	6,883.49	68.61	400.67	-78.76	1,205.78	-2,978.79	7,127.77	6,699.79	427.98	16.654	
10,800.00	6,946.86	7,043.57	6,880.50	70.11	400.29	-78.60	1,205.79	-2,978.70	7,226.69	6,799.01	427.68	16.897	
10,900.00	6,946.77	7,040.58	6,877.51	71.61	399.92	-78.44	1,205.79	-2,978.62	7,325.64	6,898.26	427.38	17.141	
11,000.00	6,946.68	7,037.58	6,874.52	73.11	399.54	-78.28	1,205.80	-2,978.53	7,424.62	6,997.54	427.08	17.385	
11,100.00	6,946.59	7,034.59	6,871.52	74.62	399.16	-78.12	1,205.81	-2,978.44	7,523.62	7,096.84	426.78	17.629	
11,200.00	6,946.50	7,031.59	6,868.53	76.14	398.79	-77.96	1,205.82	-2,978.36	7,622.65	7,196.17	426.48	17.874	
11,300.00	6,946.41	7,028.59	6,865.53	77.65	398.41	-77.80	1,205.82	-2,978.27	7,721.70	7,295.53	426.17	18.119	
11,400.00	6,946.32	7,025.59	6,862.53	79.18	398.04	-77.64	1,205.83	-2,978.18	7,820.78	7,394.90	425.87	18.364	
11,500.00	6,946.23	7,022.59	6,859.53	80.70	397.66	-77.48	1,205.84	-2,978.10	7,919.87	7,494.30	425.57	18.610	
11,600.00	6,946.14	7,019.59	6,856.53	82.23	397.28	-77.32	1,205.85	-2,978.01	8,018.99	7,593.72	425.27	18.856	
11,700.00	6,946.05	7,016.58	6,853.53	83.76	396.91	-77.16	1,205.85	-2,977.92	8,118.13	7,693.16	424.97	19.103	
11,800.00	6,945.96	7,013.58	6,850.52	85.29	396.53	-77.01	1,205.86	-2,977.84	8,217.29	7,792.62	424.67	19.350	
11,900.00	6,945.87	7,010.57	6,847.52	86.82	396.15	-76.85	1,205.87	-2,977.75	8,316.47	7,892.10	424.37	19.597	
12,000.00	6,945.78	7,007.57	6,844.51	88.36	395.78	-76.69	1,205.88	-2,977.67	8,415.66	7,991.60	424.06	19.845	
12,100.00	6,945.69	7,004.56	6,841.51	89.90	395.40	-76.53	1,205.88	-2,977.58	8,514.88	8,091.11	423.76	20.093	
12,200.00	6,945.60	7,001.55	6,838.50	91.44	395.02	-76.37	1,205.89	-2,977.49	8,614.11	8,190.65	423.46	20.342	
12,300.00	6,945.51	6,998.54	6,835.49	92.99	394.64	-76.22	1,205.90	-2,977.40	8,713.36	8,290.20	423.16	20.591	
12,400.00	6,945.42	6,995.53	6,832.48	94.53	394.27	-76.06	1,205.91	-2,977.32	8,812.62	8,389.76	422.86	20.841	
12,500.00	6,945.33	6,992.51	6,829.46	96.08	393.89	-75.90	1,205.92	-2,977.23	8,911.90	8,489.34	422.56	21.090	
12,600.00	6,945.24	6,989.50	6,826.45	97.63	393.51	-75.74	1,205.92	-2,977.14	9,011.19	8,588.94	422.26	21.341	
12,700.00	6,945.15	6,986.48	6,823.44	99.18	393.13	-75.59	1,205.93	-2,977.06	9,110.50	8,688.55	421.95	21.591	
12,800.00	6,945.06	6,983.46	6,820.42	100.74	392.75	-75.43	1,205.94	-2,976.97	9,209.82	8,788.17	421.65	21.842	
12,900.00	6,944.96	6,980.45	6,817.40	102.29	392.37	-75.27	1,205.95	-2,976.88	9,309.16	8,887.81	421.35	22.094	
13,000.00	6,944.87	6,977.43	6,814.38	103.85	392.00	-75.12	1,205.95	-2,976.80	9,408.51	8,987.46	421.05	22.345	
13,100.00	6,944.78	6,974.40	6,811.36	105.40	391.62	-74.96	1,205.96	-2,976.71	9,507.87	9,087.12	420.75	22.597	
13,200.00	6,944.69	6,971.38	6,808.34	106.96	391.24	-74.80	1,205.97	-2,976.62	9,607.25	9,186.80	420.45	22.850	
13,300.00	6,944.60	6,968.36	6,805.32	108.52	390.86	-74.65	1,205.98	-2,976.53	9,706.63	9,286.48	420.15	23.103	
13,400.00	6,944.51	6,965.33	6,802.30	110.08	390.48	-74.49	1,205.99	-2,976.45	9,806.03	9,386.18	419.85	23.356	
13,500.00	6,944.42	6,962.31	6,799.27	111.65	390.10	-74.33	1,205.99	-2,976.36	9,905.44	9,485.89	419.55	23.610	
13,600.00	6,944.33	6,959.28	6,796.25	113.21	389.72	-74.18	1,206.00	-2,976.27	10,004.86	9,585.61	419.25	23.864	
13,700.00	6,944.24	6,956.25	6,793.22	114.78	389.34	-74.02	1,206.01	-2,976.18	10,104.29	9,685.34	418.95	24.118	
13,800.00	6,944.15	6,953.22	6,790.19	116.34	388.96	-73.87	1,206.02	-2,976.10	10,203.73	9,785.08	418.65	24.373	
13,900.00	6,944.06	6,950.19	6,787.16	117.91	388.58	-73.71	1,206.02	-2,976.01	10,303.18	9,884.83	418.35	24.628	
14,000.00	6,943.97	6,947.16	6,784.13	119.48	388.20	-73.56	1,206.03	-2,975.92	10,402.64	9,984.59	418.05	24.884	
14,100.00	6,943.88	6,944.12	6,781.10	121.05	387.82	-73.40	1,206.04	-2,975.83	10,502.11	10,084.36	417.75	25.140	
14,200.00	6,943.79	6,941.09	6,778.06	122.62	387.44	-73.25	1,206.05	-2,975.75	10,601.59	10,184.14	417.45	25.396	

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 #722H - Slot B05
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 #722H	**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	6,943.70	6,938.05	6,775.03	124.19	387.06	-73.09	1,206.06	-2,975.66	10,701.08	10,283.93	417.15	25.653	
14,400.00	6,943.61	6,935.02	6,771.99	125.76	386.68	-72.94	1,206.06	-2,975.57	10,800.57	10,383.72	416.85	25.910	
14,500.00	6,943.52	6,931.98	6,768.95	127.33	386.30	-72.79	1,206.07	-2,975.48	10,900.08	10,483.53	416.55	26.168	
14,600.00	6,943.43	6,928.94	6,765.92	128.90	385.91	-72.63	1,206.08	-2,975.39	10,999.59	10,583.34	416.25	26.426	
14,700.00	6,943.34	6,925.90	6,762.88	130.48	385.53	-72.48	1,206.09	-2,975.30	11,099.11	10,683.16	415.95	26.684	
14,800.00	6,943.25	6,922.85	6,759.83	132.05	385.15	-72.33	1,206.10	-2,975.22	11,198.64	10,782.99	415.65	26.942	
14,900.00	6,943.16	6,919.81	6,756.79	133.63	384.77	-72.17	1,206.11	-2,975.13	11,298.17	10,882.82	415.35	27.201	
15,000.00	6,943.07	6,916.76	6,753.75	135.20	384.39	-72.02	1,206.11	-2,975.04	11,397.72	10,982.66	415.05	27.461	
15,100.00	6,942.98	6,913.72	6,750.70	136.78	384.01	-71.87	1,206.12	-2,974.95	11,497.27	11,082.51	414.76	27.721	
15,200.00	6,942.89	6,910.67	6,747.66	138.36	383.62	-71.71	1,206.13	-2,974.86	11,596.83	11,182.37	414.46	27.981	
15,300.00	6,942.80	6,907.62	6,744.61	139.93	383.24	-71.56	1,206.14	-2,974.77	11,696.39	11,282.23	414.16	28.241	
15,400.00	6,942.71	6,904.57	6,741.56	141.51	382.86	-71.41	1,206.15	-2,974.69	11,795.96	11,382.10	413.86	28.502	
15,500.00	6,942.62	6,901.52	6,738.51	143.09	382.48	-71.26	1,206.15	-2,974.60	11,895.54	11,481.97	413.56	28.763	
15,600.00	6,942.53	6,898.47	6,735.46	144.67	382.09	-71.11	1,206.16	-2,974.51	11,995.12	11,581.86	413.27	29.025	
15,700.00	6,942.44	6,895.41	6,732.41	146.25	381.71	-70.95	1,206.17	-2,974.42	12,094.71	11,681.74	412.97	29.287	
15,800.00	6,942.35	6,892.36	6,729.35	147.83	381.33	-70.80	1,206.18	-2,974.33	12,194.31	11,781.64	412.67	29.550	
15,900.00	6,942.26	6,889.30	6,726.30	149.41	380.94	-70.65	1,206.19	-2,974.24	12,293.91	11,881.53	412.37	29.812	
16,000.00	6,942.17	6,886.24	6,723.24	150.99	380.56	-70.50	1,206.20	-2,974.15	12,393.52	11,981.44	412.08	30.076	
16,100.00	6,942.08	6,883.18	6,720.18	152.57	380.18	-70.35	1,206.20	-2,974.07	12,493.13	12,081.35	411.78	30.339	
16,200.00	6,941.99	6,880.12	6,717.12	154.16	379.79	-70.20	1,206.21	-2,973.98	12,592.75	12,181.26	411.48	30.603	
16,300.00	6,941.90	6,877.06	6,714.06	155.74	379.41	-70.05	1,206.22	-2,973.89	12,692.37	12,281.18	411.19	30.868	
16,400.00	6,941.81	6,874.00	6,711.00	157.32	379.02	-69.90	1,206.23	-2,973.80	12,792.00	12,381.11	410.89	31.132	
16,500.00	6,941.72	6,870.93	6,707.94	158.91	378.64	-69.75	1,206.24	-2,973.71	12,891.63	12,481.04	410.60	31.397	
16,600.00	6,941.63	6,867.87	6,704.87	160.49	378.25	-69.60	1,206.25	-2,973.62	12,991.27	12,580.97	410.30	31.663	
16,700.00	6,941.54	6,864.80	6,701.81	162.07	377.87	-69.45	1,206.26	-2,973.53	13,090.91	12,680.91	410.01	31.929	
16,800.00	6,941.45	6,861.73	6,698.74	163.66	377.49	-69.30	1,206.26	-2,973.44	13,190.56	12,780.85	409.71	32.195	
16,900.00	6,941.36	6,858.66	6,695.67	165.24	377.10	-69.15	1,206.27	-2,973.35	13,290.21	12,880.80	409.41	32.461	
17,000.00	6,941.27	6,855.59	6,692.60	166.83	376.72	-69.00	1,206.28	-2,973.26	13,389.87	12,980.75	409.12	32.728	
17,100.00	6,941.18	6,852.52	6,689.53	168.42	376.33	-68.86	1,206.29	-2,973.17	13,489.53	13,080.71	408.82	32.996	
17,200.00	6,941.09	6,849.45	6,686.46	170.00	375.94	-68.71	1,206.30	-2,973.08	13,589.20	13,180.67	408.53	33.264	
17,300.00	6,941.00	6,846.37	6,683.39	171.59	375.56	-68.56	1,206.31	-2,972.99	13,688.87	13,280.63	408.24	33.532	
17,400.00	6,940.91	6,843.29	6,680.31	173.18	375.17	-68.41	1,206.32	-2,972.90	13,788.54	13,380.60	407.94	33.800	
17,500.00	6,940.82	6,840.22	6,677.23	174.76	374.79	-68.26	1,206.32	-2,972.81	13,888.22	13,480.57	407.65	34.069	
17,600.00	6,940.73	6,837.14	6,674.16	176.35	374.40	-68.12	1,206.33	-2,972.72	13,987.90	13,580.55	407.35	34.338	
17,700.00	6,940.64	6,834.06	6,671.08	177.94	374.01	-67.97	1,206.34	-2,972.63	14,087.59	13,680.53	407.06	34.608	
17,800.00	6,940.55	6,830.98	6,668.00	179.53	373.63	-67.82	1,206.35	-2,972.54	14,187.28	13,780.51	406.77	34.878	
17,900.00	6,940.46	6,827.89	6,664.92	181.11	373.24	-67.68	1,206.36	-2,972.45	14,286.97	13,880.50	406.47	35.149	
18,000.00	6,940.37	6,824.81	6,661.83	182.70	372.86	-67.53	1,206.37	-2,972.36	14,386.67	13,980.49	406.18	35.419	
18,100.00	6,940.28	6,821.73	6,658.75	184.29	372.47	-67.38	1,206.38	-2,972.27	14,486.37	14,080.48	405.89	35.691	
18,200.00	6,940.19	6,818.64	6,655.67	185.88	372.08	-67.24	1,206.38	-2,972.18	14,586.07	14,180.48	405.59	35.962	
18,300.00	6,940.10	6,815.55	6,652.58	187.47	371.69	-67.09	1,206.39	-2,972.09	14,685.78	14,280.48	405.30	36.234	
18,400.00	6,940.01	6,812.46	6,649.49	189.06	371.31	-66.95	1,206.40	-2,972.00	14,785.49	14,380.48	405.01	36.507	
18,500.00	6,939.92	6,809.37	6,646.40	190.65	370.92	-66.80	1,206.41	-2,971.91	14,885.21	14,480.49	404.72	36.779	
18,600.00	6,939.83	6,806.28	6,643.31	192.24	370.53	-66.66	1,206.42	-2,971.82	14,984.92	14,580.50	404.42	37.052	
18,700.00	6,939.74	6,803.19	6,640.22	193.83	370.14	-66.51	1,206.43	-2,971.73	15,084.64	14,680.51	404.13	37.326	
18,800.00	6,939.65	6,800.09	6,637.13	195.42	369.76	-66.37	1,206.44	-2,971.64	15,184.37	14,780.53	403.84	37.600	
18,900.00	6,939.56	6,797.00	6,634.03	197.01	369.37	-66.23	1,206.45	-2,971.55	15,284.09	14,880.54	403.55	37.874	
19,000.00	6,939.47	6,793.90	6,630.94	198.60	368.98	-66.08	1,206.46	-2,971.46	15,383.82	14,980.56	403.26	38.149	
19,100.00	6,939.38	6,790.80	6,627.84	200.19	368.59	-65.94	1,206.46	-2,971.37	15,483.55	15,080.59	402.97	38.424	
19,200.00	6,939.29	6,787.70	6,624.74	201.78	368.20	-65.80	1,206.47	-2,971.28	15,583.29	15,180.61	402.67	38.699	
19,300.00	6,939.20	6,784.60	6,621.64	203.37	367.81	-65.65	1,206.48	-2,971.19	15,683.03	15,280.64	402.38	38.975	
19,400.00	6,939.11	6,781.50	6,618.54	204.97	367.42	-65.51	1,206.49	-2,971.10	15,782.77	15,380.67	402.09	39.252	

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 #722H - Slot B05
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 #722H	**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)	Minimum Separation (usft)	Separation Factor	Warning
19,500.00	6,939.02	6,778.40	6,615.44	206.56	367.03	-65.37	1,206.50	-2,971.01	15,882.51	15,480.71	401.80	39.528	
19,600.00	6,938.93	6,775.29	6,612.34	208.15	366.64	-65.23	1,206.51	-2,970.92	15,982.26	15,580.74	401.51	39.805	
19,700.00	6,938.83	6,772.19	6,609.23	209.74	366.26	-65.08	1,206.52	-2,970.82	16,082.00	15,680.78	401.22	40.083	
19,800.00	6,938.74	6,769.08	6,606.13	211.33	365.87	-64.94	1,206.53	-2,970.73	16,181.76	15,780.82	400.93	40.360	
19,900.00	6,938.65	6,765.97	6,603.02	212.93	365.48	-64.80	1,206.54	-2,970.64	16,281.51	15,880.87	400.64	40.639	
20,000.00	6,938.56	6,762.86	6,599.91	214.52	365.09	-64.66	1,206.55	-2,970.55	16,381.26	15,980.91	400.35	40.917	
20,100.00	6,938.47	6,759.75	6,596.80	216.11	364.70	-64.52	1,206.56	-2,970.46	16,481.02	16,080.96	400.06	41.196	
20,200.00	6,938.38	6,756.64	6,593.69	217.71	364.30	-64.38	1,206.56	-2,970.37	16,580.78	16,181.01	399.77	41.476	
20,300.00	6,938.29	6,753.52	6,590.58	219.30	363.91	-64.24	1,206.57	-2,970.28	16,680.55	16,281.06	399.48	41.755	
20,400.00	6,938.20	6,750.41	6,587.46	220.89	363.52	-64.10	1,206.58	-2,970.19	16,780.31	16,381.12	399.19	42.036	
20,500.00	6,938.11	6,747.29	6,584.35	222.49	363.13	-63.96	1,206.59	-2,970.09	16,880.08	16,481.17	398.90	42.316	
20,600.00	6,938.02	6,744.17	6,581.23	224.08	362.74	-63.82	1,206.60	-2,970.00	16,979.85	16,581.23	398.62	42.597	
20,626.08	6,938.00	6,743.36	6,580.42	224.49	362.64	-63.78	1,206.60	-2,969.98	17,005.87	16,607.33	398.54	42.670	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-70.83	2,265.27	-6,514.27	6,896.90				
100.00	100.00	256.00	256.00	0.25	2.37	-70.83	2,265.27	-6,514.27	6,896.90	6,894.28	2.62	2,635.255	
200.00	200.00	356.00	356.00	0.61	3.29	-70.83	2,265.27	-6,514.27	6,896.90	6,893.00	3.90	1,768.495	
300.00	300.00	456.00	456.00	0.97	4.21	-70.83	2,265.27	-6,514.27	6,896.90	6,891.72	5.18	1,330.786	
400.00	400.00	556.01	556.00	1.33	5.39	-70.83	2,265.27	-6,514.27	6,896.90	6,890.18	6.72	1,026.373	
500.00	500.00	656.01	656.00	1.68	7.30	-70.83	2,265.27	-6,514.27	6,896.90	6,887.92	8.98	767.998	
535.00	535.00	691.01	691.00	1.81	7.96	-81.50	2,265.27	-6,514.27	6,896.87	6,887.10	9.77	705.813	
600.00	599.99	756.00	755.99	2.04	9.20	-81.50	2,265.27	-6,514.27	6,896.75	6,885.51	11.24	613.569	
700.00	699.99	859.99	859.98	2.40	11.18	-81.51	2,265.70	-6,514.27	6,896.71	6,883.14	13.58	507.993	
800.00	799.98	964.37	964.35	2.76	13.16	-81.52	2,265.41	-6,514.27	6,896.44	6,880.52	15.92	433.195	
900.00	899.97	1,056.01	1,055.97	3.12	14.94	-81.53	2,265.27	-6,514.27	6,896.21	6,878.15	18.06	381.931	
1,000.00	999.96	1,156.00	1,155.96	3.48	16.90	-81.54	2,265.27	-6,514.27	6,896.03	6,875.65	20.38	338.396	
1,060.40	1,060.36	1,216.40	1,216.36	3.69	18.09	-81.55	2,265.27	-6,514.27	6,895.92	6,874.14	21.78	316.597	
1,100.00	1,099.96	1,256.70	1,256.66	3.84	18.88	-81.55	2,266.07	-6,514.27	6,896.11	6,873.40	22.72	303.593	
1,200.00	1,199.95	1,363.12	1,363.07	4.19	20.97	-81.56	2,265.88	-6,514.27	6,895.88	6,870.71	25.16	274.040	
1,300.00	1,299.94	1,469.53	1,469.48	4.55	23.06	-81.58	2,265.40	-6,514.27	6,895.55	6,867.93	27.61	249.727	
1,400.00	1,399.93	1,556.01	1,555.93	4.91	24.90	-81.59	2,265.27	-6,514.27	6,895.31	6,865.50	29.81	231.319	
1,500.00	1,499.93	1,656.00	1,655.93	5.27	27.08	-81.60	2,265.27	-6,514.27	6,895.13	6,862.79	32.34	213.194	
1,560.40	1,560.32	1,716.40	1,716.32	5.49	28.39	-81.60	2,265.27	-6,514.27	6,895.03	6,861.15	33.87	203.560	
1,600.00	1,599.92	1,757.00	1,756.92	5.63	29.27	-81.60	2,266.08	-6,514.27	6,895.22	6,860.32	34.90	197.586	
1,700.00	1,699.91	1,863.27	1,863.18	5.99	31.58	-81.61	2,265.89	-6,514.27	6,894.98	6,857.42	37.57	183.538	
1,800.00	1,799.90	1,969.53	1,969.44	6.34	33.90	-81.63	2,265.40	-6,514.27	6,894.65	6,854.42	40.24	171.352	
1,900.00	1,899.90	2,056.07	2,055.90	6.70	35.95	-81.64	2,265.27	-6,514.27	6,894.42	6,851.77	42.65	161.638	
2,000.00	1,999.89	2,156.07	2,155.89	7.06	38.40	-81.65	2,265.27	-6,514.27	6,894.24	6,848.79	45.45	151.679	
2,050.40	2,050.29	2,206.46	2,206.29	7.24	39.63	-81.65	2,265.27	-6,514.27	6,894.15	6,847.29	46.86	147.111	
2,100.00	2,099.88	2,256.59	2,256.39	7.42	40.85	-81.64	2,266.98	-6,514.27	6,894.62	6,846.36	48.27	142.849	
2,200.00	2,199.87	2,369.26	2,369.05	7.78	43.60	-81.66	2,266.64	-6,514.27	6,894.35	6,842.97	51.37	134.199	
2,300.00	2,299.87	2,481.94	2,481.71	8.14	46.35	-81.68	2,265.66	-6,514.27	6,893.89	6,839.41	54.48	126.533	
2,400.00	2,399.86	2,556.22	2,555.86	8.50	48.18	-81.69	2,265.27	-6,514.27	6,893.54	6,836.87	56.67	121.644	
2,500.00	2,499.85	2,656.21	2,655.85	8.85	50.66	-81.70	2,265.27	-6,514.27	6,893.36	6,833.85	59.51	115.845	
2,550.40	2,550.25	2,706.61	2,706.25	9.03	51.90	-81.70	2,265.27	-6,514.27	6,893.27	6,832.34	60.93	113.127	
2,600.00	2,599.85	2,757.62	2,757.24	9.21	53.17	-81.69	2,266.79	-6,514.27	6,893.68	6,831.30	62.38	110.519	
2,700.00	2,699.84	2,872.09	2,871.70	9.57	56.00	-81.71	2,266.35	-6,514.27	6,893.37	6,827.81	65.57	105.132	
2,800.00	2,799.83	2,986.56	2,986.15	9.93	58.84	-81.73	2,265.17	-6,514.27	6,892.86	6,824.10	68.76	100.242	
2,900.00	2,899.82	3,056.34	3,055.82	10.29	60.44	-81.74	2,265.27	-6,514.27	6,892.65	6,821.94	70.72	97.465	
3,000.00	2,999.82	3,156.33	3,155.82	10.65	62.75	-81.75	2,265.27	-6,514.27	6,892.48	6,819.09	73.39	93.920	
3,050.40	3,050.21	3,206.73	3,206.21	10.83	63.91	-81.75	2,265.27	-6,514.27	6,892.39	6,817.66	74.73	92.230	
3,100.00	3,099.81	3,260.11	3,259.57	11.01	65.14	-81.74	2,266.87	-6,514.27	6,892.82	6,816.68	76.14	90.527	
3,200.00	3,199.80	3,373.46	3,372.90	11.36	67.76	-81.76	2,266.34	-6,514.27	6,892.50	6,813.38	79.12	87.119	
3,300.00	3,299.79	3,486.80	3,486.23	11.72	70.38	-81.78	2,265.14	-6,514.27	6,891.98	6,809.89	82.09	83.956	
3,400.00	3,399.79	3,556.42	3,555.79	12.08	71.84	-81.79	2,265.27	-6,514.27	6,891.78	6,807.87	83.91	82.130	
3,500.00	3,499.78	3,656.41	3,655.78	12.44	73.97	-81.80	2,265.27	-6,514.27	6,891.60	6,805.21	86.40	79.766	
3,515.81	3,515.58	3,674.14	3,673.49	12.50	74.34	-81.79	2,266.04	-6,514.27	6,891.83	6,805.00	86.83	79.370	
3,600.00	3,599.77	3,768.57	3,767.92	12.80	76.35	-81.80	2,265.75	-6,514.27	6,891.60	6,802.45	89.14	77.310	
3,700.00	3,699.76	3,856.45	3,855.76	13.16	78.30	-81.82	2,265.27	-6,514.27	6,891.26	6,799.81	91.45	75.358	
3,800.00	3,799.76	3,956.45	3,955.76	13.52	80.80	-81.83	2,265.27	-6,514.27	6,891.08	6,796.77	94.31	73.068	
3,900.00	3,899.75	4,056.44	4,055.75	13.87	83.31	-81.84	2,265.27	-6,514.27	6,890.91	6,793.74	97.17	70.913	
4,000.00	3,999.74	4,156.43	4,155.74	14.23	85.81	-81.85	2,265.27	-6,514.27	6,890.74	6,790.70	100.04	68.882	
4,100.00	4,099.73	4,256.42	4,255.73	14.59	88.32	-81.86	2,265.27	-6,514.27	6,890.56	6,787.66	102.90	66.963	
4,200.00	4,199.73	4,356.42	4,355.73	14.95	90.82	-81.87	2,265.27	-6,514.27	6,890.39	6,784.63	105.76	65.149	
4,300.00	4,299.72	4,456.41	4,455.72	15.31	93.33	-81.88	2,265.27	-6,514.27	6,890.22	6,781.59	108.63	63.430	
4,400.00	4,399.71	4,556.40	4,555.71	15.67	95.83	-81.89	2,265.27	-6,514.27	6,890.04	6,778.55	111.49	61.799	

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 #722H - Slot B05
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 #722H	**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
4,500.00	4,499.70	4,656.39	4,655.70	16.03	98.34	-81.90	2,265.27	-6,514.27	6,889.87	6,775.52	114.35	60.250	
4,600.00	4,599.70	4,756.39	4,755.70	16.38	100.84	-81.91	2,265.27	-6,514.27	6,889.70	6,772.48	117.22	58.777	
4,650.50	4,650.19	4,806.88	4,806.19	16.56	102.11	-81.91	2,265.27	-6,514.27	6,889.61	6,770.95	118.66	58.060	
4,700.00	4,699.69	4,856.75	4,856.02	16.74	103.36	-81.88	2,269.64	-6,514.27	6,890.93	6,770.84	120.09	57.381	
4,800.00	4,799.68	4,958.73	4,957.99	17.10	105.91	-81.89	2,269.58	-6,514.27	6,890.74	6,767.74	123.00	56.021	
4,900.00	4,899.67	5,060.70	5,059.96	17.46	108.47	-81.90	2,269.42	-6,514.27	6,890.52	6,764.60	125.92	54.723	
5,000.00	4,999.67	5,162.68	5,161.93	17.82	111.02	-81.92	2,269.18	-6,514.27	6,890.27	6,761.44	128.83	53.484	
5,100.00	5,099.66	5,264.65	5,263.90	18.18	113.58	-81.93	2,268.85	-6,514.27	6,889.99	6,758.25	131.74	52.299	
5,200.00	5,199.65	5,366.63	5,365.87	18.53	116.13	-81.94	2,268.42	-6,514.27	6,889.69	6,755.03	134.66	51.165	
5,300.00	5,299.64	5,468.60	5,467.84	18.89	118.69	-81.96	2,267.91	-6,514.27	6,889.36	6,751.79	137.57	50.079	
5,400.00	5,399.64	5,570.58	5,569.81	19.25	121.24	-81.97	2,267.30	-6,514.27	6,889.00	6,748.51	140.48	49.038	
5,500.00	5,499.63	5,672.55	5,671.77	19.61	123.80	-81.99	2,266.60	-6,514.27	6,888.61	6,745.21	143.39	48.039	
5,600.00	5,599.62	5,774.52	5,773.74	19.97	126.35	-82.00	2,265.82	-6,514.27	6,888.19	6,741.88	146.31	47.080	
5,700.00	5,699.61	5,857.02	5,855.61	20.33	128.42	-82.02	2,265.27	-6,514.27	6,887.82	6,739.09	148.74	46.309	
5,800.00	5,799.61	5,957.01	5,955.61	20.69	130.94	-82.03	2,265.27	-6,514.27	6,887.65	6,736.04	151.61	45.430	
5,900.00	5,899.60	6,057.00	6,055.60	21.04	133.45	-82.04	2,265.27	-6,514.27	6,887.48	6,733.00	154.49	44.583	
6,000.00	5,999.59	6,156.99	6,155.59	21.40	135.97	-82.05	2,265.27	-6,514.27	6,887.31	6,729.95	157.36	43.767	
6,100.00	6,099.58	6,256.99	6,255.58	21.76	138.49	-82.06	2,265.27	-6,514.27	6,887.14	6,726.91	160.24	42.981	
6,200.00	6,199.58	6,356.98	6,355.58	22.12	141.00	-82.07	2,265.27	-6,514.27	6,886.97	6,723.86	163.11	42.222	
6,300.00	6,299.57	6,456.97	6,455.57	22.48	143.52	-82.08	2,265.27	-6,514.27	6,886.81	6,720.82	165.99	41.490	
6,315.05	6,314.62	6,472.02	6,470.62	22.53	143.90	-82.08	2,265.27	-6,514.27	6,886.78	6,720.36	166.42	41.382	
6,316.62	6,316.19	6,473.59	6,472.19	22.54	143.94	-93.05	2,265.27	-6,514.27	6,886.78	6,720.31	166.47	41.371 CC	
6,350.00	6,349.55	6,506.95	6,505.55	22.66	144.78	-151.25	2,265.27	-6,514.27	6,887.64	6,720.22	167.42	41.139 ES	
6,400.00	6,399.30	6,556.70	6,555.30	22.83	146.03	-158.05	2,265.27	-6,514.27	6,892.06	6,723.21	168.85	40.818	
6,450.00	6,448.52	6,605.93	6,604.52	23.00	147.27	-159.71	2,265.27	-6,514.27	6,900.20	6,729.95	170.26	40.528	
6,500.00	6,496.91	6,654.32	6,652.91	23.18	148.49	-160.28	2,265.27	-6,514.27	6,912.03	6,740.38	171.65	40.269	
6,550.00	6,544.17	6,701.58	6,700.17	23.35	149.68	-160.38	2,265.27	-6,514.27	6,927.46	6,754.46	173.00	40.043	
6,600.00	6,590.01	6,747.41	6,746.01	23.53	150.83	-160.18	2,265.27	-6,514.27	6,946.41	6,772.10	174.31	39.851	
6,650.00	6,634.14	6,791.54	6,790.14	23.70	151.94	-159.75	2,265.27	-6,514.27	6,968.76	6,793.19	175.57	39.692	
6,700.00	6,676.30	6,833.70	6,832.30	23.88	153.00	-159.10	2,265.27	-6,514.27	6,994.38	6,817.60	176.77	39.567	
6,750.00	6,716.21	6,873.62	6,872.21	24.06	154.01	-158.21	2,265.27	-6,514.27	7,023.10	6,845.19	177.91	39.475	
6,800.00	6,753.65	6,911.05	6,909.65	24.24	154.95	-157.07	2,265.27	-6,514.27	7,054.77	6,875.79	178.98	39.416	
6,850.00	6,788.37	6,945.77	6,944.37	24.44	155.83	-155.60	2,265.27	-6,514.27	7,089.18	6,909.21	179.97	39.391 SF	
6,900.00	6,820.16	6,977.56	6,976.16	24.63	156.63	-153.74	2,265.27	-6,514.27	7,126.12	6,945.25	180.87	39.398	
6,950.00	6,848.83	7,006.23	7,004.83	24.84	157.35	-151.38	2,265.27	-6,514.27	7,165.38	6,983.69	181.69	39.438	
7,000.00	6,874.19	7,031.60	7,030.19	25.06	157.99	-148.33	2,265.27	-6,514.27	7,206.71	7,024.30	182.41	39.508	
7,050.00	6,896.10	7,053.50	7,052.10	25.29	158.54	-144.35	2,265.27	-6,514.27	7,249.86	7,066.82	183.04	39.609	
7,100.00	6,914.42	7,071.82	7,070.42	25.53	159.00	-139.08	2,265.27	-6,514.27	7,294.56	7,111.00	183.56	39.739	
7,150.00	6,929.03	7,086.43	7,085.03	25.78	159.37	-132.00	2,265.27	-6,514.27	7,340.54	7,156.56	183.98	39.898	
7,200.00	6,939.85	7,097.25	7,095.85	26.05	159.64	-122.46	2,265.27	-6,514.27	7,387.52	7,203.22	184.30	40.084	
7,250.00	6,946.80	7,104.20	7,102.80	26.32	159.81	-109.89	2,265.27	-6,514.27	7,435.21	7,250.70	184.52	40.296	
7,300.00	6,949.85	7,107.25	7,105.85	26.61	159.89	-94.55	2,265.27	-6,514.27	7,483.32	7,298.69	184.63	40.532	
7,314.43	6,950.00	7,107.40	7,106.00	26.69	159.89	-89.81	2,265.27	-6,514.27	7,497.24	7,312.60	184.64	40.605	
7,400.00	6,949.92	7,107.33	7,105.92	27.21	159.89	-89.81	2,265.27	-6,514.27	7,579.82	7,395.13	184.69	41.041	
7,500.00	6,949.83	7,107.24	7,105.83	27.90	159.89	-89.81	2,265.27	-6,514.27	7,676.41	7,491.66	184.75	41.550	
7,600.00	6,949.74	7,107.15	7,105.74	28.66	159.89	-89.80	2,265.27	-6,514.27	7,773.09	7,588.28	184.82	42.058	
7,700.00	6,949.65	7,107.06	7,105.65	29.49	159.89	-89.80	2,265.27	-6,514.27	7,869.86	7,684.97	184.89	42.565	
7,800.00	6,949.56	7,106.97	7,105.56	30.38	159.88	-89.80	2,265.27	-6,514.27	7,966.70	7,781.73	184.96	43.071	
7,900.00	6,949.47	7,106.88	7,105.47	31.33	159.88	-89.80	2,265.27	-6,514.27	8,063.62	7,878.57	185.04	43.577	
8,000.00	6,949.38	7,106.78	7,105.38	32.33	159.88	-89.79	2,265.27	-6,514.27	8,160.61	7,975.48	185.13	44.081	
8,100.00	6,949.29	7,106.69	7,105.29	33.38	159.88	-89.79	2,265.27	-6,514.27	8,257.68	8,072.46	185.21	44.585	
8,200.00	6,949.20	7,106.60	7,105.20	34.47	159.87	-89.79	2,265.27	-6,514.27	8,354.81	8,169.51	185.30	45.087	

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 #722H - Slot B05
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 #722H	**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
8,300.00	6,949.11	7,106.51	7,105.11	35.60	159.87	-89.78	2,265.27	-6,514.27	8,452.01	8,266.62	185.39	45.589	
8,400.00	6,949.02	7,106.42	7,105.02	36.76	159.87	-89.78	2,265.27	-6,514.27	8,549.28	8,363.79	185.49	46.091	
8,500.00	6,948.93	7,106.33	7,104.93	37.96	159.87	-89.78	2,265.27	-6,514.27	8,646.61	8,461.02	185.58	46.591	
8,600.00	6,948.84	7,106.24	7,104.84	39.18	159.87	-89.78	2,265.27	-6,514.27	8,744.00	8,558.31	185.68	47.091	
8,700.00	6,948.75	7,106.15	7,104.75	40.43	159.86	-89.77	2,265.27	-6,514.27	8,841.45	8,655.66	185.78	47.590	
8,800.00	6,948.66	7,106.06	7,104.66	41.71	159.86	-89.77	2,265.27	-6,514.27	8,938.95	8,753.06	185.89	48.089	
8,900.00	6,948.57	7,105.97	7,104.57	43.00	159.86	-89.77	2,265.27	-6,514.27	9,036.51	8,850.52	185.99	48.586	
9,000.00	6,948.48	7,105.88	7,104.48	44.32	159.86	-89.77	2,265.27	-6,514.27	9,134.12	8,948.02	186.09	49.084	
9,100.00	6,948.39	7,105.79	7,104.39	45.66	159.85	-89.76	2,265.27	-6,514.27	9,231.78	9,045.58	186.20	49.580	
9,200.00	6,948.30	7,105.70	7,104.30	47.01	159.85	-89.76	2,265.27	-6,514.27	9,329.49	9,143.19	186.31	50.076	
9,300.00	6,948.21	7,105.61	7,104.21	48.38	159.85	-89.76	2,265.27	-6,514.27	9,427.25	9,240.84	186.41	50.572	
9,400.00	6,948.12	7,105.52	7,104.12	49.76	159.85	-89.76	2,265.27	-6,514.27	9,525.06	9,338.53	186.52	51.066	
9,500.00	6,948.03	7,105.43	7,104.03	51.16	159.85	-89.75	2,265.27	-6,514.27	9,622.91	9,436.28	186.63	51.561	
9,600.00	6,947.94	7,105.34	7,103.94	52.56	159.84	-89.75	2,265.27	-6,514.27	9,720.80	9,534.06	186.74	52.055	
9,700.00	6,947.85	7,105.25	7,103.85	53.98	159.84	-89.75	2,265.27	-6,514.27	9,818.74	9,631.89	186.85	52.548	
9,800.00	6,947.76	7,105.16	7,103.76	55.41	159.84	-89.75	2,265.27	-6,514.27	9,916.72	9,729.75	186.97	53.040	
9,900.00	6,947.67	7,105.07	7,103.67	56.85	159.84	-89.74	2,265.27	-6,514.27	10,014.74	9,827.66	187.08	53.533	
10,000.00	6,947.58	7,104.98	7,103.58	58.29	159.83	-89.74	2,265.27	-6,514.27	10,112.79	9,925.61	187.19	54.024	
10,100.00	6,947.49	7,104.89	7,103.49	59.75	159.83	-89.74	2,265.27	-6,514.27	10,210.89	10,023.59	187.30	54.515	
10,200.00	6,947.40	7,104.80	7,103.40	61.21	159.83	-89.74	2,265.27	-6,514.27	10,309.02	10,121.61	187.42	55.006	
10,300.00	6,947.31	7,104.71	7,103.31	62.68	159.83	-89.73	2,265.27	-6,514.27	10,407.19	10,219.66	187.53	55.496	
10,400.00	6,947.22	7,104.62	7,103.22	64.15	159.82	-89.73	2,265.27	-6,514.27	10,505.39	10,317.75	187.64	55.986	
10,500.00	6,947.13	7,104.53	7,103.13	65.63	159.82	-89.73	2,265.27	-6,514.27	10,603.63	10,415.87	187.76	56.475	
10,600.00	6,947.04	7,104.44	7,103.04	67.12	159.82	-89.72	2,265.27	-6,514.27	10,701.89	10,514.02	187.87	56.964	
10,700.00	6,946.95	7,104.35	7,102.95	68.61	159.82	-89.72	2,265.27	-6,514.27	10,800.19	10,612.21	187.99	57.452	
10,800.00	6,946.86	7,104.26	7,102.86	70.11	159.82	-89.72	2,265.27	-6,514.27	10,898.52	10,710.42	188.10	57.940	
10,900.00	6,946.77	7,104.17	7,102.77	71.61	159.81	-89.72	2,265.27	-6,514.27	10,996.89	10,808.67	188.21	58.428	
11,000.00	6,946.68	7,104.08	7,102.68	73.11	159.81	-89.71	2,265.27	-6,514.27	11,095.28	10,906.95	188.33	58.915	
11,100.00	6,946.59	7,103.99	7,102.59	74.62	159.81	-89.71	2,265.27	-6,514.27	11,193.69	11,005.25	188.44	59.401	
11,200.00	6,946.50	7,103.90	7,102.50	76.14	159.81	-89.71	2,265.27	-6,514.27	11,292.14	11,103.58	188.56	59.887	
11,300.00	6,946.41	7,103.81	7,102.41	77.65	159.80	-89.71	2,265.27	-6,514.27	11,390.61	11,201.94	188.67	60.373	
11,400.00	6,946.32	7,103.72	7,102.32	79.18	159.80	-89.70	2,265.27	-6,514.27	11,489.11	11,300.33	188.79	60.858	
11,500.00	6,946.23	7,103.63	7,102.23	80.70	159.80	-89.70	2,265.27	-6,514.27	11,587.64	11,398.74	188.90	61.343	
11,600.00	6,946.14	7,103.54	7,102.14	82.23	159.80	-89.70	2,265.27	-6,514.27	11,686.19	11,497.18	189.01	61.827	
11,700.00	6,946.05	7,103.45	7,102.05	83.76	159.80	-89.70	2,265.27	-6,514.27	11,784.77	11,595.64	189.13	62.311	
11,800.00	6,945.96	7,103.36	7,101.96	85.29	159.79	-89.69	2,265.27	-6,514.27	11,883.36	11,694.12	189.24	62.794	
11,900.00	6,945.87	7,103.27	7,101.87	86.82	159.79	-89.69	2,265.27	-6,514.27	11,981.99	11,792.63	189.36	63.277	
12,000.00	6,945.78	7,103.18	7,101.78	88.36	159.79	-89.69	2,265.27	-6,514.27	12,080.63	11,891.16	189.47	63.760	
12,100.00	6,945.69	7,103.09	7,101.69	89.90	159.79	-89.69	2,265.27	-6,514.27	12,179.30	11,989.71	189.58	64.242	
12,200.00	6,945.60	7,103.00	7,101.60	91.44	159.78	-89.68	2,265.27	-6,514.27	12,277.99	12,088.29	189.70	64.724	
12,300.00	6,945.51	7,102.91	7,101.51	92.99	159.78	-89.68	2,265.27	-6,514.27	12,376.70	12,186.88	189.81	65.205	
12,400.00	6,945.42	7,102.82	7,101.42	94.53	159.78	-89.68	2,265.27	-6,514.27	12,475.43	12,285.50	189.93	65.686	
12,500.00	6,945.33	7,102.73	7,101.33	96.08	159.78	-89.68	2,265.27	-6,514.27	12,574.18	12,384.14	190.04	66.167	
12,600.00	6,945.24	7,102.64	7,101.24	97.63	159.77	-89.67	2,265.27	-6,514.27	12,672.95	12,482.79	190.15	66.647	
12,700.00	6,945.15	7,102.55	7,101.15	99.18	159.77	-89.67	2,265.27	-6,514.27	12,771.73	12,581.47	190.26	67.126	
12,800.00	6,945.06	7,102.46	7,101.06	100.74	159.77	-89.67	2,265.27	-6,514.27	12,870.54	12,680.16	190.38	67.605	
12,900.00	6,944.96	7,102.37	7,100.96	102.29	159.77	-89.66	2,265.27	-6,514.27	12,969.37	12,778.88	190.49	68.084	
13,000.00	6,944.87	7,102.28	7,100.87	103.85	159.77	-89.66	2,265.27	-6,514.27	13,068.21	12,877.61	190.60	68.563	
13,100.00	6,944.78	7,102.19	7,100.78	105.40	159.76	-89.66	2,265.27	-6,514.27	13,167.07	12,976.36	190.72	69.040	
13,200.00	6,944.69	7,102.10	7,100.69	106.96	159.76	-89.66	2,265.27	-6,514.27	13,265.95	13,075.12	190.83	69.518	
13,300.00	6,944.60	7,102.01	7,100.60	108.52	159.76	-89.65	2,265.27	-6,514.27	13,364.85	13,173.91	190.94	69.995	
13,400.00	6,944.51	7,101.92	7,100.51	110.08	159.76	-89.65	2,265.27	-6,514.27	13,463.76	13,272.71	191.05	70.472	

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 #722H - Slot B05
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 #722H	**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
13,500.00	6,944.42	7,101.83	7,100.42	111.65	159.75	-89.65	2,265.27	-6,514.27	13,562.68	13,371.52	191.16	70.948	
13,600.00	6,944.33	7,101.74	7,100.33	113.21	159.75	-89.65	2,265.27	-6,514.27	13,661.63	13,470.35	191.28	71.424	
13,700.00	6,944.24	7,101.65	7,100.24	114.78	159.75	-89.64	2,265.27	-6,514.27	13,760.59	13,569.20	191.39	71.899	
13,800.00	6,944.15	7,101.56	7,100.15	116.34	159.75	-89.64	2,265.27	-6,514.27	13,859.56	13,668.06	191.50	72.374	
13,900.00	6,944.06	7,101.47	7,100.06	117.91	159.75	-89.64	2,265.27	-6,514.27	13,958.55	13,766.94	191.61	72.848	
14,000.00	6,943.97	7,101.38	7,099.97	119.48	159.74	-89.64	2,265.27	-6,514.27	14,057.55	13,865.83	191.72	73.323	
14,100.00	6,943.88	7,101.29	7,099.88	121.05	159.74	-89.63	2,265.27	-6,514.27	14,156.56	13,964.73	191.83	73.796	
14,200.00	6,943.79	7,101.20	7,099.79	122.62	159.74	-89.63	2,265.27	-6,514.27	14,255.59	14,063.65	191.94	74.269	
14,300.00	6,943.70	7,101.11	7,099.70	124.19	159.74	-89.63	2,265.27	-6,514.27	14,354.64	14,162.58	192.06	74.742	
14,400.00	6,943.61	7,101.02	7,099.61	125.76	159.73	-89.63	2,265.27	-6,514.27	14,453.69	14,261.53	192.17	75.215	
14,500.00	6,943.52	7,100.93	7,099.52	127.33	159.73	-89.62	2,265.27	-6,514.27	14,552.76	14,360.49	192.28	75.686	
14,600.00	6,943.43	7,100.84	7,099.43	128.90	159.73	-89.62	2,265.27	-6,514.27	14,651.85	14,459.46	192.39	76.158	
14,700.00	6,943.34	7,100.75	7,099.34	130.48	159.73	-89.62	2,265.27	-6,514.27	14,750.94	14,558.44	192.50	76.629	
14,800.00	6,943.25	7,100.65	7,099.25	132.05	159.72	-89.61	2,265.27	-6,514.27	14,850.05	14,657.44	192.61	77.100	
14,900.00	6,943.16	7,100.56	7,099.16	133.63	159.72	-89.61	2,265.27	-6,514.27	14,949.16	14,756.45	192.72	77.570	
15,000.00	6,943.07	7,100.47	7,099.07	135.20	159.72	-89.61	2,265.27	-6,514.27	15,048.29	14,855.47	192.83	78.039	
15,100.00	6,942.98	7,100.38	7,098.98	136.78	159.72	-89.61	2,265.27	-6,514.27	15,147.44	14,954.50	192.94	78.509	
15,200.00	6,942.89	7,100.29	7,098.89	138.36	159.72	-89.60	2,265.27	-6,514.27	15,246.59	15,053.54	193.05	78.977	
15,300.00	6,942.80	7,100.20	7,098.80	139.93	159.71	-89.60	2,265.27	-6,514.27	15,345.75	15,152.59	193.16	79.446	
15,400.00	6,942.71	7,100.11	7,098.71	141.51	159.71	-89.60	2,265.27	-6,514.27	15,444.93	15,251.66	193.27	79.914	
15,500.00	6,942.62	7,100.02	7,098.62	143.09	159.71	-89.60	2,265.27	-6,514.27	15,544.11	15,350.73	193.38	80.381	
15,600.00	6,942.53	7,099.93	7,098.53	144.67	159.71	-89.59	2,265.27	-6,514.27	15,643.31	15,449.82	193.49	80.848	
15,700.00	6,942.44	7,099.84	7,098.44	146.25	159.70	-89.59	2,265.27	-6,514.27	15,742.51	15,548.91	193.60	81.315	
15,800.00	6,942.35	7,099.75	7,098.35	147.83	159.70	-89.59	2,265.27	-6,514.27	15,841.73	15,648.02	193.71	81.781	
15,900.00	6,942.26	7,099.66	7,098.26	149.41	159.70	-89.59	2,265.27	-6,514.27	15,940.95	15,747.14	193.82	82.247	
16,000.00	6,942.17	7,099.57	7,098.17	150.99	159.70	-89.58	2,265.27	-6,514.27	16,040.19	15,846.26	193.93	82.712	
16,100.00	6,942.08	7,099.48	7,098.08	152.57	159.70	-89.58	2,265.27	-6,514.27	16,139.43	15,945.40	194.04	83.177	
16,200.00	6,941.99	7,099.39	7,097.99	154.16	159.69	-89.58	2,265.27	-6,514.27	16,238.69	16,044.54	194.15	83.641	
16,300.00	6,941.90	7,099.30	7,097.90	155.74	159.69	-89.58	2,265.27	-6,514.27	16,337.95	16,143.69	194.26	84.105	
16,400.00	6,941.81	7,099.21	7,097.81	157.32	159.69	-89.57	2,265.27	-6,514.27	16,437.22	16,242.86	194.37	84.568	
16,500.00	6,941.72	7,099.12	7,097.72	158.91	159.69	-89.57	2,265.27	-6,514.27	16,536.50	16,342.03	194.48	85.031	
16,600.00	6,941.63	7,099.03	7,097.63	160.49	159.68	-89.57	2,265.27	-6,514.27	16,635.79	16,441.21	194.59	85.493	
16,700.00	6,941.54	7,098.94	7,097.54	162.07	159.68	-89.57	2,265.27	-6,514.27	16,735.09	16,540.40	194.69	85.955	
16,800.00	6,941.45	7,098.85	7,097.45	163.66	159.68	-89.56	2,265.27	-6,514.27	16,834.40	16,639.59	194.80	86.417	
16,900.00	6,941.36	7,098.76	7,097.36	165.24	159.68	-89.56	2,265.27	-6,514.27	16,933.71	16,738.80	194.91	86.878	
17,000.00	6,941.27	7,098.67	7,097.27	166.83	159.68	-89.56	2,265.27	-6,514.27	17,033.03	16,838.01	195.02	87.339	
17,100.00	6,941.18	7,098.58	7,097.18	168.42	159.67	-89.55	2,265.27	-6,514.27	17,132.36	16,937.23	195.13	87.799	
17,200.00	6,941.09	7,098.49	7,097.09	170.00	159.67	-89.55	2,265.27	-6,514.27	17,231.70	17,036.46	195.24	88.258	
17,300.00	6,941.00	7,098.40	7,097.00	171.59	159.67	-89.55	2,265.27	-6,514.27	17,331.05	17,135.69	195.35	88.718	
17,400.00	6,940.91	7,098.31	7,096.91	173.18	159.67	-89.55	2,265.27	-6,514.27	17,430.40	17,234.94	195.46	89.176	
17,500.00	6,940.82	7,098.22	7,096.82	174.76	159.66	-89.54	2,265.27	-6,514.27	17,529.76	17,334.19	195.57	89.635	
17,600.00	6,940.73	7,098.13	7,096.73	176.35	159.66	-89.54	2,265.27	-6,514.27	17,629.13	17,433.45	195.68	90.092	
17,700.00	6,940.64	7,098.04	7,096.64	177.94	159.66	-89.54	2,265.27	-6,514.27	17,728.50	17,532.71	195.79	90.550	
17,800.00	6,940.55	7,097.95	7,096.55	179.53	159.66	-89.54	2,265.27	-6,514.27	17,827.88	17,631.99	195.90	91.006	
17,900.00	6,940.46	7,097.86	7,096.46	181.11	159.65	-89.53	2,265.27	-6,514.27	17,927.27	17,731.26	196.01	91.463	
18,000.00	6,940.37	7,097.77	7,096.37	182.70	159.65	-89.53	2,265.27	-6,514.27	18,026.67	17,830.55	196.12	91.919	
18,100.00	6,940.28	7,097.68	7,096.28	184.29	159.65	-89.53	2,265.27	-6,514.27	18,126.07	17,929.84	196.22	92.374	
18,200.00	6,940.19	7,097.59	7,096.19	185.88	159.65	-89.53	2,265.27	-6,514.27	18,225.48	18,029.14	196.33	92.829	
18,300.00	6,940.10	7,097.50	7,096.10	187.47	159.65	-89.52	2,265.27	-6,514.27	18,324.89	18,128.45	196.44	93.283	
18,400.00	6,940.01	7,097.41	7,096.01	189.06	159.64	-89.52	2,265.27	-6,514.27	18,424.31	18,227.76	196.55	93.737	
18,500.00	6,939.92	7,097.32	7,095.92	190.65	159.64	-89.52	2,265.27	-6,514.27	18,523.74	18,327.08	196.66	94.191	
18,600.00	6,939.83	7,097.23	7,095.83	192.24	159.64	-89.52	2,265.27	-6,514.27	18,623.17	18,426.40	196.77	94.644	

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 #722H - Slot B05
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 #722H	**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
18,700.00	6,939.74	7,097.14	7,095.74	193.83	159.64	-89.51	2,265.27	-6,514.27	18,722.61	18,525.73	196.88	95.096	
18,800.00	6,939.65	7,097.05	7,095.65	195.42	159.63	-89.51	2,265.27	-6,514.27	18,822.06	18,625.07	196.99	95.548	
18,900.00	6,939.56	7,096.96	7,095.56	197.01	159.63	-89.51	2,265.27	-6,514.27	18,921.51	18,724.41	197.10	96.000	
19,000.00	6,939.47	7,096.87	7,095.47	198.60	159.63	-89.51	2,265.27	-6,514.27	19,020.97	18,823.76	197.21	96.451	
19,100.00	6,939.38	7,096.78	7,095.38	200.19	159.63	-89.50	2,265.27	-6,514.27	19,120.43	18,923.11	197.32	96.901	
19,200.00	6,939.29	7,096.69	7,095.29	201.78	159.63	-89.50	2,265.27	-6,514.27	19,219.90	19,022.47	197.43	97.351	
19,300.00	6,939.20	7,096.60	7,095.20	203.37	159.62	-89.50	2,265.27	-6,514.27	19,319.37	19,121.83	197.54	97.801	
19,400.00	6,939.11	7,096.51	7,095.11	204.97	159.62	-89.49	2,265.27	-6,514.27	19,418.85	19,221.20	197.65	98.250	
19,500.00	6,939.02	7,096.42	7,095.02	206.56	159.62	-89.49	2,265.27	-6,514.27	19,518.34	19,320.58	197.76	98.698	
19,600.00	6,938.93	7,096.33	7,094.93	208.15	159.62	-89.49	2,265.27	-6,514.27	19,617.83	19,419.96	197.87	99.146	
19,700.00	6,938.83	7,096.24	7,094.83	209.74	159.61	-89.49	2,265.27	-6,514.27	19,717.32	19,519.34	197.98	99.594	
19,800.00	6,938.74	7,096.15	7,094.74	211.33	159.61	-89.48	2,265.27	-6,514.27	19,816.82	19,618.73	198.09	100.041	
19,900.00	6,938.65	7,096.06	7,094.65	212.93	159.61	-89.48	2,265.27	-6,514.27	19,916.33	19,718.13	198.20	100.487	
20,000.00	6,938.56	7,095.97	7,094.56	214.52	159.61	-89.48	2,265.27	-6,514.27	20,015.84	19,817.53	198.31	100.933	
20,100.00	6,938.47	7,095.88	7,094.47	216.11	159.60	-89.48	2,265.27	-6,514.27	20,115.35	19,916.93	198.42	101.379	
20,200.00	6,938.38	7,095.79	7,094.38	217.71	159.60	-89.47	2,265.27	-6,514.27	20,214.87	20,016.34	198.53	101.824	
20,300.00	6,938.29	7,095.70	7,094.29	219.30	159.60	-89.47	2,265.27	-6,514.27	20,314.39	20,115.76	198.64	102.269	
20,400.00	6,938.20	7,095.61	7,094.20	220.89	159.60	-89.47	2,265.27	-6,514.27	20,413.92	20,215.18	198.75	102.713	
20,500.00	6,938.11	7,095.52	7,094.11	222.49	159.60	-89.47	2,265.27	-6,514.27	20,513.46	20,314.60	198.86	103.156	
20,600.00	6,938.02	7,095.43	7,094.02	224.08	159.59	-89.46	2,265.27	-6,514.27	20,613.00	20,414.03	198.97	103.599	
20,626.08	6,938.00	7,095.40	7,094.00	224.49	159.59	-89.46	2,265.27	-6,514.27	20,638.96	20,439.96	199.00	103.715	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	47.30	1,131.92	1,226.83	1,674.21				
100.00	100.00	0.00	0.00	0.25	0.00	47.30	1,131.92	1,226.83	1,669.49	1,669.23	0.25	6,566.273	
146.95	146.95	17.95	17.95	0.42	0.78	47.30	1,131.92	1,226.83	1,669.23	1,668.03	1.20	1,388.029	
200.00	200.00	71.00	71.00	0.61	3.10	47.30	1,131.92	1,226.83	1,669.23	1,665.53	3.71	450.225	
300.00	300.00	171.00	171.00	0.97	7.46	47.30	1,131.92	1,226.83	1,669.23	1,660.81	8.43	198.027	
400.00	400.00	271.00	271.00	1.33	11.82	47.30	1,131.92	1,226.83	1,669.23	1,656.08	13.15	126.927	
500.00	500.00	371.00	371.00	1.68	16.19	47.30	1,131.92	1,226.83	1,669.23	1,651.36	17.87	93.395	
535.00	535.00	406.00	406.00	1.81	17.72	36.64	1,131.92	1,226.83	1,669.06	1,649.54	19.53	85.481	
600.00	599.99	470.99	470.99	2.04	20.55	36.66	1,131.92	1,226.83	1,668.43	1,645.83	22.59	73.843	
700.00	699.99	570.99	570.99	2.40	24.91	36.68	1,131.92	1,226.83	1,667.45	1,640.13	27.32	61.044	
800.00	799.98	670.98	670.98	2.76	29.28	36.71	1,131.92	1,226.83	1,666.47	1,634.43	32.04	52.018	
900.00	899.97	770.97	770.97	3.12	33.64	36.73	1,131.92	1,226.83	1,665.49	1,628.73	36.76	45.310	
1,000.00	999.96	870.96	870.96	3.48	38.00	36.76	1,131.92	1,226.83	1,664.51	1,623.03	41.48	40.129	
1,100.00	1,099.96	970.96	970.96	3.84	42.37	36.78	1,131.92	1,226.83	1,663.53	1,617.33	46.20	36.007	
1,200.00	1,199.95	1,070.95	1,070.95	4.19	46.73	36.81	1,131.92	1,226.83	1,662.55	1,611.63	50.92	32.649	
1,300.00	1,299.94	1,170.94	1,170.94	4.55	51.09	36.83	1,131.92	1,226.83	1,661.57	1,605.93	55.64	29.861	
1,400.00	1,399.93	1,270.93	1,270.93	4.91	55.46	36.86	1,131.92	1,226.83	1,660.59	1,600.23	60.36	27.509	
1,500.00	1,499.93	1,370.93	1,370.93	5.27	59.82	36.88	1,131.92	1,226.83	1,659.62	1,594.53	65.09	25.499	
1,600.00	1,599.92	1,470.92	1,470.92	5.63	64.18	36.91	1,131.92	1,226.83	1,658.64	1,588.83	69.81	23.760	
1,700.00	1,699.91	1,570.91	1,570.91	5.99	68.54	36.93	1,131.92	1,226.83	1,657.66	1,583.13	74.53	22.242	
1,800.00	1,799.90	1,670.90	1,670.90	6.34	72.91	36.96	1,131.92	1,226.83	1,656.69	1,577.44	79.25	20.905	
1,900.00	1,899.90	1,770.90	1,770.90	6.70	77.27	36.98	1,131.92	1,226.83	1,655.71	1,571.74	83.97	19.718	
2,000.00	1,999.89	1,870.89	1,870.89	7.06	81.63	37.01	1,131.92	1,226.83	1,654.73	1,566.04	88.69	18.657	
2,100.00	2,099.88	1,970.88	1,970.88	7.42	86.00	37.04	1,131.92	1,226.83	1,653.76	1,560.34	93.41	17.703	
2,200.00	2,199.87	2,070.87	2,070.87	7.78	90.36	37.06	1,131.92	1,226.83	1,652.78	1,554.65	98.14	16.842	
2,300.00	2,299.87	2,170.87	2,170.87	8.14	94.72	37.09	1,131.92	1,226.83	1,651.81	1,548.95	102.86	16.059	
2,400.00	2,399.86	2,270.86	2,270.86	8.50	99.09	37.11	1,131.92	1,226.83	1,650.83	1,543.26	107.58	15.345	
2,500.00	2,499.85	2,370.85	2,370.85	8.85	103.45	37.14	1,131.92	1,226.83	1,649.86	1,537.56	112.30	14.692	
2,600.00	2,599.85	2,470.85	2,470.85	9.21	107.81	37.16	1,131.92	1,226.83	1,648.89	1,531.87	117.02	14.090	
2,700.00	2,699.84	2,570.84	2,570.84	9.57	112.17	37.19	1,131.92	1,226.83	1,647.91	1,526.17	121.74	13.536	
2,800.00	2,799.83	2,670.83	2,670.83	9.93	116.54	37.21	1,131.92	1,226.83	1,646.94	1,520.48	126.46	13.023	
2,900.00	2,899.82	2,770.82	2,770.82	10.29	120.90	37.24	1,131.92	1,226.83	1,645.97	1,514.78	131.19	12.547	
3,000.00	2,999.82	2,870.82	2,870.82	10.65	125.26	37.27	1,131.92	1,226.83	1,644.99	1,509.09	135.91	12.104	
3,100.00	3,099.81	2,970.81	2,970.81	11.01	129.63	37.29	1,131.92	1,226.83	1,644.02	1,503.39	140.63	11.691	
3,200.00	3,199.80	3,070.80	3,070.80	11.36	133.99	37.32	1,131.92	1,226.83	1,643.05	1,497.70	145.35	11.304	
3,300.00	3,299.79	3,170.79	3,170.79	11.72	138.35	37.34	1,131.92	1,226.83	1,642.08	1,492.01	150.07	10.942	
3,400.00	3,399.79	3,270.79	3,270.79	12.08	142.72	37.37	1,131.92	1,226.83	1,641.11	1,486.31	154.79	10.602	
3,500.00	3,499.78	3,370.78	3,370.78	12.44	147.08	37.40	1,131.92	1,226.83	1,640.14	1,480.62	159.51	10.282	
3,600.00	3,599.77	3,470.77	3,470.77	12.80	151.44	37.42	1,131.92	1,226.83	1,639.17	1,474.93	164.24	9.981	
3,700.00	3,699.76	3,570.76	3,570.76	13.16	155.80	37.45	1,131.92	1,226.83	1,638.20	1,469.24	168.96	9.696	
3,800.00	3,799.76	3,670.76	3,670.76	13.52	160.17	37.47	1,131.92	1,226.83	1,637.23	1,463.55	173.68	9.427	
3,900.00	3,899.75	3,770.75	3,770.75	13.87	164.53	37.50	1,131.92	1,226.83	1,636.26	1,457.86	178.40	9.172	
4,000.00	3,999.74	3,870.74	3,870.74	14.23	168.89	37.53	1,131.92	1,226.83	1,635.29	1,452.17	183.12	8.930	
4,100.00	4,099.73	3,970.73	3,970.73	14.59	173.26	37.55	1,131.92	1,226.83	1,634.32	1,446.48	187.84	8.700	
4,200.00	4,199.73	4,070.73	4,070.73	14.95	177.62	37.58	1,131.92	1,226.83	1,633.35	1,440.79	192.56	8.482	
4,300.00	4,299.72	4,170.72	4,170.72	15.31	181.98	37.60	1,131.92	1,226.83	1,632.38	1,435.10	197.29	8.274	
4,400.00	4,399.71	4,270.71	4,270.71	15.67	186.34	37.63	1,131.92	1,226.83	1,631.41	1,429.41	202.01	8.076	
4,500.00	4,499.70	4,370.70	4,370.70	16.03	190.71	37.66	1,131.92	1,226.83	1,630.45	1,423.72	206.73	7.887	
4,600.00	4,599.70	4,470.70	4,470.70	16.38	195.07	37.68	1,131.92	1,226.83	1,629.48	1,418.03	211.45	7.706	
4,700.00	4,699.69	4,570.69	4,570.69	16.74	199.43	37.71	1,131.92	1,226.83	1,628.51	1,412.34	216.17	7.533	
4,800.00	4,799.68	4,670.68	4,670.68	17.10	203.80	37.74	1,131.92	1,226.83	1,627.55	1,406.65	220.89	7.368	
4,900.00	4,899.67	4,770.67	4,770.67	17.46	208.16	37.76	1,131.92	1,226.83	1,626.58	1,400.97	225.62	7.210	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	4,870.67	4,870.67	17.82	212.52	37.79	1,131.92	1,226.83	1,625.61	1,395.28	230.34	7.058	
5,100.00	5,099.66	4,970.66	4,970.66	18.18	216.89	37.81	1,131.92	1,226.83	1,624.65	1,389.59	235.06	6.912	
5,200.00	5,199.65	5,070.65	5,070.65	18.53	221.25	37.84	1,131.92	1,226.83	1,623.68	1,383.90	239.78	6.772	
5,300.00	5,299.64	5,170.64	5,170.64	18.89	225.61	37.87	1,131.92	1,226.83	1,622.72	1,378.22	244.50	6.637	
5,400.00	5,399.64	5,270.64	5,270.64	19.25	229.97	37.89	1,131.92	1,226.83	1,621.75	1,372.53	249.22	6.507	
5,500.00	5,499.63	5,370.63	5,370.63	19.61	234.34	37.92	1,131.92	1,226.83	1,620.79	1,366.85	253.94	6.382	
5,600.00	5,599.62	5,470.62	5,470.62	19.97	238.70	37.95	1,131.92	1,226.83	1,619.83	1,361.16	258.67	6.262	
5,700.00	5,699.61	5,570.61	5,570.61	20.33	243.06	37.97	1,131.92	1,226.83	1,618.86	1,355.48	263.39	6.146	
5,800.00	5,799.61	5,670.61	5,670.61	20.69	247.43	38.00	1,131.92	1,226.83	1,617.90	1,349.79	268.11	6.035	
5,900.00	5,899.60	5,770.60	5,770.60	21.04	251.79	38.03	1,131.92	1,226.83	1,616.94	1,344.11	272.83	5.927	
6,000.00	5,999.59	5,870.59	5,870.59	21.40	256.15	38.05	1,131.92	1,226.83	1,615.98	1,338.42	277.55	5.822	
6,100.00	6,099.58	5,970.58	5,970.58	21.76	260.52	38.08	1,131.92	1,226.83	1,615.01	1,332.74	282.27	5.721	
6,117.90	6,117.48	5,973.00	5,973.00	21.83	260.62	38.08	1,131.92	1,226.83	1,614.92	1,332.49	282.43	5.718 SF	
6,200.00	6,199.58	5,973.00	5,973.00	22.12	260.62	38.08	1,131.92	1,226.83	1,617.00	1,334.76	282.24	5.729	
6,300.00	6,299.57	5,973.00	5,973.00	22.48	260.62	38.08	1,131.92	1,226.83	1,625.14	1,344.10	281.05	5.782	
6,315.05	6,314.62	5,973.00	5,973.00	22.53	260.62	38.08	1,131.92	1,226.83	1,626.90	1,346.12	280.78	5.794	
6,350.00	6,349.55	5,973.00	5,973.00	22.66	260.62	-30.86	1,131.92	1,226.83	1,630.81	1,350.74	280.07	5.823	
6,400.00	6,399.30	5,973.00	5,973.00	22.83	260.62	-37.49	1,131.92	1,226.83	1,635.25	1,356.43	278.83	5.865	
6,450.00	6,448.52	5,973.00	5,973.00	23.00	260.62	-39.16	1,131.92	1,226.83	1,638.34	1,361.00	277.34	5.907	
6,500.00	6,496.91	5,973.00	5,973.00	23.18	260.62	-39.91	1,131.92	1,226.83	1,640.05	1,364.43	275.61	5.951	
6,550.00	6,544.17	5,973.00	5,973.00	23.35	260.62	-40.38	1,131.92	1,226.83	1,640.38	1,366.71	273.67	5.994	
6,600.00	6,590.01	5,973.00	5,973.00	23.53	260.62	-40.76	1,131.92	1,226.83	1,639.33	1,367.82	271.52	6.038	
6,650.00	6,634.14	5,973.00	5,973.00	23.70	260.62	-41.13	1,131.92	1,226.83	1,636.91	1,367.73	269.18	6.081	
6,700.00	6,676.30	5,973.00	5,973.00	23.88	260.62	-41.52	1,131.92	1,226.83	1,633.11	1,366.44	266.68	6.124	
6,750.00	6,716.21	5,973.00	5,973.00	24.06	260.62	-41.96	1,131.92	1,226.83	1,627.97	1,363.92	264.04	6.166	
6,800.00	6,753.65	5,973.00	5,973.00	24.24	260.62	-42.45	1,131.92	1,226.83	1,621.49	1,360.18	261.31	6.205	
6,850.00	6,788.37	5,973.00	5,973.00	24.44	260.62	-43.02	1,131.92	1,226.83	1,613.69	1,355.19	258.50	6.243	
6,900.00	6,820.16	5,973.00	5,973.00	24.63	260.62	-43.66	1,131.92	1,226.83	1,604.62	1,348.96	255.66	6.276	
6,950.00	6,848.83	5,973.00	5,973.00	24.84	260.62	-44.37	1,131.92	1,226.83	1,594.30	1,341.47	252.83	6.306	
7,000.00	6,874.19	5,973.00	5,973.00	25.06	260.62	-45.17	1,131.92	1,226.83	1,582.77	1,332.71	250.06	6.330	
7,050.00	6,896.10	5,973.00	5,973.00	25.29	260.62	-46.05	1,131.92	1,226.83	1,570.08	1,322.70	247.39	6.347	
7,100.00	6,914.42	5,973.00	5,973.00	25.53	260.62	-47.03	1,131.92	1,226.83	1,556.28	1,311.42	244.86	6.356	
7,150.00	6,929.03	5,973.00	5,973.00	25.78	260.62	-48.09	1,131.92	1,226.83	1,541.43	1,298.89	242.54	6.355	
7,200.00	6,939.85	5,973.00	5,973.00	26.05	260.62	-49.24	1,131.92	1,226.83	1,525.58	1,285.11	240.47	6.344	
7,250.00	6,946.80	5,973.00	5,973.00	26.32	260.62	-50.49	1,131.92	1,226.83	1,508.81	1,270.11	238.70	6.321	
7,300.00	6,949.85	5,973.00	5,973.00	26.61	260.62	-51.82	1,131.92	1,226.83	1,491.19	1,253.91	237.29	6.284	
7,314.43	6,950.00	5,973.00	5,973.00	26.69	260.62	-52.23	1,131.92	1,226.83	1,485.96	1,249.01	236.95	6.271	
7,400.00	6,949.92	5,973.00	5,973.00	27.21	260.62	-52.23	1,131.92	1,226.83	1,456.93	1,221.76	235.17	6.195	
7,500.00	6,949.83	5,973.00	5,973.00	27.90	260.62	-52.23	1,131.92	1,226.83	1,428.76	1,195.29	233.47	6.120	
7,600.00	6,949.74	5,973.00	5,973.00	28.66	260.62	-52.23	1,131.92	1,226.83	1,407.15	1,174.87	232.28	6.058	
7,700.00	6,949.65	5,973.00	5,973.00	29.49	260.62	-52.23	1,131.92	1,226.83	1,392.40	1,160.71	231.69	6.010	
7,800.00	6,949.56	5,973.00	5,973.00	30.38	260.62	-52.23	1,131.92	1,226.83	1,384.74	1,152.97	231.77	5.975	
7,856.44	6,949.51	5,973.00	5,973.00	30.92	260.62	-52.23	1,131.92	1,226.83	1,383.58	1,151.47	232.12	5.961 CC, ES	
7,900.00	6,949.47	5,973.00	5,973.00	31.33	260.62	-52.23	1,131.92	1,226.83	1,384.27	1,151.74	232.53	5.953	
8,000.00	6,949.38	5,973.00	5,973.00	32.33	260.62	-52.23	1,131.92	1,226.83	1,391.01	1,157.06	233.95	5.946	
8,100.00	6,949.29	5,973.00	5,973.00	33.38	260.62	-52.23	1,131.92	1,226.83	1,404.86	1,168.89	235.96	5.954	
8,200.00	6,949.20	5,973.00	5,973.00	34.47	260.62	-52.23	1,131.92	1,226.83	1,425.60	1,187.13	238.47	5.978	
8,300.00	6,949.11	5,973.00	5,973.00	35.60	260.62	-52.23	1,131.92	1,226.83	1,452.95	1,211.61	241.34	6.020	
8,400.00	6,949.02	5,973.00	5,973.00	36.76	260.62	-52.23	1,131.92	1,226.83	1,486.53	1,242.08	244.45	6.081	
8,500.00	6,948.93	5,973.00	5,973.00	37.96	260.62	-52.23	1,131.92	1,226.83	1,525.93	1,278.25	247.68	6.161	
8,600.00	6,948.84	5,973.00	5,973.00	39.18	260.62	-52.23	1,131.92	1,226.83	1,570.73	1,319.80	250.93	6.260	
8,700.00	6,948.75	5,973.00	5,973.00	40.43	260.62	-52.23	1,131.92	1,226.83	1,620.46	1,366.35	254.12	6.377	

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 #722H - Slot B05
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 #722H	**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
8,800.00	6,948.66	5,973.00	5,973.00	41.71	260.62	-52.23	1,131.92	1,226.83	1,674.70	1,417.52	257.18	6.512	
8,900.00	6,948.57	5,973.00	5,973.00	43.00	260.62	-52.23	1,131.92	1,226.83	1,733.01	1,472.93	260.08	6.663	
9,000.00	6,948.48	5,973.00	5,973.00	44.32	260.62	-52.23	1,131.92	1,226.83	1,795.00	1,532.21	262.79	6.831	
9,100.00	6,948.39	5,973.00	5,973.00	45.66	260.62	-52.23	1,131.92	1,226.83	1,860.31	1,595.01	265.30	7.012	
9,200.00	6,948.30	5,973.00	5,973.00	47.01	260.62	-52.23	1,131.92	1,226.83	1,928.59	1,660.98	267.61	7.207	
9,300.00	6,948.21	5,973.00	5,973.00	48.38	260.62	-52.23	1,131.92	1,226.83	1,999.54	1,729.81	269.73	7.413	
9,400.00	6,948.12	5,973.00	5,973.00	49.76	260.62	-52.23	1,131.92	1,226.83	2,072.89	1,801.23	271.66	7.630	
9,500.00	6,948.03	5,973.00	5,973.00	51.16	260.62	-52.23	1,131.92	1,226.83	2,148.39	1,874.98	273.42	7.858	
9,600.00	6,947.94	5,973.00	5,973.00	52.56	260.62	-52.23	1,131.92	1,226.83	2,225.83	1,950.81	275.02	8.093	
9,700.00	6,947.85	5,973.00	5,973.00	53.98	260.62	-52.23	1,131.92	1,226.83	2,305.00	2,028.53	276.47	8.337	
9,800.00	6,947.76	5,973.00	5,973.00	55.41	260.62	-52.23	1,131.92	1,226.83	2,385.73	2,107.95	277.78	8.588	
9,900.00	6,947.67	5,973.00	5,973.00	56.85	260.62	-52.23	1,131.92	1,226.83	2,467.88	2,188.90	278.98	8.846	
10,000.00	6,947.58	5,973.00	5,973.00	58.29	260.62	-52.23	1,131.92	1,226.83	2,551.30	2,271.24	280.07	9.110	
10,100.00	6,947.49	5,973.00	5,973.00	59.75	260.62	-52.23	1,131.92	1,226.83	2,635.88	2,354.82	281.06	9.378	
10,200.00	6,947.40	5,973.00	5,973.00	61.21	260.62	-52.23	1,131.92	1,226.83	2,721.50	2,439.54	281.96	9.652	
10,300.00	6,947.31	5,973.00	5,973.00	62.68	260.62	-52.23	1,131.92	1,226.83	2,808.08	2,525.29	282.78	9.930	
10,400.00	6,947.22	5,973.00	5,973.00	64.15	260.62	-52.23	1,131.92	1,226.83	2,895.51	2,611.98	283.53	10.212	
10,500.00	6,947.13	5,973.00	5,973.00	65.63	260.62	-52.23	1,131.92	1,226.83	2,983.74	2,699.52	284.22	10.498	
10,600.00	6,947.04	5,973.00	5,973.00	67.12	260.62	-52.23	1,131.92	1,226.83	3,072.69	2,787.84	284.85	10.787	
10,700.00	6,946.95	5,973.00	5,973.00	68.61	260.62	-52.23	1,131.92	1,226.83	3,162.30	2,876.87	285.43	11.079	
10,800.00	6,946.86	5,973.00	5,973.00	70.11	260.62	-52.23	1,131.92	1,226.83	3,252.51	2,966.55	285.97	11.374	
10,900.00	6,946.77	5,973.00	5,973.00	71.61	260.62	-52.23	1,131.92	1,226.83	3,343.29	3,056.83	286.46	11.671	
11,000.00	6,946.68	5,973.00	5,973.00	73.11	260.62	-52.23	1,131.92	1,226.83	3,434.57	3,147.66	286.91	11.971	
11,100.00	6,946.59	5,973.00	5,973.00	74.62	260.62	-52.23	1,131.92	1,226.83	3,526.33	3,238.99	287.33	12.273	
11,200.00	6,946.50	5,973.00	5,973.00	76.14	260.62	-52.23	1,131.92	1,226.83	3,618.52	3,330.80	287.73	12.576	
11,300.00	6,946.41	5,973.00	5,973.00	77.65	260.62	-52.23	1,131.92	1,226.83	3,711.12	3,423.03	288.09	12.882	
11,400.00	6,946.32	5,973.00	5,973.00	79.18	260.62	-52.23	1,131.92	1,226.83	3,804.09	3,515.66	288.43	13.189	
11,500.00	6,946.23	5,973.00	5,973.00	80.70	260.62	-52.23	1,131.92	1,226.83	3,897.41	3,608.67	288.74	13.498	
11,600.00	6,946.14	5,973.00	5,973.00	82.23	260.62	-52.23	1,131.92	1,226.83	3,991.06	3,702.02	289.04	13.808	
11,700.00	6,946.05	5,973.00	5,973.00	83.76	260.62	-52.23	1,131.92	1,226.83	4,085.00	3,795.69	289.32	14.119	
11,800.00	6,945.96	5,973.00	5,973.00	85.29	260.62	-52.23	1,131.92	1,226.83	4,179.23	3,889.65	289.58	14.432	
11,900.00	6,945.87	5,973.00	5,973.00	86.82	260.62	-52.23	1,131.92	1,226.83	4,273.72	3,983.90	289.82	14.746	
12,000.00	6,945.78	5,973.00	5,973.00	88.36	260.62	-52.23	1,131.92	1,226.83	4,368.45	4,078.40	290.06	15.061	
12,100.00	6,945.69	5,973.00	5,973.00	89.90	260.62	-52.23	1,131.92	1,226.83	4,463.42	4,173.14	290.28	15.377	
12,200.00	6,945.60	5,973.00	5,973.00	91.44	260.62	-52.23	1,131.92	1,226.83	4,558.60	4,268.12	290.48	15.693	
12,300.00	6,945.51	5,973.00	5,973.00	92.99	260.62	-52.23	1,131.92	1,226.83	4,653.98	4,363.30	290.68	16.011	
12,400.00	6,945.42	5,973.00	5,973.00	94.53	260.62	-52.23	1,131.92	1,226.83	4,749.55	4,458.69	290.87	16.329	
12,500.00	6,945.33	5,973.00	5,973.00	96.08	260.62	-52.23	1,131.92	1,226.83	4,845.30	4,554.26	291.04	16.648	
12,600.00	6,945.24	5,973.00	5,973.00	97.63	260.62	-52.23	1,131.92	1,226.83	4,941.22	4,650.01	291.21	16.968	
12,700.00	6,945.15	5,973.00	5,973.00	99.18	260.62	-52.23	1,131.92	1,226.83	5,037.30	4,745.92	291.38	17.288	
12,800.00	6,945.06	5,973.00	5,973.00	100.74	260.62	-52.23	1,131.92	1,226.83	5,133.53	4,841.99	291.53	17.609	
12,900.00	6,944.96	5,973.00	5,973.00	102.29	260.62	-52.23	1,131.92	1,226.83	5,229.90	4,938.21	291.68	17.930	
13,000.00	6,944.87	5,973.00	5,973.00	103.85	260.62	-52.23	1,131.92	1,226.83	5,326.40	5,034.57	291.82	18.252	
13,100.00	6,944.78	5,973.00	5,973.00	105.40	260.62	-52.23	1,131.92	1,226.83	5,423.03	5,131.06	291.96	18.574	
13,200.00	6,944.69	5,973.00	5,973.00	106.96	260.62	-52.23	1,131.92	1,226.83	5,519.78	5,227.68	292.10	18.897	
13,300.00	6,944.60	5,973.00	5,973.00	108.52	260.62	-52.23	1,131.92	1,226.83	5,616.64	5,324.41	292.23	19.220	
13,400.00	6,944.51	5,973.00	5,973.00	110.08	260.62	-52.23	1,131.92	1,226.83	5,713.61	5,421.26	292.35	19.544	
13,500.00	6,944.42	5,973.00	5,973.00	111.65	260.62	-52.23	1,131.92	1,226.83	5,810.69	5,518.21	292.47	19.868	
13,600.00	6,944.33	5,973.00	5,973.00	113.21	260.62	-52.23	1,131.92	1,226.83	5,907.86	5,615.27	292.59	20.192	
13,700.00	6,944.24	5,973.00	5,973.00	114.78	260.62	-52.23	1,131.92	1,226.83	6,005.12	5,712.42	292.70	20.516	
13,800.00	6,944.15	5,973.00	5,973.00	116.34	260.62	-52.23	1,131.92	1,226.83	6,102.48	5,809.66	292.82	20.841	
13,900.00	6,944.06	5,973.00	5,973.00	117.91	260.62	-52.23	1,131.92	1,226.83	6,199.91	5,906.99	292.92	21.166	

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 #722H - Slot B05
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 #722H	**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
14,000.00	6,943.97	5,973.00	5,973.00	119.48	260.62	-52.23	1,131.92	1,226.83	6,297.43	6,004.40	293.03	21.491	
14,100.00	6,943.88	5,973.00	5,973.00	121.05	260.62	-52.23	1,131.92	1,226.83	6,395.03	6,101.89	293.13	21.816	
14,200.00	6,943.79	5,973.00	5,973.00	122.62	260.62	-52.23	1,131.92	1,226.83	6,492.69	6,199.46	293.24	22.142	
14,300.00	6,943.70	5,973.00	5,973.00	124.19	260.62	-52.23	1,131.92	1,226.83	6,590.43	6,297.09	293.34	22.467	
14,400.00	6,943.61	5,973.00	5,973.00	125.76	260.62	-52.23	1,131.92	1,226.83	6,688.23	6,394.80	293.43	22.793	
14,500.00	6,943.52	5,973.00	5,973.00	127.33	260.62	-52.23	1,131.92	1,226.83	6,786.10	6,492.57	293.53	23.119	
14,600.00	6,943.43	5,973.00	5,973.00	128.90	260.62	-52.23	1,131.92	1,226.83	6,884.03	6,590.41	293.62	23.445	
14,700.00	6,943.34	5,973.00	5,973.00	130.48	260.62	-52.23	1,131.92	1,226.83	6,982.02	6,688.30	293.72	23.771	
14,800.00	6,943.25	5,973.00	5,973.00	132.05	260.62	-52.23	1,131.92	1,226.83	7,080.07	6,786.26	293.81	24.097	
14,900.00	6,943.16	5,973.00	5,973.00	133.63	260.62	-52.23	1,131.92	1,226.83	7,178.16	6,884.26	293.90	24.424	
15,000.00	6,943.07	5,973.00	5,973.00	135.20	260.62	-52.23	1,131.92	1,226.83	7,276.31	6,982.32	293.99	24.750	
15,100.00	6,942.98	5,973.00	5,973.00	136.78	260.62	-52.23	1,131.92	1,226.83	7,374.51	7,080.43	294.08	25.077	
15,200.00	6,942.89	5,973.00	5,973.00	138.36	260.62	-52.23	1,131.92	1,226.83	7,472.76	7,178.59	294.17	25.403	
15,300.00	6,942.80	5,973.00	5,973.00	139.93	260.62	-52.23	1,131.92	1,226.83	7,571.06	7,276.80	294.26	25.729	
15,400.00	6,942.71	5,973.00	5,973.00	141.51	260.62	-52.23	1,131.92	1,226.83	7,669.39	7,375.05	294.34	26.056	
15,500.00	6,942.62	5,973.00	5,973.00	143.09	260.62	-52.23	1,131.92	1,226.83	7,767.77	7,473.35	294.43	26.383	
15,600.00	6,942.53	5,973.00	5,973.00	144.67	260.62	-52.23	1,131.92	1,226.83	7,866.20	7,571.68	294.51	26.709	
15,700.00	6,942.44	5,973.00	5,973.00	146.25	260.62	-52.23	1,131.92	1,226.83	7,964.66	7,670.06	294.60	27.036	
15,800.00	6,942.35	5,973.00	5,973.00	147.83	260.62	-52.23	1,131.92	1,226.83	8,063.15	7,768.47	294.68	27.362	
15,900.00	6,942.26	5,973.00	5,973.00	149.41	260.62	-52.23	1,131.92	1,226.83	8,161.69	7,866.92	294.77	27.689	
16,000.00	6,942.17	5,973.00	5,973.00	150.99	260.62	-52.23	1,131.92	1,226.83	8,260.26	7,965.41	294.85	28.015	
16,100.00	6,942.08	5,973.00	5,973.00	152.57	260.62	-52.23	1,131.92	1,226.83	8,358.86	8,063.93	294.93	28.342	
16,200.00	6,941.99	5,973.00	5,973.00	154.16	260.62	-52.23	1,131.92	1,226.83	8,457.50	8,162.48	295.02	28.668	
16,300.00	6,941.90	5,973.00	5,973.00	155.74	260.62	-52.23	1,131.92	1,226.83	8,556.17	8,261.07	295.10	28.994	
16,400.00	6,941.81	5,973.00	5,973.00	157.32	260.62	-52.23	1,131.92	1,226.83	8,654.87	8,359.69	295.18	29.321	
16,500.00	6,941.72	5,973.00	5,973.00	158.91	260.62	-52.23	1,131.92	1,226.83	8,753.60	8,458.33	295.26	29.647	
16,600.00	6,941.63	5,973.00	5,973.00	160.49	260.62	-52.23	1,131.92	1,226.83	8,852.35	8,557.01	295.35	29.973	
16,700.00	6,941.54	5,973.00	5,973.00	162.07	260.62	-52.23	1,131.92	1,226.83	8,951.14	8,655.71	295.43	30.299	
16,800.00	6,941.45	5,973.00	5,973.00	163.66	260.62	-52.23	1,131.92	1,226.83	9,049.95	8,754.44	295.51	30.625	
16,900.00	6,941.36	5,973.00	5,973.00	165.24	260.62	-52.23	1,131.92	1,226.83	9,148.79	8,853.19	295.59	30.951	
17,000.00	6,941.27	5,973.00	5,973.00	166.83	260.62	-52.23	1,131.92	1,226.83	9,247.65	8,951.97	295.67	31.277	
17,100.00	6,941.18	5,973.00	5,973.00	168.42	260.62	-52.23	1,131.92	1,226.83	9,346.53	9,050.78	295.76	31.602	
17,200.00	6,941.09	5,973.00	5,973.00	170.00	260.62	-52.23	1,131.92	1,226.83	9,445.44	9,149.61	295.84	31.928	
17,300.00	6,941.00	5,973.00	5,973.00	171.59	260.62	-52.23	1,131.92	1,226.83	9,544.38	9,248.46	295.92	32.253	
17,400.00	6,940.91	5,973.00	5,973.00	173.18	260.62	-52.23	1,131.92	1,226.83	9,643.33	9,347.33	296.00	32.579	
17,500.00	6,940.82	5,973.00	5,973.00	174.76	260.62	-52.23	1,131.92	1,226.83	9,742.31	9,446.22	296.08	32.904	
17,600.00	6,940.73	5,973.00	5,973.00	176.35	260.62	-52.23	1,131.92	1,226.83	9,841.30	9,545.14	296.17	33.229	
17,700.00	6,940.64	5,973.00	5,973.00	177.94	260.62	-52.23	1,131.92	1,226.83	9,940.32	9,644.07	296.25	33.554	
17,800.00	6,940.55	5,973.00	5,973.00	179.53	260.62	-52.23	1,131.92	1,226.83	10,039.36	9,743.03	296.33	33.879	
17,900.00	6,940.46	5,973.00	5,973.00	181.11	260.62	-52.23	1,131.92	1,226.83	10,138.41	9,842.00	296.41	34.204	
18,000.00	6,940.37	5,973.00	5,973.00	182.70	260.62	-52.23	1,131.92	1,226.83	10,237.49	9,940.99	296.49	34.528	
18,100.00	6,940.28	5,973.00	5,973.00	184.29	260.62	-52.23	1,131.92	1,226.83	10,336.58	10,040.00	296.58	34.853	
18,200.00	6,940.19	5,973.00	5,973.00	185.88	260.62	-52.23	1,131.92	1,226.83	10,435.69	10,139.03	296.66	35.177	
18,300.00	6,940.10	5,973.00	5,973.00	187.47	260.62	-52.23	1,131.92	1,226.83	10,534.81	10,238.07	296.74	35.501	
18,400.00	6,940.01	5,973.00	5,973.00	189.06	260.62	-52.23	1,131.92	1,226.83	10,633.95	10,337.13	296.83	35.825	
18,500.00	6,939.92	5,973.00	5,973.00	190.65	260.62	-52.23	1,131.92	1,226.83	10,733.11	10,436.20	296.91	36.149	
18,600.00	6,939.83	5,973.00	5,973.00	192.24	260.62	-52.23	1,131.92	1,226.83	10,832.28	10,535.29	297.00	36.473	
18,700.00	6,939.74	5,973.00	5,973.00	193.83	260.62	-52.23	1,131.92	1,226.83	10,931.47	10,634.39	297.08	36.797	
18,800.00	6,939.65	5,973.00	5,973.00	195.42	260.62	-52.23	1,131.92	1,226.83	11,030.68	10,733.51	297.16	37.120	
18,900.00	6,939.56	5,973.00	5,973.00	197.01	260.62	-52.23	1,131.92	1,226.83	11,129.89	10,832.65	297.25	37.443	
19,000.00	6,939.47	5,973.00	5,973.00	198.60	260.62	-52.23	1,131.92	1,226.83	11,229.12	10,931.79	297.33	37.766	
19,100.00	6,939.38	5,973.00	5,973.00	200.19	260.62	-52.23	1,131.92	1,226.83	11,328.37	11,030.95	297.42	38.089	

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 #722H - Slot B05
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 #722H	**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
19,200.00	6,939.29	5,973.00	5,973.00	201.78	260.62	-52.23	1,131.92	1,226.83	11,427.63	11,130.12	297.50	38.412	
19,300.00	6,939.20	5,973.00	5,973.00	203.37	260.62	-52.23	1,131.92	1,226.83	11,526.90	11,229.31	297.59	38.734	
19,400.00	6,939.11	5,973.00	5,973.00	204.97	260.62	-52.23	1,131.92	1,226.83	11,626.18	11,328.51	297.67	39.057	
19,500.00	6,939.02	5,973.00	5,973.00	206.56	260.62	-52.23	1,131.92	1,226.83	11,725.48	11,427.72	297.76	39.379	
19,600.00	6,938.93	5,973.00	5,973.00	208.15	260.62	-52.23	1,131.92	1,226.83	11,824.78	11,526.94	297.85	39.701	
19,700.00	6,938.83	5,973.00	5,973.00	209.74	260.62	-52.23	1,131.92	1,226.83	11,924.10	11,626.17	297.93	40.023	
19,800.00	6,938.74	5,973.00	5,973.00	211.33	260.62	-52.23	1,131.92	1,226.83	12,023.43	11,725.41	298.02	40.344	
19,900.00	6,938.65	5,973.00	5,973.00	212.93	260.62	-52.23	1,131.92	1,226.83	12,122.77	11,824.67	298.11	40.666	
20,000.00	6,938.56	5,973.00	5,973.00	214.52	260.62	-52.23	1,131.92	1,226.83	12,222.13	11,923.93	298.20	40.987	
20,100.00	6,938.47	5,973.00	5,973.00	216.11	260.62	-52.23	1,131.92	1,226.83	12,321.49	12,023.20	298.28	41.308	
20,200.00	6,938.38	5,973.00	5,973.00	217.71	260.62	-52.23	1,131.92	1,226.83	12,420.86	12,122.49	298.37	41.629	
20,300.00	6,938.29	5,973.00	5,973.00	219.30	260.62	-52.23	1,131.92	1,226.83	12,520.24	12,221.78	298.46	41.949	
20,400.00	6,938.20	5,973.00	5,973.00	220.89	260.62	-52.23	1,131.92	1,226.83	12,619.64	12,321.09	298.55	42.270	
20,500.00	6,938.11	5,973.00	5,973.00	222.49	260.62	-52.23	1,131.92	1,226.83	12,719.04	12,420.40	298.64	42.590	
20,600.00	6,938.02	5,973.00	5,973.00	224.08	260.62	-52.23	1,131.92	1,226.83	12,818.45	12,519.72	298.73	42.910	
20,626.08	6,938.00	5,973.00	5,973.00	224.49	260.62	-52.23	1,131.92	1,226.83	12,844.38	12,545.63	298.75	42.994	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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
0.00	0.00	0.00	0.00	0.00	0.00	146.94	-1,000.10	650.89	1,193.40				
100.00	100.00	81.00	81.00	0.25	0.75	146.94	-1,000.10	650.89	1,193.25	1,192.25	1.00	1,193.665	
200.00	200.00	181.00	181.00	0.61	2.52	146.94	-1,000.10	650.89	1,193.25	1,190.12	3.13	380.751	
300.00	300.00	281.01	281.00	0.97	4.43	146.94	-1,000.10	650.89	1,193.25	1,187.85	5.40	220.964	
400.00	400.00	381.01	381.00	1.33	6.40	146.94	-1,000.10	650.89	1,193.25	1,185.52	7.73	154.439	
500.00	500.00	481.01	481.00	1.68	8.37	146.94	-1,000.10	650.89	1,193.25	1,183.20	10.05	118.702	
532.28	532.28	513.29	513.28	1.80	9.00	136.28	-1,000.10	650.89	1,193.38	1,182.58	10.80	110.465	
535.00	535.00	516.00	515.98	1.81	9.06	136.26	-999.30	650.89	1,192.74	1,181.88	10.87	109.764	CC
600.00	599.99	579.28	579.26	2.04	10.30	136.28	-999.36	650.89	1,193.36	1,181.02	12.34	96.672	
700.00	699.99	676.64	676.62	2.40	12.22	136.33	-999.66	650.89	1,194.50	1,179.88	14.62	81.713	
800.00	799.98	781.03	780.98	2.76	14.29	136.38	-1,000.10	650.89	1,195.75	1,178.70	17.05	70.140	
900.00	899.97	881.03	880.97	3.12	16.33	136.42	-1,000.10	650.89	1,196.63	1,177.19	19.45	61.536	
1,000.00	999.96	981.02	980.96	3.48	18.37	136.47	-1,000.10	650.89	1,197.52	1,175.67	21.84	54.821	
1,100.00	1,099.96	1,079.10	1,079.04	3.84	20.37	136.49	-999.35	650.89	1,197.78	1,173.57	24.20	49.488	
1,200.00	1,199.95	1,176.53	1,176.46	4.19	22.36	136.53	-999.66	650.89	1,198.93	1,172.38	26.55	45.159	
1,300.00	1,299.94	1,281.05	1,280.94	4.55	24.49	136.59	-1,000.10	650.89	1,200.18	1,171.14	29.04	41.328	
1,400.00	1,399.93	1,381.05	1,380.93	4.91	26.53	136.63	-1,000.10	650.89	1,201.06	1,169.62	31.44	38.200	
1,500.00	1,499.93	1,481.04	1,480.93	5.27	28.58	136.67	-1,000.10	650.89	1,201.95	1,168.11	33.84	35.516	
1,534.43	1,534.36	1,515.47	1,515.35	5.39	29.28	136.65	-998.96	650.89	1,201.31	1,166.64	34.67	34.650	
1,600.00	1,599.92	1,578.88	1,578.76	5.63	30.57	136.68	-999.03	650.89	1,201.95	1,165.75	36.20	33.203	
1,700.00	1,699.91	1,675.60	1,675.47	5.99	32.55	136.73	-999.39	650.89	1,203.15	1,164.62	38.53	31.223	
1,800.00	1,799.90	1,781.08	1,780.90	6.34	34.70	136.79	-1,000.10	650.89	1,204.62	1,163.58	41.04	29.350	
1,900.00	1,899.90	1,881.07	1,880.90	6.70	36.67	136.83	-1,000.10	650.89	1,205.51	1,162.14	43.37	27.795	
2,000.00	1,999.89	1,981.06	1,980.89	7.06	38.64	136.86	-1,000.10	650.89	1,206.40	1,160.71	45.70	26.399	
2,100.00	2,099.88	2,079.24	2,079.06	7.42	40.57	136.89	-999.37	650.89	1,206.69	1,158.70	47.99	25.144	
2,200.00	2,199.87	2,176.53	2,176.34	7.78	42.49	136.93	-999.67	650.89	1,207.84	1,157.58	50.26	24.030	
2,300.00	2,299.87	2,281.08	2,280.87	8.14	44.55	136.98	-1,000.10	650.89	1,209.08	1,156.40	52.68	22.950	
2,400.00	2,399.86	2,381.07	2,380.86	8.50	46.52	137.02	-1,000.10	650.89	1,209.97	1,154.96	55.01	21.995	
2,500.00	2,499.85	2,481.07	2,480.85	8.85	48.49	137.06	-1,000.10	650.89	1,210.87	1,153.53	57.34	21.118	
2,600.00	2,599.85	2,578.94	2,578.72	9.21	50.41	137.08	-999.37	650.89	1,211.15	1,151.53	59.62	20.313	
2,700.00	2,699.84	2,676.30	2,676.08	9.57	52.33	137.13	-999.69	650.89	1,212.33	1,150.43	61.90	19.585	
2,800.00	2,799.83	2,781.09	2,780.83	9.93	54.42	137.18	-1,000.10	650.89	1,213.56	1,149.21	64.35	18.860	
2,900.00	2,899.82	2,881.08	2,880.82	10.29	56.46	137.22	-1,000.10	650.89	1,214.45	1,147.70	66.75	18.195	
3,000.00	2,999.82	2,981.07	2,980.82	10.65	58.51	137.26	-1,000.10	650.89	1,215.35	1,146.20	69.15	17.576	
3,100.00	3,099.81	3,078.89	3,078.62	11.01	60.50	137.28	-999.36	650.89	1,215.63	1,144.12	71.51	17.000	
3,200.00	3,199.80	3,176.26	3,175.99	11.36	62.49	137.32	-999.69	650.89	1,216.81	1,142.96	73.85	16.476	
3,300.00	3,299.79	3,281.11	3,280.79	11.72	64.66	137.38	-1,000.10	650.89	1,218.04	1,141.66	76.38	15.947	
3,400.00	3,399.79	3,381.10	3,380.79	12.08	66.78	137.41	-1,000.10	650.89	1,218.94	1,140.09	78.86	15.458	
3,500.00	3,499.78	3,478.77	3,478.45	12.44	68.85	137.43	-999.35	650.89	1,219.21	1,137.93	81.28	14.999	
3,600.00	3,599.77	3,574.09	3,573.76	12.80	70.87	137.48	-999.78	650.89	1,220.49	1,136.83	83.66	14.589	
3,700.00	3,699.76	3,681.13	3,680.76	13.16	73.14	137.53	-1,000.10	650.89	1,221.64	1,135.35	86.29	14.157	
3,800.00	3,799.76	3,781.13	3,780.76	13.52	75.26	137.57	-1,000.10	650.89	1,222.55	1,133.77	88.77	13.772	
3,900.00	3,899.75	3,881.12	3,880.75	13.87	77.38	137.61	-1,000.10	650.89	1,223.45	1,132.20	91.25	13.407	
4,000.00	3,999.74	3,981.11	3,980.74	14.23	79.50	137.65	-1,000.10	650.89	1,224.35	1,130.62	93.73	13.062	
4,100.00	4,099.73	4,081.10	4,080.73	14.59	81.63	137.69	-1,000.10	650.89	1,225.25	1,129.04	96.21	12.735	
4,200.00	4,199.73	4,181.10	4,180.73	14.95	83.75	137.72	-1,000.10	650.89	1,226.16	1,127.46	98.69	12.424	
4,260.16	4,259.88	4,241.25	4,240.85	15.17	85.02	137.68	-997.36	650.89	1,224.38	1,124.19	100.19	12.221	
4,300.00	4,299.72	4,280.52	4,280.12	15.31	85.86	137.70	-997.38	650.89	1,224.75	1,123.58	101.16	12.107	
4,400.00	4,399.71	4,379.09	4,378.69	15.67	87.95	137.74	-997.50	650.89	1,225.75	1,122.14	103.61	11.830	
4,500.00	4,499.70	4,477.66	4,477.26	16.03	90.04	137.78	-997.75	650.89	1,226.88	1,120.82	106.06	11.568	
4,600.00	4,599.70	4,576.23	4,575.82	16.38	92.13	137.83	-998.15	650.89	1,228.13	1,119.62	108.51	11.318	
4,700.00	4,699.69	4,674.81	4,674.39	16.74	94.22	137.88	-998.68	650.89	1,229.49	1,118.53	110.96	11.080	

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 #722H - Slot B05
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 #722H	**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
4,800.00	4,799.68	4,773.38	4,772.95	17.10	96.32	137.93	-999.34	650.89	1,230.97	1,117.56	113.41	10.854	
4,900.00	4,899.67	4,881.24	4,880.67	17.46	98.60	137.99	-1,000.10	650.89	1,232.50	1,116.44	116.06	10.619	
5,000.00	4,999.67	4,981.23	4,980.67	17.82	100.73	138.03	-1,000.10	650.89	1,233.41	1,114.86	118.54	10.405	
5,100.00	5,099.66	5,081.22	5,080.66	18.18	102.85	138.07	-1,000.10	650.89	1,234.32	1,113.29	121.03	10.199	
5,200.00	5,199.65	5,181.21	5,180.65	18.53	104.98	138.10	-1,000.10	650.89	1,235.23	1,111.72	123.51	10.001	
5,300.00	5,299.64	5,281.21	5,280.64	18.89	107.10	138.14	-1,000.10	650.89	1,236.14	1,110.14	125.99	9.811	
5,400.00	5,399.64	5,381.20	5,380.64	19.25	109.23	138.18	-1,000.10	650.89	1,237.05	1,108.57	128.48	9.629	
5,500.00	5,499.63	5,481.19	5,480.63	19.61	111.35	138.22	-1,000.10	650.89	1,237.96	1,107.00	130.96	9.453	
5,600.00	5,599.62	5,581.18	5,580.62	19.97	113.48	138.26	-1,000.10	650.89	1,238.87	1,105.43	133.44	9.284	
5,700.00	5,699.61	5,681.18	5,680.61	20.33	115.60	138.29	-1,000.10	650.89	1,239.78	1,103.86	135.92	9.121	
5,800.00	5,799.61	5,781.17	5,780.61	20.69	117.73	138.33	-1,000.10	650.89	1,240.69	1,102.28	138.41	8.964	
5,900.00	5,899.60	5,881.16	5,880.60	21.04	119.85	138.37	-1,000.10	650.89	1,241.60	1,100.71	140.89	8.813	
6,000.00	5,999.59	5,981.15	5,980.59	21.40	121.97	138.41	-1,000.10	650.89	1,242.52	1,099.14	143.37	8.666	
6,100.00	6,099.58	6,058.00	6,057.26	21.76	123.61	138.43	-1,000.10	650.89	1,243.65	1,098.31	145.34	8.557 ES, SF	
6,200.00	6,199.58	6,058.00	6,057.26	22.12	123.61	138.43	-1,000.10	650.89	1,250.44	1,105.41	145.04	8.622	
6,300.00	6,299.57	6,058.00	6,057.26	22.48	123.61	138.43	-1,000.10	650.89	1,265.13	1,121.25	143.88	8.793	
6,315.05	6,314.62	6,058.00	6,057.26	22.53	123.61	138.43	-1,000.10	650.89	1,268.00	1,124.37	143.64	8.828	
6,350.00	6,349.55	6,058.00	6,057.26	22.66	123.61	68.73	-1,000.10	650.89	1,274.84	1,131.84	143.00	8.915	
6,400.00	6,399.30	6,058.00	6,057.26	22.83	123.61	61.09	-1,000.10	650.89	1,284.42	1,142.49	141.93	9.050	
6,450.00	6,448.52	6,058.00	6,057.26	23.00	123.61	58.53	-1,000.10	650.89	1,293.72	1,153.04	140.68	9.196	
6,500.00	6,496.91	6,058.00	6,057.26	23.18	123.61	57.00	-1,000.10	650.89	1,302.69	1,163.41	139.28	9.353	
6,550.00	6,544.17	6,058.00	6,057.26	23.35	123.61	55.88	-1,000.10	650.89	1,311.28	1,173.54	137.73	9.520	
6,600.00	6,590.01	6,058.00	6,057.26	23.53	123.61	54.96	-1,000.10	650.89	1,319.44	1,183.37	136.08	9.696	
6,650.00	6,634.14	6,058.00	6,057.26	23.70	123.61	54.18	-1,000.10	650.89	1,327.14	1,192.81	134.33	9.880	
6,700.00	6,676.30	6,058.00	6,057.26	23.88	123.61	53.50	-1,000.10	650.89	1,334.33	1,201.82	132.52	10.069	
6,750.00	6,716.21	6,058.00	6,057.26	24.06	123.61	52.90	-1,000.10	650.89	1,340.99	1,210.32	130.67	10.262	
6,800.00	6,753.65	6,058.00	6,057.26	24.24	123.61	52.38	-1,000.10	650.89	1,347.07	1,218.24	128.83	10.456	
6,850.00	6,788.37	6,058.00	6,057.26	24.44	123.61	51.92	-1,000.10	650.89	1,352.54	1,225.52	127.02	10.648	
6,900.00	6,820.16	6,058.00	6,057.26	24.63	123.61	51.52	-1,000.10	650.89	1,357.39	1,232.11	125.28	10.835	
6,950.00	6,848.83	6,058.00	6,057.26	24.84	123.61	51.18	-1,000.10	650.89	1,361.58	1,237.95	123.64	11.013	
7,000.00	6,874.19	6,058.00	6,057.26	25.06	123.61	50.90	-1,000.10	650.89	1,365.10	1,242.97	122.13	11.177	
7,050.00	6,896.10	6,058.00	6,057.26	25.29	123.61	50.68	-1,000.10	650.89	1,367.94	1,247.14	120.80	11.324	
7,100.00	6,914.42	6,058.00	6,057.26	25.53	123.61	50.51	-1,000.10	650.89	1,370.07	1,250.40	119.67	11.449	
7,150.00	6,929.03	6,058.00	6,057.26	25.78	123.61	50.39	-1,000.10	650.89	1,371.48	1,252.72	118.77	11.548	
7,200.00	6,939.85	6,058.00	6,057.26	26.05	123.61	50.33	-1,000.10	650.89	1,372.19	1,254.07	118.12	11.617	
7,250.00	6,946.80	6,058.00	6,057.26	26.32	123.61	50.33	-1,000.10	650.89	1,372.16	1,254.42	117.74	11.654	
7,300.00	6,949.85	6,058.00	6,057.26	26.61	123.61	50.37	-1,000.10	650.89	1,371.42	1,253.77	117.65	11.657	
7,314.43	6,950.00	6,058.00	6,057.26	26.69	123.61	50.40	-1,000.10	650.89	1,371.07	1,253.40	117.68	11.651	
7,350.37	6,949.97	6,058.00	6,057.26	26.91	123.61	50.40	-1,000.10	650.89	1,370.60	1,252.79	117.81	11.634	
7,400.00	6,949.92	6,058.00	6,057.26	27.21	123.61	50.40	-1,000.10	650.89	1,371.50	1,253.43	118.07	11.616	
7,500.00	6,949.83	6,058.00	6,057.26	27.90	123.61	50.40	-1,000.10	650.89	1,378.75	1,259.83	118.92	11.594	
7,600.00	6,949.74	6,058.00	6,057.26	28.66	123.61	50.40	-1,000.10	650.89	1,393.16	1,273.03	120.13	11.597	
7,700.00	6,949.65	6,058.00	6,057.26	29.49	123.61	50.40	-1,000.10	650.89	1,414.50	1,292.86	121.65	11.628	
7,800.00	6,949.56	6,058.00	6,057.26	30.38	123.61	50.40	-1,000.10	650.89	1,442.48	1,319.10	123.39	11.691	
7,900.00	6,949.47	6,058.00	6,057.26	31.33	123.61	50.40	-1,000.10	650.89	1,476.72	1,351.45	125.26	11.789	
8,000.00	6,949.38	6,058.00	6,057.26	32.33	123.61	50.40	-1,000.10	650.89	1,516.78	1,389.57	127.21	11.923	
8,100.00	6,949.29	6,058.00	6,057.26	33.38	123.61	50.40	-1,000.10	650.89	1,562.23	1,433.07	129.16	12.095	
8,200.00	6,949.20	6,058.00	6,057.26	34.47	123.61	50.40	-1,000.10	650.89	1,612.60	1,481.54	131.06	12.304	
8,300.00	6,949.11	6,058.00	6,057.26	35.60	123.61	50.40	-1,000.10	650.89	1,667.46	1,534.57	132.89	12.548	
8,400.00	6,949.02	6,058.00	6,057.26	36.76	123.61	50.40	-1,000.10	650.89	1,726.37	1,591.76	134.61	12.825	
8,500.00	6,948.93	6,058.00	6,057.26	37.96	123.61	50.40	-1,000.10	650.89	1,788.93	1,652.71	136.22	13.132	
8,600.00	6,948.84	6,058.00	6,057.26	39.18	123.61	50.40	-1,000.10	650.89	1,854.78	1,717.07	137.71	13.469	

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 #722H - Slot B05
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 #722H	**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)	Minimum Separation (usft)	Separation Factor	Warning
8,700.00	6,948.75	6,058.00	6,057.26	40.43	123.61	50.40	-1,000.10	650.89	1,923.58	1,784.50	139.08	13.831	
8,800.00	6,948.66	6,058.00	6,057.26	41.71	123.61	50.40	-1,000.10	650.89	1,995.02	1,854.68	140.33	14.216	
8,900.00	6,948.57	6,058.00	6,057.26	43.00	123.61	50.40	-1,000.10	650.89	2,068.82	1,927.34	141.48	14.623	
9,000.00	6,948.48	6,058.00	6,057.26	44.32	123.61	50.40	-1,000.10	650.89	2,144.75	2,002.23	142.52	15.049	
9,100.00	6,948.39	6,058.00	6,057.26	45.66	123.61	50.40	-1,000.10	650.89	2,222.59	2,079.12	143.46	15.492	
9,200.00	6,948.30	6,058.00	6,057.26	47.01	123.61	50.40	-1,000.10	650.89	2,302.13	2,157.81	144.32	15.951	
9,300.00	6,948.21	6,058.00	6,057.26	48.38	123.61	50.40	-1,000.10	650.89	2,383.22	2,238.12	145.10	16.424	
9,400.00	6,948.12	6,058.00	6,057.26	49.76	123.61	50.40	-1,000.10	650.89	2,465.70	2,319.89	145.81	16.910	
9,500.00	6,948.03	6,058.00	6,057.26	51.16	123.61	50.40	-1,000.10	650.89	2,549.43	2,402.97	146.46	17.407	
9,600.00	6,947.94	6,058.00	6,057.26	52.56	123.61	50.40	-1,000.10	650.89	2,634.30	2,487.25	147.05	17.914	
9,700.00	6,947.85	6,058.00	6,057.26	53.98	123.61	50.40	-1,000.10	650.89	2,720.20	2,572.61	147.59	18.431	
9,800.00	6,947.76	6,058.00	6,057.26	55.41	123.61	50.40	-1,000.10	650.89	2,807.03	2,658.94	148.08	18.956	
9,900.00	6,947.67	6,058.00	6,057.26	56.85	123.61	50.40	-1,000.10	650.89	2,894.71	2,746.17	148.54	19.488	
10,000.00	6,947.58	6,058.00	6,057.26	58.29	123.61	50.40	-1,000.10	650.89	2,983.17	2,834.21	148.95	20.028	
10,100.00	6,947.49	6,058.00	6,057.26	59.75	123.61	50.40	-1,000.10	650.89	3,072.33	2,922.99	149.34	20.573	
10,200.00	6,947.40	6,058.00	6,057.26	61.21	123.61	50.40	-1,000.10	650.89	3,162.14	3,012.45	149.69	21.125	
10,300.00	6,947.31	6,058.00	6,057.26	62.68	123.61	50.40	-1,000.10	650.89	3,252.55	3,102.53	150.02	21.681	
10,400.00	6,947.22	6,058.00	6,057.26	64.15	123.61	50.40	-1,000.10	650.89	3,343.50	3,193.19	150.32	22.243	
10,500.00	6,947.13	6,058.00	6,057.26	65.63	123.61	50.40	-1,000.10	650.89	3,434.96	3,284.36	150.60	22.809	
10,600.00	6,947.04	6,058.00	6,057.26	67.12	123.61	50.40	-1,000.10	650.89	3,526.88	3,376.02	150.86	23.378	
10,700.00	6,946.95	6,058.00	6,057.26	68.61	123.61	50.40	-1,000.10	650.89	3,619.23	3,468.12	151.11	23.952	
10,800.00	6,946.86	6,058.00	6,057.26	70.11	123.61	50.40	-1,000.10	650.89	3,711.97	3,560.64	151.33	24.528	
10,900.00	6,946.77	6,058.00	6,057.26	71.61	123.61	50.40	-1,000.10	650.89	3,805.09	3,653.54	151.55	25.108	
11,000.00	6,946.68	6,058.00	6,057.26	73.11	123.61	50.40	-1,000.10	650.89	3,898.54	3,746.79	151.75	25.690	
11,100.00	6,946.59	6,058.00	6,057.26	74.62	123.61	50.40	-1,000.10	650.89	3,992.31	3,840.37	151.94	26.275	
11,200.00	6,946.50	6,058.00	6,057.26	76.14	123.61	50.40	-1,000.10	650.89	4,086.38	3,934.26	152.12	26.863	
11,300.00	6,946.41	6,058.00	6,057.26	77.65	123.61	50.40	-1,000.10	650.89	4,180.72	4,028.43	152.29	27.452	
11,400.00	6,946.32	6,058.00	6,057.26	79.18	123.61	50.40	-1,000.10	650.89	4,275.32	4,122.87	152.45	28.044	
11,500.00	6,946.23	6,058.00	6,057.26	80.70	123.61	50.40	-1,000.10	650.89	4,370.16	4,217.55	152.61	28.637	
11,600.00	6,946.14	6,058.00	6,057.26	82.23	123.61	50.40	-1,000.10	650.89	4,465.22	4,312.47	152.75	29.232	
11,700.00	6,946.05	6,058.00	6,057.26	83.76	123.61	50.40	-1,000.10	650.89	4,560.50	4,407.61	152.89	29.828	
11,800.00	6,945.96	6,058.00	6,057.26	85.29	123.61	50.40	-1,000.10	650.89	4,655.97	4,502.95	153.03	30.426	
11,900.00	6,945.87	6,058.00	6,057.26	86.82	123.61	50.40	-1,000.10	650.89	4,751.63	4,598.48	153.16	31.025	
12,000.00	6,945.78	6,058.00	6,057.26	88.36	123.61	50.40	-1,000.10	650.89	4,847.47	4,694.19	153.28	31.625	
12,100.00	6,945.69	6,058.00	6,057.26	89.90	123.61	50.40	-1,000.10	650.89	4,943.47	4,790.07	153.40	32.226	
12,200.00	6,945.60	6,058.00	6,057.26	91.44	123.61	50.40	-1,000.10	650.89	5,039.62	4,886.11	153.51	32.829	
12,300.00	6,945.51	6,058.00	6,057.26	92.99	123.61	50.40	-1,000.10	650.89	5,135.93	4,982.30	153.62	33.432	
12,400.00	6,945.42	6,058.00	6,057.26	94.53	123.61	50.40	-1,000.10	650.89	5,232.37	5,078.64	153.73	34.036	
12,500.00	6,945.33	6,058.00	6,057.26	96.08	123.61	50.40	-1,000.10	650.89	5,328.94	5,175.10	153.84	34.640	
12,600.00	6,945.24	6,058.00	6,057.26	97.63	123.61	50.40	-1,000.10	650.89	5,425.64	5,271.70	153.94	35.245	
12,700.00	6,945.15	6,058.00	6,057.26	99.18	123.61	50.40	-1,000.10	650.89	5,522.45	5,368.41	154.04	35.851	
12,800.00	6,945.06	6,058.00	6,057.26	100.74	123.61	50.40	-1,000.10	650.89	5,619.38	5,465.24	154.14	36.457	
12,900.00	6,944.96	6,058.00	6,057.26	102.29	123.61	50.40	-1,000.10	650.89	5,716.41	5,562.18	154.23	37.064	
13,000.00	6,944.87	6,058.00	6,057.26	103.85	123.61	50.40	-1,000.10	650.89	5,813.54	5,659.22	154.32	37.671	
13,100.00	6,944.78	6,058.00	6,057.26	105.40	123.61	50.40	-1,000.10	650.89	5,910.77	5,756.36	154.41	38.279	
13,200.00	6,944.69	6,058.00	6,057.26	106.96	123.61	50.40	-1,000.10	650.89	6,008.09	5,853.59	154.50	38.886	
13,300.00	6,944.60	6,058.00	6,057.26	108.52	123.61	50.40	-1,000.10	650.89	6,105.50	5,950.90	154.59	39.494	
13,400.00	6,944.51	6,058.00	6,057.26	110.08	123.61	50.40	-1,000.10	650.89	6,202.98	6,048.31	154.68	40.103	
13,500.00	6,944.42	6,058.00	6,057.26	111.65	123.61	50.40	-1,000.10	650.89	6,300.55	6,145.79	154.76	40.711	
13,600.00	6,944.33	6,058.00	6,057.26	113.21	123.61	50.40	-1,000.10	650.89	6,398.19	6,243.35	154.85	41.319	
13,700.00	6,944.24	6,058.00	6,057.26	114.78	123.61	50.40	-1,000.10	650.89	6,495.91	6,340.98	154.93	41.928	
13,800.00	6,944.15	6,058.00	6,057.26	116.34	123.61	50.40	-1,000.10	650.89	6,593.69	6,438.68	155.01	42.536	

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 #722H - Slot B05
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 #722H	**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
13,900.00	6,944.06	6,058.00	6,057.26	117.91	123.61	50.40	-1,000.10	650.89	6,691.54	6,536.44	155.09	43.145	
14,000.00	6,943.97	6,058.00	6,057.26	119.48	123.61	50.40	-1,000.10	650.89	6,789.45	6,634.27	155.18	43.753	
14,100.00	6,943.88	6,058.00	6,057.26	121.05	123.61	50.40	-1,000.10	650.89	6,887.42	6,732.16	155.26	44.362	
14,200.00	6,943.79	6,058.00	6,057.26	122.62	123.61	50.40	-1,000.10	650.89	6,985.45	6,830.11	155.34	44.970	
14,300.00	6,943.70	6,058.00	6,057.26	124.19	123.61	50.40	-1,000.10	650.89	7,083.53	6,928.12	155.41	45.578	
14,400.00	6,943.61	6,058.00	6,057.26	125.76	123.61	50.40	-1,000.10	650.89	7,181.67	7,026.17	155.49	46.187	
14,500.00	6,943.52	6,058.00	6,057.26	127.33	123.61	50.40	-1,000.10	650.89	7,279.85	7,124.28	155.57	46.794	
14,600.00	6,943.43	6,058.00	6,057.26	128.90	123.61	50.40	-1,000.10	650.89	7,378.09	7,222.44	155.65	47.402	
14,700.00	6,943.34	6,058.00	6,057.26	130.48	123.61	50.40	-1,000.10	650.89	7,476.37	7,320.65	155.73	48.010	
14,800.00	6,943.25	6,058.00	6,057.26	132.05	123.61	50.40	-1,000.10	650.89	7,574.70	7,418.90	155.80	48.617	
14,900.00	6,943.16	6,058.00	6,057.26	133.63	123.61	50.40	-1,000.10	650.89	7,673.07	7,517.19	155.88	49.224	
15,000.00	6,943.07	6,058.00	6,057.26	135.20	123.61	50.40	-1,000.10	650.89	7,771.48	7,615.52	155.96	49.831	
15,100.00	6,942.98	6,058.00	6,057.26	136.78	123.61	50.40	-1,000.10	650.89	7,869.93	7,713.90	156.03	50.437	
15,200.00	6,942.89	6,058.00	6,057.26	138.36	123.61	50.40	-1,000.10	650.89	7,968.43	7,812.31	156.11	51.043	
15,300.00	6,942.80	6,058.00	6,057.26	139.93	123.61	50.40	-1,000.10	650.89	8,066.95	7,910.76	156.19	51.649	
15,400.00	6,942.71	6,058.00	6,057.26	141.51	123.61	50.40	-1,000.10	650.89	8,165.52	8,009.25	156.27	52.254	
15,500.00	6,942.62	6,058.00	6,057.26	143.09	123.61	50.40	-1,000.10	650.89	8,264.12	8,107.77	156.34	52.859	
15,600.00	6,942.53	6,058.00	6,057.26	144.67	123.61	50.40	-1,000.10	650.89	8,362.75	8,206.33	156.42	53.464	
15,700.00	6,942.44	6,058.00	6,057.26	146.25	123.61	50.40	-1,000.10	650.89	8,461.41	8,304.91	156.50	54.068	
15,800.00	6,942.35	6,058.00	6,057.26	147.83	123.61	50.40	-1,000.10	650.89	8,560.11	8,403.53	156.57	54.672	
15,900.00	6,942.26	6,058.00	6,057.26	149.41	123.61	50.40	-1,000.10	650.89	8,658.83	8,502.18	156.65	55.275	
16,000.00	6,942.17	6,058.00	6,057.26	150.99	123.61	50.40	-1,000.10	650.89	8,757.58	8,600.86	156.73	55.878	
16,100.00	6,942.08	6,058.00	6,057.26	152.57	123.61	50.40	-1,000.10	650.89	8,856.37	8,699.56	156.80	56.480	
16,200.00	6,941.99	6,058.00	6,057.26	154.16	123.61	50.40	-1,000.10	650.89	8,955.17	8,798.29	156.88	57.082	
16,300.00	6,941.90	6,058.00	6,057.26	155.74	123.61	50.40	-1,000.10	650.89	9,054.01	8,897.05	156.96	57.684	
16,400.00	6,941.81	6,058.00	6,057.26	157.32	123.61	50.40	-1,000.10	650.89	9,152.87	8,995.83	157.04	58.285	
16,500.00	6,941.72	6,058.00	6,057.26	158.91	123.61	50.40	-1,000.10	650.89	9,251.75	9,094.64	157.12	58.885	
16,600.00	6,941.63	6,058.00	6,057.26	160.49	123.61	50.40	-1,000.10	650.89	9,350.66	9,193.47	157.19	59.485	
16,700.00	6,941.54	6,058.00	6,057.26	162.07	123.61	50.40	-1,000.10	650.89	9,449.59	9,292.32	157.27	60.084	
16,800.00	6,941.45	6,058.00	6,057.26	163.66	123.61	50.40	-1,000.10	650.89	9,548.55	9,391.20	157.35	60.683	
16,900.00	6,941.36	6,058.00	6,057.26	165.24	123.61	50.40	-1,000.10	650.89	9,647.52	9,490.09	157.43	61.281	
17,000.00	6,941.27	6,058.00	6,057.26	166.83	123.61	50.40	-1,000.10	650.89	9,746.52	9,589.01	157.51	61.879	
17,100.00	6,941.18	6,058.00	6,057.26	168.42	123.61	50.40	-1,000.10	650.89	9,845.53	9,687.94	157.59	62.476	
17,200.00	6,941.09	6,058.00	6,057.26	170.00	123.61	50.40	-1,000.10	650.89	9,944.57	9,786.90	157.67	63.073	
17,300.00	6,941.00	6,058.00	6,057.26	171.59	123.61	50.40	-1,000.10	650.89	10,043.62	9,885.88	157.75	63.668	
17,400.00	6,940.91	6,058.00	6,057.26	173.18	123.61	50.40	-1,000.10	650.89	10,142.70	9,984.87	157.83	64.264	
17,500.00	6,940.82	6,058.00	6,057.26	174.76	123.61	50.40	-1,000.10	650.89	10,241.79	10,083.88	157.91	64.858	
17,600.00	6,940.73	6,058.00	6,057.26	176.35	123.61	50.40	-1,000.10	650.89	10,340.90	10,182.91	157.99	65.452	
17,700.00	6,940.64	6,058.00	6,057.26	177.94	123.61	50.40	-1,000.10	650.89	10,440.03	10,281.95	158.07	66.046	
17,800.00	6,940.55	6,058.00	6,057.26	179.53	123.61	50.40	-1,000.10	650.89	10,539.17	10,381.01	158.15	66.639	
17,900.00	6,940.46	6,058.00	6,057.26	181.11	123.61	50.40	-1,000.10	650.89	10,638.33	10,480.09	158.24	67.231	
18,000.00	6,940.37	6,058.00	6,057.26	182.70	123.61	50.40	-1,000.10	650.89	10,737.50	10,579.18	158.32	67.822	
18,100.00	6,940.28	6,058.00	6,057.26	184.29	123.61	50.40	-1,000.10	650.89	10,836.69	10,678.29	158.40	68.413	
18,200.00	6,940.19	6,058.00	6,057.26	185.88	123.61	50.40	-1,000.10	650.89	10,935.89	10,777.41	158.48	69.003	
18,300.00	6,940.10	6,058.00	6,057.26	187.47	123.61	50.40	-1,000.10	650.89	11,035.11	10,876.55	158.57	69.593	
18,400.00	6,940.01	6,058.00	6,057.26	189.06	123.61	50.40	-1,000.10	650.89	11,134.35	10,975.70	158.65	70.181	
18,500.00	6,939.92	6,058.00	6,057.26	190.65	123.61	50.40	-1,000.10	650.89	11,233.59	11,074.86	158.73	70.770	
18,600.00	6,939.83	6,058.00	6,057.26	192.24	123.61	50.40	-1,000.10	650.89	11,332.85	11,174.03	158.82	71.357	
18,700.00	6,939.74	6,058.00	6,057.26	193.83	123.61	50.40	-1,000.10	650.89	11,432.12	11,273.22	158.90	71.944	
18,800.00	6,939.65	6,058.00	6,057.26	195.42	123.61	50.40	-1,000.10	650.89	11,531.41	11,372.42	158.99	72.530	
18,900.00	6,939.56	6,058.00	6,057.26	197.01	123.61	50.40	-1,000.10	650.89	11,630.71	11,471.63	159.07	73.115	
19,000.00	6,939.47	6,058.00	6,057.26	198.60	123.61	50.40	-1,000.10	650.89	11,730.02	11,570.86	159.16	73.699	

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 #722H - Slot B05
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 #722H	**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
19,100.00	6,939.38	6,058.00	6,057.26	200.19	123.61	50.40	-1,000.10	650.89	11,829.34	11,670.09	159.25	74.283	
19,200.00	6,939.29	6,058.00	6,057.26	201.78	123.61	50.40	-1,000.10	650.89	11,928.67	11,769.34	159.33	74.866	
19,300.00	6,939.20	6,058.00	6,057.26	203.37	123.61	50.40	-1,000.10	650.89	12,028.01	11,868.59	159.42	75.449	
19,400.00	6,939.11	6,058.00	6,057.26	204.97	123.61	50.40	-1,000.10	650.89	12,127.37	11,967.86	159.51	76.030	
19,500.00	6,939.02	6,058.00	6,057.26	206.56	123.61	50.40	-1,000.10	650.89	12,226.73	12,067.14	159.59	76.611	
19,600.00	6,938.93	6,058.00	6,057.26	208.15	123.61	50.40	-1,000.10	650.89	12,326.10	12,166.42	159.68	77.191	
19,700.00	6,938.83	6,058.00	6,057.26	209.74	123.61	50.40	-1,000.10	650.89	12,425.49	12,265.72	159.77	77.771	
19,800.00	6,938.74	6,058.00	6,057.26	211.33	123.61	50.40	-1,000.10	650.89	12,524.88	12,365.03	159.86	78.349	
19,900.00	6,938.65	6,058.00	6,057.26	212.93	123.61	50.40	-1,000.10	650.89	12,624.29	12,464.34	159.95	78.927	
20,000.00	6,938.56	6,058.00	6,057.26	214.52	123.61	50.40	-1,000.10	650.89	12,723.70	12,563.66	160.04	79.504	
20,100.00	6,938.47	6,058.00	6,057.26	216.11	123.61	50.40	-1,000.10	650.89	12,823.12	12,663.00	160.13	80.081	
20,200.00	6,938.38	6,058.00	6,057.26	217.71	123.61	50.40	-1,000.10	650.89	12,922.56	12,762.34	160.22	80.656	
20,300.00	6,938.29	6,058.00	6,057.26	219.30	123.61	50.40	-1,000.10	650.89	13,022.00	12,861.69	160.31	81.231	
20,400.00	6,938.20	6,058.00	6,057.26	220.89	123.61	50.40	-1,000.10	650.89	13,121.45	12,961.05	160.40	81.805	
20,500.00	6,938.11	6,058.00	6,057.26	222.49	123.61	50.40	-1,000.10	650.89	13,220.90	13,060.41	160.49	82.378	
20,600.00	6,938.02	6,058.00	6,057.26	224.08	123.61	50.40	-1,000.10	650.89	13,320.37	13,159.79	160.58	82.951	
20,626.08	6,938.00	6,058.00	6,057.26	224.49	123.61	50.40	-1,000.10	650.89	13,346.31	13,185.71	160.61	83.100	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-1.72	1,647.41	-49.41	1,648.22				
100.00	100.00	85.00	85.00	0.25	1.17	-1.72	1,647.41	-49.41	1,648.15	1,646.73	1.42	1,159.127	
200.00	200.00	185.00	185.00	0.61	2.55	-1.72	1,647.41	-49.41	1,648.15	1,645.00	3.16	521.942	
300.00	300.00	285.00	285.00	0.97	3.93	-1.72	1,647.41	-49.41	1,648.15	1,643.26	4.89	336.800	
400.00	400.00	385.00	385.00	1.33	5.30	-1.72	1,647.41	-49.41	1,648.15	1,641.52	6.63	248.612	
500.00	500.00	485.00	485.00	1.68	6.68	-1.72	1,647.41	-49.41	1,648.15	1,639.79	8.37	197.024	
535.00	535.00	520.08	520.00	1.81	7.22	-12.39	1,647.41	-49.41	1,647.94	1,638.92	9.03	182.566	
600.00	599.99	585.07	584.99	2.04	8.78	-12.40	1,647.41	-49.41	1,647.17	1,636.34	10.83	152.129	
700.00	699.99	685.07	684.99	2.40	11.20	-12.41	1,647.41	-49.41	1,645.98	1,632.38	13.60	121.046	
760.50	760.48	745.56	745.48	2.62	12.66	-12.41	1,647.41	-49.41	1,645.25	1,629.98	15.27	107.715	
800.00	799.98	786.78	786.67	2.76	13.65	-12.41	1,649.35	-49.41	1,646.72	1,630.31	16.41	100.348	
900.00	899.97	897.79	897.66	3.12	16.33	-12.42	1,648.86	-49.41	1,645.09	1,625.64	19.45	84.597	
1,000.00	999.96	1,008.80	1,008.65	3.48	19.01	-12.44	1,647.64	-49.41	1,642.79	1,620.31	22.48	73.074	
1,100.00	1,099.96	1,085.19	1,084.96	3.84	20.72	-12.44	1,647.41	-49.41	1,641.20	1,616.65	24.56	66.833	
1,200.00	1,199.95	1,185.18	1,184.95	4.19	22.93	-12.45	1,647.41	-49.41	1,640.01	1,612.89	27.12	60.474	
1,300.00	1,299.94	1,286.95	1,286.71	4.55	25.17	-12.46	1,648.42	-49.41	1,639.82	1,610.10	29.72	55.174	
1,400.00	1,399.93	1,393.47	1,393.22	4.91	27.52	-12.47	1,648.09	-49.41	1,638.32	1,605.90	32.43	50.524	
1,500.00	1,499.93	1,499.98	1,499.73	5.27	29.86	-12.48	1,647.34	-49.41	1,636.43	1,601.29	35.13	46.579	
1,600.00	1,599.92	1,585.24	1,584.92	5.63	31.85	-12.49	1,647.41	-49.41	1,635.24	1,597.76	37.47	43.636	
1,700.00	1,699.91	1,685.23	1,684.91	5.99	34.16	-12.50	1,647.41	-49.41	1,634.04	1,593.90	40.15	40.701	
1,760.40	1,760.31	1,745.63	1,745.31	6.20	35.56	-12.50	1,647.41	-49.41	1,633.32	1,591.56	41.76	39.111	
1,800.00	1,799.90	1,788.20	1,787.86	6.34	36.54	-12.51	1,648.76	-49.41	1,634.20	1,591.31	42.89	38.103	
1,900.00	1,899.90	1,895.76	1,895.41	6.70	39.03	-12.52	1,648.32	-49.41	1,632.60	1,586.86	45.74	35.696	
2,000.00	1,999.89	2,003.33	2,002.96	7.06	41.52	-12.53	1,647.38	-49.41	1,630.53	1,581.95	48.58	33.562	
2,100.00	2,099.88	2,085.32	2,084.88	7.42	43.51	-12.54	1,647.41	-49.41	1,629.27	1,578.34	50.93	31.990	
2,200.00	2,199.87	2,185.32	2,184.87	7.78	45.93	-12.54	1,647.41	-49.41	1,628.08	1,574.37	53.71	30.314	
2,255.00	2,254.87	2,240.31	2,239.87	7.98	47.26	-12.55	1,647.41	-49.41	1,627.43	1,572.19	55.23	29.464	
2,300.00	2,299.87	2,288.47	2,288.01	8.14	48.42	-12.55	1,648.71	-49.41	1,628.18	1,571.62	56.56	28.786	
2,400.00	2,399.86	2,396.31	2,395.84	8.50	51.03	-12.56	1,648.24	-49.41	1,626.56	1,567.03	59.53	27.325	
2,500.00	2,499.85	2,504.14	2,503.65	8.85	53.64	-12.57	1,647.25	-49.41	1,624.45	1,561.96	62.49	25.996	
2,600.00	2,599.85	2,585.43	2,584.85	9.21	55.71	-12.58	1,647.41	-49.41	1,623.31	1,558.39	64.92	25.005	
2,700.00	2,699.84	2,685.42	2,684.84	9.57	58.23	-12.59	1,647.41	-49.41	1,622.12	1,554.32	67.80	23.925	
2,760.40	2,760.23	2,745.82	2,745.23	9.79	59.75	-12.60	1,647.41	-49.41	1,621.40	1,551.86	69.54	23.316	
2,800.00	2,799.83	2,788.08	2,787.47	9.93	60.82	-12.60	1,649.12	-49.41	1,622.63	1,551.88	70.75	22.935	
2,900.00	2,899.82	2,896.82	2,896.20	10.29	63.56	-12.61	1,648.65	-49.41	1,621.01	1,547.16	73.85	21.950	
3,000.00	2,999.82	3,005.57	3,004.93	10.65	66.31	-12.62	1,647.59	-49.41	1,618.85	1,541.90	76.95	21.038	
3,100.00	3,099.81	3,085.57	3,084.81	11.01	68.19	-12.63	1,647.41	-49.41	1,617.35	1,538.16	79.19	20.423	
3,200.00	3,199.80	3,185.57	3,184.80	11.36	70.50	-12.64	1,647.41	-49.41	1,616.16	1,534.29	81.87	19.741	
3,300.00	3,299.79	3,285.56	3,284.79	11.72	72.82	-12.65	1,647.41	-49.41	1,614.96	1,530.43	84.54	19.103	
3,354.00	3,353.79	3,339.55	3,338.79	11.92	74.07	-12.65	1,647.41	-49.41	1,614.32	1,528.34	85.98	18.775	
3,400.00	3,399.79	3,388.55	3,387.75	12.08	75.20	-12.66	1,649.48	-49.41	1,615.85	1,528.56	87.28	18.513	
3,500.00	3,499.78	3,495.58	3,494.77	12.44	77.68	-12.67	1,649.05	-49.41	1,614.25	1,524.14	90.11	17.913	
3,600.00	3,599.77	3,602.62	3,601.80	12.80	80.15	-12.68	1,648.16	-49.41	1,612.23	1,519.28	92.95	17.346	
3,700.00	3,699.76	3,685.68	3,684.76	13.16	82.04	-12.69	1,647.41	-49.41	1,610.20	1,515.00	95.19	16.915	
3,800.00	3,799.76	3,785.68	3,784.76	13.52	84.15	-12.70	1,647.41	-49.41	1,609.00	1,511.34	97.66	16.475	
3,900.00	3,899.75	3,885.67	3,884.75	13.87	86.26	-12.71	1,647.41	-49.41	1,607.81	1,507.68	100.14	16.056	
4,000.00	3,999.74	3,985.66	3,984.74	14.23	88.37	-12.72	1,647.41	-49.41	1,606.62	1,504.01	102.61	15.658	
4,100.00	4,099.73	4,085.65	4,084.73	14.59	90.49	-12.72	1,647.41	-49.41	1,605.43	1,500.35	105.08	15.279	
4,200.00	4,199.73	4,185.65	4,184.73	14.95	92.60	-12.73	1,647.41	-49.41	1,604.24	1,496.69	107.55	14.916	
4,300.00	4,299.72	4,285.64	4,284.72	15.31	94.71	-12.74	1,647.41	-49.41	1,603.05	1,493.03	110.02	14.571	
4,400.00	4,399.71	4,385.63	4,384.71	15.67	96.82	-12.75	1,647.41	-49.41	1,601.85	1,489.36	112.49	14.240	
4,500.00	4,499.70	4,485.62	4,484.70	16.03	98.94	-12.76	1,647.41	-49.41	1,600.66	1,485.70	114.96	13.923	

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 #722H - Slot B05
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 #722H	**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
4,512.50	4,512.20	4,498.12	4,497.20	16.07	99.20	-12.76	1,647.41	-49.41	1,600.51	1,485.24	115.27	13.885	
4,600.00	4,599.70	4,587.12	4,586.16	16.38	101.08	-12.77	1,651.00	-49.41	1,603.06	1,485.59	117.46	13.647	
4,700.00	4,699.69	4,688.83	4,687.87	16.74	103.23	-12.78	1,650.85	-49.41	1,601.72	1,481.75	119.97	13.351	
4,800.00	4,799.68	4,790.55	4,789.58	17.10	105.38	-12.79	1,650.60	-49.41	1,600.28	1,477.80	122.48	13.066	
4,900.00	4,899.67	4,892.26	4,891.29	17.46	107.53	-12.80	1,650.23	-49.41	1,598.73	1,473.74	124.99	12.791	
5,000.00	4,999.67	4,993.97	4,993.00	17.82	109.68	-12.81	1,649.76	-49.41	1,597.07	1,469.58	127.49	12.527	
5,100.00	5,099.66	5,095.69	5,094.70	18.18	111.83	-12.82	1,649.17	-49.41	1,595.31	1,465.31	130.00	12.272	
5,200.00	5,199.65	5,197.40	5,196.41	18.53	113.98	-12.83	1,648.48	-49.41	1,593.44	1,460.93	132.51	12.025	
5,300.00	5,299.64	5,299.11	5,298.11	18.89	116.12	-12.84	1,647.68	-49.41	1,591.46	1,456.45	135.01	11.788	
5,400.00	5,399.64	5,385.81	5,384.64	19.25	117.81	-12.85	1,647.41	-49.41	1,589.94	1,452.88	137.06	11.600	
5,500.00	5,499.63	5,485.80	5,484.63	19.61	119.65	-12.86	1,647.41	-49.41	1,588.75	1,449.49	139.26	11.408	
5,600.00	5,599.62	5,585.80	5,584.62	19.97	121.49	-12.87	1,647.41	-49.41	1,587.56	1,446.09	141.46	11.222	
5,700.00	5,699.61	5,685.79	5,684.61	20.33	123.34	-12.88	1,647.41	-49.41	1,586.37	1,442.70	143.66	11.042	
5,800.00	5,799.61	5,785.78	5,784.61	20.69	125.18	-12.89	1,647.41	-49.41	1,585.18	1,439.31	145.86	10.867	
5,900.00	5,899.60	5,885.77	5,884.60	21.04	127.02	-12.90	1,647.41	-49.41	1,583.98	1,435.92	148.07	10.698	
6,000.00	5,999.59	5,985.77	5,984.59	21.40	128.86	-12.91	1,647.41	-49.41	1,582.79	1,432.53	150.27	10.533	
6,100.00	6,099.58	6,085.76	6,084.58	21.76	130.71	-12.92	1,647.41	-49.41	1,581.60	1,429.13	152.47	10.373	
6,200.00	6,199.58	6,185.75	6,184.58	22.12	132.55	-12.93	1,647.41	-49.41	1,580.41	1,425.74	154.67	10.218	
6,300.00	6,299.57	6,285.74	6,284.57	22.48	134.39	-12.94	1,647.41	-49.41	1,579.22	1,422.35	156.87	10.067	
6,315.05	6,314.62	6,300.79	6,299.62	22.53	134.67	-12.94	1,647.41	-49.41	1,579.04	1,421.84	157.20	10.045	
6,350.00	6,349.55	6,335.72	6,334.55	22.66	135.31	-82.19	1,647.41	-49.41	1,578.69	1,420.73	157.97	9.994	
6,400.00	6,399.30	6,385.47	6,384.30	22.83	136.23	-89.29	1,647.41	-49.41	1,578.45	1,419.39	159.06	9.924	
6,412.60	6,411.77	6,397.94	6,396.77	22.87	136.46	-90.00	1,647.41	-49.41	1,578.44	1,419.11	159.33	9.906	CC
6,450.00	6,448.52	6,434.70	6,433.52	23.00	137.14	-91.45	1,647.41	-49.41	1,578.54	1,418.40	160.14	9.857	
6,500.00	6,496.91	6,483.09	6,481.91	23.18	138.03	-92.70	1,647.41	-49.41	1,579.03	1,417.82	161.21	9.795	
6,550.00	6,544.17	6,530.35	6,529.17	23.35	138.90	-93.67	1,647.41	-49.41	1,580.00	1,417.74	162.25	9.738	ES
6,600.00	6,590.01	6,576.18	6,575.01	23.53	139.75	-94.50	1,647.41	-49.41	1,581.55	1,418.28	163.27	9.687	
6,650.00	6,634.14	6,620.32	6,619.14	23.70	140.56	-95.27	1,647.41	-49.41	1,583.83	1,419.57	164.26	9.642	
6,700.00	6,676.30	6,662.47	6,661.30	23.88	141.34	-95.96	1,647.41	-49.41	1,586.95	1,421.73	165.21	9.605	
6,750.00	6,716.21	6,702.39	6,701.21	24.06	142.07	-96.58	1,647.41	-49.41	1,591.06	1,424.93	166.13	9.577	
6,800.00	6,753.65	6,739.82	6,738.65	24.24	142.76	-97.09	1,647.41	-49.41	1,596.32	1,429.31	167.00	9.559	
6,850.00	6,788.37	6,774.54	6,773.37	24.44	143.40	-97.47	1,647.41	-49.41	1,602.84	1,435.01	167.83	9.550	SF
6,900.00	6,820.16	6,806.33	6,805.16	24.63	143.99	-97.69	1,647.41	-49.41	1,610.77	1,442.16	168.61	9.553	
6,950.00	6,848.83	6,835.00	6,833.83	24.84	144.51	-97.72	1,647.41	-49.41	1,620.21	1,450.87	169.34	9.568	
7,000.00	6,874.19	6,860.37	6,859.19	25.06	144.98	-97.53	1,647.41	-49.41	1,631.25	1,461.24	170.01	9.595	
7,050.00	6,896.10	6,882.28	6,881.10	25.29	145.39	-97.10	1,647.41	-49.41	1,643.94	1,473.31	170.63	9.635	
7,100.00	6,914.42	6,900.59	6,899.42	25.53	145.72	-96.40	1,647.41	-49.41	1,658.30	1,487.12	171.18	9.687	
7,150.00	6,929.03	6,915.20	6,914.03	25.78	145.99	-95.41	1,647.41	-49.41	1,674.33	1,502.67	171.67	9.753	
7,200.00	6,939.85	6,926.02	6,924.85	26.05	146.19	-94.11	1,647.41	-49.41	1,691.98	1,519.90	172.08	9.832	
7,250.00	6,946.80	6,932.97	6,931.80	26.32	146.32	-92.50	1,647.41	-49.41	1,711.16	1,538.74	172.43	9.924	
7,300.00	6,949.85	6,936.02	6,934.85	26.61	146.38	-90.59	1,647.41	-49.41	1,731.76	1,559.06	172.70	10.028	
7,314.43	6,950.00	6,936.17	6,935.00	26.69	146.38	-89.98	1,647.41	-49.41	1,737.95	1,565.19	172.76	10.060	
7,400.00	6,949.92	6,936.10	6,934.92	27.21	146.38	-89.97	1,647.41	-49.41	1,776.60	1,603.48	173.12	10.262	
7,500.00	6,949.83	6,936.01	6,934.83	27.90	146.38	-89.97	1,647.41	-49.41	1,825.83	1,652.27	173.56	10.520	
7,600.00	6,949.74	6,935.92	6,934.74	28.66	146.37	-89.97	1,647.41	-49.41	1,879.09	1,705.09	174.00	10.799	
7,700.00	6,949.65	6,935.83	6,934.65	29.49	146.37	-89.96	1,647.41	-49.41	1,936.06	1,761.63	174.44	11.099	
7,800.00	6,949.56	6,935.74	6,934.56	30.38	146.37	-89.96	1,647.41	-49.41	1,996.42	1,821.56	174.86	11.417	
7,900.00	6,949.47	6,935.65	6,934.47	31.33	146.37	-89.96	1,647.41	-49.41	2,059.86	1,884.59	175.27	11.753	
8,000.00	6,949.38	6,935.56	6,934.38	32.33	146.37	-89.95	1,647.41	-49.41	2,126.11	1,950.45	175.66	12.104	
8,100.00	6,949.29	6,935.47	6,934.29	33.38	146.37	-89.95	1,647.41	-49.41	2,194.92	2,018.90	176.03	12.469	
8,200.00	6,949.20	6,935.38	6,934.20	34.47	146.36	-89.95	1,647.41	-49.41	2,266.06	2,089.68	176.38	12.848	
8,300.00	6,949.11	6,935.29	6,934.11	35.60	146.36	-89.94	1,647.41	-49.41	2,339.31	2,162.61	176.70	13.239	

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 #722H - Slot B05
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 #722H	**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
8,400.00	6,949.02	6,935.20	6,934.02	36.76	146.36	-89.94	1,647.41	-49.41	2,414.48	2,237.47	177.01	13.640	
8,500.00	6,948.93	6,935.11	6,933.93	37.96	146.36	-89.94	1,647.41	-49.41	2,491.39	2,314.09	177.30	14.052	
8,600.00	6,948.84	6,935.02	6,933.84	39.18	146.36	-89.93	1,647.41	-49.41	2,569.90	2,392.33	177.57	14.473	
8,700.00	6,948.75	6,934.93	6,933.75	40.43	146.36	-89.93	1,647.41	-49.41	2,649.85	2,472.03	177.82	14.902	
8,800.00	6,948.66	6,934.84	6,933.66	41.71	146.35	-89.93	1,647.41	-49.41	2,731.13	2,553.07	178.06	15.338	
8,900.00	6,948.57	6,934.75	6,933.57	43.00	146.35	-89.92	1,647.41	-49.41	2,813.61	2,635.33	178.28	15.782	
9,000.00	6,948.48	6,934.65	6,933.48	44.32	146.35	-89.92	1,647.41	-49.41	2,897.19	2,718.71	178.49	16.232	
9,100.00	6,948.39	6,934.56	6,933.39	45.66	146.35	-89.92	1,647.41	-49.41	2,981.79	2,803.11	178.68	16.688	
9,200.00	6,948.30	6,934.47	6,933.30	47.01	146.35	-89.91	1,647.41	-49.41	3,067.31	2,888.45	178.86	17.149	
9,300.00	6,948.21	6,934.38	6,933.21	48.38	146.35	-89.91	1,647.41	-49.41	3,153.69	2,974.66	179.03	17.615	
9,400.00	6,948.12	6,934.29	6,933.12	49.76	146.34	-89.91	1,647.41	-49.41	3,240.85	3,061.65	179.20	18.086	
9,500.00	6,948.03	6,934.20	6,933.03	51.16	146.34	-89.90	1,647.41	-49.41	3,328.73	3,149.38	179.35	18.560	
9,600.00	6,947.94	6,934.11	6,932.94	52.56	146.34	-89.90	1,647.41	-49.41	3,417.27	3,237.78	179.49	19.039	
9,700.00	6,947.85	6,934.02	6,932.85	53.98	146.34	-89.90	1,647.41	-49.41	3,506.44	3,326.81	179.63	19.521	
9,800.00	6,947.76	6,933.93	6,932.76	55.41	146.34	-89.89	1,647.41	-49.41	3,596.17	3,416.41	179.76	20.006	
9,900.00	6,947.67	6,933.84	6,932.67	56.85	146.34	-89.89	1,647.41	-49.41	3,686.43	3,506.55	179.88	20.494	
10,000.00	6,947.58	6,933.75	6,932.58	58.29	146.33	-89.89	1,647.41	-49.41	3,777.18	3,597.19	180.00	20.984	
10,100.00	6,947.49	6,933.66	6,932.49	59.75	146.33	-89.88	1,647.41	-49.41	3,868.39	3,688.28	180.11	21.478	
10,200.00	6,947.40	6,933.57	6,932.40	61.21	146.33	-89.88	1,647.41	-49.41	3,960.03	3,779.81	180.22	21.973	
10,300.00	6,947.31	6,933.48	6,932.31	62.68	146.33	-89.88	1,647.41	-49.41	4,052.05	3,871.73	180.32	22.471	
10,400.00	6,947.22	6,933.39	6,932.22	64.15	146.33	-89.87	1,647.41	-49.41	4,144.45	3,964.03	180.42	22.971	
10,500.00	6,947.13	6,933.30	6,932.13	65.63	146.33	-89.87	1,647.41	-49.41	4,237.19	4,056.68	180.52	23.473	
10,600.00	6,947.04	6,933.21	6,932.04	67.12	146.32	-89.87	1,647.41	-49.41	4,330.26	4,149.65	180.61	23.976	
10,700.00	6,946.95	6,933.12	6,931.95	68.61	146.32	-89.86	1,647.41	-49.41	4,423.63	4,242.93	180.70	24.481	
10,800.00	6,946.86	6,933.03	6,931.86	70.11	146.32	-89.86	1,647.41	-49.41	4,517.28	4,336.50	180.78	24.987	
10,900.00	6,946.77	6,932.94	6,931.77	71.61	146.32	-89.86	1,647.41	-49.41	4,611.20	4,430.33	180.87	25.495	
11,000.00	6,946.68	6,932.85	6,931.68	73.11	146.32	-89.85	1,647.41	-49.41	4,705.37	4,524.42	180.95	26.004	
11,100.00	6,946.59	6,932.76	6,931.59	74.62	146.32	-89.85	1,647.41	-49.41	4,799.78	4,618.75	181.03	26.514	
11,200.00	6,946.50	6,932.67	6,931.50	76.14	146.31	-89.85	1,647.41	-49.41	4,894.40	4,713.30	181.10	27.025	
11,300.00	6,946.41	6,932.58	6,931.41	77.65	146.31	-89.84	1,647.41	-49.41	4,989.24	4,808.06	181.18	27.538	
11,400.00	6,946.32	6,932.49	6,931.32	79.18	146.31	-89.84	1,647.41	-49.41	5,084.28	4,903.02	181.25	28.051	
11,500.00	6,946.23	6,932.40	6,931.23	80.70	146.31	-89.84	1,647.41	-49.41	5,179.50	4,998.17	181.32	28.565	
11,600.00	6,946.14	6,932.31	6,931.14	82.23	146.31	-89.83	1,647.41	-49.41	5,274.90	5,093.50	181.39	29.080	
11,700.00	6,946.05	6,932.22	6,931.05	83.76	146.31	-89.83	1,647.41	-49.41	5,370.46	5,189.00	181.46	29.595	
11,800.00	6,945.96	6,932.13	6,930.96	85.29	146.30	-89.83	1,647.41	-49.41	5,466.19	5,284.66	181.53	30.111	
11,900.00	6,945.87	6,932.04	6,930.87	86.82	146.30	-89.82	1,647.41	-49.41	5,562.06	5,380.46	181.60	30.628	
12,000.00	6,945.78	6,931.95	6,930.78	88.36	146.30	-89.82	1,647.41	-49.41	5,658.08	5,476.42	181.67	31.146	
12,100.00	6,945.69	6,931.86	6,930.69	89.90	146.30	-89.82	1,647.41	-49.41	5,754.24	5,572.50	181.73	31.663	
12,200.00	6,945.60	6,931.77	6,930.60	91.44	146.30	-89.81	1,647.41	-49.41	5,850.52	5,668.72	181.80	32.182	
12,300.00	6,945.51	6,931.68	6,930.51	92.99	146.30	-89.81	1,647.41	-49.41	5,946.92	5,765.06	181.86	32.701	
12,400.00	6,945.42	6,931.59	6,930.42	94.53	146.29	-89.81	1,647.41	-49.41	6,043.45	5,861.52	181.92	33.220	
12,500.00	6,945.33	6,931.50	6,930.33	96.08	146.29	-89.80	1,647.41	-49.41	6,140.08	5,958.09	181.99	33.739	
12,600.00	6,945.24	6,931.41	6,930.24	97.63	146.29	-89.80	1,647.41	-49.41	6,236.82	6,054.77	182.05	34.259	
12,700.00	6,945.15	6,931.32	6,930.15	99.18	146.29	-89.80	1,647.41	-49.41	6,333.66	6,151.55	182.11	34.779	
12,800.00	6,945.06	6,931.23	6,930.06	100.74	146.29	-89.79	1,647.41	-49.41	6,430.60	6,248.42	182.17	35.299	
12,900.00	6,944.96	6,931.14	6,929.96	102.29	146.29	-89.79	1,647.41	-49.41	6,527.63	6,345.39	182.23	35.820	
13,000.00	6,944.87	6,931.05	6,929.87	103.85	146.28	-89.79	1,647.41	-49.41	6,624.75	6,442.45	182.30	36.341	
13,100.00	6,944.78	6,930.96	6,929.78	105.40	146.28	-89.78	1,647.41	-49.41	6,721.95	6,539.59	182.36	36.862	
13,200.00	6,944.69	6,930.87	6,929.69	106.96	146.28	-89.78	1,647.41	-49.41	6,819.23	6,636.82	182.42	37.383	
13,300.00	6,944.60	6,930.78	6,929.60	108.52	146.28	-89.78	1,647.41	-49.41	6,916.59	6,734.12	182.48	37.904	
13,400.00	6,944.51	6,930.69	6,929.51	110.08	146.28	-89.77	1,647.41	-49.41	7,014.03	6,831.49	182.54	38.425	
13,500.00	6,944.42	6,930.60	6,929.42	111.65	146.28	-89.77	1,647.41	-49.41	7,111.54	6,928.94	182.60	38.946	

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 #722H - Slot B05
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 #722H	**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
13,600.00	6,944.33	6,930.51	6,929.33	113.21	146.27	-89.77	1,647.41	-49.41	7,209.11	7,026.45	182.66	39.468	
13,700.00	6,944.24	6,930.42	6,929.24	114.78	146.27	-89.76	1,647.41	-49.41	7,306.75	7,124.03	182.72	39.989	
13,800.00	6,944.15	6,930.33	6,929.15	116.34	146.27	-89.76	1,647.41	-49.41	7,404.46	7,221.68	182.78	40.510	
13,900.00	6,944.06	6,930.24	6,929.06	117.91	146.27	-89.76	1,647.41	-49.41	7,502.22	7,319.38	182.84	41.032	
14,000.00	6,943.97	6,930.15	6,928.97	119.48	146.27	-89.75	1,647.41	-49.41	7,600.04	7,417.14	182.90	41.553	
14,100.00	6,943.88	6,930.06	6,928.88	121.05	146.27	-89.75	1,647.41	-49.41	7,697.92	7,514.96	182.96	42.074	
14,200.00	6,943.79	6,929.97	6,928.79	122.62	146.26	-89.75	1,647.41	-49.41	7,795.85	7,612.83	183.02	42.595	
14,300.00	6,943.70	6,929.88	6,928.70	124.19	146.26	-89.75	1,647.41	-49.41	7,893.84	7,710.75	183.08	43.116	
14,400.00	6,943.61	6,929.79	6,928.61	125.76	146.26	-89.74	1,647.41	-49.41	7,991.87	7,808.73	183.14	43.637	
14,500.00	6,943.52	6,929.70	6,928.52	127.33	146.26	-89.74	1,647.41	-49.41	8,089.95	7,906.75	183.20	44.158	
14,600.00	6,943.43	6,929.61	6,928.43	128.90	146.26	-89.74	1,647.41	-49.41	8,188.08	8,004.82	183.27	44.679	
14,700.00	6,943.34	6,929.52	6,928.34	130.48	146.26	-89.73	1,647.41	-49.41	8,286.25	8,102.93	183.33	45.199	
14,800.00	6,943.25	6,929.43	6,928.25	132.05	146.25	-89.73	1,647.41	-49.41	8,384.47	8,201.08	183.39	45.720	
14,900.00	6,943.16	6,929.34	6,928.16	133.63	146.25	-89.73	1,647.41	-49.41	8,482.73	8,299.28	183.45	46.240	
15,000.00	6,943.07	6,929.25	6,928.07	135.20	146.25	-89.72	1,647.41	-49.41	8,581.03	8,397.51	183.51	46.760	
15,100.00	6,942.98	6,929.16	6,927.98	136.78	146.25	-89.72	1,647.41	-49.41	8,679.36	8,495.79	183.58	47.280	
15,200.00	6,942.89	6,929.07	6,927.89	138.36	146.25	-89.72	1,647.41	-49.41	8,777.74	8,594.10	183.64	47.799	
15,300.00	6,942.80	6,928.98	6,927.80	139.93	146.25	-89.71	1,647.41	-49.41	8,876.15	8,692.45	183.70	48.319	
15,400.00	6,942.71	6,928.89	6,927.71	141.51	146.24	-89.71	1,647.41	-49.41	8,974.60	8,790.83	183.76	48.838	
15,500.00	6,942.62	6,928.80	6,927.62	143.09	146.24	-89.71	1,647.41	-49.41	9,073.08	8,889.25	183.83	49.357	
15,600.00	6,942.53	6,928.71	6,927.53	144.67	146.24	-89.70	1,647.41	-49.41	9,171.59	8,987.70	183.89	49.875	
15,700.00	6,942.44	6,928.62	6,927.44	146.25	146.24	-89.70	1,647.41	-49.41	9,270.13	9,086.18	183.95	50.394	
15,800.00	6,942.35	6,928.52	6,927.35	147.83	146.24	-89.70	1,647.41	-49.41	9,368.71	9,184.69	184.02	50.912	
15,900.00	6,942.26	6,928.43	6,927.26	149.41	146.24	-89.69	1,647.41	-49.41	9,467.32	9,283.23	184.08	51.430	
16,000.00	6,942.17	6,928.34	6,927.17	150.99	146.23	-89.69	1,647.41	-49.41	9,565.95	9,381.80	184.15	51.947	
16,100.00	6,942.08	6,928.25	6,927.08	152.57	146.23	-89.69	1,647.41	-49.41	9,664.61	9,480.40	184.21	52.465	
16,200.00	6,941.99	6,928.16	6,926.99	154.16	146.23	-89.68	1,647.41	-49.41	9,763.30	9,579.02	184.28	52.981	
16,300.00	6,941.90	6,928.07	6,926.90	155.74	146.23	-89.68	1,647.41	-49.41	9,862.02	9,677.68	184.34	53.498	
16,400.00	6,941.81	6,927.98	6,926.81	157.32	146.23	-89.68	1,647.41	-49.41	9,960.76	9,776.35	184.41	54.014	
16,500.00	6,941.72	6,927.89	6,926.72	158.91	146.23	-89.67	1,647.41	-49.41	10,059.53	9,875.05	184.48	54.530	
16,600.00	6,941.63	6,927.80	6,926.63	160.49	146.22	-89.67	1,647.41	-49.41	10,158.32	9,973.78	184.54	55.046	
16,700.00	6,941.54	6,927.71	6,926.54	162.07	146.22	-89.67	1,647.41	-49.41	10,257.13	10,072.52	184.61	55.561	
16,800.00	6,941.45	6,927.62	6,926.45	163.66	146.22	-89.66	1,647.41	-49.41	10,355.97	10,171.29	184.68	56.076	
16,900.00	6,941.36	6,927.53	6,926.36	165.24	146.22	-89.66	1,647.41	-49.41	10,454.83	10,270.08	184.74	56.591	
17,000.00	6,941.27	6,927.44	6,926.27	166.83	146.22	-89.66	1,647.41	-49.41	10,553.71	10,368.90	184.81	57.105	
17,100.00	6,941.18	6,927.35	6,926.18	168.42	146.22	-89.65	1,647.41	-49.41	10,652.61	10,467.73	184.88	57.619	
17,200.00	6,941.09	6,927.26	6,926.09	170.00	146.21	-89.65	1,647.41	-49.41	10,751.53	10,566.58	184.95	58.132	
17,300.00	6,941.00	6,927.17	6,926.00	171.59	146.21	-89.65	1,647.41	-49.41	10,850.47	10,665.45	185.02	58.645	
17,400.00	6,940.91	6,927.08	6,925.91	173.18	146.21	-89.64	1,647.41	-49.41	10,949.43	10,764.35	185.09	59.158	
17,500.00	6,940.82	6,926.99	6,925.82	174.76	146.21	-89.64	1,647.41	-49.41	11,048.41	10,863.26	185.16	59.670	
17,600.00	6,940.73	6,926.90	6,925.73	176.35	146.21	-89.64	1,647.41	-49.41	11,147.41	10,962.18	185.23	60.182	
17,700.00	6,940.64	6,926.81	6,925.64	177.94	146.21	-89.63	1,647.41	-49.41	11,246.43	11,061.13	185.30	60.693	
17,800.00	6,940.55	6,926.72	6,925.55	179.53	146.20	-89.63	1,647.41	-49.41	11,345.46	11,160.09	185.37	61.204	
17,900.00	6,940.46	6,926.63	6,925.46	181.11	146.20	-89.63	1,647.41	-49.41	11,444.51	11,259.07	185.44	61.715	
18,000.00	6,940.37	6,926.54	6,925.37	182.70	146.20	-89.62	1,647.41	-49.41	11,543.58	11,358.06	185.51	62.225	
18,100.00	6,940.28	6,926.45	6,925.28	184.29	146.20	-89.62	1,647.41	-49.41	11,642.66	11,457.07	185.58	62.735	
18,200.00	6,940.19	6,926.36	6,925.19	185.88	146.20	-89.62	1,647.41	-49.41	11,741.76	11,556.10	185.66	63.244	
18,300.00	6,940.10	6,926.27	6,925.10	187.47	146.20	-89.61	1,647.41	-49.41	11,840.87	11,655.14	185.73	63.753	
18,400.00	6,940.01	6,926.18	6,925.01	189.06	146.19	-89.61	1,647.41	-49.41	11,940.00	11,754.19	185.80	64.261	
18,500.00	6,939.92	6,926.09	6,924.92	190.65	146.19	-89.61	1,647.41	-49.41	12,039.14	11,853.26	185.88	64.769	
18,600.00	6,939.83	6,926.00	6,924.83	192.24	146.19	-89.60	1,647.41	-49.41	12,138.29	11,952.34	185.95	65.277	
18,700.00	6,939.74	6,925.91	6,924.74	193.83	146.19	-89.60	1,647.41	-49.41	12,237.46	12,051.44	186.02	65.784	

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 #722H - Slot B05
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 #722H	**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
18,800.00	6,939.65	6,925.82	6,924.65	195.42	146.19	-89.60	1,647.41	-49.41	12,336.65	12,150.55	186.10	66.291	
18,900.00	6,939.56	6,925.73	6,924.56	197.01	146.19	-89.59	1,647.41	-49.41	12,435.84	12,249.67	186.17	66.797	
19,000.00	6,939.47	6,925.64	6,924.47	198.60	146.18	-89.59	1,647.41	-49.41	12,535.05	12,348.80	186.25	67.302	
19,100.00	6,939.38	6,925.55	6,924.38	200.19	146.18	-89.59	1,647.41	-49.41	12,634.27	12,447.95	186.33	67.807	
19,200.00	6,939.29	6,925.46	6,924.29	201.78	146.18	-89.58	1,647.41	-49.41	12,733.51	12,547.10	186.40	68.312	
19,300.00	6,939.20	6,925.37	6,924.20	203.37	146.18	-89.58	1,647.41	-49.41	12,832.75	12,646.27	186.48	68.816	
19,400.00	6,939.11	6,925.28	6,924.11	204.97	146.18	-89.58	1,647.41	-49.41	12,932.01	12,745.45	186.56	69.320	
19,500.00	6,939.02	6,925.19	6,924.02	206.56	146.18	-89.57	1,647.41	-49.41	13,031.28	12,844.65	186.63	69.823	
19,600.00	6,938.93	6,925.10	6,923.93	208.15	146.18	-89.57	1,647.41	-49.41	13,130.56	12,943.85	186.71	70.326	
19,700.00	6,938.83	6,925.01	6,923.83	209.74	146.17	-89.57	1,647.41	-49.41	13,229.85	13,043.06	186.79	70.828	
19,800.00	6,938.74	6,924.92	6,923.74	211.33	146.17	-89.56	1,647.41	-49.41	13,329.15	13,142.28	186.87	71.330	
19,900.00	6,938.65	6,924.83	6,923.65	212.93	146.17	-89.56	1,647.41	-49.41	13,428.46	13,241.52	186.94	71.831	
20,000.00	6,938.56	6,924.74	6,923.56	214.52	146.17	-89.56	1,647.41	-49.41	13,527.78	13,340.76	187.02	72.332	
20,100.00	6,938.47	6,924.65	6,923.47	216.11	146.17	-89.55	1,647.41	-49.41	13,627.11	13,440.01	187.10	72.832	
20,200.00	6,938.38	6,924.56	6,923.38	217.71	146.17	-89.55	1,647.41	-49.41	13,726.45	13,539.27	187.18	73.332	
20,300.00	6,938.29	6,924.47	6,923.29	219.30	146.16	-89.55	1,647.41	-49.41	13,825.81	13,638.54	187.26	73.831	
20,400.00	6,938.20	6,924.38	6,923.20	220.89	146.16	-89.54	1,647.41	-49.41	13,925.17	13,737.82	187.34	74.329	
20,500.00	6,938.11	6,924.29	6,923.11	222.49	146.16	-89.54	1,647.41	-49.41	14,024.53	13,837.11	187.42	74.828	
20,600.00	6,938.02	6,924.20	6,923.02	224.08	146.16	-89.54	1,647.41	-49.41	14,123.91	13,936.41	187.51	75.325	
20,626.08	6,938.00	6,924.17	6,923.00	224.49	146.16	-89.54	1,647.41	-49.41	14,149.83	13,962.31	187.53	75.455	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	45.09	2,224.92	2,231.66	3,154.34				
100.00	100.00	0.00	0.00	0.25	0.00	45.09	2,224.92	2,231.66	3,151.52	3,151.27	0.25	N/A	
147.68	147.68	8.41	8.41	0.42	0.09	45.09	2,224.92	2,231.66	3,151.28	3,150.76	0.51	6,124.492	CC
200.00	200.00	59.05	59.05	0.61	0.65	45.09	2,224.91	2,231.68	3,151.30	3,150.04	1.26	2,502.577	
300.00	300.00	155.84	155.84	0.97	1.72	45.09	2,224.90	2,231.85	3,151.41	3,148.73	2.68	1,174.741	
400.00	400.00	252.64	252.63	1.33	2.79	45.09	2,224.87	2,232.17	3,151.62	3,147.52	4.11	767.554	
500.00	500.00	321.00	321.00	1.68	3.54	45.10	2,224.84	2,232.49	3,152.07	3,146.86	5.22	604.222	
535.00	535.00	354.13	354.13	1.81	3.71	34.43	2,225.00	2,232.73	3,152.20	3,146.70	5.49	573.863	ES
600.00	599.99	387.57	387.57	2.04	3.89	34.43	2,225.50	2,233.10	3,152.73	3,146.86	5.87	537.300	
700.00	699.99	411.00	410.98	2.40	4.02	34.43	2,226.05	2,233.43	3,155.06	3,148.74	6.32	499.383	
800.00	799.98	471.63	471.54	2.76	4.40	34.42	2,228.65	2,234.70	3,158.91	3,151.81	7.10	444.801	
900.00	899.97	501.00	500.83	3.12	4.65	34.41	2,230.60	2,235.54	3,164.90	3,157.19	7.71	410.525	
1,000.00	999.96	543.17	542.82	3.48	5.11	34.39	2,234.07	2,237.28	3,172.85	3,164.35	8.50	373.440	
1,100.00	1,099.96	591.00	590.32	3.84	5.67	34.38	2,238.89	2,240.24	3,183.00	3,173.61	9.39	339.078	
1,200.00	1,199.95	622.97	621.99	4.19	5.87	34.36	2,242.47	2,242.69	3,194.90	3,184.98	9.93	321.808	
1,300.00	1,299.94	682.00	680.38	4.55	6.23	34.35	2,249.41	2,247.82	3,208.32	3,197.68	10.65	301.390	
1,400.00	1,399.93	728.49	726.28	4.91	6.40	34.34	2,255.30	2,252.37	3,223.16	3,212.00	11.16	288.824	
1,500.00	1,499.93	772.00	769.12	5.27	6.56	34.33	2,261.29	2,256.99	3,239.51	3,227.85	11.66	277.870	
1,600.00	1,599.92	820.33	816.56	5.63	6.82	34.30	2,268.78	2,262.38	3,257.46	3,245.20	12.26	265.803	
1,700.00	1,699.91	862.00	857.30	5.99	7.04	34.28	2,276.17	2,267.12	3,277.08	3,264.27	12.81	255.837	
1,800.00	1,799.90	903.56	897.75	6.34	7.32	34.24	2,284.27	2,272.08	3,298.39	3,284.98	13.41	246.031	
1,900.00	1,899.90	954.00	946.62	6.70	7.65	34.20	2,294.92	2,278.66	3,321.42	3,307.35	14.07	236.116	
2,000.00	1,999.89	982.59	974.19	7.06	7.84	34.17	2,301.36	2,282.65	3,346.06	3,331.49	14.57	229.716	
2,100.00	2,099.88	1,048.00	1,036.85	7.42	8.28	34.10	2,317.27	2,292.52	3,372.70	3,357.35	15.35	219.716	
2,200.00	2,199.87	1,048.00	1,036.85	7.78	8.28	34.10	2,317.27	2,292.52	3,400.49	3,384.88	15.61	217.808	
2,300.00	2,299.87	1,092.04	1,078.70	8.14	8.59	34.05	2,328.94	2,299.76	3,430.19	3,413.95	16.24	211.175	
2,400.00	2,399.86	1,140.00	1,123.88	8.50	8.93	34.00	2,342.59	2,308.24	3,461.70	3,444.79	16.91	204.750	
2,500.00	2,499.85	1,140.00	1,123.88	8.85	8.93	34.00	2,342.59	2,308.24	3,494.87	3,477.73	17.14	203.900	
2,600.00	2,599.85	1,199.89	1,179.79	9.21	9.32	33.92	2,360.70	2,319.75	3,529.30	3,511.44	17.86	197.561	
2,700.00	2,699.84	1,234.00	1,211.40	9.57	9.54	33.88	2,371.43	2,326.78	3,565.40	3,547.03	18.37	194.091	
2,800.00	2,799.83	1,280.87	1,254.56	9.93	9.77	33.83	2,386.70	2,336.82	3,602.85	3,583.94	18.91	190.548	
2,900.00	2,899.82	1,328.00	1,297.66	10.29	10.01	33.77	2,402.69	2,347.19	3,641.58	3,622.14	19.45	187.275	
3,000.00	2,999.82	1,368.45	1,334.44	10.65	10.18	33.72	2,416.81	2,356.38	3,681.53	3,661.64	19.90	185.040	
3,100.00	3,099.81	1,420.00	1,381.04	11.01	10.40	33.65	2,435.15	2,368.60	3,722.65	3,702.24	20.41	182.350	
3,200.00	3,199.80	1,466.40	1,422.77	11.36	10.56	33.60	2,451.93	2,379.99	3,764.79	3,743.93	20.86	180.483	
3,300.00	3,299.79	1,514.00	1,465.42	11.72	10.73	33.54	2,469.35	2,391.97	3,807.83	3,786.52	21.31	178.696	
3,400.00	3,399.79	1,566.64	1,512.34	12.08	10.91	33.48	2,488.99	2,405.54	3,851.80	3,830.01	21.79	176.762	
3,500.00	3,499.78	1,616.81	1,556.76	12.44	11.10	33.42	2,508.19	2,418.74	3,896.77	3,874.51	22.26	175.071	
3,600.00	3,599.77	1,692.74	1,623.77	12.80	11.38	33.33	2,537.78	2,438.73	3,942.31	3,919.42	22.89	172.211	
3,700.00	3,699.76	1,746.51	1,671.08	13.16	11.57	33.26	2,559.01	2,452.97	3,988.38	3,965.00	23.38	170.593	
3,800.00	3,799.76	1,804.92	1,722.21	13.52	11.78	33.19	2,582.27	2,468.99	4,035.26	4,011.37	23.90	168.869	
3,900.00	3,899.75	1,940.82	1,841.48	13.87	12.28	33.04	2,635.89	2,505.99	4,081.76	4,056.84	24.92	163.798	
4,000.00	3,999.74	2,062.94	1,949.13	14.23	12.75	32.88	2,684.41	2,537.14	4,127.31	4,101.44	25.87	159.515	
4,100.00	4,099.73	2,136.05	2,013.69	14.59	13.04	32.78	2,713.29	2,555.63	4,172.68	4,146.16	26.52	157.364	
4,200.00	4,199.73	2,210.95	2,079.57	14.95	13.35	32.69	2,743.14	2,575.12	4,218.71	4,191.54	27.18	155.237	
4,300.00	4,299.72	2,344.70	2,197.43	15.31	13.90	32.53	2,796.41	2,609.13	4,264.44	4,236.19	28.25	150.967	
4,400.00	4,399.71	4,110.84	3,870.20	15.67	25.26	31.51	3,212.72	2,880.99	4,292.58	4,251.20	41.38	103.742	
4,500.00	4,499.70	4,228.70	3,987.59	16.03	26.26	31.54	3,219.79	2,888.78	4,300.43	4,257.71	42.72	100.672	
4,600.00	4,599.70	4,346.64	4,105.10	16.38	27.26	31.56	3,226.61	2,896.12	4,307.86	4,263.80	44.06	97.777	
4,700.00	4,699.69	4,464.65	4,222.73	16.74	28.26	31.58	3,233.19	2,902.99	4,314.86	4,269.46	45.40	95.040	
4,800.00	4,799.68	4,587.15	4,344.88	17.10	29.41	31.60	3,239.50	2,909.83	4,321.40	4,274.51	46.89	92.165	
4,900.00	4,899.67	4,709.73	4,467.15	17.46	30.57	31.62	3,245.03	2,916.59	4,327.40	4,279.03	48.38	89.451	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	4,832.37	4,589.51	17.82	31.73	31.66	3,249.78	2,923.25	4,332.89	4,283.02	49.87	86.888	
5,100.00	5,099.66	4,955.34	4,712.24	18.18	32.86	31.70	3,253.74	2,929.84	4,337.84	4,286.51	51.34	84.500	
5,200.00	5,199.65	5,080.55	4,837.23	18.53	33.82	31.74	3,256.88	2,936.50	4,342.24	4,289.62	52.62	82.515	
5,300.00	5,299.64	5,205.78	4,962.26	18.89	34.78	31.80	3,259.06	2,943.12	4,346.06	4,292.14	53.91	80.613	
5,400.00	5,399.64	5,331.01	5,087.32	19.25	35.74	31.86	3,260.28	2,949.71	4,349.30	4,294.09	55.20	78.789	
5,500.00	5,499.63	5,456.24	5,212.37	19.61	36.71	31.94	3,260.53	2,956.26	4,351.95	4,295.46	56.49	77.040	
5,600.00	5,599.62	5,553.05	5,309.05	19.97	37.34	31.99	3,260.57	2,961.33	4,354.48	4,297.01	57.48	75.759	
5,700.00	5,699.61	5,657.64	5,413.50	20.33	38.07	32.06	3,260.40	2,966.79	4,356.88	4,298.33	58.55	74.413	
5,800.00	5,799.61	5,762.22	5,517.94	20.69	38.80	32.12	3,260.09	2,972.24	4,359.17	4,299.55	59.62	73.114	
5,900.00	5,899.60	5,866.80	5,622.38	21.04	39.53	32.19	3,259.63	2,977.69	4,361.35	4,300.66	60.69	71.858	
6,000.00	5,999.59	5,962.18	5,717.63	21.40	40.21	32.25	3,259.19	2,982.66	4,363.53	4,301.81	61.73	70.693	
6,100.00	6,099.58	6,056.46	5,811.78	21.76	40.89	32.30	3,258.92	2,987.57	4,365.84	4,303.09	62.75	69.573	
6,200.00	6,199.58	6,150.75	5,905.93	22.12	41.56	32.36	3,258.81	2,992.49	4,368.29	4,304.51	63.78	68.491	
6,300.00	6,299.57	6,245.03	6,000.09	22.48	42.24	32.41	3,258.86	2,997.40	4,370.86	4,306.05	64.81	67.446	
6,315.05	6,314.62	6,259.22	6,014.26	22.53	42.34	32.42	3,258.89	2,998.14	4,371.26	4,306.30	64.96	67.291	
6,350.00	6,349.55	6,292.21	6,047.20	22.66	42.58	-36.73	3,258.95	2,999.86	4,371.56	4,306.25	65.32	66.928	
6,400.00	6,399.30	6,339.36	6,094.29	22.83	42.92	-43.76	3,259.08	3,002.32	4,369.83	4,304.01	65.82	66.388	
6,450.00	6,448.52	6,393.39	6,148.25	23.00	43.27	-45.98	3,259.27	3,005.13	4,365.54	4,299.21	66.34	65.810	
6,500.00	6,496.91	6,472.17	6,226.93	23.18	43.69	-47.48	3,259.29	3,008.98	4,358.50	4,291.62	66.88	65.172	
6,550.00	6,544.17	6,549.22	6,303.91	23.35	44.10	-48.88	3,258.94	3,012.37	4,348.64	4,281.24	67.40	64.516	
6,600.00	6,590.01	6,623.99	6,378.62	23.53	44.50	-50.39	3,258.25	3,015.32	4,336.10	4,268.18	67.91	63.848	
6,650.00	6,634.14	6,695.95	6,450.53	23.70	44.89	-52.07	3,257.26	3,017.83	4,320.98	4,252.58	68.40	63.170	
6,700.00	6,676.30	6,764.60	6,519.13	23.88	45.26	-53.99	3,256.01	3,019.94	4,303.46	4,234.59	68.87	62.488	
6,750.00	6,716.21	6,829.48	6,583.97	24.06	45.61	-56.15	3,254.56	3,021.67	4,283.71	4,214.40	69.31	61.805	
6,800.00	6,753.65	6,890.16	6,644.61	24.24	45.94	-58.58	3,252.97	3,023.06	4,261.93	4,192.20	69.73	61.123	
6,850.00	6,788.37	6,946.25	6,700.67	24.44	46.24	-61.27	3,251.29	3,024.14	4,238.34	4,168.23	70.12	60.446	
6,900.00	6,820.16	6,996.53	6,750.94	24.63	46.10	-64.20	3,249.97	3,024.57	4,213.19	4,143.11	70.07	60.125	
6,950.00	6,848.83	7,041.61	6,796.00	24.84	46.19	-67.36	3,248.64	3,024.83	4,186.70	4,116.43	70.26	59.586	
7,000.00	6,874.19	7,080.98	6,835.34	25.06	46.27	-70.70	3,247.45	3,024.88	4,159.13	4,088.68	70.45	59.039	
7,050.00	6,896.10	7,114.47	6,868.81	25.29	46.34	-74.17	3,246.42	3,024.78	4,130.73	4,060.11	70.63	58.486	
7,100.00	6,914.42	7,141.98	6,896.31	25.53	46.40	-77.73	3,245.55	3,024.60	4,101.76	4,030.95	70.80	57.930	
7,150.00	6,929.03	7,163.47	6,917.80	25.78	46.44	-81.31	3,244.87	3,024.41	4,072.45	4,001.47	70.98	57.373	
7,200.00	6,939.85	7,178.95	6,933.26	26.05	46.47	-84.83	3,244.37	3,024.24	4,043.05	3,971.89	71.16	56.817	
7,250.00	6,946.80	7,188.44	6,942.75	26.32	46.49	-88.25	3,244.07	3,024.12	4,013.78	3,942.44	71.34	56.265	
7,300.00	6,949.85	7,192.04	6,946.34	26.61	46.50	-91.51	3,243.95	3,024.07	3,984.85	3,913.33	71.52	55.718	
7,314.43	6,950.00	7,192.00	6,946.30	26.69	46.50	-92.41	3,243.95	3,024.07	3,976.59	3,905.02	71.57	55.562	
7,400.00	6,949.92	7,190.36	6,944.67	27.21	46.50	-92.38	3,244.01	3,024.10	3,928.40	3,856.49	71.91	54.628	
7,500.00	6,949.83	7,188.50	6,942.81	27.90	46.49	-92.35	3,244.07	3,024.12	3,873.73	3,801.34	72.39	53.512	
7,600.00	6,949.74	7,186.70	6,941.01	28.66	46.49	-92.32	3,244.12	3,024.14	3,820.88	3,747.93	72.95	52.377	
7,700.00	6,949.65	7,184.96	6,939.27	29.49	46.49	-92.29	3,244.18	3,024.16	3,769.95	3,696.36	73.59	51.228	
7,800.00	6,949.56	7,183.27	6,937.58	30.38	46.48	-92.26	3,244.23	3,024.19	3,721.01	3,646.70	74.31	50.072	
7,900.00	6,949.47	7,181.62	6,935.94	31.33	46.48	-92.23	3,244.29	3,024.21	3,674.14	3,599.02	75.12	48.913	
8,000.00	6,949.38	7,180.03	6,934.34	32.33	46.48	-92.20	3,244.34	3,024.23	3,629.42	3,553.43	75.99	47.761	
8,100.00	6,949.29	7,178.48	6,932.79	33.38	46.47	-92.17	3,244.39	3,024.24	3,586.93	3,509.99	76.94	46.620	
8,200.00	6,949.20	7,176.98	6,931.29	34.47	46.47	-92.15	3,244.44	3,024.26	3,546.75	3,468.79	77.96	45.496	
8,300.00	6,949.11	7,175.51	6,929.83	35.60	46.47	-92.12	3,244.48	3,024.28	3,508.96	3,429.92	79.03	44.397	
8,400.00	6,949.02	7,174.09	6,928.41	36.76	46.46	-92.10	3,244.53	3,024.30	3,473.63	3,393.46	80.17	43.328	
8,500.00	6,948.93	7,172.71	6,927.02	37.96	46.46	-92.07	3,244.57	3,024.31	3,440.86	3,359.50	81.36	42.293	
8,600.00	6,948.84	7,171.36	6,925.68	39.18	46.46	-92.05	3,244.62	3,024.33	3,410.70	3,328.11	82.59	41.297	
8,700.00	6,948.75	7,170.05	6,924.37	40.43	46.46	-92.03	3,244.66	3,024.34	3,383.22	3,299.36	83.86	40.344	
8,800.00	6,948.66	7,168.77	6,923.09	41.71	46.45	-92.00	3,244.70	3,024.35	3,358.50	3,273.34	85.16	39.436	
8,900.00	6,948.57	7,167.53	6,921.85	43.00	46.45	-91.98	3,244.74	3,024.37	3,336.60	3,250.11	86.49	38.577	

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 #722H - Slot B05
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 #722H	**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
9,000.00	6,948.48	7,166.32	6,920.64	44.32	46.45	-91.96	3,244.78	3,024.38	3,317.56	3,229.73	87.84	37.769	
9,100.00	6,948.39	7,165.13	6,919.46	45.66	46.45	-91.94	3,244.82	3,024.39	3,301.45	3,212.25	89.20	37.013	
9,200.00	6,948.30	7,163.98	6,918.30	47.01	46.44	-91.92	3,244.85	3,024.41	3,288.30	3,197.74	90.56	36.310	
9,300.00	6,948.21	7,162.86	6,917.18	48.38	46.44	-91.90	3,244.89	3,024.42	3,278.15	3,186.22	91.93	35.661	
9,400.00	6,948.12	7,161.76	6,916.08	49.76	46.44	-91.88	3,244.93	3,024.43	3,271.02	3,177.74	93.28	35.066	
9,500.00	6,948.03	7,160.69	6,915.01	51.16	46.44	-91.86	3,244.96	3,024.44	3,266.94	3,172.32	94.63	34.525	
9,583.36	6,947.95	7,159.82	6,914.14	52.33	46.43	-91.85	3,244.99	3,024.45	3,265.88	3,170.15	95.73	34.115	
9,600.00	6,947.94	7,159.64	6,913.97	52.56	46.43	-91.84	3,244.99	3,024.45	3,265.92	3,169.97	95.95	34.038	
9,700.00	6,947.85	7,158.62	6,912.95	53.98	46.43	-91.82	3,245.03	3,024.46	3,267.96	3,170.71	97.25	33.604	
9,800.00	6,947.76	7,157.63	6,911.95	55.41	46.43	-91.81	3,245.06	3,024.47	3,273.06	3,174.54	98.52	33.222	
9,900.00	6,947.67	7,156.65	6,910.98	56.85	46.43	-91.79	3,245.09	3,024.48	3,281.19	3,181.43	99.76	32.892	
10,000.00	6,947.58	7,155.70	6,910.03	58.29	46.43	-91.77	3,245.12	3,024.49	3,292.35	3,191.39	100.96	32.611	
10,100.00	6,947.49	7,154.77	6,909.09	59.75	46.42	-91.76	3,245.15	3,024.50	3,306.49	3,204.37	102.12	32.379	
10,200.00	6,947.40	7,153.86	6,908.18	61.21	46.42	-91.74	3,245.18	3,024.50	3,323.58	3,220.35	103.23	32.195	
10,300.00	6,947.31	7,152.97	6,907.29	62.68	46.42	-91.73	3,245.21	3,024.51	3,343.58	3,239.27	104.30	32.056	
10,400.00	6,947.22	7,152.10	6,906.42	64.15	46.42	-91.71	3,245.23	3,024.52	3,366.42	3,261.10	105.33	31.962	
10,500.00	6,947.13	7,151.24	6,905.57	65.63	46.42	-91.70	3,245.26	3,024.53	3,392.07	3,285.77	106.30	31.911	
10,600.00	6,947.04	7,150.41	6,904.74	67.12	46.41	-91.68	3,245.29	3,024.53	3,420.44	3,313.22	107.22	31.900 SF	
10,700.00	6,946.95	7,149.59	6,903.92	68.61	46.41	-91.67	3,245.31	3,024.54	3,451.48	3,343.39	108.10	31.929	
10,800.00	6,946.86	7,148.79	6,903.12	70.11	46.41	-91.65	3,245.34	3,024.55	3,485.12	3,376.20	108.92	31.997	
10,900.00	6,946.77	7,148.01	6,902.34	71.61	46.41	-91.64	3,245.36	3,024.56	3,521.27	3,411.58	109.70	32.100	
11,000.00	6,946.68	7,147.24	6,901.57	73.11	46.41	-91.62	3,245.39	3,024.56	3,559.87	3,449.45	110.42	32.239	
11,100.00	6,946.59	7,146.48	6,900.82	74.62	46.41	-91.61	3,245.41	3,024.57	3,600.83	3,489.73	111.10	32.410	
11,200.00	6,946.50	7,145.75	6,900.08	76.14	46.40	-91.60	3,245.43	3,024.57	3,644.08	3,532.34	111.73	32.614	
11,300.00	6,946.41	7,145.02	6,899.36	77.65	46.40	-91.59	3,245.46	3,024.58	3,689.52	3,577.20	112.32	32.848	
11,400.00	6,946.32	7,144.31	6,898.65	79.18	46.40	-91.57	3,245.48	3,024.59	3,737.10	3,624.23	112.86	33.111	
11,500.00	6,946.23	7,143.62	6,897.95	80.70	46.40	-91.56	3,245.50	3,024.59	3,786.71	3,673.34	113.37	33.402	
11,600.00	6,946.14	7,142.94	6,897.27	82.23	46.40	-91.55	3,245.52	3,024.60	3,838.29	3,724.46	113.83	33.719	
11,700.00	6,946.05	7,142.27	6,896.60	83.76	46.40	-91.54	3,245.54	3,024.60	3,891.76	3,777.50	114.26	34.062	
11,800.00	6,945.96	7,141.61	6,895.94	85.29	46.40	-91.53	3,245.57	3,024.61	3,947.04	3,832.39	114.65	34.428	
11,900.00	6,945.87	7,140.97	6,895.30	86.82	46.39	-91.51	3,245.59	3,024.61	4,004.05	3,889.04	115.00	34.817	
12,000.00	6,945.78	7,140.33	6,894.67	88.36	46.39	-91.50	3,245.61	3,024.62	4,062.72	3,947.39	115.33	35.228	
12,100.00	6,945.69	7,139.71	6,894.05	89.90	46.39	-91.49	3,245.63	3,024.62	4,122.98	4,007.36	115.62	35.660	
12,200.00	6,945.60	7,139.10	6,893.44	91.44	46.39	-91.48	3,245.64	3,024.63	4,184.77	4,068.88	115.89	36.111	
12,300.00	6,945.51	7,138.50	6,892.84	92.99	46.39	-91.47	3,245.66	3,024.63	4,248.01	4,131.88	116.13	36.581	
12,400.00	6,945.42	7,137.92	6,892.25	94.53	46.39	-91.46	3,245.68	3,024.64	4,312.64	4,196.30	116.34	37.069	
12,500.00	6,945.33	7,137.34	6,891.67	96.08	46.39	-91.45	3,245.70	3,024.64	4,378.60	4,262.07	116.53	37.574	
12,600.00	6,945.24	7,136.77	6,891.11	97.63	46.39	-91.44	3,245.72	3,024.64	4,445.83	4,329.13	116.71	38.094	
12,700.00	6,945.15	7,136.21	6,890.55	99.18	46.38	-91.43	3,245.74	3,024.65	4,514.28	4,397.42	116.86	38.631	
12,800.00	6,945.06	7,135.66	6,890.00	100.74	46.38	-91.42	3,245.75	3,024.65	4,583.89	4,466.90	116.99	39.182	
12,900.00	6,944.96	7,135.12	6,889.46	102.29	46.38	-91.41	3,245.77	3,024.66	4,654.60	4,537.49	117.11	39.747	
13,000.00	6,944.87	7,134.59	6,888.93	103.85	46.38	-91.40	3,245.79	3,024.66	4,726.37	4,609.16	117.21	40.325	
13,100.00	6,944.78	7,134.07	6,888.41	105.40	46.38	-91.39	3,245.80	3,024.66	4,799.15	4,681.86	117.29	40.915	
13,200.00	6,944.69	7,133.56	6,887.90	106.96	46.38	-91.39	3,245.82	3,024.67	4,872.90	4,755.53	117.37	41.518	
13,300.00	6,944.60	7,133.06	6,887.40	108.52	46.38	-91.38	3,245.84	3,024.67	4,947.57	4,830.14	117.43	42.132	
13,400.00	6,944.51	7,132.56	6,886.90	110.08	46.38	-91.37	3,245.85	3,024.67	5,023.12	4,905.64	117.48	42.758	
13,500.00	6,944.42	7,132.07	6,886.41	111.65	46.38	-91.36	3,245.87	3,024.68	5,099.51	4,981.99	117.52	43.393	
13,600.00	6,944.33	7,131.59	6,885.93	113.21	46.38	-91.35	3,245.88	3,024.68	5,176.71	5,059.16	117.55	44.039	
13,700.00	6,944.24	7,131.12	6,885.46	114.78	46.37	-91.34	3,245.90	3,024.68	5,254.67	5,137.10	117.57	44.693	
13,800.00	6,944.15	7,130.66	6,885.00	116.34	46.37	-91.33	3,245.91	3,024.69	5,333.37	5,215.79	117.59	45.357	
13,900.00	6,944.06	7,130.20	6,884.54	117.91	46.37	-91.33	3,245.92	3,024.69	5,412.78	5,295.18	117.59	46.030	
14,000.00	6,943.97	7,129.75	6,884.09	119.48	46.37	-91.32	3,245.94	3,024.69	5,492.85	5,375.26	117.59	46.711	

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 #722H - Slot B05
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 #722H	**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
14,100.00	6,943.88	7,129.31	6,883.65	121.05	46.37	-91.31	3,245.95	3,024.69	5,573.57	5,455.98	117.59	47.399	
14,200.00	6,943.79	7,128.87	6,883.21	122.62	46.37	-91.30	3,245.97	3,024.70	5,654.91	5,537.33	117.58	48.095	
14,300.00	6,943.70	7,128.44	6,882.78	124.19	46.37	-91.30	3,245.98	3,024.70	5,736.83	5,619.27	117.56	48.798	
14,400.00	6,943.61	7,128.01	6,882.36	125.76	46.37	-91.29	3,245.99	3,024.70	5,819.33	5,701.78	117.54	49.508	
14,500.00	6,943.52	7,127.60	6,881.94	127.33	46.37	-91.28	3,246.01	3,024.71	5,902.36	5,784.84	117.52	50.224	
14,600.00	6,943.43	7,127.19	6,881.53	128.90	46.37	-91.27	3,246.02	3,024.71	5,985.91	5,868.42	117.49	50.947	
14,700.00	6,943.34	7,126.78	6,881.12	130.48	46.37	-91.27	3,246.03	3,024.71	6,069.96	5,952.49	117.46	51.675	
14,800.00	6,943.25	7,126.38	6,880.72	132.05	46.36	-91.26	3,246.04	3,024.71	6,154.48	6,037.05	117.43	52.409	
14,900.00	6,943.16	7,125.99	6,880.33	133.63	46.36	-91.25	3,246.06	3,024.72	6,239.47	6,122.07	117.40	53.149	
15,000.00	6,943.07	7,125.60	6,879.94	135.20	46.36	-91.25	3,246.07	3,024.72	6,324.89	6,207.53	117.36	53.893	
15,100.00	6,942.98	7,125.22	6,879.56	136.78	46.36	-91.24	3,246.08	3,024.72	6,410.73	6,293.41	117.32	54.642	
15,200.00	6,942.89	7,124.84	6,879.19	138.36	46.36	-91.23	3,246.09	3,024.72	6,496.98	6,379.70	117.28	55.397	
15,300.00	6,942.80	7,124.47	6,878.81	139.93	46.36	-91.23	3,246.10	3,024.72	6,583.62	6,466.38	117.24	56.155	
15,400.00	6,942.71	7,124.11	6,878.45	141.51	46.36	-91.22	3,246.12	3,024.73	6,670.63	6,553.43	117.20	56.918	
15,500.00	6,942.62	7,123.75	6,878.09	143.09	46.36	-91.21	3,246.13	3,024.73	6,758.00	6,640.85	117.15	57.685	
15,600.00	6,942.53	7,123.39	6,877.73	144.67	46.36	-91.21	3,246.14	3,024.73	6,845.72	6,728.61	117.11	58.456	
15,700.00	6,942.44	7,123.04	6,877.38	146.25	46.36	-91.20	3,246.15	3,024.73	6,933.77	6,816.70	117.06	59.230	
15,800.00	6,942.35	7,122.69	6,877.04	147.83	46.36	-91.19	3,246.16	3,024.73	7,022.14	6,905.12	117.02	60.008	
15,900.00	6,942.26	7,122.35	6,876.69	149.41	46.36	-91.19	3,246.17	3,024.74	7,110.81	6,993.84	116.97	60.790	
16,000.00	6,942.17	7,122.01	6,876.36	150.99	46.36	-91.18	3,246.18	3,024.74	7,199.79	7,082.86	116.93	61.575	
16,100.00	6,942.08	7,121.68	6,876.03	152.57	46.35	-91.18	3,246.19	3,024.74	7,289.05	7,172.17	116.88	62.362	
16,200.00	6,941.99	7,121.35	6,875.70	154.16	46.35	-91.17	3,246.20	3,024.74	7,378.58	7,261.75	116.84	63.153	
16,300.00	6,941.90	7,121.03	6,875.37	155.74	46.35	-91.17	3,246.21	3,024.74	7,468.38	7,351.59	116.79	63.947	
16,400.00	6,941.81	7,120.71	6,875.05	157.32	46.35	-91.16	3,246.22	3,024.75	7,558.44	7,441.70	116.75	64.743	
16,500.00	6,941.72	7,120.39	6,874.74	158.91	46.35	-91.15	3,246.23	3,024.75	7,648.75	7,532.04	116.70	65.541	
16,600.00	6,941.63	7,120.08	6,874.43	160.49	46.35	-91.15	3,246.24	3,024.75	7,739.29	7,622.63	116.66	66.343	
16,700.00	6,941.54	7,119.78	6,874.12	162.07	46.35	-91.14	3,246.25	3,024.75	7,830.06	7,713.45	116.61	67.146	
16,800.00	6,941.45	7,119.47	6,873.82	163.66	46.35	-91.14	3,246.26	3,024.75	7,921.05	7,804.49	116.57	67.952	
16,900.00	6,941.36	7,119.17	6,873.52	165.24	46.35	-91.13	3,246.27	3,024.75	8,012.26	7,895.74	116.53	68.760	
17,000.00	6,941.27	7,118.88	6,873.22	166.83	46.35	-91.13	3,246.28	3,024.76	8,103.68	7,987.20	116.48	69.569	
17,100.00	6,941.18	7,118.59	6,872.93	168.42	46.35	-91.12	3,246.29	3,024.76	8,195.30	8,078.86	116.44	70.381	
17,200.00	6,941.09	7,118.30	6,872.64	170.00	46.35	-91.12	3,246.30	3,024.76	8,287.11	8,170.71	116.40	71.194	
17,300.00	6,941.00	7,118.01	6,872.36	171.59	46.35	-91.11	3,246.31	3,024.76	8,379.11	8,262.75	116.36	72.010	
17,400.00	6,940.91	7,117.73	6,872.08	173.18	46.35	-91.11	3,246.32	3,024.76	8,471.29	8,354.97	116.32	72.826	
17,500.00	6,940.82	7,117.45	6,871.80	174.76	46.35	-91.10	3,246.32	3,024.76	8,563.64	8,447.36	116.28	73.645	
17,600.00	6,940.73	7,117.18	6,871.53	176.35	46.35	-91.10	3,246.33	3,024.76	8,656.17	8,539.92	116.25	74.465	
17,700.00	6,940.64	7,116.91	6,871.25	177.94	46.34	-91.09	3,246.34	3,024.77	8,748.86	8,632.65	116.21	75.286	
17,800.00	6,940.55	7,116.64	6,870.99	179.53	46.34	-91.09	3,246.35	3,024.77	8,841.71	8,725.53	116.17	76.108	
17,900.00	6,940.46	7,116.38	6,870.72	181.11	46.34	-91.08	3,246.36	3,024.77	8,934.71	8,818.57	116.14	76.932	
18,000.00	6,940.37	7,116.11	6,870.46	182.70	46.34	-91.08	3,246.37	3,024.77	9,027.86	8,911.76	116.10	77.757	
18,100.00	6,940.28	7,115.86	6,870.20	184.29	46.34	-91.07	3,246.37	3,024.77	9,121.16	9,005.09	116.07	78.583	
18,200.00	6,940.19	7,115.60	6,869.95	185.88	46.34	-91.07	3,246.38	3,024.77	9,214.60	9,098.56	116.04	79.410	
18,300.00	6,940.10	7,115.35	6,869.70	187.47	46.34	-91.07	3,246.39	3,024.77	9,308.17	9,192.17	116.01	80.237	
18,400.00	6,940.01	7,115.10	6,869.45	189.06	46.34	-91.06	3,246.40	3,024.77	9,401.88	9,285.90	115.98	81.066	
18,500.00	6,939.92	7,114.85	6,869.20	190.65	46.34	-91.06	3,246.40	3,024.78	9,495.72	9,379.77	115.95	81.896	
18,600.00	6,939.83	7,114.61	6,868.96	192.24	46.34	-91.05	3,246.41	3,024.78	9,589.68	9,473.76	115.92	82.726	
18,700.00	6,939.74	7,114.37	6,868.71	193.83	46.34	-91.05	3,246.42	3,024.78	9,683.76	9,567.86	115.89	83.557	
18,800.00	6,939.65	7,114.13	6,868.48	195.42	46.34	-91.04	3,246.43	3,024.78	9,777.96	9,662.09	115.87	84.389	
18,900.00	6,939.56	7,113.89	6,868.24	197.01	46.34	-91.04	3,246.43	3,024.78	9,872.27	9,756.43	115.84	85.222	
19,000.00	6,939.47	7,113.66	6,868.01	198.60	46.34	-91.04	3,246.44	3,024.78	9,966.69	9,850.87	115.82	86.055	
19,100.00	6,939.38	7,113.43	6,867.78	200.19	46.34	-91.03	3,246.45	3,024.78	10,061.22	9,945.43	115.80	86.888	
19,200.00	6,939.29	7,113.20	6,867.55	201.78	46.34	-91.03	3,246.46	3,024.78	10,155.86	10,040.09	115.77	87.722	

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 #722H - Slot B05
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 #722H	**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)	Rule Assigned: Distance Between Centres (usft)	Rule Assigned: Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
19,300.00	6,939.20	7,112.98	6,867.33	203.37	46.34	-91.02	3,246.46	3,024.78	10,250.60	10,134.85	115.75	88.556	
19,400.00	6,939.11	7,112.75	6,867.10	204.97	46.34	-91.02	3,246.47	3,024.79	10,345.43	10,229.70	115.73	89.391	
19,500.00	6,939.02	7,112.53	6,866.88	206.56	46.34	-91.02	3,246.48	3,024.79	10,440.37	10,324.65	115.71	90.226	
19,600.00	6,938.93	7,112.32	6,866.66	208.15	46.34	-91.01	3,246.48	3,024.79	10,535.39	10,419.70	115.70	91.062	
19,700.00	6,938.83	7,112.10	6,866.45	209.74	46.33	-91.01	3,246.49	3,024.79	10,630.51	10,514.83	115.68	91.897	
19,800.00	6,938.74	7,111.89	6,866.24	211.33	46.33	-91.00	3,246.50	3,024.79	10,725.72	10,610.06	115.66	92.733	
19,900.00	6,938.65	7,111.68	6,866.02	212.93	46.33	-91.00	3,246.50	3,024.79	10,821.01	10,705.37	115.65	93.569	
20,000.00	6,938.56	7,111.47	6,865.82	214.52	46.33	-91.00	3,246.51	3,024.79	10,916.39	10,800.76	115.63	94.405	
20,100.00	6,938.47	7,111.26	6,865.61	216.11	46.33	-90.99	3,246.52	3,024.79	11,011.85	10,896.23	115.62	95.241	
20,200.00	6,938.38	7,111.06	6,865.40	217.71	46.33	-90.99	3,246.52	3,024.79	11,107.39	10,991.78	115.61	96.078	
20,300.00	6,938.29	7,110.85	6,865.20	219.30	46.33	-90.99	3,246.53	3,024.79	11,203.01	11,087.41	115.60	96.914	
20,400.00	6,938.20	7,110.65	6,865.00	220.89	46.33	-90.98	3,246.54	3,024.80	11,298.70	11,183.11	115.59	97.750	
20,500.00	6,938.11	7,110.45	6,864.80	222.49	46.33	-90.98	3,246.54	3,024.80	11,394.47	11,278.89	115.58	98.586	
20,600.00	6,938.02	7,110.26	6,864.61	224.08	46.33	-90.98	3,246.55	3,024.80	11,490.31	11,374.74	115.57	99.423	
20,626.08	6,938.00	7,110.21	6,864.56	224.49	46.33	-90.98	3,246.55	3,024.80	11,515.32	11,399.75	115.57	99.641	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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)	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	74.19	1,088.10	3,843.36	3,994.57				
100.00	100.00	65.00	65.00	0.25	0.58	74.19	1,088.10	3,843.36	3,994.41	3,993.59	0.83	4,830.495	
200.00	200.00	165.00	165.00	0.61	1.46	74.19	1,088.10	3,843.36	3,994.41	3,992.34	2.07	1,928.540	
300.00	300.00	265.00	265.00	0.97	2.35	74.19	1,088.10	3,843.36	3,994.41	3,991.10	3.32	1,204.767	
400.00	400.00	365.00	365.00	1.33	3.23	74.19	1,088.10	3,843.36	3,994.41	3,989.85	4.56	876.006	
500.00	500.00	465.00	465.00	1.68	4.12	74.19	1,088.10	3,843.36	3,994.41	3,988.61	5.80	688.206	
535.00	535.00	500.00	500.00	1.81	4.43	63.53	1,088.10	3,843.36	3,994.32	3,988.08	6.24	640.164	
600.00	599.99	564.99	564.99	2.04	5.01	63.54	1,088.10	3,843.36	3,993.97	3,986.92	7.05	566.691	
700.00	699.99	664.99	664.99	2.40	5.89	63.55	1,088.10	3,843.36	3,993.42	3,985.13	8.29	481.622	
800.00	799.98	764.98	764.98	2.76	6.78	63.57	1,088.10	3,843.36	3,992.88	3,983.34	9.54	418.741	
900.00	899.97	864.97	864.97	3.12	7.89	63.58	1,088.10	3,843.36	3,992.33	3,981.32	11.01	362.627	
1,000.00	999.96	965.84	965.84	3.48	9.68	63.60	1,088.19	3,843.36	3,991.81	3,978.66	13.15	303.450	
1,100.00	1,099.96	1,064.96	1,064.96	3.84	11.46	63.62	1,088.10	3,843.36	3,991.25	3,975.95	15.30	260.945	
1,200.00	1,199.95	1,164.95	1,164.95	4.19	13.30	63.63	1,088.10	3,843.36	3,990.70	3,973.21	17.49	228.180	
1,300.00	1,299.94	1,264.95	1,264.94	4.55	15.13	63.65	1,088.10	3,843.36	3,990.16	3,970.48	19.68	202.719	
1,400.00	1,399.93	1,365.57	1,365.57	4.91	16.98	63.66	1,088.37	3,843.36	3,989.69	3,967.80	21.89	182.271	
1,500.00	1,499.93	1,466.45	1,466.44	5.27	18.83	63.68	1,088.27	3,843.36	3,989.12	3,965.02	24.10	165.531	
1,600.00	1,599.92	1,564.95	1,564.92	5.63	20.64	63.69	1,088.10	3,843.36	3,988.54	3,962.27	26.27	151.830	
1,700.00	1,699.91	1,664.94	1,664.91	5.99	22.63	63.71	1,088.10	3,843.36	3,987.99	3,959.38	28.61	139.385	
1,800.00	1,799.90	1,764.93	1,764.90	6.34	24.61	63.73	1,088.10	3,843.36	3,987.45	3,956.50	30.95	128.823	
1,900.00	1,899.90	1,867.12	1,867.09	6.70	26.64	63.73	1,088.79	3,843.36	3,987.10	3,953.76	33.34	119.595	
2,000.00	1,999.89	1,970.23	1,970.20	7.06	28.68	63.75	1,088.43	3,843.36	3,986.46	3,950.72	35.74	111.535	
2,100.00	2,099.88	2,064.96	2,064.88	7.42	30.57	63.77	1,088.10	3,843.36	3,985.83	3,947.84	37.99	104.918	
2,200.00	2,199.87	2,164.96	2,164.87	7.78	32.59	63.79	1,088.10	3,843.36	3,985.29	3,944.93	40.36	98.743	
2,300.00	2,299.87	2,266.52	2,266.43	8.14	34.63	63.79	1,088.97	3,843.36	3,984.99	3,942.22	42.76	93.190	
2,400.00	2,399.86	2,371.29	2,371.19	8.50	36.74	63.81	1,088.58	3,843.36	3,984.35	3,939.12	45.23	88.095	
2,500.00	2,499.85	2,464.98	2,464.85	8.85	38.63	63.84	1,088.10	3,843.36	3,983.67	3,936.20	47.48	83.910	
2,600.00	2,599.85	2,564.97	2,564.85	9.21	40.65	63.85	1,088.10	3,843.36	3,983.14	3,933.28	49.86	79.887	
2,700.00	2,699.84	2,664.97	2,664.84	9.57	42.68	63.87	1,088.10	3,843.36	3,982.60	3,930.35	52.24	76.231	
2,800.00	2,799.83	2,764.96	2,764.83	9.93	44.70	63.88	1,088.10	3,843.36	3,982.06	3,927.43	54.63	72.894	
2,900.00	2,899.82	2,866.83	2,866.69	10.29	46.77	63.88	1,089.13	3,843.36	3,981.80	3,924.74	57.05	69.794	
3,000.00	2,999.82	2,968.93	2,968.78	10.65	48.84	63.90	1,088.85	3,843.36	3,981.18	3,921.71	59.48	66.936	
3,100.00	3,099.81	3,071.02	3,070.87	11.01	50.90	63.93	1,088.36	3,843.36	3,980.52	3,918.62	61.90	64.301	
3,200.00	3,199.80	3,165.01	3,164.80	11.36	52.81	63.95	1,088.10	3,843.36	3,979.91	3,915.74	64.17	62.020	
3,300.00	3,299.79	3,265.00	3,264.79	11.72	54.85	63.96	1,088.10	3,843.36	3,979.37	3,912.81	66.56	59.784	
3,400.00	3,399.79	3,364.99	3,364.79	12.08	56.88	63.98	1,088.10	3,843.36	3,978.84	3,909.88	68.95	57.702	
3,500.00	3,499.78	3,467.95	3,467.72	12.44	58.97	63.98	1,089.15	3,843.36	3,978.58	3,907.17	71.41	55.717	
3,600.00	3,599.77	3,571.51	3,571.28	12.80	61.08	64.00	1,088.69	3,843.36	3,977.93	3,904.05	73.87	53.850	
3,700.00	3,699.76	3,665.03	3,664.76	13.16	62.98	64.03	1,088.10	3,843.36	3,977.23	3,901.10	76.13	52.242	
3,800.00	3,799.76	3,765.03	3,764.76	13.52	65.02	64.04	1,088.10	3,843.36	3,976.70	3,898.17	78.53	50.641	
3,900.00	3,899.75	3,865.02	3,864.75	13.87	67.05	64.06	1,088.10	3,843.36	3,976.16	3,895.24	80.92	49.136	
4,000.00	3,999.74	3,966.85	3,966.57	14.23	69.13	64.06	1,088.86	3,843.36	3,975.83	3,892.47	83.35	47.698	
4,100.00	4,099.73	4,069.67	4,069.39	14.59	71.22	64.08	1,088.54	3,843.36	3,975.21	3,889.40	85.81	46.328	
4,200.00	4,199.73	4,165.06	4,164.73	14.95	73.30	64.10	1,088.10	3,843.36	3,974.56	3,886.31	88.25	45.040	
4,300.00	4,299.72	4,265.05	4,264.72	15.31	76.25	64.12	1,088.10	3,843.36	3,974.03	3,882.47	91.55	43.407	
4,400.00	4,399.71	4,365.04	4,364.71	15.67	79.20	64.14	1,088.10	3,843.36	3,973.49	3,878.63	94.86	41.888	
4,500.00	4,499.70	4,467.53	4,467.19	16.03	82.22	64.14	1,089.11	3,843.36	3,973.22	3,874.98	98.24	40.444	
4,600.00	4,599.70	4,571.32	4,570.97	16.38	85.28	64.16	1,088.67	3,843.36	3,972.58	3,870.92	101.66	39.077	
4,700.00	4,699.69	4,665.50	4,664.69	16.74	88.25	64.18	1,088.10	3,843.36	3,971.89	3,866.91	104.99	37.832	
4,800.00	4,799.68	4,769.79	4,768.92	17.10	92.54	64.18	1,089.83	3,843.36	3,971.82	3,862.18	109.63	36.229	
4,900.00	4,899.67	4,865.97	4,864.67	17.46	96.50	64.22	1,088.10	3,843.36	3,970.83	3,856.88	113.95	34.847	
5,000.00	4,999.67	4,965.96	4,964.67	17.82	100.97	64.23	1,088.10	3,843.36	3,970.30	3,851.52	118.78	33.426	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	5,065.96	5,064.66	18.18	105.44	64.25	1,088.10	3,843.36	3,969.77	3,846.16	123.61	32.116	
5,145.00	5,144.66	5,110.95	5,109.66	18.34	107.45	64.25	1,088.10	3,843.36	3,969.53	3,843.75	125.78	31.560	
5,200.00	5,199.65	5,175.01	5,173.51	18.53	110.31	64.21	1,092.19	3,843.36	3,970.31	3,841.47	128.84	30.816	
5,300.00	5,299.64	5,292.33	5,290.73	18.89	115.56	64.25	1,090.22	3,843.36	3,969.34	3,834.91	134.44	29.526	
5,400.00	5,399.64	5,367.15	5,364.64	19.25	118.91	64.29	1,088.10	3,843.36	3,968.18	3,830.03	138.15	28.723	
5,500.00	5,499.63	5,467.15	5,464.63	19.61	123.62	64.31	1,088.10	3,843.36	3,967.65	3,824.43	143.22	27.703	
5,600.00	5,599.62	5,567.14	5,564.62	19.97	128.33	64.33	1,088.10	3,843.36	3,967.12	3,818.83	148.29	26.752	
5,650.50	5,650.12	5,617.63	5,615.12	20.15	130.71	64.33	1,088.10	3,843.36	3,966.85	3,816.00	150.85	26.296	
5,700.00	5,699.61	5,674.09	5,671.39	20.33	133.37	64.28	1,092.48	3,843.36	3,967.73	3,814.04	153.69	25.817	
5,800.00	5,799.61	5,790.46	5,787.65	20.69	138.86	64.32	1,090.80	3,843.36	3,966.82	3,807.30	159.53	24.866	
5,900.00	5,899.60	5,906.92	5,903.94	21.04	144.34	64.39	1,087.31	3,843.36	3,965.52	3,800.15	165.37	23.980	
6,000.00	5,999.59	5,968.38	5,964.59	21.40	147.35	64.39	1,088.10	3,843.36	3,965.00	3,796.26	168.75	23.497	
6,100.00	6,099.58	6,068.37	6,064.58	21.76	152.21	64.41	1,088.10	3,843.36	3,964.47	3,790.52	173.96	22.790	
6,150.50	6,150.08	6,118.87	6,115.08	21.94	154.66	64.41	1,088.10	3,843.36	3,964.21	3,787.62	176.59	22.449	
6,200.00	6,199.58	6,172.19	6,168.22	22.12	157.24	64.36	1,092.57	3,843.36	3,965.10	3,785.75	179.35	22.108	
6,300.00	6,299.57	6,288.53	6,284.47	22.48	162.89	64.40	1,091.23	3,843.36	3,964.27	3,778.92	185.35	21.387	
6,315.05	6,314.62	6,306.04	6,301.97	22.53	163.74	64.41	1,090.87	3,843.36	3,964.12	3,777.86	186.26	21.283	
6,350.00	6,349.55	6,346.71	6,342.59	22.66	165.71	-4.80	1,089.88	3,843.36	3,962.79	3,774.44	188.35	21.039	
6,400.00	6,399.30	6,405.00	6,399.95	22.83	168.54	-11.82	1,088.10	3,843.36	3,957.64	3,766.28	191.35	20.683	
6,450.00	6,448.52	6,418.58	6,413.52	23.00	169.21	-13.92	1,088.10	3,843.36	3,948.99	3,756.79	192.20	20.546	
6,500.00	6,496.91	6,466.97	6,461.91	23.18	171.60	-15.16	1,088.10	3,843.36	3,936.84	3,742.08	194.76	20.214	
6,550.00	6,544.17	6,514.23	6,509.17	23.35	173.93	-16.17	1,088.10	3,843.36	3,921.10	3,723.85	197.25	19.879	
6,600.00	6,590.01	6,560.06	6,555.01	23.53	176.20	-17.16	1,088.10	3,843.36	3,901.87	3,702.20	199.67	19.542	
6,650.00	6,634.14	6,604.19	6,599.14	23.70	178.38	-18.24	1,088.10	3,843.36	3,879.27	3,677.28	201.99	19.205	
6,700.00	6,676.30	6,646.35	6,641.30	23.88	180.46	-19.46	1,088.10	3,843.36	3,853.45	3,649.24	204.21	18.870	
6,750.00	6,716.21	6,692.16	6,686.93	24.06	182.72	-20.99	1,092.29	3,843.36	3,825.70	3,619.10	206.60	18.517	
6,800.00	6,753.65	6,736.05	6,730.79	24.24	184.89	-22.73	1,091.91	3,843.36	3,793.87	3,584.99	208.89	18.162	
6,850.00	6,788.37	6,776.79	6,771.50	24.44	186.90	-24.84	1,091.31	3,843.36	3,759.33	3,548.32	211.01	17.816	
6,900.00	6,820.16	6,814.13	6,808.79	24.63	188.74	-27.43	1,090.55	3,843.36	3,722.30	3,509.35	212.94	17.480	
6,950.00	6,848.83	6,847.83	6,842.45	24.84	190.40	-30.64	1,089.70	3,843.36	3,683.03	3,468.33	214.69	17.155	
7,000.00	6,874.19	6,877.67	6,872.25	25.06	191.88	-34.66	1,088.82	3,843.36	3,641.78	3,425.54	216.24	16.841	
7,050.00	6,896.10	6,903.47	6,898.01	25.29	193.15	-39.75	1,087.95	3,843.36	3,598.83	3,381.25	217.58	16.540	
7,100.00	6,914.42	6,925.06	6,919.56	25.53	194.22	-46.21	1,087.15	3,843.36	3,554.47	3,335.76	218.71	16.252	
7,150.00	6,929.03	6,900.29	6,894.03	25.78	192.99	-53.05	1,088.10	3,843.36	3,509.19	3,291.63	217.56	16.130	
7,200.00	6,939.85	6,911.10	6,904.85	26.05	193.52	-62.69	1,088.10	3,843.36	3,463.01	3,244.87	218.13	15.876	
7,250.00	6,946.80	6,918.06	6,911.80	26.32	193.86	-74.07	1,088.10	3,843.36	3,416.25	3,197.74	218.52	15.634	
7,300.00	6,949.85	6,921.11	6,914.85	26.61	194.01	-86.52	1,088.10	3,843.36	3,369.22	3,150.52	218.70	15.405	
7,314.43	6,950.00	6,921.26	6,915.00	26.69	194.01	-90.14	1,088.10	3,843.36	3,355.64	3,136.91	218.72	15.342	
7,400.00	6,949.92	6,921.18	6,914.92	27.21	194.01	-90.14	1,088.10	3,843.36	3,275.24	3,056.45	218.79	14.970	
7,500.00	6,949.83	6,921.09	6,914.83	27.90	194.01	-90.14	1,088.10	3,843.36	3,181.63	2,962.74	218.89	14.535	
7,600.00	6,949.74	6,921.00	6,914.74	28.66	194.00	-90.13	1,088.10	3,843.36	3,088.42	2,869.39	219.02	14.101	
7,700.00	6,949.65	6,920.91	6,914.65	29.49	194.00	-90.13	1,088.10	3,843.36	2,995.64	2,776.46	219.18	13.667	
7,800.00	6,949.56	6,920.82	6,914.56	30.38	193.99	-90.12	1,088.10	3,843.36	2,903.35	2,683.97	219.38	13.234	
7,900.00	6,949.47	6,920.73	6,914.47	31.33	193.99	-90.12	1,088.10	3,843.36	2,811.58	2,591.96	219.61	12.802	
8,000.00	6,949.38	6,920.64	6,914.38	32.33	193.98	-90.11	1,088.10	3,843.36	2,720.39	2,500.50	219.89	12.371	
8,100.00	6,949.29	6,920.55	6,914.29	33.38	193.98	-90.11	1,088.10	3,843.36	2,629.84	2,409.62	220.23	11.942	
8,200.00	6,949.20	6,920.46	6,914.20	34.47	193.98	-90.10	1,088.10	3,843.36	2,540.01	2,319.39	220.62	11.513	
8,300.00	6,949.11	6,920.37	6,914.11	35.60	193.97	-90.10	1,088.10	3,843.36	2,450.95	2,229.88	221.08	11.086	
8,400.00	6,949.02	6,920.28	6,914.02	36.76	193.97	-90.09	1,088.10	3,843.36	2,362.78	2,141.17	221.61	10.662	
8,500.00	6,948.93	6,920.19	6,913.93	37.96	193.96	-90.09	1,088.10	3,843.36	2,275.58	2,053.35	222.23	10.240	
8,600.00	6,948.84	6,920.10	6,913.84	39.18	193.96	-90.09	1,088.10	3,843.36	2,189.48	1,966.54	222.95	9.821	
8,700.00	6,948.75	6,920.01	6,913.75	40.43	193.95	-90.08	1,088.10	3,843.36	2,104.61	1,880.84	223.77	9.405	

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 #722H - Slot B05
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 #722H	**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
8,800.00	6,948.66	6,919.92	6,913.66	41.71	193.95	-90.08	1,088.10	3,843.36	2,021.12	1,796.41	224.71	8.994	
8,900.00	6,948.57	6,919.83	6,913.57	43.00	193.95	-90.07	1,088.10	3,843.36	1,939.20	1,713.41	225.78	8.589	
9,000.00	6,948.48	6,919.74	6,913.48	44.32	193.94	-90.07	1,088.10	3,843.36	1,859.04	1,632.04	227.00	8.190	
9,100.00	6,948.39	6,919.65	6,913.39	45.66	193.94	-90.06	1,088.10	3,843.36	1,780.90	1,552.52	228.38	7.798	
9,200.00	6,948.30	6,919.56	6,913.30	47.01	193.93	-90.06	1,088.10	3,843.36	1,705.04	1,475.11	229.92	7.416	
9,300.00	6,948.21	6,919.47	6,913.21	48.38	193.93	-90.05	1,088.10	3,843.36	1,631.78	1,400.13	231.64	7.044	
9,400.00	6,948.12	6,919.38	6,913.12	49.76	193.92	-90.05	1,088.10	3,843.36	1,561.49	1,327.94	233.55	6.686	
9,500.00	6,948.03	6,919.29	6,913.03	51.16	193.92	-90.04	1,088.10	3,843.36	1,494.59	1,258.94	235.65	6.343	
9,600.00	6,947.94	6,919.20	6,912.94	52.56	193.91	-90.04	1,088.10	3,843.36	1,431.56	1,193.64	237.92	6.017	
9,700.00	6,947.85	6,919.11	6,912.85	53.98	193.91	-90.04	1,088.10	3,843.36	1,372.92	1,132.56	240.36	5.712	
9,800.00	6,947.76	6,919.02	6,912.76	55.41	193.91	-90.03	1,088.10	3,843.36	1,319.26	1,076.32	242.94	5.430	
9,900.00	6,947.67	6,918.93	6,912.67	56.85	193.90	-90.03	1,088.10	3,843.36	1,271.22	1,025.61	245.62	5.176	
10,000.00	6,947.58	6,918.84	6,912.58	58.29	193.90	-90.02	1,088.10	3,843.36	1,229.46	981.13	248.33	4.951	
10,100.00	6,947.49	6,918.75	6,912.49	59.75	193.89	-90.02	1,088.10	3,843.36	1,194.62	943.62	251.00	4.759	
10,200.00	6,947.40	6,918.66	6,912.40	61.21	193.89	-90.01	1,088.10	3,843.36	1,167.33	913.79	253.54	4.604	
10,300.00	6,947.31	6,918.57	6,912.31	62.68	193.88	-90.01	1,088.10	3,843.36	1,148.14	892.27	255.86	4.487	
10,400.00	6,947.22	6,918.48	6,912.22	64.15	193.88	-90.00	1,088.10	3,843.36	1,137.44	879.56	257.88	4.411	
10,472.24	6,947.15	6,918.41	6,912.15	65.22	193.88	-90.00	1,088.10	3,843.36	1,135.14	876.05	259.09	4.381	CC
10,500.00	6,947.13	6,918.39	6,912.13	65.63	193.87	-90.00	1,088.10	3,843.36	1,135.48	875.98	259.50	4.376	ES, SF
10,600.00	6,947.04	6,918.30	6,912.04	67.12	193.87	-89.99	1,088.10	3,843.36	1,142.31	881.61	260.70	4.382	
10,700.00	6,946.95	6,918.21	6,911.95	68.61	193.87	-89.99	1,088.10	3,843.36	1,157.77	896.32	261.44	4.428	
10,800.00	6,946.86	6,918.12	6,911.86	70.11	193.86	-89.99	1,088.10	3,843.36	1,181.51	919.75	261.76	4.514	
10,900.00	6,946.77	6,918.03	6,911.77	71.61	193.86	-89.98	1,088.10	3,843.36	1,213.07	951.38	261.69	4.636	
11,000.00	6,946.68	6,917.94	6,911.68	73.11	193.85	-89.98	1,088.10	3,843.36	1,251.83	990.54	261.29	4.791	
11,100.00	6,946.59	6,917.85	6,911.59	74.62	193.85	-89.97	1,088.10	3,843.36	1,297.16	1,036.54	260.62	4.977	
11,200.00	6,946.50	6,917.76	6,911.50	76.14	193.84	-89.97	1,088.10	3,843.36	1,348.40	1,088.65	259.75	5.191	
11,300.00	6,946.41	6,917.67	6,911.41	77.65	193.84	-89.96	1,088.10	3,843.36	1,404.90	1,146.15	258.75	5.430	
11,400.00	6,946.32	6,917.58	6,911.32	79.18	193.84	-89.96	1,088.10	3,843.36	1,466.04	1,208.39	257.66	5.690	
11,500.00	6,946.23	6,917.49	6,911.23	80.70	193.83	-89.95	1,088.10	3,843.36	1,531.29	1,274.77	256.51	5.970	
11,600.00	6,946.14	6,917.40	6,911.14	82.23	193.83	-89.95	1,088.10	3,843.36	1,600.12	1,344.76	255.36	6.266	
11,700.00	6,946.05	6,917.30	6,911.05	83.76	193.82	-89.94	1,088.10	3,843.36	1,672.11	1,417.89	254.21	6.578	
11,800.00	6,945.96	6,917.21	6,910.96	85.29	193.82	-89.94	1,088.10	3,843.36	1,746.85	1,493.76	253.09	6.902	
11,900.00	6,945.87	6,917.12	6,910.87	86.82	193.81	-89.94	1,088.10	3,843.36	1,824.02	1,572.01	252.01	7.238	
12,000.00	6,945.78	6,917.03	6,910.78	88.36	193.81	-89.93	1,088.10	3,843.36	1,903.31	1,652.35	250.97	7.584	
12,100.00	6,945.69	6,916.94	6,910.69	89.90	193.80	-89.93	1,088.10	3,843.36	1,984.48	1,734.50	249.97	7.939	
12,200.00	6,945.60	6,916.85	6,910.60	91.44	193.80	-89.92	1,088.10	3,843.36	2,067.29	1,818.26	249.03	8.301	
12,300.00	6,945.51	6,916.76	6,910.51	92.99	193.80	-89.92	1,088.10	3,843.36	2,151.57	1,903.43	248.14	8.671	
12,400.00	6,945.42	6,916.67	6,910.42	94.53	193.79	-89.91	1,088.10	3,843.36	2,237.14	1,989.84	247.30	9.046	
12,500.00	6,945.33	6,916.58	6,910.33	96.08	193.79	-89.91	1,088.10	3,843.36	2,323.87	2,077.35	246.51	9.427	
12,600.00	6,945.24	6,916.49	6,910.24	97.63	193.78	-89.90	1,088.10	3,843.36	2,411.62	2,165.85	245.77	9.813	
12,700.00	6,945.15	6,916.40	6,910.15	99.18	193.78	-89.90	1,088.10	3,843.36	2,500.29	2,255.22	245.07	10.202	
12,800.00	6,945.06	6,916.31	6,910.06	100.74	193.77	-89.89	1,088.10	3,843.36	2,589.79	2,345.38	244.41	10.596	
12,900.00	6,944.96	6,916.22	6,909.96	102.29	193.77	-89.89	1,088.10	3,843.36	2,680.03	2,436.23	243.80	10.993	
13,000.00	6,944.87	6,916.13	6,909.87	103.85	193.77	-89.88	1,088.10	3,843.36	2,770.94	2,527.72	243.22	11.393	
13,100.00	6,944.78	6,916.04	6,909.78	105.40	193.76	-89.88	1,088.10	3,843.36	2,862.46	2,619.79	242.67	11.796	
13,200.00	6,944.69	6,915.95	6,909.69	106.96	193.76	-89.88	1,088.10	3,843.36	2,954.52	2,712.37	242.16	12.201	
13,300.00	6,944.60	6,915.86	6,909.60	108.52	193.75	-89.87	1,088.10	3,843.36	3,047.09	2,805.41	241.68	12.608	
13,400.00	6,944.51	6,915.77	6,909.51	110.08	193.75	-89.87	1,088.10	3,843.36	3,140.11	2,898.89	241.22	13.017	
13,500.00	6,944.42	6,915.68	6,909.42	111.65	193.74	-89.86	1,088.10	3,843.36	3,233.55	2,992.75	240.80	13.428	
13,600.00	6,944.33	6,915.59	6,909.33	113.21	193.74	-89.86	1,088.10	3,843.36	3,327.37	3,086.98	240.40	13.841	
13,700.00	6,944.24	6,915.50	6,909.24	114.78	193.73	-89.85	1,088.10	3,843.36	3,421.54	3,181.52	240.02	14.255	
13,800.00	6,944.15	6,915.41	6,909.15	116.34	193.73	-89.85	1,088.10	3,843.36	3,516.04	3,276.37	239.67	14.671	

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 #722H - Slot B05
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 #722H	**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	Rule Assigned: Warning
13,900.00	6,944.06	6,915.32	6,909.06	117.91	193.73	-89.84	1,088.10	3,843.36	3,610.83	3,371.50	239.33	15.087	
14,000.00	6,943.97	6,915.23	6,908.97	119.48	193.72	-89.84	1,088.10	3,843.36	3,705.89	3,466.87	239.02	15.505	
14,100.00	6,943.88	6,915.14	6,908.88	121.05	193.72	-89.83	1,088.10	3,843.36	3,801.21	3,562.49	238.72	15.923	
14,200.00	6,943.79	6,915.05	6,908.79	122.62	193.71	-89.83	1,088.10	3,843.36	3,896.76	3,658.32	238.44	16.343	
14,300.00	6,943.70	6,914.96	6,908.70	124.19	193.71	-89.83	1,088.10	3,843.36	3,992.53	3,754.35	238.17	16.763	
14,400.00	6,943.61	6,914.87	6,908.61	125.76	193.70	-89.82	1,088.10	3,843.36	4,088.50	3,850.58	237.92	17.184	
14,500.00	6,943.52	6,914.78	6,908.52	127.33	193.70	-89.82	1,088.10	3,843.36	4,184.66	3,946.97	237.69	17.606	
14,600.00	6,943.43	6,914.69	6,908.43	128.90	193.69	-89.81	1,088.10	3,843.36	4,281.00	4,043.53	237.47	18.028	
14,700.00	6,943.34	6,914.60	6,908.34	130.48	193.69	-89.81	1,088.10	3,843.36	4,377.50	4,140.24	237.26	18.451	
14,800.00	6,943.25	6,914.51	6,908.25	132.05	193.69	-89.80	1,088.10	3,843.36	4,474.15	4,237.09	237.06	18.874	
14,900.00	6,943.16	6,914.42	6,908.16	133.63	193.68	-89.80	1,088.10	3,843.36	4,570.95	4,334.08	236.87	19.297	
15,000.00	6,943.07	6,914.33	6,908.07	135.20	193.68	-89.79	1,088.10	3,843.36	4,667.88	4,431.19	236.69	19.721	
15,100.00	6,942.98	6,914.24	6,907.98	136.78	193.67	-89.79	1,088.10	3,843.36	4,764.94	4,528.42	236.53	20.145	
15,200.00	6,942.89	6,914.15	6,907.89	138.36	193.67	-89.78	1,088.10	3,843.36	4,862.12	4,625.75	236.37	20.570	
15,300.00	6,942.80	6,914.06	6,907.80	139.93	193.66	-89.78	1,088.10	3,843.36	4,959.41	4,723.19	236.22	20.995	
15,400.00	6,942.71	6,913.97	6,907.71	141.51	193.66	-89.78	1,088.10	3,843.36	5,056.81	4,820.73	236.08	21.420	
15,500.00	6,942.62	6,913.88	6,907.62	143.09	193.66	-89.77	1,088.10	3,843.36	5,154.31	4,918.36	235.95	21.845	
15,600.00	6,942.53	6,913.79	6,907.53	144.67	193.65	-89.77	1,088.10	3,843.36	5,251.90	5,016.07	235.83	22.270	
15,700.00	6,942.44	6,913.70	6,907.44	146.25	193.65	-89.76	1,088.10	3,843.36	5,349.58	5,113.87	235.71	22.696	
15,800.00	6,942.35	6,913.61	6,907.35	147.83	193.64	-89.76	1,088.10	3,843.36	5,447.34	5,211.74	235.60	23.121	
15,900.00	6,942.26	6,913.52	6,907.26	149.41	193.64	-89.75	1,088.10	3,843.36	5,545.19	5,309.69	235.50	23.547	
16,000.00	6,942.17	6,913.43	6,907.17	150.99	193.63	-89.75	1,088.10	3,843.36	5,643.11	5,407.71	235.40	23.973	
16,100.00	6,942.08	6,913.34	6,907.08	152.57	193.63	-89.74	1,088.10	3,843.36	5,741.10	5,505.79	235.31	24.398	
16,200.00	6,941.99	6,913.25	6,906.99	154.16	193.62	-89.74	1,088.10	3,843.36	5,839.16	5,603.93	235.22	24.824	
16,300.00	6,941.90	6,913.16	6,906.90	155.74	193.62	-89.73	1,088.10	3,843.36	5,937.28	5,702.14	235.14	25.250	
16,400.00	6,941.81	6,913.07	6,906.81	157.32	193.62	-89.73	1,088.10	3,843.36	6,035.47	5,800.40	235.07	25.675	
16,500.00	6,941.72	6,912.98	6,906.72	158.91	193.61	-89.73	1,088.10	3,843.36	6,133.71	5,898.71	235.00	26.101	
16,600.00	6,941.63	6,912.89	6,906.63	160.49	193.61	-89.72	1,088.10	3,843.36	6,232.01	5,997.08	234.93	26.527	
16,700.00	6,941.54	6,912.80	6,906.54	162.07	193.60	-89.72	1,088.10	3,843.36	6,330.36	6,095.49	234.87	26.952	
16,800.00	6,941.45	6,912.71	6,906.45	163.66	193.60	-89.71	1,088.10	3,843.36	6,428.77	6,193.95	234.82	27.378	
16,900.00	6,941.36	6,912.62	6,906.36	165.24	193.59	-89.71	1,088.10	3,843.36	6,527.22	6,292.45	234.76	27.803	
17,000.00	6,941.27	6,912.53	6,906.27	166.83	193.59	-89.70	1,088.10	3,843.36	6,625.72	6,391.00	234.72	28.228	
17,100.00	6,941.18	6,912.44	6,906.18	168.42	193.59	-89.70	1,088.10	3,843.36	6,724.26	6,489.59	234.67	28.654	
17,200.00	6,941.09	6,912.35	6,906.09	170.00	193.58	-89.69	1,088.10	3,843.36	6,822.85	6,588.21	234.63	29.079	
17,300.00	6,941.00	6,912.26	6,906.00	171.59	193.58	-89.69	1,088.10	3,843.36	6,921.47	6,686.88	234.60	29.504	
17,400.00	6,940.91	6,912.17	6,905.91	173.18	193.57	-89.68	1,088.10	3,843.36	7,020.14	6,785.57	234.57	29.928	
17,500.00	6,940.82	6,912.08	6,905.82	174.76	193.57	-89.68	1,088.10	3,843.36	7,118.84	6,884.31	234.54	30.353	
17,600.00	6,940.73	6,911.99	6,905.73	176.35	193.56	-89.68	1,088.10	3,843.36	7,217.58	6,983.07	234.51	30.777	
17,700.00	6,940.64	6,911.90	6,905.64	177.94	193.56	-89.67	1,088.10	3,843.36	7,316.35	7,081.86	234.49	31.202	
17,800.00	6,940.55	6,911.81	6,905.55	179.53	193.55	-89.67	1,088.10	3,843.36	7,415.16	7,180.69	234.47	31.626	
17,900.00	6,940.46	6,911.72	6,905.46	181.11	193.55	-89.66	1,088.10	3,843.36	7,513.99	7,279.54	234.45	32.049	
18,000.00	6,940.37	6,911.63	6,905.37	182.70	193.55	-89.66	1,088.10	3,843.36	7,612.86	7,378.42	234.44	32.473	
18,100.00	6,940.28	6,911.54	6,905.28	184.29	193.54	-89.65	1,088.10	3,843.36	7,711.76	7,477.33	234.43	32.896	
18,200.00	6,940.19	6,911.45	6,905.19	185.88	193.54	-89.65	1,088.10	3,843.36	7,810.68	7,576.27	234.42	33.320	
18,300.00	6,940.10	6,911.36	6,905.10	187.47	193.53	-89.64	1,088.10	3,843.36	7,909.63	7,675.22	234.41	33.743	
18,400.00	6,940.01	6,911.27	6,905.01	189.06	193.53	-89.64	1,088.10	3,843.36	8,008.61	7,774.20	234.41	34.165	
18,500.00	6,939.92	6,911.17	6,904.92	190.65	193.52	-89.63	1,088.10	3,843.36	8,107.61	7,873.21	234.41	34.588	
18,600.00	6,939.83	6,911.08	6,904.83	192.24	193.52	-89.63	1,088.10	3,843.36	8,206.64	7,972.23	234.41	35.010	
18,700.00	6,939.74	6,910.99	6,904.74	193.83	193.51	-89.63	1,088.10	3,843.36	8,305.69	8,071.28	234.41	35.432	
18,800.00	6,939.65	6,910.90	6,904.65	195.42	193.51	-89.62	1,088.10	3,843.36	8,404.76	8,170.35	234.42	35.854	
18,900.00	6,939.56	6,910.81	6,904.56	197.01	193.51	-89.62	1,088.10	3,843.36	8,503.86	8,269.43	234.42	36.276	
19,000.00	6,939.47	6,910.72	6,904.47	198.60	193.50	-89.61	1,088.10	3,843.36	8,602.97	8,368.54	234.43	36.697	

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 #722H - Slot B05
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 #722H	**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
19,100.00	6,939.38	6,910.63	6,904.38	200.19	193.50	-89.61	1,088.10	3,843.36	8,702.11	8,467.66	234.45	37.118	
19,200.00	6,939.29	6,910.54	6,904.29	201.78	193.49	-89.60	1,088.10	3,843.36	8,801.26	8,566.81	234.46	37.538	
19,300.00	6,939.20	6,910.45	6,904.20	203.37	193.49	-89.60	1,088.10	3,843.36	8,900.44	8,665.96	234.48	37.959	
19,400.00	6,939.11	6,910.36	6,904.11	204.97	193.48	-89.59	1,088.10	3,843.36	8,999.63	8,765.14	234.49	38.379	
19,500.00	6,939.02	6,910.27	6,904.02	206.56	193.48	-89.59	1,088.10	3,843.36	9,098.84	8,864.33	234.51	38.799	
19,600.00	6,938.93	6,910.18	6,903.93	208.15	193.48	-89.58	1,088.10	3,843.36	9,198.07	8,963.53	234.53	39.218	
19,700.00	6,938.83	6,910.09	6,903.83	209.74	193.47	-89.58	1,088.10	3,843.36	9,297.31	9,062.76	234.56	39.638	
19,800.00	6,938.74	6,910.00	6,903.74	211.33	193.47	-89.58	1,088.10	3,843.36	9,396.57	9,161.99	234.58	40.057	
19,900.00	6,938.65	6,909.91	6,903.65	212.93	193.46	-89.57	1,088.10	3,843.36	9,495.85	9,261.24	234.61	40.475	
20,000.00	6,938.56	6,909.82	6,903.56	214.52	193.46	-89.57	1,088.10	3,843.36	9,595.14	9,360.50	234.64	40.894	
20,100.00	6,938.47	6,909.73	6,903.47	216.11	193.45	-89.56	1,088.10	3,843.36	9,694.44	9,459.78	234.67	41.312	
20,200.00	6,938.38	6,909.64	6,903.38	217.71	193.45	-89.56	1,088.10	3,843.36	9,793.76	9,559.06	234.70	41.729	
20,300.00	6,938.29	6,909.55	6,903.29	219.30	193.44	-89.55	1,088.10	3,843.36	9,893.09	9,658.37	234.73	42.147	
20,400.00	6,938.20	6,909.46	6,903.20	220.89	193.44	-89.55	1,088.10	3,843.36	9,992.44	9,757.68	234.76	42.564	
20,500.00	6,938.11	6,909.37	6,903.11	222.49	193.44	-89.54	1,088.10	3,843.36	10,091.80	9,857.00	234.80	42.981	
20,600.00	6,938.02	6,909.28	6,903.02	224.08	193.43	-89.54	1,088.10	3,843.36	10,191.17	9,956.34	234.84	43.397	
20,626.08	6,938.00	6,909.26	6,903.00	224.49	193.43	-89.54	1,088.10	3,843.36	10,217.09	9,982.25	234.85	43.506	

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 #722H - Slot B05
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 #722H	**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	-97.75	-1,096.50	-8,060.71	8,134.94				
100.00	100.00	116.00	116.00	0.25	1.07	-97.75	-1,096.50	-8,060.71	8,134.94	8,133.62	1.32	6,147.887	
200.00	200.00	216.00	216.00	0.61	2.00	-97.75	-1,096.50	-8,060.71	8,134.94	8,132.34	2.61	3,121.755	
300.00	300.00	316.00	316.00	0.97	2.94	-97.75	-1,096.50	-8,060.71	8,134.94	8,131.04	3.91	2,081.502	
400.00	400.00	416.00	416.00	1.33	4.84	-97.75	-1,096.50	-8,060.71	8,134.94	8,128.78	6.17	1,318.626	
488.49	488.49	504.49	504.49	1.64	6.53	-97.74	-1,096.09	-8,060.71	8,134.89	8,126.72	8.17	995.694	CC
500.00	500.00	515.72	515.72	1.68	6.74	-97.74	-1,096.09	-8,060.71	8,134.89	8,126.46	8.42	965.572	
535.00	535.00	549.87	549.86	1.81	7.39	-108.41	-1,096.11	-8,060.71	8,134.96	8,125.76	9.20	884.243	
600.00	599.99	613.26	613.26	2.04	8.60	-108.42	-1,096.22	-8,060.71	8,135.23	8,124.59	10.64	764.682	
700.00	699.99	716.01	715.99	2.40	10.58	-108.43	-1,096.50	-8,060.71	8,135.65	8,122.67	12.98	626.873	
800.00	799.98	816.01	815.98	2.76	12.61	-108.44	-1,096.50	-8,060.71	8,136.04	8,120.67	15.37	529.511	
900.00	899.97	912.97	912.94	3.12	14.57	-108.44	-1,096.09	-8,060.71	8,136.37	8,118.68	17.69	459.918	
1,000.00	999.96	1,016.03	1,015.96	3.48	16.68	-108.46	-1,096.50	-8,060.71	8,136.81	8,116.66	20.15	403.772	
1,100.00	1,099.96	1,116.02	1,115.96	3.84	18.79	-108.46	-1,096.50	-8,060.71	8,137.20	8,114.57	22.62	359.685	
1,200.00	1,199.95	1,216.01	1,215.95	4.19	20.90	-108.47	-1,096.50	-8,060.71	8,137.58	8,112.49	25.09	324.280	
1,300.00	1,299.94	1,315.42	1,315.34	4.55	23.00	-108.47	-1,095.22	-8,060.71	8,137.80	8,110.24	27.55	295.349	
1,400.00	1,399.93	1,412.26	1,412.18	4.91	25.05	-108.48	-1,095.41	-8,060.71	8,138.21	8,108.25	29.96	271.656	
1,500.00	1,499.93	1,509.10	1,509.01	5.27	27.10	-108.49	-1,095.88	-8,060.71	8,138.66	8,106.30	32.36	251.486	
1,600.00	1,599.92	1,616.07	1,615.92	5.63	29.39	-108.50	-1,096.50	-8,060.71	8,139.13	8,104.11	35.02	232.425	
1,700.00	1,699.91	1,716.09	1,715.91	5.99	31.72	-108.51	-1,096.50	-8,060.71	8,139.52	8,101.82	37.70	215.913	
1,800.00	1,799.90	1,816.08	1,815.90	6.34	34.26	-108.52	-1,096.50	-8,060.71	8,139.91	8,099.30	40.60	200.466	
1,900.00	1,899.90	1,916.08	1,915.90	6.70	36.81	-108.53	-1,096.50	-8,060.71	8,140.30	8,096.79	43.51	187.084	
2,000.00	1,999.89	2,012.82	2,012.61	7.06	39.28	-108.53	-1,094.91	-8,060.71	8,140.47	8,094.13	46.34	175.686	
2,100.00	2,099.88	2,107.46	2,107.24	7.42	41.69	-108.54	-1,095.42	-8,060.71	8,140.93	8,091.82	49.11	165.784	
2,200.00	2,199.87	2,216.26	2,215.87	7.78	44.46	-108.55	-1,096.50	-8,060.71	8,141.46	8,089.23	52.23	155.864	
2,300.00	2,299.87	2,316.25	2,315.87	8.14	46.95	-108.56	-1,096.50	-8,060.71	8,141.85	8,086.77	55.08	147.808	
2,400.00	2,399.86	2,408.80	2,408.39	8.50	49.26	-108.56	-1,095.66	-8,060.71	8,142.13	8,084.38	57.75	140.994	
2,500.00	2,499.85	2,516.33	2,515.85	8.85	51.83	-108.58	-1,096.50	-8,060.71	8,142.63	8,081.95	60.68	134.201	
2,600.00	2,599.85	2,616.33	2,615.85	9.21	53.95	-108.59	-1,096.50	-8,060.71	8,143.02	8,079.86	63.16	128.927	
2,700.00	2,699.84	2,716.32	2,715.84	9.57	56.08	-108.59	-1,096.50	-8,060.71	8,143.41	8,077.76	65.64	124.053	
2,800.00	2,799.83	2,812.54	2,812.04	9.93	58.12	-108.59	-1,095.27	-8,060.71	8,143.63	8,075.58	68.05	119.673	
2,900.00	2,899.82	2,907.87	2,907.36	10.29	60.15	-108.60	-1,095.79	-8,060.71	8,144.09	8,073.66	70.43	115.626	
3,000.00	2,999.82	3,016.37	3,015.82	10.65	62.35	-108.62	-1,096.50	-8,060.71	8,144.58	8,071.59	72.99	111.587	
3,100.00	3,099.81	3,116.37	3,115.81	11.01	64.12	-108.63	-1,096.50	-8,060.71	8,144.97	8,069.85	75.12	108.432	
3,200.00	3,199.80	3,214.58	3,214.02	11.36	65.85	-108.63	-1,095.93	-8,060.71	8,145.28	8,068.07	77.21	105.493	
3,300.00	3,299.79	3,310.73	3,310.17	11.72	67.55	-108.64	-1,096.25	-8,060.71	8,145.72	8,066.44	79.27	102.758	
3,400.00	3,399.79	3,416.36	3,415.79	12.08	69.49	-108.65	-1,096.50	-8,060.71	8,146.14	8,064.58	81.56	99.879	
3,500.00	3,499.78	3,516.35	3,515.78	12.44	71.36	-108.66	-1,096.50	-8,060.71	8,146.53	8,062.74	83.79	97.226	
3,600.00	3,599.77	3,616.34	3,615.77	12.80	73.23	-108.67	-1,096.50	-8,060.71	8,146.92	8,060.90	86.02	94.711	
3,700.00	3,699.76	3,716.16	3,715.59	13.16	75.09	-108.67	-1,096.14	-8,060.71	8,147.26	8,059.02	88.24	92.326	
3,800.00	3,799.76	3,815.43	3,814.85	13.52	76.95	-108.68	-1,096.18	-8,060.71	8,147.66	8,057.20	90.46	90.069	
3,900.00	3,899.75	3,914.69	3,914.11	13.87	78.81	-108.69	-1,096.29	-8,060.71	8,148.07	8,055.39	92.68	87.921	
4,000.00	3,999.74	4,013.95	4,013.37	14.23	80.67	-108.70	-1,096.47	-8,060.71	8,148.48	8,053.59	94.89	85.872	
4,100.00	4,099.73	4,116.35	4,115.73	14.59	83.41	-108.71	-1,096.50	-8,060.71	8,148.88	8,050.89	97.99	83.159	
4,200.00	4,199.73	4,216.34	4,215.73	14.95	86.24	-108.72	-1,096.50	-8,060.71	8,149.27	8,048.09	101.18	80.544	
4,300.00	4,299.72	4,315.32	4,314.69	15.31	89.04	-108.72	-1,095.39	-8,060.71	8,149.51	8,045.17	104.34	78.108	
4,400.00	4,399.71	4,411.61	4,410.98	15.67	91.76	-108.73	-1,095.63	-8,060.71	8,149.93	8,042.52	107.42	75.871	
4,500.00	4,499.70	4,507.91	4,507.27	16.03	94.48	-108.74	-1,096.18	-8,060.71	8,150.41	8,039.91	110.50	73.759	
4,600.00	4,599.70	4,616.66	4,615.70	16.38	98.23	-108.75	-1,096.50	-8,060.71	8,150.84	8,036.23	114.61	71.119	
4,700.00	4,699.69	4,703.31	4,702.29	16.74	101.54	-108.75	-1,095.38	-8,060.71	8,151.09	8,032.82	118.27	68.920	
4,800.00	4,799.68	4,816.99	4,815.68	17.10	106.07	-108.76	-1,096.50	-8,060.71	8,151.63	8,028.46	123.17	66.185	
4,900.00	4,899.67	4,902.95	4,901.58	17.46	109.68	-108.76	-1,095.23	-8,060.71	8,151.85	8,024.73	127.13	64.125	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	5,017.37	5,015.67	17.82	114.64	-108.78	-1,096.50	-8,060.71	8,152.41	8,019.97	132.44	61.553	
5,100.00	5,099.66	5,112.48	5,110.69	18.18	118.91	-108.77	-1,094.38	-8,060.71	8,152.51	8,015.43	137.08	59.473	
5,200.00	5,199.65	5,190.48	5,188.63	18.53	122.42	-108.79	-1,095.46	-8,060.71	8,153.10	8,012.15	140.94	57.846	
5,300.00	5,299.64	5,313.83	5,311.47	18.89	127.94	-108.80	-1,095.16	-8,060.71	8,153.40	8,006.58	146.83	55.531	
5,400.00	5,399.64	5,418.28	5,415.64	19.25	132.52	-108.81	-1,096.50	-8,060.71	8,153.99	8,002.23	151.76	53.729	
5,500.00	5,499.63	5,518.28	5,515.63	19.61	136.72	-108.82	-1,096.50	-8,060.71	8,154.38	7,998.06	156.32	52.164	
5,584.03	5,583.66	5,602.30	5,599.66	19.91	140.25	-108.83	-1,096.50	-8,060.71	8,154.71	7,994.56	160.16	50.917	
5,600.00	5,599.62	5,617.52	5,614.76	19.97	140.89	-108.81	-1,093.02	-8,060.71	8,154.28	7,993.43	160.85	50.694	
5,700.00	5,699.61	5,704.29	5,701.48	20.33	144.54	-108.82	-1,093.57	-8,060.71	8,154.77	7,989.91	164.86	49.465	
5,800.00	5,799.61	5,791.11	5,788.23	20.69	148.19	-108.83	-1,095.14	-8,060.71	8,155.42	7,986.55	168.87	48.295	
5,900.00	5,899.60	5,919.04	5,915.60	21.04	153.80	-108.85	-1,096.50	-8,060.71	8,155.96	7,981.12	174.84	46.649	
6,000.00	5,999.59	6,019.03	6,015.59	21.40	158.31	-108.86	-1,096.50	-8,060.71	8,156.35	7,976.65	179.70	45.389	
6,088.95	6,088.53	6,107.97	6,104.42	21.72	162.32	-108.84	-1,092.73	-8,060.71	8,156.17	7,972.14	184.03	44.321	
6,100.00	6,099.58	6,117.82	6,114.27	21.76	162.76	-108.84	-1,092.74	-8,060.71	8,156.21	7,971.70	184.51	44.205	
6,200.00	6,199.58	6,206.92	6,203.33	22.12	166.77	-108.85	-1,093.25	-8,060.71	8,156.69	7,967.81	188.88	43.184	
6,300.00	6,299.57	6,296.07	6,292.42	22.48	170.79	-108.87	-1,094.62	-8,060.71	8,157.30	7,964.05	193.26	42.210	
6,315.05	6,314.62	6,309.49	6,305.83	22.53	171.40	-108.87	-1,094.89	-8,060.71	8,157.41	7,963.49	193.91	42.067	
6,350.00	6,349.55	6,340.64	6,336.95	22.66	172.80	-178.08	-1,095.61	-8,060.71	8,158.61	7,963.16	195.44	41.745 ES	
6,400.00	6,399.30	6,419.81	6,415.30	22.83	176.61	174.94	-1,096.50	-8,060.71	8,163.51	7,964.08	199.43	40.935	
6,450.00	6,448.52	6,469.03	6,464.52	23.00	179.10	172.94	-1,096.50	-8,060.71	8,172.16	7,970.07	202.09	40.439	
6,500.00	6,496.91	6,517.43	6,512.91	23.18	181.54	171.89	-1,096.50	-8,060.71	8,184.59	7,979.89	204.70	39.984	
6,550.00	6,544.17	6,564.69	6,560.17	23.35	183.93	171.13	-1,096.50	-8,060.71	8,200.71	7,993.47	207.25	39.570	
6,600.00	6,590.01	6,610.52	6,606.01	23.53	186.25	170.47	-1,096.50	-8,060.71	8,220.44	8,010.72	209.72	39.198	
6,650.00	6,634.14	6,650.23	6,645.55	23.70	188.26	169.85	-1,092.23	-8,060.71	8,243.04	8,031.17	211.87	38.906	
6,700.00	6,676.30	6,686.53	6,681.82	23.88	190.09	169.13	-1,092.46	-8,060.71	8,269.62	8,055.78	213.84	38.672	
6,750.00	6,716.21	6,720.93	6,716.20	24.06	191.83	168.33	-1,092.86	-8,060.71	8,299.40	8,083.69	215.71	38.476	
6,800.00	6,753.65	6,753.21	6,748.45	24.24	193.46	167.38	-1,093.37	-8,060.71	8,332.19	8,114.74	217.45	38.317	
6,850.00	6,788.37	6,783.17	6,778.37	24.44	194.97	166.23	-1,093.98	-8,060.71	8,367.79	8,148.72	219.07	38.197	
6,900.00	6,820.16	6,810.61	6,805.78	24.63	196.36	164.81	-1,094.65	-8,060.71	8,405.97	8,185.42	220.55	38.114	
6,950.00	6,848.83	6,835.38	6,830.52	24.84	197.61	163.00	-1,095.35	-8,060.71	8,446.49	8,224.61	221.88	38.067	
7,000.00	6,874.19	6,895.99	6,890.19	25.06	200.45	160.79	-1,096.50	-8,060.71	8,489.08	8,264.29	224.80	37.764 SF	
7,050.00	6,896.10	6,917.90	6,912.10	25.29	201.35	157.69	-1,096.50	-8,060.71	8,533.41	8,307.66	225.76	37.799	
7,100.00	6,914.42	6,936.22	6,930.42	25.53	202.11	153.35	-1,096.50	-8,060.71	8,579.30	8,352.74	226.56	37.868	
7,150.00	6,929.03	6,950.83	6,945.03	25.78	202.71	146.96	-1,096.50	-8,060.71	8,626.46	8,399.27	227.19	37.969	
7,200.00	6,939.85	6,961.65	6,955.85	26.05	203.15	137.04	-1,096.50	-8,060.71	8,674.61	8,446.94	227.67	38.102	
7,250.00	6,946.80	6,968.60	6,962.80	26.32	203.44	121.15	-1,096.50	-8,060.71	8,723.44	8,495.47	227.97	38.265	
7,300.00	6,949.85	6,971.65	6,965.85	26.61	203.57	97.48	-1,096.50	-8,060.71	8,772.67	8,544.56	228.11	38.458	
7,314.43	6,950.00	6,971.80	6,966.00	26.69	203.57	89.69	-1,096.50	-8,060.71	8,786.90	8,558.78	228.12	38.519	
7,400.00	6,949.92	6,971.72	6,965.92	27.21	203.57	89.69	-1,096.50	-8,060.71	8,871.33	8,643.20	228.13	38.887	
7,500.00	6,949.83	6,971.63	6,965.83	27.90	203.57	89.68	-1,096.50	-8,060.71	8,970.03	8,741.88	228.15	39.317	
7,600.00	6,949.74	6,971.54	6,965.74	28.66	203.56	89.68	-1,096.50	-8,060.71	9,068.75	8,840.58	228.17	39.746	
7,700.00	6,949.65	6,971.45	6,965.65	29.49	203.56	89.67	-1,096.50	-8,060.71	9,167.50	8,939.31	228.19	40.175	
7,800.00	6,949.56	6,971.36	6,965.56	30.38	203.55	89.67	-1,096.50	-8,060.71	9,266.28	9,038.07	228.21	40.604	
7,900.00	6,949.47	6,971.27	6,965.47	31.33	203.55	89.67	-1,096.50	-8,060.71	9,365.08	9,136.84	228.24	41.032	
8,000.00	6,949.38	6,971.18	6,965.38	32.33	203.55	89.66	-1,096.50	-8,060.71	9,463.91	9,235.64	228.27	41.459	
8,100.00	6,949.29	6,971.09	6,965.29	33.38	203.54	89.66	-1,096.50	-8,060.71	9,562.77	9,334.47	228.30	41.887	
8,200.00	6,949.20	6,971.00	6,965.20	34.47	203.54	89.66	-1,096.50	-8,060.71	9,661.64	9,433.31	228.33	42.314	
8,300.00	6,949.11	6,970.91	6,965.11	35.60	203.54	89.65	-1,096.50	-8,060.71	9,760.54	9,532.17	228.37	42.740	
8,400.00	6,949.02	6,970.82	6,965.02	36.76	203.53	89.65	-1,096.50	-8,060.71	9,859.47	9,631.06	228.41	43.166	
8,500.00	6,948.93	6,970.73	6,964.93	37.96	203.53	89.65	-1,096.50	-8,060.71	9,958.41	9,729.96	228.45	43.592	
8,600.00	6,948.84	6,970.64	6,964.84	39.18	203.52	89.64	-1,096.50	-8,060.71	10,057.37	9,828.89	228.49	44.017	
8,700.00	6,948.75	6,970.55	6,964.75	40.43	203.52	89.64	-1,096.50	-8,060.71	10,156.36	9,927.83	228.53	44.442	

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 #722H - Slot B05
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 #722H	**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
8,800.00	6,948.66	6,970.46	6,964.66	41.71	203.52	89.63	-1,096.50	-8,060.71	10,255.36	10,026.79	228.58	44.866	
8,900.00	6,948.57	6,970.37	6,964.57	43.00	203.51	89.63	-1,096.50	-8,060.71	10,354.39	10,125.76	228.62	45.290	
9,000.00	6,948.48	6,970.28	6,964.48	44.32	203.51	89.63	-1,096.50	-8,060.71	10,453.43	10,224.76	228.67	45.714	
9,100.00	6,948.39	6,970.19	6,964.39	45.66	203.51	89.62	-1,096.50	-8,060.71	10,552.49	10,323.77	228.72	46.137	
9,200.00	6,948.30	6,970.10	6,964.30	47.01	203.50	89.62	-1,096.50	-8,060.71	10,651.57	10,422.80	228.77	46.560	
9,300.00	6,948.21	6,970.01	6,964.21	48.38	203.50	89.62	-1,096.50	-8,060.71	10,750.66	10,521.84	228.82	46.982	
9,400.00	6,948.12	6,969.92	6,964.12	49.76	203.49	89.61	-1,096.50	-8,060.71	10,849.77	10,620.90	228.88	47.404	
9,500.00	6,948.03	6,969.83	6,964.03	51.16	203.49	89.61	-1,096.50	-8,060.71	10,948.90	10,719.97	228.93	47.826	
9,600.00	6,947.94	6,969.74	6,963.94	52.56	203.49	89.61	-1,096.50	-8,060.71	11,048.05	10,819.06	228.99	48.247	
9,700.00	6,947.85	6,969.65	6,963.85	53.98	203.48	89.60	-1,096.50	-8,060.71	11,147.20	10,918.16	229.04	48.668	
9,800.00	6,947.76	6,969.56	6,963.76	55.41	203.48	89.60	-1,096.50	-8,060.71	11,246.38	11,017.28	229.10	49.089	
9,900.00	6,947.67	6,969.47	6,963.67	56.85	203.48	89.60	-1,096.50	-8,060.71	11,345.57	11,116.40	229.16	49.509	
10,000.00	6,947.58	6,969.38	6,963.58	58.29	203.47	89.59	-1,096.50	-8,060.71	11,444.77	11,215.55	229.22	49.929	
10,100.00	6,947.49	6,969.29	6,963.49	59.75	203.47	89.59	-1,096.50	-8,060.71	11,543.98	11,314.70	229.28	50.348	
10,200.00	6,947.40	6,969.20	6,963.40	61.21	203.47	89.58	-1,096.50	-8,060.71	11,643.21	11,413.87	229.35	50.767	
10,300.00	6,947.31	6,969.11	6,963.31	62.68	203.46	89.58	-1,096.50	-8,060.71	11,742.46	11,513.05	229.41	51.186	
10,400.00	6,947.22	6,969.02	6,963.22	64.15	203.46	89.58	-1,096.50	-8,060.71	11,841.71	11,612.24	229.47	51.604	
10,500.00	6,947.13	6,968.93	6,963.13	65.63	203.45	89.57	-1,096.50	-8,060.71	11,940.98	11,711.44	229.54	52.022	
10,600.00	6,947.04	6,968.84	6,963.04	67.12	203.45	89.57	-1,096.50	-8,060.71	12,040.26	11,810.66	229.60	52.440	
10,700.00	6,946.95	6,968.75	6,962.95	68.61	203.45	89.57	-1,096.50	-8,060.71	12,139.55	11,909.88	229.67	52.857	
10,800.00	6,946.86	6,968.66	6,962.86	70.11	203.44	89.56	-1,096.50	-8,060.71	12,238.85	12,009.12	229.74	53.273	
10,900.00	6,946.77	6,968.57	6,962.77	71.61	203.44	89.56	-1,096.50	-8,060.71	12,338.17	12,108.36	229.80	53.690	
11,000.00	6,946.68	6,968.48	6,962.68	73.11	203.44	89.56	-1,096.50	-8,060.71	12,437.49	12,207.62	229.87	54.106	
11,100.00	6,946.59	6,968.39	6,962.59	74.62	203.43	89.55	-1,096.50	-8,060.71	12,536.83	12,306.89	229.94	54.522	
11,200.00	6,946.50	6,968.30	6,962.50	76.14	203.43	89.55	-1,096.50	-8,060.71	12,636.18	12,406.16	230.01	54.937	
11,300.00	6,946.41	6,968.21	6,962.41	77.65	203.42	89.54	-1,096.50	-8,060.71	12,735.53	12,505.45	230.08	55.352	
11,400.00	6,946.32	6,968.12	6,962.32	79.18	203.42	89.54	-1,096.50	-8,060.71	12,834.90	12,604.75	230.16	55.766	
11,500.00	6,946.23	6,968.03	6,962.23	80.70	203.42	89.54	-1,096.50	-8,060.71	12,934.28	12,704.05	230.23	56.180	
11,600.00	6,946.14	6,967.94	6,962.14	82.23	203.41	89.53	-1,096.50	-8,060.71	13,033.66	12,803.36	230.30	56.594	
11,700.00	6,946.05	6,967.85	6,962.05	83.76	203.41	89.53	-1,096.50	-8,060.71	13,133.06	12,902.68	230.37	57.008	
11,800.00	6,945.96	6,967.76	6,961.96	85.29	203.41	89.53	-1,096.50	-8,060.71	13,232.46	13,002.02	230.45	57.421	
11,900.00	6,945.87	6,967.67	6,961.87	86.82	203.40	89.52	-1,096.50	-8,060.71	13,331.88	13,101.35	230.52	57.833	
12,000.00	6,945.78	6,967.58	6,961.78	88.36	203.40	89.52	-1,096.50	-8,060.71	13,431.30	13,200.70	230.60	58.245	
12,100.00	6,945.69	6,967.49	6,961.69	89.90	203.39	89.52	-1,096.50	-8,060.71	13,530.73	13,300.06	230.67	58.657	
12,200.00	6,945.60	6,967.40	6,961.60	91.44	203.39	89.51	-1,096.50	-8,060.71	13,630.17	13,399.42	230.75	59.069	
12,300.00	6,945.51	6,967.31	6,961.51	92.99	203.39	89.51	-1,096.50	-8,060.71	13,729.62	13,498.79	230.83	59.480	
12,400.00	6,945.42	6,967.22	6,961.42	94.53	203.38	89.51	-1,096.50	-8,060.71	13,829.07	13,598.17	230.90	59.891	
12,500.00	6,945.33	6,967.13	6,961.33	96.08	203.38	89.50	-1,096.50	-8,060.71	13,928.53	13,697.55	230.98	60.301	
12,600.00	6,945.24	6,967.04	6,961.24	97.63	203.38	89.50	-1,096.50	-8,060.71	14,028.00	13,796.94	231.06	60.711	
12,700.00	6,945.15	6,966.95	6,961.15	99.18	203.37	89.49	-1,096.50	-8,060.71	14,127.48	13,896.34	231.14	61.121	
12,800.00	6,945.06	6,966.85	6,961.06	100.74	203.37	89.49	-1,096.50	-8,060.71	14,226.97	13,995.75	231.22	61.530	
12,900.00	6,944.96	6,966.76	6,960.96	102.29	203.36	89.49	-1,096.50	-8,060.71	14,326.46	14,095.16	231.30	61.939	
13,000.00	6,944.87	6,966.67	6,960.87	103.85	203.36	89.48	-1,096.50	-8,060.71	14,425.96	14,194.58	231.38	62.347	
13,100.00	6,944.78	6,966.58	6,960.78	105.40	203.36	89.48	-1,096.50	-8,060.71	14,525.47	14,294.01	231.46	62.756	
13,200.00	6,944.69	6,966.49	6,960.69	106.96	203.35	89.48	-1,096.50	-8,060.71	14,624.98	14,393.44	231.54	63.163	
13,300.00	6,944.60	6,966.40	6,960.60	108.52	203.35	89.47	-1,096.50	-8,060.71	14,724.50	14,492.88	231.62	63.571	
13,400.00	6,944.51	6,966.31	6,960.51	110.08	203.35	89.47	-1,096.50	-8,060.71	14,824.03	14,592.32	231.71	63.978	
13,500.00	6,944.42	6,966.22	6,960.42	111.65	203.34	89.47	-1,096.50	-8,060.71	14,923.56	14,691.77	231.79	64.384	
13,600.00	6,944.33	6,966.13	6,960.33	113.21	203.34	89.46	-1,096.50	-8,060.71	15,023.10	14,791.22	231.87	64.790	
13,700.00	6,944.24	6,966.04	6,960.24	114.78	203.34	89.46	-1,096.50	-8,060.71	15,122.64	14,890.69	231.96	65.196	
13,800.00	6,944.15	6,965.95	6,960.15	116.34	203.33	89.46	-1,096.50	-8,060.71	15,222.19	14,990.15	232.04	65.601	
13,900.00	6,944.06	6,965.86	6,960.06	117.91	203.33	89.45	-1,096.50	-8,060.71	15,321.75	15,089.62	232.12	66.007	

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 #722H - Slot B05
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 #722H	**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)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
14,000.00	6,943.97	6,965.77	6,959.97	119.48	203.32	89.45	-1,096.50	-8,060.71	15,421.31	15,189.10	232.21	66.411	
14,100.00	6,943.88	6,965.68	6,959.88	121.05	203.32	89.44	-1,096.50	-8,060.71	15,520.88	15,288.59	232.29	66.815	
14,200.00	6,943.79	6,965.59	6,959.79	122.62	203.32	89.44	-1,096.50	-8,060.71	15,620.45	15,388.07	232.38	67.219	
14,300.00	6,943.70	6,965.50	6,959.70	124.19	203.31	89.44	-1,096.50	-8,060.71	15,720.03	15,487.57	232.47	67.623	
14,400.00	6,943.61	6,965.41	6,959.61	125.76	203.31	89.43	-1,096.50	-8,060.71	15,819.62	15,587.06	232.55	68.026	
14,500.00	6,943.52	6,965.32	6,959.52	127.33	203.31	89.43	-1,096.50	-8,060.71	15,919.21	15,686.57	232.64	68.429	
14,600.00	6,943.43	6,965.23	6,959.43	128.90	203.30	89.43	-1,096.50	-8,060.71	16,018.80	15,786.07	232.73	68.831	
14,700.00	6,943.34	6,965.14	6,959.34	130.48	203.30	89.42	-1,096.50	-8,060.71	16,118.40	15,885.59	232.81	69.233	
14,800.00	6,943.25	6,965.05	6,959.25	132.05	203.29	89.42	-1,096.50	-8,060.71	16,218.00	15,985.10	232.90	69.634	
14,900.00	6,943.16	6,964.96	6,959.16	133.63	203.29	89.42	-1,096.50	-8,060.71	16,317.61	16,084.62	232.99	70.035	
15,000.00	6,943.07	6,964.87	6,959.07	135.20	203.29	89.41	-1,096.50	-8,060.71	16,417.23	16,184.15	233.08	70.436	
15,100.00	6,942.98	6,964.78	6,958.98	136.78	203.28	89.41	-1,096.50	-8,060.71	16,516.85	16,283.68	233.17	70.836	
15,200.00	6,942.89	6,964.69	6,958.89	138.36	203.28	89.40	-1,096.50	-8,060.71	16,616.47	16,383.21	233.26	71.236	
15,300.00	6,942.80	6,964.60	6,958.80	139.93	203.28	89.40	-1,096.50	-8,060.71	16,716.10	16,482.75	233.35	71.636	
15,400.00	6,942.71	6,964.51	6,958.71	141.51	203.27	89.40	-1,096.50	-8,060.71	16,815.73	16,582.29	233.44	72.035	
15,500.00	6,942.62	6,964.42	6,958.62	143.09	203.27	89.39	-1,096.50	-8,060.71	16,915.37	16,681.84	233.53	72.434	
15,600.00	6,942.53	6,964.33	6,958.53	144.67	203.26	89.39	-1,096.50	-8,060.71	17,015.01	16,781.39	233.62	72.832	
15,700.00	6,942.44	6,964.24	6,958.44	146.25	203.26	89.39	-1,096.50	-8,060.71	17,114.65	16,880.94	233.71	73.230	
15,800.00	6,942.35	6,964.15	6,958.35	147.83	203.26	89.38	-1,096.50	-8,060.71	17,214.30	16,980.50	233.80	73.628	
15,900.00	6,942.26	6,964.06	6,958.26	149.41	203.25	89.38	-1,096.50	-8,060.71	17,313.96	17,080.06	233.89	74.025	
16,000.00	6,942.17	6,963.97	6,958.17	150.99	203.25	89.38	-1,096.50	-8,060.71	17,413.61	17,179.63	233.99	74.422	
16,100.00	6,942.08	6,963.88	6,958.08	152.57	203.25	89.37	-1,096.50	-8,060.71	17,513.27	17,279.20	234.08	74.818	
16,200.00	6,941.99	6,963.79	6,957.99	154.16	203.24	89.37	-1,096.50	-8,060.71	17,612.94	17,378.77	234.17	75.214	
16,300.00	6,941.90	6,963.70	6,957.90	155.74	203.24	89.37	-1,096.50	-8,060.71	17,712.61	17,478.34	234.26	75.609	
16,400.00	6,941.81	6,963.61	6,957.81	157.32	203.24	89.36	-1,096.50	-8,060.71	17,812.28	17,577.92	234.36	76.005	
16,500.00	6,941.72	6,963.52	6,957.72	158.91	203.23	89.36	-1,096.50	-8,060.71	17,911.96	17,677.50	234.45	76.399	
16,600.00	6,941.63	6,963.43	6,957.63	160.49	203.23	89.35	-1,096.50	-8,060.71	18,011.64	17,777.09	234.55	76.794	
16,700.00	6,941.54	6,963.34	6,957.54	162.07	203.22	89.35	-1,096.50	-8,060.71	18,111.32	17,876.68	234.64	77.188	
16,800.00	6,941.45	6,963.25	6,957.45	163.66	203.22	89.35	-1,096.50	-8,060.71	18,211.01	17,976.27	234.73	77.581	
16,900.00	6,941.36	6,963.16	6,957.36	165.24	203.22	89.34	-1,096.50	-8,060.71	18,310.70	18,075.87	234.83	77.974	
17,000.00	6,941.27	6,963.07	6,957.27	166.83	203.21	89.34	-1,096.50	-8,060.71	18,410.39	18,175.46	234.93	78.367	
17,100.00	6,941.18	6,962.98	6,957.18	168.42	203.21	89.34	-1,096.50	-8,060.71	18,510.09	18,275.07	235.02	78.759	
17,200.00	6,941.09	6,962.89	6,957.09	170.00	203.21	89.33	-1,096.50	-8,060.71	18,609.79	18,374.67	235.12	79.151	
17,300.00	6,941.00	6,962.80	6,957.00	171.59	203.20	89.33	-1,096.50	-8,060.71	18,709.49	18,474.28	235.21	79.543	
17,400.00	6,940.91	6,962.71	6,956.91	173.18	203.20	89.33	-1,096.50	-8,060.71	18,809.20	18,573.89	235.31	79.934	
17,500.00	6,940.82	6,962.62	6,956.82	174.76	203.19	89.32	-1,096.50	-8,060.71	18,908.91	18,673.50	235.41	80.324	
17,600.00	6,940.73	6,962.53	6,956.73	176.35	203.19	89.32	-1,096.50	-8,060.71	19,008.62	18,773.11	235.50	80.715	
17,700.00	6,940.64	6,962.44	6,956.64	177.94	203.19	89.31	-1,096.50	-8,060.71	19,108.33	18,872.73	235.60	81.105	
17,800.00	6,940.55	6,962.35	6,956.55	179.53	203.18	89.31	-1,096.50	-8,060.71	19,208.05	18,972.35	235.70	81.494	
17,900.00	6,940.46	6,962.26	6,956.46	181.11	203.18	89.31	-1,096.50	-8,060.71	19,307.77	19,071.98	235.80	81.883	
18,000.00	6,940.37	6,962.17	6,956.37	182.70	203.18	89.30	-1,096.50	-8,060.71	19,407.50	19,171.60	235.90	82.272	
18,100.00	6,940.28	6,962.08	6,956.28	184.29	203.17	89.30	-1,096.50	-8,060.71	19,507.22	19,271.23	235.99	82.660	
18,200.00	6,940.19	6,961.99	6,956.19	185.88	203.17	89.30	-1,096.50	-8,060.71	19,606.95	19,370.86	236.09	83.048	
18,300.00	6,940.10	6,961.90	6,956.10	187.47	203.16	89.29	-1,096.50	-8,060.71	19,706.69	19,470.50	236.19	83.435	
18,400.00	6,940.01	6,961.81	6,956.01	189.06	203.16	89.29	-1,096.50	-8,060.71	19,806.42	19,570.13	236.29	83.822	
18,500.00	6,939.92	6,961.72	6,955.92	190.65	203.16	89.29	-1,096.50	-8,060.71	19,906.16	19,669.77	236.39	84.209	
18,600.00	6,939.83	6,961.63	6,955.83	192.24	203.15	89.28	-1,096.50	-8,060.71	20,005.90	19,769.41	236.49	84.595	
18,700.00	6,939.74	6,961.54	6,955.74	193.83	203.15	89.28	-1,096.50	-8,060.71	20,105.64	19,869.05	236.59	84.981	
18,800.00	6,939.65	6,961.45	6,955.65	195.42	203.15	89.28	-1,096.50	-8,060.71	20,205.39	19,968.70	236.69	85.366	
18,900.00	6,939.56	6,961.36	6,955.56	197.01	203.14	89.27	-1,096.50	-8,060.71	20,305.14	20,068.35	236.79	85.751	
19,000.00	6,939.47	6,961.27	6,955.47	198.60	203.14	89.27	-1,096.50	-8,060.71	20,404.89	20,168.00	236.89	86.135	
19,100.00	6,939.38	6,961.18	6,955.38	200.19	203.13	89.26	-1,096.50	-8,060.71	20,504.64	20,267.65	236.99	86.520	

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 #722H - Slot B05
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 #722H	**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
19,200.00	6,939.29	6,961.09	6,955.29	201.78	203.13	89.26	-1,096.50	-8,060.71	20,604.40	20,367.30	237.10	86.903	
19,300.00	6,939.20	6,961.00	6,955.20	203.37	203.13	89.26	-1,096.50	-8,060.71	20,704.16	20,466.96	237.20	87.287	
19,400.00	6,939.11	6,960.91	6,955.11	204.97	203.12	89.25	-1,096.50	-8,060.71	20,803.92	20,566.62	237.30	87.669	
19,500.00	6,939.02	6,960.82	6,955.02	206.56	203.12	89.25	-1,096.50	-8,060.71	20,903.68	20,666.28	237.40	88.052	
19,600.00	6,938.93	6,960.72	6,954.93	208.15	203.12	89.25	-1,096.50	-8,060.71	21,003.44	20,765.94	237.50	88.434	
19,700.00	6,938.83	6,960.63	6,954.83	209.74	203.11	89.24	-1,096.50	-8,060.71	21,103.21	20,865.60	237.61	88.815	
19,800.00	6,938.74	6,960.54	6,954.74	211.33	203.11	89.24	-1,096.50	-8,060.71	21,202.98	20,965.27	237.71	89.197	
19,900.00	6,938.65	6,960.45	6,954.65	212.93	203.11	89.24	-1,096.50	-8,060.71	21,302.75	21,064.94	237.81	89.577	
20,000.00	6,938.56	6,960.36	6,954.56	214.52	203.10	89.23	-1,096.50	-8,060.71	21,402.52	21,164.61	237.92	89.958	
20,100.00	6,938.47	6,960.27	6,954.47	216.11	203.10	89.23	-1,096.50	-8,060.71	21,502.30	21,264.28	238.02	90.338	
20,200.00	6,938.38	6,960.18	6,954.38	217.71	203.09	89.22	-1,096.50	-8,060.71	21,602.08	21,363.95	238.13	90.717	
20,300.00	6,938.29	6,960.09	6,954.29	219.30	203.09	89.22	-1,096.50	-8,060.71	21,701.86	21,463.63	238.23	91.096	
20,400.00	6,938.20	6,960.00	6,954.20	220.89	203.09	89.22	-1,096.50	-8,060.71	21,801.64	21,563.30	238.33	91.475	
20,500.00	6,938.11	6,959.91	6,954.11	222.49	203.08	89.21	-1,096.50	-8,060.71	21,901.42	21,662.98	238.44	91.853	
20,600.00	6,938.02	6,959.82	6,954.02	224.08	203.08	89.21	-1,096.50	-8,060.71	22,001.21	21,762.66	238.54	92.231	
20,626.08	6,938.00	6,959.80	6,954.00	224.49	203.08	89.21	-1,096.50	-8,060.71	22,027.23	21,788.66	238.57	92.330	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-92.78	-316.71	-6,525.11	6,532.80				
100.00	100.00	80.45	80.45	0.25	0.49	-92.77	-316.18	-6,525.33	6,533.06	6,532.32	0.73	8,924.100	
200.00	200.00	180.45	180.43	0.61	1.41	-92.76	-314.98	-6,525.84	6,533.51	6,531.52	1.99	3,291.137	
300.00	300.00	270.46	270.43	0.97	2.10	-92.75	-313.73	-6,526.37	6,534.03	6,531.03	3.00	2,179.347	
400.00	400.00	361.70	361.66	1.33	2.81	-92.74	-312.06	-6,527.08	6,534.72	6,530.68	4.04	1,619.326	
500.00	500.00	469.60	469.54	1.68	3.88	-92.72	-310.11	-6,527.91	6,535.40	6,529.96	5.44	1,202.186	
535.00	535.00	507.37	507.31	1.81	4.26	-103.38	-309.51	-6,528.17	6,535.66	6,529.73	5.93	1,102.777	
600.00	599.99	577.52	577.45	2.04	4.95	-103.38	-308.51	-6,528.59	6,536.19	6,529.35	6.84	956.035	
700.00	699.99	680.42	680.34	2.40	6.41	-103.38	-307.24	-6,529.13	6,536.93	6,528.31	8.63	757.528	
800.00	799.98	780.42	780.32	2.76	8.07	-103.38	-306.04	-6,529.64	6,537.67	6,527.02	10.65	613.988	
900.00	899.97	880.41	880.31	3.12	9.74	-103.38	-304.83	-6,530.15	6,538.41	6,525.74	12.67	516.199	
1,000.00	999.96	980.41	980.30	3.48	11.42	-103.38	-303.63	-6,530.66	6,539.14	6,524.46	14.69	445.294	
1,100.00	1,099.96	1,080.41	1,080.29	3.84	13.09	-103.38	-302.42	-6,531.17	6,539.88	6,523.18	16.70	391.526	
1,200.00	1,199.95	1,178.90	1,178.78	4.19	14.59	-103.38	-301.21	-6,531.68	6,540.63	6,522.07	18.55	352.533	
1,300.00	1,299.94	1,276.96	1,276.83	4.55	16.05	-103.38	-299.93	-6,532.23	6,541.40	6,521.05	20.35	321.388	
1,400.00	1,399.93	1,375.02	1,374.87	4.91	17.51	-103.37	-298.57	-6,532.80	6,542.20	6,520.05	22.15	295.306	
1,500.00	1,499.93	1,473.07	1,472.91	5.27	18.97	-103.37	-297.14	-6,533.41	6,543.04	6,519.08	23.95	273.146	
1,600.00	1,599.92	1,571.13	1,570.95	5.63	20.43	-103.37	-295.63	-6,534.05	6,543.90	6,518.15	25.75	254.085	
1,700.00	1,699.91	1,671.86	1,671.67	5.99	21.67	-103.36	-294.03	-6,534.73	6,544.78	6,517.44	27.34	239.414	
1,800.00	1,799.90	1,773.87	1,773.67	6.34	22.82	-103.36	-292.49	-6,535.38	6,545.63	6,516.82	28.81	227.174	
1,900.00	1,899.90	1,875.89	1,875.68	6.70	23.96	-103.36	-291.04	-6,536.00	6,546.45	6,516.16	30.29	216.126	
2,000.00	1,999.89	1,977.91	1,977.68	7.06	25.10	-103.36	-289.66	-6,536.58	6,547.24	6,515.47	31.77	206.104	
2,100.00	2,099.88	2,079.93	2,079.69	7.42	26.24	-103.36	-288.37	-6,537.13	6,548.00	6,514.76	33.24	196.971	
2,200.00	2,199.87	2,178.96	2,178.71	7.78	27.27	-103.36	-287.15	-6,537.65	6,548.74	6,514.14	34.61	189.231	
2,300.00	2,299.87	2,277.11	2,276.86	8.14	28.27	-103.36	-285.88	-6,538.19	6,549.52	6,513.58	35.94	182.245	
2,400.00	2,399.86	2,375.26	2,375.00	8.50	29.27	-103.35	-284.53	-6,538.76	6,550.32	6,513.05	37.27	175.758	
2,500.00	2,499.85	2,473.42	2,473.14	8.85	30.26	-103.35	-283.11	-6,539.37	6,551.15	6,512.55	38.60	169.720	
2,600.00	2,599.85	2,571.57	2,571.28	9.21	31.26	-103.35	-281.61	-6,540.00	6,552.00	6,512.07	39.93	164.085	
2,700.00	2,699.84	2,671.25	2,670.95	9.57	32.20	-103.34	-280.03	-6,540.67	6,552.88	6,511.68	41.20	159.053	
2,800.00	2,799.83	2,773.29	2,772.97	9.93	33.04	-103.34	-278.46	-6,541.33	6,553.74	6,511.37	42.37	154.666	
2,900.00	2,899.82	2,875.33	2,875.00	10.29	33.89	-103.34	-276.98	-6,541.96	6,554.57	6,511.02	43.55	150.515	
3,000.00	2,999.82	2,977.37	2,977.02	10.65	34.73	-103.34	-275.59	-6,542.55	6,555.37	6,510.65	44.72	146.581	
3,100.00	3,099.81	3,079.41	3,079.05	11.01	35.58	-103.34	-274.28	-6,543.11	6,556.14	6,510.24	45.90	142.848	
3,200.00	3,199.80	3,180.36	3,180.00	11.36	36.32	-103.33	-273.05	-6,543.63	6,556.88	6,509.91	46.97	139.607	
3,300.00	3,299.79	3,280.36	3,279.98	11.72	36.98	-103.33	-271.85	-6,544.14	6,557.61	6,509.67	47.95	136.768	
3,400.00	3,399.79	3,380.35	3,379.97	12.08	37.63	-103.33	-270.64	-6,544.65	6,558.35	6,509.42	48.93	134.043	
3,500.00	3,499.78	3,480.35	3,479.96	12.44	38.28	-103.33	-269.44	-6,545.16	6,559.08	6,509.18	49.91	131.425	
3,600.00	3,599.77	3,580.35	3,579.95	12.80	38.94	-103.33	-268.23	-6,545.67	6,559.82	6,508.93	50.89	128.908	
3,700.00	3,699.76	3,597.00	3,596.60	13.16	39.05	-103.33	-268.03	-6,545.76	6,561.09	6,509.74	51.34	127.784	
3,800.00	3,799.76	3,597.00	3,596.60	13.52	39.05	-103.33	-268.03	-6,545.76	6,563.86	6,512.17	51.69	126.992	
3,900.00	3,899.75	3,597.00	3,596.60	13.87	39.05	-103.33	-268.03	-6,545.76	6,568.14	6,516.13	52.02	126.267	
4,000.00	3,999.74	3,597.00	3,596.60	14.23	39.05	-103.33	-268.03	-6,545.76	6,573.95	6,521.62	52.34	125.609	
4,100.00	4,099.73	3,597.00	3,596.60	14.59	39.05	-103.33	-268.03	-6,545.76	6,581.28	6,528.63	52.64	125.015	
4,200.00	4,199.73	3,597.00	3,596.60	14.95	39.05	-103.33	-268.03	-6,545.76	6,590.11	6,537.17	52.94	124.486	
4,251.47	4,251.19	3,947.92	3,946.45	15.13	86.09	-103.17	-245.46	-6,555.91	6,578.31	6,502.15	76.16	86.374 ES	
4,300.00	4,299.72	3,974.47	3,972.77	15.31	89.75	-103.14	-242.26	-6,557.36	6,580.85	6,502.75	78.10	84.258	
4,400.00	4,399.71	4,028.99	4,026.71	15.67	97.28	-103.08	-235.04	-6,560.63	6,586.59	6,504.46	82.13	80.196	
4,500.00	4,499.70	4,083.23	4,080.23	16.03	104.79	-103.02	-226.99	-6,564.28	6,593.03	6,506.84	86.19	76.494	
4,600.00	4,599.70	4,137.16	4,133.27	16.38	112.27	-102.95	-218.13	-6,568.30	6,600.17	6,509.89	90.29	73.103	
4,700.00	4,699.69	4,190.74	4,185.79	16.74	119.72	-102.87	-208.48	-6,572.67	6,608.02	6,513.60	94.42	69.986	
4,800.00	4,799.68	4,243.95	4,237.75	17.10	127.13	-102.78	-198.07	-6,577.40	6,616.58	6,517.98	98.59	67.110	
4,900.00	4,899.67	4,296.75	4,289.12	17.46	134.50	-102.69	-186.93	-6,582.46	6,625.85	6,523.04	102.81	64.449	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	4,349.12	4,339.85	17.82	141.81	-102.59	-175.07	-6,587.84	6,635.84	6,528.78	107.07	61.979	
5,100.00	5,099.66	4,401.04	4,389.91	18.18	149.07	-102.48	-162.54	-6,593.53	6,646.57	6,535.20	111.37	59.682	
5,200.00	5,199.65	4,452.48	4,439.27	18.53	156.27	-102.37	-149.36	-6,599.52	6,658.03	6,542.32	115.71	57.540	
5,300.00	5,299.64	4,503.42	4,487.90	18.89	163.41	-102.26	-135.57	-6,605.79	6,670.24	6,550.14	120.10	55.539	
5,400.00	5,399.64	4,553.83	4,535.78	19.25	170.47	-102.13	-121.19	-6,612.33	6,683.19	6,558.66	124.53	53.667	
5,500.00	5,499.63	4,603.71	4,582.88	19.61	177.47	-102.01	-106.26	-6,619.11	6,696.90	6,567.89	129.01	51.911	
5,600.00	5,599.62	4,653.03	4,629.18	19.97	184.38	-101.88	-90.80	-6,626.14	6,711.37	6,577.85	133.52	50.263	
5,700.00	5,699.61	4,701.77	4,674.67	20.33	191.23	-101.74	-74.86	-6,633.39	6,726.62	6,588.54	138.08	48.714	
5,800.00	5,799.61	4,749.92	4,719.32	20.69	197.99	-101.61	-58.47	-6,640.84	6,742.64	6,599.96	142.68	47.256	
5,900.00	5,899.60	5,147.00	5,075.51	21.04	253.82	-100.28	100.71	-6,713.25	6,777.05	6,603.46	173.59	39.041	
6,000.00	5,999.59	5,147.00	5,075.51	21.40	253.82	-100.28	100.71	-6,713.25	6,790.30	6,615.18	175.12	38.776	
6,100.00	6,099.58	5,147.00	5,075.51	21.76	253.82	-100.28	100.71	-6,713.25	6,804.99	6,628.38	176.61	38.531	
6,200.00	6,199.58	5,147.00	5,075.51	22.12	253.82	-100.28	100.71	-6,713.25	6,821.12	6,643.05	178.07	38.306	
6,300.00	6,299.57	5,147.00	5,075.51	22.48	253.82	-100.28	100.71	-6,713.25	6,838.67	6,659.17	179.50	38.099	
6,315.05	6,314.62	5,147.00	5,075.51	22.53	253.82	-100.28	100.71	-6,713.25	6,841.43	6,661.73	179.71	38.070	
6,350.00	6,349.55	5,147.00	5,075.51	22.66	253.82	-169.48	100.71	-6,713.25	6,848.92	6,668.72	180.19	38.009	
6,400.00	6,399.30	5,147.00	5,075.51	22.83	253.82	-176.41	100.71	-6,713.25	6,863.13	6,682.26	180.87	37.945	
6,450.00	6,448.52	5,147.00	5,075.51	23.00	253.82	-178.32	100.71	-6,713.25	6,881.39	6,699.87	181.52	37.910	
6,500.00	6,496.91	5,147.00	5,075.51	23.18	253.82	-179.24	100.71	-6,713.25	6,903.53	6,721.39	182.14	37.901 SF	
6,550.00	6,544.17	5,147.00	5,075.51	23.35	253.82	-179.81	100.71	-6,713.25	6,929.40	6,746.66	182.73	37.921	
6,600.00	6,590.01	5,147.00	5,075.51	23.53	253.82	179.77	100.71	-6,713.25	6,958.78	6,775.49	183.29	37.967	
6,650.00	6,634.14	5,147.00	5,075.51	23.70	253.82	179.43	100.71	-6,713.25	6,991.46	6,807.66	183.80	38.039	
6,700.00	6,676.30	5,147.00	5,075.51	23.88	253.82	179.10	100.71	-6,713.25	7,027.18	6,842.91	184.27	38.136	
6,750.00	6,716.21	5,147.00	5,075.51	24.06	253.82	178.77	100.71	-6,713.25	7,065.69	6,880.99	184.69	38.256	
6,800.00	6,753.65	5,147.00	5,075.51	24.24	253.82	178.40	100.71	-6,713.25	7,106.70	6,921.62	185.07	38.399	
6,850.00	6,788.37	5,147.00	5,075.51	24.44	253.82	177.95	100.71	-6,713.25	7,149.92	6,964.51	185.41	38.564	
6,900.00	6,820.16	5,147.00	5,075.51	24.63	253.82	177.36	100.71	-6,713.25	7,195.04	7,009.35	185.69	38.747	
6,950.00	6,848.83	5,147.00	5,075.51	24.84	253.82	176.51	100.71	-6,713.25	7,241.76	7,055.83	185.93	38.949	
7,000.00	6,874.19	5,147.00	5,075.51	25.06	253.82	175.12	100.71	-6,713.25	7,289.76	7,103.63	186.12	39.166	
7,050.00	6,896.10	5,147.00	5,075.51	25.29	253.82	172.44	100.71	-6,713.25	7,338.72	7,152.44	186.27	39.398	
7,100.00	6,914.42	5,147.00	5,075.51	25.53	253.82	164.88	100.71	-6,713.25	7,388.32	7,201.94	186.38	39.642	
7,150.00	6,929.03	5,147.00	5,075.51	25.78	253.82	99.94	100.71	-6,713.25	7,438.24	7,251.81	186.44	39.897	
7,200.00	6,939.85	5,147.00	5,075.51	26.05	253.82	17.95	100.71	-6,713.25	7,488.19	7,301.73	186.46	40.160	
7,250.00	6,946.80	5,147.00	5,075.51	26.32	253.82	9.30	100.71	-6,713.25	7,537.84	7,351.39	186.45	40.429	
7,300.00	6,949.85	5,147.00	5,075.51	26.61	253.82	6.42	100.71	-6,713.25	7,586.90	7,400.51	186.40	40.703	
7,314.43	6,950.00	5,147.00	5,075.51	26.69	253.82	5.91	100.71	-6,713.25	7,600.92	7,414.54	186.37	40.783	
7,400.00	6,949.92	5,147.00	5,075.51	27.21	253.82	5.91	100.71	-6,713.25	7,683.79	7,497.54	186.25	41.254	
7,500.00	6,949.83	5,147.00	5,075.51	27.90	253.82	5.91	100.71	-6,713.25	7,780.72	7,594.61	186.12	41.805	
7,600.00	6,949.74	5,147.00	5,075.51	28.66	253.82	5.91	100.71	-6,713.25	7,877.73	7,691.74	185.99	42.357	
7,700.00	6,949.65	5,147.00	5,075.51	29.49	253.82	5.91	100.71	-6,713.25	7,974.81	7,788.95	185.86	42.908	
7,800.00	6,949.56	5,147.00	5,075.51	30.38	253.82	5.91	100.71	-6,713.25	8,071.96	7,886.23	185.73	43.460	
7,900.00	6,949.47	5,147.00	5,075.51	31.33	253.82	5.91	100.71	-6,713.25	8,169.18	7,983.57	185.61	44.011	
8,000.00	6,949.38	5,147.00	5,075.51	32.33	253.82	5.91	100.71	-6,713.25	8,266.47	8,080.97	185.50	44.563	
8,100.00	6,949.29	5,147.00	5,075.51	33.38	253.82	5.91	100.71	-6,713.25	8,363.82	8,178.43	185.39	45.116	
8,200.00	6,949.20	5,147.00	5,075.51	34.47	253.82	5.91	100.71	-6,713.25	8,461.23	8,275.96	185.28	45.668	
8,300.00	6,949.11	5,147.00	5,075.51	35.60	253.82	5.91	100.71	-6,713.25	8,558.71	8,373.53	185.17	46.220	
8,400.00	6,949.02	5,147.00	5,075.51	36.76	253.82	5.91	100.71	-6,713.25	8,656.24	8,471.16	185.07	46.772	
8,500.00	6,948.93	5,147.00	5,075.51	37.96	253.82	5.91	100.71	-6,713.25	8,753.82	8,568.85	184.97	47.325	
8,600.00	6,948.84	5,147.00	5,075.51	39.18	253.82	5.91	100.71	-6,713.25	8,851.46	8,666.58	184.88	47.877	
8,700.00	6,948.75	5,147.00	5,075.51	40.43	253.82	5.91	100.71	-6,713.25	8,949.15	8,764.37	184.79	48.429	
8,800.00	6,948.66	5,147.00	5,075.51	41.71	253.82	5.91	100.71	-6,713.25	9,046.89	8,862.20	184.70	48.982	
8,900.00	6,948.57	5,147.00	5,075.51	43.00	253.82	5.91	100.71	-6,713.25	9,144.69	8,960.07	184.61	49.534	

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 #722H - Slot B05
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 #722H	**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
9,000.00	6,948.48	5,147.00	5,075.51	44.32	253.82	5.91	100.71	-6,713.25	9,242.52	9,057.99	184.53	50.086	
9,100.00	6,948.39	5,147.00	5,075.51	45.66	253.82	5.91	100.71	-6,713.25	9,340.41	9,155.96	184.45	50.639	
9,200.00	6,948.30	5,147.00	5,075.51	47.01	253.82	5.91	100.71	-6,713.25	9,438.34	9,253.96	184.38	51.191	
9,300.00	6,948.21	5,147.00	5,075.51	48.38	253.82	5.91	100.71	-6,713.25	9,536.31	9,352.01	184.30	51.743	
9,400.00	6,948.12	5,147.00	5,075.51	49.76	253.82	5.91	100.71	-6,713.25	9,634.32	9,450.09	184.23	52.295	
9,500.00	6,948.03	5,147.00	5,075.51	51.16	253.82	5.91	100.71	-6,713.25	9,732.37	9,548.21	184.16	52.847	
9,600.00	6,947.94	5,147.00	5,075.51	52.56	253.82	5.91	100.71	-6,713.25	9,830.47	9,646.37	184.10	53.398	
9,700.00	6,947.85	5,147.00	5,075.51	53.98	253.82	5.91	100.71	-6,713.25	9,928.60	9,744.56	184.03	53.950	
9,800.00	6,947.76	5,147.00	5,075.51	55.41	253.82	5.91	100.71	-6,713.25	10,026.77	9,842.79	183.97	54.501	
9,900.00	6,947.67	5,147.00	5,075.51	56.85	253.82	5.91	100.71	-6,713.25	10,124.97	9,941.05	183.92	55.052	
10,000.00	6,947.58	5,147.00	5,075.51	58.29	253.82	5.91	100.71	-6,713.25	10,223.21	10,039.35	183.86	55.603	
10,100.00	6,947.49	5,147.00	5,075.51	59.75	253.82	5.91	100.71	-6,713.25	10,321.48	10,137.67	183.81	56.154	
10,200.00	6,947.40	5,147.00	5,075.51	61.21	253.82	5.91	100.71	-6,713.25	10,419.78	10,236.03	183.76	56.704	
10,300.00	6,947.31	5,147.00	5,075.51	62.68	253.82	5.91	100.71	-6,713.25	10,518.12	10,334.41	183.71	57.254	
10,400.00	6,947.22	5,147.00	5,075.51	64.15	253.82	5.91	100.71	-6,713.25	10,616.49	10,432.83	183.66	57.804	
10,500.00	6,947.13	5,147.00	5,075.51	65.63	253.82	5.91	100.71	-6,713.25	10,714.89	10,531.27	183.62	58.354	
10,600.00	6,947.04	5,147.00	5,075.51	67.12	253.82	5.91	100.71	-6,713.25	10,813.32	10,629.74	183.58	58.903	
10,700.00	6,946.95	5,147.00	5,075.51	68.61	253.82	5.91	100.71	-6,713.25	10,911.77	10,728.23	183.54	59.452	
10,800.00	6,946.86	5,147.00	5,075.51	70.11	253.82	5.91	100.71	-6,713.25	11,010.26	10,826.76	183.50	60.001	
10,900.00	6,946.77	5,147.00	5,075.51	71.61	253.82	5.91	100.71	-6,713.25	11,108.77	10,925.30	183.47	60.550	
11,000.00	6,946.68	5,147.00	5,075.51	73.11	253.82	5.91	100.71	-6,713.25	11,207.31	11,023.87	183.43	61.098	
11,100.00	6,946.59	5,147.00	5,075.51	74.62	253.82	5.91	100.71	-6,713.25	11,305.87	11,122.47	183.40	61.646	
11,200.00	6,946.50	5,147.00	5,075.51	76.14	253.82	5.91	100.71	-6,713.25	11,404.46	11,221.09	183.37	62.193	
11,300.00	6,946.41	5,147.00	5,075.51	77.65	253.82	5.91	100.71	-6,713.25	11,503.07	11,319.73	183.34	62.740	
11,400.00	6,946.32	5,147.00	5,075.51	79.18	253.82	5.91	100.71	-6,713.25	11,601.71	11,418.39	183.32	63.287	
11,500.00	6,946.23	5,147.00	5,075.51	80.70	253.82	5.91	100.71	-6,713.25	11,700.37	11,517.07	183.30	63.833	
11,600.00	6,946.14	5,147.00	5,075.51	82.23	253.82	5.91	100.71	-6,713.25	11,799.05	11,615.77	183.27	64.379	
11,700.00	6,946.05	5,147.00	5,075.51	83.76	253.82	5.91	100.71	-6,713.25	11,897.75	11,714.50	183.25	64.925	
11,800.00	6,945.96	5,147.00	5,075.51	85.29	253.82	5.91	100.71	-6,713.25	11,996.48	11,813.24	183.24	65.470	
11,900.00	6,945.87	5,147.00	5,075.51	86.82	253.82	5.91	100.71	-6,713.25	12,095.22	11,912.01	183.22	66.015	
12,000.00	6,945.78	5,147.00	5,075.51	88.36	253.82	5.91	100.71	-6,713.25	12,193.99	12,010.79	183.20	66.560	
12,100.00	6,945.69	5,147.00	5,075.51	89.90	253.82	5.91	100.71	-6,713.25	12,292.78	12,109.59	183.19	67.104	
12,200.00	6,945.60	5,147.00	5,075.51	91.44	253.82	5.91	100.71	-6,713.25	12,391.58	12,208.40	183.18	67.647	
12,300.00	6,945.51	5,147.00	5,075.51	92.99	253.82	5.91	100.71	-6,713.25	12,490.41	12,307.24	183.17	68.190	
12,400.00	6,945.42	5,147.00	5,075.51	94.53	253.82	5.91	100.71	-6,713.25	12,589.25	12,406.09	183.16	68.733	
12,500.00	6,945.33	5,147.00	5,075.51	96.08	253.82	5.91	100.71	-6,713.25	12,688.12	12,504.96	183.16	69.275	
12,600.00	6,945.24	5,147.00	5,075.51	97.63	253.82	5.91	100.71	-6,713.25	12,787.00	12,603.85	183.15	69.817	
12,700.00	6,945.15	5,147.00	5,075.51	99.18	253.82	5.91	100.71	-6,713.25	12,885.89	12,702.75	183.15	70.358	
12,800.00	6,945.06	5,147.00	5,075.51	100.74	253.82	5.91	100.71	-6,713.25	12,984.81	12,801.66	183.14	70.899	
12,900.00	6,944.96	5,147.00	5,075.51	102.29	253.82	5.91	100.71	-6,713.25	13,083.74	12,900.59	183.14	71.439	
13,000.00	6,944.87	5,147.00	5,075.51	103.85	253.82	5.91	100.71	-6,713.25	13,182.68	12,999.54	183.15	71.979	
13,100.00	6,944.78	5,147.00	5,075.51	105.40	253.82	5.91	100.71	-6,713.25	13,281.65	13,098.50	183.15	72.519	
13,200.00	6,944.69	5,147.00	5,075.51	106.96	253.82	5.91	100.71	-6,713.25	13,380.62	13,197.47	183.15	73.057	
13,300.00	6,944.60	5,147.00	5,075.51	108.52	253.82	5.91	100.71	-6,713.25	13,479.62	13,296.46	183.16	73.596	
13,400.00	6,944.51	5,147.00	5,075.51	110.08	253.82	5.91	100.71	-6,713.25	13,578.62	13,395.46	183.16	74.134	
13,500.00	6,944.42	5,147.00	5,075.51	111.65	253.82	5.91	100.71	-6,713.25	13,677.65	13,494.47	183.17	74.671	
13,600.00	6,944.33	5,147.00	5,075.51	113.21	253.82	5.91	100.71	-6,713.25	13,776.68	13,593.50	183.18	75.208	
13,700.00	6,944.24	5,147.00	5,075.51	114.78	253.82	5.91	100.71	-6,713.25	13,875.73	13,692.54	183.19	75.744	
13,800.00	6,944.15	5,147.00	5,075.51	116.34	253.82	5.91	100.71	-6,713.25	13,974.80	13,791.59	183.21	76.279	
13,900.00	6,944.06	5,147.00	5,075.51	117.91	253.82	5.91	100.71	-6,713.25	14,073.87	13,890.65	183.22	76.815	
14,000.00	6,943.97	5,147.00	5,075.51	119.48	253.82	5.91	100.71	-6,713.25	14,172.96	13,989.73	183.23	77.349	
14,100.00	6,943.88	5,147.00	5,075.51	121.05	253.82	5.91	100.71	-6,713.25	14,272.07	14,088.82	183.25	77.883	

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 #722H - Slot B05
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 #722H	**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
14,200.00	6,943.79	5,147.00	5,075.51	122.62	253.82	5.91	100.71	-6,713.25	14,371.18	14,187.91	183.27	78.417	
14,300.00	6,943.70	5,147.00	5,075.51	124.19	253.82	5.91	100.71	-6,713.25	14,470.31	14,287.02	183.29	78.950	
14,400.00	6,943.61	5,147.00	5,075.51	125.76	253.82	5.91	100.71	-6,713.25	14,569.45	14,386.14	183.31	79.482	
14,500.00	6,943.52	5,147.00	5,075.51	127.33	253.82	5.91	100.71	-6,713.25	14,668.60	14,485.27	183.33	80.014	
14,600.00	6,943.43	5,147.00	5,075.51	128.90	253.82	5.91	100.71	-6,713.25	14,767.76	14,584.41	183.35	80.545	
14,700.00	6,943.34	5,147.00	5,075.51	130.48	253.82	5.91	100.71	-6,713.25	14,866.93	14,683.56	183.37	81.075	
14,800.00	6,943.25	5,147.00	5,075.51	132.05	253.82	5.91	100.71	-6,713.25	14,966.12	14,782.72	183.40	81.605	
14,900.00	6,943.16	5,147.00	5,075.51	133.63	253.82	5.91	100.71	-6,713.25	15,065.31	14,881.89	183.42	82.135	
15,000.00	6,943.07	5,147.00	5,075.51	135.20	253.82	5.91	100.71	-6,713.25	15,164.52	14,981.07	183.45	82.663	
15,100.00	6,942.98	5,147.00	5,075.51	136.78	253.82	5.91	100.71	-6,713.25	15,263.73	15,080.26	183.48	83.192	
15,200.00	6,942.89	5,147.00	5,075.51	138.36	253.82	5.91	100.71	-6,713.25	15,362.96	15,179.45	183.51	83.719	
15,300.00	6,942.80	5,147.00	5,075.51	139.93	253.82	5.91	100.71	-6,713.25	15,462.20	15,278.66	183.54	84.246	
15,400.00	6,942.71	5,147.00	5,075.51	141.51	253.82	5.91	100.71	-6,713.25	15,561.44	15,377.88	183.57	84.772	
15,500.00	6,942.62	5,147.00	5,075.51	143.09	253.82	5.91	100.71	-6,713.25	15,660.70	15,477.10	183.60	85.298	
15,600.00	6,942.53	5,147.00	5,075.51	144.67	253.82	5.91	100.71	-6,713.25	15,759.96	15,576.33	183.63	85.823	
15,700.00	6,942.44	5,147.00	5,075.51	146.25	253.82	5.91	100.71	-6,713.25	15,859.24	15,675.57	183.67	86.348	
15,800.00	6,942.35	5,147.00	5,075.51	147.83	253.82	5.91	100.71	-6,713.25	15,958.52	15,774.82	183.70	86.872	
15,900.00	6,942.26	4,599.92	4,579.31	149.41	176.93	9.53	-107.41	-6,618.59	16,026.88	15,884.20	142.67	112.333	
16,000.00	6,942.17	4,595.44	4,575.09	150.99	176.31	9.55	-108.78	-6,617.97	16,125.73	15,983.33	142.41	113.237	
16,100.00	6,942.08	4,591.00	4,570.90	152.57	175.68	9.56	-110.13	-6,617.35	16,224.60	16,082.46	142.14	114.142	
16,200.00	6,941.99	4,586.59	4,566.74	154.16	175.06	9.57	-111.46	-6,616.75	16,323.48	16,181.59	141.88	115.048	
16,300.00	6,941.90	4,582.22	4,562.62	155.74	174.45	9.59	-112.77	-6,616.15	16,422.37	16,280.74	141.63	115.953	
16,400.00	6,941.81	4,577.89	4,558.53	157.32	173.84	9.60	-114.07	-6,615.56	16,521.26	16,379.89	141.38	116.860	
16,500.00	6,941.72	4,573.59	4,554.46	158.91	173.24	9.62	-115.36	-6,614.98	16,620.17	16,479.04	141.13	117.766	
16,600.00	6,941.63	4,569.33	4,550.43	160.49	172.64	9.63	-116.62	-6,614.40	16,719.08	16,578.20	140.88	118.672	
16,700.00	6,941.54	4,565.10	4,546.43	162.07	172.05	9.64	-117.88	-6,613.83	16,818.01	16,677.36	140.64	119.579	
16,800.00	6,941.45	4,560.90	4,542.46	163.66	171.46	9.65	-119.12	-6,613.27	16,916.94	16,776.54	140.41	120.486	
16,900.00	6,941.36	4,556.74	4,538.52	165.24	170.88	9.67	-120.34	-6,612.71	17,015.88	16,875.71	140.17	121.394	
17,000.00	6,941.27	4,552.61	4,534.61	166.83	170.30	9.68	-121.55	-6,612.16	17,114.84	16,974.90	139.94	122.301	
17,100.00	6,941.18	4,548.51	4,530.73	168.42	169.72	9.69	-122.74	-6,611.62	17,213.80	17,074.08	139.71	123.209	
17,200.00	6,941.09	4,544.44	4,526.88	170.00	169.16	9.70	-123.92	-6,611.08	17,312.76	17,173.28	139.49	124.116	
17,300.00	6,941.00	4,540.41	4,523.05	171.59	168.59	9.71	-125.09	-6,610.55	17,411.74	17,272.47	139.27	125.024	
17,400.00	6,940.91	4,536.41	4,519.26	173.18	168.03	9.72	-126.24	-6,610.03	17,510.73	17,371.68	139.05	125.932	
17,500.00	6,940.82	4,532.44	4,515.49	174.76	167.47	9.73	-127.38	-6,609.51	17,609.72	17,470.89	138.83	126.840	
17,600.00	6,940.73	4,528.50	4,511.75	176.35	166.92	9.74	-128.51	-6,609.00	17,708.72	17,570.10	138.62	127.748	
17,700.00	6,940.64	4,524.59	4,508.03	177.94	166.37	9.76	-129.62	-6,608.49	17,807.73	17,669.32	138.41	128.656	
17,800.00	6,940.55	4,520.71	4,504.35	179.53	165.83	9.77	-130.72	-6,608.00	17,906.75	17,768.54	138.21	129.563	
17,900.00	6,940.46	4,516.86	4,500.69	181.11	165.29	9.78	-131.80	-6,607.50	18,005.78	17,867.77	138.01	130.471	
18,000.00	6,940.37	4,513.04	4,497.05	182.70	164.75	9.78	-132.88	-6,607.01	18,104.81	17,967.00	137.81	131.379	
18,100.00	6,940.28	4,509.25	4,493.45	184.29	164.22	9.79	-133.94	-6,606.53	18,203.85	18,066.24	137.61	132.287	
18,200.00	6,940.19	4,505.49	4,489.87	185.88	163.70	9.80	-134.99	-6,606.05	18,302.90	18,165.48	137.42	133.194	
18,300.00	6,940.10	4,501.75	4,486.31	187.47	163.17	9.81	-136.03	-6,605.58	18,401.96	18,264.73	137.22	134.101	
18,400.00	6,940.01	4,498.05	4,482.78	189.06	162.65	9.82	-137.06	-6,605.11	18,501.02	18,363.98	137.04	135.009	
18,500.00	6,939.92	4,494.37	4,479.28	190.65	162.14	9.83	-138.07	-6,604.65	18,600.09	18,463.24	136.85	135.916	
18,600.00	6,939.83	4,490.72	4,475.80	192.24	161.63	9.84	-139.08	-6,604.20	18,699.17	18,562.50	136.67	136.822	
18,700.00	6,939.74	4,487.10	4,472.34	193.83	161.12	9.85	-140.07	-6,603.75	18,798.25	18,661.77	136.49	137.729	
18,800.00	6,939.65	4,483.50	4,468.91	195.42	160.62	9.86	-141.05	-6,603.30	18,897.35	18,761.04	136.31	138.635	
18,900.00	6,939.56	4,479.93	4,465.51	197.01	160.12	9.86	-142.02	-6,602.86	18,996.45	18,860.31	136.14	139.541	
19,000.00	6,939.47	4,476.39	4,462.13	198.60	159.62	9.87	-142.98	-6,602.42	19,095.55	18,959.59	135.96	140.447	
19,100.00	6,939.38	4,472.87	4,458.77	200.19	159.13	9.88	-143.93	-6,601.99	19,194.67	19,058.87	135.79	141.352	
19,200.00	6,939.29	4,469.38	4,455.43	201.78	158.64	9.89	-144.87	-6,601.57	19,293.79	19,158.16	135.63	142.257	
19,300.00	6,939.20	4,465.92	4,452.12	203.37	158.15	9.89	-145.80	-6,601.14	19,392.91	19,257.45	135.46	143.161	

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 #722H - Slot B05
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 #722H	**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
19,400.00	6,939.11	4,462.48	4,448.83	204.97	157.67	9.90	-146.71	-6,600.73	19,492.05	19,356.75	135.30	144.066	
19,500.00	6,939.02	4,459.07	4,445.57	206.56	157.19	9.91	-147.62	-6,600.31	19,591.19	19,456.05	135.14	144.969	
19,600.00	6,938.93	4,455.68	4,442.33	208.15	156.72	9.92	-148.52	-6,599.91	19,690.33	19,555.35	134.98	145.873	
19,700.00	6,938.83	4,452.31	4,439.11	209.74	156.25	9.92	-149.41	-6,599.50	19,789.49	19,654.66	134.83	146.776	
19,800.00	6,938.74	4,448.97	4,435.91	211.33	155.78	9.93	-150.29	-6,599.10	19,888.65	19,753.97	134.68	147.678	
19,900.00	6,938.65	4,445.65	4,432.73	212.93	155.32	9.94	-151.16	-6,598.71	19,987.81	19,853.29	134.53	148.580	
20,000.00	6,938.56	4,442.36	4,429.58	214.52	154.86	9.94	-152.02	-6,598.32	20,086.98	19,952.60	134.38	149.481	
20,100.00	6,938.47	4,439.09	4,426.44	216.11	154.40	9.95	-152.87	-6,597.93	20,186.16	20,051.93	134.23	150.382	
20,200.00	6,938.38	4,435.85	4,423.33	217.71	153.94	9.96	-153.71	-6,597.55	20,285.34	20,151.25	134.09	151.283	
20,300.00	6,938.29	4,432.62	4,420.24	219.30	153.49	9.96	-154.54	-6,597.17	20,384.53	20,250.59	133.95	152.182	
20,400.00	6,938.20	4,429.42	4,417.17	220.89	153.05	9.97	-155.36	-6,596.80	20,483.73	20,349.92	133.81	153.082	
20,500.00	6,938.11	4,426.25	4,414.12	222.49	152.60	9.97	-156.18	-6,596.43	20,582.93	20,449.26	133.67	153.980	
20,600.00	6,938.02	4,423.09	4,411.09	224.08	152.16	9.98	-156.99	-6,596.06	20,682.14	20,548.60	133.54	154.878	
20,626.08	6,938.00	4,422.27	4,410.31	224.49	152.04	9.98	-157.19	-6,595.96	20,708.01	20,574.51	133.50	155.112	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-86.06	714.05	-10,378.50	10,403.04				
100.00	100.00	135.00	135.00	0.25	1.33	-86.06	714.05	-10,378.50	10,403.04	10,401.46	1.58	6,580.996	
200.00	200.00	235.00	235.00	0.61	2.31	-86.06	714.05	-10,378.50	10,403.04	10,400.11	2.92	3,557.617	
300.00	300.00	335.01	335.00	0.97	3.37	-86.06	714.05	-10,378.50	10,403.04	10,398.70	4.34	2,398.845	
400.00	400.00	435.01	435.00	1.33	5.34	-86.06	714.05	-10,378.50	10,403.04	10,396.37	6.67	1,560.819	
500.00	500.00	535.01	535.00	1.68	7.31	-86.06	714.05	-10,378.50	10,403.04	10,394.04	8.99	1,156.723	CC
535.00	535.00	570.01	570.00	1.81	8.00	-96.74	714.05	-10,378.50	10,403.06	10,393.25	9.81	1,060.627	
600.00	599.99	636.16	636.14	2.04	9.30	-96.74	714.81	-10,378.50	10,403.21	10,391.86	11.34	917.062	
700.00	699.99	738.08	738.06	2.40	11.31	-96.74	714.50	-10,378.50	10,403.33	10,389.62	13.71	758.828	
800.00	799.98	835.03	834.98	2.76	13.21	-96.75	714.05	-10,378.50	10,403.44	10,387.47	15.97	651.485	
900.00	899.97	935.02	934.97	3.12	15.11	-96.76	714.05	-10,378.50	10,403.59	10,385.36	18.23	570.743	
1,000.00	999.96	1,035.02	1,034.96	3.48	17.01	-96.77	714.05	-10,378.50	10,403.73	10,383.24	20.49	507.807	
1,100.00	1,099.96	1,136.19	1,136.13	3.84	18.94	-96.77	714.82	-10,378.50	10,403.93	10,381.16	22.77	456.926	
1,200.00	1,199.95	1,238.06	1,238.00	4.19	20.87	-96.78	714.51	-10,378.50	10,404.05	10,378.98	25.06	415.089	
1,300.00	1,299.94	1,335.02	1,334.94	4.55	22.71	-96.79	714.05	-10,378.50	10,404.16	10,376.90	27.26	381.677	
1,400.00	1,399.93	1,435.02	1,434.93	4.91	24.55	-96.79	714.05	-10,378.50	10,404.31	10,374.85	29.46	353.204	
1,500.00	1,499.93	1,535.01	1,534.93	5.27	26.39	-96.80	714.05	-10,378.50	10,404.45	10,372.80	31.65	328.686	
1,600.00	1,599.92	1,635.77	1,635.68	5.63	28.24	-96.80	714.56	-10,378.50	10,404.63	10,370.76	33.87	307.224	
1,700.00	1,699.91	1,737.00	1,736.91	5.99	30.10	-96.81	714.36	-10,378.50	10,404.76	10,368.67	36.09	288.323	
1,800.00	1,799.90	1,835.01	1,834.90	6.34	31.91	-96.82	714.05	-10,378.50	10,404.89	10,366.64	38.25	272.030	
1,900.00	1,899.90	1,935.00	1,934.90	6.70	33.75	-96.83	714.05	-10,378.50	10,405.03	10,364.58	40.45	257.226	
2,000.00	1,999.89	2,034.99	2,034.89	7.06	35.60	-96.83	714.05	-10,378.50	10,405.18	10,362.52	42.65	243.951	
2,100.00	2,099.88	2,135.59	2,135.48	7.42	37.45	-96.84	714.59	-10,378.50	10,405.36	10,360.49	44.87	231.922	
2,200.00	2,199.87	2,236.76	2,236.65	7.78	39.32	-96.84	714.42	-10,378.50	10,405.49	10,358.40	47.09	220.973	
2,300.00	2,299.87	2,337.92	2,337.81	8.14	41.18	-96.85	714.07	-10,378.50	10,405.62	10,356.30	49.31	211.012	
2,400.00	2,399.86	2,434.98	2,434.86	8.50	42.97	-96.86	714.05	-10,378.50	10,405.76	10,354.30	51.46	202.201	
2,500.00	2,499.85	2,534.97	2,534.85	8.85	44.82	-96.87	714.05	-10,378.50	10,405.91	10,352.24	53.67	193.901	
2,600.00	2,599.85	2,635.42	2,635.30	9.21	46.67	-96.87	714.59	-10,378.50	10,406.09	10,350.21	55.88	186.228	
2,700.00	2,699.84	2,736.61	2,736.49	9.57	48.54	-96.88	714.43	-10,378.50	10,406.22	10,348.12	58.10	179.096	
2,800.00	2,799.83	2,837.80	2,837.67	9.93	50.41	-96.89	714.10	-10,378.50	10,406.35	10,346.02	60.33	172.491	
2,900.00	2,899.82	2,934.96	2,934.82	10.29	52.25	-96.89	714.05	-10,378.50	10,406.49	10,343.96	62.53	166.422	
3,000.00	2,999.82	3,034.96	3,034.82	10.65	54.15	-96.90	714.05	-10,378.50	10,406.64	10,341.84	64.79	160.615	
3,100.00	3,099.81	3,135.45	3,135.31	11.01	56.06	-96.90	714.57	-10,378.50	10,406.82	10,339.75	67.06	155.177	
3,200.00	3,199.80	3,236.68	3,236.53	11.36	57.99	-96.91	714.40	-10,378.50	10,406.95	10,337.60	69.35	150.065	
3,300.00	3,299.79	3,337.90	3,337.75	11.72	59.92	-96.92	714.05	-10,378.50	10,407.08	10,335.44	71.63	145.280	
3,400.00	3,399.79	3,434.95	3,434.79	12.08	61.88	-96.93	714.05	-10,378.50	10,407.23	10,333.27	73.96	140.722	
3,500.00	3,499.78	3,535.00	3,534.83	12.44	63.91	-96.93	714.68	-10,378.50	10,407.41	10,331.08	76.34	136.333	
3,600.00	3,599.77	3,637.33	3,637.15	12.80	65.98	-96.94	714.50	-10,378.50	10,407.55	10,328.78	78.77	132.132	
3,700.00	3,699.76	3,734.98	3,734.76	13.16	67.96	-96.95	714.05	-10,378.50	10,407.67	10,326.56	81.11	128.323	
3,800.00	3,799.76	3,834.97	3,834.76	13.52	70.05	-96.95	714.05	-10,378.50	10,407.82	10,324.26	83.56	124.562	
3,900.00	3,899.75	3,934.96	3,934.75	13.87	72.14	-96.96	714.05	-10,378.50	10,407.96	10,321.96	86.01	121.015	
4,000.00	3,999.74	4,036.15	4,035.92	14.23	74.26	-96.96	715.12	-10,378.50	10,408.18	10,319.70	88.48	117.633	
4,100.00	4,099.73	4,138.48	4,138.25	14.59	76.40	-96.97	714.76	-10,378.50	10,408.31	10,317.33	90.98	114.403	
4,200.00	4,199.73	4,240.81	4,240.57	14.95	78.54	-96.98	714.05	-10,378.50	10,408.41	10,314.93	93.48	111.346	
4,300.00	4,299.72	4,335.01	4,334.72	15.31	80.52	-96.99	714.05	-10,378.50	10,408.56	10,312.74	95.82	108.632	
4,400.00	4,399.71	4,435.00	4,434.71	15.67	82.62	-96.99	714.05	-10,378.50	10,408.71	10,310.43	98.27	105.915	
4,500.00	4,499.70	4,535.70	4,535.39	16.03	84.73	-96.99	715.18	-10,378.50	10,408.93	10,308.18	100.75	103.317	
4,600.00	4,599.70	4,637.96	4,637.65	16.38	86.88	-97.00	714.90	-10,378.50	10,409.06	10,305.80	103.25	100.810	
4,700.00	4,699.69	4,740.21	4,739.90	16.74	89.03	-97.01	714.27	-10,378.50	10,409.17	10,303.41	105.76	98.422	
4,800.00	4,799.68	4,835.05	4,834.68	17.10	91.02	-97.02	714.05	-10,378.50	10,409.30	10,301.19	108.12	96.279	
4,900.00	4,899.67	4,935.05	4,934.67	17.46	93.13	-97.03	714.05	-10,378.50	10,409.45	10,298.87	110.58	94.134	
5,000.00	4,999.67	5,035.04	5,034.67	17.82	95.24	-97.03	714.05	-10,378.50	10,409.60	10,296.56	113.05	92.083	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	5,136.63	5,136.24	18.18	97.38	-97.03	715.21	-10,378.50	10,409.82	10,294.28	115.55	90.093	
5,200.00	5,199.65	5,238.66	5,238.26	18.53	99.53	-97.04	714.81	-10,378.50	10,409.95	10,291.90	118.05	88.180	
5,300.00	5,299.64	5,340.68	5,340.28	18.89	101.68	-97.05	714.09	-10,378.50	10,410.06	10,289.49	120.56	86.346	
5,400.00	5,399.64	5,435.10	5,434.64	19.25	103.67	-97.06	714.05	-10,378.50	10,410.20	10,287.29	122.91	84.696	
5,500.00	5,499.63	5,535.09	5,534.63	19.61	105.78	-97.07	714.05	-10,378.50	10,410.35	10,284.97	125.38	83.029	
5,600.00	5,599.62	5,635.98	5,635.51	19.97	107.91	-97.07	715.11	-10,378.50	10,410.57	10,282.70	127.87	81.414	
5,700.00	5,699.61	5,738.31	5,737.83	20.33	110.07	-97.08	714.79	-10,378.50	10,410.70	10,280.31	130.39	79.843	
5,800.00	5,799.61	5,840.63	5,840.14	20.69	112.23	-97.09	714.10	-10,378.50	10,410.81	10,277.90	132.91	78.330	
5,900.00	5,899.60	5,935.14	5,934.60	21.04	114.23	-97.09	714.05	-10,378.50	10,410.95	10,275.69	135.27	76.966	
6,000.00	5,999.59	6,035.13	6,034.59	21.40	116.35	-97.10	714.05	-10,378.50	10,411.10	10,273.36	137.74	75.584	
6,100.00	6,099.58	6,135.12	6,134.58	21.76	118.47	-97.11	714.05	-10,378.50	10,411.26	10,271.04	140.22	74.251	
6,200.00	6,199.58	6,235.11	6,234.58	22.12	120.58	-97.11	714.05	-10,378.50	10,411.41	10,268.72	142.69	72.964	
6,300.00	6,299.57	6,335.11	6,334.57	22.48	122.70	-97.12	714.05	-10,378.50	10,411.56	10,266.39	145.17	71.722	
6,315.05	6,314.62	6,350.16	6,349.62	22.53	123.02	-97.12	714.05	-10,378.50	10,411.58	10,266.04	145.54	71.538 ES	
6,350.00	6,349.55	6,385.08	6,384.55	22.66	123.76	-166.30	714.05	-10,378.50	10,412.59	10,266.19	146.40	71.124	
6,400.00	6,399.30	6,434.84	6,434.30	22.83	124.81	-173.20	714.05	-10,378.50	10,417.37	10,269.74	147.63	70.565	
6,450.00	6,448.52	6,484.06	6,483.52	23.00	125.85	-175.04	714.05	-10,378.50	10,426.03	10,277.19	148.84	70.049	
6,500.00	6,496.91	6,532.45	6,531.91	23.18	126.88	-175.86	714.05	-10,378.50	10,438.52	10,288.49	150.03	69.576	
6,550.00	6,544.17	6,579.71	6,579.17	23.35	127.88	-176.31	714.05	-10,378.50	10,454.78	10,303.58	151.19	69.149	
6,600.00	6,590.01	6,625.55	6,625.01	23.53	128.85	-176.57	714.05	-10,378.50	10,474.69	10,322.37	152.32	68.769	
6,650.00	6,634.14	6,669.68	6,669.14	23.70	129.78	-176.72	714.05	-10,378.50	10,498.13	10,344.73	153.40	68.437	
6,700.00	6,676.30	6,711.83	6,711.30	23.88	130.67	-176.79	714.05	-10,378.50	10,524.97	10,370.54	154.43	68.155	
6,750.00	6,716.21	6,751.75	6,751.21	24.06	131.52	-176.80	714.05	-10,378.50	10,555.02	10,399.63	155.40	67.922	
6,800.00	6,753.65	6,789.19	6,788.65	24.24	132.31	-176.75	714.05	-10,378.50	10,588.12	10,431.81	156.31	67.739	
6,850.00	6,788.37	6,823.91	6,823.37	24.44	133.05	-176.65	714.05	-10,378.50	10,624.06	10,466.91	157.15	67.605	
6,900.00	6,820.16	6,855.70	6,855.16	24.63	133.72	-176.48	714.05	-10,378.50	10,662.60	10,504.69	157.91	67.521	
6,950.00	6,848.83	6,884.36	6,883.83	24.84	134.33	-176.22	714.05	-10,378.50	10,703.53	10,544.92	158.60	67.487 SF	
7,000.00	6,874.19	6,909.73	6,909.19	25.06	134.86	-175.86	714.05	-10,378.50	10,746.57	10,587.36	159.21	67.500	
7,050.00	6,896.10	6,931.64	6,931.10	25.29	135.33	-175.32	714.05	-10,378.50	10,791.48	10,631.75	159.73	67.561	
7,100.00	6,914.42	6,949.96	6,949.42	25.53	135.71	-174.50	714.05	-10,378.50	10,837.96	10,677.80	160.16	67.669	
7,150.00	6,929.03	6,964.57	6,964.03	25.78	136.02	-173.15	714.05	-10,378.50	10,885.74	10,725.24	160.51	67.821	
7,200.00	6,939.85	6,975.38	6,974.85	26.05	136.25	-170.60	714.05	-10,378.50	10,934.52	10,773.76	160.76	68.018	
7,250.00	6,946.80	6,982.34	6,981.80	26.32	136.40	-164.20	714.05	-10,378.50	10,984.00	10,823.08	160.92	68.256	
7,300.00	6,949.85	6,985.39	6,984.85	26.61	136.46	-128.61	714.05	-10,378.50	11,033.88	10,872.88	161.00	68.534	
7,314.43	6,950.00	6,985.54	6,985.00	26.69	136.47	-88.08	714.05	-10,378.50	11,048.31	10,887.30	161.00	68.622	
7,400.00	6,949.92	6,985.46	6,984.92	27.21	136.47	-88.07	714.05	-10,378.50	11,133.84	10,972.83	161.01	69.150	
7,500.00	6,949.83	6,985.37	6,984.83	27.90	136.46	-88.05	714.05	-10,378.50	11,233.81	11,072.79	161.02	69.767	
7,600.00	6,949.74	6,985.28	6,984.74	28.66	136.46	-88.03	714.05	-10,378.50	11,333.77	11,172.74	161.03	70.384	
7,700.00	6,949.65	6,985.19	6,984.65	29.49	136.46	-88.02	714.05	-10,378.50	11,433.74	11,272.70	161.04	71.000	
7,800.00	6,949.56	6,985.10	6,984.56	30.38	136.46	-88.00	714.05	-10,378.50	11,533.70	11,372.65	161.05	71.616	
7,900.00	6,949.47	6,985.01	6,984.47	31.33	136.46	-87.98	714.05	-10,378.50	11,633.67	11,472.61	161.06	72.231	
8,000.00	6,949.38	6,984.92	6,984.38	32.33	136.45	-87.97	714.05	-10,378.50	11,733.64	11,572.56	161.08	72.845	
8,100.00	6,949.29	6,984.83	6,984.29	33.38	136.45	-87.95	714.05	-10,378.50	11,833.61	11,672.52	161.09	73.459	
8,200.00	6,949.20	6,984.74	6,984.20	34.47	136.45	-87.93	714.05	-10,378.50	11,933.58	11,772.47	161.11	74.073	
8,300.00	6,949.11	6,984.65	6,984.11	35.60	136.45	-87.91	714.05	-10,378.50	12,033.54	11,872.42	161.12	74.685	
8,400.00	6,949.02	6,984.56	6,984.02	36.76	136.45	-87.90	714.05	-10,378.50	12,133.51	11,972.37	161.14	75.298	
8,500.00	6,948.93	6,984.47	6,983.93	37.96	136.44	-87.88	714.05	-10,378.50	12,233.48	12,072.33	161.16	75.909	
8,600.00	6,948.84	6,984.38	6,983.84	39.18	136.44	-87.86	714.05	-10,378.50	12,333.45	12,172.28	161.18	76.521	
8,700.00	6,948.75	6,984.29	6,983.75	40.43	136.44	-87.84	714.05	-10,378.50	12,433.43	12,272.23	161.20	77.131	
8,800.00	6,948.66	6,984.20	6,983.66	41.71	136.44	-87.83	714.05	-10,378.50	12,533.40	12,372.18	161.22	77.741	
8,900.00	6,948.57	6,984.11	6,983.57	43.00	136.44	-87.81	714.05	-10,378.50	12,633.37	12,472.13	161.24	78.350	
9,000.00	6,948.48	6,984.02	6,983.48	44.32	136.43	-87.79	714.05	-10,378.50	12,733.34	12,572.08	161.27	78.959	

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 #722H - Slot B05
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 #722H	**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
9,100.00	6,948.39	6,983.93	6,983.39	45.66	136.43	-87.77	714.05	-10,378.50	12,833.31	12,672.03	161.29	79.567	
9,200.00	6,948.30	6,983.84	6,983.30	47.01	136.43	-87.76	714.05	-10,378.50	12,933.29	12,771.97	161.31	80.174	
9,300.00	6,948.21	6,983.75	6,983.21	48.38	136.43	-87.74	714.05	-10,378.50	13,033.26	12,871.92	161.34	80.781	
9,400.00	6,948.12	6,983.66	6,983.12	49.76	136.43	-87.72	714.05	-10,378.50	13,133.24	12,971.87	161.37	81.387	
9,500.00	6,948.03	6,983.57	6,983.03	51.16	136.43	-87.71	714.05	-10,378.50	13,233.21	13,071.81	161.39	81.993	
9,600.00	6,947.94	6,983.48	6,982.94	52.56	136.42	-87.69	714.05	-10,378.50	13,333.18	13,171.76	161.42	82.597	
9,700.00	6,947.85	6,983.39	6,982.85	53.98	136.42	-87.67	714.05	-10,378.50	13,433.16	13,271.71	161.45	83.202	
9,800.00	6,947.76	6,983.30	6,982.76	55.41	136.42	-87.65	714.05	-10,378.50	13,533.14	13,371.65	161.48	83.805	
9,900.00	6,947.67	6,983.21	6,982.67	56.85	136.42	-87.64	714.05	-10,378.50	13,633.11	13,471.60	161.52	84.408	
10,000.00	6,947.58	6,983.12	6,982.58	58.29	136.42	-87.62	714.05	-10,378.50	13,733.09	13,571.54	161.55	85.010	
10,100.00	6,947.49	6,983.03	6,982.49	59.75	136.41	-87.60	714.05	-10,378.50	13,833.06	13,671.48	161.58	85.611	
10,200.00	6,947.40	6,982.94	6,982.40	61.21	136.41	-87.58	714.05	-10,378.50	13,933.04	13,771.43	161.61	86.211	
10,300.00	6,947.31	6,982.85	6,982.31	62.68	136.41	-87.57	714.05	-10,378.50	14,033.02	13,871.37	161.65	86.811	
10,400.00	6,947.22	6,982.76	6,982.22	64.15	136.41	-87.55	714.05	-10,378.50	14,133.00	13,971.31	161.69	87.410	
10,500.00	6,947.13	6,982.67	6,982.13	65.63	136.41	-87.53	714.05	-10,378.50	14,232.97	14,071.25	161.72	88.009	
10,600.00	6,947.04	6,982.58	6,982.04	67.12	136.40	-87.51	714.05	-10,378.50	14,332.95	14,171.19	161.76	88.606	
10,700.00	6,946.95	6,982.49	6,981.95	68.61	136.40	-87.50	714.05	-10,378.50	14,432.93	14,271.13	161.80	89.203	
10,800.00	6,946.86	6,982.40	6,981.86	70.11	136.40	-87.48	714.05	-10,378.50	14,532.91	14,371.07	161.84	89.799	
10,900.00	6,946.77	6,982.31	6,981.77	71.61	136.40	-87.46	714.05	-10,378.50	14,632.89	14,471.01	161.88	90.394	
11,000.00	6,946.68	6,982.22	6,981.68	73.11	136.40	-87.45	714.05	-10,378.50	14,732.87	14,570.95	161.92	90.989	
11,100.00	6,946.59	6,982.13	6,981.59	74.62	136.39	-87.43	714.05	-10,378.50	14,832.85	14,670.89	161.96	91.583	
11,200.00	6,946.50	6,982.04	6,981.50	76.14	136.39	-87.41	714.05	-10,378.50	14,932.83	14,770.82	162.00	92.176	
11,300.00	6,946.41	6,981.95	6,981.41	77.65	136.39	-87.39	714.05	-10,378.50	15,032.81	14,870.76	162.05	92.768	
11,400.00	6,946.32	6,981.86	6,981.32	79.18	136.39	-87.38	714.05	-10,378.50	15,132.79	14,970.70	162.09	93.359	
11,500.00	6,946.23	6,981.77	6,981.23	80.70	136.39	-87.36	714.05	-10,378.50	15,232.77	15,070.63	162.14	93.950	
11,600.00	6,946.14	6,981.67	6,981.14	82.23	136.39	-87.34	714.05	-10,378.50	15,332.75	15,170.57	162.18	94.539	
11,700.00	6,946.05	6,981.58	6,981.05	83.76	136.38	-87.32	714.05	-10,378.50	15,432.73	15,270.50	162.23	95.128	
11,800.00	6,945.96	6,981.49	6,980.96	85.29	136.38	-87.31	714.05	-10,378.50	15,532.71	15,370.43	162.28	95.716	
11,900.00	6,945.87	6,981.40	6,980.87	86.82	136.38	-87.29	714.05	-10,378.50	15,632.70	15,470.37	162.33	96.304	
12,000.00	6,945.78	6,981.31	6,980.78	88.36	136.38	-87.27	714.05	-10,378.50	15,732.68	15,570.30	162.38	96.890	
12,100.00	6,945.69	6,981.22	6,980.69	89.90	136.38	-87.26	714.05	-10,378.50	15,832.66	15,670.23	162.43	97.476	
12,200.00	6,945.60	6,981.13	6,980.60	91.44	136.37	-87.24	714.05	-10,378.50	15,932.64	15,770.16	162.48	98.061	
12,300.00	6,945.51	6,981.04	6,980.51	92.99	136.37	-87.22	714.05	-10,378.50	16,032.62	15,870.10	162.53	98.645	
12,400.00	6,945.42	6,980.95	6,980.42	94.53	136.37	-87.20	714.05	-10,378.50	16,132.61	15,970.03	162.58	99.228	
12,500.00	6,945.33	6,980.86	6,980.33	96.08	136.37	-87.19	714.05	-10,378.50	16,232.59	16,069.96	162.64	99.810	
12,600.00	6,945.24	6,980.77	6,980.24	97.63	136.37	-87.17	714.05	-10,378.50	16,332.57	16,169.88	162.69	100.391	
12,700.00	6,945.15	6,980.68	6,980.15	99.18	136.36	-87.15	714.05	-10,378.50	16,432.56	16,269.81	162.74	100.972	
12,800.00	6,945.06	6,980.59	6,980.06	100.74	136.36	-87.13	714.05	-10,378.50	16,532.54	16,369.74	162.80	101.551	
12,900.00	6,944.96	6,980.50	6,979.96	102.29	136.36	-87.12	714.05	-10,378.50	16,632.52	16,469.67	162.86	102.130	
13,000.00	6,944.87	6,980.41	6,979.87	103.85	136.36	-87.10	714.05	-10,378.50	16,732.51	16,569.60	162.91	102.708	
13,100.00	6,944.78	6,980.32	6,979.78	105.40	136.36	-87.08	714.05	-10,378.50	16,832.49	16,669.52	162.97	103.285	
13,200.00	6,944.69	6,980.23	6,979.69	106.96	136.35	-87.06	714.05	-10,378.50	16,932.48	16,769.45	163.03	103.861	
13,300.00	6,944.60	6,980.14	6,979.60	108.52	136.35	-87.05	714.05	-10,378.50	17,032.46	16,869.37	163.09	104.436	
13,400.00	6,944.51	6,980.05	6,979.51	110.08	136.35	-87.03	714.05	-10,378.50	17,132.45	16,969.30	163.15	105.011	
13,500.00	6,944.42	6,979.96	6,979.42	111.65	136.35	-87.01	714.05	-10,378.50	17,232.43	17,069.22	163.21	105.584	
13,600.00	6,944.33	6,979.87	6,979.33	113.21	136.35	-87.00	714.05	-10,378.50	17,332.42	17,169.14	163.27	106.157	
13,700.00	6,944.24	6,979.78	6,979.24	114.78	136.35	-86.98	714.05	-10,378.50	17,432.40	17,269.07	163.33	106.729	
13,800.00	6,944.15	6,979.69	6,979.15	116.34	136.34	-86.96	714.05	-10,378.50	17,532.39	17,368.99	163.40	107.299	
13,900.00	6,944.06	6,979.60	6,979.06	117.91	136.34	-86.94	714.05	-10,378.50	17,632.37	17,468.91	163.46	107.869	
14,000.00	6,943.97	6,979.51	6,978.97	119.48	136.34	-86.93	714.05	-10,378.50	17,732.36	17,568.83	163.53	108.438	
14,100.00	6,943.88	6,979.42	6,978.88	121.05	136.34	-86.91	714.05	-10,378.50	17,832.34	17,668.75	163.59	109.006	
14,200.00	6,943.79	6,979.33	6,978.79	122.62	136.34	-86.89	714.05	-10,378.50	17,932.33	17,768.67	163.66	109.573	

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 #722H - Slot B05
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 #722H	**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
14,300.00	6,943.70	6,979.24	6,978.70	124.19	136.33	-86.87	714.05	-10,378.50	18,032.32	17,868.59	163.72	110.139	
14,400.00	6,943.61	6,979.15	6,978.61	125.76	136.33	-86.86	714.05	-10,378.50	18,132.30	17,968.51	163.79	110.705	
14,500.00	6,943.52	6,979.06	6,978.52	127.33	136.33	-86.84	714.05	-10,378.50	18,232.29	18,068.43	163.86	111.269	
14,600.00	6,943.43	6,978.97	6,978.43	128.90	136.33	-86.82	714.05	-10,378.50	18,332.28	18,168.35	163.93	111.832	
14,700.00	6,943.34	6,978.88	6,978.34	130.48	136.33	-86.81	714.05	-10,378.50	18,432.26	18,268.27	164.00	112.395	
14,800.00	6,943.25	6,978.79	6,978.25	132.05	136.32	-86.79	714.05	-10,378.50	18,532.25	18,368.19	164.07	112.956	
14,900.00	6,943.16	6,978.70	6,978.16	133.63	136.32	-86.77	714.05	-10,378.50	18,632.24	18,468.10	164.14	113.517	
15,000.00	6,943.07	6,978.61	6,978.07	135.20	136.32	-86.75	714.05	-10,378.50	18,732.22	18,568.02	164.21	114.077	
15,100.00	6,942.98	6,978.52	6,977.98	136.78	136.32	-86.74	714.05	-10,378.50	18,832.21	18,667.93	164.28	114.636	
15,200.00	6,942.89	6,978.43	6,977.89	138.36	136.32	-86.72	714.05	-10,378.50	18,932.20	18,767.85	164.35	115.193	
15,300.00	6,942.80	6,978.34	6,977.80	139.93	136.31	-86.70	714.05	-10,378.50	19,032.19	18,867.76	164.42	115.750	
15,400.00	6,942.71	6,978.25	6,977.71	141.51	136.31	-86.68	714.05	-10,378.50	19,132.18	18,967.68	164.50	116.306	
15,500.00	6,942.62	6,978.16	6,977.62	143.09	136.31	-86.67	714.05	-10,378.50	19,232.16	19,067.59	164.57	116.861	
15,600.00	6,942.53	6,978.07	6,977.53	144.67	136.31	-86.65	714.05	-10,378.50	19,332.15	19,167.50	164.65	117.415	
15,700.00	6,942.44	6,977.98	6,977.44	146.25	136.31	-86.63	714.05	-10,378.50	19,432.14	19,267.42	164.72	117.968	
15,800.00	6,942.35	6,977.89	6,977.35	147.83	136.31	-86.61	714.05	-10,378.50	19,532.13	19,367.33	164.80	118.521	
15,900.00	6,942.26	6,977.80	6,977.26	149.41	136.30	-86.60	714.05	-10,378.50	19,632.12	19,467.24	164.88	119.072	
16,000.00	6,942.17	6,977.71	6,977.17	150.99	136.30	-86.58	714.05	-10,378.50	19,732.10	19,567.15	164.95	119.622	
16,100.00	6,942.08	6,977.62	6,977.08	152.57	136.30	-86.56	714.05	-10,378.50	19,832.09	19,667.06	165.03	120.171	
16,200.00	6,941.99	6,977.53	6,976.99	154.16	136.30	-86.55	714.05	-10,378.50	19,932.08	19,766.97	165.11	120.720	
16,300.00	6,941.90	6,977.44	6,976.90	155.74	136.30	-86.53	714.05	-10,378.50	20,032.07	19,866.88	165.19	121.267	
16,400.00	6,941.81	6,977.35	6,976.81	157.32	136.29	-86.51	714.05	-10,378.50	20,132.06	19,966.79	165.27	121.814	
16,500.00	6,941.72	6,977.26	6,976.72	158.91	136.29	-86.49	714.05	-10,378.50	20,232.05	20,066.70	165.35	122.359	
16,600.00	6,941.63	6,977.17	6,976.63	160.49	136.29	-86.48	714.05	-10,378.50	20,332.04	20,166.61	165.43	122.904	
16,700.00	6,941.54	6,977.08	6,976.54	162.07	136.29	-86.46	714.05	-10,378.50	20,432.03	20,266.52	165.51	123.447	
16,800.00	6,941.45	6,976.99	6,976.45	163.66	136.29	-86.44	714.05	-10,378.50	20,532.02	20,366.42	165.59	123.990	
16,900.00	6,941.36	6,976.90	6,976.36	165.24	136.28	-86.42	714.05	-10,378.50	20,632.01	20,466.33	165.68	124.531	
17,000.00	6,941.27	6,976.81	6,976.27	166.83	136.28	-86.41	714.05	-10,378.50	20,732.00	20,566.24	165.76	125.072	
17,100.00	6,941.18	6,976.72	6,976.18	168.42	136.28	-86.39	714.05	-10,378.50	20,831.99	20,666.14	165.84	125.612	
17,200.00	6,941.09	6,976.63	6,976.09	170.00	136.28	-86.37	714.05	-10,378.50	20,931.98	20,766.05	165.93	126.151	
17,300.00	6,941.00	6,976.54	6,976.00	171.59	136.28	-86.36	714.05	-10,378.50	21,031.97	20,865.95	166.01	126.689	
17,400.00	6,940.91	6,976.45	6,975.91	173.18	136.27	-86.34	714.05	-10,378.50	21,131.96	20,965.86	166.10	127.226	
17,500.00	6,940.82	6,976.36	6,975.82	174.76	136.27	-86.32	714.05	-10,378.50	21,231.95	21,065.76	166.18	127.761	
17,600.00	6,940.73	6,976.27	6,975.73	176.35	136.27	-86.30	714.05	-10,378.50	21,331.94	21,165.67	166.27	128.296	
17,700.00	6,940.64	6,976.18	6,975.64	177.94	136.27	-86.29	714.05	-10,378.50	21,431.93	21,265.57	166.36	128.830	
17,800.00	6,940.55	6,976.09	6,975.55	179.53	136.27	-86.27	714.05	-10,378.50	21,531.92	21,365.47	166.44	129.364	
17,900.00	6,940.46	6,976.00	6,975.46	181.11	136.27	-86.25	714.05	-10,378.50	21,631.91	21,465.37	166.53	129.896	
18,000.00	6,940.37	6,975.91	6,975.37	182.70	136.26	-86.23	714.05	-10,378.50	21,731.90	21,565.28	166.62	130.427	
18,100.00	6,940.28	6,975.82	6,975.28	184.29	136.26	-86.22	714.05	-10,378.50	21,831.89	21,665.18	166.71	130.957	
18,200.00	6,940.19	6,975.73	6,975.19	185.88	136.26	-86.20	714.05	-10,378.50	21,931.88	21,765.08	166.80	131.486	
18,300.00	6,940.10	6,975.64	6,975.10	187.47	136.26	-86.18	714.05	-10,378.50	22,031.87	21,864.98	166.89	132.015	
18,400.00	6,940.01	6,975.54	6,975.01	189.06	136.26	-86.17	714.05	-10,378.50	22,131.86	21,964.88	166.98	132.542	
18,500.00	6,939.92	6,975.45	6,974.92	190.65	136.25	-86.15	714.05	-10,378.50	22,231.85	22,064.78	167.07	133.068	
18,600.00	6,939.83	6,975.36	6,974.83	192.24	136.25	-86.13	714.05	-10,378.50	22,331.84	22,164.68	167.16	133.594	
18,700.00	6,939.74	6,975.27	6,974.74	193.83	136.25	-86.11	714.05	-10,378.50	22,431.83	22,264.58	167.25	134.118	
18,800.00	6,939.65	6,975.18	6,974.65	195.42	136.25	-86.10	714.05	-10,378.50	22,531.82	22,364.48	167.35	134.642	
18,900.00	6,939.56	6,975.09	6,974.56	197.01	136.25	-86.08	714.05	-10,378.50	22,631.82	22,464.38	167.44	135.164	
19,000.00	6,939.47	6,975.00	6,974.47	198.60	136.24	-86.06	714.05	-10,378.50	22,731.81	22,564.27	167.53	135.686	
19,100.00	6,939.38	6,974.91	6,974.38	200.19	136.24	-86.04	714.05	-10,378.50	22,831.80	22,664.17	167.63	136.206	
19,200.00	6,939.29	6,974.82	6,974.29	201.78	136.24	-86.03	714.05	-10,378.50	22,931.79	22,764.07	167.72	136.726	
19,300.00	6,939.20	6,974.73	6,974.20	203.37	136.24	-86.01	714.05	-10,378.50	23,031.78	22,863.97	167.82	137.245	
19,400.00	6,939.11	6,974.64	6,974.11	204.97	136.24	-85.99	714.05	-10,378.50	23,131.77	22,963.86	167.91	137.763	

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 #722H - Slot B05
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 #722H	**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	6,939.02	6,974.55	6,974.02	206.56	136.23	-85.98	714.05	-10,378.50	23,231.77	23,063.76	168.01	138.279	
19,600.00	6,938.93	6,974.46	6,973.93	208.15	136.23	-85.96	714.05	-10,378.50	23,331.76	23,163.65	168.10	138.795	
19,700.00	6,938.83	6,974.37	6,973.83	209.74	136.23	-85.94	714.05	-10,378.50	23,431.75	23,263.55	168.20	139.310	
19,800.00	6,938.74	6,974.28	6,973.74	211.33	136.23	-85.92	714.05	-10,378.50	23,531.74	23,363.45	168.30	139.824	
19,900.00	6,938.65	6,974.19	6,973.65	212.93	136.23	-85.91	714.05	-10,378.50	23,631.73	23,463.34	168.39	140.337	
20,000.00	6,938.56	6,974.10	6,973.56	214.52	136.23	-85.89	714.05	-10,378.50	23,731.72	23,563.23	168.49	140.849	
20,100.00	6,938.47	6,974.01	6,973.47	216.11	136.22	-85.87	714.05	-10,378.50	23,831.72	23,663.13	168.59	141.361	
20,200.00	6,938.38	6,973.92	6,973.38	217.71	136.22	-85.85	714.05	-10,378.50	23,931.71	23,763.02	168.69	141.871	
20,300.00	6,938.29	6,973.83	6,973.29	219.30	136.22	-85.84	714.05	-10,378.50	24,031.70	23,862.92	168.79	142.380	
20,400.00	6,938.20	6,973.74	6,973.20	220.89	136.22	-85.82	714.05	-10,378.50	24,131.69	23,962.81	168.88	142.888	
20,500.00	6,938.11	6,973.65	6,973.11	222.49	136.22	-85.80	714.05	-10,378.50	24,231.69	24,062.70	168.98	143.396	
20,600.00	6,938.02	6,973.56	6,973.02	224.08	136.21	-85.79	714.05	-10,378.50	24,331.68	24,162.59	169.08	143.902	
20,626.08	6,938.00	6,973.54	6,973.00	224.49	136.21	-85.78	714.05	-10,378.50	24,357.76	24,188.65	169.11	144.034	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	169.49	-1,219.64	226.32	1,240.60				
100.00	100.00	81.00	81.00	0.25	0.80	169.49	-1,219.64	226.32	1,240.46	1,239.41	1.05	1,182.597	
200.00	200.00	181.00	181.00	0.61	1.78	169.49	-1,219.64	226.32	1,240.46	1,238.06	2.39	518.514	
300.00	300.00	281.00	281.00	0.97	2.77	169.49	-1,219.64	226.32	1,240.46	1,236.72	3.74	332.051	
400.00	400.00	381.01	381.00	1.33	4.04	169.49	-1,219.64	226.32	1,240.46	1,235.09	5.36	231.260	
500.00	500.00	481.01	481.00	1.68	5.94	169.49	-1,219.64	226.32	1,240.46	1,232.83	7.63	162.677	CC
535.00	535.00	516.01	516.00	1.81	6.61	158.82	-1,219.64	226.32	1,240.66	1,232.24	8.42	147.402	
600.00	599.99	581.00	580.99	2.04	7.84	158.83	-1,219.64	226.32	1,241.40	1,231.51	9.89	125.565	
700.00	699.99	678.81	678.79	2.40	9.70	158.85	-1,218.85	226.32	1,241.77	1,229.66	12.11	102.576	
800.00	799.98	775.80	775.78	2.76	11.55	158.87	-1,219.15	226.32	1,243.21	1,228.90	14.31	86.878	
900.00	899.97	881.01	880.97	3.12	13.54	158.89	-1,219.64	226.32	1,244.81	1,228.15	16.66	74.713	
1,000.00	999.96	981.01	980.96	3.48	15.39	158.91	-1,219.64	226.32	1,245.95	1,227.09	18.86	66.052	
1,100.00	1,099.96	1,081.00	1,080.96	3.84	17.23	158.93	-1,219.64	226.32	1,247.09	1,226.03	21.07	59.201	
1,200.00	1,199.95	1,179.59	1,179.55	4.19	19.05	158.95	-1,219.13	226.32	1,247.74	1,224.50	23.24	53.686	
1,300.00	1,299.94	1,277.48	1,277.43	4.55	20.85	158.97	-1,219.33	226.32	1,249.08	1,223.67	25.40	49.168	
1,400.00	1,399.93	1,380.99	1,380.93	4.91	22.76	158.99	-1,219.64	226.32	1,250.52	1,222.84	27.67	45.190	
1,500.00	1,499.93	1,480.99	1,480.93	5.27	24.61	159.01	-1,219.64	226.32	1,251.66	1,221.78	29.88	41.894	
1,600.00	1,599.92	1,580.98	1,580.92	5.63	26.45	159.03	-1,219.64	226.32	1,252.80	1,220.72	32.08	39.050	
1,700.00	1,699.91	1,679.06	1,678.99	5.99	28.27	159.05	-1,219.19	226.32	1,253.50	1,219.25	34.25	36.597	
1,800.00	1,799.90	1,776.79	1,776.73	6.34	30.07	159.07	-1,219.43	226.32	1,254.89	1,218.47	36.41	34.461	
1,900.00	1,899.90	1,880.98	1,880.90	6.70	31.99	159.09	-1,219.64	226.32	1,256.22	1,217.52	38.70	32.463	
2,000.00	1,999.89	1,980.97	1,980.89	7.06	33.84	159.11	-1,219.64	226.32	1,257.36	1,216.46	40.90	30.740	
2,100.00	2,099.88	2,080.92	2,080.84	7.42	35.69	159.13	-1,219.09	226.32	1,257.97	1,214.86	43.11	29.182	
2,200.00	2,199.87	2,178.80	2,178.72	7.78	37.50	159.15	-1,219.18	226.32	1,259.20	1,213.92	45.27	27.812	
2,300.00	2,299.87	2,276.68	2,276.59	8.14	39.30	159.17	-1,219.43	226.32	1,260.59	1,213.15	47.44	26.572	
2,400.00	2,399.86	2,380.96	2,380.86	8.50	41.29	159.19	-1,219.64	226.32	1,261.93	1,212.15	49.78	25.348	
2,500.00	2,499.85	2,480.95	2,480.85	8.85	43.25	159.21	-1,219.64	226.32	1,263.07	1,210.97	52.10	24.242	
2,600.00	2,599.85	2,580.90	2,580.80	9.21	45.21	159.23	-1,219.09	226.32	1,263.68	1,209.26	54.42	23.221	
2,700.00	2,699.84	2,678.77	2,678.67	9.57	47.12	159.25	-1,219.18	226.32	1,264.91	1,208.21	56.70	22.311	
2,800.00	2,799.83	2,776.64	2,776.53	9.93	49.04	159.27	-1,219.43	226.32	1,266.31	1,207.33	58.97	21.473	
2,900.00	2,899.82	2,880.96	2,880.82	10.29	51.15	159.29	-1,219.64	226.32	1,267.64	1,206.20	61.44	20.631	
3,000.00	2,999.82	2,980.96	2,980.82	10.65	53.24	159.31	-1,219.64	226.32	1,268.78	1,204.89	63.89	19.858	
3,100.00	3,099.81	3,080.95	3,080.81	11.01	55.34	159.33	-1,219.64	226.32	1,269.93	1,203.59	66.34	19.143	
3,200.00	3,199.80	3,180.94	3,180.80	11.36	57.43	159.35	-1,219.64	226.32	1,271.07	1,202.28	68.79	18.478	
3,276.50	3,276.29	3,257.44	3,257.28	11.64	59.03	159.35	-1,217.77	226.32	1,270.10	1,199.44	70.66	17.974	
3,300.00	3,299.79	3,280.35	3,280.19	11.72	59.50	159.35	-1,217.77	226.32	1,270.38	1,199.15	71.23	17.836	
3,400.00	3,399.79	3,377.87	3,377.71	12.08	61.54	159.37	-1,217.91	226.32	1,271.67	1,198.04	73.62	17.273	
3,500.00	3,499.78	3,475.39	3,475.22	12.44	63.58	159.40	-1,218.25	226.32	1,273.15	1,197.13	76.02	16.748	
3,600.00	3,599.77	3,572.91	3,572.74	12.80	65.62	159.42	-1,218.78	226.32	1,274.83	1,196.41	78.42	16.257	
3,700.00	3,699.76	3,670.43	3,670.25	13.16	67.66	159.44	-1,219.50	226.32	1,276.70	1,195.89	80.81	15.798	
3,800.00	3,799.76	3,781.03	3,780.76	13.52	69.98	159.47	-1,219.64	226.32	1,277.93	1,194.43	83.50	15.305	
3,900.00	3,899.75	3,881.02	3,880.75	13.87	72.09	159.48	-1,219.64	226.32	1,279.08	1,193.12	85.96	14.880	
3,952.88	3,952.62	3,933.88	3,933.60	14.06	73.20	159.49	-1,218.56	226.32	1,278.62	1,191.36	87.26	14.652	
4,000.00	3,999.74	3,979.00	3,978.71	14.23	74.15	159.50	-1,218.59	226.32	1,279.20	1,190.81	88.38	14.474	
4,100.00	4,099.73	4,074.75	4,074.46	14.59	76.17	159.52	-1,218.91	226.32	1,280.67	1,189.91	90.75	14.111	
4,200.00	4,199.73	4,181.07	4,180.73	14.95	78.40	159.54	-1,219.64	226.32	1,282.51	1,189.16	93.35	13.739	
4,300.00	4,299.72	4,281.07	4,280.72	15.31	80.51	159.56	-1,219.64	226.32	1,283.66	1,187.84	95.82	13.397	
4,400.00	4,399.71	4,381.06	4,380.71	15.67	82.62	159.58	-1,219.64	226.32	1,284.80	1,186.51	98.29	13.072	
4,448.27	4,447.97	4,429.24	4,428.88	15.84	83.64	159.58	-1,218.56	226.32	1,284.29	1,184.82	99.48	12.910	
4,500.00	4,499.70	4,478.76	4,478.40	16.03	84.68	159.59	-1,218.61	226.32	1,284.93	1,184.23	100.71	12.759	
4,600.00	4,599.70	4,574.47	4,574.11	16.38	86.70	159.61	-1,218.94	226.32	1,286.43	1,183.34	103.08	12.479	
4,700.00	4,699.69	4,681.11	4,680.69	16.74	88.95	159.64	-1,219.64	226.32	1,288.24	1,182.54	105.70	12.188	

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 #722H - Slot B05
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 #722H	**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
4,800.00	4,799.68	4,781.10	4,780.68	17.10	91.07	159.66	-1,219.64	226.32	1,289.38	1,181.22	108.17	11.920	
4,900.00	4,899.67	4,881.10	4,880.67	17.46	93.18	159.67	-1,219.64	226.32	1,290.53	1,179.89	110.64	11.664	
4,949.43	4,949.10	4,930.41	4,929.98	17.64	94.22	159.68	-1,218.53	226.32	1,290.00	1,178.14	111.86	11.532	
5,000.00	4,999.67	4,978.87	4,978.44	17.82	95.25	159.69	-1,218.57	226.32	1,290.63	1,177.56	113.06	11.415	
5,100.00	5,099.66	5,074.69	5,074.25	18.18	97.27	159.71	-1,218.90	226.32	1,292.11	1,176.66	115.45	11.192	
5,200.00	5,199.65	5,170.50	5,170.06	18.53	99.30	159.73	-1,219.54	226.32	1,293.91	1,176.08	117.83	10.981	
5,300.00	5,299.64	5,281.14	5,280.64	18.89	101.64	159.75	-1,219.64	226.32	1,295.11	1,174.58	120.53	10.745	
5,400.00	5,399.64	5,381.14	5,380.64	19.25	103.76	159.77	-1,219.64	226.32	1,296.26	1,173.25	123.01	10.538	
5,500.00	5,499.63	5,478.54	5,478.02	19.61	105.82	159.78	-1,218.64	226.32	1,296.43	1,171.00	125.43	10.336	
5,600.00	5,599.62	5,574.11	5,573.59	19.97	107.84	159.80	-1,219.00	226.32	1,297.95	1,170.14	127.81	10.155	
5,700.00	5,699.61	5,681.19	5,680.61	20.33	110.11	159.82	-1,219.64	226.32	1,299.70	1,169.26	130.44	9.964	
5,800.00	5,799.61	5,781.18	5,780.61	20.69	112.23	159.84	-1,219.64	226.32	1,300.85	1,167.93	132.91	9.787	
5,900.00	5,899.60	5,881.17	5,880.60	21.04	114.35	159.86	-1,219.64	226.32	1,301.99	1,166.60	135.39	9.617	
5,938.78	5,938.38	5,919.87	5,919.29	21.18	115.17	159.86	-1,218.52	226.32	1,301.34	1,164.99	136.35	9.544	
6,000.00	5,999.59	5,978.51	5,977.93	21.40	116.41	159.87	-1,218.59	226.32	1,302.11	1,164.30	137.81	9.449	
6,100.00	6,099.58	6,074.31	6,073.72	21.76	118.44	159.89	-1,218.94	226.32	1,303.62	1,163.42	140.20	9.299	
6,200.00	6,199.58	6,181.23	6,180.58	22.12	120.70	159.92	-1,219.64	226.32	1,305.43	1,162.61	142.82	9.140	
6,300.00	6,299.57	6,281.22	6,280.57	22.48	122.82	159.94	-1,219.64	226.32	1,306.58	1,161.28	145.30	8.992	
6,315.05	6,314.62	6,296.27	6,295.62	22.53	123.14	159.94	-1,219.64	226.32	1,306.75	1,161.08	145.67	8.970	
6,350.00	6,349.55	6,331.20	6,330.55	22.66	123.88	90.78	-1,219.64	226.32	1,306.97	1,160.43	146.54	8.919	
6,400.00	6,399.30	6,380.95	6,380.30	22.83	124.94	84.12	-1,219.64	226.32	1,306.64	1,158.87	147.77	8.842	
6,450.00	6,448.52	6,430.17	6,429.52	23.00	125.98	82.73	-1,219.64	226.32	1,305.59	1,156.61	148.99	8.763	
6,500.00	6,496.91	6,478.56	6,477.91	23.18	127.01	82.55	-1,219.64	226.32	1,303.92	1,153.73	150.19	8.682	
6,550.00	6,544.17	6,525.69	6,525.02	23.35	128.01	82.91	-1,218.12	226.32	1,300.22	1,148.87	151.36	8.590	
6,600.00	6,590.01	6,570.10	6,569.43	23.53	128.95	83.60	-1,218.14	226.32	1,297.70	1,145.23	152.48	8.511	
6,650.00	6,634.14	6,612.86	6,612.19	23.70	129.86	84.50	-1,218.22	226.32	1,295.05	1,141.49	153.56	8.434	
6,700.00	6,676.30	6,653.70	6,653.03	23.88	130.72	85.54	-1,218.33	226.32	1,292.46	1,137.86	154.60	8.360	
6,750.00	6,716.21	6,692.38	6,691.71	24.06	131.54	86.66	-1,218.48	226.32	1,290.14	1,134.54	155.60	8.291	
6,800.00	6,753.65	6,728.66	6,727.98	24.24	132.31	87.80	-1,218.65	226.32	1,288.33	1,131.78	156.55	8.229	
6,850.00	6,788.37	6,762.30	6,761.63	24.44	133.03	88.90	-1,218.84	226.32	1,287.26	1,129.80	157.46	8.175	
6,880.16	6,807.91	6,781.24	6,780.56	24.56	133.43	89.52	-1,218.96	226.32	1,287.07	1,129.09	157.98	8.147	
6,900.00	6,820.16	6,793.12	6,792.44	24.63	133.68	89.91	-1,219.04	226.32	1,287.16	1,128.85	158.31	8.131 ES	
6,950.00	6,848.83	6,820.91	6,820.22	24.84	134.27	90.78	-1,219.24	226.32	1,288.24	1,129.14	159.10	8.097	
7,000.00	6,874.19	6,845.50	6,844.81	25.06	134.79	91.46	-1,219.43	226.32	1,290.70	1,130.87	159.83	8.075	
7,050.00	6,896.10	6,877.86	6,877.10	25.29	135.48	92.36	-1,219.64	226.32	1,294.70	1,133.95	160.74	8.054 SF	
7,100.00	6,914.42	6,896.18	6,895.42	25.53	135.86	92.59	-1,219.64	226.32	1,300.23	1,138.88	161.35	8.058	
7,150.00	6,929.03	6,910.79	6,910.03	25.78	136.17	92.53	-1,219.64	226.32	1,307.58	1,145.69	161.89	8.077	
7,200.00	6,939.85	6,921.60	6,920.85	26.05	136.40	92.14	-1,219.64	226.32	1,316.78	1,154.43	162.35	8.111	
7,250.00	6,946.80	6,928.56	6,927.80	26.32	136.55	91.42	-1,219.64	226.32	1,327.83	1,165.10	162.72	8.160	
7,300.00	6,949.85	6,931.61	6,930.85	26.61	136.62	90.36	-1,219.64	226.32	1,340.68	1,177.67	163.01	8.225	
7,314.43	6,950.00	6,931.76	6,931.00	26.69	136.62	89.98	-1,219.64	226.32	1,344.71	1,181.64	163.07	8.246	
7,400.00	6,949.92	6,931.68	6,930.92	27.21	136.62	89.98	-1,219.64	226.32	1,371.48	1,208.03	163.45	8.391	
7,500.00	6,949.83	6,931.59	6,930.83	27.90	136.62	89.98	-1,219.64	226.32	1,408.71	1,244.83	163.89	8.596	
7,600.00	6,949.74	6,931.50	6,930.74	28.66	136.61	89.97	-1,219.64	226.32	1,451.90	1,287.58	164.32	8.836	
7,700.00	6,949.65	6,931.41	6,930.65	29.49	136.61	89.97	-1,219.64	226.32	1,500.51	1,335.78	164.73	9.109	
7,800.00	6,949.56	6,931.32	6,930.56	30.38	136.61	89.97	-1,219.64	226.32	1,554.05	1,388.93	165.12	9.412	
7,900.00	6,949.47	6,931.23	6,930.47	31.33	136.61	89.96	-1,219.64	226.32	1,612.01	1,446.54	165.48	9.742	
8,000.00	6,949.38	6,931.14	6,930.38	32.33	136.61	89.96	-1,219.64	226.32	1,673.95	1,508.15	165.80	10.096	
8,100.00	6,949.29	6,931.05	6,930.29	33.38	136.60	89.95	-1,219.64	226.32	1,739.44	1,573.34	166.10	10.472	
8,200.00	6,949.20	6,930.96	6,930.20	34.47	136.60	89.95	-1,219.64	226.32	1,808.08	1,641.72	166.37	10.868	
8,300.00	6,949.11	6,930.87	6,930.11	35.60	136.60	89.95	-1,219.64	226.32	1,879.55	1,712.94	166.61	11.281	
8,400.00	6,949.02	6,930.78	6,930.02	36.76	136.60	89.94	-1,219.64	226.32	1,953.52	1,786.69	166.82	11.710	

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 #722H - Slot B05
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 #722H	**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
8,500.00	6,948.93	6,930.69	6,929.93	37.96	136.60	89.94	-1,219.64	226.32	2,029.72	1,862.70	167.02	12.153	
8,600.00	6,948.84	6,930.60	6,929.84	39.18	136.59	89.93	-1,219.64	226.32	2,107.91	1,940.72	167.19	12.608	
8,700.00	6,948.75	6,930.51	6,929.75	40.43	136.59	89.93	-1,219.64	226.32	2,187.88	2,020.53	167.34	13.074	
8,800.00	6,948.66	6,930.42	6,929.66	41.71	136.59	89.93	-1,219.64	226.32	2,269.43	2,101.95	167.48	13.550	
8,900.00	6,948.57	6,930.33	6,929.57	43.00	136.59	89.92	-1,219.64	226.32	2,352.42	2,184.81	167.61	14.035	
9,000.00	6,948.48	6,930.24	6,929.48	44.32	136.59	89.92	-1,219.64	226.32	2,436.68	2,268.95	167.72	14.528	
9,100.00	6,948.39	6,930.15	6,929.39	45.66	136.59	89.91	-1,219.64	226.32	2,522.09	2,354.26	167.83	15.028	
9,200.00	6,948.30	6,930.06	6,929.30	47.01	136.58	89.91	-1,219.64	226.32	2,608.53	2,440.61	167.92	15.534	
9,300.00	6,948.21	6,929.97	6,929.21	48.38	136.58	89.91	-1,219.64	226.32	2,695.92	2,527.91	168.01	16.046	
9,400.00	6,948.12	6,929.88	6,929.12	49.76	136.58	89.90	-1,219.64	226.32	2,784.15	2,616.06	168.09	16.563	
9,500.00	6,948.03	6,929.79	6,929.03	51.16	136.58	89.90	-1,219.64	226.32	2,873.16	2,704.99	168.17	17.085	
9,600.00	6,947.94	6,929.70	6,928.94	52.56	136.58	89.89	-1,219.64	226.32	2,962.86	2,794.63	168.23	17.611	
9,700.00	6,947.85	6,929.61	6,928.85	53.98	136.57	89.89	-1,219.64	226.32	3,053.21	2,884.91	168.30	18.142	
9,800.00	6,947.76	6,929.52	6,928.76	55.41	136.57	89.89	-1,219.64	226.32	3,144.14	2,975.78	168.36	18.675	
9,900.00	6,947.67	6,929.43	6,928.67	56.85	136.57	89.88	-1,219.64	226.32	3,235.60	3,067.19	168.42	19.212	
10,000.00	6,947.58	6,929.34	6,928.58	58.29	136.57	89.88	-1,219.64	226.32	3,327.56	3,159.09	168.47	19.751	
10,100.00	6,947.49	6,929.25	6,928.49	59.75	136.57	89.87	-1,219.64	226.32	3,419.97	3,251.44	168.52	20.294	
10,200.00	6,947.40	6,929.16	6,928.40	61.21	136.56	89.87	-1,219.64	226.32	3,512.79	3,344.22	168.57	20.838	
10,300.00	6,947.31	6,929.07	6,928.31	62.68	136.56	89.87	-1,219.64	226.32	3,606.00	3,437.38	168.62	21.385	
10,400.00	6,947.22	6,928.98	6,928.22	64.15	136.56	89.86	-1,219.64	226.32	3,699.56	3,530.89	168.67	21.934	
10,500.00	6,947.13	6,928.89	6,928.13	65.63	136.56	89.86	-1,219.64	226.32	3,793.45	3,624.74	168.71	22.484	
10,600.00	6,947.04	6,928.80	6,928.04	67.12	136.56	89.85	-1,219.64	226.32	3,887.65	3,718.89	168.76	23.037	
10,700.00	6,946.95	6,928.70	6,927.95	68.61	136.55	89.85	-1,219.64	226.32	3,982.13	3,813.33	168.80	23.591	
10,800.00	6,946.86	6,928.61	6,927.86	70.11	136.55	89.85	-1,219.64	226.32	4,076.87	3,908.03	168.84	24.146	
10,900.00	6,946.77	6,928.52	6,927.77	71.61	136.55	89.84	-1,219.64	226.32	4,171.86	4,002.97	168.89	24.702	
11,000.00	6,946.68	6,928.43	6,927.68	73.11	136.55	89.84	-1,219.64	226.32	4,267.08	4,098.15	168.93	25.260	
11,100.00	6,946.59	6,928.34	6,927.59	74.62	136.55	89.83	-1,219.64	226.32	4,362.51	4,193.54	168.97	25.819	
11,200.00	6,946.50	6,928.25	6,927.50	76.14	136.54	89.83	-1,219.64	226.32	4,458.14	4,289.13	169.01	26.378	
11,300.00	6,946.41	6,928.16	6,927.41	77.65	136.54	89.83	-1,219.64	226.32	4,553.96	4,384.91	169.05	26.939	
11,400.00	6,946.32	6,928.07	6,927.32	79.18	136.54	89.82	-1,219.64	226.32	4,649.95	4,480.86	169.09	27.500	
11,500.00	6,946.23	6,927.98	6,927.23	80.70	136.54	89.82	-1,219.64	226.32	4,746.11	4,576.98	169.13	28.062	
11,600.00	6,946.14	6,927.89	6,927.14	82.23	136.54	89.81	-1,219.64	226.32	4,842.43	4,673.26	169.17	28.625	
11,700.00	6,946.05	6,927.80	6,927.05	83.76	136.54	89.81	-1,219.64	226.32	4,938.89	4,769.68	169.21	29.188	
11,800.00	6,945.96	6,927.71	6,926.96	85.29	136.53	89.81	-1,219.64	226.32	5,035.49	4,866.24	169.25	29.751	
11,900.00	6,945.87	6,927.62	6,926.87	86.82	136.53	89.80	-1,219.64	226.32	5,132.22	4,962.93	169.29	30.316	
12,000.00	6,945.78	6,927.53	6,926.78	88.36	136.53	89.80	-1,219.64	226.32	5,229.07	5,059.74	169.33	30.880	
12,100.00	6,945.69	6,927.44	6,926.69	89.90	136.53	89.79	-1,219.64	226.32	5,326.04	5,156.67	169.38	31.445	
12,200.00	6,945.60	6,927.35	6,926.60	91.44	136.53	89.79	-1,219.64	226.32	5,423.12	5,253.71	169.42	32.011	
12,300.00	6,945.51	6,927.26	6,926.51	92.99	136.52	89.78	-1,219.64	226.32	5,520.31	5,350.85	169.46	32.576	
12,400.00	6,945.42	6,927.17	6,926.42	94.53	136.52	89.78	-1,219.64	226.32	5,617.59	5,448.09	169.50	33.142	
12,500.00	6,945.33	6,927.08	6,926.33	96.08	136.52	89.78	-1,219.64	226.32	5,714.97	5,545.42	169.54	33.708	
12,600.00	6,945.24	6,926.99	6,926.24	97.63	136.52	89.77	-1,219.64	226.32	5,812.43	5,642.84	169.59	34.274	
12,700.00	6,945.15	6,926.90	6,926.15	99.18	136.52	89.77	-1,219.64	226.32	5,909.98	5,740.35	169.63	34.840	
12,800.00	6,945.06	6,926.81	6,926.06	100.74	136.51	89.76	-1,219.64	226.32	6,007.61	5,837.94	169.67	35.407	
12,900.00	6,944.96	6,926.72	6,925.96	102.29	136.51	89.76	-1,219.64	226.32	6,105.32	5,935.60	169.72	35.973	
13,000.00	6,944.87	6,926.63	6,925.87	103.85	136.51	89.76	-1,219.64	226.32	6,203.10	6,033.34	169.76	36.540	
13,100.00	6,944.78	6,926.54	6,925.78	105.40	136.51	89.75	-1,219.64	226.32	6,300.95	6,131.14	169.81	37.106	
13,200.00	6,944.69	6,926.45	6,925.69	106.96	136.51	89.75	-1,219.64	226.32	6,398.87	6,229.01	169.86	37.672	
13,300.00	6,944.60	6,926.36	6,925.60	108.52	136.50	89.74	-1,219.64	226.32	6,496.85	6,326.95	169.90	38.239	
13,400.00	6,944.51	6,926.27	6,925.51	110.08	136.50	89.74	-1,219.64	226.32	6,594.89	6,424.94	169.95	38.805	
13,500.00	6,944.42	6,926.18	6,925.42	111.65	136.50	89.74	-1,219.64	226.32	6,692.99	6,522.99	170.00	39.371	
13,600.00	6,944.33	6,926.09	6,925.33	113.21	136.50	89.73	-1,219.64	226.32	6,791.14	6,621.10	170.04	39.937	

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 #722H - Slot B05
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 #722H	**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
13,700.00	6,944.24	6,926.00	6,925.24	114.78	136.50	89.73	-1,219.64	226.32	6,889.35	6,719.26	170.09	40.503	
13,800.00	6,944.15	6,925.91	6,925.15	116.34	136.50	89.72	-1,219.64	226.32	6,987.61	6,817.47	170.14	41.069	
13,900.00	6,944.06	6,925.82	6,925.06	117.91	136.49	89.72	-1,219.64	226.32	7,085.92	6,915.72	170.19	41.635	
14,000.00	6,943.97	6,925.73	6,924.97	119.48	136.49	89.72	-1,219.64	226.32	7,184.27	7,014.03	170.24	42.200	
14,100.00	6,943.88	6,925.64	6,924.88	121.05	136.49	89.71	-1,219.64	226.32	7,282.67	7,112.38	170.29	42.766	
14,200.00	6,943.79	6,925.55	6,924.79	122.62	136.49	89.71	-1,219.64	226.32	7,381.11	7,210.77	170.34	43.331	
14,300.00	6,943.70	6,925.46	6,924.70	124.19	136.49	89.70	-1,219.64	226.32	7,479.59	7,309.20	170.40	43.895	
14,400.00	6,943.61	6,925.37	6,924.61	125.76	136.48	89.70	-1,219.64	226.32	7,578.12	7,407.67	170.45	44.460	
14,500.00	6,943.52	6,925.28	6,924.52	127.33	136.48	89.70	-1,219.64	226.32	7,676.68	7,506.18	170.50	45.024	
14,600.00	6,943.43	6,925.19	6,924.43	128.90	136.48	89.69	-1,219.64	226.32	7,775.27	7,604.72	170.55	45.588	
14,700.00	6,943.34	6,925.10	6,924.34	130.48	136.48	89.69	-1,219.64	226.32	7,873.91	7,703.30	170.61	46.152	
14,800.00	6,943.25	6,925.01	6,924.25	132.05	136.48	89.68	-1,219.64	226.32	7,972.57	7,801.91	170.66	46.715	
14,900.00	6,943.16	6,924.92	6,924.16	133.63	136.47	89.68	-1,219.64	226.32	8,071.27	7,900.56	170.72	47.278	
15,000.00	6,943.07	6,924.83	6,924.07	135.20	136.47	89.68	-1,219.64	226.32	8,170.01	7,999.23	170.77	47.841	
15,100.00	6,942.98	6,924.74	6,923.98	136.78	136.47	89.67	-1,219.64	226.32	8,268.77	8,097.94	170.83	48.403	
15,200.00	6,942.89	6,924.65	6,923.89	138.36	136.47	89.67	-1,219.64	226.32	8,367.56	8,196.67	170.89	48.965	
15,300.00	6,942.80	6,924.56	6,923.80	139.93	136.47	89.66	-1,219.64	226.32	8,466.38	8,295.43	170.94	49.527	
15,400.00	6,942.71	6,924.47	6,923.71	141.51	136.46	89.66	-1,219.64	226.32	8,565.23	8,394.22	171.00	50.088	
15,500.00	6,942.62	6,924.38	6,923.62	143.09	136.46	89.66	-1,219.64	226.32	8,664.10	8,493.04	171.06	50.649	
15,600.00	6,942.53	6,924.29	6,923.53	144.67	136.46	89.65	-1,219.64	226.32	8,763.00	8,591.88	171.12	51.210	
15,700.00	6,942.44	6,924.20	6,923.44	146.25	136.46	89.65	-1,219.64	226.32	8,861.92	8,690.74	171.18	51.770	
15,800.00	6,942.35	6,924.11	6,923.35	147.83	136.46	89.64	-1,219.64	226.32	8,960.87	8,789.63	171.24	52.329	
15,900.00	6,942.26	6,924.02	6,923.26	149.41	136.45	89.64	-1,219.64	226.32	9,059.84	8,888.54	171.30	52.888	
16,000.00	6,942.17	6,923.93	6,923.17	150.99	136.45	89.64	-1,219.64	226.32	9,158.84	8,987.47	171.36	53.447	
16,100.00	6,942.08	6,923.84	6,923.08	152.57	136.45	89.63	-1,219.64	226.32	9,257.85	9,086.43	171.42	54.005	
16,200.00	6,941.99	6,923.75	6,922.99	154.16	136.45	89.63	-1,219.64	226.32	9,356.89	9,185.40	171.49	54.563	
16,300.00	6,941.90	6,923.66	6,922.90	155.74	136.45	89.62	-1,219.64	226.32	9,455.94	9,284.39	171.55	55.121	
16,400.00	6,941.81	6,923.57	6,922.81	157.32	136.45	89.62	-1,219.64	226.32	9,555.02	9,383.40	171.61	55.678	
16,500.00	6,941.72	6,923.48	6,922.72	158.91	136.44	89.62	-1,219.64	226.32	9,654.11	9,482.44	171.68	56.234	
16,600.00	6,941.63	6,923.39	6,922.63	160.49	136.44	89.61	-1,219.64	226.32	9,753.23	9,581.48	171.74	56.790	
16,700.00	6,941.54	6,923.30	6,922.54	162.07	136.44	89.61	-1,219.64	226.32	9,852.36	9,680.55	171.81	57.345	
16,800.00	6,941.45	6,923.21	6,922.45	163.66	136.44	89.60	-1,219.64	226.32	9,951.51	9,779.63	171.87	57.900	
16,900.00	6,941.36	6,923.12	6,922.36	165.24	136.44	89.60	-1,219.64	226.32	10,050.67	9,878.73	171.94	58.455	
17,000.00	6,941.27	6,923.03	6,922.27	166.83	136.43	89.60	-1,219.64	226.32	10,149.85	9,977.85	172.01	59.009	
17,100.00	6,941.18	6,922.94	6,922.18	168.42	136.43	89.59	-1,219.64	226.32	10,249.05	10,076.98	172.07	59.562	
17,200.00	6,941.09	6,922.85	6,922.09	170.00	136.43	89.59	-1,219.64	226.32	10,348.26	10,176.12	172.14	60.115	
17,300.00	6,941.00	6,922.76	6,922.00	171.59	136.43	89.58	-1,219.64	226.32	10,447.49	10,275.28	172.21	60.667	
17,400.00	6,940.91	6,922.67	6,921.91	173.18	136.43	89.58	-1,219.64	226.32	10,546.74	10,374.46	172.28	61.219	
17,500.00	6,940.82	6,922.57	6,921.82	174.76	136.42	89.58	-1,219.64	226.32	10,645.99	10,473.64	172.35	61.770	
17,600.00	6,940.73	6,922.48	6,921.73	176.35	136.42	89.57	-1,219.64	226.32	10,745.26	10,572.85	172.42	62.321	
17,700.00	6,940.64	6,922.39	6,921.64	177.94	136.42	89.57	-1,219.64	226.32	10,844.55	10,672.06	172.49	62.871	
17,800.00	6,940.55	6,922.30	6,921.55	179.53	136.42	89.56	-1,219.64	226.32	10,943.84	10,771.29	172.56	63.421	
17,900.00	6,940.46	6,922.21	6,921.46	181.11	136.42	89.56	-1,219.64	226.32	11,043.15	10,870.52	172.63	63.970	
18,000.00	6,940.37	6,922.12	6,921.37	182.70	136.41	89.56	-1,219.64	226.32	11,142.48	10,969.77	172.70	64.518	
18,100.00	6,940.28	6,922.03	6,921.28	184.29	136.41	89.55	-1,219.64	226.32	11,241.81	11,069.04	172.77	65.066	
18,200.00	6,940.19	6,921.94	6,921.19	185.88	136.41	89.55	-1,219.64	226.32	11,341.16	11,168.31	172.85	65.614	
18,300.00	6,940.10	6,921.85	6,921.10	187.47	136.41	89.54	-1,219.64	226.32	11,440.51	11,267.59	172.92	66.160	
18,400.00	6,940.01	6,921.76	6,921.01	189.06	136.41	89.54	-1,219.64	226.32	11,539.88	11,366.89	173.00	66.706	
18,500.00	6,939.92	6,921.67	6,920.92	190.65	136.41	89.54	-1,219.64	226.32	11,639.26	11,466.19	173.07	67.252	
18,600.00	6,939.83	6,921.58	6,920.83	192.24	136.40	89.53	-1,219.64	226.32	11,738.65	11,565.51	173.14	67.797	
18,700.00	6,939.74	6,921.49	6,920.74	193.83	136.40	89.53	-1,219.64	226.32	11,838.05	11,664.83	173.22	68.341	
18,800.00	6,939.65	6,921.40	6,920.65	195.42	136.40	89.52	-1,219.64	226.32	11,937.46	11,764.17	173.30	68.885	

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 #722H - Slot B05
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 #722H	**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
18,900.00	6,939.56	6,921.31	6,920.56	197.01	136.40	89.52	-1,219.64	226.32	12,036.88	11,863.51	173.37	69.428	
19,000.00	6,939.47	6,921.22	6,920.47	198.60	136.40	89.52	-1,219.64	226.32	12,136.31	11,962.86	173.45	69.970	
19,100.00	6,939.38	6,921.13	6,920.38	200.19	136.39	89.51	-1,219.64	226.32	12,235.75	12,062.22	173.53	70.512	
19,200.00	6,939.29	6,921.04	6,920.29	201.78	136.39	89.51	-1,219.64	226.32	12,335.20	12,161.59	173.60	71.054	
19,300.00	6,939.20	6,920.95	6,920.20	203.37	136.39	89.50	-1,219.64	226.32	12,434.65	12,260.97	173.68	71.594	
19,400.00	6,939.11	6,920.86	6,920.11	204.97	136.39	89.50	-1,219.64	226.32	12,534.12	12,360.36	173.76	72.134	
19,500.00	6,939.02	6,920.77	6,920.02	206.56	136.39	89.50	-1,219.64	226.32	12,633.59	12,459.75	173.84	72.673	
19,600.00	6,938.93	6,920.68	6,919.93	208.15	136.38	89.49	-1,219.64	226.32	12,733.08	12,559.16	173.92	73.212	
19,700.00	6,938.83	6,920.59	6,919.83	209.74	136.38	89.49	-1,219.64	226.32	12,832.57	12,658.56	174.00	73.750	
19,800.00	6,938.74	6,920.50	6,919.74	211.33	136.38	89.48	-1,219.64	226.32	12,932.06	12,757.98	174.08	74.288	
19,900.00	6,938.65	6,920.41	6,919.65	212.93	136.38	89.48	-1,219.64	226.32	13,031.57	12,857.41	174.16	74.825	
20,000.00	6,938.56	6,920.32	6,919.56	214.52	136.38	89.48	-1,219.64	226.32	13,131.08	12,956.84	174.24	75.361	
20,100.00	6,938.47	6,920.23	6,919.47	216.11	136.37	89.47	-1,219.64	226.32	13,230.60	13,056.28	174.33	75.896	
20,200.00	6,938.38	6,920.14	6,919.38	217.71	136.37	89.47	-1,219.64	226.32	13,330.13	13,155.72	174.41	76.431	
20,300.00	6,938.29	6,920.05	6,919.29	219.30	136.37	89.46	-1,219.64	226.32	13,429.66	13,255.17	174.49	76.965	
20,400.00	6,938.20	6,919.96	6,919.20	220.89	136.37	89.46	-1,219.64	226.32	13,529.21	13,354.63	174.57	77.499	
20,500.00	6,938.11	6,919.87	6,919.11	222.49	136.37	89.46	-1,219.64	226.32	13,628.75	13,454.10	174.66	78.032	
20,600.00	6,938.02	6,919.78	6,919.02	224.08	136.37	89.45	-1,219.64	226.32	13,728.31	13,553.57	174.74	78.564	
20,626.08	6,938.00	6,919.76	6,919.00	224.49	136.36	89.45	-1,219.64	226.32	13,754.28	13,579.51	174.76	78.702	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-121.63	-2,065.53	-3,353.41	3,938.50				
100.00	100.00	106.00	106.00	0.25	0.94	-121.63	-2,065.53	-3,353.41	3,938.50	3,937.31	1.19	3,309.525	
200.00	200.00	206.00	206.00	0.61	1.82	-121.63	-2,065.53	-3,353.41	3,938.50	3,936.07	2.43	1,617.922	
300.00	300.00	306.00	306.00	0.97	3.09	-121.63	-2,065.53	-3,353.41	3,938.50	3,934.45	4.05	971.516	
346.90	346.90	352.83	352.83	1.14	3.93	-121.63	-2,065.43	-3,353.41	3,938.45	3,933.39	5.07	777.471 CC	
400.00	400.00	403.30	403.30	1.33	4.84	-121.63	-2,065.47	-3,353.41	3,938.47	3,932.30	6.17	638.816	
500.00	500.00	506.00	506.00	1.68	6.69	-121.63	-2,065.53	-3,353.41	3,938.50	3,930.13	8.38	470.255	
535.00	535.00	541.01	541.00	1.81	7.32	-132.30	-2,065.53	-3,353.41	3,938.64	3,929.51	9.13	431.306	
600.00	599.99	603.20	603.19	2.04	8.44	-132.31	-2,065.28	-3,353.41	3,939.05	3,928.56	10.49	375.641	
700.00	699.99	706.00	705.99	2.40	10.29	-132.32	-2,065.53	-3,353.41	3,940.00	3,927.31	12.69	310.411	
800.00	799.98	805.99	805.98	2.76	12.06	-132.34	-2,065.53	-3,353.41	3,940.82	3,926.00	14.82	265.901	
900.00	899.97	905.98	905.97	3.12	13.83	-132.35	-2,065.53	-3,353.41	3,941.65	3,924.70	16.95	232.566	
1,000.00	999.96	1,004.84	1,004.83	3.48	15.58	-132.36	-2,065.27	-3,353.41	3,942.34	3,923.28	19.06	206.878	
1,100.00	1,099.96	1,103.06	1,103.05	3.84	17.32	-132.37	-2,065.37	-3,353.41	3,943.21	3,922.06	21.15	186.414	
1,200.00	1,199.95	1,205.96	1,205.95	4.19	19.15	-132.39	-2,065.53	-3,353.41	3,944.12	3,920.78	23.34	168.976	
1,300.00	1,299.94	1,305.96	1,305.94	4.55	20.99	-132.40	-2,065.53	-3,353.41	3,944.94	3,919.40	25.54	154.475	
1,400.00	1,399.93	1,405.95	1,405.93	4.91	22.83	-132.42	-2,065.53	-3,353.41	3,945.77	3,918.03	27.73	142.272	
1,500.00	1,499.93	1,504.82	1,504.81	5.27	24.64	-132.42	-2,065.27	-3,353.41	3,946.45	3,916.55	29.91	131.945	
1,600.00	1,599.92	1,603.03	1,603.02	5.63	26.45	-132.44	-2,065.37	-3,353.41	3,947.33	3,915.26	32.07	123.072	
1,700.00	1,699.91	1,705.95	1,705.91	5.99	28.36	-132.45	-2,065.53	-3,353.41	3,948.24	3,913.89	34.35	114.947	
1,800.00	1,799.90	1,805.94	1,805.90	6.34	30.39	-132.47	-2,065.53	-3,353.41	3,949.06	3,912.33	36.73	107.501	
1,900.00	1,899.90	1,905.93	1,905.90	6.70	32.42	-132.48	-2,065.53	-3,353.41	3,949.89	3,910.77	39.12	100.964	
2,000.00	1,999.89	2,002.77	2,002.73	7.06	34.39	-132.48	-2,064.75	-3,353.41	3,950.30	3,908.86	41.44	95.315	
2,100.00	2,099.88	2,097.63	2,097.58	7.42	36.31	-132.50	-2,065.01	-3,353.41	3,951.27	3,907.55	43.73	90.362	
2,200.00	2,199.87	2,205.99	2,205.87	7.78	38.52	-132.52	-2,065.53	-3,353.41	3,952.36	3,906.07	46.29	85.378	
2,300.00	2,299.87	2,302.64	2,302.52	8.14	40.56	-132.53	-2,065.03	-3,353.41	3,952.93	3,904.23	48.70	81.172	
2,400.00	2,399.86	2,406.01	2,405.86	8.50	42.79	-132.55	-2,065.53	-3,353.41	3,954.02	3,902.73	51.29	77.099	
2,500.00	2,499.85	2,506.00	2,505.85	8.85	45.07	-132.56	-2,065.53	-3,353.41	3,954.84	3,900.92	53.92	73.344	
2,600.00	2,599.85	2,605.99	2,605.85	9.21	47.35	-132.57	-2,065.53	-3,353.41	3,955.67	3,899.11	56.56	69.939	
2,700.00	2,699.84	2,700.83	2,700.66	9.57	49.51	-132.57	-2,064.53	-3,353.41	3,955.97	3,896.89	59.08	66.961	
2,800.00	2,799.83	2,793.99	2,793.82	9.93	51.63	-132.59	-2,064.91	-3,353.41	3,957.02	3,895.46	61.56	64.279	
2,900.00	2,899.82	2,906.12	2,905.82	10.29	54.18	-132.61	-2,065.53	-3,353.41	3,958.15	3,893.68	64.47	61.396	
3,000.00	2,999.82	3,006.11	3,005.82	10.65	56.45	-132.62	-2,065.53	-3,353.41	3,958.98	3,891.89	67.09	59.009	
3,100.00	3,099.81	3,106.10	3,105.81	11.01	58.71	-132.64	-2,065.53	-3,353.41	3,959.81	3,890.09	69.71	56.801	
3,200.00	3,199.80	3,206.10	3,205.80	11.36	60.98	-132.65	-2,065.53	-3,353.41	3,960.63	3,888.30	72.34	54.753	
3,300.00	3,299.79	3,306.09	3,305.79	11.72	63.24	-132.66	-2,065.53	-3,353.41	3,961.46	3,886.50	74.96	52.849	
3,376.85	3,376.64	3,382.87	3,382.52	12.00	64.98	-132.63	-2,061.69	-3,353.41	3,960.06	3,883.09	76.97	51.448	
3,400.00	3,399.79	3,404.64	3,404.28	12.08	65.47	-132.63	-2,061.70	-3,353.41	3,960.26	3,882.71	77.55	51.069	
3,500.00	3,499.78	3,498.69	3,498.32	12.44	67.60	-132.64	-2,061.90	-3,353.41	3,961.20	3,881.16	80.03	49.494	
3,600.00	3,599.77	3,592.74	3,592.35	12.80	69.73	-132.66	-2,062.36	-3,353.41	3,962.29	3,879.77	82.52	48.015	
3,700.00	3,699.76	3,686.79	3,686.39	13.16	71.86	-132.68	-2,063.10	-3,353.41	3,963.53	3,878.53	85.01	46.625	
3,800.00	3,799.76	3,780.85	3,780.42	13.52	73.99	-132.71	-2,064.10	-3,353.41	3,964.93	3,877.43	87.50	45.316	
3,900.00	3,899.75	3,906.30	3,905.75	13.87	76.85	-132.74	-2,065.53	-3,353.41	3,966.43	3,875.72	90.72	43.723	
4,000.00	3,999.74	4,005.38	4,004.83	14.23	79.19	-132.75	-2,065.16	-3,353.41	3,967.07	3,873.65	93.42	42.467	
4,100.00	4,099.73	4,094.50	4,093.95	14.59	81.29	-132.76	-2,065.43	-3,353.41	3,968.06	3,872.18	95.88	41.387	
4,200.00	4,199.73	4,206.43	4,205.73	14.95	84.64	-132.78	-2,065.53	-3,353.41	3,968.92	3,869.34	99.58	39.856	
4,300.00	4,299.72	4,306.55	4,305.72	15.31	88.12	-132.79	-2,065.53	-3,353.41	3,969.75	3,866.32	103.43	38.382	
4,400.00	4,399.71	4,406.67	4,405.71	15.67	91.67	-132.81	-2,065.53	-3,353.41	3,970.58	3,863.25	107.33	36.994	
4,500.00	4,499.70	4,495.72	4,494.61	16.03	95.02	-132.81	-2,065.29	-3,353.41	3,971.30	3,860.26	111.04	35.764	
4,600.00	4,599.70	4,603.98	4,602.69	16.38	99.18	-132.83	-2,065.10	-3,353.41	3,972.01	3,856.46	115.56	34.372	
4,700.00	4,699.69	4,707.19	4,705.69	16.74	103.48	-132.84	-2,065.53	-3,353.41	3,973.07	3,852.86	120.22	33.049	
4,800.00	4,799.68	4,807.34	4,805.68	17.10	107.77	-132.86	-2,065.53	-3,353.41	3,973.90	3,849.04	124.87	31.825	

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 #722H - Slot B05
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 #722H	**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
4,858.97	4,858.64	4,866.30	4,864.60	17.31	110.21	-132.85	-2,063.97	-3,353.41	3,973.56	3,846.05	127.51	31.162	
4,900.00	4,899.67	4,892.90	4,891.19	17.46	111.30	-132.85	-2,064.06	-3,353.41	3,973.98	3,845.22	128.76	30.864	
5,000.00	4,999.67	5,007.73	5,005.67	17.82	116.09	-132.88	-2,065.53	-3,353.41	3,975.57	3,841.67	133.90	29.690	
5,100.00	5,099.66	5,095.14	5,092.92	18.18	119.85	-132.89	-2,064.84	-3,353.41	3,976.05	3,838.04	138.02	28.809	
5,200.00	5,199.65	5,208.17	5,205.65	18.53	124.82	-132.91	-2,065.53	-3,353.41	3,977.23	3,833.88	143.35	27.746	
5,300.00	5,299.64	5,308.36	5,305.64	18.89	129.30	-132.92	-2,065.53	-3,353.41	3,978.06	3,829.88	148.18	26.846	
5,400.00	5,399.64	5,379.28	5,376.51	19.25	132.49	-132.92	-2,064.68	-3,353.41	3,978.55	3,826.82	151.73	26.222	
5,500.00	5,499.63	5,501.93	5,498.89	19.61	137.74	-132.93	-2,064.26	-3,353.41	3,979.05	3,821.71	157.35	25.288	
5,600.00	5,599.62	5,608.88	5,605.62	19.97	142.16	-132.96	-2,065.53	-3,353.41	3,980.56	3,818.44	162.12	24.553	
5,700.00	5,699.61	5,709.01	5,705.61	20.33	146.30	-132.97	-2,065.53	-3,353.41	3,981.39	3,814.77	166.62	23.895	
5,800.00	5,799.61	5,809.24	5,805.61	20.69	150.71	-132.99	-2,065.53	-3,353.41	3,982.23	3,810.84	171.39	23.235	
5,900.00	5,899.60	5,881.01	5,877.32	21.04	154.09	-132.99	-2,064.68	-3,353.41	3,982.71	3,807.58	175.12	22.742	
6,000.00	5,999.59	6,002.85	5,998.87	21.40	159.65	-132.99	-2,064.18	-3,353.41	3,983.18	3,802.13	181.05	22.001	
6,100.00	6,099.58	6,109.82	6,105.58	21.76	164.35	-133.02	-2,065.53	-3,353.41	3,984.73	3,798.62	186.10	21.411	
6,200.00	6,199.58	6,184.84	6,180.56	22.12	167.48	-133.02	-2,064.61	-3,353.41	3,985.14	3,795.56	189.59	21.020	
6,300.00	6,299.57	6,309.75	6,305.23	22.48	172.88	-133.04	-2,064.42	-3,353.41	3,985.80	3,790.45	195.35	20.403	
6,315.05	6,314.62	6,318.25	6,313.73	22.53	173.26	-133.04	-2,064.43	-3,353.41	3,985.94	3,790.16	195.78	20.359 ES	
6,350.00	6,349.55	6,337.98	6,333.45	22.66	174.13	157.72	-2,064.57	-3,353.41	3,987.15	3,790.37	196.77	20.263	
6,400.00	6,399.30	6,410.08	6,405.30	22.83	177.34	150.63	-2,065.53	-3,353.41	3,991.90	3,791.74	200.17	19.943	
6,450.00	6,448.52	6,444.36	6,439.55	23.00	178.90	148.43	-2,064.80	-3,353.41	3,999.06	3,797.17	201.89	19.808	
6,500.00	6,496.91	6,507.88	6,502.91	23.18	181.77	147.11	-2,065.53	-3,353.41	4,010.11	3,805.19	204.92	19.569	
6,550.00	6,544.17	6,549.69	6,544.69	23.35	183.62	145.99	-2,064.57	-3,353.41	4,023.42	3,816.48	206.94	19.442	
6,600.00	6,590.01	6,572.32	6,567.31	23.53	184.63	144.78	-2,064.75	-3,353.41	4,040.48	3,832.38	208.10	19.416	
6,650.00	6,634.14	6,645.34	6,640.14	23.70	187.78	143.67	-2,065.53	-3,353.41	4,060.61	3,849.20	211.41	19.207	
6,700.00	6,676.30	6,686.53	6,681.29	23.88	189.52	142.32	-2,064.35	-3,353.41	4,082.67	3,869.38	213.29	19.141	
6,750.00	6,716.21	6,708.23	6,702.98	24.06	190.43	140.62	-2,064.45	-3,353.41	4,108.18	3,893.84	214.34	19.167	
6,800.00	6,753.65	6,765.10	6,759.65	24.24	192.82	138.90	-2,065.53	-3,353.41	4,136.71	3,919.85	216.86	19.075 SF	
6,850.00	6,788.37	6,799.82	6,794.37	24.44	194.20	136.76	-2,065.53	-3,353.41	4,167.16	3,948.80	218.36	19.083	
6,900.00	6,820.16	6,831.61	6,826.16	24.63	195.46	134.24	-2,065.53	-3,353.41	4,199.89	3,980.14	219.74	19.113	
6,950.00	6,848.83	6,852.20	6,846.72	24.84	196.28	131.18	-2,064.53	-3,353.41	4,234.21	4,013.54	220.67	19.188	
7,000.00	6,874.19	6,867.01	6,861.52	25.06	196.86	127.51	-2,064.62	-3,353.41	4,271.01	4,049.65	221.35	19.295	
7,050.00	6,896.10	6,879.80	6,874.31	25.29	197.37	123.20	-2,064.76	-3,353.41	4,309.52	4,087.57	221.95	19.417	
7,100.00	6,914.42	6,926.08	6,920.42	25.53	199.19	118.82	-2,065.53	-3,353.41	4,349.65	4,125.79	223.87	19.430	
7,150.00	6,929.03	6,940.70	6,935.03	25.78	199.74	113.24	-2,065.53	-3,353.41	4,390.72	4,166.23	224.49	19.558	
7,200.00	6,939.85	6,951.51	6,945.85	26.05	200.14	106.87	-2,065.53	-3,353.41	4,432.76	4,207.79	224.97	19.704	
7,250.00	6,946.80	6,958.47	6,952.80	26.32	200.40	99.79	-2,065.53	-3,353.41	4,475.51	4,250.21	225.30	19.865	
7,300.00	6,949.85	6,961.51	6,955.85	26.61	200.51	92.17	-2,065.53	-3,353.41	4,518.72	4,293.25	225.47	20.041	
7,314.43	6,950.00	6,961.67	6,956.00	26.69	200.52	89.91	-2,065.53	-3,353.41	4,531.24	4,305.74	225.50	20.095	
7,400.00	6,949.92	6,961.59	6,955.92	27.21	200.52	89.91	-2,065.53	-3,353.41	4,605.69	4,380.09	225.60	20.415	
7,500.00	6,949.83	6,961.50	6,955.83	27.90	200.51	89.91	-2,065.53	-3,353.41	4,693.18	4,467.45	225.73	20.791	
7,600.00	6,949.74	6,961.41	6,955.74	28.66	200.51	89.90	-2,065.53	-3,353.41	4,781.17	4,555.29	225.88	21.167	
7,700.00	6,949.65	6,961.32	6,955.65	29.49	200.51	89.90	-2,065.53	-3,353.41	4,869.61	4,643.58	226.04	21.544	
7,800.00	6,949.56	6,961.23	6,955.56	30.38	200.50	89.90	-2,065.53	-3,353.41	4,958.50	4,732.30	226.20	21.921	
7,900.00	6,949.47	6,961.14	6,955.47	31.33	200.50	89.90	-2,065.53	-3,353.41	5,047.80	4,821.43	226.37	22.299	
8,000.00	6,949.38	6,961.05	6,955.38	32.33	200.50	89.89	-2,065.53	-3,353.41	5,137.50	4,910.95	226.55	22.677	
8,100.00	6,949.29	6,960.96	6,955.29	33.38	200.49	89.89	-2,065.53	-3,353.41	5,227.57	5,000.83	226.73	23.056	
8,200.00	6,949.20	6,960.87	6,955.20	34.47	200.49	89.89	-2,065.53	-3,353.41	5,317.99	5,091.07	226.92	23.436	
8,300.00	6,949.11	6,960.78	6,955.11	35.60	200.49	89.89	-2,065.53	-3,353.41	5,408.75	5,181.65	227.11	23.816	
8,400.00	6,949.02	6,960.69	6,955.02	36.76	200.48	89.88	-2,065.53	-3,353.41	5,499.83	5,272.54	227.30	24.197	
8,500.00	6,948.93	6,960.60	6,954.93	37.96	200.48	89.88	-2,065.53	-3,353.41	5,591.22	5,363.73	227.49	24.578	
8,600.00	6,948.84	6,960.51	6,954.84	39.18	200.48	89.88	-2,065.53	-3,353.41	5,682.90	5,455.21	227.68	24.960	
8,700.00	6,948.75	6,960.42	6,954.75	40.43	200.47	89.88	-2,065.53	-3,353.41	5,774.85	5,546.97	227.88	25.342	

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 #722H - Slot B05
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 #722H	**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
8,800.00	6,948.66	6,960.33	6,954.66	41.71	200.47	89.88	-2,065.53	-3,353.41	5,867.07	5,639.00	228.07	25.725	
8,900.00	6,948.57	6,960.24	6,954.57	43.00	200.47	89.87	-2,065.53	-3,353.41	5,959.54	5,731.27	228.27	26.108	
9,000.00	6,948.48	6,960.15	6,954.48	44.32	200.46	89.87	-2,065.53	-3,353.41	6,052.24	5,823.78	228.46	26.492	
9,100.00	6,948.39	6,960.06	6,954.39	45.66	200.46	89.87	-2,065.53	-3,353.41	6,145.18	5,916.53	228.65	26.876	
9,200.00	6,948.30	6,959.97	6,954.30	47.01	200.46	89.87	-2,065.53	-3,353.41	6,238.33	6,009.49	228.84	27.260	
9,300.00	6,948.21	6,959.88	6,954.21	48.38	200.45	89.86	-2,065.53	-3,353.41	6,331.70	6,102.66	229.03	27.645	
9,400.00	6,948.12	6,959.79	6,954.12	49.76	200.45	89.86	-2,065.53	-3,353.41	6,425.26	6,196.04	229.22	28.031	
9,500.00	6,948.03	6,959.70	6,954.03	51.16	200.45	89.86	-2,065.53	-3,353.41	6,519.01	6,289.61	229.41	28.417	
9,600.00	6,947.94	6,959.61	6,953.94	52.56	200.44	89.86	-2,065.53	-3,353.41	6,612.95	6,383.36	229.59	28.803	
9,700.00	6,947.85	6,959.52	6,953.85	53.98	200.44	89.86	-2,065.53	-3,353.41	6,707.06	6,477.29	229.78	29.189	
9,800.00	6,947.76	6,959.42	6,953.76	55.41	200.44	89.85	-2,065.53	-3,353.41	6,801.34	6,571.38	229.96	29.576	
9,900.00	6,947.67	6,959.33	6,953.67	56.85	200.43	89.85	-2,065.53	-3,353.41	6,895.78	6,665.65	230.14	29.964	
10,000.00	6,947.58	6,959.24	6,953.58	58.29	200.43	89.85	-2,065.53	-3,353.41	6,990.38	6,760.06	230.32	30.351	
10,100.00	6,947.49	6,959.15	6,953.49	59.75	200.43	89.85	-2,065.53	-3,353.41	7,085.12	6,854.63	230.49	30.739	
10,200.00	6,947.40	6,959.06	6,953.40	61.21	200.42	89.84	-2,065.53	-3,353.41	7,180.01	6,949.34	230.67	31.127	
10,300.00	6,947.31	6,958.97	6,953.31	62.68	200.42	89.84	-2,065.53	-3,353.41	7,275.04	7,044.20	230.84	31.515	
10,400.00	6,947.22	6,958.88	6,953.22	64.15	200.42	89.84	-2,065.53	-3,353.41	7,370.19	7,139.18	231.01	31.904	
10,500.00	6,947.13	6,958.79	6,953.13	65.63	200.41	89.84	-2,065.53	-3,353.41	7,465.47	7,234.29	231.18	32.293	
10,600.00	6,947.04	6,958.70	6,953.04	67.12	200.41	89.83	-2,065.53	-3,353.41	7,560.88	7,329.53	231.35	32.682	
10,700.00	6,946.95	6,958.61	6,952.95	68.61	200.41	89.83	-2,065.53	-3,353.41	7,656.40	7,424.89	231.51	33.071	
10,800.00	6,946.86	6,958.52	6,952.86	70.11	200.40	89.83	-2,065.53	-3,353.41	7,752.03	7,520.36	231.67	33.461	
10,900.00	6,946.77	6,958.43	6,952.77	71.61	200.40	89.83	-2,065.53	-3,353.41	7,847.78	7,615.94	231.83	33.851	
11,000.00	6,946.68	6,958.34	6,952.68	73.11	200.40	89.83	-2,065.53	-3,353.41	7,943.63	7,711.63	231.99	34.241	
11,100.00	6,946.59	6,958.25	6,952.59	74.62	200.39	89.82	-2,065.53	-3,353.41	8,039.57	7,807.42	232.15	34.631	
11,200.00	6,946.50	6,958.16	6,952.50	76.14	200.39	89.82	-2,065.53	-3,353.41	8,135.62	7,903.32	232.31	35.021	
11,300.00	6,946.41	6,958.07	6,952.41	77.65	200.39	89.82	-2,065.53	-3,353.41	8,231.76	7,999.30	232.46	35.412	
11,400.00	6,946.32	6,957.98	6,952.32	79.18	200.38	89.82	-2,065.53	-3,353.41	8,327.99	8,095.38	232.61	35.802	
11,500.00	6,946.23	6,957.89	6,952.23	80.70	200.38	89.81	-2,065.53	-3,353.41	8,424.31	8,191.55	232.76	36.193	
11,600.00	6,946.14	6,957.80	6,952.14	82.23	200.38	89.81	-2,065.53	-3,353.41	8,520.72	8,287.81	232.91	36.584	
11,700.00	6,946.05	6,957.71	6,952.05	83.76	200.37	89.81	-2,065.53	-3,353.41	8,617.21	8,384.15	233.06	36.974	
11,800.00	6,945.96	6,957.62	6,951.96	85.29	200.37	89.81	-2,065.53	-3,353.41	8,713.77	8,480.57	233.20	37.365	
11,900.00	6,945.87	6,957.53	6,951.87	86.82	200.37	89.80	-2,065.53	-3,353.41	8,810.41	8,577.07	233.35	37.756	
12,000.00	6,945.78	6,957.44	6,951.78	88.36	200.36	89.80	-2,065.53	-3,353.41	8,907.13	8,673.64	233.49	38.148	
12,100.00	6,945.69	6,957.35	6,951.69	89.90	200.36	89.80	-2,065.53	-3,353.41	9,003.92	8,770.29	233.63	38.539	
12,200.00	6,945.60	6,957.26	6,951.60	91.44	200.36	89.80	-2,065.53	-3,353.41	9,100.78	8,867.00	233.77	38.930	
12,300.00	6,945.51	6,957.17	6,951.51	92.99	200.35	89.80	-2,065.53	-3,353.41	9,197.70	8,963.79	233.91	39.321	
12,400.00	6,945.42	6,957.08	6,951.42	94.53	200.35	89.79	-2,065.53	-3,353.41	9,294.69	9,060.64	234.05	39.713	
12,500.00	6,945.33	6,956.99	6,951.33	96.08	200.35	89.79	-2,065.53	-3,353.41	9,391.74	9,157.56	234.18	40.104	
12,600.00	6,945.24	6,956.90	6,951.24	97.63	200.34	89.79	-2,065.53	-3,353.41	9,488.86	9,254.54	234.32	40.496	
12,700.00	6,945.15	6,956.81	6,951.15	99.18	200.34	89.79	-2,065.53	-3,353.41	9,586.03	9,351.58	234.45	40.887	
12,800.00	6,945.06	6,956.72	6,951.06	100.74	200.34	89.78	-2,065.53	-3,353.41	9,683.26	9,448.68	234.58	41.279	
12,900.00	6,944.96	6,956.63	6,950.96	102.29	200.33	89.78	-2,065.53	-3,353.41	9,780.55	9,545.84	234.71	41.670	
13,000.00	6,944.87	6,956.54	6,950.87	103.85	200.33	89.78	-2,065.53	-3,353.41	9,877.89	9,643.05	234.84	42.061	
13,100.00	6,944.78	6,956.45	6,950.78	105.40	200.33	89.78	-2,065.53	-3,353.41	9,975.28	9,740.31	234.97	42.453	
13,200.00	6,944.69	6,956.36	6,950.69	106.96	200.32	89.77	-2,065.53	-3,353.41	10,072.73	9,837.63	235.10	42.844	
13,300.00	6,944.60	6,956.27	6,950.60	108.52	200.32	89.77	-2,065.53	-3,353.41	10,170.22	9,935.00	235.23	43.236	
13,400.00	6,944.51	6,956.18	6,950.51	110.08	200.32	89.77	-2,065.53	-3,353.41	10,267.77	10,032.41	235.35	43.627	
13,500.00	6,944.42	6,956.09	6,950.42	111.65	200.31	89.77	-2,065.53	-3,353.41	10,365.36	10,129.88	235.48	44.018	
13,600.00	6,944.33	6,956.00	6,950.33	113.21	200.31	89.77	-2,065.53	-3,353.41	10,462.99	10,227.39	235.60	44.410	
13,700.00	6,944.24	6,955.91	6,950.24	114.78	200.31	89.76	-2,065.53	-3,353.41	10,560.67	10,324.95	235.72	44.801	
13,800.00	6,944.15	6,955.82	6,950.15	116.34	200.30	89.76	-2,065.53	-3,353.41	10,658.39	10,422.55	235.85	45.192	
13,900.00	6,944.06	6,955.73	6,950.06	117.91	200.30	89.76	-2,065.53	-3,353.41	10,756.16	10,520.19	235.97	45.583	

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 #722H - Slot B05
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 #722H	**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
14,000.00	6,943.97	6,955.64	6,949.97	119.48	200.30	89.76	-2,065.53	-3,353.41	10,853.96	10,617.87	236.09	45.974	
14,100.00	6,943.88	6,955.55	6,949.88	121.05	200.29	89.75	-2,065.53	-3,353.41	10,951.81	10,715.60	236.21	46.365	
14,200.00	6,943.79	6,955.46	6,949.79	122.62	200.29	89.75	-2,065.53	-3,353.41	11,049.69	10,813.36	236.33	46.756	
14,300.00	6,943.70	6,955.37	6,949.70	124.19	200.29	89.75	-2,065.53	-3,353.41	11,147.61	10,911.17	236.45	47.147	
14,400.00	6,943.61	6,955.28	6,949.61	125.76	200.28	89.75	-2,065.53	-3,353.41	11,245.57	11,009.01	236.56	47.537	
14,500.00	6,943.52	6,955.19	6,949.52	127.33	200.28	89.74	-2,065.53	-3,353.41	11,343.56	11,106.88	236.68	47.928	
14,600.00	6,943.43	6,955.10	6,949.43	128.90	200.28	89.74	-2,065.53	-3,353.41	11,441.59	11,204.79	236.80	48.319	
14,700.00	6,943.34	6,955.01	6,949.34	130.48	200.27	89.74	-2,065.53	-3,353.41	11,539.65	11,302.74	236.91	48.709	
14,800.00	6,943.25	6,954.92	6,949.25	132.05	200.27	89.74	-2,065.53	-3,353.41	11,637.74	11,400.72	237.03	49.099	
14,900.00	6,943.16	6,954.83	6,949.16	133.63	200.27	89.74	-2,065.53	-3,353.41	11,735.87	11,498.73	237.14	49.489	
15,000.00	6,943.07	6,954.74	6,949.07	135.20	200.26	89.73	-2,065.53	-3,353.41	11,834.03	11,596.78	237.25	49.879	
15,100.00	6,942.98	6,954.65	6,948.98	136.78	200.26	89.73	-2,065.53	-3,353.41	11,932.22	11,694.85	237.37	50.269	
15,200.00	6,942.89	6,954.56	6,948.89	138.36	200.25	89.73	-2,065.53	-3,353.41	12,030.44	11,792.96	237.48	50.659	
15,300.00	6,942.80	6,954.47	6,948.80	139.93	200.25	89.73	-2,065.53	-3,353.41	12,128.68	11,891.09	237.59	51.049	
15,400.00	6,942.71	6,954.38	6,948.71	141.51	200.25	89.72	-2,065.53	-3,353.41	12,226.96	11,989.26	237.70	51.438	
15,500.00	6,942.62	6,954.29	6,948.62	143.09	200.24	89.72	-2,065.53	-3,353.41	12,325.26	12,087.45	237.81	51.828	
15,600.00	6,942.53	6,954.20	6,948.53	144.67	200.24	89.72	-2,065.53	-3,353.41	12,423.60	12,185.67	237.92	52.217	
15,700.00	6,942.44	6,954.11	6,948.44	146.25	200.24	89.72	-2,065.53	-3,353.41	12,521.95	12,283.92	238.03	52.606	
15,800.00	6,942.35	6,954.02	6,948.35	147.83	200.23	89.72	-2,065.53	-3,353.41	12,620.34	12,382.19	238.14	52.995	
15,900.00	6,942.26	6,953.93	6,948.26	149.41	200.23	89.71	-2,065.53	-3,353.41	12,718.74	12,480.49	238.25	53.384	
16,000.00	6,942.17	6,953.84	6,948.17	150.99	200.23	89.71	-2,065.53	-3,353.41	12,817.18	12,578.82	238.36	53.772	
16,100.00	6,942.08	6,953.75	6,948.08	152.57	200.22	89.71	-2,065.53	-3,353.41	12,915.63	12,677.16	238.47	54.161	
16,200.00	6,941.99	6,953.66	6,947.99	154.16	200.22	89.71	-2,065.53	-3,353.41	13,014.11	12,775.54	238.58	54.549	
16,300.00	6,941.90	6,953.57	6,947.90	155.74	200.22	89.70	-2,065.53	-3,353.41	13,112.62	12,873.93	238.69	54.937	
16,400.00	6,941.81	6,953.48	6,947.81	157.32	200.21	89.70	-2,065.53	-3,353.41	13,211.14	12,972.35	238.79	55.325	
16,500.00	6,941.72	6,953.39	6,947.72	158.91	200.21	89.70	-2,065.53	-3,353.41	13,309.69	13,070.79	238.90	55.713	
16,600.00	6,941.63	6,953.29	6,947.63	160.49	200.21	89.70	-2,065.53	-3,353.41	13,408.26	13,169.26	239.01	56.100	
16,700.00	6,941.54	6,953.20	6,947.54	162.07	200.20	89.69	-2,065.53	-3,353.41	13,506.85	13,267.74	239.11	56.487	
16,800.00	6,941.45	6,953.11	6,947.45	163.66	200.20	89.69	-2,065.53	-3,353.41	13,605.46	13,366.24	239.22	56.875	
16,900.00	6,941.36	6,953.02	6,947.36	165.24	200.20	89.69	-2,065.53	-3,353.41	13,704.09	13,464.77	239.32	57.262	
17,000.00	6,941.27	6,952.93	6,947.27	166.83	200.19	89.69	-2,065.53	-3,353.41	13,802.75	13,563.32	239.43	57.648	
17,100.00	6,941.18	6,952.84	6,947.18	168.42	200.19	89.69	-2,065.53	-3,353.41	13,901.42	13,661.88	239.54	58.035	
17,200.00	6,941.09	6,952.75	6,947.09	170.00	200.19	89.68	-2,065.53	-3,353.41	14,000.10	13,760.46	239.64	58.421	
17,300.00	6,941.00	6,952.66	6,947.00	171.59	200.18	89.68	-2,065.53	-3,353.41	14,098.81	13,859.07	239.75	58.807	
17,400.00	6,940.91	6,952.57	6,946.91	173.18	200.18	89.68	-2,065.53	-3,353.41	14,197.54	13,957.69	239.85	59.193	
17,500.00	6,940.82	6,952.48	6,946.82	174.76	200.18	89.68	-2,065.53	-3,353.41	14,296.28	14,056.33	239.95	59.579	
17,600.00	6,940.73	6,952.39	6,946.73	176.35	200.17	89.67	-2,065.53	-3,353.41	14,395.04	14,154.98	240.06	59.965	
17,700.00	6,940.64	6,952.30	6,946.64	177.94	200.17	89.67	-2,065.53	-3,353.41	14,493.82	14,253.66	240.16	60.350	
17,800.00	6,940.55	6,952.21	6,946.55	179.53	200.17	89.67	-2,065.53	-3,353.41	14,592.61	14,352.35	240.27	60.735	
17,900.00	6,940.46	6,952.12	6,946.46	181.11	200.16	89.67	-2,065.53	-3,353.41	14,691.43	14,451.06	240.37	61.120	
18,000.00	6,940.37	6,952.03	6,946.37	182.70	200.16	89.66	-2,065.53	-3,353.41	14,790.25	14,549.78	240.47	61.505	
18,100.00	6,940.28	6,951.94	6,946.28	184.29	200.16	89.66	-2,065.53	-3,353.41	14,889.09	14,648.52	240.58	61.889	
18,200.00	6,940.19	6,951.85	6,946.19	185.88	200.15	89.66	-2,065.53	-3,353.41	14,987.95	14,747.27	240.68	62.273	
18,300.00	6,940.10	6,951.76	6,946.10	187.47	200.15	89.66	-2,065.53	-3,353.41	15,086.82	14,846.04	240.78	62.657	
18,400.00	6,940.01	6,951.67	6,946.01	189.06	200.15	89.66	-2,065.53	-3,353.41	15,185.71	14,944.83	240.89	63.041	
18,500.00	6,939.92	6,951.58	6,945.92	190.65	200.14	89.65	-2,065.53	-3,353.41	15,284.61	15,043.63	240.99	63.425	
18,600.00	6,939.83	6,951.49	6,945.83	192.24	200.14	89.65	-2,065.53	-3,353.41	15,383.53	15,142.44	241.09	63.808	
18,700.00	6,939.74	6,951.40	6,945.74	193.83	200.14	89.65	-2,065.53	-3,353.41	15,482.46	15,241.27	241.19	64.191	
18,800.00	6,939.65	6,951.31	6,945.65	195.42	200.13	89.65	-2,065.53	-3,353.41	15,581.40	15,340.11	241.30	64.574	
18,900.00	6,939.56	6,951.22	6,945.56	197.01	200.13	89.64	-2,065.53	-3,353.41	15,680.36	15,438.96	241.40	64.956	
19,000.00	6,939.47	6,951.13	6,945.47	198.60	200.13	89.64	-2,065.53	-3,353.41	15,779.33	15,537.83	241.50	65.338	
19,100.00	6,939.38	6,951.04	6,945.38	200.19	200.12	89.64	-2,065.53	-3,353.41	15,878.31	15,636.71	241.60	65.720	

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 #722H - Slot B05
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 #722H	**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
19,200.00	6,939.29	6,950.95	6,945.29	201.78	200.12	89.64	-2,065.53	-3,353.41	15,977.31	15,735.60	241.71	66.102	
19,300.00	6,939.20	6,950.86	6,945.20	203.37	200.12	89.63	-2,065.53	-3,353.41	16,076.32	15,834.51	241.81	66.484	
19,400.00	6,939.11	6,950.77	6,945.11	204.97	200.11	89.63	-2,065.53	-3,353.41	16,175.34	15,933.43	241.91	66.865	
19,500.00	6,939.02	6,950.68	6,945.02	206.56	200.11	89.63	-2,065.53	-3,353.41	16,274.37	16,032.36	242.01	67.246	
19,600.00	6,938.93	6,950.59	6,944.93	208.15	200.11	89.63	-2,065.53	-3,353.41	16,373.42	16,131.30	242.11	67.627	
19,700.00	6,938.83	6,950.50	6,944.83	209.74	200.10	89.63	-2,065.53	-3,353.41	16,472.47	16,230.26	242.22	68.007	
19,800.00	6,938.74	6,950.41	6,944.74	211.33	200.10	89.62	-2,065.53	-3,353.41	16,571.54	16,329.22	242.32	68.388	
19,900.00	6,938.65	6,950.32	6,944.65	212.93	200.10	89.62	-2,065.53	-3,353.41	16,670.62	16,428.20	242.42	68.768	
20,000.00	6,938.56	6,950.23	6,944.56	214.52	200.09	89.62	-2,065.53	-3,353.41	16,769.71	16,527.19	242.52	69.147	
20,100.00	6,938.47	6,950.14	6,944.47	216.11	200.09	89.62	-2,065.53	-3,353.41	16,868.81	16,626.18	242.62	69.527	
20,200.00	6,938.38	6,950.05	6,944.38	217.71	200.09	89.61	-2,065.53	-3,353.41	16,967.92	16,725.19	242.73	69.906	
20,300.00	6,938.29	6,949.96	6,944.29	219.30	200.08	89.61	-2,065.53	-3,353.41	17,067.04	16,824.21	242.83	70.285	
20,400.00	6,938.20	6,949.87	6,944.20	220.89	200.08	89.61	-2,065.53	-3,353.41	17,166.17	16,923.24	242.93	70.663	
20,500.00	6,938.11	6,949.78	6,944.11	222.49	200.08	89.61	-2,065.53	-3,353.41	17,265.31	17,022.28	243.03	71.042	
20,600.00	6,938.02	6,949.69	6,944.02	224.08	200.07	89.61	-2,065.53	-3,353.41	17,364.46	17,121.33	243.13	71.420	
20,626.08	6,938.00	6,949.67	6,944.00	224.49	200.07	89.60	-2,065.53	-3,353.41	17,390.32	17,147.17	243.16	71.518	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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)	Rule Assigned: 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	-77.30	1,260.24	-5,592.93	5,733.16				
100.00	100.00	261.00	261.00	0.25	3.27	-77.30	1,260.24	-5,592.93	5,733.16	5,729.63	3.52	1,626.723	
200.00	200.00	364.27	364.27	0.61	5.24	-77.30	1,260.41	-5,592.93	5,733.19	5,727.35	5.85	980.415	
300.00	300.00	461.02	461.00	0.97	7.11	-77.30	1,260.24	-5,592.93	5,733.16	5,725.08	8.08	709.798	
400.00	400.00	562.52	562.50	1.33	9.10	-77.30	1,260.64	-5,592.93	5,733.24	5,722.81	10.43	549.653	
500.00	500.00	669.51	669.48	1.68	11.21	-77.30	1,260.21	-5,592.93	5,733.16	5,720.26	12.89	444.709	
514.83	514.83	675.87	675.83	1.74	11.33	-87.97	1,260.24	-5,592.93	5,733.15	5,720.08	13.07	438.636	
535.00	535.00	696.04	696.00	1.81	11.73	-87.97	1,260.24	-5,592.93	5,733.15	5,719.61	13.54	423.430	
600.00	599.99	761.03	760.99	2.04	13.01	-87.98	1,260.24	-5,592.93	5,733.12	5,718.07	15.05	380.891	
700.00	699.99	861.03	860.99	2.40	14.98	-87.99	1,260.24	-5,592.93	5,733.08	5,715.70	17.38	329.898	
750.50	750.48	911.52	911.48	2.58	15.97	-88.00	1,260.24	-5,592.93	5,733.05	5,714.50	18.55	309.005	
800.00	799.98	961.91	961.87	2.76	16.96	-88.00	1,261.10	-5,592.93	5,733.22	5,713.50	19.72	290.694	
900.00	899.97	1,065.09	1,065.04	3.12	19.00	-88.01	1,260.90	-5,592.93	5,733.14	5,711.03	22.11	259.278	
1,000.00	999.96	1,168.26	1,168.21	3.48	21.03	-88.03	1,260.43	-5,592.93	5,733.00	5,708.50	24.50	233.988	
1,100.00	1,099.96	1,261.04	1,260.96	3.84	22.99	-88.04	1,260.24	-5,592.93	5,732.91	5,706.09	26.82	213.762	
1,200.00	1,199.95	1,361.03	1,360.95	4.19	25.17	-88.06	1,260.24	-5,592.93	5,732.87	5,703.50	29.36	195.234	
1,250.40	1,250.35	1,411.43	1,411.35	4.37	26.27	-88.06	1,260.24	-5,592.93	5,732.85	5,702.20	30.65	187.062	
1,300.00	1,299.94	1,461.37	1,461.28	4.55	27.37	-88.06	1,261.06	-5,592.93	5,733.00	5,701.09	31.92	179.625	
1,400.00	1,399.93	1,564.74	1,564.64	4.91	29.63	-88.07	1,260.89	-5,592.93	5,732.93	5,698.39	34.54	166.001	
1,500.00	1,499.93	1,668.10	1,668.01	5.27	31.89	-88.09	1,260.44	-5,592.93	5,732.79	5,695.64	37.15	154.297	
1,600.00	1,599.92	1,761.10	1,760.92	5.63	34.02	-88.10	1,260.24	-5,592.93	5,732.70	5,693.06	39.65	144.594	
1,700.00	1,699.91	1,861.14	1,860.91	5.99	36.32	-88.12	1,260.24	-5,592.93	5,732.66	5,690.35	42.31	135.501	
1,800.00	1,799.90	1,961.13	1,960.90	6.34	38.45	-88.13	1,260.24	-5,592.93	5,732.62	5,687.83	44.79	127.988	
1,900.00	1,899.90	2,061.12	2,060.90	6.70	40.57	-88.14	1,260.24	-5,592.93	5,732.58	5,685.31	47.27	121.263	
1,907.00	1,906.90	2,068.12	2,067.90	6.73	40.72	-88.14	1,260.24	-5,592.93	5,732.58	5,685.13	47.45	120.819	
2,000.00	1,999.89	2,166.90	2,166.66	7.06	42.82	-88.14	1,261.27	-5,592.93	5,732.77	5,682.89	49.88	114.931	
2,100.00	2,099.88	2,273.14	2,272.89	7.42	45.08	-88.16	1,260.51	-5,592.93	5,732.58	5,680.08	52.50	109.199	
2,200.00	2,199.87	2,361.17	2,360.87	7.78	46.95	-88.18	1,260.24	-5,592.93	5,732.46	5,677.74	54.73	104.748	
2,300.00	2,299.87	2,461.16	2,460.87	8.14	49.08	-88.19	1,260.24	-5,592.93	5,732.43	5,675.21	57.21	100.198	
2,350.40	2,350.26	2,511.56	2,511.26	8.32	50.15	-88.20	1,260.24	-5,592.93	5,732.41	5,673.94	58.46	98.052	
2,400.00	2,399.86	2,561.53	2,561.23	8.50	51.21	-88.19	1,261.05	-5,592.93	5,732.56	5,672.86	59.70	96.017	
2,500.00	2,499.85	2,664.88	2,664.57	8.85	53.41	-88.21	1,260.88	-5,592.93	5,732.49	5,670.23	62.26	92.074	
2,600.00	2,599.85	2,768.22	2,767.91	9.21	55.61	-88.23	1,260.43	-5,592.93	5,732.36	5,667.54	64.82	88.442	
2,700.00	2,699.84	2,861.21	2,860.84	9.57	57.85	-88.24	1,260.24	-5,592.93	5,732.27	5,664.86	67.41	85.031	
2,800.00	2,799.83	2,961.20	2,960.83	9.93	60.40	-88.25	1,260.24	-5,592.93	5,732.24	5,661.91	70.33	81.506	
2,850.40	2,850.23	3,011.60	3,011.23	10.11	61.69	-88.26	1,260.24	-5,592.93	5,732.22	5,660.42	71.80	79.838	
2,900.00	2,899.82	3,061.84	3,061.45	10.29	62.98	-88.25	1,261.60	-5,592.93	5,732.49	5,659.23	73.26	78.248	
3,000.00	2,999.82	3,167.54	3,167.14	10.65	65.68	-88.27	1,261.30	-5,592.93	5,732.39	5,656.07	76.32	75.109	
3,100.00	3,099.81	3,273.24	3,272.83	11.01	68.38	-88.29	1,260.51	-5,592.93	5,732.20	5,652.81	79.38	72.210	
3,200.00	3,199.80	3,361.38	3,360.80	11.36	71.13	-88.30	1,260.24	-5,592.93	5,732.09	5,649.60	82.49	69.489	
3,300.00	3,299.79	3,461.37	3,460.79	11.72	74.49	-88.31	1,260.24	-5,592.93	5,732.05	5,645.84	86.21	66.490	
3,400.00	3,399.79	3,561.36	3,560.79	12.08	77.86	-88.32	1,260.24	-5,592.93	5,732.02	5,642.09	89.93	63.739	
3,423.40	3,423.18	3,584.76	3,584.18	12.16	78.64	-88.33	1,260.24	-5,592.93	5,732.01	5,641.21	90.80	63.127	
3,500.00	3,499.78	3,667.58	3,666.95	12.44	81.43	-88.31	1,262.52	-5,592.93	5,732.47	5,638.61	93.86	61.074	
3,600.00	3,599.77	3,775.76	3,775.10	12.80	85.07	-88.34	1,261.62	-5,592.93	5,732.26	5,634.40	97.86	58.578	
3,700.00	3,699.76	3,883.95	3,883.25	13.16	88.70	-88.37	1,260.00	-5,592.93	5,731.90	5,630.05	101.85	56.277	
3,736.70	3,736.46	3,898.65	3,897.46	13.29	89.39	-88.37	1,260.24	-5,592.93	5,731.90	5,629.22	102.67	55.826	
3,800.00	3,799.76	3,961.94	3,960.76	13.52	91.97	-88.37	1,260.24	-5,592.93	5,731.88	5,626.40	105.47	54.344	
3,900.00	3,899.75	4,062.26	4,060.75	13.87	96.05	-88.39	1,260.24	-5,592.93	5,731.84	5,621.93	109.91	52.150	
4,000.00	3,999.74	4,162.26	4,160.74	14.23	100.07	-88.40	1,260.24	-5,592.93	5,731.81	5,617.51	114.30	50.148	
4,024.00	4,023.74	4,186.25	4,184.74	14.32	101.04	-88.40	1,260.24	-5,592.93	5,731.80	5,616.45	115.35	49.690	
4,100.00	4,099.73	4,291.31	4,289.67	14.59	105.27	-88.41	1,261.03	-5,592.93	5,732.02	5,612.16	119.85	47.825	

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 #722H - Slot B05
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 #722H	**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
4,200.00	4,199.73	4,362.66	4,360.73	14.95	108.07	-88.42	1,260.24	-5,592.93	5,731.74	5,608.73	123.01	46.594	
4,300.00	4,299.72	4,462.82	4,460.72	15.31	111.93	-88.43	1,260.24	-5,592.93	5,731.71	5,604.47	127.23	45.049	
4,350.50	4,350.21	4,513.32	4,511.21	15.49	113.89	-88.44	1,260.24	-5,592.93	5,731.69	5,602.32	129.37	44.306	
4,400.00	4,399.71	4,591.77	4,589.60	15.67	116.92	-88.45	1,260.42	-5,592.93	5,731.78	5,599.21	132.58	43.234	
4,500.00	4,499.70	4,663.02	4,660.70	16.03	119.70	-88.46	1,260.24	-5,592.93	5,731.64	5,595.93	135.71	42.234	
4,600.00	4,599.70	4,763.01	4,760.70	16.38	123.60	-88.47	1,260.24	-5,592.93	5,731.61	5,591.64	139.97	40.949	
4,650.50	4,650.19	4,813.51	4,811.19	16.56	125.57	-88.48	1,260.24	-5,592.93	5,731.59	5,589.47	142.12	40.329	
4,700.00	4,699.69	4,871.30	4,868.89	16.74	127.82	-88.46	1,262.88	-5,592.93	5,732.14	5,587.59	144.55	39.655	
4,800.00	4,799.68	4,988.70	4,986.22	17.10	132.40	-88.49	1,261.25	-5,592.93	5,731.81	5,582.33	149.49	38.343	
4,900.00	4,899.67	5,063.58	5,060.67	17.46	135.33	-88.51	1,260.24	-5,592.93	5,731.51	5,578.74	152.77	37.516	
4,950.50	4,950.17	5,114.08	5,111.17	17.64	137.31	-88.51	1,260.24	-5,592.93	5,731.49	5,576.56	154.94	36.992	
5,000.00	4,999.67	5,167.80	5,164.84	17.82	139.42	-88.51	1,261.78	-5,592.93	5,731.80	5,574.58	157.23	36.456	
5,100.00	5,099.66	5,303.86	5,300.80	18.18	144.76	-88.55	1,259.29	-5,592.93	5,731.39	5,568.46	162.92	35.178	
5,130.36	5,130.01	5,294.25	5,291.01	18.29	144.39	-88.54	1,260.24	-5,592.93	5,731.44	5,568.77	162.66	35.235	
5,200.00	5,199.65	5,363.89	5,360.65	18.53	147.14	-88.54	1,260.24	-5,592.93	5,731.42	5,565.76	165.66	34.597	
5,250.50	5,250.15	5,414.39	5,411.15	18.72	149.13	-88.55	1,260.24	-5,592.93	5,731.40	5,563.57	167.83	34.149	
5,300.00	5,299.64	5,465.58	5,462.27	18.89	151.15	-88.53	1,262.64	-5,592.93	5,731.89	5,561.86	170.03	33.711	
5,400.00	5,399.64	5,586.47	5,583.11	19.25	155.92	-88.56	1,261.43	-5,592.93	5,731.65	5,556.49	175.16	32.723	
5,500.00	5,499.63	5,664.37	5,660.63	19.61	158.97	-88.58	1,260.24	-5,592.93	5,731.32	5,552.76	178.57	32.096	
5,600.00	5,599.62	5,764.37	5,760.62	19.97	162.81	-88.59	1,260.24	-5,592.93	5,731.29	5,548.53	182.77	31.358	
5,700.00	5,699.61	5,864.36	5,860.61	20.33	166.65	-88.61	1,260.24	-5,592.93	5,731.26	5,544.29	186.97	30.653	
5,722.33	5,721.94	5,886.69	5,882.94	20.41	167.51	-88.61	1,260.24	-5,592.93	5,731.26	5,543.35	187.91	30.500	
5,800.00	5,799.61	5,975.80	5,971.94	20.69	170.94	-88.59	1,263.05	-5,592.93	5,731.83	5,540.22	191.61	29.914	
5,900.00	5,899.60	6,090.59	6,086.66	21.04	175.35	-88.62	1,261.26	-5,592.93	5,731.48	5,535.10	196.38	29.186	
6,000.00	5,999.59	6,164.96	6,160.59	21.40	178.21	-88.64	1,260.24	-5,592.93	5,731.18	5,531.57	199.60	28.713	
6,100.00	6,099.58	6,264.95	6,260.58	21.76	182.07	-88.65	1,260.24	-5,592.93	5,731.15	5,527.33	203.82	28.119	
6,200.00	6,199.58	6,364.94	6,360.58	22.12	185.93	-88.67	1,260.24	-5,592.93	5,731.12	5,523.09	208.03	27.549	
6,230.50	6,230.07	6,395.44	6,391.07	22.23	187.10	-88.67	1,260.24	-5,592.93	5,731.11	5,521.79	209.32	27.380 CC	
6,300.00	6,299.57	6,473.53	6,469.07	22.48	190.11	-88.65	1,263.10	-5,592.93	5,731.69	5,519.11	212.58	26.963	
6,315.05	6,314.62	6,490.45	6,485.98	22.53	190.77	-88.65	1,262.97	-5,592.93	5,731.66	5,518.38	213.29	26.873	
6,316.62	6,316.19	6,492.22	6,487.75	22.54	190.83	-99.62	1,262.95	-5,592.93	5,731.66	5,518.30	213.36	26.864	
6,350.00	6,349.55	6,529.73	6,525.24	22.66	192.28	-157.84	1,262.55	-5,592.93	5,732.52	5,517.60	214.92	26.672 ES	
6,400.00	6,399.30	6,585.69	6,581.17	22.83	194.44	-164.69	1,261.72	-5,592.93	5,736.98	5,519.73	217.25	26.407	
6,450.00	6,448.52	6,641.06	6,636.50	23.00	196.58	-166.45	1,260.62	-5,592.93	5,745.22	5,525.66	219.56	26.167	
6,500.00	6,496.91	6,662.94	6,657.91	23.18	197.41	-167.12	1,260.24	-5,592.93	5,757.30	5,536.73	220.57	26.102	
6,550.00	6,544.17	6,710.20	6,705.17	23.35	199.18	-167.37	1,260.24	-5,592.93	5,773.23	5,550.73	222.50	25.947	
6,600.00	6,590.01	6,756.04	6,751.01	23.53	200.90	-167.36	1,260.24	-5,592.93	5,792.76	5,568.39	224.37	25.818	
6,650.00	6,634.14	6,800.17	6,795.14	23.70	202.55	-167.18	1,260.24	-5,592.93	5,815.79	5,589.62	226.17	25.714	
6,700.00	6,676.30	6,842.32	6,837.30	23.88	204.13	-166.83	1,260.24	-5,592.93	5,842.16	5,614.27	227.89	25.636	
6,750.00	6,716.21	6,882.24	6,877.21	24.06	205.62	-166.32	1,260.24	-5,592.93	5,871.72	5,642.21	229.51	25.584	
6,800.00	6,753.65	6,921.86	6,916.74	24.24	207.10	-165.58	1,263.45	-5,592.93	5,904.93	5,673.82	231.11	25.550	
6,850.00	6,788.37	6,961.68	6,956.54	24.44	208.59	-164.67	1,263.30	-5,592.93	5,940.27	5,707.56	232.71	25.526 SF	
6,900.00	6,820.16	6,998.15	6,993.00	24.63	209.96	-163.49	1,263.00	-5,592.93	5,978.18	5,744.00	234.17	25.529	
6,950.00	6,848.83	7,031.06	7,025.89	24.84	211.19	-161.95	1,262.62	-5,592.93	6,018.42	5,782.93	235.49	25.557	
7,000.00	6,874.19	7,060.19	7,055.01	25.06	212.28	-159.89	1,262.19	-5,592.93	6,060.77	5,824.11	236.66	25.610	
7,050.00	6,896.10	7,085.38	7,080.18	25.29	213.22	-157.07	1,261.74	-5,592.93	6,104.96	5,867.30	237.66	25.687	
7,100.00	6,914.42	7,106.44	7,101.23	25.53	214.01	-153.10	1,261.31	-5,592.93	6,150.74	5,912.23	238.51	25.789	
7,150.00	6,929.03	7,123.26	7,118.04	25.78	214.64	-147.21	1,260.94	-5,592.93	6,197.82	5,958.64	239.18	25.913	
7,200.00	6,939.85	7,135.73	7,130.49	26.05	215.11	-137.99	1,260.64	-5,592.93	6,245.92	6,006.24	239.68	26.060	
7,250.00	6,946.80	7,143.77	7,138.52	26.32	215.41	-122.94	1,260.44	-5,592.93	6,294.74	6,054.73	240.00	26.228	
7,300.00	6,949.85	7,147.32	7,142.07	26.61	215.54	-99.50	1,260.35	-5,592.93	6,343.98	6,103.83	240.16	26.416	
7,314.43	6,950.00	7,147.51	7,142.26	26.69	215.55	-91.47	1,260.35	-5,592.93	6,358.23	6,118.06	240.17	26.474	

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 #722H - Slot B05
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 #722H	**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
7,400.00	6,949.92	7,147.50	7,142.25	27.21	215.55	-91.47	1,260.35	-5,592.93	6,442.75	6,202.56	240.19	26.823	
7,500.00	6,949.83	7,147.49	7,142.24	27.90	215.55	-91.47	1,260.35	-5,592.93	6,541.55	6,301.33	240.22	27.231	
7,600.00	6,949.74	7,147.48	7,142.23	28.66	215.55	-91.47	1,260.35	-5,592.93	6,640.40	6,400.14	240.26	27.639	
7,700.00	6,949.65	7,147.47	7,142.23	29.49	215.55	-91.47	1,260.35	-5,592.93	6,739.27	6,498.98	240.29	28.046	
7,800.00	6,949.56	7,147.47	7,142.22	30.38	215.55	-91.46	1,260.35	-5,592.93	6,838.18	6,597.85	240.33	28.454	
7,900.00	6,949.47	7,147.46	7,142.21	31.33	215.55	-91.46	1,260.35	-5,592.93	6,937.12	6,696.76	240.37	28.861	
8,000.00	6,949.38	7,147.45	7,142.20	32.33	215.54	-91.46	1,260.35	-5,592.93	7,036.09	6,795.69	240.41	29.268	
8,100.00	6,949.29	7,147.44	7,142.20	33.38	215.54	-91.46	1,260.35	-5,592.93	7,135.09	6,894.64	240.45	29.674	
8,200.00	6,949.20	7,147.44	7,142.19	34.47	215.54	-91.46	1,260.35	-5,592.93	7,234.12	6,993.63	240.49	30.081	
8,300.00	6,949.11	7,147.43	7,142.18	35.60	215.54	-91.46	1,260.35	-5,592.93	7,333.17	7,092.64	240.54	30.487	
8,400.00	6,949.02	7,147.42	7,142.17	36.76	215.54	-91.46	1,260.35	-5,592.93	7,432.25	7,191.67	240.58	30.893	
8,500.00	6,948.93	7,147.41	7,142.16	37.96	215.54	-91.46	1,260.35	-5,592.93	7,531.35	7,290.73	240.63	31.299	
8,600.00	6,948.84	7,147.40	7,142.16	39.18	215.54	-91.46	1,260.35	-5,592.93	7,630.48	7,389.80	240.68	31.704	
8,700.00	6,948.75	7,147.40	7,142.15	40.43	215.54	-91.46	1,260.35	-5,592.93	7,729.63	7,488.90	240.72	32.110	
8,800.00	6,948.66	7,147.39	7,142.14	41.71	215.54	-91.46	1,260.35	-5,592.93	7,828.80	7,588.02	240.77	32.515	
8,900.00	6,948.57	7,147.38	7,142.13	43.00	215.54	-91.46	1,260.35	-5,592.93	7,927.99	7,687.16	240.83	32.920	
9,000.00	6,948.48	7,147.37	7,142.12	44.32	215.54	-91.46	1,260.35	-5,592.93	8,027.20	7,786.32	240.88	33.325	
9,100.00	6,948.39	7,147.36	7,142.12	45.66	215.54	-91.46	1,260.35	-5,592.93	8,126.43	7,885.50	240.93	33.729	
9,200.00	6,948.30	7,147.36	7,142.11	47.01	215.54	-91.46	1,260.35	-5,592.93	8,225.68	7,984.70	240.98	34.134	
9,300.00	6,948.21	7,147.35	7,142.10	48.38	215.54	-91.46	1,260.35	-5,592.93	8,324.95	8,083.91	241.04	34.538	
9,400.00	6,948.12	7,147.34	7,142.09	49.76	215.54	-91.46	1,260.35	-5,592.93	8,424.23	8,183.14	241.09	34.942	
9,500.00	6,948.03	7,147.33	7,142.08	51.16	215.54	-91.46	1,260.35	-5,592.93	8,523.53	8,282.38	241.15	35.345	
9,600.00	6,947.94	7,147.32	7,142.08	52.56	215.54	-91.46	1,260.35	-5,592.93	8,622.85	8,381.64	241.21	35.749	
9,700.00	6,947.85	7,147.32	7,142.07	53.98	215.54	-91.46	1,260.35	-5,592.93	8,722.18	8,480.92	241.26	36.152	
9,800.00	6,947.76	7,147.31	7,142.06	55.41	215.54	-91.46	1,260.35	-5,592.93	8,821.53	8,580.21	241.32	36.555	
9,900.00	6,947.67	7,147.30	7,142.05	56.85	215.54	-91.46	1,260.35	-5,592.93	8,920.89	8,679.51	241.38	36.958	
10,000.00	6,947.58	7,147.29	7,142.04	58.29	215.54	-91.45	1,260.35	-5,592.93	9,020.27	8,778.83	241.44	37.360	
10,100.00	6,947.49	7,147.28	7,142.04	59.75	215.54	-91.45	1,260.35	-5,592.93	9,119.66	8,878.16	241.50	37.762	
10,200.00	6,947.40	7,147.28	7,142.03	61.21	215.54	-91.45	1,260.35	-5,592.93	9,219.07	8,977.50	241.56	38.164	
10,300.00	6,947.31	7,147.27	7,142.02	62.68	215.54	-91.45	1,260.35	-5,592.93	9,318.48	9,076.86	241.62	38.566	
10,400.00	6,947.22	7,147.26	7,142.01	64.15	215.54	-91.45	1,260.35	-5,592.93	9,417.91	9,176.22	241.69	38.967	
10,500.00	6,947.13	7,147.25	7,142.00	65.63	215.54	-91.45	1,260.35	-5,592.93	9,517.35	9,275.60	241.75	39.369	
10,600.00	6,947.04	7,147.24	7,142.00	67.12	215.54	-91.45	1,260.35	-5,592.93	9,616.80	9,374.99	241.81	39.770	
10,700.00	6,946.95	7,147.24	7,141.99	68.61	215.54	-91.45	1,260.35	-5,592.93	9,716.27	9,474.39	241.88	40.170	
10,800.00	6,946.86	7,147.23	7,141.98	70.11	215.54	-91.45	1,260.35	-5,592.93	9,815.74	9,573.80	241.94	40.571	
10,900.00	6,946.77	7,147.22	7,141.97	71.61	215.54	-91.45	1,260.35	-5,592.93	9,915.23	9,673.22	242.01	40.971	
11,000.00	6,946.68	7,147.21	7,141.96	73.11	215.54	-91.45	1,260.35	-5,592.93	10,014.72	9,772.65	242.07	41.371	
11,100.00	6,946.59	7,147.20	7,141.96	74.62	215.54	-91.45	1,260.35	-5,592.93	10,114.23	9,872.09	242.14	41.771	
11,200.00	6,946.50	7,147.20	7,141.95	76.14	215.54	-91.45	1,260.35	-5,592.93	10,213.74	9,971.54	242.20	42.170	
11,300.00	6,946.41	7,147.19	7,141.94	77.65	215.53	-91.45	1,260.35	-5,592.93	10,313.27	10,070.99	242.27	42.569	
11,400.00	6,946.32	7,147.18	7,141.93	79.18	215.53	-91.45	1,260.35	-5,592.93	10,412.80	10,170.46	242.34	42.968	
11,500.00	6,946.23	7,147.17	7,141.92	80.70	215.53	-91.45	1,260.35	-5,592.93	10,512.34	10,269.94	242.41	43.367	
11,600.00	6,946.14	7,147.16	7,141.92	82.23	215.53	-91.45	1,260.35	-5,592.93	10,611.89	10,369.42	242.47	43.765	
11,700.00	6,946.05	7,147.16	7,141.91	83.76	215.53	-91.45	1,260.35	-5,592.93	10,711.45	10,468.91	242.54	44.163	
11,800.00	6,945.96	7,147.15	7,141.90	85.29	215.53	-91.45	1,260.36	-5,592.93	10,811.02	10,568.41	242.61	44.561	
11,900.00	6,945.87	7,147.14	7,141.89	86.82	215.53	-91.45	1,260.36	-5,592.93	10,910.59	10,667.91	242.68	44.958	
12,000.00	6,945.78	7,147.13	7,141.88	88.36	215.53	-91.45	1,260.36	-5,592.93	11,010.18	10,767.42	242.75	45.355	
12,100.00	6,945.69	7,147.12	7,141.88	89.90	215.53	-91.44	1,260.36	-5,592.93	11,109.77	10,866.94	242.82	45.752	
12,200.00	6,945.60	7,147.12	7,141.87	91.44	215.53	-91.44	1,260.36	-5,592.93	11,209.36	10,966.47	242.90	46.149	
12,300.00	6,945.51	7,147.11	7,141.86	92.99	215.53	-91.44	1,260.36	-5,592.93	11,308.97	11,066.00	242.97	46.545	
12,400.00	6,945.42	7,147.10	7,141.85	94.53	215.53	-91.44	1,260.36	-5,592.93	11,408.58	11,165.54	243.04	46.941	
12,500.00	6,945.33	7,147.09	7,141.84	96.08	215.53	-91.44	1,260.36	-5,592.93	11,508.20	11,265.09	243.11	47.337	

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 #722H - Slot B05
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 #722H	**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)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.00	6,945.24	7,147.08	7,141.83	97.63	215.53	-91.44	1,260.36	-5,592.93	11,607.82	11,364.64	243.19	47.732	
12,700.00	6,945.15	7,147.07	7,141.83	99.18	215.53	-91.44	1,260.36	-5,592.93	11,707.46	11,464.20	243.26	48.128	
12,800.00	6,945.06	7,147.07	7,141.82	100.74	215.53	-91.44	1,260.36	-5,592.93	11,807.09	11,563.76	243.33	48.522	
12,900.00	6,944.96	7,147.06	7,141.81	102.29	215.53	-91.44	1,260.36	-5,592.93	11,906.74	11,663.33	243.41	48.917	
13,000.00	6,944.87	7,147.05	7,141.80	103.85	215.53	-91.44	1,260.36	-5,592.93	12,006.39	11,762.90	243.48	49.311	
13,100.00	6,944.78	7,147.04	7,141.79	105.40	215.53	-91.44	1,260.36	-5,592.93	12,106.04	11,862.48	243.56	49.705	
13,200.00	6,944.69	7,147.03	7,141.79	106.96	215.53	-91.44	1,260.36	-5,592.93	12,205.70	11,962.07	243.63	50.099	
13,300.00	6,944.60	7,147.03	7,141.78	108.52	215.53	-91.44	1,260.36	-5,592.93	12,305.37	12,061.66	243.71	50.492	
13,400.00	6,944.51	7,147.02	7,141.77	110.08	215.53	-91.44	1,260.36	-5,592.93	12,405.04	12,161.25	243.79	50.885	
13,500.00	6,944.42	7,147.01	7,141.76	111.65	215.53	-91.44	1,260.36	-5,592.93	12,504.72	12,260.85	243.86	51.277	
13,600.00	6,944.33	7,147.00	7,141.75	113.21	215.53	-91.44	1,260.36	-5,592.93	12,604.40	12,360.46	243.94	51.670	
13,700.00	6,944.24	7,146.99	7,141.74	114.78	215.53	-91.44	1,260.36	-5,592.93	12,704.09	12,460.07	244.02	52.062	
13,800.00	6,944.15	7,146.98	7,141.74	116.34	215.53	-91.44	1,260.36	-5,592.93	12,803.78	12,559.68	244.10	52.453	
13,900.00	6,944.06	7,146.98	7,141.73	117.91	215.53	-91.44	1,260.36	-5,592.93	12,903.48	12,659.30	244.18	52.845	
14,000.00	6,943.97	7,146.97	7,141.72	119.48	215.53	-91.44	1,260.36	-5,592.93	13,003.18	12,758.92	244.26	53.236	
14,100.00	6,943.88	7,146.96	7,141.71	121.05	215.53	-91.44	1,260.36	-5,592.93	13,102.88	12,858.55	244.34	53.626	
14,200.00	6,943.79	7,146.95	7,141.70	122.62	215.53	-91.44	1,260.36	-5,592.93	13,202.60	12,958.18	244.42	54.017	
14,300.00	6,943.70	7,146.94	7,141.69	124.19	215.53	-91.43	1,260.36	-5,592.93	13,302.31	13,057.81	244.50	54.407	
14,400.00	6,943.61	7,146.93	7,141.69	125.76	215.53	-91.43	1,260.36	-5,592.93	13,402.03	13,157.45	244.58	54.797	
14,500.00	6,943.52	7,146.93	7,141.68	127.33	215.53	-91.43	1,260.36	-5,592.93	13,501.75	13,257.09	244.66	55.186	
14,600.00	6,943.43	7,146.92	7,141.67	128.90	215.52	-91.43	1,260.36	-5,592.93	13,601.48	13,356.74	244.74	55.575	
14,700.00	6,943.34	7,146.91	7,141.66	130.48	215.52	-91.43	1,260.36	-5,592.93	13,701.21	13,456.39	244.82	55.964	
14,800.00	6,943.25	7,146.90	7,141.65	132.05	215.52	-91.43	1,260.36	-5,592.93	13,800.95	13,556.04	244.91	56.352	
14,900.00	6,943.16	7,146.89	7,141.65	133.63	215.52	-91.43	1,260.36	-5,592.93	13,900.69	13,655.70	244.99	56.740	
15,000.00	6,943.07	7,146.88	7,141.64	135.20	215.52	-91.43	1,260.36	-5,592.93	14,000.43	13,755.36	245.07	57.128	
15,100.00	6,942.98	7,146.88	7,141.63	136.78	215.52	-91.43	1,260.36	-5,592.93	14,100.18	13,855.02	245.16	57.515	
15,200.00	6,942.89	7,146.87	7,141.62	138.36	215.52	-91.43	1,260.36	-5,592.93	14,199.92	13,954.68	245.24	57.902	
15,300.00	6,942.80	7,146.86	7,141.61	139.93	215.52	-91.43	1,260.36	-5,592.93	14,299.68	14,054.35	245.33	58.288	
15,400.00	6,942.71	7,146.85	7,141.60	141.51	215.52	-91.43	1,260.36	-5,592.93	14,399.44	14,154.02	245.41	58.675	
15,500.00	6,942.62	7,146.84	7,141.60	143.09	215.52	-91.43	1,260.36	-5,592.93	14,499.20	14,253.70	245.50	59.061	
15,600.00	6,942.53	7,146.83	7,141.59	144.67	215.52	-91.43	1,260.36	-5,592.93	14,598.96	14,353.38	245.58	59.446	
15,700.00	6,942.44	7,146.83	7,141.58	146.25	215.52	-91.43	1,260.36	-5,592.93	14,698.73	14,453.06	245.67	59.831	
15,800.00	6,942.35	7,146.82	7,141.57	147.83	215.52	-91.43	1,260.36	-5,592.93	14,798.50	14,552.74	245.76	60.216	
15,900.00	6,942.26	7,146.81	7,141.56	149.41	215.52	-91.43	1,260.36	-5,592.93	14,898.27	14,652.43	245.84	60.601	
16,000.00	6,942.17	7,146.80	7,141.55	150.99	215.52	-91.43	1,260.36	-5,592.93	14,998.04	14,752.11	245.93	60.985	
16,100.00	6,942.08	7,146.79	7,141.54	152.57	215.52	-91.43	1,260.36	-5,592.93	15,097.82	14,851.81	246.02	61.369	
16,200.00	6,941.99	7,146.78	7,141.54	154.16	215.52	-91.43	1,260.36	-5,592.93	15,197.61	14,951.50	246.11	61.752	
16,300.00	6,941.90	7,146.78	7,141.53	155.74	215.52	-91.42	1,260.36	-5,592.93	15,297.39	15,051.20	246.19	62.135	
16,400.00	6,941.81	7,146.77	7,141.52	157.32	215.52	-91.42	1,260.36	-5,592.93	15,397.18	15,150.89	246.28	62.518	
16,500.00	6,941.72	7,146.76	7,141.51	158.91	215.52	-91.42	1,260.37	-5,592.93	15,496.97	15,250.59	246.37	62.900	
16,600.00	6,941.63	7,146.75	7,141.50	160.49	215.52	-91.42	1,260.37	-5,592.93	15,596.76	15,350.30	246.46	63.282	
16,700.00	6,941.54	7,146.74	7,141.49	162.07	215.52	-91.42	1,260.37	-5,592.93	15,696.56	15,450.00	246.55	63.664	
16,800.00	6,941.45	7,146.73	7,141.49	163.66	215.52	-91.42	1,260.37	-5,592.93	15,796.35	15,549.71	246.64	64.045	
16,900.00	6,941.36	7,146.73	7,141.48	165.24	215.52	-91.42	1,260.37	-5,592.93	15,896.16	15,649.42	246.73	64.426	
17,000.00	6,941.27	7,146.72	7,141.47	166.83	215.52	-91.42	1,260.37	-5,592.93	15,995.96	15,749.13	246.83	64.807	
17,100.00	6,941.18	7,146.71	7,141.46	168.42	215.52	-91.42	1,260.37	-5,592.93	16,095.76	15,848.85	246.92	65.187	
17,200.00	6,941.09	7,146.70	7,141.45	170.00	215.52	-91.42	1,260.37	-5,592.93	16,195.57	15,948.56	247.01	65.567	
17,300.00	6,941.00	7,146.69	7,141.44	171.59	215.52	-91.42	1,260.37	-5,592.93	16,295.38	16,048.28	247.10	65.946	
17,400.00	6,940.91	7,146.68	7,141.44	173.18	215.52	-91.42	1,260.37	-5,592.93	16,395.20	16,148.00	247.19	66.325	
17,500.00	6,940.82	7,146.67	7,141.43	174.76	215.52	-91.42	1,260.37	-5,592.93	16,495.01	16,247.72	247.29	66.704	
17,600.00	6,940.73	7,146.67	7,141.42	176.35	215.52	-91.42	1,260.37	-5,592.93	16,594.83	16,347.45	247.38	67.082	
17,700.00	6,940.64	7,146.66	7,141.41	177.94	215.52	-91.42	1,260.37	-5,592.93	16,694.65	16,447.17	247.48	67.460	

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 #722H - Slot B05
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 #722H	**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
17,800.00	6,940.55	7,146.65	7,141.40	179.53	215.51	-91.42	1,260.37	-5,592.93	16,794.47	16,546.90	247.57	67.837	
17,900.00	6,940.46	7,146.64	7,141.39	181.11	215.51	-91.42	1,260.37	-5,592.93	16,894.29	16,646.63	247.66	68.215	
18,000.00	6,940.37	7,146.63	7,141.38	182.70	215.51	-91.42	1,260.37	-5,592.93	16,994.12	16,746.36	247.76	68.591	
18,100.00	6,940.28	7,146.62	7,141.38	184.29	215.51	-91.42	1,260.37	-5,592.93	17,093.95	16,846.09	247.85	68.968	
18,200.00	6,940.19	7,146.61	7,141.37	185.88	215.51	-91.42	1,260.37	-5,592.93	17,193.77	16,945.83	247.95	69.344	
18,300.00	6,940.10	7,146.61	7,141.36	187.47	215.51	-91.42	1,260.37	-5,592.93	17,293.61	17,045.56	248.05	69.719	
18,400.00	6,940.01	7,146.60	7,141.35	189.06	215.51	-91.41	1,260.37	-5,592.93	17,393.44	17,145.30	248.14	70.095	
18,500.00	6,939.92	7,146.59	7,141.34	190.65	215.51	-91.41	1,260.37	-5,592.93	17,493.28	17,245.04	248.24	70.470	
18,600.00	6,939.83	7,146.58	7,141.33	192.24	215.51	-91.41	1,260.37	-5,592.93	17,593.11	17,344.78	248.34	70.844	
18,700.00	6,939.74	7,146.57	7,141.32	193.83	215.51	-91.41	1,260.37	-5,592.93	17,692.95	17,444.52	248.43	71.218	
18,800.00	6,939.65	7,146.56	7,141.32	195.42	215.51	-91.41	1,260.37	-5,592.93	17,792.79	17,544.26	248.53	71.592	
18,900.00	6,939.56	7,146.55	7,141.31	197.01	215.51	-91.41	1,260.37	-5,592.93	17,892.64	17,644.01	248.63	71.965	
19,000.00	6,939.47	7,146.55	7,141.30	198.60	215.51	-91.41	1,260.37	-5,592.93	17,992.48	17,743.75	248.73	72.338	
19,100.00	6,939.38	7,146.54	7,141.29	200.19	215.51	-91.41	1,260.37	-5,592.93	18,092.33	17,843.50	248.83	72.711	
19,200.00	6,939.29	7,146.53	7,141.28	201.78	215.51	-91.41	1,260.37	-5,592.93	18,192.18	17,943.25	248.92	73.083	
19,300.00	6,939.20	7,146.52	7,141.27	203.37	215.51	-91.41	1,260.37	-5,592.93	18,292.02	18,043.00	249.02	73.455	
19,400.00	6,939.11	7,146.51	7,141.26	204.97	215.51	-91.41	1,260.37	-5,592.93	18,391.88	18,142.75	249.12	73.826	
19,500.00	6,939.02	7,146.50	7,141.26	206.56	215.51	-91.41	1,260.37	-5,592.93	18,491.73	18,242.51	249.22	74.197	
19,600.00	6,938.93	7,146.49	7,141.25	208.15	215.51	-91.41	1,260.37	-5,592.93	18,591.58	18,342.26	249.32	74.568	
19,700.00	6,938.83	7,146.49	7,141.24	209.74	215.51	-91.41	1,260.37	-5,592.93	18,691.44	18,442.02	249.42	74.938	
19,800.00	6,938.74	7,146.48	7,141.23	211.33	215.51	-91.41	1,260.37	-5,592.93	18,791.30	18,541.77	249.53	75.308	
19,900.00	6,938.65	7,146.47	7,141.22	212.93	215.51	-91.41	1,260.37	-5,592.93	18,891.16	18,641.53	249.63	75.678	
20,000.00	6,938.56	7,146.46	7,141.21	214.52	215.51	-91.41	1,260.37	-5,592.93	18,991.02	18,741.29	249.73	76.047	
20,100.00	6,938.47	7,146.45	7,141.20	216.11	215.51	-91.41	1,260.37	-5,592.93	19,090.88	18,841.05	249.83	76.416	
20,200.00	6,938.38	7,146.44	7,141.19	217.71	215.51	-91.41	1,260.37	-5,592.93	19,190.74	18,940.81	249.93	76.784	
20,300.00	6,938.29	7,146.43	7,141.19	219.30	215.51	-91.41	1,260.37	-5,592.93	19,290.61	19,040.57	250.03	77.152	
20,400.00	6,938.20	7,146.42	7,141.18	220.89	215.51	-91.40	1,260.37	-5,592.93	19,390.47	19,140.34	250.14	77.519	
20,500.00	6,938.11	7,146.42	7,141.17	222.49	215.51	-91.40	1,260.37	-5,592.93	19,490.34	19,240.10	250.24	77.886	
20,600.00	6,938.02	7,146.41	7,141.16	224.08	215.51	-91.40	1,260.37	-5,592.93	19,590.21	19,339.87	250.34	78.253	
20,626.08	6,938.00	7,146.41	7,141.16	224.49	215.51	-91.40	1,260.37	-5,592.93	19,616.26	19,365.89	250.37	78.349	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-104.03	-1,351.99	-5,410.12	5,576.49				
100.00	100.00	115.00	115.00	0.25	1.13	-104.03	-1,351.99	-5,410.12	5,576.49	5,575.11	1.38	4,030.177	
200.00	200.00	215.00	215.00	0.61	3.02	-104.03	-1,351.99	-5,410.12	5,576.49	5,572.86	3.63	1,537.380	
215.52	215.52	229.96	229.95	0.67	3.32	-104.03	-1,351.69	-5,410.12	5,576.42	5,572.43	3.99	1,398.117	
300.00	300.00	307.18	307.17	0.97	4.90	-104.03	-1,351.93	-5,410.12	5,576.48	5,570.61	5.87	950.047	
400.00	400.00	415.03	415.00	1.33	7.11	-104.03	-1,351.99	-5,410.12	5,576.49	5,568.06	8.43	661.239	
431.70	431.70	446.36	446.33	1.44	7.75	-104.03	-1,351.45	-5,410.12	5,576.36	5,567.17	9.19	606.932 CC	
500.00	500.00	508.76	508.72	1.68	9.02	-104.03	-1,351.60	-5,410.12	5,576.40	5,565.69	10.71	520.745	
535.00	535.00	540.73	540.70	1.81	9.68	-114.70	-1,351.79	-5,410.12	5,576.54	5,565.05	11.49	485.432	
600.00	599.99	615.05	614.99	2.04	11.20	-114.71	-1,351.99	-5,410.12	5,576.91	5,563.67	13.24	421.213	
700.00	699.99	715.04	714.99	2.40	13.24	-114.72	-1,351.99	-5,410.12	5,577.42	5,561.78	15.64	356.546	
800.00	799.98	815.03	814.98	2.76	15.29	-114.73	-1,351.99	-5,410.12	5,577.93	5,559.89	18.05	309.099	
900.00	899.97	911.69	911.63	3.12	17.26	-114.74	-1,351.29	-5,410.12	5,578.27	5,557.89	20.38	273.705	
1,000.00	999.96	1,008.27	1,008.20	3.48	19.24	-114.75	-1,351.65	-5,410.12	5,578.88	5,556.16	22.71	245.617	
1,100.00	1,099.96	1,115.07	1,114.96	3.84	21.46	-114.77	-1,351.99	-5,410.12	5,579.47	5,554.17	25.29	220.586	
1,200.00	1,199.95	1,215.06	1,214.95	4.19	23.59	-114.78	-1,351.99	-5,410.12	5,579.98	5,552.20	27.78	200.883	
1,300.00	1,299.94	1,314.40	1,314.28	4.55	25.70	-114.78	-1,350.98	-5,410.12	5,580.24	5,550.00	30.25	184.491	
1,400.00	1,399.93	1,409.56	1,409.43	4.91	27.72	-114.79	-1,351.19	-5,410.12	5,580.81	5,548.18	32.63	171.047	
1,500.00	1,499.93	1,504.72	1,504.59	5.27	29.74	-114.81	-1,351.75	-5,410.12	5,581.47	5,546.46	35.01	159.434	
1,600.00	1,599.92	1,615.10	1,614.92	5.63	32.09	-114.82	-1,351.99	-5,410.12	5,582.03	5,544.32	37.71	148.011	
1,700.00	1,699.91	1,715.10	1,714.91	5.99	34.22	-114.83	-1,351.99	-5,410.12	5,582.54	5,542.34	40.20	138.874	
1,800.00	1,799.90	1,814.35	1,814.15	6.34	36.33	-114.83	-1,350.85	-5,410.12	5,582.78	5,540.11	42.67	130.843	
1,900.00	1,899.90	1,910.01	1,909.81	6.70	38.36	-114.85	-1,351.05	-5,410.12	5,583.34	5,538.28	45.06	123.907	
2,000.00	1,999.89	2,005.68	2,005.47	7.06	40.40	-114.86	-1,351.56	-5,410.12	5,583.99	5,536.53	47.45	117.672	
2,100.00	2,099.88	2,115.15	2,114.88	7.42	42.86	-114.88	-1,351.99	-5,410.12	5,584.60	5,534.32	50.28	111.069	
2,200.00	2,199.87	2,215.14	2,214.87	7.78	45.25	-114.89	-1,351.99	-5,410.12	5,585.11	5,532.09	53.02	105.332	
2,300.00	2,299.87	2,313.99	2,313.72	8.14	47.61	-114.89	-1,350.99	-5,410.12	5,585.38	5,529.64	55.74	100.204	
2,400.00	2,399.86	2,409.06	2,408.78	8.50	49.87	-114.91	-1,351.24	-5,410.12	5,585.96	5,527.59	58.37	95.706	
2,500.00	2,499.85	2,504.13	2,503.84	8.85	52.14	-114.92	-1,351.84	-5,410.12	5,586.63	5,525.64	60.99	91.596	
2,600.00	2,599.85	2,615.25	2,614.85	9.21	54.72	-114.94	-1,351.99	-5,410.12	5,587.17	5,523.24	63.93	87.398	
2,700.00	2,699.84	2,715.24	2,714.84	9.57	57.03	-114.95	-1,351.99	-5,410.12	5,587.69	5,521.09	66.59	83.908	
2,758.75	2,758.58	2,773.90	2,773.47	9.78	58.38	-114.94	-1,350.08	-5,410.12	5,587.52	5,519.36	68.16	81.981	
2,800.00	2,799.83	2,811.96	2,811.53	9.93	59.26	-114.94	-1,350.13	-5,410.12	5,587.74	5,518.56	69.18	80.769	
2,900.00	2,899.82	2,904.23	2,903.78	10.29	61.39	-114.96	-1,350.61	-5,410.12	5,588.39	5,516.72	71.67	77.976	
3,000.00	2,999.82	2,996.50	2,996.03	10.65	63.51	-114.98	-1,351.61	-5,410.12	5,589.17	5,515.02	74.15	75.372	
3,100.00	3,099.81	3,115.33	3,114.81	11.01	65.85	-114.99	-1,351.99	-5,410.12	5,589.75	5,512.90	76.85	72.741	
3,200.00	3,199.80	3,215.33	3,214.80	11.36	67.71	-115.00	-1,351.99	-5,410.12	5,590.27	5,511.20	79.07	70.703	
3,300.00	3,299.79	3,315.08	3,314.54	11.72	69.57	-115.01	-1,351.06	-5,410.12	5,590.55	5,509.27	81.28	68.778	
3,400.00	3,399.79	3,411.99	3,411.45	12.08	71.37	-115.02	-1,351.19	-5,410.12	5,591.10	5,507.65	83.45	67.001	
3,500.00	3,499.78	3,508.90	3,508.36	12.44	73.18	-115.03	-1,351.53	-5,410.12	5,591.70	5,506.09	85.61	65.314	
3,600.00	3,599.77	3,615.33	3,614.77	12.80	75.16	-115.05	-1,351.99	-5,410.12	5,592.33	5,504.38	87.96	63.581	
3,700.00	3,699.76	3,715.32	3,714.76	13.16	77.04	-115.06	-1,351.99	-5,410.12	5,592.85	5,502.66	90.19	62.015	
3,800.00	3,799.76	3,810.80	3,810.24	13.52	78.82	-115.07	-1,351.87	-5,410.12	5,593.34	5,501.01	92.33	60.579	
3,900.00	3,899.75	3,915.32	3,914.75	13.87	81.09	-115.08	-1,351.99	-5,410.12	5,593.89	5,498.93	94.95	58.911	
4,000.00	3,999.74	4,014.47	4,013.89	14.23	83.37	-115.09	-1,351.48	-5,410.12	5,594.28	5,496.68	97.59	57.323	
4,100.00	4,099.73	4,108.98	4,108.39	14.59	85.54	-115.10	-1,351.73	-5,410.12	5,594.86	5,494.74	100.12	55.880	
4,200.00	4,199.73	4,215.38	4,214.73	14.95	88.35	-115.12	-1,351.99	-5,410.12	5,595.44	5,492.15	103.29	54.173	
4,300.00	4,299.72	4,303.47	4,302.80	15.31	90.92	-115.12	-1,351.50	-5,410.12	5,595.85	5,489.63	106.22	52.683	
4,400.00	4,399.71	4,413.03	4,412.23	15.67	94.25	-115.13	-1,351.31	-5,410.12	5,596.31	5,486.40	109.91	50.918	
4,500.00	4,499.70	4,515.60	4,514.70	16.03	97.42	-115.15	-1,351.99	-5,410.12	5,597.00	5,483.56	113.43	49.341	
4,600.00	4,599.70	4,615.69	4,614.70	16.38	100.45	-115.16	-1,351.99	-5,410.12	5,597.52	5,480.69	116.83	47.913	
4,700.00	4,699.69	4,698.76	4,697.74	16.74	102.92	-115.17	-1,351.61	-5,410.12	5,597.97	5,478.32	119.65	46.786	

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 #722H - Slot B05
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 #722H	**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)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,800.00	4,799.68	4,815.76	4,814.68	17.10	106.40	-115.19	-1,351.99	-5,410.12	5,598.56	5,475.06	123.50	45.334	
4,900.00	4,899.67	4,915.88	4,914.67	17.46	109.39	-115.20	-1,351.99	-5,410.12	5,599.08	5,472.23	126.84	44.142	
5,000.00	4,999.67	5,015.88	5,014.67	17.82	112.59	-115.21	-1,351.99	-5,410.12	5,599.60	5,469.20	130.40	42.943	
5,100.00	5,099.66	5,101.98	5,100.73	18.18	115.34	-115.21	-1,351.08	-5,410.12	5,599.91	5,466.40	133.51	41.945	
5,200.00	5,199.65	5,216.08	5,214.65	18.53	119.05	-115.23	-1,351.99	-5,410.12	5,600.64	5,463.06	137.58	40.709	
5,300.00	5,299.64	5,310.37	5,308.91	18.89	122.18	-115.23	-1,350.69	-5,410.12	5,600.84	5,459.77	141.07	39.704	
5,400.00	5,399.64	5,416.30	5,414.64	19.25	125.70	-115.25	-1,351.99	-5,410.12	5,601.68	5,456.74	144.94	38.647	
5,500.00	5,499.63	5,502.16	5,500.48	19.61	128.57	-115.26	-1,351.46	-5,410.12	5,602.08	5,453.92	148.17	37.809	
5,600.00	5,599.62	5,616.40	5,614.62	19.97	132.31	-115.28	-1,351.99	-5,410.12	5,602.72	5,450.45	152.27	36.795	
5,700.00	5,699.61	5,695.29	5,693.47	20.33	134.87	-115.28	-1,351.45	-5,410.12	5,603.15	5,447.96	155.19	36.105	
5,800.00	5,799.61	5,816.55	5,814.61	20.69	138.82	-115.30	-1,351.99	-5,410.12	5,603.77	5,444.27	159.50	35.134	
5,900.00	5,899.60	5,916.70	5,914.60	21.04	142.09	-115.31	-1,351.99	-5,410.12	5,604.29	5,441.17	163.12	34.356	
6,000.00	5,999.59	6,016.70	6,014.59	21.40	145.58	-115.32	-1,351.99	-5,410.12	5,604.81	5,437.84	166.97	33.568	
6,100.00	6,099.58	6,096.77	6,094.62	21.76	148.37	-115.32	-1,351.29	-5,410.12	5,605.19	5,435.08	170.12	32.949	
6,200.00	6,199.58	6,216.91	6,214.58	22.12	152.57	-115.34	-1,351.99	-5,410.12	5,605.86	5,431.18	174.67	32.093	
6,300.00	6,299.57	6,294.03	6,291.64	22.48	155.26	-115.35	-1,351.37	-5,410.12	5,606.27	5,428.54	177.73	31.544	
6,315.05	6,314.62	6,332.15	6,329.62	22.53	156.58	-115.36	-1,351.99	-5,410.12	5,606.46	5,427.35	179.10	31.303	
6,350.00	6,349.55	6,367.08	6,364.55	22.66	157.73	175.43	-1,351.99	-5,410.12	5,607.56	5,427.18	180.38	31.088 ES	
6,400.00	6,399.30	6,416.83	6,414.30	22.83	159.37	168.42	-1,351.99	-5,410.12	5,612.33	5,430.14	182.19	30.805	
6,450.00	6,448.52	6,462.74	6,460.17	23.00	160.88	166.36	-1,350.65	-5,410.12	5,620.48	5,436.61	183.87	30.568	
6,500.00	6,496.91	6,501.51	6,498.93	23.18	162.16	165.20	-1,350.87	-5,410.12	5,632.72	5,447.41	185.31	30.396	
6,550.00	6,544.17	6,539.39	6,536.79	23.35	163.41	164.28	-1,351.35	-5,410.12	5,648.64	5,461.92	186.72	30.252	
6,600.00	6,590.01	6,607.76	6,605.01	23.53	165.59	163.46	-1,351.99	-5,410.12	5,668.03	5,478.98	189.06	29.981	
6,650.00	6,634.14	6,651.89	6,649.14	23.70	166.95	162.59	-1,351.99	-5,410.12	5,690.70	5,500.14	190.56	29.863	
6,700.00	6,676.30	6,694.05	6,691.30	23.88	168.24	161.61	-1,351.99	-5,410.12	5,716.62	5,524.63	192.00	29.774	
6,750.00	6,716.21	6,727.69	6,724.91	24.06	169.28	160.48	-1,350.82	-5,410.12	5,745.36	5,552.20	193.16	29.744	
6,800.00	6,753.65	6,758.35	6,755.56	24.24	170.22	159.11	-1,351.03	-5,410.12	5,777.37	5,583.14	194.22	29.746	
6,850.00	6,788.37	6,786.79	6,783.99	24.44	171.10	157.46	-1,351.36	-5,410.12	5,812.14	5,616.93	195.21	29.774	
6,900.00	6,820.16	6,838.08	6,835.16	24.63	172.65	155.55	-1,351.99	-5,410.12	5,849.45	5,652.59	196.86	29.714 SF	
6,950.00	6,848.83	6,866.75	6,863.83	24.84	173.47	153.07	-1,351.99	-5,410.12	5,888.93	5,691.17	197.76	29.778	
7,000.00	6,874.19	6,892.11	6,889.19	25.06	174.19	149.93	-1,351.99	-5,410.12	5,930.47	5,731.91	198.56	29.867	
7,050.00	6,896.10	6,914.02	6,911.10	25.29	174.82	145.85	-1,351.99	-5,410.12	5,973.81	5,774.56	199.25	29.981	
7,100.00	6,914.42	6,932.34	6,929.42	25.53	175.35	140.46	-1,351.99	-5,410.12	6,018.68	5,818.85	199.83	30.119	
7,150.00	6,929.03	6,946.95	6,944.03	25.78	175.76	133.20	-1,351.99	-5,410.12	6,064.82	5,864.52	200.29	30.280	
7,200.00	6,939.85	6,957.40	6,954.46	26.05	176.06	123.40	-1,350.86	-5,410.12	6,111.66	5,911.04	200.62	30.463	
7,250.00	6,946.80	6,963.25	6,960.31	26.32	176.23	110.41	-1,350.86	-5,410.12	6,159.47	5,958.65	200.82	30.672	
7,300.00	6,949.85	6,965.82	6,962.88	26.61	176.30	94.59	-1,350.86	-5,410.12	6,207.66	6,006.75	200.91	30.897	
7,314.43	6,950.00	6,965.95	6,963.00	26.69	176.31	89.74	-1,350.86	-5,410.12	6,221.60	6,020.68	200.92	30.965	
7,400.00	6,949.92	6,965.88	6,962.94	27.21	176.30	89.73	-1,350.86	-5,410.12	6,304.32	6,103.37	200.95	31.372	
7,500.00	6,949.83	6,965.81	6,962.87	27.90	176.30	89.73	-1,350.86	-5,410.12	6,401.08	6,200.09	200.99	31.848	
7,600.00	6,949.74	6,965.74	6,962.80	28.66	176.30	89.73	-1,350.86	-5,410.12	6,497.93	6,296.90	201.03	32.323	
7,700.00	6,949.65	6,965.67	6,962.72	29.49	176.30	89.73	-1,350.86	-5,410.12	6,594.88	6,393.80	201.08	32.797	
7,800.00	6,949.56	6,965.60	6,962.65	30.38	176.30	89.72	-1,350.86	-5,410.12	6,691.92	6,490.79	201.13	33.271	
7,900.00	6,949.47	6,965.52	6,962.58	31.33	176.29	89.72	-1,350.86	-5,410.12	6,789.05	6,587.86	201.19	33.745	
8,000.00	6,949.38	6,965.45	6,962.51	32.33	176.29	89.72	-1,350.86	-5,410.12	6,886.26	6,685.01	201.25	34.218	
8,100.00	6,949.29	6,965.38	6,962.44	33.38	176.29	89.71	-1,350.86	-5,410.12	6,983.55	6,782.24	201.31	34.690	
8,200.00	6,949.20	6,965.31	6,962.36	34.47	176.29	89.71	-1,350.86	-5,410.12	7,080.91	6,879.53	201.38	35.163	
8,300.00	6,949.11	6,965.23	6,962.29	35.60	176.29	89.71	-1,350.86	-5,410.12	7,178.35	6,976.90	201.44	35.635	
8,400.00	6,949.02	6,965.16	6,962.22	36.76	176.28	89.71	-1,350.86	-5,410.12	7,275.85	7,074.34	201.51	36.106	
8,500.00	6,948.93	6,965.09	6,962.14	37.96	176.28	89.70	-1,350.86	-5,410.12	7,373.42	7,171.84	201.59	36.577	
8,600.00	6,948.84	6,965.02	6,962.07	39.18	176.28	89.70	-1,350.86	-5,410.12	7,471.06	7,269.40	201.66	37.048	
8,700.00	6,948.75	6,964.94	6,962.00	40.43	176.28	89.70	-1,350.86	-5,410.12	7,568.76	7,367.02	201.74	37.518	

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 #722H - Slot B05
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 #722H	**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
8,800.00	6,948.66	6,964.87	6,961.93	41.71	176.28	89.70	-1,350.86	-5,410.12	7,666.51	7,464.70	201.81	37.988	
8,900.00	6,948.57	6,964.80	6,961.85	43.00	176.27	89.69	-1,350.86	-5,410.12	7,764.33	7,562.44	201.89	38.458	
9,000.00	6,948.48	6,964.72	6,961.78	44.32	176.27	89.69	-1,350.86	-5,410.12	7,862.20	7,660.22	201.97	38.927	
9,100.00	6,948.39	6,964.65	6,961.71	45.66	176.27	89.69	-1,350.86	-5,410.12	7,960.12	7,758.07	202.06	39.396	
9,200.00	6,948.30	6,964.58	6,961.63	47.01	176.27	89.69	-1,350.86	-5,410.12	8,058.09	7,855.96	202.14	39.864	
9,300.00	6,948.21	6,964.50	6,961.56	48.38	176.27	89.68	-1,350.86	-5,410.12	8,156.12	7,953.89	202.22	40.333	
9,400.00	6,948.12	6,964.43	6,961.49	49.76	176.26	89.68	-1,350.86	-5,410.12	8,254.19	8,051.88	202.31	40.800	
9,500.00	6,948.03	6,964.36	6,961.42	51.16	176.26	89.68	-1,350.86	-5,410.12	8,352.30	8,149.91	202.39	41.268	
9,600.00	6,947.94	6,964.29	6,961.34	52.56	176.26	89.68	-1,350.86	-5,410.12	8,450.46	8,247.98	202.48	41.735	
9,700.00	6,947.85	6,964.21	6,961.27	53.98	176.26	89.67	-1,350.86	-5,410.12	8,548.66	8,346.10	202.57	42.202	
9,800.00	6,947.76	6,964.14	6,961.20	55.41	176.25	89.67	-1,350.86	-5,410.12	8,646.91	8,444.25	202.65	42.668	
9,900.00	6,947.67	6,964.07	6,961.12	56.85	176.25	89.67	-1,350.86	-5,410.12	8,745.19	8,542.45	202.74	43.134	
10,000.00	6,947.58	6,963.99	6,961.05	58.29	176.25	89.67	-1,350.86	-5,410.12	8,843.51	8,640.68	202.83	43.600	
10,100.00	6,947.49	6,963.92	6,960.98	59.75	176.25	89.66	-1,350.86	-5,410.12	8,941.87	8,738.95	202.92	44.066	
10,200.00	6,947.40	6,963.84	6,960.90	61.21	176.25	89.66	-1,350.86	-5,410.12	9,040.27	8,837.26	203.01	44.531	
10,300.00	6,947.31	6,963.77	6,960.83	62.68	176.24	89.66	-1,350.86	-5,410.12	9,138.70	8,935.60	203.10	44.996	
10,400.00	6,947.22	6,963.70	6,960.75	64.15	176.24	89.65	-1,350.86	-5,410.12	9,237.16	9,033.97	203.19	45.460	
10,500.00	6,947.13	6,963.62	6,960.68	65.63	176.24	89.65	-1,350.86	-5,410.12	9,335.66	9,132.38	203.28	45.924	
10,600.00	6,947.04	6,963.55	6,960.61	67.12	176.24	89.65	-1,350.86	-5,410.12	9,434.19	9,230.81	203.37	46.388	
10,700.00	6,946.95	6,963.48	6,960.53	68.61	176.24	89.65	-1,350.86	-5,410.12	9,532.75	9,329.28	203.47	46.852	
10,800.00	6,946.86	6,963.40	6,960.46	70.11	176.23	89.64	-1,350.86	-5,410.12	9,631.33	9,427.78	203.56	47.315	
10,900.00	6,946.77	6,963.33	6,960.39	71.61	176.23	89.64	-1,350.86	-5,410.12	9,729.95	9,526.30	203.65	47.778	
11,000.00	6,946.68	6,963.25	6,960.31	73.11	176.23	89.64	-1,350.86	-5,410.12	9,828.60	9,624.86	203.74	48.240	
11,100.00	6,946.59	6,963.18	6,960.24	74.62	176.23	89.64	-1,350.86	-5,410.12	9,927.27	9,723.43	203.83	48.703	
11,200.00	6,946.50	6,963.11	6,960.16	76.14	176.23	89.63	-1,350.86	-5,410.12	10,025.97	9,822.04	203.93	49.164	
11,300.00	6,946.41	6,963.03	6,960.09	77.65	176.22	89.63	-1,350.86	-5,410.12	10,124.69	9,920.67	204.02	49.626	
11,400.00	6,946.32	6,962.96	6,960.01	79.18	176.22	89.63	-1,350.86	-5,410.12	10,223.44	10,019.33	204.11	50.087	
11,500.00	6,946.23	6,962.88	6,959.94	80.70	176.22	89.63	-1,350.86	-5,410.12	10,322.21	10,118.01	204.21	50.548	
11,600.00	6,946.14	6,962.81	6,959.87	82.23	176.22	89.62	-1,350.86	-5,410.12	10,421.01	10,216.71	204.30	51.008	
11,700.00	6,946.05	6,962.73	6,959.79	83.76	176.21	89.62	-1,350.86	-5,410.12	10,519.83	10,315.44	204.39	51.469	
11,800.00	6,945.96	6,962.66	6,959.72	85.29	176.21	89.62	-1,350.86	-5,410.12	10,618.67	10,414.18	204.49	51.928	
11,900.00	6,945.87	6,962.59	6,959.64	86.82	176.21	89.62	-1,350.86	-5,410.12	10,717.53	10,512.95	204.58	52.388	
12,000.00	6,945.78	6,962.51	6,959.57	88.36	176.21	89.61	-1,350.86	-5,410.12	10,816.42	10,611.74	204.67	52.847	
12,100.00	6,945.69	6,962.44	6,959.49	89.90	176.21	89.61	-1,350.86	-5,410.12	10,915.32	10,710.55	204.77	53.306	
12,200.00	6,945.60	6,962.36	6,959.42	91.44	176.20	89.61	-1,350.86	-5,410.12	11,014.25	10,809.38	204.86	53.764	
12,300.00	6,945.51	6,962.29	6,959.34	92.99	176.20	89.60	-1,350.86	-5,410.12	11,113.19	10,908.23	204.96	54.222	
12,400.00	6,945.42	6,962.21	6,959.27	94.53	176.20	89.60	-1,350.86	-5,410.12	11,212.15	11,007.10	205.05	54.680	
12,500.00	6,945.33	6,962.14	6,959.19	96.08	176.20	89.60	-1,350.86	-5,410.12	11,311.13	11,105.99	205.15	55.137	
12,600.00	6,945.24	6,962.06	6,959.12	97.63	176.20	89.60	-1,350.86	-5,410.12	11,410.13	11,204.89	205.24	55.594	
12,700.00	6,945.15	6,961.99	6,959.05	99.18	176.19	89.59	-1,350.86	-5,410.12	11,509.14	11,303.81	205.33	56.051	
12,800.00	6,945.06	6,961.91	6,958.97	100.74	176.19	89.59	-1,350.86	-5,410.12	11,608.18	11,402.75	205.43	56.507	
12,900.00	6,944.96	6,961.84	6,958.90	102.29	176.19	89.59	-1,350.86	-5,410.12	11,707.23	11,501.70	205.52	56.963	
13,000.00	6,944.87	6,961.76	6,958.82	103.85	176.19	89.59	-1,350.86	-5,410.12	11,806.29	11,600.67	205.62	57.419	
13,100.00	6,944.78	6,961.69	6,958.74	105.40	176.18	89.58	-1,350.86	-5,410.12	11,905.37	11,699.66	205.71	57.874	
13,200.00	6,944.69	6,961.61	6,958.67	106.96	176.18	89.58	-1,350.86	-5,410.12	12,004.47	11,798.66	205.81	58.329	
13,300.00	6,944.60	6,961.54	6,958.59	108.52	176.18	89.58	-1,350.86	-5,410.12	12,103.58	11,897.67	205.90	58.783	
13,400.00	6,944.51	6,961.46	6,958.52	110.08	176.18	89.57	-1,350.86	-5,410.12	12,202.70	11,996.70	206.00	59.237	
13,500.00	6,944.42	6,961.39	6,958.44	111.65	176.18	89.57	-1,350.86	-5,410.12	12,301.84	12,095.75	206.09	59.691	
13,600.00	6,944.33	6,961.31	6,958.37	113.21	176.17	89.57	-1,350.86	-5,410.12	12,400.99	12,194.81	206.19	60.144	
13,700.00	6,944.24	6,961.24	6,958.29	114.78	176.17	89.57	-1,350.86	-5,410.12	12,500.16	12,293.88	206.28	60.597	
13,800.00	6,944.15	6,961.16	6,958.22	116.34	176.17	89.56	-1,350.86	-5,410.12	12,599.34	12,392.96	206.38	61.050	
13,900.00	6,944.06	6,961.08	6,958.14	117.91	176.17	89.56	-1,350.86	-5,410.12	12,698.53	12,492.06	206.47	61.502	

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 #722H - Slot B05
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 #722H	**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
14,000.00	6,943.97	6,961.01	6,958.07	119.48	176.17	89.56	-1,350.86	-5,410.12	12,797.74	12,591.17	206.57	61.954	
14,100.00	6,943.88	6,960.93	6,957.99	121.05	176.16	89.56	-1,350.86	-5,410.12	12,896.95	12,690.29	206.66	62.405	
14,200.00	6,943.79	6,960.86	6,957.91	122.62	176.16	89.55	-1,350.86	-5,410.12	12,996.18	12,789.42	206.76	62.856	
14,300.00	6,943.70	6,960.78	6,957.84	124.19	176.16	89.55	-1,350.86	-5,410.12	13,095.42	12,888.57	206.86	63.307	
14,400.00	6,943.61	6,960.70	6,957.76	125.76	176.16	89.55	-1,350.86	-5,410.12	13,194.68	12,987.72	206.95	63.757	
14,500.00	6,943.52	6,960.63	6,957.69	127.33	176.15	89.55	-1,350.86	-5,410.12	13,293.94	13,086.89	207.05	64.207	
14,600.00	6,943.43	6,960.55	6,957.61	128.90	176.15	89.54	-1,350.86	-5,410.12	13,393.22	13,186.07	207.14	64.656	
14,700.00	6,943.34	6,960.48	6,957.53	130.48	176.15	89.54	-1,350.86	-5,410.12	13,492.50	13,285.26	207.24	65.105	
14,800.00	6,943.25	6,960.40	6,957.46	132.05	176.15	89.54	-1,350.86	-5,410.12	13,591.80	13,384.46	207.34	65.554	
14,900.00	6,943.16	6,960.32	6,957.38	133.63	176.15	89.53	-1,350.86	-5,410.12	13,691.10	13,483.67	207.43	66.002	
15,000.00	6,943.07	6,960.25	6,957.31	135.20	176.14	89.53	-1,350.86	-5,410.12	13,790.42	13,582.89	207.53	66.450	
15,100.00	6,942.98	6,960.17	6,957.23	136.78	176.14	89.53	-1,350.86	-5,410.12	13,889.74	13,682.12	207.63	66.898	
15,200.00	6,942.89	6,960.10	6,957.15	138.36	176.14	89.53	-1,350.86	-5,410.12	13,989.08	13,781.36	207.72	67.345	
15,300.00	6,942.80	6,960.02	6,957.08	139.93	176.14	89.52	-1,350.86	-5,410.12	14,088.43	13,880.60	207.82	67.791	
15,400.00	6,942.71	6,959.94	6,957.00	141.51	176.13	89.52	-1,350.86	-5,410.12	14,187.78	13,979.86	207.92	68.237	
15,500.00	6,942.62	6,959.87	6,956.92	143.09	176.13	89.52	-1,350.86	-5,410.12	14,287.14	14,079.13	208.01	68.683	
15,600.00	6,942.53	6,959.79	6,956.85	144.67	176.13	89.52	-1,350.86	-5,410.12	14,386.51	14,178.40	208.11	69.129	
15,700.00	6,942.44	6,959.71	6,956.77	146.25	176.13	89.51	-1,350.86	-5,410.12	14,485.90	14,277.69	208.21	69.574	
15,800.00	6,942.35	6,959.64	6,956.69	147.83	176.13	89.51	-1,350.86	-5,410.12	14,585.28	14,376.98	208.31	70.018	
15,900.00	6,942.26	6,959.56	6,956.62	149.41	176.12	89.51	-1,350.86	-5,410.12	14,684.68	14,476.28	208.40	70.462	
16,000.00	6,942.17	6,959.48	6,956.54	150.99	176.12	89.50	-1,350.86	-5,410.12	14,784.09	14,575.58	208.50	70.906	
16,100.00	6,942.08	6,959.41	6,956.46	152.57	176.12	89.50	-1,350.86	-5,410.12	14,883.50	14,674.90	208.60	71.349	
16,200.00	6,941.99	6,959.33	6,956.39	154.16	176.12	89.50	-1,350.86	-5,410.12	14,982.92	14,774.22	208.70	71.792	
16,300.00	6,941.90	6,959.25	6,956.31	155.74	176.11	89.50	-1,350.86	-5,410.12	15,082.35	14,873.55	208.80	72.235	
16,400.00	6,941.81	6,959.18	6,956.23	157.32	176.11	89.49	-1,350.86	-5,410.12	15,181.79	14,972.89	208.90	72.677	
16,500.00	6,941.72	6,959.10	6,956.16	158.91	176.11	89.49	-1,350.86	-5,410.12	15,281.23	15,072.24	208.99	73.118	
16,600.00	6,941.63	6,959.02	6,956.08	160.49	176.11	89.49	-1,350.86	-5,410.12	15,380.68	15,171.59	209.09	73.559	
16,700.00	6,941.54	6,958.94	6,956.00	162.07	176.11	89.49	-1,350.86	-5,410.12	15,480.14	15,270.95	209.19	74.000	
16,800.00	6,941.45	6,958.87	6,955.92	163.66	176.10	89.48	-1,350.86	-5,410.12	15,579.61	15,370.32	209.29	74.440	
16,900.00	6,941.36	6,958.79	6,955.85	165.24	176.10	89.48	-1,350.86	-5,410.12	15,679.08	15,469.69	209.39	74.880	
17,000.00	6,941.27	6,958.71	6,955.77	166.83	176.10	89.48	-1,350.86	-5,410.12	15,778.56	15,569.07	209.49	75.320	
17,100.00	6,941.18	6,958.63	6,955.69	168.42	176.10	89.47	-1,350.86	-5,410.12	15,878.04	15,668.45	209.59	75.759	
17,200.00	6,941.09	6,958.56	6,955.61	170.00	176.10	89.47	-1,350.86	-5,410.12	15,977.53	15,767.84	209.69	76.197	
17,300.00	6,941.00	6,958.48	6,955.54	171.59	176.09	89.47	-1,350.86	-5,410.12	16,077.03	15,867.24	209.79	76.635	
17,400.00	6,940.91	6,958.40	6,955.46	173.18	176.09	89.47	-1,350.86	-5,410.12	16,176.53	15,966.65	209.89	77.073	
17,500.00	6,940.82	6,958.32	6,955.38	174.76	176.09	89.46	-1,350.86	-5,410.12	16,276.04	16,066.06	209.99	77.510	
17,600.00	6,940.73	6,958.25	6,955.30	176.35	176.09	89.46	-1,350.86	-5,410.12	16,375.56	16,165.47	210.09	77.947	
17,700.00	6,940.64	6,958.17	6,955.23	177.94	176.08	89.46	-1,350.86	-5,410.12	16,475.08	16,264.89	210.19	78.383	
17,800.00	6,940.55	6,958.09	6,955.15	179.53	176.08	89.45	-1,350.86	-5,410.12	16,574.61	16,364.32	210.29	78.819	
17,900.00	6,940.46	6,958.01	6,955.07	181.11	176.08	89.45	-1,350.86	-5,410.12	16,674.14	16,463.75	210.39	79.254	
18,000.00	6,940.37	6,957.93	6,954.99	182.70	176.08	89.45	-1,350.86	-5,410.12	16,773.68	16,563.19	210.49	79.689	
18,100.00	6,940.28	6,957.86	6,954.91	184.29	176.08	89.45	-1,350.86	-5,410.12	16,873.23	16,662.64	210.59	80.124	
18,200.00	6,940.19	6,957.78	6,954.84	185.88	176.07	89.44	-1,350.86	-5,410.12	16,972.78	16,762.08	210.69	80.558	
18,300.00	6,940.10	6,957.70	6,954.76	187.47	176.07	89.44	-1,350.86	-5,410.12	17,072.33	16,861.54	210.79	80.991	
18,400.00	6,940.01	6,957.62	6,954.68	189.06	176.07	89.44	-1,350.86	-5,410.12	17,171.89	16,961.00	210.89	81.425	
18,500.00	6,939.92	6,957.54	6,954.60	190.65	176.07	89.44	-1,350.86	-5,410.12	17,271.46	17,060.46	210.99	81.857	
18,600.00	6,939.83	6,957.47	6,954.52	192.24	176.06	89.43	-1,350.86	-5,410.12	17,371.03	17,159.93	211.10	82.289	
18,700.00	6,939.74	6,957.39	6,954.45	193.83	176.06	89.43	-1,350.86	-5,410.12	17,470.60	17,259.40	211.20	82.721	
18,800.00	6,939.65	6,957.31	6,954.37	195.42	176.06	89.43	-1,350.86	-5,410.12	17,570.18	17,358.88	211.30	83.152	
18,900.00	6,939.56	6,957.23	6,954.29	197.01	176.06	89.42	-1,350.86	-5,410.12	17,669.77	17,458.36	211.40	83.583	
19,000.00	6,939.47	6,957.15	6,954.21	198.60	176.05	89.42	-1,350.86	-5,410.12	17,769.35	17,557.85	211.51	84.014	
19,100.00	6,939.38	6,957.07	6,954.13	200.19	176.05	89.42	-1,350.86	-5,410.12	17,868.95	17,657.34	211.61	84.444	

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 #722H - Slot B05
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 #722H	**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
19,200.00	6,939.29	6,956.99	6,954.05	201.78	176.05	89.42	-1,350.86	-5,410.12	17,968.55	17,756.84	211.71	84.873	
19,300.00	6,939.20	6,956.92	6,953.97	203.37	176.05	89.41	-1,350.86	-5,410.12	18,068.15	17,856.34	211.81	85.302	
19,400.00	6,939.11	6,956.84	6,953.89	204.97	176.05	89.41	-1,350.86	-5,410.12	18,167.76	17,955.84	211.92	85.731	
19,500.00	6,939.02	6,956.76	6,953.82	206.56	176.04	89.41	-1,350.86	-5,410.12	18,267.37	18,055.35	212.02	86.159	
19,600.00	6,938.93	6,956.68	6,953.74	208.15	176.04	89.40	-1,350.86	-5,410.12	18,366.98	18,154.86	212.12	86.586	
19,700.00	6,938.83	6,956.60	6,953.66	209.74	176.04	89.40	-1,350.86	-5,410.12	18,466.60	18,254.38	212.23	87.013	
19,800.00	6,938.74	6,956.52	6,953.58	211.33	176.04	89.40	-1,350.86	-5,410.12	18,566.23	18,353.90	212.33	87.440	
19,900.00	6,938.65	6,956.44	6,953.50	212.93	176.03	89.40	-1,350.86	-5,410.12	18,665.86	18,453.42	212.43	87.866	
20,000.00	6,938.56	6,956.36	6,953.42	214.52	176.03	89.39	-1,350.86	-5,410.12	18,765.49	18,552.95	212.54	88.292	
20,100.00	6,938.47	6,956.28	6,953.34	216.11	176.03	89.39	-1,350.86	-5,410.12	18,865.12	18,652.48	212.64	88.717	
20,200.00	6,938.38	6,956.20	6,953.26	217.71	176.03	89.39	-1,350.86	-5,410.12	18,964.76	18,752.02	212.75	89.142	
20,300.00	6,938.29	6,956.12	6,953.18	219.30	176.03	89.38	-1,350.86	-5,410.12	19,064.41	18,851.55	212.85	89.566	
20,400.00	6,938.20	6,956.04	6,953.10	220.89	176.02	89.38	-1,350.86	-5,410.12	19,164.05	18,951.10	212.96	89.990	
20,500.00	6,938.11	6,955.97	6,953.02	222.49	176.02	89.38	-1,350.86	-5,410.12	19,263.70	19,050.64	213.06	90.413	
20,600.00	6,938.02	6,955.89	6,952.94	224.08	176.02	89.38	-1,350.86	-5,410.12	19,363.36	19,150.19	213.17	90.836	
20,626.08	6,938.00	6,955.87	6,952.92	224.49	176.02	89.38	-1,350.86	-5,410.12	19,389.35	19,176.16	213.19	90.947	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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
0.00	0.00	0.00	0.00	0.00	0.00	96.12	-445.32	4,151.46	4,175.28				
100.00	100.00	93.00	93.00	0.25	0.82	96.12	-445.32	4,151.46	4,175.28	4,174.20	1.07	3,884.515	
200.00	200.00	193.00	193.00	0.61	2.06	96.12	-445.32	4,151.46	4,175.28	4,172.61	2.67	1,563.729	
261.42	261.42	254.38	254.38	0.83	3.22	96.12	-445.22	4,151.46	4,175.27	4,171.22	4.05	1,031.061	
300.00	300.00	292.55	292.55	0.97	3.94	96.12	-445.24	4,151.46	4,175.27	4,170.36	4.91	850.584	
400.00	400.00	393.01	393.00	1.33	6.39	96.12	-445.32	4,151.46	4,175.28	4,167.56	7.71	541.260	
500.00	500.00	493.01	493.00	1.68	9.35	96.12	-445.32	4,151.46	4,175.28	4,164.24	11.04	378.258	
535.00	535.00	528.01	528.00	1.81	10.39	85.46	-445.32	4,151.46	4,175.26	4,163.06	12.20	342.190	
600.00	599.99	592.72	592.70	2.04	12.31	85.45	-444.30	4,151.46	4,175.09	4,160.74	14.35	290.884	
700.00	699.99	691.08	691.06	2.40	15.23	85.47	-444.55	4,151.46	4,175.02	4,157.39	17.63	236.837	
800.00	799.98	789.45	789.41	2.76	18.15	85.50	-445.16	4,151.46	4,174.99	4,154.09	20.90	199.727	
900.00	899.97	893.34	892.97	3.12	22.16	85.52	-445.32	4,151.46	4,174.91	4,149.64	25.27	165.187	
1,000.00	999.96	993.32	992.88	3.48	26.23	85.50	-442.71	4,151.46	4,174.53	4,144.83	29.70	140.551	
1,061.48	1,061.44	1,050.91	1,050.44	3.70	28.57	85.51	-442.96	4,151.46	4,174.50	4,142.24	32.27	129.381	
1,100.00	1,099.96	1,087.00	1,086.51	3.84	30.04	85.52	-443.38	4,151.46	4,174.51	4,140.64	33.87	123.244	
1,200.00	1,199.95	1,193.86	1,192.95	4.19	34.38	85.57	-445.32	4,151.46	4,174.62	4,136.05	38.57	108.233	
1,300.00	1,299.94	1,293.85	1,292.94	4.55	38.40	85.58	-445.32	4,151.46	4,174.53	4,131.59	42.94	97.208	
1,400.00	1,399.93	1,393.85	1,392.93	4.91	42.41	85.60	-445.32	4,151.46	4,174.44	4,127.12	47.32	88.221	
1,500.00	1,499.93	1,490.12	1,489.10	5.27	46.28	85.58	-442.55	4,151.46	4,174.04	4,122.50	51.54	80.983	
1,504.45	1,504.38	1,494.36	1,493.34	5.28	46.45	85.58	-442.58	4,151.46	4,174.04	4,122.31	51.73	80.691	
1,600.00	1,599.92	1,585.49	1,584.41	5.63	50.11	85.61	-443.85	4,151.46	4,174.10	4,118.37	55.73	74.899	
1,700.00	1,699.91	1,694.47	1,692.91	5.99	55.30	85.65	-445.32	4,151.46	4,174.16	4,112.87	61.29	68.108	
1,800.00	1,799.90	1,794.47	1,792.90	6.34	61.21	85.67	-445.32	4,151.46	4,174.06	4,106.51	67.55	61.790	
1,900.00	1,899.90	1,894.04	1,892.39	6.70	67.09	85.64	-442.25	4,151.46	4,173.63	4,099.84	73.79	56.558	
1,970.11	1,970.00	1,960.81	1,959.14	6.95	71.04	85.66	-442.56	4,151.46	4,173.60	4,095.61	77.99	53.515	
2,000.00	1,999.89	1,989.29	1,987.60	7.06	72.72	85.67	-442.84	4,151.46	4,173.61	4,093.83	79.78	52.315	
2,100.00	2,099.88	2,084.57	2,082.83	7.42	78.35	85.70	-444.45	4,151.46	4,173.70	4,087.94	85.77	48.664	
2,200.00	2,199.87	2,196.13	2,192.87	7.78	86.22	85.73	-445.32	4,151.46	4,173.70	4,079.70	93.99	44.404	
2,300.00	2,299.87	2,293.45	2,289.92	8.14	93.65	85.69	-440.97	4,151.46	4,173.12	4,071.34	101.78	41.001	
2,307.21	2,307.08	2,299.65	2,296.11	8.16	94.12	85.69	-441.02	4,151.46	4,173.12	4,070.84	102.28	40.801	
2,400.00	2,399.86	2,379.63	2,375.90	8.50	100.23	85.73	-442.83	4,151.46	4,173.27	4,064.56	108.72	38.387	
2,500.00	2,499.85	2,497.96	2,492.85	8.85	109.03	85.78	-445.32	4,151.46	4,173.43	4,055.55	117.88	35.405	
2,578.05	2,577.89	2,572.33	2,567.03	9.13	114.43	85.75	-442.26	4,151.46	4,173.01	4,049.45	123.56	33.773	
2,600.00	2,599.85	2,590.67	2,585.34	9.21	115.76	85.76	-442.48	4,151.46	4,173.02	4,048.05	124.97	33.392	
2,700.00	2,699.84	2,699.21	2,692.84	9.57	123.59	85.82	-445.32	4,151.46	4,173.25	4,040.09	133.16	31.341	
2,800.00	2,799.83	2,799.20	2,792.83	9.93	130.60	85.83	-445.32	4,151.46	4,173.16	4,032.64	140.52	29.697	
2,863.88	2,863.71	2,859.47	2,852.86	10.16	134.82	85.79	-441.43	4,151.46	4,172.66	4,027.69	144.97	28.782	
2,900.00	2,899.82	2,891.09	2,884.44	10.29	137.04	85.80	-441.83	4,151.46	4,172.68	4,025.36	147.32	28.324	
3,000.00	2,999.82	3,000.73	2,992.82	10.65	144.68	85.87	-445.32	4,151.46	4,172.98	4,017.66	155.32	26.866	
3,100.00	3,099.81	3,100.72	3,092.81	11.01	150.99	85.88	-445.32	4,151.46	4,172.89	4,010.90	161.99	25.760	
3,200.00	3,199.80	3,200.52	3,192.37	11.36	157.29	85.83	-440.43	4,151.46	4,172.25	4,003.60	168.65	24.740	
3,234.00	3,233.80	3,231.23	3,223.04	11.49	159.23	85.84	-440.56	4,151.46	4,172.24	4,001.53	170.71	24.441	
3,300.00	3,299.79	3,290.91	3,282.63	11.72	162.99	85.86	-441.43	4,151.46	4,172.29	3,997.58	174.71	23.881	
3,400.00	3,399.79	3,381.47	3,373.00	12.08	168.71	85.92	-444.34	4,151.46	4,172.57	3,991.79	180.78	23.081	
3,500.00	3,499.78	3,502.25	3,492.78	12.44	174.93	85.95	-445.32	4,151.46	4,172.55	3,985.18	187.36	22.270	
3,556.38	3,556.15	3,555.08	3,545.49	12.64	177.51	85.93	-442.92	4,151.46	4,172.22	3,982.08	190.15	21.942	
3,600.00	3,599.77	3,593.19	3,583.56	12.80	179.37	85.94	-443.43	4,151.46	4,172.25	3,980.09	192.16	21.712	
3,700.00	3,699.76	3,702.79	3,692.76	13.16	184.03	85.98	-445.32	4,151.46	4,172.37	3,975.20	197.18	21.160	
3,800.00	3,799.76	3,802.78	3,792.76	13.52	187.35	86.00	-445.32	4,151.46	4,172.29	3,971.43	200.86	20.772	
3,900.00	3,899.75	3,902.77	3,892.75	13.87	190.68	86.02	-445.32	4,151.46	4,172.20	3,967.66	204.54	20.398	
4,000.00	3,999.74	4,002.77	3,992.74	14.23	194.00	86.03	-445.32	4,151.46	4,172.12	3,963.89	208.23	20.037	
4,100.00	4,099.73	4,102.76	4,092.73	14.59	197.33	86.05	-445.32	4,151.46	4,172.03	3,960.13	211.91	19.688	

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 #722H - Slot B05
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 #722H	**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	Rule Assigned: Warning
4,200.00	4,199.73	4,202.10	4,191.88	14.95	200.63	85.98	-438.58	4,151.46	4,171.17	3,955.60	215.57	19.350	
4,300.00	4,299.72	4,299.82	4,289.57	15.31	203.88	86.00	-438.96	4,151.46	4,171.13	3,951.95	219.18	19.031	
4,319.06	4,318.78	4,318.45	4,308.19	15.38	204.50	86.00	-439.09	4,151.46	4,171.12	3,951.26	219.86	18.971	
4,400.00	4,399.71	4,397.57	4,387.27	15.67	207.13	86.03	-439.83	4,151.46	4,171.14	3,948.36	222.78	18.723	
4,500.00	4,499.70	4,495.33	4,484.98	16.03	210.38	86.06	-441.18	4,151.46	4,171.22	3,944.83	226.39	18.425	
4,600.00	4,599.70	4,593.12	4,582.70	16.38	213.63	86.10	-443.01	4,151.46	4,171.36	3,941.36	230.00	18.136	
4,700.00	4,699.69	4,703.62	4,692.69	16.74	217.12	86.15	-445.32	4,151.46	4,171.54	3,937.69	233.85	17.839	
4,800.00	4,799.68	4,803.62	4,792.68	17.10	218.97	86.17	-445.32	4,151.46	4,171.45	3,935.39	236.06	17.671	
4,900.00	4,899.67	4,903.61	4,892.67	17.46	220.83	86.19	-445.32	4,151.46	4,171.37	3,933.10	238.28	17.506	
5,000.00	4,999.67	5,003.60	4,992.67	17.82	222.69	86.20	-445.32	4,151.46	4,171.29	3,930.80	240.49	17.345	
5,100.00	5,099.66	5,103.59	5,092.66	18.18	224.54	86.22	-445.32	4,151.46	4,171.21	3,928.50	242.71	17.186	
5,200.00	5,199.65	5,203.59	5,192.65	18.53	226.40	86.24	-445.32	4,151.46	4,171.13	3,926.21	244.92	17.030	
5,300.00	5,299.64	5,303.58	5,292.64	18.89	228.26	86.25	-445.32	4,151.46	4,171.05	3,923.91	247.14	16.878	
5,400.00	5,399.64	5,403.57	5,392.64	19.25	230.11	86.27	-445.32	4,151.46	4,170.97	3,921.62	249.35	16.727	
5,500.00	5,499.63	5,503.56	5,492.63	19.61	231.97	86.29	-445.32	4,151.46	4,170.89	3,919.33	251.57	16.580	
5,600.00	5,599.62	5,603.56	5,592.62	19.97	233.82	86.30	-445.32	4,151.46	4,170.81	3,917.03	253.78	16.435	
5,700.00	5,699.61	5,703.55	5,692.61	20.33	235.68	86.32	-445.32	4,151.46	4,170.73	3,914.74	256.00	16.292	
5,800.00	5,799.61	5,803.54	5,792.61	20.69	237.54	86.34	-445.32	4,151.46	4,170.66	3,912.45	258.21	16.152	
5,900.00	5,899.60	5,903.53	5,892.60	21.04	239.39	86.35	-445.32	4,151.46	4,170.58	3,910.15	260.43	16.015	
6,000.00	5,999.59	6,003.53	5,992.59	21.40	241.25	86.37	-445.32	4,151.46	4,170.50	3,907.86	262.64	15.879	
6,100.00	6,099.58	6,103.52	6,092.58	21.76	243.11	86.39	-445.32	4,151.46	4,170.42	3,905.57	264.85	15.746	
6,200.00	6,199.58	6,203.51	6,192.58	22.12	244.96	86.40	-445.32	4,151.46	4,170.35	3,903.28	267.07	15.615	
6,300.00	6,299.57	6,303.50	6,292.57	22.48	246.82	86.42	-445.32	4,151.46	4,170.27	3,900.99	269.28	15.486	
6,315.05	6,314.62	6,318.55	6,307.62	22.53	247.10	86.42	-445.32	4,151.46	4,170.26	3,900.64	269.62	15.467	
6,350.00	6,349.55	6,353.48	6,342.55	22.66	247.75	17.25	-445.32	4,151.46	4,169.28	3,898.89	270.39	15.420	
6,400.00	6,399.30	6,403.23	6,392.30	22.83	248.67	10.41	-445.32	4,151.46	4,164.56	3,893.07	271.49	15.340	
6,450.00	6,448.52	6,452.46	6,441.52	23.00	249.59	8.64	-445.32	4,151.46	4,155.97	3,883.40	272.57	15.247	
6,500.00	6,496.91	6,500.85	6,489.91	23.18	250.48	7.92	-445.32	4,151.46	4,143.56	3,869.92	273.64	15.143	
6,550.00	6,544.17	6,548.11	6,537.17	23.35	251.36	7.61	-445.32	4,151.46	4,127.40	3,852.73	274.68	15.026	
6,600.00	6,590.01	6,593.94	6,583.01	23.53	252.21	7.53	-445.32	4,151.46	4,107.60	3,831.92	275.68	14.900	
6,650.00	6,634.14	6,638.08	6,627.14	23.70	253.03	7.60	-445.32	4,151.46	4,084.29	3,807.64	276.65	14.763	
6,700.00	6,676.30	6,680.23	6,669.30	23.88	253.81	7.81	-445.32	4,151.46	4,057.60	3,780.03	277.57	14.618	
6,750.00	6,716.21	6,720.15	6,709.21	24.06	254.55	8.15	-445.32	4,151.46	4,027.69	3,749.25	278.44	14.465	
6,800.00	6,753.65	6,757.58	6,746.65	24.24	255.25	8.63	-445.32	4,151.46	3,994.77	3,715.51	279.25	14.305	
6,850.00	6,788.37	6,792.30	6,781.37	24.44	255.89	9.27	-445.32	4,151.46	3,959.02	3,679.01	280.00	14.139	
6,900.00	6,820.16	6,824.09	6,813.16	24.63	256.48	10.13	-445.32	4,151.46	3,920.67	3,639.98	280.69	13.968	
6,950.00	6,848.83	6,852.76	6,841.83	24.84	257.02	11.28	-445.32	4,151.46	3,879.95	3,598.65	281.30	13.793	
7,000.00	6,874.19	6,878.13	6,867.19	25.06	257.49	12.83	-445.32	4,151.46	3,837.13	3,555.28	281.85	13.614	
7,050.00	6,896.10	6,900.04	6,889.10	25.29	257.89	15.00	-445.32	4,151.46	3,792.46	3,510.14	282.31	13.433	
7,100.00	6,914.42	6,918.35	6,907.42	25.53	258.23	18.16	-445.32	4,151.46	3,746.22	3,463.51	282.70	13.251	
7,150.00	6,929.03	6,932.97	6,922.03	25.78	258.51	23.08	-445.32	4,151.46	3,698.69	3,415.68	283.01	13.069	
7,200.00	6,939.85	6,943.78	6,932.85	26.05	258.71	31.48	-445.32	4,151.46	3,650.17	3,366.93	283.24	12.887	
7,250.00	6,946.80	6,950.74	6,939.80	26.32	258.84	47.54	-445.32	4,151.46	3,600.96	3,317.57	283.40	12.706	
7,300.00	6,949.85	6,953.78	6,942.85	26.61	258.89	78.81	-445.32	4,151.46	3,551.37	3,267.90	283.47	12.528	
7,314.43	6,950.00	6,953.93	6,943.00	26.69	258.90	90.47	-445.32	4,151.46	3,537.02	3,253.55	283.47	12.477	
7,400.00	6,949.92	6,953.86	6,942.92	27.21	258.89	90.46	-445.32	4,151.46	3,451.98	3,168.49	283.49	12.177	
7,500.00	6,949.83	6,953.77	6,942.83	27.90	258.89	90.44	-445.32	4,151.46	3,352.63	3,069.11	283.52	11.825	
7,600.00	6,949.74	6,953.68	6,942.74	28.66	258.89	90.43	-445.32	4,151.46	3,253.32	2,969.77	283.55	11.474	
7,700.00	6,949.65	6,953.59	6,942.65	29.49	258.89	90.42	-445.32	4,151.46	3,154.06	2,870.47	283.58	11.122	
7,800.00	6,949.56	6,953.50	6,942.56	30.38	258.89	90.40	-445.32	4,151.46	3,054.84	2,771.22	283.62	10.771	
7,900.00	6,949.47	6,953.41	6,942.47	31.33	258.89	90.39	-445.32	4,151.46	2,955.67	2,672.00	283.67	10.419	
8,000.00	6,949.38	6,953.32	6,942.38	32.33	258.88	90.38	-445.32	4,151.46	2,856.57	2,572.84	283.72	10.068	

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 #722H - Slot B05
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 #722H	**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
8,100.00	6,949.29	6,953.23	6,942.29	33.38	258.88	90.36	-445.32	4,151.46	2,757.52	2,473.74	283.78	9.717	
8,200.00	6,949.20	6,953.14	6,942.20	34.47	258.88	90.35	-445.32	4,151.46	2,658.55	2,374.70	283.85	9.366	
8,300.00	6,949.11	6,953.05	6,942.11	35.60	258.88	90.34	-445.32	4,151.46	2,559.66	2,275.73	283.93	9.015	
8,400.00	6,949.02	6,952.96	6,942.02	36.76	258.88	90.32	-445.32	4,151.46	2,460.86	2,176.83	284.03	8.664	
8,500.00	6,948.93	6,952.87	6,941.93	37.96	258.88	90.31	-445.32	4,151.46	2,362.16	2,078.03	284.13	8.314	
8,600.00	6,948.84	6,952.78	6,941.84	39.18	258.87	90.30	-445.32	4,151.46	2,263.57	1,979.32	284.26	7.963	
8,700.00	6,948.75	6,952.69	6,941.75	40.43	258.87	90.28	-445.32	4,151.46	2,165.12	1,880.72	284.40	7.613	
8,800.00	6,948.66	6,952.60	6,941.66	41.71	258.87	90.27	-445.32	4,151.46	2,066.81	1,782.24	284.57	7.263	
8,900.00	6,948.57	6,952.51	6,941.57	43.00	258.87	90.26	-445.32	4,151.46	1,968.67	1,683.91	284.76	6.913	
9,000.00	6,948.48	6,952.42	6,941.48	44.32	258.87	90.24	-445.32	4,151.46	1,870.73	1,585.73	285.00	6.564	
9,100.00	6,948.39	6,952.33	6,941.39	45.66	258.87	90.23	-445.32	4,151.46	1,773.02	1,487.75	285.27	6.215	
9,200.00	6,948.30	6,952.24	6,941.30	47.01	258.86	90.22	-445.32	4,151.46	1,675.58	1,389.98	285.60	5.867	
9,300.00	6,948.21	6,952.14	6,941.21	48.38	258.86	90.20	-445.32	4,151.46	1,578.46	1,292.47	285.99	5.519	
9,400.00	6,948.12	6,952.05	6,941.12	49.76	258.86	90.19	-445.32	4,151.46	1,481.72	1,195.26	286.46	5.173	
9,500.00	6,948.03	6,951.96	6,941.03	51.16	258.86	90.18	-445.32	4,151.46	1,385.44	1,098.41	287.03	4.827	
9,600.00	6,947.94	6,951.87	6,940.94	52.56	258.86	90.16	-445.32	4,151.46	1,289.74	1,002.00	287.74	4.482	
9,700.00	6,947.85	6,951.78	6,940.85	53.98	258.86	90.15	-445.32	4,151.46	1,194.73	906.13	288.61	4.140	
9,800.00	6,947.76	6,951.69	6,940.76	55.41	258.85	90.14	-445.32	4,151.46	1,100.61	810.92	289.69	3.799	
9,900.00	6,947.67	6,951.60	6,940.67	56.85	258.85	90.12	-445.32	4,151.46	1,007.63	716.57	291.06	3.462	
10,000.00	6,947.58	6,951.51	6,940.58	58.29	258.85	90.11	-445.32	4,151.46	916.12	623.33	292.79	3.129	
10,100.00	6,947.49	6,951.42	6,940.49	59.75	258.85	90.10	-445.32	4,151.46	826.59	531.58	295.01	2.802	
10,200.00	6,947.40	6,951.33	6,940.40	61.21	258.85	90.08	-445.32	4,151.46	739.74	441.89	297.85	2.484	
10,300.00	6,947.31	6,951.24	6,940.31	62.68	258.85	90.07	-445.32	4,151.46	656.64	355.15	301.49	2.178	
10,400.00	6,947.22	6,951.15	6,940.22	64.15	258.84	90.06	-445.32	4,151.46	578.91	272.79	306.12	1.891	
10,500.00	6,947.13	6,951.06	6,940.13	65.63	258.84	90.04	-445.32	4,151.46	509.03	197.22	311.81	1.633	
10,600.00	6,947.04	6,950.97	6,940.04	67.12	258.84	90.03	-445.32	4,151.46	450.64	132.34	318.29	1.416	Level 3
10,700.00	6,946.95	6,950.88	6,939.95	68.61	258.84	90.02	-445.32	4,151.46	408.70	84.12	324.58	1.259	Level 3
10,800.00	6,946.86	6,950.79	6,939.86	70.11	258.84	90.00	-445.32	4,151.46	388.59	59.78	328.81	1.182	Level 3
10,830.18	6,946.83	6,950.77	6,939.83	70.56	258.84	90.00	-445.32	4,151.46	387.42	58.02	329.39	1.176	Level 3, CC, ES, SF
10,900.00	6,946.77	6,950.70	6,939.77	71.61	258.84	89.99	-445.32	4,151.46	393.66	64.33	329.33	1.195	Level 3
11,000.00	6,946.68	6,950.61	6,939.68	73.11	258.83	89.98	-445.32	4,151.46	423.00	96.70	326.30	1.296	Level 3
11,100.00	6,946.59	6,950.52	6,939.59	74.62	258.83	89.96	-445.32	4,151.46	472.12	150.72	321.40	1.469	Level 3
11,200.00	6,946.50	6,950.43	6,939.50	76.14	258.83	89.95	-445.32	4,151.46	535.59	219.38	316.21	1.694	
11,300.00	6,946.41	6,950.34	6,939.41	77.65	258.83	89.94	-445.32	4,151.46	608.96	297.41	311.54	1.955	
11,400.00	6,946.32	6,950.25	6,939.32	79.18	258.83	89.92	-445.32	4,151.46	689.05	381.43	307.62	2.240	
11,500.00	6,946.23	6,950.16	6,939.23	80.70	258.83	89.91	-445.32	4,151.46	773.79	469.38	304.42	2.542	
11,600.00	6,946.14	6,950.07	6,939.14	82.23	258.82	89.90	-445.32	4,151.46	861.81	559.99	301.82	2.855	
11,700.00	6,946.05	6,949.98	6,939.05	83.76	258.82	89.88	-445.32	4,151.46	952.20	652.48	299.72	3.177	
11,800.00	6,945.96	6,949.89	6,938.96	85.29	258.82	89.87	-445.32	4,151.46	1,044.34	746.34	298.00	3.504	
11,900.00	6,945.87	6,949.80	6,938.87	86.82	258.82	89.86	-445.32	4,151.46	1,137.81	841.22	296.59	3.836	
12,000.00	6,945.78	6,949.71	6,938.78	88.36	258.82	89.84	-445.32	4,151.46	1,232.31	936.88	295.43	4.171	
12,100.00	6,945.69	6,949.62	6,938.69	89.90	258.82	89.83	-445.32	4,151.46	1,327.61	1,033.15	294.45	4.509	
12,200.00	6,945.60	6,949.53	6,938.60	91.44	258.81	89.82	-445.32	4,151.46	1,423.56	1,129.92	293.64	4.848	
12,300.00	6,945.51	6,949.44	6,938.51	92.99	258.81	89.80	-445.32	4,151.46	1,520.02	1,227.08	292.95	5.189	
12,400.00	6,945.42	6,949.35	6,938.42	94.53	258.81	89.79	-445.32	4,151.46	1,616.92	1,324.57	292.36	5.531	
12,500.00	6,945.33	6,949.26	6,938.33	96.08	258.81	89.78	-445.32	4,151.46	1,714.18	1,422.32	291.85	5.873	
12,600.00	6,945.24	6,949.17	6,938.24	97.63	258.81	89.76	-445.32	4,151.46	1,811.73	1,520.31	291.42	6.217	
12,700.00	6,945.15	6,949.08	6,938.15	99.18	258.81	89.75	-445.32	4,151.46	1,909.54	1,618.49	291.05	6.561	
12,800.00	6,945.06	6,948.99	6,938.06	100.74	258.80	89.74	-445.32	4,151.46	2,007.56	1,716.84	290.73	6.905	
12,900.00	6,944.96	6,948.90	6,937.96	102.29	258.80	89.72	-445.32	4,151.46	2,105.77	1,815.32	290.44	7.250	
13,000.00	6,944.87	6,948.81	6,937.87	103.85	258.80	89.71	-445.32	4,151.46	2,204.14	1,913.94	290.20	7.595	
13,100.00	6,944.78	6,948.72	6,937.78	105.40	258.80	89.70	-445.32	4,151.46	2,302.65	2,012.66	289.99	7.941	

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 #722H - Slot B05
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 #722H	**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
13,200.00	6,944.69	6,948.63	6,937.69	106.96	258.80	89.68	-445.32	4,151.46	2,401.28	2,111.48	289.80	8.286	
13,300.00	6,944.60	6,948.54	6,937.60	108.52	258.80	89.67	-445.32	4,151.46	2,500.02	2,210.38	289.64	8.631	
13,400.00	6,944.51	6,948.45	6,937.51	110.08	258.79	89.66	-445.32	4,151.46	2,598.86	2,309.36	289.50	8.977	
13,500.00	6,944.42	6,948.36	6,937.42	111.65	258.79	89.64	-445.32	4,151.46	2,697.79	2,408.41	289.38	9.323	
13,600.00	6,944.33	6,948.27	6,937.33	113.21	258.79	89.63	-445.32	4,151.46	2,796.79	2,507.52	289.27	9.668	
13,700.00	6,944.24	6,948.18	6,937.24	114.78	258.79	89.62	-445.32	4,151.46	2,895.86	2,606.68	289.18	10.014	
13,800.00	6,944.15	6,948.09	6,937.15	116.34	258.79	89.60	-445.32	4,151.46	2,994.99	2,705.89	289.10	10.360	
13,900.00	6,944.06	6,948.00	6,937.06	117.91	258.79	89.59	-445.32	4,151.46	3,094.17	2,805.14	289.03	10.705	
14,000.00	6,943.97	6,947.91	6,936.97	119.48	258.78	89.58	-445.32	4,151.46	3,193.41	2,904.44	288.98	11.051	
14,100.00	6,943.88	6,947.82	6,936.88	121.05	258.78	89.56	-445.32	4,151.46	3,292.69	3,003.77	288.93	11.396	
14,200.00	6,943.79	6,947.73	6,936.79	122.62	258.78	89.55	-445.32	4,151.46	3,392.02	3,103.13	288.89	11.742	
14,300.00	6,943.70	6,947.64	6,936.70	124.19	258.78	89.54	-445.32	4,151.46	3,491.38	3,202.53	288.86	12.087	
14,400.00	6,943.61	6,947.55	6,936.61	125.76	258.78	89.52	-445.32	4,151.46	3,590.78	3,301.95	288.83	12.432	
14,500.00	6,943.52	6,947.46	6,936.52	127.33	258.78	89.51	-445.32	4,151.46	3,690.22	3,401.40	288.82	12.777	
14,600.00	6,943.43	6,947.37	6,936.43	128.90	258.77	89.50	-445.32	4,151.46	3,789.68	3,500.87	288.80	13.122	
14,700.00	6,943.34	6,947.28	6,936.34	130.48	258.77	89.48	-445.32	4,151.46	3,889.17	3,600.37	288.80	13.467	
14,800.00	6,943.25	6,947.19	6,936.25	132.05	258.77	89.47	-445.32	4,151.46	3,988.68	3,699.89	288.80	13.811	
14,900.00	6,943.16	6,947.10	6,936.16	133.63	258.77	89.46	-445.32	4,151.46	4,088.22	3,799.42	288.80	14.156	
15,000.00	6,943.07	6,947.01	6,936.07	135.20	258.77	89.44	-445.32	4,151.46	4,187.78	3,898.97	288.81	14.500	
15,100.00	6,942.98	6,946.92	6,935.98	136.78	258.77	89.43	-445.32	4,151.46	4,287.36	3,998.54	288.82	14.844	
15,200.00	6,942.89	6,946.83	6,935.89	138.36	258.76	89.42	-445.32	4,151.46	4,386.96	4,098.13	288.84	15.188	
15,300.00	6,942.80	6,946.74	6,935.80	139.93	258.76	89.40	-445.32	4,151.46	4,486.58	4,197.73	288.85	15.532	
15,400.00	6,942.71	6,946.65	6,935.71	141.51	258.76	89.39	-445.32	4,151.46	4,586.22	4,297.34	288.88	15.876	
15,500.00	6,942.62	6,946.56	6,935.62	143.09	258.76	89.38	-445.32	4,151.46	4,685.87	4,396.96	288.90	16.219	
15,600.00	6,942.53	6,946.47	6,935.53	144.67	258.76	89.36	-445.32	4,151.46	4,785.53	4,496.60	288.93	16.563	
15,700.00	6,942.44	6,946.38	6,935.44	146.25	258.76	89.35	-445.32	4,151.46	4,885.21	4,596.25	288.96	16.906	
15,800.00	6,942.35	6,946.29	6,935.35	147.83	258.75	89.34	-445.32	4,151.46	4,984.90	4,695.90	289.00	17.249	
15,900.00	6,942.26	6,946.20	6,935.26	149.41	258.75	89.32	-445.32	4,151.46	5,084.60	4,795.57	289.03	17.592	
16,000.00	6,942.17	6,946.11	6,935.17	150.99	258.75	89.31	-445.32	4,151.46	5,184.32	4,895.25	289.07	17.934	
16,100.00	6,942.08	6,946.02	6,935.08	152.57	258.75	89.30	-445.32	4,151.46	5,284.04	4,994.93	289.11	18.277	
16,200.00	6,941.99	6,945.92	6,934.99	154.16	258.75	89.28	-445.32	4,151.46	5,383.78	5,094.62	289.16	18.619	
16,300.00	6,941.90	6,945.83	6,934.90	155.74	258.75	89.27	-445.32	4,151.46	5,483.53	5,194.32	289.20	18.961	
16,400.00	6,941.81	6,945.74	6,934.81	157.32	258.74	89.26	-445.32	4,151.46	5,583.28	5,294.03	289.25	19.303	
16,500.00	6,941.72	6,945.65	6,934.72	158.91	258.74	89.24	-445.32	4,151.46	5,683.04	5,393.74	289.30	19.644	
16,600.00	6,941.63	6,945.56	6,934.63	160.49	258.74	89.23	-445.32	4,151.46	5,782.81	5,493.46	289.35	19.985	
16,700.00	6,941.54	6,945.47	6,934.54	162.07	258.74	89.22	-445.32	4,151.46	5,882.59	5,593.19	289.40	20.327	
16,800.00	6,941.45	6,945.38	6,934.45	163.66	258.74	89.20	-445.32	4,151.46	5,982.38	5,692.92	289.46	20.667	
16,900.00	6,941.36	6,945.29	6,934.36	165.24	258.73	89.19	-445.32	4,151.46	6,082.17	5,792.66	289.51	21.008	
17,000.00	6,941.27	6,945.20	6,934.27	166.83	258.73	89.18	-445.32	4,151.46	6,181.97	5,892.40	289.57	21.349	
17,100.00	6,941.18	6,945.11	6,934.18	168.42	258.73	89.16	-445.32	4,151.46	6,281.78	5,992.15	289.63	21.689	
17,200.00	6,941.09	6,945.02	6,934.09	170.00	258.73	89.15	-445.32	4,151.46	6,381.59	6,091.90	289.69	22.029	
17,300.00	6,941.00	6,944.93	6,934.00	171.59	258.73	89.14	-445.32	4,151.46	6,481.41	6,191.66	289.75	22.369	
17,400.00	6,940.91	6,944.84	6,933.91	173.18	258.73	89.12	-445.32	4,151.46	6,581.24	6,291.42	289.82	22.708	
17,500.00	6,940.82	6,944.75	6,933.82	174.76	258.72	89.11	-445.32	4,151.46	6,681.06	6,391.18	289.88	23.048	
17,600.00	6,940.73	6,944.66	6,933.73	176.35	258.72	89.10	-445.32	4,151.46	6,780.90	6,490.95	289.95	23.387	
17,700.00	6,940.64	6,944.57	6,933.64	177.94	258.72	89.08	-445.32	4,151.46	6,880.74	6,590.73	290.01	23.726	
17,800.00	6,940.55	6,944.48	6,933.55	179.53	258.72	89.07	-445.32	4,151.46	6,980.58	6,690.50	290.08	24.064	
17,900.00	6,940.46	6,944.39	6,933.46	181.11	258.72	89.06	-445.32	4,151.46	7,080.43	6,790.28	290.15	24.403	
18,000.00	6,940.37	6,944.30	6,933.37	182.70	258.72	89.04	-445.32	4,151.46	7,180.28	6,890.06	290.22	24.741	
18,100.00	6,940.28	6,944.21	6,933.28	184.29	258.71	89.03	-445.32	4,151.46	7,280.14	6,989.85	290.29	25.079	
18,200.00	6,940.19	6,944.12	6,933.19	185.88	258.71	89.02	-445.32	4,151.46	7,380.00	7,089.64	290.36	25.417	
18,300.00	6,940.10	6,944.03	6,933.10	187.47	258.71	89.00	-445.32	4,151.46	7,479.86	7,189.43	290.43	25.754	

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 #722H - Slot B05
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 #722H	**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
18,400.00	6,940.01	6,943.94	6,933.01	189.06	258.71	88.99	-445.32	4,151.46	7,579.73	7,289.22	290.51	26.091	
18,500.00	6,939.92	6,943.85	6,932.92	190.65	258.71	88.98	-445.32	4,151.46	7,679.60	7,389.02	290.58	26.428	
18,600.00	6,939.83	6,943.76	6,932.83	192.24	258.71	88.96	-445.32	4,151.46	7,779.47	7,488.81	290.66	26.765	
18,700.00	6,939.74	6,943.67	6,932.74	193.83	258.70	88.95	-445.32	4,151.46	7,879.35	7,588.62	290.74	27.101	
18,800.00	6,939.65	6,943.58	6,932.65	195.42	258.70	88.94	-445.32	4,151.46	7,979.23	7,688.42	290.81	27.438	
18,900.00	6,939.56	6,943.49	6,932.56	197.01	258.70	88.92	-445.32	4,151.46	8,079.12	7,788.22	290.89	27.774	
19,000.00	6,939.47	6,943.40	6,932.47	198.60	258.70	88.91	-445.32	4,151.46	8,179.00	7,888.03	290.97	28.109	
19,100.00	6,939.38	6,943.31	6,932.38	200.19	258.70	88.90	-445.32	4,151.46	8,278.89	7,987.84	291.05	28.445	
19,200.00	6,939.29	6,943.22	6,932.29	201.78	258.70	88.88	-445.32	4,151.46	8,378.78	8,087.65	291.13	28.780	
19,300.00	6,939.20	6,943.13	6,932.20	203.37	258.69	88.87	-445.32	4,151.46	8,478.68	8,187.46	291.21	29.115	
19,400.00	6,939.11	6,943.04	6,932.11	204.97	258.69	88.86	-445.32	4,151.46	8,578.57	8,287.28	291.30	29.450	
19,500.00	6,939.02	6,942.95	6,932.02	206.56	258.69	88.84	-445.32	4,151.46	8,678.47	8,387.09	291.38	29.784	
19,600.00	6,938.93	6,942.86	6,931.93	208.15	258.69	88.83	-445.32	4,151.46	8,778.37	8,486.91	291.46	30.118	
19,700.00	6,938.83	6,942.77	6,931.83	209.74	258.69	88.82	-445.32	4,151.46	8,878.28	8,586.73	291.55	30.452	
19,800.00	6,938.74	6,942.68	6,931.74	211.33	258.69	88.80	-445.32	4,151.46	8,978.18	8,686.55	291.63	30.786	
19,900.00	6,938.65	6,942.59	6,931.65	212.93	258.68	88.79	-445.32	4,151.46	9,078.09	8,786.37	291.72	31.119	
20,000.00	6,938.56	6,942.50	6,931.56	214.52	258.68	88.78	-445.32	4,151.46	9,178.00	8,886.19	291.81	31.452	
20,100.00	6,938.47	6,942.41	6,931.47	216.11	258.68	88.76	-445.32	4,151.46	9,277.91	8,986.02	291.90	31.785	
20,200.00	6,938.38	6,942.32	6,931.38	217.71	258.68	88.75	-445.32	4,151.46	9,377.83	9,085.84	291.98	32.118	
20,300.00	6,938.29	6,942.23	6,931.29	219.30	258.68	88.74	-445.32	4,151.46	9,477.74	9,185.67	292.07	32.450	
20,400.00	6,938.20	6,942.14	6,931.20	220.89	258.68	88.72	-445.32	4,151.46	9,577.66	9,285.50	292.16	32.782	
20,500.00	6,938.11	6,942.05	6,931.11	222.49	258.67	88.71	-445.32	4,151.46	9,677.58	9,385.33	292.25	33.114	
20,600.00	6,938.02	6,941.96	6,931.02	224.08	258.67	88.70	-445.32	4,151.46	9,777.50	9,485.16	292.34	33.445	
20,626.08	6,938.00	6,941.93	6,931.00	224.49	258.67	88.69	-445.32	4,151.46	9,803.56	9,511.20	292.37	33.532	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	47.19	1,099.51	1,187.07	1,621.64				
100.00	100.00	0.00	0.00	0.25	0.00	47.19	1,099.51	1,187.07	1,618.06	1,617.81	0.25	6,441.714	
200.00	200.00	103.44	103.44	0.61	1.14	47.18	1,099.50	1,186.58	1,617.72	1,615.97	1.74	928.361	
300.00	300.00	215.85	215.84	0.97	2.37	47.14	1,099.44	1,184.96	1,616.62	1,613.29	3.33	485.082	
400.00	400.00	328.22	328.17	1.33	3.61	47.08	1,099.36	1,182.19	1,614.77	1,609.84	4.92	328.056	
500.00	500.00	423.81	423.73	1.68	3.92	47.03	1,099.01	1,179.65	1,612.57	1,606.99	5.58	288.934	
535.00	535.00	455.48	455.39	1.81	3.95	36.37	1,098.55	1,179.26	1,611.75	1,606.01	5.73	281.063	
600.00	599.99	509.57	509.45	2.04	3.99	36.43	1,097.08	1,179.52	1,610.14	1,604.12	6.02	267.499	
689.62	689.60	566.00	565.81	2.36	4.03	36.55	1,094.90	1,181.44	1,609.17	1,602.79	6.38	252.072	
700.00	699.99	571.57	571.36	2.40	4.03	36.56	1,094.69	1,181.74	1,609.19	1,602.77	6.42	250.540	
800.00	799.98	639.11	638.65	2.76	4.05	36.78	1,091.58	1,186.61	1,610.44	1,603.64	6.80	236.822	
900.00	899.97	700.48	699.52	3.12	4.11	37.05	1,088.09	1,193.60	1,614.04	1,606.86	7.18	224.849	
1,000.00	999.96	775.50	773.46	3.48	4.22	37.49	1,082.61	1,205.03	1,619.58	1,612.01	7.57	214.044	
1,100.00	1,099.96	843.00	839.45	3.84	4.35	37.97	1,076.63	1,217.89	1,627.09	1,619.12	7.97	204.252	
1,200.00	1,199.95	905.00	899.62	4.19	4.47	38.46	1,070.58	1,231.52	1,636.61	1,628.23	8.37	195.435	
1,300.00	1,299.94	968.00	960.24	4.55	4.62	39.01	1,064.29	1,247.48	1,648.72	1,639.91	8.81	187.186	
1,400.00	1,399.93	1,031.00	1,020.12	4.91	4.80	39.63	1,057.27	1,265.75	1,663.27	1,654.00	9.27	179.351	
1,500.00	1,499.93	1,095.00	1,080.12	5.27	4.99	40.32	1,049.04	1,286.42	1,679.96	1,670.18	9.77	171.887	
1,600.00	1,599.92	1,168.46	1,148.05	5.63	5.24	41.18	1,038.26	1,312.21	1,698.50	1,688.14	10.36	164.016	
1,700.00	1,699.91	1,220.00	1,194.96	5.99	5.43	41.84	1,029.73	1,331.77	1,719.12	1,708.25	10.87	158.110	
1,800.00	1,799.90	1,281.00	1,249.56	6.34	5.68	42.66	1,019.13	1,356.82	1,742.48	1,731.01	11.47	151.870	
1,900.00	1,899.90	1,326.38	1,289.60	6.70	5.90	43.28	1,011.12	1,376.63	1,768.59	1,756.59	12.00	147.399	
2,000.00	1,999.89	1,383.15	1,338.81	7.06	6.24	44.09	1,000.73	1,402.94	1,797.47	1,784.84	12.63	142.331	
2,100.00	2,099.88	1,448.33	1,394.74	7.42	6.71	45.03	988.46	1,434.07	1,828.31	1,814.99	13.32	137.219	
2,200.00	2,199.87	1,509.49	1,446.35	7.78	7.21	45.95	975.94	1,464.40	1,861.05	1,847.02	14.03	132.679	
2,300.00	2,299.87	1,566.00	1,493.30	8.14	7.72	46.80	964.14	1,493.55	1,896.15	1,881.45	14.70	128.972	
2,400.00	2,399.86	1,615.74	1,533.77	8.50	8.21	47.57	953.10	1,520.28	1,933.61	1,918.28	15.33	126.137	
2,500.00	2,499.85	1,691.00	1,594.48	8.85	8.99	48.74	935.74	1,561.23	1,972.53	1,956.32	16.22	121.639	
2,600.00	2,599.85	1,738.96	1,632.64	9.21	9.52	49.48	924.27	1,587.92	2,013.32	1,996.49	16.83	119.641	
2,700.00	2,699.84	1,797.30	1,678.53	9.57	10.19	50.38	910.40	1,621.16	2,056.24	2,038.69	17.55	117.170	
2,800.00	2,799.83	1,860.70	1,728.18	9.93	10.94	51.34	895.46	1,657.64	2,100.67	2,082.35	18.32	114.660	
2,900.00	2,899.82	1,948.67	1,796.35	10.29	12.01	52.66	873.58	1,708.76	2,146.26	2,126.88	19.38	110.754	
3,000.00	2,999.82	2,015.32	1,847.75	10.65	12.84	53.64	856.23	1,747.48	2,192.52	2,172.33	20.19	108.593	
3,100.00	3,099.81	2,090.75	1,905.65	11.01	13.80	54.74	836.53	1,791.63	2,240.01	2,218.91	21.10	106.167	
3,200.00	3,199.80	2,137.22	1,941.23	11.36	14.40	55.39	824.52	1,819.02	2,288.75	2,267.09	21.66	105.673	
3,300.00	3,299.79	2,319.89	2,082.74	11.72	16.72	57.79	778.28	1,924.79	2,337.83	2,314.04	23.79	98.268	
3,400.00	3,399.79	2,699.00	2,401.93	12.08	20.70	61.64	695.90	2,111.03	2,378.67	2,351.07	27.61	86.158	
3,500.00	3,499.78	2,770.07	2,464.62	12.44	21.34	62.21	682.93	2,141.89	2,416.03	2,387.71	28.32	85.302	
3,600.00	3,599.77	3,445.00	3,098.47	12.80	25.36	65.88	592.02	2,346.08	2,436.01	2,403.38	32.63	74.650	
3,700.00	3,699.76	3,919.04	3,567.96	13.16	26.34	66.85	567.09	2,398.15	2,448.86	2,414.95	33.92	72.201	
3,800.00	3,799.76	4,018.46	3,667.37	13.52	29.33	66.89	566.79	2,399.22	2,449.36	2,411.88	37.48	65.352	
3,900.00	3,899.75	4,117.67	3,766.57	13.87	33.49	66.93	566.49	2,400.31	2,449.90	2,407.64	42.26	57.975	
4,000.00	3,999.74	4,216.88	3,865.78	14.23	37.72	66.97	566.18	2,401.44	2,450.46	2,403.36	47.10	52.024	
4,100.00	4,099.73	4,316.09	3,964.98	14.59	41.99	67.01	565.86	2,402.60	2,451.06	2,399.07	51.99	47.145	
4,200.00	4,199.73	4,415.29	4,064.17	14.95	46.29	67.05	565.53	2,403.80	2,451.69	2,394.78	56.91	43.083	
4,300.00	4,299.72	4,514.50	4,163.37	15.31	50.60	67.09	565.19	2,405.03	2,452.35	2,390.51	61.84	39.655	
4,400.00	4,399.71	4,613.70	4,262.57	15.67	54.93	67.13	564.85	2,406.29	2,453.05	2,386.26	66.79	36.725	
4,500.00	4,499.70	4,712.91	4,361.76	16.03	59.27	67.17	564.49	2,407.59	2,453.78	2,382.02	71.76	34.196	
4,600.00	4,599.70	4,812.11	4,460.95	16.38	63.62	67.21	564.12	2,408.92	2,454.54	2,377.81	76.73	31.990	
4,700.00	4,699.69	4,911.31	4,560.14	16.74	67.97	67.25	563.74	2,410.29	2,455.34	2,373.63	81.71	30.051	
4,800.00	4,799.68	5,010.51	4,659.33	17.10	72.33	67.29	563.36	2,411.69	2,456.17	2,369.48	86.69	28.332	
4,900.00	4,899.67	5,109.71	4,758.52	17.46	76.69	67.33	562.96	2,413.13	2,457.03	2,365.35	91.68	26.800	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	5,208.91	4,857.71	17.82	81.06	67.38	562.56	2,414.60	2,457.92	2,361.25	96.67	25.426	
5,100.00	5,099.66	5,308.10	4,956.89	18.18	85.43	67.42	562.14	2,416.11	2,458.85	2,357.19	101.67	24.185	
5,200.00	5,199.65	5,407.30	5,056.07	18.53	89.80	67.46	561.72	2,417.64	2,459.81	2,353.15	106.66	23.061	
5,300.00	5,299.64	5,506.49	5,155.25	18.89	94.18	67.50	561.29	2,419.22	2,460.81	2,349.14	111.66	22.037	
5,400.00	5,399.64	5,605.68	5,254.43	19.25	98.56	67.55	560.84	2,420.82	2,461.84	2,345.17	116.67	21.101	
5,500.00	5,499.63	5,704.88	5,353.61	19.61	102.95	67.59	560.39	2,422.47	2,462.90	2,341.23	121.67	20.242	
5,600.00	5,599.62	5,804.61	5,453.33	19.97	105.12	67.64	559.93	2,424.14	2,463.99	2,339.69	124.30	19.823	
5,700.00	5,699.61	5,904.59	5,553.29	20.33	106.31	67.68	559.47	2,425.82	2,465.08	2,339.19	125.89	19.582	
5,800.00	5,799.61	6,004.56	5,653.25	20.69	107.50	67.73	559.00	2,427.51	2,466.17	2,338.69	127.48	19.346	
5,900.00	5,899.60	6,104.54	5,753.21	21.04	108.70	67.77	558.54	2,429.19	2,467.26	2,338.19	129.06	19.116	
6,000.00	5,999.59	6,204.51	5,853.17	21.40	109.89	67.82	558.08	2,430.87	2,468.35	2,337.70	130.65	18.892	
6,100.00	6,099.58	6,304.49	5,953.13	21.76	110.57	67.86	557.61	2,432.55	2,469.45	2,337.72	131.73	18.746	
6,200.00	6,199.58	6,404.47	6,053.09	22.12	110.80	67.91	557.15	2,434.24	2,470.55	2,338.20	132.35	18.667	
6,300.00	6,299.57	6,504.44	6,153.05	22.48	111.02	67.95	556.69	2,435.92	2,471.65	2,338.68	132.96	18.589	
6,315.05	6,314.62	6,519.49	6,168.10	22.53	111.06	67.96	556.62	2,436.17	2,471.81	2,338.75	133.06	18.577	
6,350.00	6,349.55	6,554.43	6,203.03	22.66	111.14	-1.23	556.46	2,436.76	2,471.26	2,337.99	133.27	18.543	
6,400.00	6,399.30	6,604.25	6,252.85	22.83	111.25	-8.21	556.22	2,437.60	2,467.24	2,333.66	133.57	18.471	
6,450.00	6,448.52	6,653.61	6,302.20	23.00	111.36	-10.26	556.00	2,438.43	2,459.42	2,325.55	133.87	18.372	
6,500.00	6,496.91	6,702.21	6,350.79	23.18	111.47	-11.42	555.77	2,439.25	2,447.85	2,313.69	134.16	18.245	
6,550.00	6,544.17	6,748.23	6,396.80	23.35	111.58	-12.33	555.56	2,440.03	2,432.63	2,298.18	134.45	18.094	
6,600.00	6,590.01	6,791.23	6,439.80	23.53	111.68	-13.18	555.34	2,440.81	2,413.88	2,279.16	134.72	17.917	
6,650.00	6,634.14	6,832.77	6,481.33	23.70	111.78	-14.10	555.12	2,441.62	2,391.74	2,256.75	134.99	17.719	
6,700.00	6,676.30	6,872.59	6,521.14	23.88	111.87	-15.12	554.89	2,442.46	2,366.34	2,231.10	135.24	17.498	
6,750.00	6,716.21	6,910.45	6,558.99	24.06	111.96	-16.32	554.65	2,443.30	2,337.82	2,202.35	135.47	17.257	
6,800.00	6,753.65	6,946.13	6,594.66	24.24	112.05	-17.75	554.42	2,444.14	2,306.38	2,170.69	135.69	16.997	
6,850.00	6,788.37	6,979.42	6,627.94	24.44	112.12	-19.49	554.20	2,444.95	2,272.20	2,136.31	135.89	16.721	
6,900.00	6,820.16	7,010.10	6,658.60	24.63	112.20	-21.63	553.98	2,445.74	2,235.49	2,099.41	136.08	16.428	
6,950.00	6,848.83	7,037.98	6,686.48	24.84	112.26	-24.29	553.78	2,446.48	2,196.48	2,060.23	136.24	16.122	
7,000.00	6,874.19	7,062.89	6,711.38	25.06	112.32	-27.67	553.59	2,447.17	2,155.41	2,019.02	136.39	15.803	
7,050.00	6,896.10	7,084.67	6,733.15	25.29	112.38	-32.01	553.42	2,447.78	2,112.54	1,976.02	136.52	15.474	
7,100.00	6,914.42	7,103.17	6,751.64	25.53	112.42	-37.66	553.27	2,448.32	2,068.15	1,931.51	136.64	15.136	
7,150.00	6,929.03	7,118.27	6,766.74	25.78	112.46	-45.07	553.15	2,448.76	2,022.50	1,885.77	136.73	14.792	
7,200.00	6,939.85	7,129.87	6,778.32	26.05	112.48	-54.70	553.05	2,449.11	1,975.89	1,839.08	136.81	14.443	
7,250.00	6,946.80	7,137.86	6,786.32	26.32	112.50	-66.77	552.99	2,449.35	1,928.61	1,791.74	136.87	14.090	
7,300.00	6,949.85	7,142.20	6,790.65	26.61	112.51	-80.75	552.95	2,449.48	1,880.98	1,744.05	136.93	13.737	
7,314.43	6,950.00	7,142.76	6,791.21	26.69	112.52	-84.93	552.95	2,449.50	1,867.20	1,730.26	136.94	13.635	
7,400.00	6,949.92	7,145.19	6,793.64	27.21	112.52	-85.18	552.93	2,449.58	1,785.71	1,648.69	137.02	13.032	
7,500.00	6,949.83	7,148.05	6,796.50	27.90	112.53	-85.48	552.90	2,449.66	1,690.98	1,553.84	137.14	12.330	
7,600.00	6,949.74	7,150.93	6,799.37	28.66	112.53	-85.77	552.88	2,449.75	1,596.89	1,459.59	137.30	11.631	
7,700.00	6,949.65	7,153.82	6,802.26	29.49	112.54	-86.07	552.85	2,449.84	1,503.55	1,366.05	137.51	10.935	
7,800.00	6,949.56	7,156.73	6,805.18	30.38	112.55	-86.37	552.83	2,449.93	1,411.12	1,273.35	137.77	10.242	
7,900.00	6,949.47	7,159.66	6,808.11	31.33	112.56	-86.67	552.80	2,450.02	1,319.79	1,181.67	138.12	9.555	
8,000.00	6,949.38	7,162.61	6,811.05	32.33	112.56	-86.97	552.78	2,450.11	1,229.80	1,091.23	138.57	8.875	
8,100.00	6,949.29	7,165.58	6,814.02	33.38	112.57	-87.28	552.75	2,450.21	1,141.48	1,002.32	139.16	8.203	
8,200.00	6,949.20	7,168.57	6,817.01	34.47	112.58	-87.59	552.73	2,450.30	1,055.22	915.30	139.92	7.542	
8,300.00	6,949.11	7,171.58	6,820.02	35.60	112.58	-87.90	552.70	2,450.39	971.60	830.70	140.90	6.895	
8,400.00	6,949.02	7,174.61	6,823.04	36.76	112.59	-88.21	552.67	2,450.49	891.35	749.17	142.17	6.269	
8,500.00	6,948.93	7,177.66	6,826.09	37.96	112.60	-88.52	552.65	2,450.59	815.46	671.67	143.78	5.671	
8,600.00	6,948.84	7,180.73	6,829.16	39.18	112.61	-88.84	552.62	2,450.68	745.27	599.48	145.79	5.112	
8,700.00	6,948.75	7,183.81	6,832.24	40.43	112.61	-89.16	552.59	2,450.78	682.54	534.34	148.20	4.606	
8,800.00	6,948.66	7,186.92	6,835.35	41.71	112.62	-89.48	552.57	2,450.88	629.50	478.57	150.93	4.171	
8,900.00	6,948.57	7,190.05	6,838.48	43.00	112.63	-89.80	552.54	2,450.98	588.79	435.02	153.77	3.829	

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 #722H - Slot B05
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 #722H	**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
9,000.00	6,948.48	7,193.20	6,841.63	44.32	112.64	-90.13	552.51	2,451.08	563.07	406.75	156.32	3.602	
9,098.26	6,948.39	7,196.32	6,844.74	45.63	112.64	-90.45	552.48	2,451.18	554.44	396.31	158.13	3.506	CC
9,100.00	6,948.39	7,196.37	6,844.80	45.66	112.64	-90.46	552.48	2,451.19	554.44	396.29	158.15	3.506	ES, SF
9,200.00	6,948.30	7,199.57	6,847.99	47.01	112.65	-90.78	552.45	2,451.29	563.69	404.72	158.97	3.546	
9,300.00	6,948.21	7,202.78	6,851.20	48.38	112.66	-91.12	552.42	2,451.39	589.96	431.19	158.78	3.716	
9,400.00	6,948.12	7,206.02	6,854.43	49.76	112.67	-91.45	552.40	2,451.50	631.15	473.32	157.84	3.999	
9,500.00	6,948.03	7,209.27	6,857.69	51.16	112.67	-91.79	552.37	2,451.60	684.56	528.08	156.48	4.375	
9,600.00	6,947.94	7,212.55	6,860.97	52.56	112.68	-92.13	552.34	2,451.71	747.58	592.60	154.99	4.824	
9,700.00	6,947.85	7,215.86	6,864.27	53.98	112.69	-92.47	552.31	2,451.82	817.99	664.47	153.52	5.328	
9,800.00	6,947.76	7,219.18	6,867.59	55.41	112.70	-92.81	552.28	2,451.93	894.05	741.88	152.16	5.876	
9,900.00	6,947.67	7,222.53	6,870.94	56.85	112.71	-93.15	552.25	2,452.04	974.43	823.47	150.96	6.455	
10,000.00	6,947.58	7,225.90	6,874.31	58.29	112.71	-93.50	552.22	2,452.15	1,058.15	908.25	149.90	7.059	
10,100.00	6,947.49	7,229.30	6,877.70	59.75	112.72	-93.85	552.18	2,452.27	1,144.48	995.50	148.98	7.682	
10,200.00	6,947.40	7,232.71	6,881.11	61.21	112.73	-94.20	552.15	2,452.38	1,232.86	1,084.68	148.18	8.320	
10,300.00	6,947.31	7,236.15	6,884.55	62.68	112.74	-94.56	552.12	2,452.50	1,322.89	1,175.40	147.49	8.969	
10,400.00	6,947.22	7,239.62	6,888.02	64.15	112.75	-94.91	552.09	2,452.61	1,414.26	1,267.36	146.90	9.628	
10,500.00	6,947.13	7,243.11	6,891.51	65.63	112.76	-95.27	552.06	2,452.73	1,506.71	1,360.33	146.38	10.293	
10,600.00	6,947.04	7,246.63	6,895.02	67.12	112.76	-95.63	552.02	2,452.85	1,600.07	1,454.14	145.93	10.965	
10,700.00	6,946.95	7,250.17	6,898.56	68.61	112.77	-95.99	551.99	2,452.97	1,694.17	1,548.64	145.54	11.641	
10,800.00	6,946.86	7,253.53	6,901.92	70.11	112.78	-96.34	551.96	2,453.08	1,788.91	1,643.72	145.19	12.321	
10,900.00	6,946.77	7,257.06	6,905.45	71.61	112.79	-96.70	551.93	2,453.21	1,884.19	1,739.30	144.89	13.004	
11,000.00	6,946.68	7,260.62	6,909.00	73.11	112.79	-97.06	551.89	2,453.33	1,979.93	1,835.30	144.62	13.690	
11,100.00	6,946.59	7,264.19	6,912.57	74.62	112.80	-97.43	551.86	2,453.45	2,076.06	1,931.67	144.39	14.378	
11,200.00	6,946.50	7,267.79	6,916.16	76.14	112.81	-97.79	551.82	2,453.57	2,172.54	2,028.35	144.19	15.067	
11,300.00	6,946.41	7,271.40	6,919.78	77.65	112.82	-98.16	551.79	2,453.70	2,269.31	2,125.30	144.01	15.758	
11,400.00	6,946.32	7,275.04	6,923.41	79.18	112.83	-98.53	551.76	2,453.82	2,366.35	2,222.50	143.85	16.450	
11,500.00	6,946.23	7,278.70	6,927.07	80.70	112.83	-98.90	551.72	2,453.95	2,463.62	2,319.91	143.71	17.143	
11,600.00	6,946.14	7,282.37	6,930.74	82.23	112.84	-99.27	551.69	2,454.08	2,561.10	2,417.51	143.59	17.837	
11,700.00	6,946.05	7,286.08	6,934.44	83.76	112.85	-99.64	551.65	2,454.21	2,658.76	2,515.28	143.48	18.531	
11,800.00	6,945.96	7,289.80	6,938.16	85.29	112.86	-100.01	551.61	2,454.34	2,756.58	2,613.19	143.39	19.225	
11,900.00	6,945.87	7,293.54	6,941.90	86.82	112.87	-100.39	551.58	2,454.47	2,854.55	2,711.24	143.30	19.920	
12,000.00	6,945.78	7,297.31	6,945.67	88.36	112.87	-100.77	551.54	2,454.60	2,952.65	2,809.42	143.23	20.614	
12,100.00	6,945.69	7,301.10	6,949.45	89.90	112.88	-101.15	551.50	2,454.74	3,050.87	2,907.70	143.17	21.309	
12,200.00	6,945.60	7,304.91	6,953.26	91.44	112.89	-101.53	551.47	2,454.87	3,149.19	3,006.07	143.12	22.004	
12,300.00	6,945.51	7,308.74	6,957.09	92.99	112.90	-101.91	551.43	2,455.01	3,247.62	3,104.54	143.08	22.698	
12,400.00	6,945.42	7,312.60	6,960.95	94.53	112.91	-102.29	551.39	2,455.15	3,346.14	3,203.09	143.04	23.393	
12,500.00	6,945.33	7,316.48	6,964.83	96.08	112.92	-102.67	551.35	2,455.28	3,444.73	3,301.72	143.01	24.087	
12,600.00	6,945.24	7,320.38	6,968.73	97.63	112.93	-103.06	551.31	2,455.42	3,543.40	3,400.41	142.99	24.781	
12,700.00	6,945.15	7,324.31	6,972.65	99.18	112.93	-103.44	551.28	2,455.57	3,642.14	3,499.17	142.97	25.474	
12,800.00	6,945.06	7,328.26	6,976.60	100.74	112.94	-103.83	551.24	2,455.71	3,740.95	3,597.98	142.96	26.167	
12,900.00	6,944.96	7,332.23	6,980.57	102.29	112.95	-104.22	551.20	2,455.85	3,839.81	3,696.85	142.96	26.860	
13,000.00	6,944.87	7,336.23	6,984.57	103.85	112.96	-104.61	551.16	2,456.00	3,938.72	3,795.77	142.96	27.552	
13,100.00	6,944.78	7,340.26	6,988.59	105.40	112.97	-105.00	551.12	2,456.14	4,037.69	3,894.73	142.96	28.243	
13,200.00	6,944.69	7,344.30	6,992.63	106.96	112.98	-105.39	551.08	2,456.29	4,136.70	3,993.73	142.97	28.934	
13,300.00	6,944.60	7,348.38	6,996.70	108.52	112.99	-105.78	551.04	2,456.44	4,235.75	4,092.77	142.98	29.625	
13,400.00	6,944.51	7,352.48	7,000.80	110.08	113.00	-106.17	550.99	2,456.59	4,334.85	4,191.85	143.00	30.315	
13,500.00	6,944.42	7,356.60	7,004.92	111.65	113.01	-106.57	550.95	2,456.74	4,433.98	4,290.97	143.01	31.004	
13,600.00	6,944.33	7,360.75	7,009.06	113.21	113.02	-106.96	550.91	2,456.89	4,533.15	4,390.11	143.04	31.692	
13,700.00	6,944.24	7,364.92	7,013.23	114.78	113.03	-107.36	550.87	2,457.05	4,632.35	4,489.28	143.06	32.380	
13,800.00	6,944.15	7,369.12	7,017.43	116.34	113.03	-107.75	550.82	2,457.21	4,731.58	4,588.48	143.09	33.067	
13,900.00	6,944.06	7,373.35	7,021.66	117.91	113.04	-108.15	550.78	2,457.36	4,830.83	4,687.71	143.12	33.753	
14,000.00	6,943.97	7,377.60	7,025.91	119.48	113.05	-108.55	550.74	2,457.52	4,930.12	4,786.96	143.16	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 #722H - Slot B05
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 #722H	**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
14,100.00	6,943.88	7,381.88	7,030.18	121.05	113.06	-108.95	550.69	2,457.68	5,029.43	4,886.24	143.19	35.124	
14,200.00	6,943.79	7,386.19	7,034.49	122.62	113.07	-109.35	550.65	2,457.84	5,128.76	4,985.53	143.23	35.807	
14,300.00	6,943.70	7,390.53	7,038.82	124.19	113.08	-109.75	550.60	2,458.01	5,228.12	5,084.85	143.27	36.491	
14,400.00	6,943.61	7,394.89	7,043.18	125.76	113.09	-110.15	550.56	2,458.17	5,327.50	5,184.18	143.32	37.173	
14,500.00	6,943.52	7,399.28	7,047.57	127.33	113.10	-110.55	550.51	2,458.34	5,426.89	5,283.53	143.36	37.854	
14,600.00	6,943.43	7,403.70	7,051.98	128.90	113.11	-110.95	550.47	2,458.51	5,526.31	5,382.90	143.41	38.535	
14,700.00	6,943.34	7,408.14	7,056.42	130.48	113.12	-111.35	550.42	2,458.68	5,625.74	5,482.28	143.46	39.215	
14,800.00	6,943.25	7,412.62	7,060.90	132.05	113.13	-111.76	550.37	2,458.85	5,725.19	5,581.68	143.51	39.893	
14,900.00	6,943.16	7,417.12	7,065.40	133.63	113.14	-112.16	550.32	2,459.02	5,824.66	5,681.09	143.57	40.571	
15,000.00	6,943.07	7,421.66	7,069.93	135.20	113.15	-112.56	550.28	2,459.20	5,924.14	5,780.52	143.62	41.248	
15,100.00	6,942.98	7,426.22	7,074.48	136.78	113.16	-112.97	550.23	2,459.37	6,023.64	5,879.96	143.68	41.924	
15,200.00	6,942.89	7,430.81	7,079.07	138.36	113.17	-113.37	550.18	2,459.55	6,123.15	5,979.41	143.74	42.599	
15,300.00	6,942.80	7,435.44	7,083.69	139.93	113.18	-113.77	550.13	2,459.73	6,222.67	6,078.87	143.80	43.273	
15,400.00	6,942.71	7,440.09	7,088.34	141.51	113.19	-114.18	550.08	2,459.91	6,322.20	6,178.34	143.86	43.947	
15,500.00	6,942.62	7,444.77	7,093.02	143.09	113.20	-114.58	550.03	2,460.10	6,421.75	6,277.82	143.92	44.619	
15,600.00	6,942.53	7,449.49	7,097.73	144.67	113.21	-114.99	549.98	2,460.28	6,521.31	6,377.32	143.99	45.290	
15,700.00	6,942.44	7,454.23	7,102.48	146.25	113.23	-115.39	549.93	2,460.47	6,620.88	6,476.82	144.06	45.960	
15,800.00	6,942.35	7,459.01	7,107.25	147.83	113.24	-115.80	549.87	2,460.66	6,720.45	6,576.33	144.13	46.629	
15,900.00	6,942.26	7,463.82	7,112.05	149.41	113.25	-116.20	549.82	2,460.85	6,820.04	6,675.85	144.20	47.297	
16,000.00	6,942.17	7,468.66	7,116.89	150.99	113.26	-116.61	549.77	2,461.04	6,919.64	6,775.37	144.27	47.964	
16,100.00	6,942.08	7,473.54	7,121.76	152.57	113.27	-117.01	549.71	2,461.24	7,019.24	6,874.90	144.34	48.630	
16,200.00	6,941.99	7,478.44	7,126.67	154.16	113.28	-117.42	549.66	2,461.43	7,118.86	6,974.44	144.41	49.295	
16,300.00	6,941.90	7,483.38	7,131.60	155.74	113.29	-117.82	549.61	2,461.63	7,218.48	7,073.99	144.49	49.959	
16,400.00	6,941.81	7,488.36	7,136.57	157.32	113.30	-118.22	549.55	2,461.83	7,318.11	7,173.54	144.56	50.622	
16,500.00	6,941.72	7,493.37	7,141.57	158.91	113.31	-118.63	549.49	2,462.03	7,417.74	7,273.10	144.64	51.284	
16,600.00	6,941.63	7,498.41	7,146.61	160.49	113.32	-119.03	549.44	2,462.24	7,517.39	7,372.67	144.72	51.944	
16,700.00	6,941.54	7,503.49	7,151.68	162.07	113.34	-119.43	549.38	2,462.45	7,617.04	7,472.24	144.80	52.604	
16,800.00	6,941.45	7,508.60	7,156.79	163.66	113.35	-119.84	549.32	2,462.66	7,716.70	7,571.81	144.88	53.262	
16,900.00	6,941.36	7,513.74	7,161.93	165.24	113.36	-120.24	549.27	2,462.87	7,816.36	7,671.39	144.96	53.919	
17,000.00	6,941.27	7,518.93	7,167.11	166.83	113.37	-120.64	549.21	2,463.08	7,916.03	7,770.98	145.05	54.576	
17,100.00	6,941.18	7,524.15	7,172.33	168.42	113.38	-121.04	549.15	2,463.30	8,015.70	7,870.57	145.13	55.231	
17,200.00	6,941.09	7,529.40	7,177.58	170.00	113.39	-121.45	549.09	2,463.51	8,115.38	7,970.16	145.22	55.884	
17,300.00	6,941.00	7,534.69	7,182.86	171.59	113.41	-121.85	549.03	2,463.73	8,215.07	8,069.76	145.30	56.537	
17,400.00	6,940.91	7,540.02	7,188.19	173.18	113.42	-122.25	548.97	2,463.96	8,314.76	8,169.36	145.39	57.189	
17,500.00	6,940.82	7,545.39	7,193.55	174.76	113.43	-122.65	548.90	2,464.18	8,414.45	8,268.97	145.48	57.839	
17,600.00	6,940.73	7,550.79	7,198.95	176.35	113.44	-123.04	548.84	2,464.41	8,514.15	8,368.58	145.57	58.488	
17,700.00	6,940.64	7,556.24	7,204.39	177.94	113.45	-123.44	548.78	2,464.64	8,613.85	8,468.19	145.66	59.136	
17,800.00	6,940.55	7,561.72	7,209.86	179.53	113.47	-123.84	548.71	2,464.87	8,713.56	8,567.81	145.75	59.783	
17,900.00	6,940.46	7,567.24	7,215.38	181.11	113.48	-124.24	548.65	2,465.10	8,813.27	8,667.43	145.85	60.429	
18,000.00	6,940.37	7,572.80	7,220.94	182.70	113.49	-124.63	548.58	2,465.34	8,912.99	8,767.05	145.94	61.073	
18,100.00	6,940.28	7,578.40	7,226.53	184.29	113.50	-125.03	548.52	2,465.58	9,012.71	8,866.67	146.03	61.716	
18,200.00	6,940.19	7,584.04	7,232.17	185.88	113.52	-125.42	548.45	2,465.82	9,112.43	8,966.30	146.13	62.358	
18,300.00	6,940.10	7,589.73	7,237.84	187.47	113.53	-125.81	548.38	2,466.07	9,212.16	9,065.93	146.23	62.999	
18,400.00	6,940.01	7,595.45	7,243.56	189.06	113.54	-126.21	548.32	2,466.31	9,311.88	9,165.56	146.32	63.639	
18,500.00	6,939.92	7,601.22	7,249.32	190.65	113.56	-126.60	548.25	2,466.56	9,411.62	9,265.20	146.42	64.277	
18,600.00	6,939.83	7,607.02	7,255.12	192.24	113.57	-126.99	548.18	2,466.82	9,511.35	9,364.83	146.52	64.914	
18,700.00	6,939.74	7,612.88	7,260.97	193.83	113.58	-127.38	548.11	2,467.07	9,611.09	9,464.47	146.62	65.550	
18,800.00	6,939.65	7,618.77	7,266.86	195.42	113.60	-127.77	548.04	2,467.33	9,710.83	9,564.11	146.72	66.185	
18,900.00	6,939.56	7,624.71	7,272.79	197.01	113.61	-128.15	547.96	2,467.59	9,810.58	9,663.75	146.83	66.818	
19,000.00	6,939.47	7,630.69	7,278.76	198.60	113.62	-128.54	547.89	2,467.86	9,910.32	9,763.39	146.93	67.450	
19,100.00	6,939.38	7,636.72	7,284.79	200.19	113.64	-128.92	547.82	2,468.12	10,010.07	9,863.04	147.03	68.081	
19,200.00	6,939.29	7,642.79	7,290.85	201.78	113.65	-129.31	547.74	2,468.39	10,109.82	9,962.69	147.14	68.710	

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 #722H - Slot B05
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 #722H	**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)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
19,300.00	6,939.20	7,648.91	7,296.96	203.37	113.67	-129.69	547.67	2,468.67	10,209.58	10,062.33	147.24	69.339	
19,400.00	6,939.11	7,655.07	7,303.12	204.97	113.68	-130.07	547.59	2,468.94	10,309.33	10,161.98	147.35	69.966	
19,500.00	6,939.02	7,661.28	7,309.32	206.56	113.69	-130.45	547.52	2,469.22	10,409.09	10,261.63	147.46	70.591	
19,600.00	6,938.93	7,667.54	7,315.57	208.15	113.71	-130.83	547.44	2,469.50	10,508.85	10,361.29	147.56	71.216	
19,700.00	6,938.83	7,673.85	7,321.87	209.74	113.72	-131.21	547.36	2,469.79	10,608.61	10,460.94	147.67	71.839	
19,800.00	6,938.74	7,680.20	7,328.22	211.33	113.74	-131.58	547.28	2,470.08	10,708.37	10,560.59	147.78	72.460	
19,900.00	6,938.65	7,686.60	7,334.62	212.93	113.75	-131.96	547.20	2,470.37	10,808.14	10,660.25	147.89	73.081	
20,000.00	6,938.56	7,693.06	7,341.06	214.52	113.77	-132.33	547.12	2,470.67	10,907.91	10,759.90	148.00	73.700	
20,100.00	6,938.47	7,699.56	7,347.56	216.11	113.78	-132.70	547.03	2,470.97	11,007.67	10,859.56	148.12	74.318	
20,200.00	6,938.38	7,706.11	7,354.10	217.71	113.80	-133.07	546.95	2,471.27	11,107.44	10,959.21	148.23	74.934	
20,300.00	6,938.29	7,712.72	7,360.70	219.30	113.81	-133.44	546.87	2,471.57	11,207.21	11,058.87	148.34	75.549	
20,400.00	6,938.20	7,719.37	7,367.35	220.89	113.83	-133.81	546.78	2,471.88	11,306.99	11,158.53	148.46	76.163	
20,500.00	6,938.11	7,726.08	7,374.05	222.49	113.84	-134.17	546.70	2,472.20	11,406.76	11,258.19	148.57	76.776	
20,600.00	6,938.02	7,732.85	7,380.81	224.08	113.86	-134.54	546.61	2,472.51	11,506.54	11,357.85	148.69	77.387	
20,626.08	6,938.00	7,734.62	7,382.58	224.49	113.86	-134.63	546.59	2,472.60	11,532.56	11,383.84	148.72	77.546	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-86.02	1,036.47	-14,884.85	14,921.02				
100.00	100.00	38.02	38.02	0.25	0.07	-86.02	1,036.49	-14,884.85	14,920.89	14,920.58	0.32	N/A	
200.00	200.00	138.09	138.09	0.61	0.25	-86.02	1,036.70	-14,884.84	14,920.89	14,920.04	0.86	N/A	
300.00	300.00	238.15	238.15	0.97	0.43	-86.01	1,037.16	-14,884.80	14,920.89	14,919.50	1.39	N/A	
400.00	400.00	338.21	338.21	1.33	0.61	-86.01	1,037.85	-14,884.75	14,920.89	14,918.96	1.93	7,721.284	
444.99	444.99	383.00	382.99	1.49	0.70	-86.01	1,038.25	-14,884.72	14,920.89	14,918.70	2.19	6,812.938	CC
500.00	500.00	414.00	413.99	1.68	0.81	-86.01	1,038.69	-14,884.72	14,920.93	14,918.44	2.50	5,972.248	
535.00	535.00	425.60	425.59	1.81	0.86	-96.68	1,038.91	-14,884.73	14,921.04	14,918.38	2.67	5,598.233	ES
600.00	599.99	445.00	444.98	2.04	0.93	-96.68	1,039.35	-14,884.79	14,921.44	14,918.47	2.97	5,028.395	
700.00	699.99	476.00	475.97	2.40	1.04	-96.67	1,040.33	-14,885.01	14,922.46	14,919.03	3.44	4,342.309	
800.00	799.98	491.25	491.20	2.76	1.10	-96.67	1,040.97	-14,885.20	14,923.99	14,920.14	3.85	3,877.070	
900.00	899.97	507.00	506.93	3.12	1.15	-96.67	1,041.72	-14,885.43	14,926.05	14,921.79	4.26	3,500.686	
1,000.00	999.96	537.00	536.87	3.48	1.26	-96.66	1,043.51	-14,886.02	14,928.63	14,923.90	4.73	3,156.389	
1,100.00	1,099.96	551.90	551.73	3.84	1.32	-96.66	1,044.57	-14,886.40	14,931.75	14,926.60	5.14	2,904.280	
1,200.00	1,199.95	568.00	567.77	4.19	1.38	-96.66	1,045.82	-14,886.87	14,935.42	14,929.86	5.56	2,687.690	
1,300.00	1,299.94	583.17	582.88	4.55	1.44	-96.65	1,047.12	-14,887.40	14,939.66	14,933.69	5.97	2,502.658	
1,400.00	1,399.93	599.00	598.63	4.91	1.50	-96.65	1,048.61	-14,888.04	14,944.47	14,938.09	6.38	2,340.906	
1,500.00	1,499.93	615.86	615.38	5.27	1.56	-96.64	1,050.34	-14,888.81	14,949.85	14,943.04	6.80	2,197.627	
1,600.00	1,599.92	630.00	629.42	5.63	1.61	-96.64	1,051.90	-14,889.50	14,955.76	14,948.55	7.21	2,074.061	
1,700.00	1,699.91	630.00	629.42	5.99	1.61	-96.64	1,051.90	-14,889.50	14,962.31	14,954.75	7.57	1,977.502	
1,800.00	1,799.90	659.73	658.87	6.34	1.72	-96.62	1,055.58	-14,891.18	14,969.31	14,961.27	8.03	1,863.228	
1,900.00	1,899.90	691.00	689.73	6.70	1.84	-96.61	1,060.14	-14,893.32	14,977.03	14,968.52	8.51	1,760.513	
2,000.00	1,999.89	691.00	689.73	7.06	1.84	-96.61	1,060.14	-14,893.32	14,985.16	14,976.30	8.86	1,691.139	
2,100.00	2,099.88	691.00	689.73	7.42	1.84	-96.61	1,060.14	-14,893.32	14,993.97	14,984.75	9.21	1,627.263	
2,200.00	2,199.87	722.00	720.19	7.78	1.97	-96.59	1,065.31	-14,895.83	15,003.38	14,993.69	9.69	1,548.596	
2,300.00	2,299.87	722.00	720.19	8.14	1.97	-96.59	1,065.31	-14,895.83	15,013.30	15,003.26	10.04	1,495.335	
2,400.00	2,399.86	722.00	720.19	8.50	1.97	-96.59	1,065.31	-14,895.83	15,023.88	15,013.49	10.39	1,445.836	
2,500.00	2,499.85	753.00	750.51	8.85	2.09	-96.57	1,071.08	-14,898.75	15,034.97	15,024.10	10.87	1,383.645	
2,600.00	2,599.85	753.00	750.51	9.21	2.09	-96.57	1,071.08	-14,898.75	15,046.66	15,035.44	11.22	1,341.576	
2,700.00	2,699.84	783.00	779.68	9.57	2.21	-96.55	1,077.31	-14,901.93	15,058.96	15,047.27	11.69	1,288.317	
2,800.00	2,799.83	783.00	779.68	9.93	2.21	-96.55	1,077.31	-14,901.93	15,071.77	15,059.73	12.04	1,252.158	
2,900.00	2,899.82	783.00	779.68	10.29	2.21	-96.55	1,077.31	-14,901.93	15,085.22	15,072.84	12.38	1,218.168	
3,000.00	2,999.82	814.00	809.63	10.65	2.34	-96.53	1,084.40	-14,905.67	15,099.27	15,086.41	12.86	1,173.883	
3,100.00	3,099.81	814.00	809.63	11.01	2.34	-96.53	1,084.40	-14,905.67	15,113.83	15,100.62	13.21	1,144.322	
3,200.00	3,199.80	814.00	809.63	11.36	2.34	-96.53	1,084.40	-14,905.67	15,129.03	15,115.48	13.55	1,116.392	
3,300.00	3,299.79	814.00	809.63	11.72	2.34	-96.53	1,084.40	-14,905.67	15,144.88	15,130.99	13.89	1,089.968	
3,400.00	3,399.79	814.00	809.63	12.08	2.34	-96.53	1,084.40	-14,905.67	15,161.37	15,147.14	14.24	1,064.938	
3,500.00	3,499.78	843.62	838.04	12.44	2.48	-96.50	1,091.69	-14,909.78	15,178.16	15,163.44	14.71	1,031.642	
3,600.00	3,599.77	876.00	868.84	12.80	2.64	-96.47	1,100.24	-14,914.94	15,195.95	15,180.75	15.20	999.773	
3,700.00	3,699.76	876.00	868.84	13.16	2.64	-96.47	1,100.24	-14,914.94	15,213.97	15,198.43	15.54	979.133	
3,800.00	3,799.76	876.00	868.84	13.52	2.64	-96.47	1,100.24	-14,914.94	15,232.63	15,216.75	15.88	959.482	
3,900.00	3,899.75	876.00	868.84	13.87	2.64	-96.47	1,100.24	-14,914.94	15,251.91	15,235.70	16.21	940.754	
4,000.00	3,999.74	876.00	868.84	14.23	2.64	-96.47	1,100.24	-14,914.94	15,271.83	15,255.28	16.55	922.891	
4,100.00	4,099.73	892.66	884.57	14.59	2.72	-96.45	1,104.89	-14,917.84	15,292.28	15,275.32	16.96	901.553	
4,200.00	4,199.73	907.00	898.04	14.95	2.80	-96.44	1,109.07	-14,920.45	15,313.33	15,295.97	17.36	881.899	
4,300.00	4,299.72	907.00	898.04	15.31	2.80	-96.44	1,109.07	-14,920.45	15,334.93	15,317.24	17.70	866.595	
4,400.00	4,399.71	938.00	926.95	15.67	2.96	-96.41	1,118.57	-14,926.36	15,357.11	15,338.93	18.18	844.641	
4,500.00	4,499.70	938.00	926.95	16.03	2.96	-96.41	1,118.57	-14,926.36	15,379.76	15,361.25	18.51	830.847	
4,600.00	4,599.70	953.45	941.26	16.38	3.05	-96.39	1,123.55	-14,929.40	15,402.98	15,384.06	18.92	814.106	
4,700.00	4,699.69	970.00	956.49	16.74	3.14	-96.37	1,129.09	-14,932.72	15,426.73	15,407.40	19.33	797.925	
4,800.00	4,799.68	970.00	956.49	17.10	3.14	-96.37	1,129.09	-14,932.72	15,451.03	15,431.37	19.66	785.955	
4,900.00	4,899.67	1,002.00	985.72	17.46	3.33	-96.33	1,140.32	-14,939.33	15,475.81	15,455.65	20.16	767.691	

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 #722H - Slot B05
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 #722H	**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	4,999.67	1,002.00	985.72	17.82	3.33	-96.33	1,140.32	-14,939.33	15,501.13	15,480.65	20.48	756.827	
5,100.00	5,099.66	1,033.00	1,013.70	18.18	3.52	-96.29	1,151.87	-14,945.98	15,527.00	15,506.02	20.98	740.037	
5,200.00	5,199.65	1,033.00	1,013.70	18.53	3.52	-96.29	1,151.87	-14,945.98	15,553.35	15,532.04	21.30	730.148	
5,300.00	5,299.64	1,051.16	1,029.93	18.89	3.64	-96.26	1,158.97	-14,949.98	15,580.23	15,558.50	21.73	716.994	
5,400.00	5,399.64	1,064.00	1,041.34	19.25	3.72	-96.25	1,164.14	-14,952.83	15,607.62	15,585.50	22.12	705.445	
5,500.00	5,499.63	1,064.00	1,041.34	19.61	3.72	-96.25	1,164.14	-14,952.83	15,635.57	15,613.13	22.44	696.747	
5,600.00	5,599.62	1,298.61	1,244.62	19.97	5.46	-95.87	1,269.32	-15,004.12	15,663.93	15,639.58	24.35	643.157	
5,700.00	5,699.61	1,316.00	1,259.59	20.33	5.60	-95.84	1,277.40	-15,007.78	15,691.69	15,666.90	24.79	632.860	
5,800.00	5,799.61	1,347.00	1,286.24	20.69	5.84	-95.79	1,291.77	-15,014.40	15,719.88	15,694.55	25.33	620.513	
5,900.00	5,899.60	1,409.00	1,339.31	21.04	6.34	-95.69	1,320.90	-15,027.81	15,748.46	15,722.36	26.11	603.247	
6,000.00	5,999.59	1,409.00	1,339.31	21.40	6.34	-95.69	1,320.90	-15,027.81	15,777.44	15,751.02	26.42	597.246	
6,100.00	6,099.58	1,440.96	1,366.47	21.76	6.61	-95.63	1,336.20	-15,034.84	15,806.85	15,779.88	26.97	586.090	
6,200.00	6,199.58	1,470.00	1,391.06	22.12	6.85	-95.58	1,350.20	-15,041.39	15,836.76	15,809.26	27.50	575.890	
6,300.00	6,299.57	1,470.00	1,391.06	22.48	6.85	-95.58	1,350.20	-15,041.39	15,867.14	15,839.33	27.81	570.629	
6,315.05	6,314.62	1,470.00	1,391.06	22.53	6.85	-95.58	1,350.20	-15,041.39	15,871.76	15,843.90	27.85	569.852	
6,350.00	6,349.55	1,470.00	1,391.06	22.66	6.85	-164.70	1,350.20	-15,041.39	15,883.44	15,855.48	27.96	568.104	
6,400.00	6,399.30	1,470.00	1,391.06	22.83	6.85	-171.49	1,350.20	-15,041.39	15,903.37	15,875.26	28.11	565.820	
6,446.24	6,444.85	6,542.75	6,147.21	22.99	33.23	-169.46	2,513.18	-15,616.38	15,834.53	15,781.28	53.25	297.346	
6,450.00	6,448.52	6,546.44	6,150.89	23.00	33.24	-169.54	2,513.27	-15,616.42	15,835.36	15,782.08	53.28	297.236	
6,500.00	6,496.91	6,594.89	6,199.32	23.18	33.36	-170.25	2,514.46	-15,616.96	15,848.43	15,794.86	53.57	295.847	
6,550.00	6,544.17	6,642.16	6,246.58	23.35	33.48	-170.54	2,515.62	-15,617.49	15,865.22	15,811.36	53.86	294.586	
6,600.00	6,590.01	6,687.96	6,292.36	23.53	33.60	-170.60	2,516.75	-15,618.00	15,885.61	15,831.48	54.13	293.462	
6,650.00	6,634.14	6,732.01	6,336.39	23.70	33.71	-170.48	2,517.83	-15,618.50	15,909.50	15,855.10	54.40	292.480	
6,700.00	6,676.30	6,774.03	6,378.40	23.88	33.81	-170.23	2,518.86	-15,618.96	15,936.72	15,882.07	54.64	291.643	
6,750.00	6,716.21	6,813.76	6,418.11	24.06	33.91	-169.84	2,519.83	-15,619.41	15,967.11	15,912.23	54.88	290.955	
6,800.00	6,753.65	6,850.96	6,455.30	24.24	34.00	-169.29	2,520.74	-15,619.82	16,000.48	15,945.39	55.09	290.416	
6,850.00	6,788.37	6,885.41	6,489.74	24.44	34.09	-168.56	2,521.59	-15,620.21	16,036.64	15,981.35	55.29	290.028	
6,900.00	6,820.16	6,916.88	6,521.20	24.63	34.17	-167.58	2,522.36	-15,620.56	16,075.35	16,019.88	55.47	289.788	
6,950.00	6,848.83	6,945.18	6,549.49	24.84	34.24	-166.29	2,523.05	-15,620.87	16,116.38	16,060.74	55.63	289.695 SF	
7,000.00	6,874.19	6,970.15	6,574.45	25.06	34.30	-164.54	2,523.66	-15,621.15	16,159.47	16,103.70	55.77	289.745	
7,050.00	6,896.10	6,991.62	6,595.91	25.29	34.36	-162.09	2,524.18	-15,621.39	16,204.36	16,148.47	55.89	289.934	
7,100.00	6,914.42	7,009.46	6,613.75	25.53	34.40	-158.50	2,524.62	-15,621.59	16,250.77	16,194.79	55.99	290.254	
7,150.00	6,929.03	7,023.57	6,627.85	25.78	34.44	-152.90	2,524.96	-15,621.74	16,298.43	16,242.36	56.07	290.699	
7,200.00	6,939.85	7,033.85	6,638.12	26.05	34.46	-143.34	2,525.21	-15,621.86	16,347.02	16,290.90	56.13	291.259	
7,250.00	6,946.80	7,040.24	6,644.52	26.32	34.48	-125.40	2,525.37	-15,621.93	16,396.26	16,340.10	56.17	291.923	
7,300.00	6,949.85	7,042.71	6,646.98	26.61	34.48	-93.38	2,525.43	-15,621.96	16,445.84	16,389.65	56.19	292.679	
7,314.43	6,950.00	7,042.69	6,646.96	26.69	34.48	-82.48	2,525.43	-15,621.96	16,460.18	16,403.98	56.20	292.911	
7,400.00	6,949.92	7,041.59	6,645.86	27.21	34.48	-82.45	2,525.40	-15,621.94	16,545.14	16,488.92	56.22	294.314	
7,500.00	6,949.83	7,040.30	6,644.58	27.90	34.48	-82.41	2,525.37	-15,621.93	16,644.44	16,588.20	56.24	295.942	
7,600.00	6,949.74	7,039.02	6,643.29	28.66	34.48	-82.37	2,525.34	-15,621.92	16,743.76	16,687.49	56.27	297.559	
7,700.00	6,949.65	7,037.73	6,642.00	29.49	34.47	-82.33	2,525.31	-15,621.90	16,843.08	16,786.78	56.30	299.164	
7,800.00	6,949.56	7,036.45	6,640.72	30.38	34.47	-82.30	2,525.27	-15,621.89	16,942.41	16,886.07	56.33	300.757	
7,900.00	6,949.47	7,035.16	6,639.43	31.33	34.47	-82.26	2,525.24	-15,621.87	17,041.74	16,985.38	56.37	302.339	
8,000.00	6,949.38	7,033.87	6,638.15	32.33	34.46	-82.22	2,525.21	-15,621.86	17,141.09	17,084.68	56.40	303.909	
8,100.00	6,949.29	7,032.59	6,636.86	33.38	34.46	-82.18	2,525.18	-15,621.84	17,240.44	17,184.00	56.44	305.468	
8,200.00	6,949.20	7,031.30	6,635.58	34.47	34.46	-82.15	2,525.15	-15,621.83	17,339.80	17,283.32	56.48	307.017	
8,300.00	6,949.11	7,030.01	6,634.29	35.60	34.45	-82.11	2,525.12	-15,621.82	17,439.16	17,382.64	56.52	308.554	
8,400.00	6,949.02	7,028.73	6,633.00	36.76	34.45	-82.07	2,525.09	-15,621.80	17,538.53	17,481.97	56.56	310.080	
8,500.00	6,948.93	7,027.44	6,631.72	37.96	34.45	-82.03	2,525.06	-15,621.79	17,637.91	17,581.31	56.61	311.595	
8,600.00	6,948.84	7,026.15	6,630.43	39.18	34.44	-82.00	2,525.02	-15,621.77	17,737.30	17,680.65	56.65	313.099	
8,700.00	6,948.75	7,024.87	6,629.15	40.43	34.44	-81.96	2,524.99	-15,621.76	17,836.70	17,780.00	56.70	314.593	
8,800.00	6,948.66	7,023.58	6,627.86	41.71	34.44	-81.92	2,524.96	-15,621.74	17,936.10	17,879.35	56.75	316.076	

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 #722H - Slot B05
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 #722H	**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
8,900.00	6,948.57	7,022.29	6,626.57	43.00	34.43	-81.88	2,524.93	-15,621.73	18,035.50	17,978.71	56.80	317.549	
9,000.00	6,948.48	7,021.01	6,625.29	44.32	34.43	-81.85	2,524.90	-15,621.72	18,134.92	18,078.07	56.85	319.011	
9,100.00	6,948.39	7,019.72	6,624.00	45.66	34.43	-81.81	2,524.87	-15,621.70	18,234.33	18,177.43	56.90	320.463	
9,200.00	6,948.30	7,018.43	6,622.71	47.01	34.42	-81.77	2,524.84	-15,621.69	18,333.76	18,276.81	56.95	321.905	
9,300.00	6,948.21	7,017.15	6,621.43	48.38	34.42	-81.73	2,524.80	-15,621.67	18,433.19	18,376.18	57.01	323.337	
9,400.00	6,948.12	7,015.86	6,620.14	49.76	34.42	-81.70	2,524.77	-15,621.66	18,532.63	18,475.56	57.07	324.759	
9,500.00	6,948.03	7,014.57	6,618.86	51.16	34.41	-81.66	2,524.74	-15,621.64	18,632.07	18,574.95	57.12	326.171	
9,600.00	6,947.94	7,013.29	6,617.57	52.56	34.41	-81.62	2,524.71	-15,621.63	18,731.52	18,674.34	57.18	327.573	
9,700.00	6,947.85	7,012.00	6,616.28	53.98	34.41	-81.59	2,524.68	-15,621.62	18,830.98	18,773.74	57.24	328.966	
9,800.00	6,947.76	7,010.71	6,615.00	55.41	34.40	-81.55	2,524.65	-15,621.60	18,930.44	18,873.14	57.30	330.349	
9,900.00	6,947.67	7,009.42	6,613.71	56.85	34.40	-81.51	2,524.62	-15,621.59	19,029.91	18,972.54	57.37	331.722	
10,000.00	6,947.58	7,008.14	6,612.42	58.29	34.40	-81.47	2,524.58	-15,621.57	19,129.38	19,071.95	57.43	333.086	
10,100.00	6,947.49	7,006.85	6,611.13	59.75	34.39	-81.44	2,524.55	-15,621.56	19,228.86	19,171.36	57.50	334.441	
10,200.00	6,947.40	7,005.56	6,609.85	61.21	34.39	-81.40	2,524.52	-15,621.54	19,328.34	19,270.78	57.56	335.787	
10,300.00	6,947.31	7,004.27	6,608.56	62.68	34.39	-81.36	2,524.49	-15,621.53	19,427.83	19,370.20	57.63	337.123	
10,400.00	6,947.22	7,002.99	6,607.27	64.15	34.39	-81.32	2,524.46	-15,621.52	19,527.32	19,469.62	57.70	338.451	
10,500.00	6,947.13	7,001.70	6,605.99	65.63	34.38	-81.29	2,524.43	-15,621.50	19,626.82	19,569.05	57.77	339.770	
10,600.00	6,947.04	7,000.41	6,604.70	67.12	34.38	-81.25	2,524.40	-15,621.49	19,726.32	19,668.49	57.83	341.079	
10,700.00	6,946.95	6,999.12	6,603.41	68.61	34.38	-81.21	2,524.36	-15,621.47	19,825.83	19,767.92	57.91	342.381	
10,800.00	6,946.86	6,997.84	6,602.12	70.11	34.37	-81.17	2,524.33	-15,621.46	19,925.34	19,867.37	57.98	343.673	
10,900.00	6,946.77	6,996.55	6,600.84	71.61	34.37	-81.14	2,524.30	-15,621.44	20,024.86	19,966.81	58.05	344.957	
11,000.00	6,946.68	6,995.26	6,599.55	73.11	34.37	-81.10	2,524.27	-15,621.43	20,124.38	20,066.26	58.12	346.232	
11,100.00	6,946.59	6,993.97	6,598.26	74.62	34.36	-81.06	2,524.24	-15,621.42	20,223.91	20,165.71	58.20	347.499	
11,200.00	6,946.50	6,992.68	6,596.97	76.14	34.36	-81.02	2,524.21	-15,621.40	20,323.44	20,265.17	58.27	348.758	
11,300.00	6,946.41	6,991.40	6,595.69	77.65	34.36	-80.99	2,524.18	-15,621.39	20,422.98	20,364.63	58.35	350.008	
11,400.00	6,946.32	6,990.11	6,594.40	79.18	34.35	-80.95	2,524.14	-15,621.37	20,522.52	20,464.09	58.43	351.251	
11,500.00	6,946.23	6,988.82	6,593.11	80.70	34.35	-80.91	2,524.11	-15,621.36	20,622.06	20,563.56	58.50	352.485	
11,600.00	6,946.14	6,987.53	6,591.82	82.23	34.35	-80.88	2,524.08	-15,621.34	20,721.61	20,663.03	58.58	353.711	
11,700.00	6,946.05	6,986.24	6,590.54	83.76	34.34	-80.84	2,524.05	-15,621.33	20,821.17	20,762.50	58.66	354.930	
11,800.00	6,945.96	1,095.00	1,068.60	85.29	3.94	-5.98	1,177.09	-14,959.90	20,956.24	20,925.54	30.70	682.627	
11,900.00	6,945.87	1,078.77	1,054.38	86.82	3.83	-5.90	1,170.22	-14,956.16	21,052.19	21,021.46	30.73	685.152	
12,000.00	6,945.78	1,064.00	1,041.34	88.36	3.72	-5.83	1,164.14	-14,952.83	21,148.27	21,117.51	30.76	687.474	
12,100.00	6,945.69	1,064.00	1,041.34	89.90	3.72	-5.83	1,164.14	-14,952.83	21,244.33	21,213.45	30.89	687.842	
12,200.00	6,945.60	1,064.00	1,041.34	91.44	3.72	-5.83	1,164.14	-14,952.83	21,340.43	21,309.42	31.01	688.195	
12,300.00	6,945.51	1,064.00	1,041.34	92.99	3.72	-5.83	1,164.14	-14,952.83	21,436.56	21,405.43	31.13	688.534	
12,400.00	6,945.42	1,064.00	1,041.34	94.53	3.72	-5.83	1,164.14	-14,952.83	21,532.73	21,501.47	31.26	688.859	
12,500.00	6,945.33	1,064.00	1,041.34	96.08	3.72	-5.83	1,164.14	-14,952.83	21,628.93	21,597.54	31.38	689.171	
12,600.00	6,945.24	1,064.00	1,041.34	97.63	3.72	-5.83	1,164.14	-14,952.83	21,725.16	21,693.65	31.51	689.471	
12,700.00	6,945.15	1,064.00	1,041.34	99.18	3.72	-5.83	1,164.14	-14,952.83	21,821.43	21,789.80	31.64	689.759	
12,800.00	6,945.06	1,064.00	1,041.34	100.74	3.72	-5.83	1,164.14	-14,952.83	21,917.74	21,885.97	31.76	690.035	
12,900.00	6,944.96	1,064.00	1,041.34	102.29	3.72	-5.83	1,164.14	-14,952.83	22,014.07	21,982.18	31.89	690.301	
13,000.00	6,944.87	1,050.12	1,029.01	103.85	3.63	-5.76	1,158.56	-14,949.75	22,110.41	22,078.47	31.94	692.171	
13,100.00	6,944.78	1,046.80	1,026.05	105.40	3.61	-5.75	1,157.25	-14,949.01	22,206.80	22,174.74	32.05	692.793	
13,200.00	6,944.69	1,033.00	1,013.70	106.96	3.52	-5.69	1,151.87	-14,945.98	22,303.23	22,271.12	32.11	694.618	
13,300.00	6,944.60	1,033.00	1,013.70	108.52	3.52	-5.69	1,151.87	-14,945.98	22,399.66	22,367.42	32.24	694.823	
13,400.00	6,944.51	1,033.00	1,013.70	110.08	3.52	-5.69	1,151.87	-14,945.98	22,496.12	22,463.75	32.37	695.019	
13,500.00	6,944.42	1,033.00	1,013.70	111.65	3.52	-5.69	1,151.87	-14,945.98	22,592.62	22,560.12	32.50	695.208	
13,600.00	6,944.33	1,033.00	1,013.70	113.21	3.52	-5.69	1,151.87	-14,945.98	22,689.14	22,656.51	32.63	695.390	
13,700.00	6,944.24	1,033.00	1,013.70	114.78	3.52	-5.69	1,151.87	-14,945.98	22,785.69	22,752.94	32.76	695.564	
13,800.00	6,944.15	1,033.00	1,013.70	116.34	3.52	-5.69	1,151.87	-14,945.98	22,882.28	22,849.39	32.89	695.732	
13,900.00	6,944.06	1,033.00	1,013.70	117.91	3.52	-5.69	1,151.87	-14,945.98	22,978.89	22,945.87	33.02	695.894	
14,000.00	6,943.97	1,033.00	1,013.70	119.48	3.52	-5.69	1,151.87	-14,945.98	23,075.53	23,042.38	33.15	696.050	

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 #722H - Slot B05
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 #722H	**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)	Rule Assigned: Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.00	6,943.88	1,033.00	1,013.70	121.05	3.52	-5.69	1,151.87	-14,945.98	23,172.20	23,138.92	33.28	696.201	
14,200.00	6,943.79	1,017.47	999.73	122.62	3.43	-5.62	1,145.99	-14,942.62	23,268.85	23,235.51	33.34	697.945	
14,300.00	6,943.70	1,002.00	985.72	124.19	3.33	-5.55	1,140.32	-14,939.33	23,365.60	23,332.20	33.40	699.668	
14,400.00	6,943.61	1,002.00	985.72	125.76	3.33	-5.55	1,140.32	-14,939.33	23,462.32	23,428.79	33.53	699.782	
14,500.00	6,943.52	1,002.00	985.72	127.33	3.33	-5.55	1,140.32	-14,939.33	23,559.07	23,525.41	33.66	699.892	
14,600.00	6,943.43	1,002.00	985.72	128.90	3.33	-5.55	1,140.32	-14,939.33	23,655.85	23,622.05	33.79	699.998	
14,700.00	6,943.34	1,002.00	985.72	130.48	3.33	-5.55	1,140.32	-14,939.33	23,752.65	23,718.73	33.93	700.100	
14,800.00	6,943.25	1,002.00	985.72	132.05	3.33	-5.55	1,140.32	-14,939.33	23,849.48	23,815.42	34.06	700.198	
14,900.00	6,943.16	1,002.00	985.72	133.63	3.33	-5.55	1,140.32	-14,939.33	23,946.34	23,912.15	34.19	700.293	
15,000.00	6,943.07	1,002.00	985.72	135.20	3.33	-5.55	1,140.32	-14,939.33	24,043.22	24,008.90	34.33	700.385	
15,100.00	6,942.98	1,002.00	985.72	136.78	3.33	-5.55	1,140.32	-14,939.33	24,140.13	24,105.67	34.46	700.475	
15,200.00	6,942.89	1,002.00	985.72	138.36	3.33	-5.55	1,140.32	-14,939.33	24,237.07	24,202.47	34.60	700.561	
15,300.00	6,942.80	1,002.00	985.72	139.93	3.33	-5.55	1,140.32	-14,939.33	24,334.02	24,299.29	34.73	700.645	
15,400.00	6,942.71	1,002.00	985.72	141.51	3.33	-5.55	1,140.32	-14,939.33	24,431.01	24,396.14	34.87	700.726	
15,500.00	6,942.62	987.48	972.49	143.09	3.24	-5.49	1,135.14	-14,936.30	24,527.98	24,493.04	34.93	702.112	
15,600.00	6,942.53	985.09	970.31	144.67	3.23	-5.48	1,134.31	-14,935.81	24,624.99	24,589.93	35.06	702.394	
15,700.00	6,942.44	970.00	956.49	146.25	3.14	-5.42	1,129.09	-14,932.72	24,722.06	24,686.93	35.13	703.809	
15,800.00	6,942.35	970.00	956.49	147.83	3.14	-5.42	1,129.09	-14,932.72	24,819.11	24,783.85	35.26	703.863	
15,900.00	6,942.26	970.00	956.49	149.41	3.14	-5.42	1,129.09	-14,932.72	24,916.18	24,880.79	35.40	703.916	
16,000.00	6,942.17	970.00	956.49	150.99	3.14	-5.42	1,129.09	-14,932.72	25,013.28	24,977.75	35.53	703.967	
16,100.00	6,942.08	970.00	956.49	152.57	3.14	-5.42	1,129.09	-14,932.72	25,110.40	25,074.73	35.67	704.017	
16,200.00	6,941.99	970.00	956.49	154.16	3.14	-5.42	1,129.09	-14,932.72	25,207.54	25,171.74	35.80	704.066	
16,300.00	6,941.90	970.00	956.49	155.74	3.14	-5.42	1,129.09	-14,932.72	25,304.71	25,268.77	35.94	704.114	
16,400.00	6,941.81	970.00	956.49	157.32	3.14	-5.42	1,129.09	-14,932.72	25,401.89	25,365.82	36.07	704.161	
16,500.00	6,941.72	970.00	956.49	158.91	3.14	-5.42	1,129.09	-14,932.72	25,499.10	25,462.89	36.21	704.207	
16,600.00	6,941.63	970.00	956.49	160.49	3.14	-5.42	1,129.09	-14,932.72	25,596.33	25,559.98	36.35	704.253	
16,700.00	6,941.54	970.00	956.49	162.07	3.14	-5.42	1,129.09	-14,932.72	25,693.58	25,657.10	36.48	704.297	
16,800.00	6,941.45	970.00	956.49	163.66	3.14	-5.42	1,129.09	-14,932.72	25,790.85	25,754.23	36.62	704.341	
16,900.00	6,941.36	970.00	956.49	165.24	3.14	-5.42	1,129.09	-14,932.72	25,888.14	25,851.39	36.75	704.385	
17,000.00	6,941.27	954.44	942.17	166.83	3.05	-5.36	1,123.87	-14,929.59	25,985.41	25,948.58	36.83	705.631	
17,100.00	6,941.18	938.00	926.95	168.42	2.96	-5.29	1,118.57	-14,926.36	26,082.77	26,045.87	36.90	706.932	
17,200.00	6,941.09	938.00	926.95	170.00	2.96	-5.29	1,118.57	-14,926.36	26,180.10	26,143.06	37.03	706.959	
17,300.00	6,941.00	938.00	926.95	171.59	2.96	-5.29	1,118.57	-14,926.36	26,277.44	26,240.27	37.17	706.985	
17,400.00	6,940.91	938.00	926.95	173.18	2.96	-5.29	1,118.57	-14,926.36	26,374.81	26,337.51	37.30	707.011	
17,500.00	6,940.82	938.00	926.95	174.76	2.96	-5.29	1,118.57	-14,926.36	26,472.20	26,434.76	37.44	707.037	
17,600.00	6,940.73	938.00	926.95	176.35	2.96	-5.29	1,118.57	-14,926.36	26,569.60	26,532.03	37.58	707.063	
17,700.00	6,940.64	938.00	926.95	177.94	2.96	-5.29	1,118.57	-14,926.36	26,667.03	26,629.32	37.71	707.089	
17,800.00	6,940.55	938.00	926.95	179.53	2.96	-5.29	1,118.57	-14,926.36	26,764.48	26,726.63	37.85	707.115	
17,900.00	6,940.46	938.00	926.95	181.11	2.96	-5.29	1,118.57	-14,926.36	26,861.94	26,823.95	37.99	707.141	
18,000.00	6,940.37	938.00	926.95	182.70	2.96	-5.29	1,118.57	-14,926.36	26,959.42	26,921.30	38.12	707.168	
18,100.00	6,940.28	938.00	926.95	184.29	2.96	-5.29	1,118.57	-14,926.36	27,056.92	27,018.66	38.26	707.194	
18,200.00	6,940.19	938.00	926.95	185.88	2.96	-5.29	1,118.57	-14,926.36	27,154.44	27,116.04	38.40	707.221	
18,300.00	6,940.10	938.00	926.95	187.47	2.96	-5.29	1,118.57	-14,926.36	27,251.98	27,213.44	38.53	707.249	
18,400.00	6,940.01	938.00	926.95	189.06	2.96	-5.29	1,118.57	-14,926.36	27,349.53	27,310.86	38.67	707.276	
18,500.00	6,939.92	938.00	926.95	190.65	2.96	-5.29	1,118.57	-14,926.36	27,447.10	27,408.30	38.81	707.304	
18,600.00	6,939.83	923.54	913.50	192.24	2.88	-5.24	1,114.06	-14,923.57	27,544.65	27,505.76	38.89	708.283	
18,700.00	6,939.74	921.70	911.78	193.83	2.87	-5.23	1,113.50	-14,923.22	27,642.25	27,603.23	39.02	708.426	
18,800.00	6,939.65	907.00	898.04	195.42	2.80	-5.18	1,109.07	-14,920.45	27,739.89	27,700.79	39.10	709.405	
18,900.00	6,939.56	907.00	898.04	197.01	2.80	-5.18	1,109.07	-14,920.45	27,837.51	27,798.27	39.24	709.422	
19,000.00	6,939.47	907.00	898.04	198.60	2.80	-5.18	1,109.07	-14,920.45	27,935.14	27,895.77	39.38	709.439	
19,100.00	6,939.38	907.00	898.04	200.19	2.80	-5.18	1,109.07	-14,920.45	28,032.80	27,993.28	39.51	709.457	
19,200.00	6,939.29	907.00	898.04	201.78	2.80	-5.18	1,109.07	-14,920.45	28,130.47	28,090.82	39.65	709.475	

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 #722H - Slot B05
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 #722H	**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
19,300.00	6,939.20	907.00	898.04	203.37	2.80	-5.18	1,109.07	-14,920.45	28,228.15	28,188.36	39.79	709.494	
19,400.00	6,939.11	907.00	898.04	204.97	2.80	-5.18	1,109.07	-14,920.45	28,325.85	28,285.93	39.92	709.513	
19,500.00	6,939.02	907.00	898.04	206.56	2.80	-5.18	1,109.07	-14,920.45	28,423.57	28,383.51	40.06	709.533	
19,600.00	6,938.93	907.00	898.04	208.15	2.80	-5.18	1,109.07	-14,920.45	28,521.30	28,481.10	40.20	709.554	
19,700.00	6,938.83	907.00	898.04	209.74	2.80	-5.18	1,109.07	-14,920.45	28,619.05	28,578.72	40.33	709.575	
19,800.00	6,938.74	907.00	898.04	211.33	2.80	-5.18	1,109.07	-14,920.45	28,716.81	28,676.34	40.47	709.596	
19,900.00	6,938.65	907.00	898.04	212.93	2.80	-5.18	1,109.07	-14,920.45	28,814.59	28,773.99	40.61	709.619	
20,000.00	6,938.56	907.00	898.04	214.52	2.80	-5.18	1,109.07	-14,920.45	28,912.39	28,871.64	40.74	709.641	
20,100.00	6,938.47	907.00	898.04	216.11	2.80	-5.18	1,109.07	-14,920.45	29,010.20	28,969.32	40.88	709.665	
20,200.00	6,938.38	907.00	898.04	217.71	2.80	-5.18	1,109.07	-14,920.45	29,108.02	29,067.00	41.02	709.689	
20,300.00	6,938.29	907.00	898.04	219.30	2.80	-5.18	1,109.07	-14,920.45	29,205.86	29,164.71	41.15	709.713	
20,400.00	6,938.20	907.00	898.04	220.89	2.80	-5.18	1,109.07	-14,920.45	29,303.71	29,262.42	41.29	709.739	
20,500.00	6,938.11	907.00	898.04	222.49	2.80	-5.18	1,109.07	-14,920.45	29,401.58	29,360.16	41.42	709.764	
20,600.00	6,938.02	907.00	898.04	224.08	2.80	-5.18	1,109.07	-14,920.45	29,499.46	29,457.90	41.56	709.791	
20,626.08	6,938.00	907.00	898.04	224.49	2.80	-5.18	1,109.07	-14,920.45	29,525.00	29,483.40	41.60	709.797	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	150.66	-1,029.59	578.66	1,181.41				
100.00	100.00	71.00	71.00	0.25	0.76	150.66	-1,029.59	578.66	1,181.06	1,180.05	1.01	1,173.261	
200.00	200.00	171.00	171.00	0.61	1.82	150.66	-1,029.59	578.66	1,181.06	1,178.63	2.43	486.188	
300.00	300.00	271.01	271.00	0.97	3.15	150.66	-1,029.59	578.66	1,181.06	1,176.94	4.12	286.473	
400.00	400.00	371.01	371.00	1.33	5.12	150.66	-1,029.59	578.66	1,181.06	1,174.61	6.45	183.175	
500.00	500.00	471.01	471.00	1.68	7.09	150.66	-1,029.59	578.66	1,181.06	1,172.29	8.77	134.629	
513.23	513.23	483.94	483.92	1.73	7.34	139.97	-1,028.56	578.66	1,180.19	1,171.12	9.07	130.059	CC
535.00	535.00	504.91	504.89	1.81	7.75	139.97	-1,028.58	578.66	1,180.34	1,170.78	9.56	123.405	
600.00	599.99	567.52	567.50	2.04	8.99	140.00	-1,028.72	578.66	1,181.08	1,170.05	11.03	107.090	
700.00	699.99	663.85	663.81	2.40	10.88	140.05	-1,029.22	578.66	1,182.47	1,169.19	13.28	89.034	
800.00	799.98	771.03	770.98	2.76	12.95	140.10	-1,029.59	578.66	1,183.70	1,168.00	15.71	75.363	
900.00	899.97	871.03	870.97	3.12	14.85	140.14	-1,029.59	578.66	1,184.64	1,166.68	17.96	65.946	
1,000.00	999.96	970.88	970.82	3.48	16.74	140.16	-1,029.04	578.66	1,185.10	1,164.88	20.22	58.615	
1,100.00	1,099.96	1,069.11	1,069.05	3.84	18.61	140.20	-1,029.13	578.66	1,186.13	1,163.68	22.44	52.852	
1,200.00	1,199.95	1,167.34	1,167.28	4.19	20.47	140.24	-1,029.40	578.66	1,187.30	1,162.63	24.67	48.135	
1,300.00	1,299.94	1,271.03	1,270.94	4.55	22.44	140.29	-1,029.59	578.66	1,188.40	1,161.40	27.00	44.022	
1,400.00	1,399.93	1,371.02	1,370.93	4.91	24.35	140.32	-1,029.59	578.66	1,189.34	1,160.08	29.26	40.653	
1,500.00	1,499.93	1,470.80	1,470.71	5.27	26.24	140.34	-1,028.78	578.66	1,189.57	1,158.06	31.51	37.750	
1,600.00	1,599.92	1,568.12	1,568.03	5.63	28.10	140.38	-1,028.92	578.66	1,190.64	1,156.92	33.72	35.308	
1,700.00	1,699.91	1,665.45	1,665.35	5.99	29.95	140.43	-1,029.32	578.66	1,191.94	1,156.01	35.93	33.173	
1,800.00	1,799.90	1,771.02	1,770.90	6.34	31.96	140.47	-1,029.59	578.66	1,193.10	1,154.80	38.30	31.153	
1,900.00	1,899.90	1,871.01	1,870.90	6.70	33.86	140.51	-1,029.59	578.66	1,194.05	1,153.49	40.56	29.439	
2,000.00	1,999.89	1,971.00	1,970.89	7.06	35.76	140.55	-1,029.59	578.66	1,194.99	1,152.17	42.82	27.906	
2,100.00	2,099.88	2,069.35	2,069.24	7.42	37.63	140.57	-1,029.09	578.66	1,195.50	1,150.44	45.05	26.536	
2,200.00	2,199.87	2,167.64	2,167.52	7.78	39.50	140.62	-1,029.32	578.66	1,196.65	1,149.37	47.28	25.310	
2,300.00	2,299.87	2,271.01	2,270.87	8.14	41.49	140.66	-1,029.59	578.66	1,197.82	1,148.19	49.63	24.136	
2,400.00	2,399.86	2,371.01	2,370.86	8.50	43.46	140.70	-1,029.59	578.66	1,198.77	1,146.81	51.95	23.073	
2,500.00	2,499.85	2,471.00	2,470.85	8.85	45.43	140.73	-1,029.59	578.66	1,199.71	1,145.43	54.28	22.102	
2,600.00	2,599.85	2,568.70	2,568.54	9.21	47.35	140.75	-1,028.87	578.66	1,200.03	1,143.46	56.56	21.216	
2,700.00	2,699.84	2,665.99	2,665.83	9.57	49.27	140.80	-1,029.20	578.66	1,201.28	1,142.44	58.84	20.417	
2,800.00	2,799.83	2,771.02	2,770.83	9.93	51.34	140.84	-1,029.59	578.66	1,202.55	1,141.29	61.26	19.629	
2,900.00	2,899.82	2,871.01	2,870.82	10.29	53.30	140.88	-1,029.59	578.66	1,203.50	1,139.91	63.59	18.926	
3,000.00	2,999.82	2,971.00	2,970.82	10.65	55.27	140.92	-1,029.59	578.66	1,204.45	1,138.53	65.92	18.272	
3,100.00	3,099.81	3,038.00	3,037.79	11.01	56.59	140.94	-1,029.59	578.66	1,205.85	1,138.28	67.57	17.846	ES, SF
3,200.00	3,199.80	3,038.00	3,037.79	11.36	56.59	140.94	-1,029.59	578.66	1,213.66	1,146.10	67.56	17.965	
3,300.00	3,299.79	3,038.00	3,037.79	11.72	56.59	140.94	-1,029.59	578.66	1,229.58	1,162.45	67.13	18.318	
3,400.00	3,399.79	3,038.00	3,037.79	12.08	56.59	140.94	-1,029.59	578.66	1,253.30	1,186.98	66.31	18.900	
3,500.00	3,499.78	3,038.00	3,037.79	12.44	56.59	140.94	-1,029.59	578.66	1,284.38	1,219.21	65.18	19.706	
3,600.00	3,599.77	3,038.00	3,037.79	12.80	56.59	140.94	-1,029.59	578.66	1,322.32	1,258.53	63.79	20.729	
3,700.00	3,699.76	3,038.00	3,037.79	13.16	56.59	140.94	-1,029.59	578.66	1,366.54	1,304.32	62.22	21.964	
3,800.00	3,799.76	3,038.00	3,037.79	13.52	56.59	140.94	-1,029.59	578.66	1,416.44	1,355.92	60.52	23.404	
3,900.00	3,899.75	3,038.00	3,037.79	13.87	56.59	140.94	-1,029.59	578.66	1,471.46	1,412.70	58.76	25.041	
4,000.00	3,999.74	3,038.00	3,037.79	14.23	56.59	140.94	-1,029.59	578.66	1,531.05	1,474.06	56.98	26.869	
4,100.00	4,099.73	3,038.00	3,037.79	14.59	56.59	140.94	-1,029.59	578.66	1,594.68	1,539.46	55.22	28.879	
4,200.00	4,199.73	3,038.00	3,037.79	14.95	56.59	140.94	-1,029.59	578.66	1,661.89	1,608.39	53.50	31.064	
4,300.00	4,299.72	3,038.00	3,037.79	15.31	56.59	140.94	-1,029.59	578.66	1,732.27	1,680.43	51.84	33.415	
4,400.00	4,399.71	3,038.00	3,037.79	15.67	56.59	140.94	-1,029.59	578.66	1,805.45	1,755.20	50.26	35.924	
4,500.00	4,499.70	3,038.00	3,037.79	16.03	56.59	140.94	-1,029.59	578.66	1,881.11	1,832.35	48.76	38.583	
4,600.00	4,599.70	3,038.00	3,037.79	16.38	56.59	140.94	-1,029.59	578.66	1,958.94	1,911.60	47.34	41.381	
4,700.00	4,699.69	3,038.00	3,037.79	16.74	56.59	140.94	-1,029.59	578.66	2,038.71	1,992.70	46.01	44.311	
4,800.00	4,799.68	3,038.00	3,037.79	17.10	56.59	140.94	-1,029.59	578.66	2,120.20	2,075.43	44.76	47.364	
4,900.00	4,899.67	3,038.00	3,037.79	17.46	56.59	140.94	-1,029.59	578.66	2,203.21	2,159.61	43.60	50.530	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	3,038.00	3,037.79	17.82	56.59	140.94	-1,029.59	578.66	2,287.58	2,245.06	42.52	53.799	
5,100.00	5,099.66	3,038.00	3,037.79	18.18	56.59	140.94	-1,029.59	578.66	2,373.16	2,331.65	41.51	57.164	
5,200.00	5,199.65	3,038.00	3,037.79	18.53	56.59	140.94	-1,029.59	578.66	2,459.84	2,419.26	40.58	60.615	
5,300.00	5,299.64	3,038.00	3,037.79	18.89	56.59	140.94	-1,029.59	578.66	2,547.49	2,507.77	39.72	64.142	
5,400.00	5,399.64	3,038.00	3,037.79	19.25	56.59	140.94	-1,029.59	578.66	2,636.02	2,597.10	38.92	67.737	
5,500.00	5,499.63	3,038.00	3,037.79	19.61	56.59	140.94	-1,029.59	578.66	2,725.34	2,687.16	38.17	71.392	
5,600.00	5,599.62	3,038.00	3,037.79	19.97	56.59	140.94	-1,029.59	578.66	2,815.38	2,777.89	37.49	75.097	
5,700.00	5,699.61	3,038.00	3,037.79	20.33	56.59	140.94	-1,029.59	578.66	2,906.07	2,869.21	36.86	78.844	
5,800.00	5,799.61	3,038.00	3,037.79	20.69	56.59	140.94	-1,029.59	578.66	2,997.36	2,961.08	36.28	82.626	
5,900.00	5,899.60	3,038.00	3,037.79	21.04	56.59	140.94	-1,029.59	578.66	3,089.18	3,053.44	35.74	86.434	
6,000.00	5,999.59	3,038.00	3,037.79	21.40	56.59	140.94	-1,029.59	578.66	3,181.50	3,146.25	35.25	90.261	
6,100.00	6,099.58	3,038.00	3,037.79	21.76	56.59	140.94	-1,029.59	578.66	3,274.27	3,239.47	34.80	94.100	
6,200.00	6,199.58	3,038.00	3,037.79	22.12	56.59	140.94	-1,029.59	578.66	3,367.45	3,333.07	34.38	97.943	
6,300.00	6,299.57	3,038.00	3,037.79	22.48	56.59	140.94	-1,029.59	578.66	3,461.01	3,427.01	34.00	101.784	
6,315.05	6,314.62	3,038.00	3,037.79	22.53	56.59	140.94	-1,029.59	578.66	3,475.12	3,441.17	33.95	102.361	
6,350.00	6,349.55	3,038.00	3,037.79	22.66	56.59	64.95	-1,029.59	578.66	3,507.74	3,473.93	33.82	103.724	
6,400.00	6,399.30	3,038.00	3,037.79	22.83	56.59	50.11	-1,029.59	578.66	3,553.73	3,520.12	33.61	105.731	
6,450.00	6,448.52	3,038.00	3,037.79	23.00	56.59	42.08	-1,029.59	578.66	3,598.68	3,565.29	33.39	107.789	
6,500.00	6,496.91	3,038.00	3,037.79	23.18	56.59	36.42	-1,029.59	578.66	3,642.37	3,609.22	33.15	109.885	
6,550.00	6,544.17	3,038.00	3,037.79	23.35	56.59	32.16	-1,029.59	578.66	3,684.58	3,651.68	32.90	112.006	
6,600.00	6,590.01	3,038.00	3,037.79	23.53	56.59	28.84	-1,029.59	578.66	3,725.10	3,692.46	32.64	114.137	
6,650.00	6,634.14	3,038.00	3,037.79	23.70	56.59	26.22	-1,029.59	578.66	3,763.74	3,731.37	32.37	116.259	
6,700.00	6,676.30	3,038.00	3,037.79	23.88	56.59	24.10	-1,029.59	578.66	3,800.33	3,768.22	32.11	118.352	
6,750.00	6,716.21	3,038.00	3,037.79	24.06	56.59	22.38	-1,029.59	578.66	3,834.69	3,802.84	31.85	120.395	
6,800.00	6,753.65	3,038.00	3,037.79	24.24	56.59	20.97	-1,029.59	578.66	3,866.69	3,835.08	31.60	122.360	
6,850.00	6,788.37	3,038.00	3,037.79	24.44	56.59	19.80	-1,029.59	578.66	3,896.17	3,864.81	31.36	124.221	
6,900.00	6,820.16	3,038.00	3,037.79	24.63	56.59	18.84	-1,029.59	578.66	3,923.03	3,891.88	31.15	125.947	
6,950.00	6,848.83	3,038.00	3,037.79	24.84	56.59	18.04	-1,029.59	578.66	3,947.15	3,916.19	30.96	127.506	
7,000.00	6,874.19	3,038.00	3,037.79	25.06	56.59	17.39	-1,029.59	578.66	3,968.43	3,937.63	30.80	128.865	
7,050.00	6,896.10	3,038.00	3,037.79	25.29	56.59	16.86	-1,029.59	578.66	3,986.78	3,956.11	30.67	129.995	
7,100.00	6,914.42	3,038.00	3,037.79	25.53	56.59	16.44	-1,029.59	578.66	4,002.14	3,971.56	30.58	130.865	
7,150.00	6,929.03	3,038.00	3,037.79	25.78	56.59	16.11	-1,029.59	578.66	4,014.45	3,983.91	30.54	131.451	
7,200.00	6,939.85	3,038.00	3,037.79	26.05	56.59	15.88	-1,029.59	578.66	4,023.65	3,993.11	30.54	131.734	
7,250.00	6,946.80	3,038.00	3,037.79	26.32	56.59	15.73	-1,029.59	578.66	4,029.72	3,999.12	30.60	131.701	
7,300.00	6,949.85	3,038.00	3,037.79	26.61	56.59	15.66	-1,029.59	578.66	4,032.63	4,001.92	30.70	131.348	
7,314.43	6,950.00	3,038.00	3,037.79	26.69	56.59	15.65	-1,029.59	578.66	4,032.88	4,002.13	30.74	131.188	
7,400.00	6,949.92	3,038.00	3,037.79	27.21	56.59	15.65	-1,029.59	578.66	4,034.47	4,003.42	31.05	129.929	
7,500.00	6,949.83	3,038.00	3,037.79	27.90	56.59	15.65	-1,029.59	578.66	4,038.64	4,007.08	31.57	127.945	
7,600.00	6,949.74	3,038.00	3,037.79	28.66	56.59	15.65	-1,029.59	578.66	4,045.28	4,013.04	32.23	125.501	
7,700.00	6,949.65	3,038.00	3,037.79	29.49	56.59	15.65	-1,029.59	578.66	4,054.37	4,021.33	33.04	122.708	
7,800.00	6,949.56	3,038.00	3,037.79	30.38	56.59	15.65	-1,029.59	578.66	4,065.90	4,031.92	33.97	119.674	
7,900.00	6,949.47	3,038.00	3,037.79	31.33	56.59	15.65	-1,029.59	578.66	4,079.85	4,044.83	35.02	116.502	
8,000.00	6,949.38	3,038.00	3,037.79	32.33	56.59	15.65	-1,029.59	578.66	4,096.19	4,060.03	36.16	113.281	
8,100.00	6,949.29	3,038.00	3,037.79	33.38	56.59	15.65	-1,029.59	578.66	4,114.90	4,077.52	37.38	110.084	
8,200.00	6,949.20	3,038.00	3,037.79	34.47	56.59	15.65	-1,029.59	578.66	4,135.95	4,097.28	38.67	106.966	
8,300.00	6,949.11	3,038.00	3,037.79	35.60	56.59	15.65	-1,029.59	578.66	4,159.29	4,119.29	40.00	103.971	
8,400.00	6,949.02	3,038.00	3,037.79	36.76	56.59	15.65	-1,029.59	578.66	4,184.89	4,143.51	41.38	101.126	
8,500.00	6,948.93	3,038.00	3,037.79	37.96	56.59	15.65	-1,029.59	578.66	4,212.72	4,169.92	42.79	98.449	
8,600.00	6,948.84	3,038.00	3,037.79	39.18	56.59	15.65	-1,029.59	578.66	4,242.71	4,198.49	44.22	95.950	
8,700.00	6,948.75	3,038.00	3,037.79	40.43	56.59	15.65	-1,029.59	578.66	4,274.84	4,229.18	45.66	93.632	
8,800.00	6,948.66	3,038.00	3,037.79	41.71	56.59	15.65	-1,029.59	578.66	4,309.05	4,261.95	47.10	91.494	
8,900.00	6,948.57	3,038.00	3,037.79	43.00	56.59	15.65	-1,029.59	578.66	4,345.29	4,296.75	48.53	89.532	

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 #722H - Slot B05
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 #722H	**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
9,000.00	6,948.48	3,038.00	3,037.79	44.32	56.59	15.65	-1,029.59	578.66	4,383.51	4,333.55	49.96	87.739	
9,100.00	6,948.39	3,038.00	3,037.79	45.66	56.59	15.65	-1,029.59	578.66	4,423.66	4,372.29	51.37	86.107	
9,200.00	6,948.30	3,038.00	3,037.79	47.01	56.59	15.65	-1,029.59	578.66	4,465.69	4,412.92	52.77	84.627	
9,300.00	6,948.21	3,038.00	3,037.79	48.38	56.59	15.65	-1,029.59	578.66	4,509.55	4,455.41	54.14	83.291	
9,400.00	6,948.12	3,038.00	3,037.79	49.76	56.59	15.65	-1,029.59	578.66	4,555.18	4,499.69	55.49	82.090	
9,500.00	6,948.03	3,038.00	3,037.79	51.16	56.59	15.65	-1,029.59	578.66	4,602.53	4,545.72	56.81	81.014	
9,600.00	6,947.94	3,038.00	3,037.79	52.56	56.59	15.65	-1,029.59	578.66	4,651.55	4,593.45	58.10	80.056	
9,700.00	6,947.85	3,038.00	3,037.79	53.98	56.59	15.65	-1,029.59	578.66	4,702.19	4,642.82	59.37	79.207	
9,800.00	6,947.76	3,038.00	3,037.79	55.41	56.59	15.65	-1,029.59	578.66	4,754.39	4,693.79	60.60	78.460	
9,900.00	6,947.67	3,038.00	3,037.79	56.85	56.59	15.65	-1,029.59	578.66	4,808.10	4,746.31	61.79	77.808	
10,000.00	6,947.58	3,038.00	3,037.79	58.29	56.59	15.65	-1,029.59	578.66	4,863.28	4,800.32	62.96	77.243	
10,100.00	6,947.49	3,038.00	3,037.79	59.75	56.59	15.65	-1,029.59	578.66	4,919.87	4,855.78	64.09	76.761	
10,200.00	6,947.40	3,038.00	3,037.79	61.21	56.59	15.65	-1,029.59	578.66	4,977.83	4,912.64	65.19	76.356	
10,300.00	6,947.31	3,038.00	3,037.79	62.68	56.59	15.65	-1,029.59	578.66	5,037.10	4,970.84	66.26	76.021	
10,400.00	6,947.22	3,038.00	3,037.79	64.15	56.59	15.65	-1,029.59	578.66	5,097.65	5,030.36	67.29	75.753	
10,500.00	6,947.13	3,038.00	3,037.79	65.63	56.59	15.65	-1,029.59	578.66	5,159.43	5,091.13	68.30	75.546	
10,600.00	6,947.04	3,038.00	3,037.79	67.12	56.59	15.65	-1,029.59	578.66	5,222.39	5,153.12	69.27	75.397	
10,700.00	6,946.95	3,038.00	3,037.79	68.61	56.59	15.65	-1,029.59	578.66	5,286.49	5,216.28	70.20	75.301	
10,800.00	6,946.86	3,038.00	3,037.79	70.11	56.59	15.65	-1,029.59	578.66	5,351.69	5,280.58	71.11	75.256	
10,900.00	6,946.77	3,038.00	3,037.79	71.61	56.59	15.65	-1,029.59	578.66	5,417.95	5,345.96	71.99	75.258	
11,000.00	6,946.68	3,038.00	3,037.79	73.11	56.59	15.65	-1,029.59	578.66	5,485.24	5,412.40	72.84	75.304	
11,100.00	6,946.59	3,038.00	3,037.79	74.62	56.59	15.65	-1,029.59	578.66	5,553.51	5,479.85	73.66	75.391	
11,200.00	6,946.50	3,038.00	3,037.79	76.14	56.59	15.65	-1,029.59	578.66	5,622.73	5,548.28	74.46	75.517	
11,300.00	6,946.41	3,038.00	3,037.79	77.65	56.59	15.65	-1,029.59	578.66	5,692.87	5,617.64	75.22	75.679	
11,400.00	6,946.32	3,038.00	3,037.79	79.18	56.59	15.65	-1,029.59	578.66	5,763.89	5,687.92	75.97	75.874	
11,500.00	6,946.23	3,038.00	3,037.79	80.70	56.59	15.65	-1,029.59	578.66	5,835.75	5,759.07	76.68	76.102	
11,600.00	6,946.14	3,038.00	3,037.79	82.23	56.59	15.65	-1,029.59	578.66	5,908.44	5,831.06	77.38	76.360	
11,700.00	6,946.05	3,038.00	3,037.79	83.76	56.59	15.65	-1,029.59	578.66	5,981.91	5,903.87	78.05	76.646	
11,800.00	6,945.96	3,038.00	3,037.79	85.29	56.59	15.65	-1,029.59	578.66	6,056.15	5,977.46	78.69	76.959	
11,900.00	6,945.87	3,038.00	3,037.79	86.82	56.59	15.65	-1,029.59	578.66	6,131.11	6,051.80	79.32	77.297	
12,000.00	6,945.78	3,038.00	3,037.79	88.36	56.59	15.65	-1,029.59	578.66	6,206.79	6,126.86	79.92	77.659	
12,100.00	6,945.69	3,038.00	3,037.79	89.90	56.59	15.65	-1,029.59	578.66	6,283.14	6,202.63	80.51	78.043	
12,200.00	6,945.60	3,038.00	3,037.79	91.44	56.59	15.65	-1,029.59	578.66	6,360.15	6,279.07	81.07	78.449	
12,300.00	6,945.51	3,038.00	3,037.79	92.99	56.59	15.65	-1,029.59	578.66	6,437.79	6,356.17	81.62	78.874	
12,400.00	6,945.42	3,038.00	3,037.79	94.53	56.59	15.65	-1,029.59	578.66	6,516.04	6,433.89	82.15	79.318	
12,500.00	6,945.33	3,038.00	3,037.79	96.08	56.59	15.65	-1,029.59	578.66	6,594.88	6,512.21	82.66	79.780	
12,600.00	6,945.24	3,038.00	3,037.79	97.63	56.59	15.65	-1,029.59	578.66	6,674.28	6,591.12	83.16	80.259	
12,700.00	6,945.15	3,038.00	3,037.79	99.18	56.59	15.65	-1,029.59	578.66	6,754.23	6,670.59	83.64	80.754	
12,800.00	6,945.06	3,038.00	3,037.79	100.74	56.59	15.65	-1,029.59	578.66	6,834.71	6,750.61	84.10	81.264	
12,900.00	6,944.96	3,038.00	3,037.79	102.29	56.59	15.65	-1,029.59	578.66	6,915.70	6,831.15	84.56	81.789	
13,000.00	6,944.87	3,038.00	3,037.79	103.85	56.59	15.65	-1,029.59	578.66	6,997.18	6,912.19	84.99	82.328	
13,100.00	6,944.78	3,038.00	3,037.79	105.40	56.59	15.65	-1,029.59	578.66	7,079.14	6,993.72	85.42	82.879	
13,200.00	6,944.69	3,038.00	3,037.79	106.96	56.59	15.65	-1,029.59	578.66	7,161.55	7,075.73	85.83	83.443	
13,300.00	6,944.60	3,038.00	3,037.79	108.52	56.59	15.65	-1,029.59	578.66	7,244.41	7,158.18	86.22	84.019	
13,400.00	6,944.51	3,038.00	3,037.79	110.08	56.59	15.65	-1,029.59	578.66	7,327.69	7,241.08	86.61	84.605	
13,500.00	6,944.42	3,038.00	3,037.79	111.65	56.59	15.65	-1,029.59	578.66	7,411.39	7,324.41	86.99	85.203	
13,600.00	6,944.33	3,038.00	3,037.79	113.21	56.59	15.65	-1,029.59	578.66	7,495.49	7,408.14	87.35	85.810	
13,700.00	6,944.24	3,038.00	3,037.79	114.78	56.59	15.65	-1,029.59	578.66	7,579.97	7,492.27	87.70	86.427	
13,800.00	6,944.15	3,038.00	3,037.79	116.34	56.59	15.65	-1,029.59	578.66	7,664.83	7,576.78	88.05	87.053	
13,900.00	6,944.06	3,038.00	3,037.79	117.91	56.59	15.65	-1,029.59	578.66	7,750.05	7,661.67	88.38	87.688	
14,000.00	6,943.97	3,038.00	3,037.79	119.48	56.59	15.65	-1,029.59	578.66	7,835.62	7,746.91	88.71	88.332	
14,100.00	6,943.88	3,038.00	3,037.79	121.05	56.59	15.65	-1,029.59	578.66	7,921.52	7,832.50	89.02	88.983	

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 #722H - Slot B05
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 #722H	**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
14,200.00	6,943.79	3,038.00	3,037.79	122.62	56.59	15.65	-1,029.59	578.66	8,007.76	7,918.43	89.33	89.641	
14,300.00	6,943.70	3,038.00	3,037.79	124.19	56.59	15.65	-1,029.59	578.66	8,094.31	8,004.68	89.63	90.307	
14,400.00	6,943.61	3,038.00	3,037.79	125.76	56.59	15.65	-1,029.59	578.66	8,181.16	8,091.24	89.92	90.980	
14,500.00	6,943.52	3,038.00	3,037.79	127.33	56.59	15.65	-1,029.59	578.66	8,268.32	8,178.11	90.21	91.659	
14,600.00	6,943.43	3,038.00	3,037.79	128.90	56.59	15.65	-1,029.59	578.66	8,355.76	8,265.27	90.48	92.344	
14,700.00	6,943.34	3,038.00	3,037.79	130.48	56.59	15.65	-1,029.59	578.66	8,443.48	8,352.72	90.76	93.036	
14,800.00	6,943.25	3,038.00	3,037.79	132.05	56.59	15.65	-1,029.59	578.66	8,531.47	8,440.45	91.02	93.733	
14,900.00	6,943.16	3,038.00	3,037.79	133.63	56.59	15.65	-1,029.59	578.66	8,619.72	8,528.45	91.28	94.435	
15,000.00	6,943.07	3,038.00	3,037.79	135.20	56.59	15.65	-1,029.59	578.66	8,708.23	8,616.70	91.53	95.142	
15,100.00	6,942.98	3,038.00	3,037.79	136.78	56.59	15.65	-1,029.59	578.66	8,796.98	8,705.21	91.77	95.855	
15,200.00	6,942.89	3,038.00	3,037.79	138.36	56.59	15.65	-1,029.59	578.66	8,885.97	8,793.96	92.01	96.572	
15,300.00	6,942.80	3,038.00	3,037.79	139.93	56.59	15.65	-1,029.59	578.66	8,975.20	8,882.95	92.25	97.293	
15,400.00	6,942.71	3,038.00	3,037.79	141.51	56.59	15.65	-1,029.59	578.66	9,064.65	8,972.17	92.48	98.019	
15,500.00	6,942.62	3,038.00	3,037.79	143.09	56.59	15.65	-1,029.59	578.66	9,154.31	9,061.61	92.70	98.749	
15,600.00	6,942.53	3,038.00	3,037.79	144.67	56.59	15.65	-1,029.59	578.66	9,244.19	9,151.27	92.92	99.482	
15,700.00	6,942.44	3,038.00	3,037.79	146.25	56.59	15.65	-1,029.59	578.66	9,334.28	9,241.14	93.14	100.220	
15,800.00	6,942.35	3,038.00	3,037.79	147.83	56.59	15.65	-1,029.59	578.66	9,424.56	9,331.21	93.35	100.960	
15,900.00	6,942.26	3,038.00	3,037.79	149.41	56.59	15.65	-1,029.59	578.66	9,515.04	9,421.48	93.56	101.704	
16,000.00	6,942.17	3,038.00	3,037.79	150.99	56.59	15.65	-1,029.59	578.66	9,605.71	9,511.95	93.76	102.452	
16,100.00	6,942.08	3,038.00	3,037.79	152.57	56.59	15.65	-1,029.59	578.66	9,696.56	9,602.60	93.96	103.202	
16,200.00	6,941.99	3,038.00	3,037.79	154.16	56.59	15.65	-1,029.59	578.66	9,787.59	9,693.44	94.15	103.955	
16,300.00	6,941.90	3,038.00	3,037.79	155.74	56.59	15.65	-1,029.59	578.66	9,878.79	9,784.45	94.34	104.711	
16,400.00	6,941.81	3,038.00	3,037.79	157.32	56.59	15.65	-1,029.59	578.66	9,970.16	9,875.63	94.53	105.469	
16,500.00	6,941.72	3,038.00	3,037.79	158.91	56.59	15.65	-1,029.59	578.66	10,061.70	9,966.98	94.72	106.230	
16,600.00	6,941.63	3,038.00	3,037.79	160.49	56.59	15.65	-1,029.59	578.66	10,153.39	10,058.50	94.90	106.993	
16,700.00	6,941.54	3,038.00	3,037.79	162.07	56.59	15.65	-1,029.59	578.66	10,245.25	10,150.17	95.08	107.758	
16,800.00	6,941.45	3,038.00	3,037.79	163.66	56.59	15.65	-1,029.59	578.66	10,337.25	10,242.00	95.25	108.525	
16,900.00	6,941.36	3,038.00	3,037.79	165.24	56.59	15.65	-1,029.59	578.66	10,429.40	10,333.97	95.42	109.295	
17,000.00	6,941.27	3,038.00	3,037.79	166.83	56.59	15.65	-1,029.59	578.66	10,521.69	10,426.10	95.59	110.066	
17,100.00	6,941.18	3,038.00	3,037.79	168.42	56.59	15.65	-1,029.59	578.66	10,614.12	10,518.36	95.76	110.839	
17,200.00	6,941.09	3,038.00	3,037.79	170.00	56.59	15.65	-1,029.59	578.66	10,706.69	10,610.76	95.93	111.613	
17,300.00	6,941.00	3,038.00	3,037.79	171.59	56.59	15.65	-1,029.59	578.66	10,799.39	10,703.30	96.09	112.389	
17,400.00	6,940.91	3,038.00	3,037.79	173.18	56.59	15.65	-1,029.59	578.66	10,892.22	10,795.97	96.25	113.167	
17,500.00	6,940.82	3,038.00	3,037.79	174.76	56.59	15.65	-1,029.59	578.66	10,985.18	10,888.77	96.41	113.946	
17,600.00	6,940.73	3,038.00	3,037.79	176.35	56.59	15.65	-1,029.59	578.66	11,078.26	10,981.69	96.56	114.726	
17,700.00	6,940.64	3,038.00	3,037.79	177.94	56.59	15.65	-1,029.59	578.66	11,171.46	11,074.74	96.72	115.508	
17,800.00	6,940.55	3,038.00	3,037.79	179.53	56.59	15.65	-1,029.59	578.66	11,264.77	11,167.90	96.87	116.290	
17,900.00	6,940.46	3,038.00	3,037.79	181.11	56.59	15.65	-1,029.59	578.66	11,358.20	11,261.18	97.02	117.074	
18,000.00	6,940.37	3,038.00	3,037.79	182.70	56.59	15.65	-1,029.59	578.66	11,451.74	11,354.57	97.17	117.858	
18,100.00	6,940.28	3,038.00	3,037.79	184.29	56.59	15.65	-1,029.59	578.66	11,545.39	11,448.08	97.31	118.644	
18,200.00	6,940.19	3,038.00	3,037.79	185.88	56.59	15.65	-1,029.59	578.66	11,639.14	11,541.68	97.46	119.430	
18,300.00	6,940.10	3,038.00	3,037.79	187.47	56.59	15.65	-1,029.59	578.66	11,733.00	11,635.40	97.60	120.217	
18,400.00	6,940.01	3,038.00	3,037.79	189.06	56.59	15.65	-1,029.59	578.66	11,826.95	11,729.21	97.74	121.005	
18,500.00	6,939.92	3,038.00	3,037.79	190.65	56.59	15.65	-1,029.59	578.66	11,921.01	11,823.13	97.88	121.793	
18,600.00	6,939.83	3,038.00	3,037.79	192.24	56.59	15.65	-1,029.59	578.66	12,015.16	11,917.14	98.02	122.582	
18,700.00	6,939.74	3,038.00	3,037.79	193.83	56.59	15.65	-1,029.59	578.66	12,109.41	12,011.25	98.15	123.371	
18,800.00	6,939.65	3,038.00	3,037.79	195.42	56.59	15.65	-1,029.59	578.66	12,203.75	12,105.46	98.29	124.161	
18,900.00	6,939.56	3,038.00	3,037.79	197.01	56.59	15.65	-1,029.59	578.66	12,298.17	12,199.75	98.42	124.951	
19,000.00	6,939.47	3,038.00	3,037.79	198.60	56.59	15.65	-1,029.59	578.66	12,392.69	12,294.13	98.56	125.741	
19,100.00	6,939.38	3,038.00	3,037.79	200.19	56.59	15.65	-1,029.59	578.66	12,487.29	12,388.60	98.69	126.532	
19,200.00	6,939.29	3,038.00	3,037.79	201.78	56.59	15.65	-1,029.59	578.66	12,581.97	12,483.15	98.82	127.323	
19,300.00	6,939.20	3,038.00	3,037.79	203.37	56.59	15.65	-1,029.59	578.66	12,676.73	12,577.78	98.95	128.114	

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 #722H - Slot B05
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 #722H	**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
19,400.00	6,939.11	3,038.00	3,037.79	204.97	56.59	15.65	-1,029.59	578.66	12,771.58	12,672.50	99.08	128.905	
19,500.00	6,939.02	3,038.00	3,037.79	206.56	56.59	15.65	-1,029.59	578.66	12,866.50	12,767.30	99.20	129.697	
19,600.00	6,938.93	3,038.00	3,037.79	208.15	56.59	15.65	-1,029.59	578.66	12,961.50	12,862.17	99.33	130.488	
19,700.00	6,938.83	3,038.00	3,037.79	209.74	56.59	15.65	-1,029.59	578.66	13,056.57	12,957.12	99.46	131.279	
19,800.00	6,938.74	3,038.00	3,037.79	211.33	56.59	15.65	-1,029.59	578.66	13,151.72	13,052.14	99.58	132.071	
19,900.00	6,938.65	3,038.00	3,037.79	212.93	56.59	15.65	-1,029.59	578.66	13,246.94	13,147.23	99.70	132.862	
20,000.00	6,938.56	3,038.00	3,037.79	214.52	56.59	15.65	-1,029.59	578.66	13,342.23	13,242.40	99.83	133.653	
20,100.00	6,938.47	3,038.00	3,037.79	216.11	56.59	15.65	-1,029.59	578.66	13,437.58	13,337.63	99.95	134.444	
20,200.00	6,938.38	3,038.00	3,037.79	217.71	56.59	15.65	-1,029.59	578.66	13,533.01	13,432.94	100.07	135.235	
20,300.00	6,938.29	3,038.00	3,037.79	219.30	56.59	15.65	-1,029.59	578.66	13,628.50	13,528.31	100.19	136.025	
20,400.00	6,938.20	3,038.00	3,037.79	220.89	56.59	15.65	-1,029.59	578.66	13,724.05	13,623.74	100.31	136.815	
20,500.00	6,938.11	3,038.00	3,037.79	222.49	56.59	15.65	-1,029.59	578.66	13,819.67	13,719.24	100.43	137.605	
20,600.00	6,938.02	3,038.00	3,037.79	224.08	56.59	15.65	-1,029.59	578.66	13,915.35	13,814.80	100.55	138.394	
20,626.08	6,938.00	3,038.00	3,037.79	224.49	56.59	15.65	-1,029.59	578.66	13,940.31	13,839.73	100.58	138.600	

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 #722H - Slot B05
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 #722H	**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	-10.35	875.95	-159.94	890.54				
100.00	100.00	86.00	86.00	0.25	0.80	-10.35	875.95	-159.94	890.43	889.38	1.05	851.307	
200.00	200.00	186.00	186.00	0.61	1.72	-10.35	875.95	-159.94	890.43	888.10	2.33	382.381	
300.00	300.00	286.00	286.00	0.97	2.64	-10.35	875.95	-159.94	890.43	886.82	3.61	246.565	
400.00	400.00	386.00	386.00	1.33	4.04	-10.35	875.95	-159.94	890.43	885.06	5.37	165.775	
500.00	500.00	486.00	486.00	1.68	6.08	-10.35	875.95	-159.94	890.43	882.67	7.76	114.690	
535.00	535.00	521.01	521.00	1.81	6.79	-21.02	875.95	-159.94	890.23	881.63	8.60	103.500	
600.00	599.99	586.00	585.99	2.04	8.11	-21.04	875.95	-159.94	889.49	879.33	10.16	87.581	
700.00	699.99	687.47	687.46	2.40	10.18	-21.07	876.41	-159.94	888.80	876.23	12.58	70.661	
800.00	799.98	789.02	789.01	2.76	12.24	-21.10	876.15	-159.94	887.41	872.41	15.00	59.152	
900.00	899.97	886.04	885.97	3.12	14.37	-21.13	875.95	-159.94	886.07	868.58	17.49	50.662	
1,000.00	999.96	986.03	985.96	3.48	16.74	-21.16	875.95	-159.94	884.93	864.71	20.22	43.763	
1,060.40	1,060.36	1,046.43	1,046.36	3.69	18.18	-21.17	875.95	-159.94	884.24	862.37	21.87	40.431	
1,100.00	1,099.96	1,086.27	1,086.19	3.84	19.12	-21.17	877.26	-159.94	885.08	862.12	22.96	38.552	
1,200.00	1,199.95	1,190.41	1,190.32	4.19	21.59	-21.20	876.98	-159.94	883.68	857.89	25.79	34.268	
1,300.00	1,299.94	1,294.54	1,294.44	4.55	24.07	-21.24	876.21	-159.94	881.81	853.20	28.62	30.815	
1,400.00	1,399.93	1,386.14	1,385.93	4.91	26.14	-21.27	875.95	-159.94	880.37	849.33	31.05	28.357	
1,500.00	1,499.93	1,486.13	1,485.93	5.27	28.35	-21.30	875.95	-159.94	879.24	845.61	33.62	26.151	
1,560.40	1,560.32	1,546.53	1,546.32	5.49	29.69	-21.32	875.95	-159.94	878.55	843.37	35.18	24.974	
1,600.00	1,599.92	1,586.90	1,586.67	5.63	30.59	-21.31	877.58	-159.94	879.70	843.48	36.21	24.291	
1,700.00	1,699.91	1,691.66	1,691.43	5.99	32.91	-21.34	877.20	-159.94	878.20	839.31	38.90	22.578	
1,800.00	1,799.90	1,796.44	1,796.18	6.34	35.23	-21.39	876.24	-159.94	876.17	834.59	41.58	21.074	
1,900.00	1,899.90	1,886.20	1,885.90	6.70	36.99	-21.42	875.95	-159.94	874.68	830.99	43.70	20.018	
2,000.00	1,999.89	1,986.19	1,985.89	7.06	38.86	-21.45	875.95	-159.94	873.55	827.62	45.92	19.023	
2,100.00	2,099.88	2,086.19	2,085.88	7.42	40.73	-21.47	875.95	-159.94	872.41	824.26	48.15	18.119	
2,200.00	2,199.87	2,187.69	2,187.38	7.78	42.62	-21.49	876.83	-159.94	872.14	821.74	50.40	17.304	
2,300.00	2,299.87	2,289.66	2,289.34	8.14	44.53	-21.53	876.53	-159.94	870.72	818.05	52.66	16.533	
2,400.00	2,399.86	2,391.63	2,391.31	8.50	46.43	-21.56	876.00	-159.94	869.07	814.14	54.93	15.823	
2,500.00	2,499.85	2,486.19	2,485.85	8.85	48.42	-21.59	875.95	-159.94	867.86	810.59	57.28	15.152	
2,600.00	2,599.85	2,586.18	2,585.85	9.21	50.55	-21.62	875.95	-159.94	866.73	806.97	59.76	14.503	
2,700.00	2,699.84	2,686.18	2,685.84	9.57	52.68	-21.65	875.95	-159.94	865.59	803.34	62.25	13.906	
2,800.00	2,799.83	2,786.17	2,785.83	9.93	54.80	-21.68	875.95	-159.94	864.46	799.72	64.73	13.354	
2,832.58	2,832.41	2,809.00	2,808.59	10.05	55.29	-21.69	875.95	-159.94	864.14	798.81	65.33	13.227	CC, ES, SF
2,900.00	2,899.82	2,809.00	2,808.59	10.29	55.29	-21.69	875.95	-159.94	866.77	801.43	65.33	13.267	
3,000.00	2,999.82	2,809.00	2,808.59	10.65	55.29	-21.69	875.95	-159.94	880.21	815.55	64.66	13.612	
3,100.00	3,099.81	2,809.00	2,808.59	11.01	55.29	-21.69	875.95	-159.94	904.58	841.29	63.28	14.294	
3,200.00	3,199.80	2,809.00	2,808.59	11.36	55.29	-21.69	875.95	-159.94	939.01	877.66	61.35	15.306	
3,300.00	3,299.79	2,809.00	2,808.59	11.72	55.29	-21.69	875.95	-159.94	982.46	923.41	59.05	16.639	
3,400.00	3,399.79	2,809.00	2,808.59	12.08	55.29	-21.69	875.95	-159.94	1,033.78	977.24	56.55	18.282	
3,500.00	3,499.78	2,809.00	2,808.59	12.44	55.29	-21.69	875.95	-159.94	1,091.88	1,037.89	53.98	20.226	
3,600.00	3,599.77	2,809.00	2,808.59	12.80	55.29	-21.69	875.95	-159.94	1,155.72	1,104.25	51.46	22.458	
3,700.00	3,699.76	2,809.00	2,808.59	13.16	55.29	-21.69	875.95	-159.94	1,224.40	1,175.36	49.05	24.965	
3,800.00	3,799.76	2,809.00	2,808.59	13.52	55.29	-21.69	875.95	-159.94	1,297.17	1,250.40	46.77	27.733	
3,900.00	3,899.75	2,809.00	2,808.59	13.87	55.29	-21.69	875.95	-159.94	1,373.37	1,328.70	44.66	30.749	
4,000.00	3,999.74	2,809.00	2,808.59	14.23	55.29	-21.69	875.95	-159.94	1,452.45	1,409.73	42.73	33.995	
4,100.00	4,099.73	2,809.00	2,808.59	14.59	55.29	-21.69	875.95	-159.94	1,533.98	1,493.03	40.95	37.458	
4,200.00	4,199.73	2,809.00	2,808.59	14.95	55.29	-21.69	875.95	-159.94	1,617.59	1,578.25	39.34	41.120	
4,300.00	4,299.72	2,809.00	2,808.59	15.31	55.29	-21.69	875.95	-159.94	1,702.96	1,665.09	37.87	44.964	
4,400.00	4,399.71	2,809.00	2,808.59	15.67	55.29	-21.69	875.95	-159.94	1,789.85	1,753.30	36.55	48.975	
4,500.00	4,499.70	2,809.00	2,808.59	16.03	55.29	-21.69	875.95	-159.94	1,878.04	1,842.70	35.34	53.136	
4,600.00	4,599.70	2,809.00	2,808.59	16.38	55.29	-21.69	875.95	-159.94	1,967.37	1,933.11	34.26	57.430	
4,700.00	4,699.69	2,809.00	2,808.59	16.74	55.29	-21.69	875.95	-159.94	2,057.67	2,024.40	33.27	61.840	

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 #722H - Slot B05
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 #722H	**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
4,800.00	4,799.68	2,809.00	2,808.59	17.10	55.29	-21.69	875.95	-159.94	2,148.84	2,116.45	32.39	66.350	
4,900.00	4,899.67	2,809.00	2,808.59	17.46	55.29	-21.69	875.95	-159.94	2,240.75	2,209.17	31.58	70.945	
5,000.00	4,999.67	2,809.00	2,808.59	17.82	55.29	-21.69	875.95	-159.94	2,333.34	2,302.48	30.86	75.610	
5,100.00	5,099.66	2,809.00	2,808.59	18.18	55.29	-21.69	875.95	-159.94	2,426.51	2,396.30	30.21	80.330	
5,200.00	5,199.65	2,809.00	2,808.59	18.53	55.29	-21.69	875.95	-159.94	2,520.21	2,490.59	29.62	85.090	
5,300.00	5,299.64	2,809.00	2,808.59	18.89	55.29	-21.69	875.95	-159.94	2,614.37	2,585.28	29.09	89.878	
5,400.00	5,399.64	2,809.00	2,808.59	19.25	55.29	-21.69	875.95	-159.94	2,708.95	2,680.34	28.61	94.681	
5,500.00	5,499.63	2,809.00	2,808.59	19.61	55.29	-21.69	875.95	-159.94	2,803.91	2,775.72	28.18	99.486	
5,600.00	5,599.62	2,809.00	2,808.59	19.97	55.29	-21.69	875.95	-159.94	2,899.20	2,871.40	27.80	104.284	
5,700.00	5,699.61	2,809.00	2,808.59	20.33	55.29	-21.69	875.95	-159.94	2,994.81	2,967.35	27.46	109.062	
5,800.00	5,799.61	2,809.00	2,808.59	20.69	55.29	-21.69	875.95	-159.94	3,090.69	3,063.53	27.16	113.811	
5,900.00	5,899.60	2,809.00	2,808.59	21.04	55.29	-21.69	875.95	-159.94	3,186.82	3,159.93	26.89	118.523	
6,000.00	5,999.59	2,809.00	2,808.59	21.40	55.29	-21.69	875.95	-159.94	3,283.19	3,256.54	26.65	123.190	
6,100.00	6,099.58	2,809.00	2,808.59	21.76	55.29	-21.69	875.95	-159.94	3,379.76	3,353.32	26.45	127.803	
6,200.00	6,199.58	2,809.00	2,808.59	22.12	55.29	-21.69	875.95	-159.94	3,476.53	3,450.27	26.27	132.356	
6,300.00	6,299.57	2,809.00	2,808.59	22.48	55.29	-21.69	875.95	-159.94	3,573.48	3,547.37	26.11	136.844	
6,315.05	6,314.62	2,809.00	2,808.59	22.53	55.29	-21.69	875.95	-159.94	3,588.09	3,561.99	26.09	137.513	
6,350.00	6,349.55	2,809.00	2,808.59	22.66	55.29	-78.01	875.95	-159.94	3,622.05	3,596.00	26.05	139.045	
6,400.00	6,399.30	2,809.00	2,808.59	22.83	55.29	-66.62	875.95	-159.94	3,670.65	3,644.65	26.00	141.168	
6,450.00	6,448.52	2,809.00	2,808.59	23.00	55.29	-53.20	875.95	-159.94	3,718.99	3,693.02	25.97	143.198	
6,500.00	6,496.91	2,809.00	2,808.59	23.18	55.29	-42.70	875.95	-159.94	3,766.79	3,740.84	25.96	145.118	
6,550.00	6,544.17	2,809.00	2,808.59	23.35	55.29	-35.05	875.95	-159.94	3,813.79	3,787.83	25.96	146.907	
6,600.00	6,590.01	2,809.00	2,808.59	23.53	55.29	-29.51	875.95	-159.94	3,859.72	3,833.74	25.98	148.541	
6,650.00	6,634.14	2,809.00	2,808.59	23.70	55.29	-25.42	875.95	-159.94	3,904.35	3,878.32	26.03	149.996	
6,700.00	6,676.30	2,809.00	2,808.59	23.88	55.29	-22.32	875.95	-159.94	3,947.45	3,921.35	26.10	151.245	
6,750.00	6,716.21	2,809.00	2,808.59	24.06	55.29	-19.93	875.95	-159.94	3,988.80	3,962.61	26.20	152.265	
6,800.00	6,753.65	2,809.00	2,808.59	24.24	55.29	-18.05	875.95	-159.94	4,028.22	4,001.90	26.32	153.031	
6,850.00	6,788.37	2,809.00	2,808.59	24.44	55.29	-16.54	875.95	-159.94	4,065.51	4,039.03	26.48	153.521	
6,900.00	6,820.16	2,809.00	2,808.59	24.63	55.29	-15.32	875.95	-159.94	4,100.51	4,073.84	26.68	153.717	
6,950.00	6,848.83	2,809.00	2,808.59	24.84	55.29	-14.32	875.95	-159.94	4,133.07	4,106.16	26.91	153.603	
7,000.00	6,874.19	2,809.00	2,808.59	25.06	55.29	-13.50	875.95	-159.94	4,163.04	4,135.86	27.18	153.172	
7,050.00	6,896.10	2,809.00	2,808.59	25.29	55.29	-12.83	875.95	-159.94	4,190.29	4,162.80	27.49	152.420	
7,100.00	6,914.42	2,809.00	2,808.59	25.53	55.29	-12.27	875.95	-159.94	4,214.71	4,186.87	27.85	151.350	
7,150.00	6,929.03	2,809.00	2,808.59	25.78	55.29	-11.82	875.95	-159.94	4,236.21	4,207.96	28.25	149.974	
7,200.00	6,939.85	2,809.00	2,808.59	26.05	55.29	-11.45	875.95	-159.94	4,254.68	4,226.00	28.69	148.307	
7,250.00	6,946.80	2,809.00	2,808.59	26.32	55.29	-11.15	875.95	-159.94	4,270.07	4,240.90	29.17	146.372	
7,300.00	6,949.85	2,809.00	2,808.59	26.61	55.29	-10.92	875.95	-159.94	4,282.31	4,252.61	29.70	144.196	
7,314.43	6,950.00	2,809.00	2,808.59	26.69	55.29	-10.87	875.95	-159.94	4,285.24	4,255.39	29.85	143.538	
7,400.00	6,949.92	2,809.00	2,808.59	27.21	55.29	-10.87	875.95	-159.94	4,302.69	4,271.84	30.85	139.481	
7,500.00	6,949.83	2,809.00	2,808.59	27.90	55.29	-10.87	875.95	-159.94	4,325.14	4,293.05	32.08	134.808	
7,600.00	6,949.74	2,809.00	2,808.59	28.66	55.29	-10.87	875.95	-159.94	4,349.77	4,316.38	33.38	130.295	
7,700.00	6,949.65	2,809.00	2,808.59	29.49	55.29	-10.87	875.95	-159.94	4,376.54	4,341.81	34.73	126.000	
7,800.00	6,949.56	2,809.00	2,808.59	30.38	55.29	-10.87	875.95	-159.94	4,405.43	4,369.30	36.12	121.959	
7,900.00	6,949.47	2,809.00	2,808.59	31.33	55.29	-10.87	875.95	-159.94	4,436.38	4,398.84	37.54	118.190	
8,000.00	6,949.38	2,809.00	2,808.59	32.33	55.29	-10.87	875.95	-159.94	4,469.35	4,430.38	38.97	114.698	
8,100.00	6,949.29	2,809.00	2,808.59	33.38	55.29	-10.87	875.95	-159.94	4,504.30	4,463.90	40.40	111.480	
8,200.00	6,949.20	2,809.00	2,808.59	34.47	55.29	-10.87	875.95	-159.94	4,541.19	4,499.35	41.84	108.527	
8,300.00	6,949.11	2,809.00	2,808.59	35.60	55.29	-10.87	875.95	-159.94	4,579.96	4,536.69	43.28	105.828	
8,400.00	6,949.02	2,809.00	2,808.59	36.76	55.29	-10.87	875.95	-159.94	4,620.58	4,575.87	44.70	103.367	
8,500.00	6,948.93	2,809.00	2,808.59	37.96	55.29	-10.87	875.95	-159.94	4,662.98	4,616.87	46.11	101.130	
8,600.00	6,948.84	2,809.00	2,808.59	39.18	55.29	-10.87	875.95	-159.94	4,707.13	4,659.63	47.50	99.101	
8,700.00	6,948.75	2,809.00	2,808.59	40.43	55.29	-10.87	875.95	-159.94	4,752.97	4,704.10	48.87	97.266	

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 #722H - Slot B05
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 #722H	**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
8,800.00	6,948.66	2,809.00	2,808.59	41.71	55.29	-10.87	875.95	-159.94	4,800.45	4,750.24	50.21	95.610	
8,900.00	6,948.57	2,809.00	2,808.59	43.00	55.29	-10.87	875.95	-159.94	4,849.54	4,798.01	51.53	94.118	
9,000.00	6,948.48	2,809.00	2,808.59	44.32	55.29	-10.87	875.95	-159.94	4,900.17	4,847.35	52.82	92.780	
9,100.00	6,948.39	2,809.00	2,808.59	45.66	55.29	-10.87	875.95	-159.94	4,952.30	4,898.23	54.08	91.582	
9,200.00	6,948.30	2,809.00	2,808.59	47.01	55.29	-10.87	875.95	-159.94	5,005.89	4,950.59	55.31	90.514	
9,300.00	6,948.21	2,809.00	2,808.59	48.38	55.29	-10.87	875.95	-159.94	5,060.89	5,004.39	56.50	89.566	
9,400.00	6,948.12	2,809.00	2,808.59	49.76	55.29	-10.87	875.95	-159.94	5,117.25	5,059.58	57.67	88.729	
9,500.00	6,948.03	2,809.00	2,808.59	51.16	55.29	-10.87	875.95	-159.94	5,174.93	5,116.12	58.81	87.994	
9,600.00	6,947.94	2,809.00	2,808.59	52.56	55.29	-10.87	875.95	-159.94	5,233.89	5,173.97	59.92	87.354	
9,700.00	6,947.85	2,809.00	2,808.59	53.98	55.29	-10.87	875.95	-159.94	5,294.08	5,233.09	60.99	86.801	
9,800.00	6,947.76	2,809.00	2,808.59	55.41	55.29	-10.87	875.95	-159.94	5,355.46	5,293.42	62.03	86.330	
9,900.00	6,947.67	2,809.00	2,808.59	56.85	55.29	-10.87	875.95	-159.94	5,417.99	5,354.94	63.05	85.934	
10,000.00	6,947.58	2,809.00	2,808.59	58.29	55.29	-10.87	875.95	-159.94	5,481.63	5,417.60	64.03	85.608	
10,100.00	6,947.49	2,809.00	2,808.59	59.75	55.29	-10.87	875.95	-159.94	5,546.34	5,481.35	64.99	85.347	
10,200.00	6,947.40	2,809.00	2,808.59	61.21	55.29	-10.87	875.95	-159.94	5,612.09	5,546.18	65.91	85.147	
10,300.00	6,947.31	2,809.00	2,808.59	62.68	55.29	-10.87	875.95	-159.94	5,678.84	5,612.03	66.81	85.003	
10,400.00	6,947.22	2,809.00	2,808.59	64.15	55.29	-10.87	875.95	-159.94	5,746.55	5,678.88	67.68	84.912	
10,500.00	6,947.13	2,809.00	2,808.59	65.63	55.29	-10.87	875.95	-159.94	5,815.20	5,746.68	68.52	84.870	
10,600.00	6,947.04	2,809.00	2,808.59	67.12	55.29	-10.87	875.95	-159.94	5,884.74	5,815.41	69.33	84.874	
10,700.00	6,946.95	2,809.00	2,808.59	68.61	55.29	-10.87	875.95	-159.94	5,955.15	5,885.03	70.13	84.921	
10,800.00	6,946.86	2,809.00	2,808.59	70.11	55.29	-10.87	875.95	-159.94	6,026.40	5,955.51	70.89	85.008	
10,900.00	6,946.77	2,809.00	2,808.59	71.61	55.29	-10.87	875.95	-159.94	6,098.45	6,026.82	71.63	85.133	
11,000.00	6,946.68	2,809.00	2,808.59	73.11	55.29	-10.87	875.95	-159.94	6,171.29	6,098.94	72.35	85.294	
11,100.00	6,946.59	2,809.00	2,808.59	74.62	55.29	-10.87	875.95	-159.94	6,244.88	6,171.83	73.05	85.488	
11,200.00	6,946.50	2,809.00	2,808.59	76.14	55.29	-10.87	875.95	-159.94	6,319.19	6,245.46	73.72	85.713	
11,300.00	6,946.41	2,809.00	2,808.59	77.65	55.29	-10.87	875.95	-159.94	6,394.20	6,319.82	74.38	85.968	
11,400.00	6,946.32	2,809.00	2,808.59	79.18	55.29	-10.87	875.95	-159.94	6,469.89	6,394.87	75.01	86.250	
11,500.00	6,946.23	2,809.00	2,808.59	80.70	55.29	-10.87	875.95	-159.94	6,546.23	6,470.60	75.63	86.559	
11,600.00	6,946.14	2,809.00	2,808.59	82.23	55.29	-10.87	875.95	-159.94	6,623.20	6,546.97	76.22	86.892	
11,700.00	6,946.05	2,809.00	2,808.59	83.76	55.29	-10.87	875.95	-159.94	6,700.78	6,623.98	76.80	87.249	
11,800.00	6,945.96	2,809.00	2,808.59	85.29	55.29	-10.87	875.95	-159.94	6,778.94	6,701.58	77.36	87.628	
11,900.00	6,945.87	2,809.00	2,808.59	86.82	55.29	-10.87	875.95	-159.94	6,857.68	6,779.77	77.90	88.027	
12,000.00	6,945.78	2,809.00	2,808.59	88.36	55.29	-10.87	875.95	-159.94	6,936.96	6,858.53	78.43	88.446	
12,100.00	6,945.69	2,809.00	2,808.59	89.90	55.29	-10.87	875.95	-159.94	7,016.77	6,937.83	78.94	88.884	
12,200.00	6,945.60	2,809.00	2,808.59	91.44	55.29	-10.87	875.95	-159.94	7,097.09	7,017.65	79.44	89.340	
12,300.00	6,945.51	2,809.00	2,808.59	92.99	55.29	-10.87	875.95	-159.94	7,177.91	7,097.99	79.92	89.812	
12,400.00	6,945.42	2,809.00	2,808.59	94.53	55.29	-10.87	875.95	-159.94	7,259.20	7,178.81	80.39	90.301	
12,500.00	6,945.33	2,809.00	2,808.59	96.08	55.29	-10.87	875.95	-159.94	7,340.96	7,260.11	80.84	90.804	
12,600.00	6,945.24	2,809.00	2,808.59	97.63	55.29	-10.87	875.95	-159.94	7,423.16	7,341.88	81.29	91.322	
12,700.00	6,945.15	2,809.00	2,808.59	99.18	55.29	-10.87	875.95	-159.94	7,505.80	7,424.08	81.72	91.853	
12,800.00	6,945.06	2,809.00	2,808.59	100.74	55.29	-10.87	875.95	-159.94	7,588.85	7,506.72	82.13	92.397	
12,900.00	6,944.96	2,809.00	2,808.59	102.29	55.29	-10.87	875.95	-159.94	7,672.31	7,589.77	82.54	92.954	
13,000.00	6,944.87	2,809.00	2,808.59	103.85	55.29	-10.87	875.95	-159.94	7,756.16	7,673.22	82.93	93.522	
13,100.00	6,944.78	2,809.00	2,808.59	105.40	55.29	-10.87	875.95	-159.94	7,840.38	7,757.06	83.32	94.102	
13,200.00	6,944.69	2,809.00	2,808.59	106.96	55.29	-10.87	875.95	-159.94	7,924.98	7,841.28	83.69	94.692	
13,300.00	6,944.60	2,809.00	2,808.59	108.52	55.29	-10.87	875.95	-159.94	8,009.93	7,925.87	84.06	95.292	
13,400.00	6,944.51	2,809.00	2,808.59	110.08	55.29	-10.87	875.95	-159.94	8,095.22	8,010.81	84.41	95.901	
13,500.00	6,944.42	2,809.00	2,808.59	111.65	55.29	-10.87	875.95	-159.94	8,180.85	8,096.09	84.76	96.520	
13,600.00	6,944.33	2,809.00	2,808.59	113.21	55.29	-10.87	875.95	-159.94	8,266.79	8,181.70	85.10	97.147	
13,700.00	6,944.24	2,809.00	2,808.59	114.78	55.29	-10.87	875.95	-159.94	8,353.06	8,267.63	85.42	97.783	
13,800.00	6,944.15	2,809.00	2,808.59	116.34	55.29	-10.87	875.95	-159.94	8,439.62	8,353.88	85.74	98.427	
13,900.00	6,944.06	2,809.00	2,808.59	117.91	55.29	-10.87	875.95	-159.94	8,526.48	8,440.42	86.06	99.078	

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 #722H - Slot B05
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 #722H	**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
14,000.00	6,943.97	2,809.00	2,808.59	119.48	55.29	-10.87	875.95	-159.94	8,613.62	8,527.26	86.36	99.737	
14,100.00	6,943.88	2,809.00	2,808.59	121.05	55.29	-10.87	875.95	-159.94	8,701.04	8,614.38	86.66	100.402	
14,200.00	6,943.79	2,809.00	2,808.59	122.62	55.29	-10.87	875.95	-159.94	8,788.73	8,701.78	86.95	101.074	
14,300.00	6,943.70	2,809.00	2,808.59	124.19	55.29	-10.87	875.95	-159.94	8,876.68	8,789.44	87.24	101.752	
14,400.00	6,943.61	2,809.00	2,808.59	125.76	55.29	-10.87	875.95	-159.94	8,964.88	8,877.37	87.52	102.437	
14,500.00	6,943.52	2,809.00	2,808.59	127.33	55.29	-10.87	875.95	-159.94	9,053.33	8,965.54	87.79	103.126	
14,600.00	6,943.43	2,809.00	2,808.59	128.90	55.29	-10.87	875.95	-159.94	9,142.02	9,053.96	88.05	103.822	
14,700.00	6,943.34	2,809.00	2,808.59	130.48	55.29	-10.87	875.95	-159.94	9,230.93	9,142.62	88.32	104.522	
14,800.00	6,943.25	2,809.00	2,808.59	132.05	55.29	-10.87	875.95	-159.94	9,320.07	9,231.50	88.57	105.228	
14,900.00	6,943.16	2,809.00	2,808.59	133.63	55.29	-10.87	875.95	-159.94	9,409.43	9,320.61	88.82	105.938	
15,000.00	6,943.07	2,809.00	2,808.59	135.20	55.29	-10.87	875.95	-159.94	9,499.01	9,409.94	89.06	106.653	
15,100.00	6,942.98	2,809.00	2,808.59	136.78	55.29	-10.87	875.95	-159.94	9,588.78	9,499.48	89.30	107.372	
15,200.00	6,942.89	2,809.00	2,808.59	138.36	55.29	-10.87	875.95	-159.94	9,678.76	9,589.22	89.54	108.095	
15,300.00	6,942.80	2,809.00	2,808.59	139.93	55.29	-10.87	875.95	-159.94	9,768.93	9,679.16	89.77	108.822	
15,400.00	6,942.71	2,809.00	2,808.59	141.51	55.29	-10.87	875.95	-159.94	9,859.30	9,769.30	90.00	109.552	
15,500.00	6,942.62	2,809.00	2,808.59	143.09	55.29	-10.87	875.95	-159.94	9,949.84	9,859.63	90.22	110.286	
15,600.00	6,942.53	2,809.00	2,808.59	144.67	55.29	-10.87	875.95	-159.94	10,040.57	9,950.13	90.44	111.024	
15,700.00	6,942.44	2,809.00	2,808.59	146.25	55.29	-10.87	875.95	-159.94	10,131.47	10,040.82	90.65	111.765	
15,800.00	6,942.35	2,809.00	2,808.59	147.83	55.29	-10.87	875.95	-159.94	10,222.54	10,131.68	90.86	112.509	
15,900.00	6,942.26	2,809.00	2,808.59	149.41	55.29	-10.87	875.95	-159.94	10,313.78	10,222.71	91.07	113.256	
16,000.00	6,942.17	2,809.00	2,808.59	150.99	55.29	-10.87	875.95	-159.94	10,405.18	10,313.91	91.27	114.005	
16,100.00	6,942.08	2,809.00	2,808.59	152.57	55.29	-10.87	875.95	-159.94	10,496.73	10,405.26	91.47	114.757	
16,200.00	6,941.99	2,809.00	2,808.59	154.16	55.29	-10.87	875.95	-159.94	10,588.44	10,496.77	91.67	115.512	
16,300.00	6,941.90	2,809.00	2,808.59	155.74	55.29	-10.87	875.95	-159.94	10,680.29	10,588.43	91.86	116.269	
16,400.00	6,941.81	2,809.00	2,808.59	157.32	55.29	-10.87	875.95	-159.94	10,772.29	10,680.24	92.05	117.029	
16,500.00	6,941.72	2,809.00	2,808.59	158.91	55.29	-10.87	875.95	-159.94	10,864.44	10,772.20	92.24	117.790	
16,600.00	6,941.63	2,809.00	2,808.59	160.49	55.29	-10.87	875.95	-159.94	10,956.72	10,864.30	92.42	118.553	
16,700.00	6,941.54	2,809.00	2,808.59	162.07	55.29	-10.87	875.95	-159.94	11,049.13	10,956.53	92.60	119.319	
16,800.00	6,941.45	2,809.00	2,808.59	163.66	55.29	-10.87	875.95	-159.94	11,141.68	11,048.89	92.78	120.086	
16,900.00	6,941.36	2,809.00	2,808.59	165.24	55.29	-10.87	875.95	-159.94	11,234.35	11,141.39	92.96	120.855	
17,000.00	6,941.27	2,809.00	2,808.59	166.83	55.29	-10.87	875.95	-159.94	11,327.15	11,234.02	93.13	121.626	
17,100.00	6,941.18	2,809.00	2,808.59	168.42	55.29	-10.87	875.95	-159.94	11,420.07	11,326.76	93.30	122.398	
17,200.00	6,941.09	2,809.00	2,808.59	170.00	55.29	-10.87	875.95	-159.94	11,513.10	11,419.63	93.47	123.171	
17,300.00	6,941.00	2,809.00	2,808.59	171.59	55.29	-10.87	875.95	-159.94	11,606.26	11,512.62	93.64	123.946	
17,400.00	6,940.91	2,809.00	2,808.59	173.18	55.29	-10.87	875.95	-159.94	11,699.52	11,605.72	93.80	124.722	
17,500.00	6,940.82	2,809.00	2,808.59	174.76	55.29	-10.87	875.95	-159.94	11,792.90	11,698.93	93.97	125.499	
17,600.00	6,940.73	2,809.00	2,808.59	176.35	55.29	-10.87	875.95	-159.94	11,886.39	11,792.26	94.13	126.278	
17,700.00	6,940.64	2,809.00	2,808.59	177.94	55.29	-10.87	875.95	-159.94	11,979.98	11,885.69	94.29	127.057	
17,800.00	6,940.55	2,809.00	2,808.59	179.53	55.29	-10.87	875.95	-159.94	12,073.67	11,979.22	94.45	127.837	
17,900.00	6,940.46	2,809.00	2,808.59	181.11	55.29	-10.87	875.95	-159.94	12,167.46	12,072.86	94.60	128.618	
18,000.00	6,940.37	2,809.00	2,808.59	182.70	55.29	-10.87	875.95	-159.94	12,261.35	12,166.60	94.76	129.400	
18,100.00	6,940.28	2,809.00	2,808.59	184.29	55.29	-10.87	875.95	-159.94	12,355.34	12,260.43	94.91	130.183	
18,200.00	6,940.19	2,809.00	2,808.59	185.88	55.29	-10.87	875.95	-159.94	12,449.42	12,354.36	95.06	130.966	
18,300.00	6,940.10	2,809.00	2,808.59	187.47	55.29	-10.87	875.95	-159.94	12,543.60	12,448.39	95.21	131.750	
18,400.00	6,940.01	2,809.00	2,808.59	189.06	55.29	-10.87	875.95	-159.94	12,637.86	12,542.50	95.36	132.535	
18,500.00	6,939.92	2,809.00	2,808.59	190.65	55.29	-10.87	875.95	-159.94	12,732.21	12,636.71	95.50	133.319	
18,600.00	6,939.83	2,809.00	2,808.59	192.24	55.29	-10.87	875.95	-159.94	12,826.64	12,731.00	95.65	134.105	
18,700.00	6,939.74	2,809.00	2,808.59	193.83	55.29	-10.87	875.95	-159.94	12,921.16	12,825.37	95.79	134.891	
18,800.00	6,939.65	2,809.00	2,808.59	195.42	55.29	-10.87	875.95	-159.94	13,015.76	12,919.83	95.93	135.677	
18,900.00	6,939.56	2,809.00	2,808.59	197.01	55.29	-10.87	875.95	-159.94	13,110.44	13,014.37	96.07	136.463	
19,000.00	6,939.47	2,809.00	2,808.59	198.60	55.29	-10.87	875.95	-159.94	13,205.20	13,108.99	96.21	137.249	
19,100.00	6,939.38	2,809.00	2,808.59	200.19	55.29	-10.87	875.95	-159.94	13,300.04	13,203.69	96.35	138.036	

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 #722H - Slot B05
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 #722H	**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
19,200.00	6,939.29	2,809.00	2,808.59	201.78	55.29	-10.87	875.95	-159.94	13,394.95	13,298.46	96.49	138.823	
19,300.00	6,939.20	2,809.00	2,808.59	203.37	55.29	-10.87	875.95	-159.94	13,489.94	13,393.31	96.63	139.610	
19,400.00	6,939.11	2,809.00	2,808.59	204.97	55.29	-10.87	875.95	-159.94	13,584.99	13,488.23	96.76	140.397	
19,500.00	6,939.02	2,809.00	2,808.59	206.56	55.29	-10.87	875.95	-159.94	13,680.12	13,583.22	96.90	141.184	
19,600.00	6,938.93	2,809.00	2,808.59	208.15	55.29	-10.87	875.95	-159.94	13,775.32	13,678.29	97.03	141.970	
19,700.00	6,938.83	2,809.00	2,808.59	209.74	55.29	-10.87	875.95	-159.94	13,870.58	13,773.42	97.16	142.757	
19,800.00	6,938.74	2,809.00	2,808.59	211.33	55.29	-10.87	875.95	-159.94	13,965.91	13,868.62	97.29	143.544	
19,900.00	6,938.65	2,809.00	2,808.59	212.93	55.29	-10.87	875.95	-159.94	14,061.31	13,963.88	97.42	144.330	
20,000.00	6,938.56	2,809.00	2,808.59	214.52	55.29	-10.87	875.95	-159.94	14,156.76	14,059.21	97.55	145.116	
20,100.00	6,938.47	2,809.00	2,808.59	216.11	55.29	-10.87	875.95	-159.94	14,252.28	14,154.60	97.68	145.902	
20,200.00	6,938.38	2,809.00	2,808.59	217.71	55.29	-10.87	875.95	-159.94	14,347.87	14,250.05	97.81	146.688	
20,300.00	6,938.29	2,809.00	2,808.59	219.30	55.29	-10.87	875.95	-159.94	14,443.51	14,345.57	97.94	147.473	
20,400.00	6,938.20	2,809.00	2,808.59	220.89	55.29	-10.87	875.95	-159.94	14,539.21	14,441.14	98.07	148.258	
20,500.00	6,938.11	2,809.00	2,808.59	222.49	55.29	-10.87	875.95	-159.94	14,634.97	14,536.77	98.19	149.042	
20,600.00	6,938.02	2,809.00	2,808.59	224.08	55.29	-10.87	875.95	-159.94	14,730.78	14,632.46	98.32	149.826	
20,626.08	6,938.00	2,809.00	2,808.59	224.49	55.29	-10.87	875.95	-159.94	14,755.78	14,657.43	98.35	150.031	

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 #722H - Slot B05
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 #722H	**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	85.10	308.98	3,606.19	3,619.51				
100.00	100.00	72.00	72.00	0.25	3.14	85.10	308.98	3,606.19	3,619.40	3,616.01	3.39	1,066.814	
200.00	200.00	172.00	172.00	0.61	7.51	85.10	308.98	3,606.19	3,619.40	3,611.29	8.11	446.041	
300.00	300.00	272.00	272.00	0.97	11.87	85.10	308.98	3,606.19	3,619.40	3,606.57	12.84	281.966	
400.00	400.00	372.00	372.00	1.33	16.23	85.10	308.98	3,606.19	3,619.40	3,601.84	17.56	206.139	
500.00	500.00	472.00	472.00	1.68	20.60	85.10	308.98	3,606.19	3,619.40	3,597.12	22.28	162.452	
535.00	535.00	507.00	507.00	1.81	22.12	74.44	308.98	3,606.19	3,619.34	3,595.41	23.93	151.231	
600.00	599.99	571.99	571.99	2.04	24.96	74.45	308.98	3,606.19	3,619.13	3,592.13	27.00	134.037	
700.00	699.99	671.99	671.99	2.40	29.32	74.47	308.98	3,606.19	3,618.80	3,587.08	31.72	114.079	
800.00	799.98	771.98	771.98	2.76	33.68	74.49	308.98	3,606.19	3,618.48	3,582.03	36.44	99.292	
900.00	899.97	871.97	871.97	3.12	38.05	74.50	308.98	3,606.19	3,618.15	3,576.99	41.16	87.896	
1,000.00	999.96	971.96	971.96	3.48	42.41	74.52	308.98	3,606.19	3,617.82	3,571.94	45.89	78.845	
1,100.00	1,099.96	1,071.96	1,071.96	3.84	46.77	74.54	308.98	3,606.19	3,617.50	3,566.89	50.61	71.483	
1,200.00	1,199.95	1,171.95	1,171.95	4.19	51.14	74.56	308.98	3,606.19	3,617.17	3,561.85	55.33	65.377	
1,300.00	1,299.94	1,271.94	1,271.94	4.55	55.50	74.58	308.98	3,606.19	3,616.85	3,556.80	60.05	60.232	
1,400.00	1,399.93	1,371.93	1,371.93	4.91	59.86	74.60	308.98	3,606.19	3,616.52	3,551.75	64.77	55.836	
1,500.00	1,499.93	1,471.93	1,471.93	5.27	64.23	74.62	308.98	3,606.19	3,616.20	3,546.71	69.49	52.038	
1,600.00	1,599.92	1,571.92	1,571.92	5.63	68.59	74.64	308.98	3,606.19	3,615.87	3,541.66	74.21	48.723	
1,700.00	1,699.91	1,671.91	1,671.91	5.99	72.95	74.65	308.98	3,606.19	3,615.55	3,536.62	78.93	45.805	
1,800.00	1,799.90	1,771.90	1,771.90	6.34	77.31	74.67	308.98	3,606.19	3,615.23	3,531.57	83.66	43.216	
1,900.00	1,899.90	1,871.90	1,871.90	6.70	81.68	74.69	308.98	3,606.19	3,614.91	3,526.53	88.38	40.903	
2,000.00	1,999.89	1,971.89	1,971.89	7.06	86.04	74.71	308.98	3,606.19	3,614.58	3,521.48	93.10	38.826	
2,100.00	2,099.88	2,071.88	2,071.88	7.42	90.40	74.73	308.98	3,606.19	3,614.26	3,516.44	97.82	36.948	
2,200.00	2,199.87	2,171.87	2,171.87	7.78	94.77	74.75	308.98	3,606.19	3,613.94	3,511.40	102.54	35.244	
2,300.00	2,299.87	2,271.87	2,271.87	8.14	99.13	74.77	308.98	3,606.19	3,613.62	3,506.36	107.26	33.690	
2,400.00	2,399.86	2,371.86	2,371.86	8.50	103.49	74.78	308.98	3,606.19	3,613.30	3,501.31	111.98	32.266	
2,500.00	2,499.85	2,471.85	2,471.85	8.85	107.86	74.80	308.98	3,606.19	3,612.98	3,496.27	116.70	30.958	
2,600.00	2,599.85	2,571.85	2,571.85	9.21	112.22	74.82	308.98	3,606.19	3,612.66	3,491.23	121.43	29.752	
2,700.00	2,699.84	2,671.84	2,671.84	9.57	116.58	74.84	308.98	3,606.19	3,612.34	3,486.19	126.15	28.636	
2,800.00	2,799.83	2,771.83	2,771.83	9.93	120.94	74.86	308.98	3,606.19	3,612.02	3,481.15	130.87	27.600	
2,900.00	2,899.82	2,871.82	2,871.82	10.29	125.31	74.88	308.98	3,606.19	3,611.70	3,476.11	135.59	26.637	
3,000.00	2,999.82	2,971.82	2,971.82	10.65	129.67	74.90	308.98	3,606.19	3,611.38	3,471.07	140.31	25.738	
3,100.00	3,099.81	3,071.81	3,071.81	11.01	134.03	74.92	308.98	3,606.19	3,611.06	3,466.03	145.03	24.898	
3,200.00	3,199.80	3,171.80	3,171.80	11.36	138.40	74.93	308.98	3,606.19	3,610.74	3,460.99	149.75	24.111	
3,300.00	3,299.79	3,271.79	3,271.79	11.72	142.76	74.95	308.98	3,606.19	3,610.43	3,455.95	154.48	23.372	
3,400.00	3,399.79	3,371.79	3,371.79	12.08	147.12	74.97	308.98	3,606.19	3,610.11	3,450.91	159.20	22.677	
3,500.00	3,499.78	3,471.78	3,471.78	12.44	151.49	74.99	308.98	3,606.19	3,609.79	3,445.87	163.92	22.022	
3,600.00	3,599.77	3,571.77	3,571.77	12.80	155.85	75.01	308.98	3,606.19	3,609.48	3,440.84	168.64	21.404	
3,700.00	3,699.76	3,671.76	3,671.76	13.16	160.21	75.03	308.98	3,606.19	3,609.16	3,435.80	173.36	20.819	
3,800.00	3,799.76	3,771.76	3,771.76	13.52	164.57	75.05	308.98	3,606.19	3,608.85	3,430.76	178.08	20.265	
3,900.00	3,899.75	3,871.75	3,871.75	13.87	168.94	75.07	308.98	3,606.19	3,608.53	3,425.73	182.80	19.740	
4,000.00	3,999.74	3,971.74	3,971.74	14.23	173.30	75.08	308.98	3,606.19	3,608.22	3,420.69	187.52	19.241	
4,100.00	4,099.73	4,071.73	4,071.73	14.59	177.66	75.10	308.98	3,606.19	3,607.90	3,415.66	192.25	18.767	
4,200.00	4,199.73	4,171.73	4,171.73	14.95	182.03	75.12	308.98	3,606.19	3,607.59	3,410.62	196.97	18.316	
4,300.00	4,299.72	4,271.72	4,271.72	15.31	186.39	75.14	308.98	3,606.19	3,607.27	3,405.58	201.69	17.885	
4,400.00	4,399.71	4,371.71	4,371.71	15.67	190.75	75.16	308.98	3,606.19	3,606.96	3,400.55	206.41	17.475	
4,500.00	4,499.70	4,471.70	4,471.70	16.03	195.11	75.18	308.98	3,606.19	3,606.65	3,395.52	211.13	17.082	
4,600.00	4,599.70	4,571.70	4,571.70	16.38	199.48	75.20	308.98	3,606.19	3,606.34	3,390.48	215.85	16.707	
4,700.00	4,699.69	4,671.69	4,671.69	16.74	203.84	75.22	308.98	3,606.19	3,606.02	3,385.45	220.57	16.348	
4,800.00	4,799.68	4,771.68	4,771.68	17.10	208.20	75.23	308.98	3,606.19	3,605.71	3,380.42	225.30	16.004	
4,900.00	4,899.67	4,871.67	4,871.67	17.46	212.57	75.25	308.98	3,606.19	3,605.40	3,375.38	230.02	15.674	
5,000.00	4,999.67	4,971.67	4,971.67	17.82	216.93	75.27	308.98	3,606.19	3,605.09	3,370.35	234.74	15.358	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	5,071.66	5,071.66	18.18	221.29	75.29	308.98	3,606.19	3,604.78	3,365.32	239.46	15.054	
5,200.00	5,199.65	5,171.65	5,171.65	18.53	225.66	75.31	308.98	3,606.19	3,604.47	3,360.29	244.18	14.761	
5,300.00	5,299.64	5,271.64	5,271.64	18.89	230.02	75.33	308.98	3,606.19	3,604.16	3,355.26	248.90	14.480	
5,400.00	5,399.64	5,371.64	5,371.64	19.25	234.38	75.35	308.98	3,606.19	3,603.85	3,350.23	253.62	14.209	
5,500.00	5,499.63	5,471.63	5,471.63	19.61	238.74	75.37	308.98	3,606.19	3,603.54	3,345.20	258.35	13.949	
5,600.00	5,599.62	5,571.62	5,571.62	19.97	243.11	75.38	308.98	3,606.19	3,603.23	3,340.17	263.07	13.697	
5,700.00	5,699.61	5,671.61	5,671.61	20.33	247.47	75.40	308.98	3,606.19	3,602.92	3,335.14	267.79	13.454	
5,800.00	5,799.61	5,771.61	5,771.61	20.69	251.83	75.42	308.98	3,606.19	3,602.62	3,330.11	272.51	13.220	
5,900.00	5,899.60	5,871.60	5,871.60	21.04	256.20	75.44	308.98	3,606.19	3,602.31	3,325.08	277.23	12.994	
6,000.00	5,999.59	5,971.59	5,971.59	21.40	260.56	75.46	308.98	3,606.19	3,602.00	3,320.05	281.95	12.775	
6,100.00	6,099.58	6,071.58	6,071.58	21.76	264.92	75.48	308.98	3,606.19	3,601.70	3,315.02	286.67	12.564	
6,200.00	6,199.58	6,171.58	6,171.58	22.12	269.29	75.50	308.98	3,606.19	3,601.39	3,310.00	291.39	12.359	
6,300.00	6,299.57	6,271.57	6,271.57	22.48	273.65	75.52	308.98	3,606.19	3,601.08	3,304.97	296.12	12.161	
6,315.05	6,314.62	6,286.62	6,286.62	22.53	274.31	75.52	308.98	3,606.19	3,601.04	3,304.21	296.83	12.132	
6,350.00	6,349.55	6,321.55	6,321.55	22.66	275.83	6.33	308.98	3,606.19	3,599.98	3,301.50	298.47	12.061	
6,400.00	6,399.30	6,371.30	6,371.30	22.83	278.00	-0.61	308.98	3,606.19	3,595.15	3,294.33	300.82	11.951	
6,450.00	6,448.52	6,420.52	6,420.52	23.00	280.15	-2.55	308.98	3,606.19	3,586.45	3,283.31	303.14	11.831	
6,500.00	6,496.91	6,468.91	6,468.91	23.18	282.26	-3.54	308.98	3,606.19	3,573.93	3,268.52	305.41	11.702	
6,550.00	6,544.17	6,516.17	6,516.17	23.35	284.32	-4.21	308.98	3,606.19	3,557.68	3,250.05	307.64	11.565	
6,600.00	6,590.01	6,562.01	6,562.01	23.53	286.32	-4.76	308.98	3,606.19	3,537.79	3,228.00	309.79	11.420	
6,650.00	6,634.14	6,606.14	6,606.14	23.70	288.25	-5.29	308.98	3,606.19	3,514.39	3,202.52	311.86	11.269	
6,700.00	6,676.30	6,648.30	6,648.30	23.88	290.09	-5.83	308.98	3,606.19	3,487.61	3,173.77	313.84	11.113	
6,750.00	6,716.21	6,688.21	6,688.21	24.06	291.83	-6.43	308.98	3,606.19	3,457.63	3,141.93	315.71	10.952	
6,800.00	6,753.65	6,725.65	6,725.65	24.24	293.46	-7.13	308.98	3,606.19	3,424.63	3,107.18	317.46	10.788	
6,850.00	6,788.37	6,760.37	6,760.37	24.44	294.98	-7.96	308.98	3,606.19	3,388.82	3,069.75	319.07	10.621	
6,900.00	6,820.16	6,792.16	6,792.16	24.63	296.36	-9.00	308.98	3,606.19	3,350.42	3,029.87	320.55	10.452	
6,950.00	6,848.83	6,820.83	6,820.83	24.84	297.61	-10.32	308.98	3,606.19	3,309.66	2,987.78	321.89	10.282	
7,000.00	6,874.19	6,846.19	6,846.19	25.06	298.72	-12.06	308.98	3,606.19	3,266.80	2,943.74	323.06	10.112	
7,050.00	6,896.10	6,868.10	6,868.10	25.29	299.68	-14.44	308.98	3,606.19	3,222.11	2,898.03	324.07	9.943	
7,100.00	6,914.42	6,886.42	6,886.42	25.53	300.48	-17.88	308.98	3,606.19	3,175.85	2,850.93	324.92	9.774	
7,150.00	6,929.03	6,901.03	6,901.03	25.78	301.11	-23.19	308.98	3,606.19	3,128.32	2,802.73	325.59	9.608	
7,200.00	6,939.85	6,911.85	6,911.85	26.05	301.59	-32.14	308.98	3,606.19	3,079.81	2,753.73	326.09	9.445	
7,250.00	6,946.80	6,918.80	6,918.80	26.32	301.89	-48.85	308.98	3,606.19	3,030.63	2,704.22	326.41	9.285	
7,300.00	6,949.85	6,921.85	6,921.85	26.61	302.02	-79.51	308.98	3,606.19	2,981.06	2,654.51	326.55	9.129	
7,314.43	6,950.00	6,922.00	6,922.00	26.69	302.03	-90.44	308.98	3,606.19	2,966.73	2,640.17	326.56	9.085	
7,400.00	6,949.92	6,921.92	6,921.92	27.21	302.03	-90.42	308.98	3,606.19	2,881.78	2,555.21	326.57	8.824	
7,500.00	6,949.83	6,921.83	6,921.83	27.90	302.02	-90.41	308.98	3,606.19	2,782.54	2,455.95	326.58	8.520	
7,600.00	6,949.74	6,921.74	6,921.74	28.66	302.02	-90.39	308.98	3,606.19	2,683.35	2,356.76	326.60	8.216	
7,700.00	6,949.65	6,921.65	6,921.65	29.49	302.01	-90.38	308.98	3,606.19	2,584.23	2,257.61	326.62	7.912	
7,800.00	6,949.56	6,921.56	6,921.56	30.38	302.01	-90.36	308.98	3,606.19	2,485.19	2,158.54	326.65	7.608	
7,900.00	6,949.47	6,921.47	6,921.47	31.33	302.01	-90.35	308.98	3,606.19	2,386.22	2,059.53	326.68	7.304	
8,000.00	6,949.38	6,921.38	6,921.38	32.33	302.00	-90.33	308.98	3,606.19	2,287.34	1,960.61	326.73	7.001	
8,100.00	6,949.29	6,921.29	6,921.29	33.38	302.00	-90.32	308.98	3,606.19	2,188.56	1,861.78	326.78	6.697	
8,200.00	6,949.20	6,921.20	6,921.20	34.47	301.99	-90.31	308.98	3,606.19	2,089.90	1,763.05	326.85	6.394	
8,300.00	6,949.11	6,921.11	6,921.11	35.60	301.99	-90.29	308.98	3,606.19	1,991.37	1,664.44	326.93	6.091	
8,400.00	6,949.02	6,921.02	6,921.02	36.76	301.99	-90.28	308.98	3,606.19	1,892.99	1,565.97	327.03	5.789	
8,500.00	6,948.93	6,920.93	6,920.93	37.96	301.98	-90.26	308.98	3,606.19	1,794.80	1,467.65	327.15	5.486	
8,600.00	6,948.84	6,920.84	6,920.84	39.18	301.98	-90.25	308.98	3,606.19	1,696.82	1,369.52	327.30	5.184	
8,700.00	6,948.75	6,920.75	6,920.75	40.43	301.97	-90.23	308.98	3,606.19	1,599.08	1,271.60	327.48	4.883	
8,800.00	6,948.66	6,920.66	6,920.66	41.71	301.97	-90.22	308.98	3,606.19	1,501.65	1,173.94	327.71	4.582	
8,900.00	6,948.57	6,920.57	6,920.57	43.00	301.97	-90.20	308.98	3,606.19	1,404.57	1,076.57	328.00	4.282	
9,000.00	6,948.48	6,920.48	6,920.48	44.32	301.96	-90.19	308.98	3,606.19	1,307.94	979.57	328.37	3.983	

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 #722H - Slot B05
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 #722H	**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
9,100.00	6,948.39	6,920.39	6,920.39	45.66	301.96	-90.17	308.98	3,606.19	1,211.85	883.01	328.84	3.685	
9,200.00	6,948.30	6,920.30	6,920.30	47.01	301.96	-90.16	308.98	3,606.19	1,116.45	787.00	329.45	3.389	
9,300.00	6,948.21	6,920.21	6,920.21	48.38	301.95	-90.14	308.98	3,606.19	1,021.93	691.69	330.24	3.095	
9,400.00	6,948.12	6,920.12	6,920.12	49.76	301.95	-90.13	308.98	3,606.19	928.56	597.28	331.28	2.803	
9,500.00	6,948.03	6,920.03	6,920.03	51.16	301.94	-90.11	308.98	3,606.19	836.72	504.06	332.67	2.515	
9,600.00	6,947.94	6,919.94	6,919.94	52.56	301.94	-90.10	308.98	3,606.19	746.99	412.46	334.53	2.233	
9,700.00	6,947.85	6,919.85	6,919.85	53.98	301.94	-90.08	308.98	3,606.19	660.20	323.16	337.04	1.959	
9,800.00	6,947.76	6,919.76	6,919.76	55.41	301.93	-90.07	308.98	3,606.19	577.71	237.27	340.44	1.697	
9,900.00	6,947.67	6,919.67	6,919.67	56.85	301.93	-90.05	308.98	3,606.19	501.63	156.69	344.93	1.454	Level 3
10,000.00	6,947.58	6,919.58	6,919.58	58.29	301.92	-90.04	308.98	3,606.19	435.32	84.72	350.60	1.242	Level 3
10,100.00	6,947.49	6,919.49	6,919.49	59.75	301.92	-90.02	308.98	3,606.19	383.91	26.98	356.93	1.076	Level 3
10,200.00	6,947.40	6,919.40	6,919.40	61.21	301.92	-90.01	308.98	3,606.19	353.93	-8.33	362.26	0.977	Level 3
10,260.61	6,947.34	6,919.34	6,919.34	62.10	301.91	-90.00	308.98	3,606.19	348.70	-15.30	364.01	0.958	Level 3, CC, ES, SF
10,300.00	6,947.31	6,919.31	6,919.31	62.68	301.91	-89.99	308.98	3,606.19	350.92	-13.40	364.32	0.963	Level 3
10,400.00	6,947.22	6,919.22	6,919.22	64.15	301.91	-89.98	308.98	3,606.19	375.53	13.09	362.44	1.036	Level 3
10,500.00	6,947.13	6,919.13	6,919.13	65.63	301.90	-89.96	308.98	3,606.19	422.97	64.75	358.22	1.181	Level 3
10,600.00	6,947.04	6,919.04	6,919.04	67.12	301.90	-89.95	308.98	3,606.19	486.61	133.05	353.55	1.376	Level 3
10,700.00	6,946.95	6,918.95	6,918.95	68.61	301.90	-89.93	308.98	3,606.19	560.95	211.55	349.40	1.605	
10,800.00	6,946.86	6,918.86	6,918.86	70.11	301.89	-89.92	308.98	3,606.19	642.30	296.31	345.99	1.856	
10,900.00	6,946.77	6,918.77	6,918.77	71.61	301.89	-89.91	308.98	3,606.19	728.30	385.03	343.27	2.122	
11,000.00	6,946.68	6,918.68	6,918.68	73.11	301.88	-89.89	308.98	3,606.19	817.50	476.37	341.12	2.396	
11,100.00	6,946.59	6,918.59	6,918.59	74.62	301.88	-89.88	308.98	3,606.19	908.95	569.53	339.42	2.678	
11,200.00	6,946.50	6,918.50	6,918.50	76.14	301.88	-89.86	308.98	3,606.19	1,002.03	663.98	338.04	2.964	
11,300.00	6,946.41	6,918.41	6,918.41	77.65	301.87	-89.85	308.98	3,606.19	1,096.33	759.40	336.93	3.254	
11,400.00	6,946.32	6,918.32	6,918.32	79.18	301.87	-89.83	308.98	3,606.19	1,191.56	855.54	336.03	3.546	
11,500.00	6,946.23	6,918.23	6,918.23	80.70	301.86	-89.82	308.98	3,606.19	1,287.52	952.24	335.28	3.840	
11,600.00	6,946.14	6,918.14	6,918.14	82.23	301.86	-89.80	308.98	3,606.19	1,384.05	1,049.39	334.65	4.136	
11,700.00	6,946.05	6,918.05	6,918.05	83.76	301.86	-89.79	308.98	3,606.19	1,481.03	1,146.90	334.13	4.433	
11,800.00	6,945.96	6,917.96	6,917.96	85.29	301.85	-89.77	308.98	3,606.19	1,578.40	1,244.71	333.69	4.730	
11,900.00	6,945.87	6,917.87	6,917.87	86.82	301.85	-89.76	308.98	3,606.19	1,676.07	1,342.76	333.31	5.029	
12,000.00	6,945.78	6,917.78	6,917.78	88.36	301.84	-89.74	308.98	3,606.19	1,774.01	1,441.02	332.99	5.327	
12,100.00	6,945.69	6,917.69	6,917.69	89.90	301.84	-89.73	308.98	3,606.19	1,872.16	1,539.44	332.71	5.627	
12,200.00	6,945.60	6,917.60	6,917.60	91.44	301.84	-89.71	308.98	3,606.19	1,970.50	1,638.02	332.48	5.927	
12,300.00	6,945.51	6,917.51	6,917.51	92.99	301.83	-89.70	308.98	3,606.19	2,068.99	1,736.72	332.27	6.227	
12,400.00	6,945.42	6,917.42	6,917.42	94.53	301.83	-89.68	308.98	3,606.19	2,167.63	1,835.53	332.10	6.527	
12,500.00	6,945.33	6,917.33	6,917.33	96.08	301.83	-89.67	308.98	3,606.19	2,266.38	1,934.44	331.94	6.828	
12,600.00	6,945.24	6,917.24	6,917.24	97.63	301.82	-89.65	308.98	3,606.19	2,365.24	2,033.43	331.81	7.128	
12,700.00	6,945.15	6,917.15	6,917.15	99.18	301.82	-89.64	308.98	3,606.19	2,464.19	2,132.50	331.70	7.429	
12,800.00	6,945.06	6,917.06	6,917.06	100.74	301.81	-89.62	308.98	3,606.19	2,563.23	2,231.63	331.60	7.730	
12,900.00	6,944.96	6,916.96	6,916.96	102.29	301.81	-89.61	308.98	3,606.19	2,662.33	2,330.82	331.51	8.031	
13,000.00	6,944.87	6,916.87	6,916.87	103.85	301.81	-89.59	308.98	3,606.19	2,761.50	2,430.06	331.44	8.332	
13,100.00	6,944.78	6,916.78	6,916.78	105.40	301.80	-89.58	308.98	3,606.19	2,860.73	2,529.35	331.38	8.633	
13,200.00	6,944.69	6,916.69	6,916.69	106.96	301.80	-89.56	308.98	3,606.19	2,960.01	2,628.68	331.33	8.934	
13,300.00	6,944.60	6,916.60	6,916.60	108.52	301.79	-89.55	308.98	3,606.19	3,059.34	2,728.05	331.28	9.235	
13,400.00	6,944.51	6,916.51	6,916.51	110.08	301.79	-89.54	308.98	3,606.19	3,158.70	2,827.45	331.25	9.536	
13,500.00	6,944.42	6,916.42	6,916.42	111.65	301.79	-89.52	308.98	3,606.19	3,258.11	2,926.89	331.22	9.837	
13,600.00	6,944.33	6,916.33	6,916.33	113.21	301.78	-89.51	308.98	3,606.19	3,357.55	3,026.35	331.20	10.138	
13,700.00	6,944.24	6,916.24	6,916.24	114.78	301.78	-89.49	308.98	3,606.19	3,457.03	3,125.84	331.19	10.438	
13,800.00	6,944.15	6,916.15	6,916.15	116.34	301.77	-89.48	308.98	3,606.19	3,556.53	3,225.36	331.18	10.739	
13,900.00	6,944.06	6,916.06	6,916.06	117.91	301.77	-89.46	308.98	3,606.19	3,656.06	3,324.89	331.17	11.040	
14,000.00	6,943.97	6,915.97	6,915.97	119.48	301.77	-89.45	308.98	3,606.19	3,755.62	3,424.45	331.17	11.340	
14,100.00	6,943.88	6,915.88	6,915.88	121.05	301.76	-89.43	308.98	3,606.19	3,855.20	3,524.02	331.18	11.641	

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 #722H - Slot B05
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 #722H	**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
14,200.00	6,943.79	6,915.79	6,915.79	122.62	301.76	-89.42	308.98	3,606.19	3,954.80	3,623.62	331.18	11.941	
14,300.00	6,943.70	6,915.70	6,915.70	124.19	301.75	-89.40	308.98	3,606.19	4,054.42	3,723.22	331.20	12.242	
14,400.00	6,943.61	6,915.61	6,915.61	125.76	301.75	-89.39	308.98	3,606.19	4,154.06	3,822.85	331.21	12.542	
14,500.00	6,943.52	6,915.52	6,915.52	127.33	301.75	-89.37	308.98	3,606.19	4,253.71	3,922.48	331.23	12.842	
14,600.00	6,943.43	6,915.43	6,915.43	128.90	301.74	-89.36	308.98	3,606.19	4,353.38	4,022.13	331.25	13.142	
14,700.00	6,943.34	6,915.34	6,915.34	130.48	301.74	-89.34	308.98	3,606.19	4,453.07	4,121.79	331.28	13.442	
14,800.00	6,943.25	6,915.25	6,915.25	132.05	301.73	-89.33	308.98	3,606.19	4,552.77	4,221.47	331.30	13.742	
14,900.00	6,943.16	6,915.16	6,915.16	133.63	301.73	-89.31	308.98	3,606.19	4,652.48	4,321.15	331.33	14.042	
15,000.00	6,943.07	6,915.07	6,915.07	135.20	301.73	-89.30	308.98	3,606.19	4,752.21	4,420.84	331.37	14.341	
15,100.00	6,942.98	6,914.98	6,914.98	136.78	301.72	-89.28	308.98	3,606.19	4,851.94	4,520.54	331.40	14.641	
15,200.00	6,942.89	6,914.89	6,914.89	138.36	301.72	-89.27	308.98	3,606.19	4,951.69	4,620.25	331.44	14.940	
15,300.00	6,942.80	6,914.80	6,914.80	139.93	301.72	-89.25	308.98	3,606.19	5,051.45	4,719.97	331.48	15.239	
15,400.00	6,942.71	6,914.71	6,914.71	141.51	301.71	-89.24	308.98	3,606.19	5,151.21	4,819.70	331.52	15.538	
15,500.00	6,942.62	6,914.62	6,914.62	143.09	301.71	-89.22	308.98	3,606.19	5,250.99	4,919.43	331.56	15.837	
15,600.00	6,942.53	6,914.53	6,914.53	144.67	301.70	-89.21	308.98	3,606.19	5,350.77	5,019.17	331.60	16.136	
15,700.00	6,942.44	6,914.44	6,914.44	146.25	301.70	-89.19	308.98	3,606.19	5,450.56	5,118.91	331.65	16.435	
15,800.00	6,942.35	6,914.35	6,914.35	147.83	301.70	-89.18	308.98	3,606.19	5,550.36	5,218.66	331.70	16.733	
15,900.00	6,942.26	6,914.26	6,914.26	149.41	301.69	-89.16	308.98	3,606.19	5,650.17	5,318.42	331.75	17.032	
16,000.00	6,942.17	6,914.17	6,914.17	150.99	301.69	-89.15	308.98	3,606.19	5,749.98	5,418.18	331.80	17.330	
16,100.00	6,942.08	6,914.08	6,914.08	152.57	301.68	-89.14	308.98	3,606.19	5,849.80	5,517.95	331.85	17.628	
16,200.00	6,941.99	6,913.99	6,913.99	154.16	301.68	-89.12	308.98	3,606.19	5,949.62	5,617.72	331.90	17.926	
16,300.00	6,941.90	6,913.90	6,913.90	155.74	301.68	-89.11	308.98	3,606.19	6,049.45	5,717.50	331.96	18.224	
16,400.00	6,941.81	6,913.81	6,913.81	157.32	301.67	-89.09	308.98	3,606.19	6,149.29	5,817.28	332.01	18.521	
16,500.00	6,941.72	6,913.72	6,913.72	158.91	301.67	-89.08	308.98	3,606.19	6,249.13	5,917.06	332.07	18.819	
16,600.00	6,941.63	6,913.63	6,913.63	160.49	301.66	-89.06	308.98	3,606.19	6,348.98	6,016.85	332.13	19.116	
16,700.00	6,941.54	6,913.54	6,913.54	162.07	301.66	-89.05	308.98	3,606.19	6,448.83	6,116.64	332.19	19.413	
16,800.00	6,941.45	6,913.45	6,913.45	163.66	301.66	-89.03	308.98	3,606.19	6,548.69	6,216.44	332.25	19.710	
16,900.00	6,941.36	6,913.36	6,913.36	165.24	301.65	-89.02	308.98	3,606.19	6,648.55	6,316.23	332.31	20.007	
17,000.00	6,941.27	6,913.27	6,913.27	166.83	301.65	-89.00	308.98	3,606.19	6,748.41	6,416.03	332.38	20.303	
17,100.00	6,941.18	6,913.18	6,913.18	168.42	301.64	-88.99	308.98	3,606.19	6,848.28	6,515.84	332.44	20.600	
17,200.00	6,941.09	6,913.09	6,913.09	170.00	301.64	-88.97	308.98	3,606.19	6,948.15	6,615.64	332.51	20.896	
17,300.00	6,941.00	6,913.00	6,913.00	171.59	301.64	-88.96	308.98	3,606.19	7,048.03	6,715.45	332.57	21.192	
17,400.00	6,940.91	6,912.91	6,912.91	173.18	301.63	-88.94	308.98	3,606.19	7,147.91	6,815.27	332.64	21.488	
17,500.00	6,940.82	6,912.82	6,912.82	174.76	301.63	-88.93	308.98	3,606.19	7,247.79	6,915.08	332.71	21.784	
17,600.00	6,940.73	6,912.73	6,912.73	176.35	301.62	-88.91	308.98	3,606.19	7,347.67	7,014.90	332.78	22.080	
17,700.00	6,940.64	6,912.64	6,912.64	177.94	301.62	-88.90	308.98	3,606.19	7,447.56	7,114.71	332.85	22.375	
17,800.00	6,940.55	6,912.55	6,912.55	179.53	301.62	-88.88	308.98	3,606.19	7,547.46	7,214.54	332.92	22.670	
17,900.00	6,940.46	6,912.46	6,912.46	181.11	301.61	-88.87	308.98	3,606.19	7,647.35	7,314.36	332.99	22.966	
18,000.00	6,940.37	6,912.37	6,912.37	182.70	301.61	-88.85	308.98	3,606.19	7,747.25	7,414.18	333.06	23.260	
18,100.00	6,940.28	6,912.28	6,912.28	184.29	301.61	-88.84	308.98	3,606.19	7,847.15	7,514.01	333.14	23.555	
18,200.00	6,940.19	6,912.19	6,912.19	185.88	301.60	-88.82	308.98	3,606.19	7,947.05	7,613.84	333.21	23.850	
18,300.00	6,940.10	6,912.10	6,912.10	187.47	301.60	-88.81	308.98	3,606.19	8,046.95	7,713.67	333.29	24.144	
18,400.00	6,940.01	6,912.01	6,912.01	189.06	301.59	-88.79	308.98	3,606.19	8,146.86	7,813.50	333.36	24.438	
18,500.00	6,939.92	6,911.92	6,911.92	190.65	301.59	-88.78	308.98	3,606.19	8,246.77	7,913.33	333.44	24.732	
18,600.00	6,939.83	6,911.83	6,911.83	192.24	301.59	-88.76	308.98	3,606.19	8,346.68	8,013.16	333.52	25.026	
18,700.00	6,939.74	6,911.74	6,911.74	193.83	301.58	-88.75	308.98	3,606.19	8,446.60	8,113.00	333.60	25.320	
18,800.00	6,939.65	6,911.65	6,911.65	195.42	301.58	-88.74	308.98	3,606.19	8,546.51	8,212.84	333.68	25.613	
18,900.00	6,939.56	6,911.56	6,911.56	197.01	301.57	-88.72	308.98	3,606.19	8,646.43	8,312.67	333.76	25.906	
19,000.00	6,939.47	6,911.47	6,911.47	198.60	301.57	-88.71	308.98	3,606.19	8,746.35	8,412.51	333.84	26.200	
19,100.00	6,939.38	6,911.38	6,911.38	200.19	301.57	-88.69	308.98	3,606.19	8,846.27	8,512.35	333.92	26.492	
19,200.00	6,939.29	6,911.29	6,911.29	201.78	301.56	-88.68	308.98	3,606.19	8,946.19	8,612.19	334.00	26.785	
19,300.00	6,939.20	6,911.20	6,911.20	203.37	301.56	-88.66	308.98	3,606.19	9,046.12	8,712.04	334.08	27.078	

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 #722H - Slot B05
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 #722H	**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
19,400.00	6,939.11	6,911.11	6,911.11	204.97	301.55	-88.65	308.98	3,606.19	9,146.04	8,811.88	334.16	27.370	
19,500.00	6,939.02	6,911.02	6,911.02	206.56	301.55	-88.63	308.98	3,606.19	9,245.97	8,911.72	334.25	27.662	
19,600.00	6,938.93	6,910.93	6,910.93	208.15	301.55	-88.62	308.98	3,606.19	9,345.90	9,011.57	334.33	27.954	
19,700.00	6,938.83	6,910.83	6,910.83	209.74	301.54	-88.60	308.98	3,606.19	9,445.83	9,111.42	334.42	28.246	
19,800.00	6,938.74	6,910.74	6,910.74	211.33	301.54	-88.59	308.98	3,606.19	9,545.77	9,211.26	334.50	28.537	
19,900.00	6,938.65	6,910.65	6,910.65	212.93	301.53	-88.57	308.98	3,606.19	9,645.70	9,311.11	334.59	28.828	
20,000.00	6,938.56	6,910.56	6,910.56	214.52	301.53	-88.56	308.98	3,606.19	9,745.64	9,410.96	334.68	29.120	
20,100.00	6,938.47	6,910.47	6,910.47	216.11	301.53	-88.54	308.98	3,606.19	9,845.57	9,510.81	334.76	29.410	
20,200.00	6,938.38	6,910.38	6,910.38	217.71	301.52	-88.53	308.98	3,606.19	9,945.51	9,610.66	334.85	29.701	
20,300.00	6,938.29	6,910.29	6,910.29	219.30	301.52	-88.51	308.98	3,606.19	10,045.45	9,710.51	334.94	29.992	
20,400.00	6,938.20	6,910.20	6,910.20	220.89	301.51	-88.50	308.98	3,606.19	10,145.39	9,810.36	335.03	30.282	
20,500.00	6,938.11	6,910.11	6,910.11	222.49	301.51	-88.48	308.98	3,606.19	10,245.33	9,910.21	335.12	30.572	
20,600.00	6,938.02	6,910.02	6,910.02	224.08	301.51	-88.47	308.98	3,606.19	10,345.27	10,010.06	335.21	30.862	
20,626.08	6,938.00	6,910.00	6,910.00	224.49	301.51	-88.47	308.98	3,606.19	10,371.34	10,036.11	335.23	30.938	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	312.82	312.82	0.00	4.24	82.14	1,059.07	7,676.49	7,749.21				
100.00	100.00	411.01	411.00	0.25	6.52	82.15	1,059.04	7,676.49	7,749.20	7,742.43	6.77	1,144.702	
200.00	200.00	514.76	514.74	0.61	9.02	82.14	1,059.52	7,676.49	7,749.27	7,739.64	9.63	804.666	
300.00	300.00	611.10	611.00	0.97	11.48	82.15	1,059.04	7,676.49	7,749.20	7,736.76	12.44	622.762	
400.00	400.00	711.10	711.00	1.33	14.61	82.15	1,059.04	7,676.49	7,749.20	7,733.26	15.94	486.280	
500.00	500.00	814.42	814.28	1.68	17.85	82.13	1,060.63	7,676.49	7,749.42	7,729.89	19.53	396.754	
535.00	535.00	853.27	853.12	1.81	19.06	71.47	1,060.44	7,676.49	7,749.33	7,728.45	20.87	371.228	
600.00	599.99	925.41	925.24	2.04	21.33	71.48	1,059.71	7,676.49	7,748.98	7,725.62	23.37	331.605	
700.00	699.99	1,011.38	1,010.99	2.40	24.26	71.49	1,059.04	7,676.49	7,748.49	7,721.83	26.66	290.666	
800.00	799.98	1,111.38	1,110.98	2.76	27.95	71.50	1,059.04	7,676.49	7,748.10	7,717.40	30.71	252.307	
900.00	899.97	1,217.29	1,216.83	3.12	31.86	71.49	1,061.06	7,676.49	7,747.99	7,713.01	34.98	221.505	
1,000.00	999.96	1,330.58	1,330.08	3.48	36.05	71.51	1,059.72	7,676.49	7,747.44	7,707.92	39.52	196.031	
1,100.00	1,099.96	1,411.81	1,410.96	3.84	39.18	71.53	1,059.04	7,676.49	7,746.94	7,703.93	43.02	180.090	
1,200.00	1,199.95	1,519.13	1,518.22	4.19	43.46	71.52	1,060.52	7,676.49	7,746.76	7,699.11	47.65	162.567	
1,300.00	1,299.94	1,612.13	1,610.94	4.55	47.17	71.54	1,059.04	7,676.49	7,746.17	7,694.45	51.72	149.775	
1,400.00	1,399.93	1,712.12	1,710.93	4.91	51.18	71.55	1,059.04	7,676.49	7,745.78	7,689.70	56.09	138.107	
1,500.00	1,499.93	1,826.56	1,825.29	5.27	55.77	71.55	1,060.40	7,676.49	7,745.59	7,684.56	61.03	126.913	
1,600.00	1,599.92	1,912.50	1,910.92	5.63	59.26	71.57	1,059.04	7,676.49	7,745.01	7,680.13	64.88	119.371	
1,700.00	1,699.91	2,012.49	2,010.91	5.99	63.54	71.58	1,059.04	7,676.49	7,744.62	7,675.10	69.52	111.401	
1,800.00	1,799.90	2,137.87	2,136.18	6.34	68.90	71.59	1,059.29	7,676.49	7,744.31	7,669.07	75.24	102.922	
1,900.00	1,899.90	2,212.88	2,210.90	6.70	72.38	71.59	1,059.04	7,676.49	7,743.85	7,664.77	79.08	97.927	
2,000.00	1,999.89	2,325.99	2,323.92	7.06	77.68	71.59	1,060.64	7,676.49	7,743.69	7,658.95	84.74	91.385	
2,100.00	2,099.88	2,413.38	2,410.88	7.42	81.74	71.61	1,059.04	7,676.49	7,743.08	7,653.92	89.16	86.845	
2,200.00	2,199.87	2,513.37	2,510.87	7.78	86.18	71.62	1,059.04	7,676.49	7,742.69	7,648.74	93.95	82.410	
2,300.00	2,299.87	2,648.78	2,646.10	8.14	92.19	71.63	1,058.91	7,676.49	7,742.37	7,642.05	100.32	77.179	
2,400.00	2,399.86	2,713.78	2,710.86	8.50	94.61	71.64	1,059.04	7,676.49	7,741.92	7,638.82	103.11	75.088	
2,500.00	2,499.85	2,830.28	2,827.29	8.85	99.01	71.64	1,060.00	7,676.49	7,741.68	7,633.82	107.86	71.775	
2,600.00	2,599.85	2,914.03	2,910.85	9.21	102.33	71.65	1,059.04	7,676.49	7,741.15	7,629.62	111.53	69.407	
2,700.00	2,699.84	3,014.02	3,010.84	9.57	106.50	71.66	1,059.04	7,676.49	7,740.77	7,624.70	116.07	66.692	
2,800.00	2,799.83	3,117.17	3,113.93	9.93	110.81	71.66	1,061.30	7,676.49	7,740.69	7,619.95	120.73	64.114	
2,900.00	2,899.82	3,229.19	3,225.91	10.29	115.49	71.67	1,060.32	7,676.49	7,740.19	7,614.42	125.77	61.543	
3,000.00	2,999.82	3,314.64	3,310.82	10.65	119.13	71.69	1,059.04	7,676.49	7,739.62	7,609.84	129.77	59.639	
3,100.00	3,099.81	3,414.63	3,410.81	11.01	123.85	71.70	1,059.04	7,676.49	7,739.23	7,604.39	134.85	57.393	
3,200.00	3,199.80	3,514.62	3,510.80	11.36	128.56	71.71	1,059.04	7,676.49	7,738.85	7,598.93	139.92	55.309	
3,288.55	3,288.34	3,574.00	3,569.63	11.68	131.36	71.71	1,059.04	7,676.49	7,738.57	7,595.53	143.04	54.102	
3,300.00	3,299.79	3,574.00	3,569.63	11.72	131.36	71.71	1,059.04	7,676.49	7,738.58	7,595.50	143.08	54.086	
3,400.00	3,399.79	3,574.00	3,569.63	12.08	131.36	71.71	1,059.04	7,676.49	7,739.37	7,595.95	143.42	53.965	
3,500.00	3,499.78	3,574.00	3,569.63	12.44	131.36	71.71	1,059.04	7,676.49	7,741.46	7,597.73	143.73	53.862	
3,600.00	3,599.77	3,574.00	3,569.63	12.80	131.36	71.71	1,059.04	7,676.49	7,744.83	7,600.81	144.02	53.776	
3,700.00	3,699.76	3,574.00	3,569.63	13.16	131.36	71.71	1,059.04	7,676.49	7,749.50	7,605.21	144.29	53.710	
3,800.00	3,799.76	3,574.00	3,569.63	13.52	131.36	71.71	1,059.04	7,676.49	7,755.45	7,610.92	144.53	53.661	
3,900.00	3,899.75	3,574.00	3,569.63	13.87	131.36	71.71	1,059.04	7,676.49	7,762.69	7,617.94	144.75	53.629	
4,000.00	3,999.74	3,574.00	3,569.63	14.23	131.36	71.71	1,059.04	7,676.49	7,771.21	7,626.26	144.94	53.616	
4,100.00	4,099.73	3,574.00	3,569.63	14.59	131.36	71.71	1,059.04	7,676.49	7,781.00	7,635.88	145.11	53.620	
4,200.00	4,199.73	3,574.00	3,569.63	14.95	131.36	71.71	1,059.04	7,676.49	7,792.06	7,646.80	145.26	53.641	
4,300.00	4,299.72	3,574.00	3,569.63	15.31	131.36	71.71	1,059.04	7,676.49	7,804.39	7,659.01	145.39	53.680	
4,400.00	4,399.71	3,574.00	3,569.63	15.67	131.36	71.71	1,059.04	7,676.49	7,817.98	7,672.49	145.49	53.736	
4,500.00	4,499.70	3,574.00	3,569.63	16.03	131.36	71.71	1,059.04	7,676.49	7,832.82	7,687.26	145.57	53.809	
4,600.00	4,599.70	3,574.00	3,569.63	16.38	131.36	71.71	1,059.04	7,676.49	7,848.91	7,703.29	145.62	53.898	
4,700.00	4,699.69	3,574.00	3,569.63	16.74	131.36	71.71	1,059.04	7,676.49	7,866.24	7,720.58	145.66	54.004	
4,800.00	4,799.68	3,574.00	3,569.63	17.10	131.36	71.71	1,059.04	7,676.49	7,884.80	7,739.13	145.67	54.127	
4,900.00	4,899.67	3,574.00	3,569.63	17.46	131.36	71.71	1,059.04	7,676.49	7,904.58	7,758.91	145.66	54.266	

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 #722H - Slot B05
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 #722H	**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
5,000.00	4,999.67	3,574.00	3,569.63	17.82	131.36	71.71	1,059.04	7,676.49	7,925.57	7,779.94	145.63	54.422	
5,100.00	5,099.66	3,574.00	3,569.63	18.18	131.36	71.71	1,059.04	7,676.49	7,947.76	7,802.18	145.58	54.593	
5,200.00	5,199.65	3,574.00	3,569.63	18.53	131.36	71.71	1,059.04	7,676.49	7,971.15	7,825.64	145.51	54.781	
5,300.00	5,299.64	3,574.00	3,569.63	18.89	131.36	71.71	1,059.04	7,676.49	7,995.72	7,850.30	145.42	54.984	
5,400.00	5,399.64	3,574.00	3,569.63	19.25	131.36	71.71	1,059.04	7,676.49	8,021.46	7,876.15	145.31	55.203	
5,500.00	5,499.63	3,574.00	3,569.63	19.61	131.36	71.71	1,059.04	7,676.49	8,048.36	7,903.18	145.18	55.438	
5,600.00	5,599.62	3,574.00	3,569.63	19.97	131.36	71.71	1,059.04	7,676.49	8,076.41	7,931.38	145.03	55.688	
5,700.00	5,699.61	3,574.00	3,569.63	20.33	131.36	71.71	1,059.04	7,676.49	8,105.60	7,960.73	144.86	55.953	
5,800.00	5,799.61	3,574.00	3,569.63	20.69	131.36	71.71	1,059.04	7,676.49	8,135.91	7,991.23	144.68	56.234	
5,900.00	5,899.60	3,574.00	3,569.63	21.04	131.36	71.71	1,059.04	7,676.49	8,167.33	8,022.85	144.48	56.529	
6,000.00	5,999.59	3,574.00	3,569.63	21.40	131.36	71.71	1,059.04	7,676.49	8,199.86	8,055.59	144.26	56.839	
6,100.00	6,099.58	3,574.00	3,569.63	21.76	131.36	71.71	1,059.04	7,676.49	8,233.46	8,089.43	144.03	57.164	
6,200.00	6,199.58	3,574.00	3,569.63	22.12	131.36	71.71	1,059.04	7,676.49	8,268.15	8,124.36	143.79	57.503	
6,300.00	6,299.57	3,574.00	3,569.63	22.48	131.36	71.71	1,059.04	7,676.49	8,303.89	8,160.36	143.53	57.857	
6,315.05	6,314.62	3,574.00	3,569.63	22.53	131.36	71.71	1,059.04	7,676.49	8,309.36	8,165.87	143.48	57.911	
6,350.00	6,349.55	3,574.00	3,569.63	22.66	131.36	2.71	1,059.04	7,676.49	8,321.26	8,177.88	143.38	58.035	
6,400.00	6,399.30	3,574.00	3,569.63	22.83	131.36	-3.97	1,059.04	7,676.49	8,335.40	8,192.17	143.23	58.197	
6,450.00	6,448.52	3,574.00	3,569.63	23.00	131.36	-5.68	1,059.04	7,676.49	8,346.06	8,203.00	143.06	58.339	
6,500.00	6,496.91	3,574.00	3,569.63	23.18	131.36	-6.44	1,059.04	7,676.49	8,353.20	8,210.32	142.88	58.461	
6,550.00	6,544.17	3,574.00	3,569.63	23.35	131.36	-6.88	1,059.04	7,676.49	8,356.78	8,214.08	142.70	58.562	
6,600.00	6,590.01	3,574.00	3,569.63	23.53	131.36	-7.19	1,059.04	7,676.49	8,356.78	8,214.27	142.51	58.641	
6,650.00	6,634.14	3,574.00	3,569.63	23.70	131.36	-7.46	1,059.04	7,676.49	8,353.20	8,210.89	142.31	58.699	
6,700.00	6,676.30	3,574.00	3,569.63	23.88	131.36	-7.72	1,059.04	7,676.49	8,346.05	8,203.96	142.10	58.734	
6,750.00	6,716.21	3,574.00	3,569.63	24.06	131.36	-8.00	1,059.04	7,676.49	8,335.39	8,193.50	141.88	58.748	
6,800.00	6,753.65	3,574.00	3,569.63	24.24	131.36	-8.30	1,059.04	7,676.49	8,321.25	8,179.58	141.67	58.739	
6,850.00	6,788.37	3,574.00	3,569.63	24.44	131.36	-8.65	1,059.04	7,676.49	8,303.71	8,162.26	141.44	58.707	
6,900.00	6,820.16	3,574.00	3,569.63	24.63	131.36	-9.06	1,059.04	7,676.49	8,282.85	8,141.63	141.22	58.652	
6,950.00	6,848.83	3,574.00	3,569.63	24.84	131.36	-9.54	1,059.04	7,676.49	8,258.77	8,117.78	141.00	58.575	
7,000.00	6,874.19	3,574.00	3,569.63	25.06	131.36	-10.12	1,059.04	7,676.49	8,231.61	8,090.83	140.77	58.474	
7,050.00	6,896.10	3,574.00	3,569.63	25.29	131.36	-10.81	1,059.04	7,676.49	8,201.49	8,060.93	140.55	58.351	
7,100.00	6,914.42	3,574.00	3,569.63	25.53	131.36	-11.65	1,059.04	7,676.49	8,168.57	8,028.23	140.34	58.205	
7,150.00	6,929.03	3,574.00	3,569.63	25.78	131.36	-12.68	1,059.04	7,676.49	8,133.02	7,992.89	140.13	58.037	
7,200.00	6,939.85	3,574.00	3,569.63	26.05	131.36	-13.97	1,059.04	7,676.49	8,095.03	7,955.09	139.94	57.847	
7,250.00	6,946.80	3,574.00	3,569.63	26.32	131.36	-15.61	1,059.04	7,676.49	8,054.79	7,915.04	139.75	57.636	
7,300.00	6,949.85	3,574.00	3,569.63	26.61	131.36	-17.74	1,059.04	7,676.49	8,012.53	7,872.95	139.58	57.403	
7,314.43	6,950.00	3,574.00	3,569.63	26.69	131.36	-18.47	1,059.04	7,676.49	7,999.99	7,860.45	139.54	57.331	
7,400.00	6,949.92	3,574.00	3,569.63	27.21	131.36	-18.47	1,059.04	7,676.49	7,925.30	7,786.04	139.26	56.911	
7,500.00	6,949.83	3,574.00	3,569.63	27.90	131.36	-18.47	1,059.04	7,676.49	7,838.29	7,699.37	138.92	56.421	
7,600.00	6,949.74	3,574.00	3,569.63	28.66	131.36	-18.47	1,059.04	7,676.49	7,751.60	7,613.01	138.59	55.931	
7,700.00	6,949.65	3,574.00	3,569.63	29.49	131.36	-18.47	1,059.04	7,676.49	7,665.23	7,526.98	138.26	55.442	
7,800.00	6,949.56	3,574.00	3,569.63	30.38	131.36	-18.47	1,059.04	7,676.49	7,579.20	7,441.28	137.92	54.953	
7,900.00	6,949.47	3,574.00	3,569.63	31.33	131.36	-18.47	1,059.04	7,676.49	7,493.51	7,355.93	137.59	54.464	
8,000.00	6,949.38	3,574.00	3,569.63	32.33	131.36	-18.47	1,059.04	7,676.49	7,408.19	7,270.94	137.25	53.976	
8,100.00	6,949.29	3,574.00	3,569.63	33.38	131.36	-18.47	1,059.04	7,676.49	7,323.23	7,186.32	136.91	53.488	
8,200.00	6,949.20	3,574.00	3,569.63	34.47	131.36	-18.47	1,059.04	7,676.49	7,238.66	7,102.08	136.58	53.000	
8,300.00	6,949.11	3,574.00	3,569.63	35.60	131.36	-18.47	1,059.04	7,676.49	7,154.48	7,018.24	136.24	52.513	
8,400.00	6,949.02	3,574.00	3,569.63	36.76	131.36	-18.47	1,059.04	7,676.49	7,070.72	6,934.82	135.90	52.027	
8,500.00	6,948.93	3,574.00	3,569.63	37.96	131.36	-18.47	1,059.04	7,676.49	6,987.39	6,851.82	135.57	51.542	
8,600.00	6,948.84	3,574.00	3,569.63	39.18	131.36	-18.47	1,059.04	7,676.49	6,904.50	6,769.27	135.23	51.057	
8,700.00	6,948.75	3,574.00	3,569.63	40.43	131.36	-18.47	1,059.04	7,676.49	6,822.06	6,687.17	134.89	50.573	
8,800.00	6,948.66	3,574.00	3,569.63	41.71	131.36	-18.47	1,059.04	7,676.49	6,740.11	6,605.55	134.56	50.091	
8,900.00	6,948.57	3,574.00	3,569.63	43.00	131.36	-18.47	1,059.04	7,676.49	6,658.64	6,524.42	134.22	49.610	

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 #722H - Slot B05
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 #722H	**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
9,000.00	6,948.48	3,574.00	3,569.63	44.32	131.36	-18.47	1,059.04	7,676.49	6,577.69	6,443.81	133.88	49.131	
9,100.00	6,948.39	3,574.00	3,569.63	45.66	131.36	-18.47	1,059.04	7,676.49	6,497.27	6,363.72	133.54	48.653	
9,200.00	6,948.30	3,574.00	3,569.63	47.01	131.36	-18.47	1,059.04	7,676.49	6,417.39	6,284.19	133.20	48.177	
9,300.00	6,948.21	3,574.00	3,569.63	48.38	131.36	-18.47	1,059.04	7,676.49	6,338.09	6,205.23	132.86	47.704	
9,400.00	6,948.12	3,574.00	3,569.63	49.76	131.36	-18.47	1,059.04	7,676.49	6,259.39	6,126.86	132.52	47.233	
9,500.00	6,948.03	3,574.00	3,569.63	51.16	131.36	-18.47	1,059.04	7,676.49	6,181.29	6,049.11	132.18	46.764	
9,600.00	6,947.94	3,574.00	3,569.63	52.56	131.36	-18.47	1,059.04	7,676.49	6,103.84	5,972.01	131.83	46.299	
9,700.00	6,947.85	3,574.00	3,569.63	53.98	131.36	-18.47	1,059.04	7,676.49	6,027.05	5,895.56	131.49	45.838	
9,800.00	6,947.76	3,574.00	3,569.63	55.41	131.36	-18.47	1,059.04	7,676.49	5,950.95	5,819.82	131.14	45.380	
9,900.00	6,947.67	3,574.00	3,569.63	56.85	131.36	-18.47	1,059.04	7,676.49	5,875.57	5,744.79	130.78	44.927	
10,000.00	6,947.58	3,574.00	3,569.63	58.29	131.36	-18.47	1,059.04	7,676.49	5,800.93	5,670.51	130.42	44.478	
10,100.00	6,947.49	3,574.00	3,569.63	59.75	131.36	-18.47	1,059.04	7,676.49	5,727.06	5,597.01	130.06	44.035	
10,200.00	6,947.40	3,574.00	3,569.63	61.21	131.36	-18.47	1,059.04	7,676.49	5,654.00	5,524.31	129.69	43.597	
10,300.00	6,947.31	3,574.00	3,569.63	62.68	131.36	-18.47	1,059.04	7,676.49	5,581.77	5,452.46	129.31	43.166	
10,400.00	6,947.22	3,574.00	3,569.63	64.15	131.36	-18.47	1,059.04	7,676.49	5,510.42	5,381.49	128.93	42.741	
10,500.00	6,947.13	3,574.00	3,569.63	65.63	131.36	-18.47	1,059.04	7,676.49	5,439.96	5,311.43	128.53	42.323	
10,600.00	6,947.04	3,574.00	3,569.63	67.12	131.36	-18.47	1,059.04	7,676.49	5,370.44	5,242.31	128.13	41.913	
10,700.00	6,946.95	3,574.00	3,569.63	68.61	131.36	-18.47	1,059.04	7,676.49	5,301.90	5,174.18	127.72	41.512	
10,800.00	6,946.86	3,574.00	3,569.63	70.11	131.36	-18.47	1,059.04	7,676.49	5,234.37	5,107.07	127.30	41.120	
10,900.00	6,946.77	3,574.00	3,569.63	71.61	131.36	-18.47	1,059.04	7,676.49	5,167.89	5,041.03	126.86	40.737	
11,000.00	6,946.68	3,574.00	3,569.63	73.11	131.36	-18.47	1,059.04	7,676.49	5,102.50	4,976.09	126.41	40.364	
11,100.00	6,946.59	3,574.00	3,569.63	74.62	131.36	-18.47	1,059.04	7,676.49	5,038.26	4,912.31	125.95	40.003	
11,200.00	6,946.50	3,574.00	3,569.63	76.14	131.36	-18.47	1,059.04	7,676.49	4,975.19	4,849.72	125.47	39.653	
11,300.00	6,946.41	3,574.00	3,569.63	77.65	131.36	-18.47	1,059.04	7,676.49	4,913.35	4,788.37	124.97	39.315	
11,400.00	6,946.32	3,574.00	3,569.63	79.18	131.36	-18.47	1,059.04	7,676.49	4,852.78	4,728.32	124.46	38.991	
11,500.00	6,946.23	3,574.00	3,569.63	80.70	131.36	-18.47	1,059.04	7,676.49	4,793.53	4,669.60	123.93	38.680	
11,600.00	6,946.14	3,574.00	3,569.63	82.23	131.36	-18.47	1,059.04	7,676.49	4,735.65	4,612.27	123.38	38.383	
11,700.00	6,946.05	3,574.00	3,569.63	83.76	131.36	-18.47	1,059.04	7,676.49	4,679.20	4,556.39	122.81	38.101	
11,800.00	6,945.96	3,574.00	3,569.63	85.29	131.36	-18.47	1,059.04	7,676.49	4,624.22	4,501.99	122.22	37.835	
11,900.00	6,945.87	3,574.00	3,569.63	86.82	131.36	-18.47	1,059.04	7,676.49	4,570.76	4,449.15	121.61	37.585	
12,000.00	6,945.78	3,574.00	3,569.63	88.36	131.36	-18.47	1,059.04	7,676.49	4,518.89	4,397.90	120.98	37.351	
12,100.00	6,945.69	3,574.00	3,569.63	89.90	131.36	-18.47	1,059.04	7,676.49	4,468.65	4,348.31	120.34	37.135	
12,200.00	6,945.60	3,574.00	3,569.63	91.44	131.36	-18.47	1,059.04	7,676.49	4,420.10	4,300.43	119.67	36.936	
12,300.00	6,945.51	3,574.00	3,569.63	92.99	131.36	-18.47	1,059.04	7,676.49	4,373.30	4,254.31	118.99	36.754	
12,400.00	6,945.42	3,574.00	3,569.63	94.53	131.36	-18.47	1,059.04	7,676.49	4,328.31	4,210.02	118.29	36.591	
12,500.00	6,945.33	3,574.00	3,569.63	96.08	131.36	-18.47	1,059.04	7,676.49	4,285.17	4,167.59	117.58	36.445	
12,600.00	6,945.24	3,574.00	3,569.63	97.63	131.36	-18.47	1,059.04	7,676.49	4,243.96	4,127.10	116.86	36.317	
12,700.00	6,945.15	3,574.00	3,569.63	99.18	131.36	-18.47	1,059.04	7,676.49	4,204.72	4,088.58	116.14	36.205	
12,800.00	6,945.06	3,574.00	3,569.63	100.74	131.36	-18.47	1,059.04	7,676.49	4,167.51	4,052.10	115.41	36.109	
12,900.00	6,944.96	3,574.00	3,569.63	102.29	131.36	-18.47	1,059.04	7,676.49	4,132.39	4,017.69	114.70	36.028	
13,000.00	6,944.87	3,574.00	3,569.63	103.85	131.36	-18.47	1,059.04	7,676.49	4,099.40	3,985.40	114.00	35.960	
13,100.00	6,944.78	3,574.00	3,569.63	105.40	131.36	-18.47	1,059.04	7,676.49	4,068.61	3,955.29	113.32	35.902	
13,200.00	6,944.69	3,574.00	3,569.63	106.96	131.36	-18.47	1,059.04	7,676.49	4,040.06	3,927.37	112.68	35.853	
13,300.00	6,944.60	3,574.00	3,569.63	108.52	131.36	-18.47	1,059.04	7,676.49	4,013.79	3,901.70	112.09	35.808	
13,400.00	6,944.51	3,574.00	3,569.63	110.08	131.36	-18.47	1,059.04	7,676.49	3,989.86	3,878.30	111.56	35.763	
13,500.00	6,944.42	3,574.00	3,569.63	111.65	131.36	-18.47	1,059.04	7,676.49	3,968.31	3,857.20	111.11	35.715	
13,600.00	6,944.33	3,574.00	3,569.63	113.21	131.36	-18.47	1,059.04	7,676.49	3,949.17	3,838.42	110.75	35.657	
13,700.00	6,944.24	3,574.00	3,569.63	114.78	131.36	-18.47	1,059.04	7,676.49	3,932.49	3,821.98	110.51	35.585	
13,800.00	6,944.15	3,574.00	3,569.63	116.34	131.36	-18.47	1,059.04	7,676.49	3,918.28	3,807.88	110.40	35.492	
13,900.00	6,944.06	3,574.00	3,569.63	117.91	131.36	-18.47	1,059.04	7,676.49	3,906.58	3,796.15	110.43	35.375	
14,000.00	6,943.97	3,574.00	3,569.63	119.48	131.36	-18.47	1,059.04	7,676.49	3,897.42	3,786.78	110.64	35.227	
14,100.00	6,943.88	3,574.00	3,569.63	121.05	131.36	-18.47	1,059.04	7,676.49	3,890.80	3,779.78	111.02	35.045	

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 #722H - Slot B05
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 #722H	**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
14,200.00	6,943.79	3,574.00	3,569.63	122.62	131.36	-18.47	1,059.04	7,676.49	3,886.75	3,775.15	111.60	34.828	
14,300.00	6,943.70	3,574.00	3,569.63	124.19	131.36	-18.47	1,059.04	7,676.49	3,885.27	3,772.89	112.37	34.574	
14,307.61	6,943.70	3,574.00	3,569.63	124.31	131.36	-18.47	1,059.04	7,676.49	3,885.26	3,772.82	112.44	34.554	CC, ES
14,400.00	6,943.61	3,574.00	3,569.63	125.76	131.36	-18.47	1,059.04	7,676.49	3,886.36	3,773.01	113.35	34.287	
14,500.00	6,943.52	3,574.00	3,569.63	127.33	131.36	-18.47	1,059.04	7,676.49	3,890.02	3,775.50	114.52	33.969	
14,600.00	6,943.43	3,574.00	3,569.63	128.90	131.36	-18.47	1,059.04	7,676.49	3,896.25	3,780.38	115.87	33.625	
14,700.00	6,943.34	3,574.00	3,569.63	130.48	131.36	-18.47	1,059.04	7,676.49	3,905.03	3,787.63	117.40	33.263	
14,800.00	6,943.25	3,574.00	3,569.63	132.05	131.36	-18.47	1,059.04	7,676.49	3,916.34	3,797.26	119.08	32.889	
14,900.00	6,943.16	3,574.00	3,569.63	133.63	131.36	-18.47	1,059.04	7,676.49	3,930.16	3,809.28	120.89	32.511	
15,000.00	6,943.07	3,574.00	3,569.63	135.20	131.36	-18.47	1,059.04	7,676.49	3,946.47	3,823.66	122.81	32.135	
15,100.00	6,942.98	3,574.00	3,569.63	136.78	131.36	-18.47	1,059.04	7,676.49	3,965.24	3,840.42	124.82	31.767	
15,200.00	6,942.89	3,574.00	3,569.63	138.36	131.36	-18.47	1,059.04	7,676.49	3,986.43	3,859.53	126.90	31.414	
15,300.00	6,942.80	3,574.00	3,569.63	139.93	131.36	-18.47	1,059.04	7,676.49	4,010.00	3,880.97	129.03	31.078	
15,400.00	6,942.71	3,574.00	3,569.63	141.51	131.36	-18.47	1,059.04	7,676.49	4,035.91	3,904.72	131.19	30.764	
15,500.00	6,942.62	3,574.00	3,569.63	143.09	131.36	-18.47	1,059.04	7,676.49	4,064.12	3,930.76	133.36	30.475	
15,600.00	6,942.53	3,574.00	3,569.63	144.67	131.36	-18.47	1,059.04	7,676.49	4,094.57	3,959.04	135.53	30.211	
15,700.00	6,942.44	3,574.00	3,569.63	146.25	131.36	-18.47	1,059.04	7,676.49	4,127.23	3,989.54	137.69	29.975	
15,800.00	6,942.35	3,574.00	3,569.63	147.83	131.36	-18.47	1,059.04	7,676.49	4,162.03	4,022.21	139.82	29.767	
15,900.00	6,942.26	3,574.00	3,569.63	149.41	131.36	-18.47	1,059.04	7,676.49	4,198.92	4,057.00	141.92	29.586	
16,000.00	6,942.17	3,574.00	3,569.63	150.99	131.36	-18.47	1,059.04	7,676.49	4,237.86	4,093.88	143.98	29.434	
16,100.00	6,942.08	3,574.00	3,569.63	152.57	131.36	-18.47	1,059.04	7,676.49	4,278.77	4,132.79	145.99	29.309	
16,200.00	6,941.99	3,574.00	3,569.63	154.16	131.36	-18.47	1,059.04	7,676.49	4,321.62	4,173.68	147.94	29.211	
16,300.00	6,941.90	3,574.00	3,569.63	155.74	131.36	-18.47	1,059.04	7,676.49	4,366.33	4,216.49	149.84	29.139	
16,400.00	6,941.81	3,574.00	3,569.63	157.32	131.36	-18.47	1,059.04	7,676.49	4,412.86	4,261.18	151.68	29.093	
16,500.00	6,941.72	3,574.00	3,569.63	158.91	131.36	-18.47	1,059.04	7,676.49	4,461.15	4,307.69	153.46	29.070	SF
16,600.00	6,941.63	3,574.00	3,569.63	160.49	131.36	-18.47	1,059.04	7,676.49	4,511.13	4,355.96	155.17	29.071	
16,700.00	6,941.54	3,574.00	3,569.63	162.07	131.36	-18.47	1,059.04	7,676.49	4,562.76	4,405.94	156.82	29.095	
16,800.00	6,941.45	3,574.00	3,569.63	163.66	131.36	-18.47	1,059.04	7,676.49	4,615.98	4,457.57	158.41	29.139	
16,900.00	6,941.36	3,574.00	3,569.63	165.24	131.36	-18.47	1,059.04	7,676.49	4,670.73	4,510.80	159.93	29.204	
17,000.00	6,941.27	3,574.00	3,569.63	166.83	131.36	-18.47	1,059.04	7,676.49	4,726.97	4,565.57	161.39	29.288	
17,100.00	6,941.18	3,574.00	3,569.63	168.42	131.36	-18.47	1,059.04	7,676.49	4,784.63	4,621.84	162.79	29.391	
17,200.00	6,941.09	3,574.00	3,569.63	170.00	131.36	-18.47	1,059.04	7,676.49	4,843.67	4,679.55	164.13	29.512	
17,300.00	6,941.00	3,574.00	3,569.63	171.59	131.36	-18.47	1,059.04	7,676.49	4,904.04	4,738.64	165.40	29.649	
17,400.00	6,940.91	3,574.00	3,569.63	173.18	131.36	-18.47	1,059.04	7,676.49	4,965.69	4,799.07	166.62	29.802	
17,500.00	6,940.82	3,574.00	3,569.63	174.76	131.36	-18.47	1,059.04	7,676.49	5,028.58	4,860.79	167.79	29.970	
17,600.00	6,940.73	3,574.00	3,569.63	176.35	131.36	-18.47	1,059.04	7,676.49	5,092.65	4,923.75	168.90	30.152	
17,700.00	6,940.64	3,574.00	3,569.63	177.94	131.36	-18.47	1,059.04	7,676.49	5,157.86	4,987.91	169.95	30.348	
17,800.00	6,940.55	3,574.00	3,569.63	179.53	131.36	-18.47	1,059.04	7,676.49	5,224.18	5,053.22	170.96	30.558	
17,900.00	6,940.46	3,574.00	3,569.63	181.11	131.36	-18.47	1,059.04	7,676.49	5,291.55	5,119.63	171.92	30.779	
18,000.00	6,940.37	3,574.00	3,569.63	182.70	131.36	-18.47	1,059.04	7,676.49	5,359.94	5,187.11	172.83	31.012	
18,100.00	6,940.28	3,574.00	3,569.63	184.29	131.36	-18.47	1,059.04	7,676.49	5,429.32	5,255.62	173.70	31.257	
18,200.00	6,940.19	3,574.00	3,569.63	185.88	131.36	-18.47	1,059.04	7,676.49	5,499.63	5,325.11	174.53	31.512	
18,300.00	6,940.10	3,574.00	3,569.63	187.47	131.36	-18.47	1,059.04	7,676.49	5,570.85	5,395.54	175.31	31.777	
18,400.00	6,940.01	3,574.00	3,569.63	189.06	131.36	-18.47	1,059.04	7,676.49	5,642.95	5,466.89	176.06	32.052	
18,500.00	6,939.92	3,574.00	3,569.63	190.65	131.36	-18.47	1,059.04	7,676.49	5,715.89	5,539.12	176.77	32.336	
18,600.00	6,939.83	3,574.00	3,569.63	192.24	131.36	-18.47	1,059.04	7,676.49	5,789.63	5,612.19	177.44	32.629	
18,700.00	6,939.74	3,574.00	3,569.63	193.83	131.36	-18.47	1,059.04	7,676.49	5,864.16	5,686.07	178.08	32.930	
18,800.00	6,939.65	3,574.00	3,569.63	195.42	131.36	-18.47	1,059.04	7,676.49	5,939.43	5,760.74	178.69	33.239	
18,900.00	6,939.56	3,574.00	3,569.63	197.01	131.36	-18.47	1,059.04	7,676.49	6,015.42	5,836.15	179.27	33.555	
19,000.00	6,939.47	3,574.00	3,569.63	198.60	131.36	-18.47	1,059.04	7,676.49	6,092.11	5,912.29	179.82	33.879	
19,100.00	6,939.38	3,574.00	3,569.63	200.19	131.36	-18.47	1,059.04	7,676.49	6,169.46	5,989.12	180.34	34.210	
19,200.00	6,939.29	3,574.00	3,569.63	201.78	131.36	-18.47	1,059.04	7,676.49	6,247.46	6,066.62	180.84	34.547	

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 #722H - Slot B05
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 #722H	**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
19,300.00	6,939.20	3,574.00	3,569.63	203.37	131.36	-18.47	1,059.04	7,676.49	6,326.07	6,144.76	181.31	34.890	
19,400.00	6,939.11	3,574.00	3,569.63	204.97	131.36	-18.47	1,059.04	7,676.49	6,405.28	6,223.52	181.76	35.240	
19,500.00	6,939.02	3,574.00	3,569.63	206.56	131.36	-18.47	1,059.04	7,676.49	6,485.07	6,302.88	182.19	35.595	
19,600.00	6,938.93	3,574.00	3,569.63	208.15	131.36	-18.47	1,059.04	7,676.49	6,565.41	6,382.82	182.60	35.956	
19,700.00	6,938.83	3,574.00	3,569.63	209.74	131.36	-18.47	1,059.04	7,676.49	6,646.29	6,463.30	182.98	36.322	
19,800.00	6,938.74	3,574.00	3,569.63	211.33	131.36	-18.47	1,059.04	7,676.49	6,727.67	6,544.32	183.35	36.693	
19,900.00	6,938.65	3,574.00	3,569.63	212.93	131.36	-18.47	1,059.04	7,676.49	6,809.56	6,625.86	183.70	37.069	
20,000.00	6,938.56	3,574.00	3,569.63	214.52	131.36	-18.47	1,059.04	7,676.49	6,891.92	6,707.88	184.04	37.449	
20,100.00	6,938.47	3,574.00	3,569.63	216.11	131.36	-18.47	1,059.04	7,676.49	6,974.74	6,790.39	184.35	37.834	
20,200.00	6,938.38	3,574.00	3,569.63	217.71	131.36	-18.47	1,059.04	7,676.49	7,058.01	6,873.35	184.66	38.222	
20,300.00	6,938.29	3,574.00	3,569.63	219.30	131.36	-18.47	1,059.04	7,676.49	7,141.71	6,956.76	184.94	38.615	
20,400.00	6,938.20	3,574.00	3,569.63	220.89	131.36	-18.47	1,059.04	7,676.49	7,225.82	7,040.60	185.22	39.012	
20,500.00	6,938.11	3,574.00	3,569.63	222.49	131.36	-18.47	1,059.04	7,676.49	7,310.33	7,124.85	185.48	39.413	
20,600.00	6,938.02	3,574.00	3,569.63	224.08	131.36	-18.47	1,059.04	7,676.49	7,395.23	7,209.50	185.73	39.817	
20,626.08	6,938.00	3,574.00	3,569.63	224.49	131.36	-18.47	1,059.04	7,676.49	7,417.43	7,231.64	185.80	39.923	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-14.99	57.88	-15.50	59.92				
100.00	100.00	100.00	100.00	0.25	0.25	-14.99	57.88	-15.50	59.92	59.42	0.50	119.400	
200.00	200.00	200.00	200.00	0.61	0.61	-14.99	57.88	-15.50	59.92	58.70	1.22	49.165	
300.00	300.00	300.00	300.00	0.97	0.97	-14.99	57.88	-15.50	59.92	57.99	1.94	30.956	
400.00	400.00	400.00	400.00	1.33	1.33	-14.99	57.88	-15.50	59.92	57.27	2.65	22.589	
500.00	500.00	500.00	500.00	1.68	1.68	-14.99	57.88	-15.50	59.92	56.55	3.37	17.783	CC
535.00	535.00	534.29	534.29	1.81	1.81	-25.72	58.09	-15.53	59.94	56.32	3.62	16.566	ES
600.00	599.99	597.96	597.94	2.04	2.04	-25.84	59.55	-15.70	60.71	56.63	4.08	14.884	
700.00	699.99	695.77	695.62	2.40	2.39	-25.64	64.52	-16.27	64.68	59.89	4.78	13.517	
800.00	799.98	793.20	792.69	2.76	2.74	-25.08	72.77	-17.23	72.02	66.53	5.49	13.129	SF
900.00	899.97	890.03	888.83	3.12	3.10	-24.34	84.22	-18.56	82.71	76.53	6.18	13.387	
1,000.00	999.96	986.05	983.73	3.48	3.45	-23.55	98.74	-20.24	96.74	89.88	6.86	14.096	
1,100.00	1,099.96	1,081.06	1,077.09	3.84	3.82	-22.80	116.22	-22.26	114.06	106.52	7.54	15.133	
1,200.00	1,199.95	1,174.86	1,168.64	4.19	4.19	-22.13	136.48	-24.61	134.62	126.41	8.20	16.413	
1,300.00	1,299.94	1,268.48	1,259.32	4.55	4.58	-21.56	159.57	-27.29	158.26	149.40	8.86	17.853	
1,400.00	1,399.93	1,365.40	1,352.98	4.91	5.00	-21.09	184.35	-30.16	182.84	173.26	9.58	19.089	
1,500.00	1,499.93	1,462.32	1,446.63	5.27	5.43	-20.74	209.13	-33.03	207.42	197.13	10.30	20.146	
1,600.00	1,599.92	1,559.25	1,540.29	5.63	5.86	-20.46	233.91	-35.91	232.01	221.00	11.02	21.061	
1,700.00	1,699.91	1,656.17	1,633.95	5.99	6.29	-20.23	258.69	-38.78	256.61	244.87	11.74	21.860	
1,800.00	1,799.90	1,753.10	1,727.61	6.34	6.73	-20.04	283.47	-41.65	281.20	268.74	12.46	22.563	
1,900.00	1,899.90	1,850.02	1,821.27	6.70	7.18	-19.89	308.25	-44.52	305.80	292.61	13.19	23.186	
2,000.00	1,999.89	1,946.94	1,914.93	7.06	7.62	-19.75	333.04	-47.40	330.41	316.49	13.92	23.742	
2,100.00	2,099.88	2,043.87	2,008.58	7.42	8.07	-19.64	357.82	-50.27	355.01	340.36	14.65	24.240	
2,200.00	2,199.87	2,140.79	2,102.24	7.78	8.52	-19.54	382.60	-53.14	379.61	364.24	15.38	24.690	
2,300.00	2,299.87	2,237.72	2,195.90	8.14	8.98	-19.45	407.38	-56.01	404.22	388.11	16.11	25.098	
2,400.00	2,399.86	2,334.64	2,289.56	8.50	9.43	-19.37	432.16	-58.89	428.82	411.99	16.84	25.469	
2,500.00	2,499.85	2,431.56	2,383.22	8.85	9.88	-19.31	456.94	-61.76	453.43	435.86	17.57	25.808	
2,600.00	2,599.85	2,528.49	2,476.88	9.21	10.34	-19.24	481.72	-64.63	478.04	459.73	18.30	26.120	
2,700.00	2,699.84	2,625.41	2,570.54	9.57	10.79	-19.19	506.50	-67.50	502.64	483.61	19.04	26.406	
2,800.00	2,799.83	2,722.34	2,664.19	9.93	11.25	-19.14	531.28	-70.38	527.25	507.48	19.77	26.671	
2,900.00	2,899.82	2,819.26	2,757.85	10.29	11.71	-19.09	556.06	-73.25	551.86	531.36	20.50	26.916	
3,000.00	2,999.82	2,916.18	2,851.51	10.65	12.17	-19.05	580.84	-76.12	576.47	555.23	21.24	27.144	
3,100.00	3,099.81	3,013.11	2,945.17	11.01	12.63	-19.01	605.62	-78.99	601.08	579.11	21.97	27.356	
3,200.00	3,199.80	3,110.03	3,038.83	11.36	13.09	-18.97	630.41	-81.87	625.69	602.98	22.71	27.555	
3,300.00	3,299.79	3,206.96	3,132.49	11.72	13.55	-18.94	655.19	-84.74	650.30	626.85	23.44	27.740	
3,400.00	3,399.79	3,303.88	3,226.14	12.08	14.01	-18.91	679.97	-87.61	674.91	650.73	24.18	27.914	
3,500.00	3,499.78	3,400.80	3,319.80	12.44	14.47	-18.88	704.75	-90.48	699.52	674.60	24.91	28.077	
3,600.00	3,599.77	3,497.73	3,413.46	12.80	14.93	-18.86	729.53	-93.36	724.13	698.48	25.65	28.230	
3,700.00	3,699.76	3,594.65	3,507.12	13.16	15.39	-18.83	754.31	-96.23	748.74	722.35	26.39	28.375	
3,800.00	3,799.76	3,691.58	3,600.78	13.52	15.85	-18.81	779.09	-99.10	773.35	746.22	27.12	28.512	
3,900.00	3,899.75	3,788.50	3,694.44	13.87	16.31	-18.79	803.87	-101.97	797.96	770.10	27.86	28.641	
4,000.00	3,999.74	3,885.42	3,788.10	14.23	16.78	-18.76	828.65	-104.85	822.57	793.97	28.60	28.764	
4,100.00	4,099.73	3,982.35	3,881.75	14.59	17.24	-18.75	853.43	-107.72	847.18	817.84	29.33	28.880	
4,200.00	4,199.73	4,079.27	3,975.41	14.95	17.70	-18.73	878.21	-110.59	871.79	841.72	30.07	28.990	
4,300.00	4,299.72	4,176.20	4,069.07	15.31	18.16	-18.71	902.99	-113.46	896.40	865.59	30.81	29.095	
4,400.00	4,399.71	4,273.12	4,162.73	15.67	18.63	-18.69	927.78	-116.34	921.01	889.46	31.55	29.195	
4,500.00	4,499.70	4,370.04	4,256.39	16.03	19.09	-18.68	952.56	-119.21	945.62	913.33	32.29	29.290	
4,600.00	4,599.70	4,466.97	4,350.05	16.38	19.55	-18.66	977.34	-122.08	970.23	937.21	33.02	29.380	
4,700.00	4,699.69	4,563.89	4,443.71	16.74	20.01	-18.65	1,002.12	-124.95	994.84	961.08	33.76	29.467	
4,800.00	4,799.68	4,660.81	4,537.36	17.10	20.48	-18.64	1,026.90	-127.83	1,019.45	984.95	34.50	29.550	
4,900.00	4,899.67	4,757.74	4,631.02	17.46	20.94	-18.62	1,051.68	-130.70	1,044.06	1,008.82	35.24	29.629	
5,000.00	4,999.67	4,854.66	4,724.68	17.82	21.40	-18.61	1,076.46	-133.57	1,068.67	1,032.70	35.98	29.705	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	4,951.59	4,818.34	18.18	21.87	-18.60	1,101.24	-136.44	1,093.28	1,056.57	36.71	29.778	
5,200.00	5,199.65	5,048.51	4,912.00	18.53	22.33	-18.59	1,126.02	-139.32	1,117.90	1,080.44	37.45	29.847	
5,300.00	5,299.64	5,145.43	5,005.66	18.89	22.80	-18.58	1,150.80	-142.19	1,142.51	1,104.31	38.19	29.914	
5,400.00	5,399.64	5,242.36	5,099.31	19.25	23.26	-18.57	1,175.58	-145.06	1,167.12	1,128.19	38.93	29.979	
5,500.00	5,499.63	5,339.28	5,192.97	19.61	23.72	-18.56	1,200.36	-147.93	1,191.73	1,152.06	39.67	30.041	
5,600.00	5,599.62	5,436.21	5,286.63	19.97	24.19	-18.55	1,225.15	-150.81	1,216.34	1,175.93	40.41	30.100	
5,700.00	5,699.61	5,533.13	5,380.29	20.33	24.65	-18.54	1,249.93	-153.68	1,240.95	1,199.80	41.15	30.157	
5,800.00	5,799.61	5,630.05	5,473.95	20.69	25.12	-18.53	1,274.71	-156.55	1,265.56	1,223.67	41.89	30.213	
5,900.00	5,899.60	5,726.98	5,567.61	21.04	25.58	-18.52	1,299.49	-159.42	1,290.17	1,247.55	42.63	30.266	
6,000.00	5,999.59	5,823.90	5,661.27	21.40	26.05	-18.52	1,324.27	-162.30	1,314.79	1,271.42	43.37	30.317	
6,100.00	6,099.58	5,920.83	5,754.92	21.76	26.51	-18.51	1,349.05	-165.17	1,339.40	1,295.29	44.11	30.367	
6,200.00	6,199.58	6,017.75	5,848.58	22.12	26.97	-18.50	1,373.83	-168.04	1,364.01	1,319.16	44.85	30.414	
6,300.00	6,299.57	6,114.67	5,942.24	22.48	27.44	-18.49	1,398.61	-170.91	1,388.62	1,343.03	45.59	30.461	
6,315.05	6,314.62	6,129.26	5,956.34	22.53	27.51	-18.49	1,402.34	-171.35	1,392.32	1,346.62	45.70	30.467	
6,350.00	6,349.55	6,163.08	5,989.02	22.66	27.67	-86.91	1,410.99	-172.35	1,401.08	1,355.12	45.96	30.488	
6,400.00	6,399.30	6,211.13	6,035.45	22.83	27.90	-92.80	1,423.27	-173.77	1,414.10	1,367.78	46.32	30.529	
6,450.00	6,448.52	6,258.52	6,081.24	23.00	28.13	-93.74	1,435.39	-175.18	1,427.68	1,381.00	46.68	30.584	
6,500.00	6,496.91	6,304.95	6,126.11	23.18	28.35	-93.77	1,447.26	-176.55	1,441.79	1,394.75	47.04	30.651	
6,550.00	6,544.17	6,350.15	6,169.78	23.35	28.57	-93.49	1,458.81	-177.89	1,456.44	1,409.05	47.39	30.731	
6,600.00	6,590.01	6,393.82	6,211.98	23.53	28.78	-93.09	1,469.98	-179.19	1,471.65	1,423.90	47.74	30.825	
6,650.00	6,634.14	6,435.71	6,252.46	23.70	28.98	-92.62	1,480.69	-180.43	1,487.45	1,439.36	48.09	30.932	
6,700.00	6,676.30	6,475.56	6,290.96	23.88	29.17	-92.08	1,490.88	-181.61	1,503.89	1,455.46	48.43	31.053	
6,750.00	6,716.21	6,513.11	6,327.25	24.06	29.35	-91.47	1,500.48	-182.72	1,521.02	1,472.26	48.77	31.189	
6,800.00	6,753.65	6,546.45	6,359.47	24.24	29.51	-90.72	1,509.00	-183.72	1,538.90	1,489.81	49.09	31.349	
6,850.00	6,788.37	6,565.80	6,378.15	24.44	29.60	-89.53	1,513.95	-184.67	1,557.72	1,508.40	49.32	31.583	
6,900.00	6,820.16	6,582.01	6,393.78	24.63	29.68	-88.16	1,518.09	-185.92	1,577.60	1,528.05	49.55	31.840	
6,950.00	6,848.83	6,600.00	6,411.07	24.84	29.77	-86.75	1,522.67	-187.79	1,598.51	1,548.70	49.81	32.094	
7,000.00	6,874.19	6,600.00	6,411.07	25.06	29.77	-84.60	1,522.67	-187.79	1,620.37	1,570.43	49.94	32.446	
7,050.00	6,896.10	6,613.33	6,423.85	25.29	29.83	-82.84	1,526.06	-189.50	1,643.08	1,592.88	50.21	32.727	
7,100.00	6,914.42	6,618.67	6,428.95	25.53	29.86	-80.69	1,527.42	-190.26	1,666.57	1,616.14	50.43	33.049	
7,150.00	6,929.03	6,621.82	6,431.96	25.78	29.87	-78.39	1,528.22	-190.73	1,690.68	1,640.02	50.65	33.378	
7,200.00	6,939.85	6,623.00	6,433.09	26.05	29.88	-75.96	1,528.51	-190.91	1,715.26	1,664.37	50.88	33.710	
7,250.00	6,946.80	6,622.40	6,432.52	26.32	29.88	-73.45	1,528.36	-190.82	1,740.15	1,689.03	51.12	34.043	
7,300.00	6,949.85	6,620.20	6,430.42	26.61	29.87	-70.88	1,527.81	-190.49	1,765.19	1,713.83	51.35	34.373	
7,314.43	6,950.00	6,619.29	6,429.55	26.69	29.86	-70.14	1,527.58	-190.35	1,772.42	1,720.99	51.42	34.467	
7,400.00	6,949.92	6,600.00	6,411.07	27.21	29.77	-69.43	1,522.67	-187.79	1,816.89	1,765.16	51.73	35.122	
7,500.00	6,949.83	6,600.00	6,411.07	27.90	29.77	-69.43	1,522.67	-187.79	1,872.21	1,819.91	52.30	35.796	
7,600.00	6,949.74	6,600.00	6,411.07	28.66	29.77	-69.43	1,522.67	-187.79	1,931.13	1,878.26	52.87	36.523	
7,700.00	6,949.65	6,600.00	6,411.07	29.49	29.77	-69.43	1,522.67	-187.79	1,993.33	1,939.89	53.44	37.303	
7,800.00	6,949.56	6,600.00	6,411.07	30.38	29.77	-69.43	1,522.67	-187.79	2,058.50	2,004.52	53.98	38.133	
7,900.00	6,949.47	6,600.00	6,411.07	31.33	29.77	-69.43	1,522.67	-187.79	2,126.39	2,071.88	54.51	39.011	
8,000.00	6,949.38	6,600.00	6,411.07	32.33	29.77	-69.43	1,522.67	-187.79	2,196.73	2,141.72	55.01	39.934	
8,100.00	6,949.29	6,600.00	6,411.07	33.38	29.77	-69.43	1,522.67	-187.79	2,269.30	2,213.81	55.48	40.899	
8,200.00	6,949.20	6,600.00	6,411.07	34.47	29.77	-69.43	1,522.67	-187.79	2,343.88	2,287.95	55.93	41.904	
8,300.00	6,949.11	6,579.45	6,391.31	35.60	29.67	-68.67	1,517.44	-185.69	2,419.97	2,363.76	56.20	43.058	
8,400.00	6,949.02	6,577.11	6,389.05	36.76	29.66	-68.59	1,516.84	-185.50	2,497.97	2,441.38	56.59	44.144	
8,500.00	6,948.93	6,574.93	6,386.96	37.96	29.65	-68.50	1,516.28	-185.32	2,577.48	2,520.54	56.95	45.261	
8,600.00	6,948.84	6,572.91	6,385.01	39.18	29.64	-68.43	1,515.77	-185.17	2,658.37	2,601.09	57.29	46.405	
8,700.00	6,948.75	6,571.04	6,383.20	40.43	29.63	-68.36	1,515.29	-185.03	2,740.52	2,682.91	57.61	47.574	
8,800.00	6,948.66	6,550.00	6,362.90	41.71	29.53	-67.59	1,509.91	-183.85	2,824.12	2,766.36	57.76	48.892	
8,900.00	6,948.57	6,550.00	6,362.90	43.00	29.53	-67.59	1,509.91	-183.85	2,908.41	2,850.35	58.06	50.095	
9,000.00	6,948.48	6,550.00	6,362.90	44.32	29.53	-67.59	1,509.91	-183.85	2,993.67	2,935.34	58.34	51.318	

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 #722H - Slot B05
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 #722H	**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	Rule Assigned: Warning
9,100.00	6,948.39	6,550.00	6,362.90	45.66	29.53	-67.59	1,509.91	-183.85	3,079.82	3,021.22	58.60	52.560	
9,200.00	6,948.30	6,550.00	6,362.90	47.01	29.53	-67.59	1,509.91	-183.85	3,166.78	3,107.94	58.84	53.818	
9,300.00	6,948.21	6,550.00	6,362.90	48.38	29.53	-67.59	1,509.91	-183.85	3,254.49	3,195.41	59.07	55.091	
9,400.00	6,948.12	6,550.00	6,362.90	49.76	29.53	-67.59	1,509.91	-183.85	3,342.89	3,283.60	59.29	56.379	
9,500.00	6,948.03	6,550.00	6,362.90	51.16	29.53	-67.59	1,509.91	-183.85	3,431.93	3,372.43	59.50	57.679	
9,600.00	6,947.94	6,550.00	6,362.90	52.56	29.53	-67.59	1,509.91	-183.85	3,521.55	3,461.85	59.70	58.991	
9,700.00	6,947.85	6,550.00	6,362.90	53.98	29.53	-67.59	1,509.91	-183.85	3,611.72	3,551.84	59.88	60.313	
9,800.00	6,947.76	6,550.00	6,362.90	55.41	29.53	-67.59	1,509.91	-183.85	3,702.40	3,642.34	60.06	61.645	
9,900.00	6,947.67	6,550.00	6,362.90	56.85	29.53	-67.59	1,509.91	-183.85	3,793.54	3,733.31	60.23	62.986	
10,000.00	6,947.58	6,550.00	6,362.90	58.29	29.53	-67.59	1,509.91	-183.85	3,885.12	3,824.73	60.39	64.335	
10,100.00	6,947.49	6,550.00	6,362.90	59.75	29.53	-67.59	1,509.91	-183.85	3,977.11	3,916.56	60.54	65.691	
10,200.00	6,947.40	6,550.00	6,362.90	61.21	29.53	-67.59	1,509.91	-183.85	4,069.47	4,008.78	60.69	67.054	
10,300.00	6,947.31	6,550.00	6,362.90	62.68	29.53	-67.59	1,509.91	-183.85	4,162.19	4,101.36	60.83	68.423	
10,400.00	6,947.22	6,550.00	6,362.90	64.15	29.53	-67.59	1,509.91	-183.85	4,255.23	4,194.27	60.97	69.797	
10,500.00	6,947.13	6,550.00	6,362.90	65.63	29.53	-67.59	1,509.91	-183.85	4,348.59	4,287.49	61.10	71.177	
10,600.00	6,947.04	6,550.00	6,362.90	67.12	29.53	-67.59	1,509.91	-183.85	4,442.23	4,381.01	61.22	72.561	
10,700.00	6,946.95	6,550.00	6,362.90	68.61	29.53	-67.59	1,509.91	-183.85	4,536.15	4,474.80	61.34	73.949	
10,800.00	6,946.86	6,550.00	6,362.90	70.11	29.53	-67.59	1,509.91	-183.85	4,630.32	4,568.86	61.46	75.341	
10,900.00	6,946.77	6,550.00	6,362.90	71.61	29.53	-67.59	1,509.91	-183.85	4,724.73	4,663.16	61.57	76.736	
11,000.00	6,946.68	6,550.00	6,362.90	73.11	29.53	-67.59	1,509.91	-183.85	4,819.36	4,757.68	61.68	78.134	
11,100.00	6,946.59	6,550.00	6,362.90	74.62	29.53	-67.59	1,509.91	-183.85	4,914.21	4,852.42	61.79	79.534	
11,200.00	6,946.50	6,546.78	6,359.79	76.14	29.51	-67.47	1,509.09	-183.73	5,009.25	4,947.38	61.87	80.965	
11,300.00	6,946.41	6,543.64	6,356.75	77.65	29.49	-67.35	1,508.29	-183.63	5,104.49	5,042.54	61.95	82.398	
11,400.00	6,946.32	6,543.64	6,356.75	79.18	29.49	-67.35	1,508.29	-183.63	5,199.90	5,137.85	62.05	83.805	
11,500.00	6,946.23	6,543.64	6,356.75	80.70	29.49	-67.35	1,508.29	-183.63	5,295.48	5,233.34	62.14	85.214	
11,600.00	6,946.14	6,543.64	6,356.75	82.23	29.49	-67.35	1,508.29	-183.63	5,391.22	5,328.99	62.24	86.624	
11,700.00	6,946.05	6,543.64	6,356.75	83.76	29.49	-67.35	1,508.29	-183.63	5,487.11	5,424.79	62.33	88.035	
11,800.00	6,945.96	6,543.64	6,356.75	85.29	29.49	-67.35	1,508.29	-183.63	5,583.15	5,520.73	62.42	89.446	
11,900.00	6,945.87	6,542.96	6,356.10	86.82	29.49	-67.33	1,508.11	-183.61	5,679.33	5,616.82	62.50	90.865	
12,000.00	6,945.78	6,539.08	6,352.35	88.36	29.47	-67.19	1,507.12	-183.49	5,775.63	5,713.06	62.56	92.316	
12,100.00	6,945.69	6,535.20	6,348.60	89.90	29.45	-67.04	1,506.13	-183.38	5,872.05	5,809.43	62.62	93.767	
12,200.00	6,945.60	6,531.31	6,344.84	91.44	29.44	-66.90	1,505.13	-183.26	5,968.59	5,905.91	62.68	95.220	
12,300.00	6,945.51	6,527.43	6,341.09	92.99	29.42	-66.76	1,504.14	-183.15	6,065.24	6,002.50	62.74	96.674	
12,400.00	6,945.42	6,523.55	6,337.34	94.53	29.40	-66.62	1,503.15	-183.03	6,161.99	6,099.19	62.80	98.128	
12,500.00	6,945.33	6,519.67	6,333.59	96.08	29.38	-66.47	1,502.16	-182.92	6,258.84	6,195.99	62.85	99.583	
12,600.00	6,945.24	6,515.78	6,329.84	97.63	29.36	-66.33	1,501.16	-182.80	6,355.79	6,292.88	62.91	101.038	
12,700.00	6,945.15	6,511.90	6,326.08	99.18	29.34	-66.19	1,500.17	-182.69	6,452.83	6,389.87	62.96	102.493	
12,800.00	6,945.06	6,508.02	6,322.33	100.74	29.32	-66.05	1,499.18	-182.57	6,549.95	6,486.94	63.01	103.948	
12,900.00	6,944.96	6,504.14	6,318.58	102.29	29.31	-65.91	1,498.19	-182.46	6,647.16	6,584.09	63.06	105.403	
13,000.00	6,944.87	6,500.25	6,314.83	103.85	29.29	-65.76	1,497.19	-182.34	6,744.45	6,681.33	63.12	106.858	
13,100.00	6,944.78	6,496.37	6,311.08	105.40	29.27	-65.62	1,496.20	-182.23	6,841.81	6,778.64	63.17	108.313	
13,200.00	6,944.69	6,492.49	6,307.33	106.96	29.25	-65.48	1,495.21	-182.11	6,939.24	6,876.03	63.22	109.768	
13,300.00	6,944.60	6,488.60	6,303.57	108.52	29.23	-65.34	1,494.22	-182.00	7,036.75	6,973.48	63.27	111.222	
13,400.00	6,944.51	6,484.72	6,299.82	110.08	29.21	-65.20	1,493.22	-181.88	7,134.32	7,071.01	63.32	112.675	
13,500.00	6,944.42	6,480.84	6,296.07	111.65	29.19	-65.06	1,492.23	-181.77	7,231.96	7,168.59	63.37	114.128	
13,600.00	6,944.33	6,476.96	6,292.32	113.21	29.17	-64.92	1,491.24	-181.65	7,329.66	7,266.24	63.42	115.580	
13,700.00	6,944.24	6,473.07	6,288.57	114.78	29.16	-64.78	1,490.24	-181.54	7,427.42	7,363.95	63.47	117.031	
13,800.00	6,944.15	6,469.19	6,284.81	116.34	29.14	-64.64	1,489.25	-181.42	7,525.23	7,461.72	63.51	118.481	
13,900.00	6,944.06	6,465.31	6,281.06	117.91	29.12	-64.50	1,488.26	-181.31	7,623.10	7,559.54	63.56	119.930	
14,000.00	6,943.97	6,461.43	6,277.31	119.48	29.10	-64.36	1,487.27	-181.19	7,721.02	7,657.41	63.61	121.378	
14,100.00	6,943.88	6,457.54	6,273.56	121.05	29.08	-64.22	1,486.27	-181.08	7,819.00	7,755.34	63.66	122.824	
14,200.00	6,943.79	6,453.66	6,269.81	122.62	29.06	-64.08	1,485.28	-180.96	7,917.02	7,853.31	63.71	124.270	

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 #722H - Slot B05
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 #722H	**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
14,300.00	6,943.70	6,449.78	6,266.05	124.19	29.04	-63.94	1,484.29	-180.85	8,015.09	7,951.33	63.76	125.714	
14,400.00	6,943.61	6,445.89	6,262.30	125.76	29.03	-63.80	1,483.30	-180.73	8,113.20	8,049.39	63.80	127.156	
14,500.00	6,943.52	6,442.01	6,258.55	127.33	29.01	-63.66	1,482.30	-180.62	8,211.36	8,147.50	63.85	128.597	
14,600.00	6,943.43	6,438.13	6,254.80	128.90	28.99	-63.52	1,481.31	-180.50	8,309.56	8,245.66	63.90	130.037	
14,700.00	6,943.34	6,434.25	6,251.05	130.48	28.97	-63.38	1,480.32	-180.39	8,407.80	8,343.85	63.95	131.475	
14,800.00	6,943.25	6,430.36	6,247.29	132.05	28.95	-63.24	1,479.32	-180.27	8,506.08	8,442.08	64.00	132.911	
14,900.00	6,943.16	6,426.48	6,243.54	133.63	28.93	-63.10	1,478.33	-180.16	8,604.39	8,540.35	64.05	134.345	
15,000.00	6,943.07	6,422.60	6,239.79	135.20	28.91	-62.96	1,477.34	-180.04	8,702.75	8,638.65	64.10	135.778	
15,100.00	6,942.98	6,418.72	6,236.04	136.78	28.90	-62.82	1,476.35	-179.92	8,801.14	8,736.99	64.14	137.209	
15,200.00	6,942.89	6,414.83	6,232.29	138.36	28.88	-62.68	1,475.35	-179.81	8,899.56	8,835.37	64.19	138.637	
15,300.00	6,942.80	6,410.95	6,228.54	139.93	28.86	-62.54	1,474.36	-179.69	8,998.02	8,933.78	64.24	140.064	
15,400.00	6,942.71	6,407.07	6,224.78	141.51	28.84	-62.41	1,473.37	-179.58	9,096.51	9,032.22	64.29	141.489	
15,500.00	6,942.62	6,403.18	6,221.03	143.09	28.82	-62.27	1,472.38	-179.46	9,195.03	9,130.69	64.34	142.912	
15,600.00	6,942.53	6,399.30	6,217.28	144.67	28.80	-62.13	1,471.38	-179.35	9,293.58	9,229.19	64.39	144.332	
15,700.00	6,942.44	6,395.42	6,213.53	146.25	28.78	-61.99	1,470.39	-179.23	9,392.16	9,327.72	64.44	145.750	
15,800.00	6,942.35	6,391.54	6,209.78	147.83	28.77	-61.85	1,469.40	-179.12	9,490.76	9,426.27	64.49	147.166	
15,900.00	6,942.26	6,387.65	6,206.02	149.41	28.75	-61.72	1,468.40	-179.00	9,589.40	9,524.86	64.54	148.580	
16,000.00	6,942.17	6,383.77	6,202.27	150.99	28.73	-61.58	1,467.41	-178.89	9,688.06	9,623.47	64.59	149.991	
16,100.00	6,942.08	6,379.89	6,198.52	152.57	28.71	-61.44	1,466.42	-178.77	9,786.74	9,722.10	64.64	151.400	
16,200.00	6,941.99	6,376.01	6,194.77	154.16	28.69	-61.30	1,465.43	-178.66	9,885.46	9,820.76	64.69	152.807	
16,300.00	6,941.90	6,372.12	6,191.02	155.74	28.67	-61.17	1,464.43	-178.54	9,984.19	9,919.45	64.74	154.211	
16,400.00	6,941.81	6,368.24	6,187.26	157.32	28.65	-61.03	1,463.44	-178.43	10,082.95	10,018.15	64.80	155.613	
16,500.00	6,941.72	6,364.36	6,183.51	158.91	28.64	-60.89	1,462.45	-178.31	10,181.73	10,116.88	64.85	157.012	
16,600.00	6,941.63	6,360.48	6,179.76	160.49	28.62	-60.76	1,461.46	-178.20	10,280.53	10,215.64	64.90	158.408	
16,700.00	6,941.54	6,356.59	6,176.01	162.07	28.60	-60.62	1,460.46	-178.08	10,379.36	10,314.41	64.95	159.802	
16,800.00	6,941.45	6,352.71	6,172.26	163.66	28.58	-60.49	1,459.47	-177.97	10,478.21	10,413.20	65.00	161.193	
16,900.00	6,941.36	6,348.83	6,168.50	165.24	28.56	-60.35	1,458.48	-177.85	10,577.07	10,512.01	65.06	162.581	
17,000.00	6,941.27	6,344.94	6,164.75	166.83	28.54	-60.21	1,457.49	-177.74	10,675.96	10,610.85	65.11	163.967	
17,100.00	6,941.18	6,341.06	6,161.00	168.42	28.52	-60.08	1,456.49	-177.62	10,774.86	10,709.70	65.16	165.350	
17,200.00	6,941.09	6,337.18	6,157.25	170.00	28.50	-59.94	1,455.50	-177.51	10,873.79	10,808.57	65.22	166.730	
17,300.00	6,941.00	6,333.30	6,153.50	171.59	28.49	-59.81	1,454.51	-177.39	10,972.73	10,907.46	65.27	168.107	
17,400.00	6,940.91	6,329.41	6,149.75	173.18	28.47	-59.67	1,453.51	-177.28	11,071.69	11,006.36	65.33	169.481	
17,500.00	6,940.82	6,325.53	6,145.99	174.76	28.45	-59.54	1,452.52	-177.16	11,170.66	11,105.28	65.38	170.853	
17,600.00	6,940.73	6,321.65	6,142.24	176.35	28.43	-59.40	1,451.53	-177.05	11,269.66	11,204.22	65.44	172.221	
17,700.00	6,940.64	6,317.77	6,138.49	177.94	28.41	-59.27	1,450.54	-176.93	11,368.67	11,303.17	65.49	173.587	
17,800.00	6,940.55	6,313.88	6,134.74	179.53	28.39	-59.13	1,449.54	-176.82	11,467.69	11,402.14	65.55	174.949	
17,900.00	6,940.46	6,310.00	6,130.99	181.11	28.37	-59.00	1,448.55	-176.70	11,566.73	11,501.13	65.61	176.309	
18,000.00	6,940.37	6,306.12	6,127.23	182.70	28.36	-58.87	1,447.56	-176.59	11,665.79	11,600.13	65.66	177.665	
18,100.00	6,940.28	6,302.23	6,123.48	184.29	28.34	-58.73	1,446.57	-176.47	11,764.86	11,699.14	65.72	179.018	
18,200.00	6,940.19	6,298.35	6,119.73	185.88	28.32	-58.60	1,445.57	-176.36	11,863.95	11,798.17	65.78	180.369	
18,300.00	6,940.10	6,294.47	6,115.98	187.47	28.30	-58.46	1,444.58	-176.24	11,963.05	11,897.21	65.83	181.716	
18,400.00	6,940.01	6,290.59	6,112.23	189.06	28.28	-58.33	1,443.59	-176.13	12,062.16	11,996.27	65.89	183.060	
18,500.00	6,939.92	6,286.70	6,108.47	190.65	28.26	-58.20	1,442.59	-176.01	12,161.28	12,095.33	65.95	184.400	
18,600.00	6,939.83	6,282.82	6,104.72	192.24	28.24	-58.07	1,441.60	-175.90	12,260.42	12,194.41	66.01	185.738	
18,700.00	6,939.74	6,278.94	6,100.97	193.83	28.23	-57.93	1,440.61	-175.78	12,359.57	12,293.51	66.07	187.072	
18,800.00	6,939.65	6,275.06	6,097.22	195.42	28.21	-57.80	1,439.62	-175.67	12,458.74	12,392.61	66.13	188.403	
18,900.00	6,939.56	6,271.17	6,093.47	197.01	28.19	-57.67	1,438.62	-175.55	12,557.91	12,491.73	66.19	189.731	
19,000.00	6,939.47	6,267.29	6,089.72	198.60	28.17	-57.54	1,437.63	-175.44	12,657.10	12,590.85	66.25	191.056	
19,100.00	6,939.38	6,263.41	6,085.96	200.19	28.15	-57.40	1,436.64	-175.32	12,756.30	12,689.99	66.31	192.377	
19,200.00	6,939.29	6,259.52	6,082.21	201.78	28.13	-57.27	1,435.65	-175.21	12,855.51	12,789.14	66.37	193.695	
19,300.00	6,939.20	6,255.64	6,078.46	203.37	28.11	-57.14	1,434.65	-175.09	12,954.73	12,888.30	66.43	195.010	
19,400.00	6,939.11	6,251.76	6,074.71	204.97	28.10	-57.01	1,433.66	-174.98	13,053.97	12,987.47	66.49	196.321	

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 #722H - Slot B05
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 #722H	**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 **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	6,939.02	6,247.88	6,070.96	206.56	28.08	-56.88	1,432.67	-174.86	13,153.21	13,086.65	66.56	197.629	
19,600.00	6,938.93	6,243.99	6,067.20	208.15	28.06	-56.75	1,431.67	-174.75	13,252.46	13,185.84	66.62	198.933	
19,700.00	6,938.83	6,240.11	6,063.45	209.74	28.04	-56.62	1,430.68	-174.63	13,351.72	13,285.04	66.68	200.234	
19,800.00	6,938.74	6,236.23	6,059.70	211.33	28.02	-56.49	1,429.69	-174.52	13,451.00	13,384.25	66.74	201.532	
19,900.00	6,938.65	6,232.35	6,055.95	212.93	28.00	-56.36	1,428.70	-174.40	13,550.28	13,483.47	66.81	202.826	
20,000.00	6,938.56	6,228.46	6,052.20	214.52	27.98	-56.23	1,427.70	-174.29	13,649.57	13,582.70	66.87	204.117	
20,100.00	6,938.47	6,224.58	6,048.44	216.11	27.97	-56.10	1,426.71	-174.17	13,748.87	13,681.94	66.94	205.404	
20,200.00	6,938.38	6,220.70	6,044.69	217.71	27.95	-55.97	1,425.72	-174.06	13,848.18	13,781.18	67.00	206.688	
20,300.00	6,938.29	6,216.81	6,040.94	219.30	27.93	-55.84	1,424.73	-173.94	13,947.50	13,880.44	67.07	207.968	
20,400.00	6,938.20	6,212.93	6,037.19	220.89	27.91	-55.71	1,423.73	-173.83	14,046.83	13,979.70	67.13	209.245	
20,500.00	6,938.11	6,209.05	6,033.44	222.49	27.89	-55.58	1,422.74	-173.71	14,146.16	14,078.97	67.20	210.519	
20,600.00	6,938.02	6,205.17	6,029.68	224.08	27.87	-55.45	1,421.75	-173.60	14,245.51	14,178.25	67.26	211.788	
20,626.08	6,938.00	6,204.15	6,028.71	224.49	27.87	-55.42	1,421.49	-173.57	14,271.42	14,204.14	67.28	212.119	

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 #722H - Slot B05
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 #722H	**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 #714H - 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	-15.27	38.59	-10.53	40.00				
100.00	100.00	100.00	100.00	0.25	0.25	-15.27	38.59	-10.53	40.00	39.50	0.50	79.704	
200.00	200.00	200.00	200.00	0.61	0.61	-15.27	38.59	-10.53	40.00	38.78	1.22	32.819	
300.00	300.00	300.00	300.00	0.97	0.97	-15.27	38.59	-10.53	40.00	38.06	1.94	20.664	
400.00	400.00	400.00	400.00	1.33	1.33	-15.27	38.59	-10.53	40.00	37.35	2.65	15.079	
500.00	500.00	500.00	500.00	1.68	1.68	-15.27	38.59	-10.53	40.00	36.63	3.37	11.871	
535.00	535.00	535.26	535.26	1.81	1.81	-26.34	38.43	-10.68	39.69	36.08	3.62	10.975	
600.00	599.99	600.67	600.65	2.04	2.03	-28.85	37.29	-11.73	38.21	34.13	4.07	9.376	
700.00	699.99	700.60	700.51	2.40	2.37	-35.05	34.54	-14.24	35.52	30.75	4.77	7.447	
800.00	799.98	800.48	800.32	2.76	2.71	-42.17	31.79	-16.76	33.31	27.84	5.47	6.090	
900.00	899.97	900.37	900.14	3.12	3.06	-50.16	29.04	-19.28	31.68	25.51	6.17	5.131	
1,000.00	999.96	1,000.25	999.95	3.48	3.41	-58.82	26.30	-21.80	30.73	23.85	6.88	4.464	
1,078.35	1,078.31	1,078.51	1,078.16	3.76	3.68	-65.86	24.14	-23.77	30.50	23.06	7.44	4.099	CC
1,100.00	1,099.96	1,100.13	1,099.77	3.84	3.76	-67.81	23.55	-24.31	30.51	22.92	7.59	4.019	
1,200.00	1,199.95	1,200.02	1,199.58	4.19	4.11	-76.71	20.80	-26.83	31.05	22.75	8.30	3.739	ES
1,300.00	1,299.94	1,299.90	1,299.40	4.55	4.47	-85.11	18.05	-29.35	32.31	23.29	9.02	3.583	
1,400.00	1,399.93	1,399.79	1,399.21	4.91	4.83	-92.74	15.30	-31.87	34.20	24.47	9.73	3.516	
1,500.00	1,499.93	1,499.67	1,499.02	5.27	5.18	-99.46	12.56	-34.39	36.63	26.19	10.44	3.509	SF
1,600.00	1,599.92	1,599.56	1,598.84	5.63	5.54	-105.28	9.81	-36.91	39.50	28.35	11.15	3.542	
1,700.00	1,699.91	1,699.44	1,698.65	5.99	5.90	-110.27	7.06	-39.42	42.72	30.85	11.87	3.600	
1,800.00	1,799.90	1,799.32	1,798.47	6.34	6.26	-114.54	4.31	-41.94	46.22	33.64	12.58	3.674	
1,900.00	1,899.90	1,899.21	1,898.28	6.70	6.62	-118.18	1.56	-44.46	49.93	36.64	13.29	3.757	
2,000.00	1,999.89	1,999.09	1,998.10	7.06	6.98	-121.31	-1.18	-46.98	53.82	39.82	14.01	3.843	
2,100.00	2,099.88	2,098.98	2,097.91	7.42	7.34	-124.02	-3.93	-49.50	57.85	43.13	14.72	3.930	
2,200.00	2,199.87	2,198.86	2,197.73	7.78	7.70	-126.36	-6.68	-52.02	61.99	46.56	15.43	4.017	
2,300.00	2,299.87	2,298.74	2,297.54	8.14	8.06	-128.41	-9.43	-54.53	66.23	50.08	16.15	4.101	
2,400.00	2,399.86	2,398.63	2,397.36	8.50	8.42	-130.21	-12.18	-57.05	70.53	53.67	16.86	4.182	
2,500.00	2,499.85	2,498.51	2,497.17	8.85	8.78	-131.81	-14.92	-59.57	74.90	57.32	17.58	4.261	
2,600.00	2,599.85	2,598.40	2,596.98	9.21	9.14	-133.22	-17.67	-62.09	79.32	61.03	18.29	4.336	
2,700.00	2,699.84	2,698.28	2,696.80	9.57	9.50	-134.49	-20.42	-64.61	83.78	64.77	19.01	4.407	
2,800.00	2,799.83	2,798.17	2,796.61	9.93	9.86	-135.63	-23.17	-67.13	88.28	68.56	19.73	4.476	
2,900.00	2,899.82	2,898.05	2,896.43	10.29	10.22	-136.65	-25.92	-69.64	92.81	72.37	20.44	4.541	
3,000.00	2,999.82	2,997.93	2,996.24	10.65	10.59	-137.59	-28.66	-72.16	97.37	76.21	21.16	4.602	
3,100.00	3,099.81	3,097.82	3,096.06	11.01	10.95	-138.43	-31.41	-74.68	101.95	80.08	21.87	4.661	
3,200.00	3,199.80	3,197.70	3,195.87	11.36	11.31	-139.21	-34.16	-77.20	106.55	83.96	22.59	4.717	
3,300.00	3,299.79	3,297.59	3,295.69	11.72	11.67	-139.92	-36.91	-79.72	111.17	87.87	23.30	4.770	
3,400.00	3,399.79	3,397.47	3,395.50	12.08	12.03	-140.57	-39.66	-82.24	115.81	91.79	24.02	4.821	
3,500.00	3,499.78	3,497.35	3,495.32	12.44	12.39	-141.18	-42.40	-84.75	120.46	95.72	24.74	4.869	
3,600.00	3,599.77	3,597.24	3,595.13	12.80	12.76	-141.73	-45.15	-87.27	125.12	99.66	25.45	4.916	
3,700.00	3,699.76	3,697.12	3,694.95	13.16	13.12	-142.25	-47.90	-89.79	129.79	103.62	26.17	4.960	
3,800.00	3,799.76	3,797.01	3,794.76	13.52	13.48	-142.74	-50.65	-92.31	134.47	107.59	26.89	5.002	
3,900.00	3,899.75	3,896.89	3,894.57	13.87	13.84	-143.18	-53.40	-94.83	139.16	111.56	27.60	5.042	
4,000.00	3,999.74	3,996.77	3,994.39	14.23	14.20	-143.61	-56.15	-97.34	143.86	115.54	28.32	5.080	
4,100.00	4,099.73	4,096.66	4,094.20	14.59	14.56	-144.00	-58.89	-99.86	148.57	119.53	29.04	5.117	
4,200.00	4,199.73	4,196.54	4,194.02	14.95	14.93	-144.37	-61.64	-102.38	153.28	123.53	29.75	5.152	
4,300.00	4,299.72	4,296.43	4,293.83	15.31	15.29	-144.72	-64.39	-104.90	158.00	127.53	30.47	5.186	
4,400.00	4,399.71	4,396.31	4,393.65	15.67	15.65	-145.04	-67.14	-107.42	162.72	131.54	31.19	5.218	
4,500.00	4,499.70	4,496.20	4,493.46	16.03	16.01	-145.35	-69.89	-109.94	167.45	135.55	31.90	5.249	
4,600.00	4,599.70	4,596.08	4,593.28	16.38	16.37	-145.64	-72.63	-112.45	172.19	139.57	32.62	5.279	
4,700.00	4,699.69	4,695.96	4,693.09	16.74	16.74	-145.92	-75.38	-114.97	176.93	143.59	33.34	5.307	
4,800.00	4,799.68	4,795.85	4,792.91	17.10	17.10	-146.18	-78.13	-117.49	181.67	147.62	34.05	5.335	
4,900.00	4,899.67	4,895.73	4,892.72	17.46	17.46	-146.43	-80.88	-120.01	186.41	151.65	34.77	5.362	

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 #722H - Slot B05
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 #722H	**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 #714H - 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
5,000.00	4,999.67	4,995.62	4,992.53	17.82	17.82	-146.67	-83.63	-122.53	191.16	155.68	35.49	5.387	
5,100.00	5,099.66	5,095.50	5,092.35	18.18	18.18	-146.89	-86.37	-125.05	195.91	159.71	36.20	5.412	
5,200.00	5,199.65	5,195.38	5,192.16	18.53	18.55	-147.11	-89.12	-127.56	200.67	163.75	36.92	5.435	
5,300.00	5,299.64	5,295.27	5,291.98	18.89	18.91	-147.31	-91.87	-130.08	205.43	167.79	37.64	5.458	
5,400.00	5,399.64	5,395.15	5,391.79	19.25	19.27	-147.51	-94.62	-132.60	210.19	171.83	38.35	5.480	
5,500.00	5,499.63	5,495.04	5,491.61	19.61	19.63	-147.69	-97.37	-135.12	214.95	175.88	39.07	5.502	
5,600.00	5,599.62	5,594.92	5,591.42	19.97	19.99	-147.87	-100.11	-137.64	219.71	179.93	39.79	5.522	
5,700.00	5,699.61	5,694.81	5,691.24	20.33	20.36	-148.04	-102.86	-140.16	224.48	183.98	40.50	5.542	
5,800.00	5,799.61	5,794.69	5,791.05	20.69	20.72	-148.20	-105.61	-142.67	229.25	188.03	41.22	5.562	
5,900.00	5,899.60	5,894.57	5,890.87	21.04	21.08	-148.36	-108.36	-145.19	234.02	192.08	41.94	5.580	
6,000.00	5,999.59	5,994.46	5,990.68	21.40	21.44	-148.51	-111.11	-147.71	238.79	196.14	42.65	5.598	
6,100.00	6,099.58	6,094.34	6,090.50	21.76	21.80	-148.66	-113.85	-150.23	243.56	200.19	43.37	5.616	
6,200.00	6,199.58	6,194.23	6,190.31	22.12	22.17	-148.80	-116.60	-152.75	248.34	204.25	44.09	5.633	
6,300.00	6,299.57	6,294.11	6,290.12	22.48	22.53	-148.93	-119.35	-155.27	253.12	208.31	44.80	5.649	
6,315.05	6,314.62	6,309.14	6,305.15	22.53	22.58	-148.95	-119.76	-155.64	253.83	208.92	44.91	5.652	
6,350.00	6,349.55	6,342.24	6,338.22	22.66	22.70	141.82	-120.67	-156.51	256.15	211.00	45.15	5.674	
6,400.00	6,399.30	6,380.96	6,376.84	22.83	22.85	135.28	-121.73	-159.07	262.93	217.55	45.38	5.794	
6,450.00	6,448.52	6,417.93	6,413.49	23.00	22.98	134.20	-122.72	-163.69	274.37	228.83	45.53	6.026	
6,500.00	6,496.91	6,450.00	6,445.03	23.18	23.10	134.13	-123.57	-169.43	290.62	245.08	45.54	6.381	
6,550.00	6,544.17	6,483.39	6,477.52	23.35	23.23	134.62	-124.43	-177.07	311.72	266.15	45.57	6.840	
6,600.00	6,590.01	6,510.88	6,503.93	23.53	23.33	134.77	-125.13	-184.64	337.61	292.15	45.46	7.426	
6,650.00	6,634.14	6,534.59	6,526.44	23.70	23.42	134.43	-125.72	-192.08	367.98	322.68	45.29	8.124	
6,700.00	6,676.30	6,550.00	6,540.91	23.88	23.48	132.84	-126.09	-197.36	402.42	357.48	44.94	8.954	
6,750.00	6,716.21	6,570.88	6,560.31	24.06	23.55	131.41	-126.59	-205.08	440.29	395.40	44.88	9.810	
6,800.00	6,753.65	6,583.83	6,572.21	24.24	23.60	128.22	-126.90	-210.18	481.11	436.43	44.69	10.766	
6,850.00	6,788.37	6,600.00	6,586.91	24.44	23.66	124.60	-127.27	-216.89	524.35	479.64	44.71	11.727	
6,900.00	6,820.16	6,600.00	6,586.91	24.63	23.66	116.52	-127.27	-216.89	569.27	524.90	44.37	12.831	
6,950.00	6,848.83	6,600.00	6,586.91	24.84	23.66	106.07	-127.27	-216.89	615.60	571.46	44.14	13.945	
7,000.00	6,874.19	6,600.00	6,586.91	25.06	23.66	93.31	-127.27	-216.89	662.80	618.76	44.04	15.050	
7,050.00	6,896.10	6,600.00	6,586.91	25.29	23.66	79.26	-127.27	-216.89	710.43	666.39	44.04	16.132	
7,100.00	6,914.42	6,600.00	6,586.91	25.53	23.66	65.63	-127.27	-216.89	758.15	714.03	44.12	17.184	
7,150.00	6,929.03	6,600.00	6,586.91	25.78	23.66	53.86	-127.27	-216.89	805.67	761.40	44.27	18.201	
7,200.00	6,939.85	6,600.00	6,586.91	26.05	23.66	44.44	-127.27	-216.89	852.75	808.29	44.47	19.177	
7,250.00	6,946.80	6,600.00	6,586.91	26.32	23.66	37.16	-127.27	-216.89	899.20	854.50	44.71	20.112	
7,300.00	6,949.85	6,583.81	6,572.19	26.61	23.60	30.44	-126.90	-210.17	944.51	899.84	44.67	21.145	
7,314.43	6,950.00	6,581.52	6,570.09	26.69	23.59	29.03	-126.84	-209.25	957.41	912.70	44.71	21.414	
7,400.00	6,949.92	6,568.34	6,557.96	27.21	23.54	28.22	-126.53	-204.10	1,034.14	989.16	44.98	22.992	
7,500.00	6,949.83	6,550.00	6,540.91	27.90	23.48	27.15	-126.09	-197.36	1,124.98	1,079.80	45.19	24.896	
7,600.00	6,949.74	6,550.00	6,540.91	28.66	23.48	27.15	-126.09	-197.36	1,216.91	1,171.29	45.61	26.678	
7,700.00	6,949.65	6,530.69	6,522.76	29.49	23.40	26.08	-125.62	-190.80	1,309.58	1,263.87	45.71	28.647	
7,800.00	6,949.56	6,520.47	6,513.07	30.38	23.36	25.54	-125.37	-187.55	1,403.08	1,357.18	45.90	30.566	
7,900.00	6,949.47	6,500.00	6,493.52	31.33	23.29	24.50	-124.85	-181.51	1,497.36	1,451.41	45.95	32.587	
8,000.00	6,949.38	6,500.00	6,493.52	32.33	23.29	24.50	-124.85	-181.51	1,591.91	1,545.72	46.20	34.460	
8,100.00	6,949.29	6,500.00	6,493.52	33.38	23.29	24.50	-124.85	-181.51	1,687.09	1,640.69	46.41	36.355	
8,200.00	6,949.20	6,500.00	6,493.52	34.47	23.29	24.50	-124.85	-181.51	1,782.81	1,736.22	46.59	38.267	
8,300.00	6,949.11	6,481.06	6,475.27	35.60	23.22	23.60	-124.37	-176.49	1,878.59	1,832.00	46.59	40.320	
8,400.00	6,949.02	6,474.93	6,469.32	36.76	23.19	23.32	-124.21	-174.98	1,974.85	1,928.16	46.69	42.293	
8,500.00	6,948.93	6,469.23	6,463.80	37.96	23.17	23.06	-124.07	-173.62	2,071.40	2,024.61	46.79	44.272	
8,600.00	6,948.84	6,450.00	6,445.03	39.18	23.10	22.23	-123.57	-169.43	2,168.40	2,121.62	46.78	46.357	
8,700.00	6,948.75	6,450.00	6,445.03	40.43	23.10	22.23	-123.57	-169.43	2,265.31	2,218.42	46.90	48.305	
8,800.00	6,948.66	6,450.00	6,445.03	41.71	23.10	22.23	-123.57	-169.43	2,362.49	2,315.48	47.01	50.259	
8,900.00	6,948.57	6,450.00	6,445.03	43.00	23.10	22.23	-123.57	-169.43	2,459.88	2,412.78	47.11	52.219	

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 #722H - Slot B05
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 #722H	**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 #714H - 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
9,000.00	6,948.48	6,450.00	6,445.03	44.32	23.10	22.23	-123.57	-169.43	2,557.48	2,510.28	47.20	54.184	
9,100.00	6,948.39	6,450.00	6,445.03	45.66	23.10	22.23	-123.57	-169.43	2,655.26	2,607.97	47.29	56.152	
9,200.00	6,948.30	6,450.00	6,445.03	47.01	23.10	22.23	-123.57	-169.43	2,753.20	2,705.83	47.37	58.124	
9,300.00	6,948.21	6,450.00	6,445.03	48.38	23.10	22.23	-123.57	-169.43	2,851.28	2,803.83	47.44	60.097	
9,400.00	6,948.12	6,450.00	6,445.03	49.76	23.10	22.23	-123.57	-169.43	2,949.49	2,901.97	47.52	62.071	
9,500.00	6,948.03	6,428.93	6,424.35	51.16	23.02	21.38	-123.01	-165.48	3,047.39	2,999.91	47.48	64.182	
9,600.00	6,947.94	6,426.05	6,421.51	52.56	23.01	21.26	-122.94	-165.00	3,145.70	3,098.17	47.54	66.175	
9,700.00	6,947.85	6,423.32	6,418.82	53.98	23.00	21.16	-122.87	-164.55	3,244.11	3,196.51	47.59	68.167	
9,800.00	6,947.76	6,400.00	6,395.75	55.41	22.91	20.28	-122.24	-161.19	3,342.99	3,295.44	47.55	70.310	
9,900.00	6,947.67	6,400.00	6,395.75	56.85	22.91	20.28	-122.24	-161.19	3,441.46	3,393.84	47.61	72.280	
10,000.00	6,947.58	6,400.00	6,395.75	58.29	22.91	20.28	-122.24	-161.19	3,540.01	3,492.33	47.68	74.250	
10,100.00	6,947.49	6,400.00	6,395.75	59.75	22.91	20.28	-122.24	-161.19	3,638.64	3,590.90	47.74	76.218	
10,200.00	6,947.40	6,400.00	6,395.75	61.21	22.91	20.28	-122.24	-161.19	3,737.34	3,689.54	47.80	78.184	
10,300.00	6,947.31	6,400.00	6,395.75	62.68	22.91	20.28	-122.24	-161.19	3,836.12	3,788.25	47.86	80.149	
10,400.00	6,947.22	6,400.00	6,395.75	64.15	22.91	20.28	-122.24	-161.19	3,934.95	3,887.03	47.92	82.112	
10,500.00	6,947.13	6,400.00	6,395.75	65.63	22.91	20.28	-122.24	-161.19	4,033.84	3,985.86	47.98	84.072	
10,600.00	6,947.04	6,400.00	6,395.75	67.12	22.91	20.28	-122.24	-161.19	4,132.79	4,084.75	48.04	86.030	
10,700.00	6,946.95	6,400.00	6,395.75	68.61	22.91	20.28	-122.24	-161.19	4,231.78	4,183.68	48.10	87.986	
10,800.00	6,946.86	6,400.00	6,395.75	70.11	22.91	20.28	-122.24	-161.19	4,330.82	4,282.67	48.15	89.938	
10,900.00	6,946.77	6,400.00	6,395.75	71.61	22.91	20.28	-122.24	-161.19	4,429.90	4,381.69	48.21	91.887	
11,000.00	6,946.68	6,400.00	6,395.75	73.11	22.91	20.28	-122.24	-161.19	4,529.03	4,480.76	48.27	93.832	
11,100.00	6,946.59	6,400.00	6,395.75	74.62	22.91	20.28	-122.24	-161.19	4,628.19	4,579.86	48.32	95.774	
11,200.00	6,946.50	6,400.00	6,395.75	76.14	22.91	20.28	-122.24	-161.19	4,727.39	4,679.00	48.38	97.712	
11,300.00	6,946.41	6,400.00	6,395.75	77.65	22.91	20.28	-122.24	-161.19	4,826.62	4,778.18	48.44	99.646	
11,400.00	6,946.32	6,400.00	6,395.75	79.18	22.91	20.28	-122.24	-161.19	4,925.88	4,877.38	48.49	101.576	
11,500.00	6,946.23	6,400.00	6,395.75	80.70	22.91	20.28	-122.24	-161.19	5,025.17	4,976.62	48.55	103.502	
11,600.00	6,946.14	6,400.00	6,395.75	82.23	22.91	20.28	-122.24	-161.19	5,124.48	5,075.88	48.61	105.424	
11,700.00	6,946.05	6,400.00	6,395.75	83.76	22.91	20.28	-122.24	-161.19	5,223.83	5,175.16	48.67	107.341	
11,800.00	6,945.96	6,400.00	6,395.75	85.29	22.91	20.28	-122.24	-161.19	5,323.20	5,274.47	48.72	109.254	
11,900.00	6,945.87	6,400.00	6,395.75	86.82	22.91	20.28	-122.24	-161.19	5,422.59	5,373.81	48.78	111.162	
12,000.00	6,945.78	6,400.00	6,395.75	88.36	22.91	20.28	-122.24	-161.19	5,522.00	5,473.16	48.84	113.065	
12,100.00	6,945.69	6,400.00	6,395.75	89.90	22.91	20.28	-122.24	-161.19	5,621.44	5,572.54	48.90	114.963	
12,200.00	6,945.60	6,400.00	6,395.75	91.44	22.91	20.28	-122.24	-161.19	5,720.89	5,671.93	48.96	116.856	
12,300.00	6,945.51	6,400.00	6,395.75	92.99	22.91	20.28	-122.24	-161.19	5,820.36	5,771.35	49.02	118.743	
12,400.00	6,945.42	6,400.00	6,395.75	94.53	22.91	20.28	-122.24	-161.19	5,919.85	5,870.78	49.08	120.626	
12,500.00	6,945.33	6,400.00	6,395.75	96.08	22.91	20.28	-122.24	-161.19	6,019.36	5,970.23	49.14	122.503	
12,600.00	6,945.24	6,400.00	6,395.75	97.63	22.91	20.28	-122.24	-161.19	6,118.89	6,069.69	49.20	124.375	
12,700.00	6,945.15	6,400.00	6,395.75	99.18	22.91	20.28	-122.24	-161.19	6,218.43	6,169.17	49.26	126.241	
12,800.00	6,945.06	6,377.24	6,373.14	100.74	22.83	19.49	-121.63	-158.72	6,317.53	6,268.29	49.25	128.285	
12,900.00	6,944.96	6,376.43	6,372.32	102.29	22.83	19.46	-121.61	-158.65	6,417.07	6,367.76	49.31	130.148	
13,000.00	6,944.87	6,375.63	6,371.53	103.85	22.83	19.44	-121.59	-158.58	6,516.61	6,467.25	49.37	132.005	
13,100.00	6,944.78	6,374.86	6,370.77	105.40	22.82	19.41	-121.57	-158.51	6,616.18	6,566.75	49.43	133.856	
13,200.00	6,944.69	6,374.11	6,370.02	106.96	22.82	19.38	-121.54	-158.45	6,715.75	6,666.26	49.49	135.701	
13,300.00	6,944.60	6,373.38	6,369.29	108.52	22.82	19.36	-121.52	-158.38	6,815.33	6,765.78	49.55	137.540	
13,400.00	6,944.51	6,350.00	6,345.97	110.08	22.73	18.61	-120.89	-156.84	6,915.37	6,865.83	49.54	139.581	
13,500.00	6,944.42	6,350.00	6,345.97	111.65	22.73	18.61	-120.89	-156.84	7,014.95	6,965.34	49.61	141.403	
13,600.00	6,944.33	6,350.00	6,345.97	113.21	22.73	18.61	-120.89	-156.84	7,114.54	7,064.86	49.68	143.218	
13,700.00	6,944.24	6,350.00	6,345.97	114.78	22.73	18.61	-120.89	-156.84	7,214.14	7,164.40	49.74	145.027	
13,800.00	6,944.15	6,350.00	6,345.97	116.34	22.73	18.61	-120.89	-156.84	7,313.76	7,263.95	49.81	146.830	
13,900.00	6,944.06	6,350.00	6,345.97	117.91	22.73	18.61	-120.89	-156.84	7,413.38	7,363.50	49.88	148.627	
14,000.00	6,943.97	6,350.00	6,345.97	119.48	22.73	18.61	-120.89	-156.84	7,513.01	7,463.07	49.95	150.417	
14,100.00	6,943.88	6,350.00	6,345.97	121.05	22.73	18.61	-120.89	-156.84	7,612.66	7,562.64	50.02	152.201	

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 #722H - Slot B05
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 #722H	**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 #714H - 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
14,200.00	6,943.79	6,350.00	6,345.97	122.62	22.73	18.61	-120.89	-156.84	7,712.31	7,662.22	50.09	153.978	
14,300.00	6,943.70	6,350.00	6,345.97	124.19	22.73	18.61	-120.89	-156.84	7,811.97	7,761.81	50.16	155.749	
14,400.00	6,943.61	6,350.00	6,345.97	125.76	22.73	18.61	-120.89	-156.84	7,911.64	7,861.41	50.23	157.514	
14,500.00	6,943.52	6,350.00	6,345.97	127.33	22.73	18.61	-120.89	-156.84	8,011.32	7,961.02	50.30	159.271	
14,600.00	6,943.43	6,350.00	6,345.97	128.90	22.73	18.61	-120.89	-156.84	8,111.01	8,060.63	50.37	161.023	
14,700.00	6,943.34	6,350.00	6,345.97	130.48	22.73	18.61	-120.89	-156.84	8,210.70	8,160.26	50.44	162.767	
14,800.00	6,943.25	6,350.00	6,345.97	132.05	22.73	18.61	-120.89	-156.84	8,310.40	8,259.88	50.52	164.505	
14,900.00	6,943.16	6,350.00	6,345.97	133.63	22.73	18.61	-120.89	-156.84	8,410.11	8,359.52	50.59	166.236	
15,000.00	6,943.07	6,350.00	6,345.97	135.20	22.73	18.61	-120.89	-156.84	8,509.82	8,459.16	50.67	167.961	
15,100.00	6,942.98	6,350.00	6,345.97	136.78	22.73	18.61	-120.89	-156.84	8,609.55	8,558.81	50.74	169.678	
15,200.00	6,942.89	6,350.00	6,345.97	138.36	22.73	18.61	-120.89	-156.84	8,709.27	8,658.46	50.82	171.389	
15,300.00	6,942.80	6,350.00	6,345.97	139.93	22.73	18.61	-120.89	-156.84	8,809.01	8,758.12	50.89	173.093	
15,400.00	6,942.71	6,350.00	6,345.97	141.51	22.73	18.61	-120.89	-156.84	8,908.75	8,857.78	50.97	174.790	
15,500.00	6,942.62	6,350.00	6,345.97	143.09	22.73	18.61	-120.89	-156.84	9,008.50	8,957.45	51.05	176.480	
15,600.00	6,942.53	6,350.00	6,345.97	144.67	22.73	18.61	-120.89	-156.84	9,108.25	9,057.12	51.12	178.164	
15,700.00	6,942.44	6,350.00	6,345.97	146.25	22.73	18.61	-120.89	-156.84	9,208.00	9,156.80	51.20	179.840	
15,800.00	6,942.35	6,350.00	6,345.97	147.83	22.73	18.61	-120.89	-156.84	9,307.77	9,256.49	51.28	181.509	
15,900.00	6,942.26	6,350.00	6,345.97	149.41	22.73	18.61	-120.89	-156.84	9,407.53	9,356.17	51.36	183.172	
16,000.00	6,942.17	6,350.00	6,345.97	150.99	22.73	18.61	-120.89	-156.84	9,507.31	9,455.87	51.44	184.827	
16,100.00	6,942.08	6,350.00	6,345.97	152.57	22.73	18.61	-120.89	-156.84	9,607.08	9,555.56	51.52	186.476	
16,200.00	6,941.99	6,350.00	6,345.97	154.16	22.73	18.61	-120.89	-156.84	9,706.86	9,655.26	51.60	188.117	
16,300.00	6,941.90	6,350.00	6,345.97	155.74	22.73	18.61	-120.89	-156.84	9,806.65	9,754.97	51.68	189.752	
16,400.00	6,941.81	6,350.00	6,345.97	157.32	22.73	18.61	-120.89	-156.84	9,906.44	9,854.68	51.76	191.379	
16,500.00	6,941.72	6,350.00	6,345.97	158.91	22.73	18.61	-120.89	-156.84	10,006.23	9,954.39	51.85	193.000	
16,600.00	6,941.63	6,350.00	6,345.97	160.49	22.73	18.61	-120.89	-156.84	10,106.03	10,054.10	51.93	194.613	
16,700.00	6,941.54	6,350.00	6,345.97	162.07	22.73	18.61	-120.89	-156.84	10,205.83	10,153.82	52.01	196.219	
16,800.00	6,941.45	6,350.00	6,345.97	163.66	22.73	18.61	-120.89	-156.84	10,305.64	10,253.54	52.10	197.818	
16,900.00	6,941.36	6,350.00	6,345.97	165.24	22.73	18.61	-120.89	-156.84	10,405.45	10,353.27	52.18	199.410	
17,000.00	6,941.27	6,350.00	6,345.97	166.83	22.73	18.61	-120.89	-156.84	10,505.26	10,453.00	52.27	200.995	
17,100.00	6,941.18	6,350.00	6,345.97	168.42	22.73	18.61	-120.89	-156.84	10,605.08	10,552.73	52.35	202.573	
17,200.00	6,941.09	6,350.00	6,345.97	170.00	22.73	18.61	-120.89	-156.84	10,704.90	10,652.46	52.44	204.144	
17,300.00	6,941.00	6,350.00	6,345.97	171.59	22.73	18.61	-120.89	-156.84	10,804.73	10,752.20	52.52	205.708	
17,400.00	6,940.91	6,350.00	6,345.97	173.18	22.73	18.61	-120.89	-156.84	10,904.55	10,851.94	52.61	207.265	
17,500.00	6,940.82	6,350.00	6,345.97	174.76	22.73	18.61	-120.89	-156.84	11,004.38	10,951.68	52.70	208.814	
17,600.00	6,940.73	6,350.00	6,345.97	176.35	22.73	18.61	-120.89	-156.84	11,104.22	11,051.43	52.79	210.357	
17,700.00	6,940.64	6,350.00	6,345.97	177.94	22.73	18.61	-120.89	-156.84	11,204.05	11,151.18	52.88	211.892	
17,800.00	6,940.55	6,350.00	6,345.97	179.53	22.73	18.61	-120.89	-156.84	11,303.89	11,250.93	52.97	213.421	
17,900.00	6,940.46	6,350.00	6,345.97	181.11	22.73	18.61	-120.89	-156.84	11,403.73	11,350.68	53.05	214.942	
18,000.00	6,940.37	6,350.00	6,345.97	182.70	22.73	18.61	-120.89	-156.84	11,503.58	11,450.43	53.15	216.456	
18,100.00	6,940.28	6,350.00	6,345.97	184.29	22.73	18.61	-120.89	-156.84	11,603.43	11,550.19	53.24	217.964	
18,200.00	6,940.19	6,350.00	6,345.97	185.88	22.73	18.61	-120.89	-156.84	11,703.28	11,649.95	53.33	219.464	
18,300.00	6,940.10	6,350.00	6,345.97	187.47	22.73	18.61	-120.89	-156.84	11,803.13	11,749.71	53.42	220.957	
18,400.00	6,940.01	6,350.00	6,345.97	189.06	22.73	18.61	-120.89	-156.84	11,902.98	11,849.47	53.51	222.443	
18,500.00	6,939.92	6,350.00	6,345.97	190.65	22.73	18.61	-120.89	-156.84	12,002.84	11,949.24	53.60	223.922	
18,600.00	6,939.83	6,350.00	6,345.97	192.24	22.73	18.61	-120.89	-156.84	12,102.70	12,049.00	53.70	225.395	
18,700.00	6,939.74	6,350.00	6,345.97	193.83	22.73	18.61	-120.89	-156.84	12,202.56	12,148.77	53.79	226.860	
18,800.00	6,939.65	6,350.00	6,345.97	195.42	22.73	18.61	-120.89	-156.84	12,302.43	12,248.54	53.88	228.318	
18,900.00	6,939.56	6,350.00	6,345.97	197.01	22.73	18.61	-120.89	-156.84	12,402.29	12,348.32	53.98	229.769	
19,000.00	6,939.47	6,350.00	6,345.97	198.60	22.73	18.61	-120.89	-156.84	12,502.16	12,448.09	54.07	231.213	
19,100.00	6,939.38	6,350.00	6,345.97	200.19	22.73	18.61	-120.89	-156.84	12,602.03	12,547.87	54.17	232.651	
19,200.00	6,939.29	6,350.00	6,345.97	201.78	22.73	18.61	-120.89	-156.84	12,701.91	12,647.64	54.26	234.081	
19,300.00	6,939.20	6,350.00	6,345.97	203.37	22.73	18.61	-120.89	-156.84	12,801.78	12,747.42	54.36	235.505	

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 #722H - Slot B05
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 #722H	**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 #714H - 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
19,400.00	6,939.11	6,350.00	6,345.97	204.97	22.73	18.61	-120.89	-156.84	12,901.66	12,847.20	54.46	236.921	
19,500.00	6,939.02	6,350.00	6,345.97	206.56	22.73	18.61	-120.89	-156.84	13,001.54	12,946.98	54.55	238.331	
19,600.00	6,938.93	6,350.00	6,345.97	208.15	22.73	18.61	-120.89	-156.84	13,101.42	13,046.77	54.65	239.734	
19,700.00	6,938.83	6,350.00	6,345.97	209.74	22.73	18.61	-120.89	-156.84	13,201.30	13,146.55	54.75	241.130	
19,800.00	6,938.74	6,350.00	6,345.97	211.33	22.73	18.61	-120.89	-156.84	13,301.18	13,246.34	54.85	242.520	
19,900.00	6,938.65	6,350.00	6,345.97	212.93	22.73	18.61	-120.89	-156.84	13,401.07	13,346.12	54.94	243.902	
20,000.00	6,938.56	6,350.00	6,345.97	214.52	22.73	18.61	-120.89	-156.84	13,500.96	13,445.91	55.04	245.278	
20,100.00	6,938.47	6,350.00	6,345.97	216.11	22.73	18.61	-120.89	-156.84	13,600.84	13,545.70	55.14	246.647	
20,200.00	6,938.38	6,350.00	6,345.97	217.71	22.73	18.61	-120.89	-156.84	13,700.73	13,645.49	55.24	248.009	
20,300.00	6,938.29	6,350.00	6,345.97	219.30	22.73	18.61	-120.89	-156.84	13,800.63	13,745.28	55.34	249.365	
20,400.00	6,938.20	6,350.00	6,345.97	220.89	22.73	18.61	-120.89	-156.84	13,900.52	13,845.08	55.44	250.713	
20,500.00	6,938.11	6,350.00	6,345.97	222.49	22.73	18.61	-120.89	-156.84	14,000.42	13,944.87	55.54	252.056	
20,600.00	6,938.02	6,350.00	6,345.97	224.08	22.73	18.61	-120.89	-156.84	14,100.31	14,044.67	55.65	253.391	
20,626.08	6,938.00	6,350.00	6,345.97	224.49	22.73	18.61	-120.89	-156.84	14,126.37	14,070.70	55.67	253.738	

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	-15.25	19.29	-5.26	20.00				
100.00	100.00	100.00	100.00	0.25	0.25	-15.25	19.29	-5.26	20.00	19.50	0.50	39.849	
200.00	200.00	200.00	200.00	0.61	0.61	-15.25	19.29	-5.26	20.00	18.78	1.22	16.409	
300.00	300.00	300.00	300.00	0.97	0.97	-15.25	19.29	-5.26	20.00	18.06	1.94	10.331	
400.00	400.00	400.00	400.00	1.33	1.33	-15.25	19.29	-5.26	20.00	17.35	2.65	7.539	
500.00	500.00	500.00	500.00	1.68	1.68	-15.25	19.29	-5.26	20.00	16.63	3.37	5.935	CC
535.00	535.00	534.77	534.77	1.81	1.81	-26.02	19.51	-5.26	20.01	16.39	3.62	5.528	ES
600.00	599.99	599.32	599.30	2.04	2.04	-25.78	21.02	-5.22	20.75	16.67	4.08	5.083	
700.00	699.99	698.49	698.33	2.40	2.40	-23.63	26.17	-5.11	24.66	19.87	4.79	5.143	
800.00	799.98	797.27	796.73	2.76	2.76	-20.74	34.70	-4.93	31.97	26.47	5.50	5.812	
900.00	899.97	895.42	894.16	3.12	3.12	-18.17	46.53	-4.68	42.70	36.51	6.20	6.890	
1,000.00	999.96	992.73	990.30	3.48	3.48	-16.22	61.55	-4.36	56.85	49.97	6.89	8.256	
1,100.00	1,099.96	1,088.98	1,084.84	3.84	3.85	-14.80	79.61	-3.97	74.36	66.80	7.56	9.831	
1,200.00	1,199.95	1,183.98	1,177.50	4.19	4.23	-13.77	100.54	-3.53	95.17	86.94	8.23	11.562	
1,300.00	1,299.94	1,278.90	1,269.39	4.55	4.63	-13.02	124.31	-3.02	119.01	110.10	8.91	13.364	
1,400.00	1,399.93	1,375.84	1,363.07	4.91	5.04	-12.48	149.24	-2.49	143.53	133.92	9.62	14.922	
1,500.00	1,499.93	1,472.78	1,456.74	5.27	5.47	-12.11	174.17	-1.95	168.07	157.73	10.34	16.259	
1,600.00	1,599.92	1,569.71	1,550.42	5.63	5.90	-11.82	199.10	-1.42	192.61	181.55	11.06	17.418	
1,700.00	1,699.91	1,666.65	1,644.10	5.99	6.34	-11.61	224.02	-0.89	217.15	205.37	11.78	18.433	
1,800.00	1,799.90	1,763.59	1,737.78	6.34	6.78	-11.43	248.95	-0.36	241.70	229.19	12.51	19.327	
1,900.00	1,899.90	1,860.53	1,831.45	6.70	7.22	-11.29	273.88	0.18	266.24	253.01	13.23	20.122	
2,000.00	1,999.89	1,957.47	1,925.13	7.06	7.67	-11.17	298.81	0.71	290.79	276.83	13.96	20.831	
2,100.00	2,099.88	2,054.41	2,018.81	7.42	8.12	-11.08	323.73	1.24	315.34	300.65	14.69	21.469	
2,200.00	2,199.87	2,151.35	2,112.48	7.78	8.57	-10.99	348.66	1.77	339.89	324.47	15.42	22.045	
2,300.00	2,299.87	2,248.28	2,206.16	8.14	9.02	-10.92	373.59	2.30	364.44	348.29	16.15	22.567	
2,400.00	2,399.86	2,345.22	2,299.84	8.50	9.47	-10.85	398.51	2.84	388.99	372.11	16.88	23.044	
2,500.00	2,499.85	2,442.16	2,393.52	8.85	9.92	-10.80	423.44	3.37	413.54	395.93	17.61	23.480	
2,600.00	2,599.85	2,539.10	2,487.19	9.21	10.38	-10.75	448.37	3.90	438.10	419.75	18.35	23.880	
2,700.00	2,699.84	2,636.04	2,580.87	9.57	10.84	-10.70	473.30	4.43	462.65	443.57	19.08	24.249	
2,800.00	2,799.83	2,732.98	2,674.55	9.93	11.29	-10.66	498.22	4.97	487.20	467.39	19.81	24.590	
2,900.00	2,899.82	2,829.91	2,768.23	10.29	11.75	-10.62	523.15	5.50	511.75	491.21	20.55	24.906	
3,000.00	2,999.82	2,926.85	2,861.90	10.65	12.21	-10.59	548.08	6.03	536.31	515.03	21.28	25.200	
3,100.00	3,099.81	3,023.79	2,955.58	11.01	12.67	-10.56	573.00	6.56	560.86	538.84	22.02	25.474	
3,200.00	3,199.80	3,120.73	3,049.26	11.36	13.12	-10.53	597.93	7.09	585.41	562.66	22.75	25.730	
3,300.00	3,299.79	3,217.67	3,142.93	11.72	13.58	-10.51	622.86	7.63	609.97	586.48	23.49	25.970	
3,400.00	3,399.79	3,314.61	3,236.61	12.08	14.04	-10.48	647.79	8.16	634.52	610.30	24.22	26.195	
3,500.00	3,499.78	3,411.55	3,330.29	12.44	14.50	-10.46	672.71	8.69	659.07	634.11	24.96	26.406	
3,600.00	3,599.77	3,508.48	3,423.97	12.80	14.96	-10.44	697.64	9.22	683.63	657.93	25.70	26.605	
3,700.00	3,699.76	3,605.42	3,517.64	13.16	15.43	-10.42	722.57	9.76	708.18	681.75	26.43	26.792	
3,800.00	3,799.76	3,702.36	3,611.32	13.52	15.89	-10.41	747.50	10.29	732.73	705.56	27.17	26.970	
3,900.00	3,899.75	3,799.30	3,705.00	13.87	16.35	-10.39	772.42	10.82	757.29	729.38	27.91	27.137	
4,000.00	3,999.74	3,896.24	3,798.67	14.23	16.81	-10.37	797.35	11.35	781.84	753.20	28.64	27.296	
4,100.00	4,099.73	3,993.18	3,892.35	14.59	17.27	-10.36	822.28	11.89	806.39	777.01	29.38	27.447	
4,200.00	4,199.73	4,090.12	3,986.03	14.95	17.73	-10.35	847.20	12.42	830.95	800.83	30.12	27.590	
4,300.00	4,299.72	4,187.05	4,079.71	15.31	18.20	-10.33	872.13	12.95	855.50	824.65	30.86	27.726	
4,400.00	4,399.71	4,283.99	4,173.38	15.67	18.66	-10.32	897.06	13.48	880.06	848.46	31.59	27.856	
4,500.00	4,499.70	4,380.93	4,267.06	16.03	19.12	-10.31	921.99	14.01	904.61	872.28	32.33	27.980	
4,600.00	4,599.70	4,477.87	4,360.74	16.38	19.58	-10.30	946.91	14.55	929.16	896.10	33.07	28.098	
4,700.00	4,699.69	4,574.81	4,454.42	16.74	20.05	-10.29	971.84	15.08	953.72	919.91	33.81	28.211	
4,800.00	4,799.68	4,671.75	4,548.09	17.10	20.51	-10.28	996.77	15.61	978.27	943.73	34.55	28.318	
4,900.00	4,899.67	4,768.69	4,641.77	17.46	20.97	-10.27	1,021.70	16.14	1,002.83	967.54	35.28	28.422	
5,000.00	4,999.67	4,865.62	4,735.45	17.82	21.43	-10.26	1,046.62	16.68	1,027.38	991.36	36.02	28.521	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	4,962.56	4,829.12	18.18	21.90	-10.25	1,071.55	17.21	1,051.93	1,015.17	36.76	28.615	
5,200.00	5,199.65	5,059.50	4,922.80	18.53	22.36	-10.24	1,096.48	17.74	1,076.49	1,038.99	37.50	28.706	
5,300.00	5,299.64	5,156.44	5,016.48	18.89	22.82	-10.24	1,121.40	18.27	1,101.04	1,062.80	38.24	28.794	
5,400.00	5,399.64	5,253.38	5,110.16	19.25	23.29	-10.23	1,146.33	18.81	1,125.60	1,086.62	38.98	28.878	
5,500.00	5,499.63	5,350.32	5,203.83	19.61	23.75	-10.22	1,171.26	19.34	1,150.15	1,110.43	39.72	28.959	
5,600.00	5,599.62	5,447.25	5,297.51	19.97	24.21	-10.22	1,196.19	19.87	1,174.71	1,134.25	40.46	29.036	
5,700.00	5,699.61	5,544.19	5,391.19	20.33	24.68	-10.21	1,221.11	20.40	1,199.26	1,158.06	41.20	29.111	
5,800.00	5,799.61	5,641.13	5,484.87	20.69	25.14	-10.20	1,246.04	20.93	1,223.81	1,181.88	41.94	29.183	
5,900.00	5,899.60	5,738.07	5,578.54	21.04	25.61	-10.20	1,270.97	21.47	1,248.37	1,205.69	42.67	29.253	
6,000.00	5,999.59	5,835.01	5,672.22	21.40	26.07	-10.19	1,295.89	22.00	1,272.92	1,229.51	43.41	29.320	
6,100.00	6,099.58	5,931.95	5,765.90	21.76	26.53	-10.19	1,320.82	22.53	1,297.48	1,253.32	44.15	29.385	
6,200.00	6,199.58	6,028.89	5,859.57	22.12	27.00	-10.18	1,345.75	23.06	1,322.03	1,277.14	44.89	29.448	
6,300.00	6,299.57	6,125.82	5,953.25	22.48	27.46	-10.18	1,370.68	23.60	1,346.58	1,300.95	45.63	29.508	
6,315.05	6,314.62	6,140.41	5,967.35	22.53	27.53	-10.17	1,374.43	23.68	1,350.28	1,304.53	45.75	29.517	
6,350.00	6,349.55	6,174.27	6,000.07	22.66	27.69	-78.60	1,383.13	23.86	1,358.88	1,312.88	46.00	29.539	
6,400.00	6,399.30	6,222.49	6,046.67	22.83	27.92	-84.55	1,395.53	24.13	1,371.22	1,324.85	46.37	29.573	
6,450.00	6,448.52	6,270.19	6,092.76	23.00	28.15	-85.62	1,407.80	24.39	1,383.57	1,336.84	46.73	29.608	
6,500.00	6,496.91	6,317.06	6,138.06	23.18	28.38	-85.83	1,419.85	24.65	1,395.93	1,348.84	47.09	29.644	
6,550.00	6,544.17	6,362.83	6,182.29	23.35	28.60	-85.80	1,431.62	24.90	1,408.31	1,360.86	47.45	29.681	
6,600.00	6,590.01	6,407.21	6,225.17	23.53	28.81	-85.70	1,443.03	25.14	1,420.76	1,372.96	47.80	29.722	
6,650.00	6,634.14	6,449.93	6,266.45	23.70	29.01	-85.59	1,454.02	25.38	1,433.35	1,385.19	48.15	29.766	
6,700.00	6,676.30	6,490.72	6,305.87	23.88	29.21	-85.46	1,464.51	25.60	1,446.14	1,397.64	48.50	29.815	
6,750.00	6,716.21	6,531.78	6,345.55	24.06	29.40	-85.36	1,475.06	25.91	1,459.24	1,410.37	48.87	29.859	
6,800.00	6,753.65	6,583.48	6,395.42	24.24	29.65	-85.51	1,488.29	29.11	1,472.47	1,423.13	49.34	29.846	
6,850.00	6,788.37	6,639.23	6,448.72	24.44	29.91	-85.72	1,502.35	37.25	1,485.66	1,435.82	49.84	29.808	
6,900.00	6,820.16	6,699.94	6,505.78	24.63	30.19	-86.00	1,517.31	51.56	1,498.69	1,448.30	50.38	29.745	
6,950.00	6,848.83	6,766.79	6,566.78	24.84	30.49	-86.39	1,533.20	73.72	1,511.41	1,460.44	50.96	29.656	
7,000.00	6,874.19	6,841.17	6,631.61	25.06	30.81	-86.88	1,549.95	105.99	1,523.63	1,472.06	51.57	29.543	
7,050.00	6,896.10	6,924.67	6,699.54	25.29	31.14	-87.48	1,567.33	151.23	1,535.11	1,482.91	52.20	29.409	
7,100.00	6,914.42	7,018.94	6,768.64	25.53	31.50	-88.16	1,584.75	212.80	1,545.55	1,492.72	52.83	29.255	
7,150.00	6,929.03	7,125.26	6,835.11	25.78	31.88	-88.88	1,601.17	293.98	1,554.59	1,501.13	53.46	29.079	
7,200.00	6,939.85	7,243.85	6,892.76	26.05	32.29	-89.52	1,614.91	396.50	1,561.81	1,507.71	54.10	28.871	
7,250.00	6,946.80	7,372.99	6,933.53	26.32	32.75	-89.94	1,623.85	518.48	1,566.79	1,512.03	54.76	28.613	
7,300.00	6,949.85	7,508.44	6,949.89	26.61	33.30	-90.03	1,626.10	652.66	1,569.21	1,513.75	55.46	28.292	
7,314.43	6,950.00	7,530.86	6,949.99	26.69	33.40	-90.00	1,625.78	675.08	1,569.46	1,513.82	55.64	28.205	
7,400.00	6,949.92	7,616.42	6,949.94	27.21	33.80	-90.00	1,624.42	760.63	1,570.90	1,514.23	56.67	27.722	
7,500.00	6,949.83	7,716.41	6,949.88	27.90	34.34	-90.00	1,622.84	860.60	1,572.57	1,514.57	58.00	27.113	
7,600.00	6,949.74	7,816.39	6,949.82	28.66	34.94	-90.00	1,621.25	960.57	1,574.25	1,514.77	59.48	26.467	
7,700.00	6,949.65	7,916.38	6,949.76	29.49	35.62	-90.00	1,619.67	1,060.55	1,575.93	1,514.84	61.09	25.797	
7,800.00	6,949.56	8,016.36	6,949.70	30.38	36.36	-90.00	1,618.09	1,160.52	1,577.60	1,514.78	62.82	25.112	
7,900.00	6,949.47	8,116.35	6,949.64	31.33	37.15	-90.01	1,616.50	1,260.49	1,579.28	1,514.61	64.67	24.421	
8,000.00	6,949.38	8,216.34	6,949.58	32.33	38.00	-90.01	1,614.92	1,360.47	1,580.96	1,514.34	66.62	23.732	
8,100.00	6,949.29	8,316.32	6,949.52	33.38	38.89	-90.01	1,613.33	1,460.44	1,582.63	1,513.97	68.66	23.050	
8,200.00	6,949.20	8,416.31	6,949.46	34.47	39.84	-90.01	1,611.75	1,560.41	1,584.31	1,513.52	70.79	22.380	
8,300.00	6,949.11	8,516.29	6,949.40	35.60	40.82	-90.01	1,610.17	1,660.39	1,585.98	1,512.99	73.00	21.726	
8,400.00	6,949.02	8,616.28	6,949.34	36.76	41.84	-90.01	1,608.58	1,760.36	1,587.66	1,512.38	75.28	21.091	
8,500.00	6,948.93	8,716.27	6,949.28	37.96	42.90	-90.01	1,607.00	1,860.33	1,589.34	1,511.71	77.62	20.475	
8,600.00	6,948.84	8,816.25	6,949.22	39.18	44.00	-90.01	1,605.41	1,960.31	1,591.01	1,510.99	80.03	19.881	
8,700.00	6,948.75	8,916.24	6,949.16	40.43	45.12	-90.01	1,603.83	2,060.28	1,592.69	1,510.20	82.49	19.308	
8,800.00	6,948.66	9,016.22	6,949.10	41.71	46.27	-90.01	1,602.25	2,160.26	1,594.37	1,509.37	85.00	18.758	
8,900.00	6,948.57	9,116.21	6,949.04	43.00	47.45	-90.02	1,600.66	2,260.23	1,596.04	1,508.49	87.55	18.230	
9,000.00	6,948.48	9,216.19	6,948.98	44.32	48.66	-90.02	1,599.08	2,360.20	1,597.72	1,507.57	90.15	17.724	

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 #722H - Slot B05
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 #722H	**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
9,100.00	6,948.39	9,316.18	6,948.92	45.66	49.88	-90.02	1,597.49	2,460.18	1,599.40	1,506.61	92.78	17.238	
9,200.00	6,948.30	9,416.17	6,948.86	47.01	51.13	-90.02	1,595.91	2,560.15	1,601.07	1,505.62	95.45	16.774	
9,300.00	6,948.21	9,516.15	6,948.80	48.38	52.40	-90.02	1,594.33	2,660.12	1,602.75	1,504.60	98.15	16.329	
9,400.00	6,948.12	9,616.14	6,948.74	49.76	53.68	-90.02	1,592.74	2,760.10	1,604.42	1,503.54	100.88	15.904	
9,500.00	6,948.03	9,716.12	6,948.68	51.16	54.98	-90.02	1,591.16	2,860.07	1,606.10	1,502.46	103.64	15.497	
9,600.00	6,947.94	9,816.11	6,948.62	52.56	56.30	-90.02	1,589.57	2,960.04	1,607.78	1,501.36	106.42	15.107	
9,700.00	6,947.85	9,916.10	6,948.56	53.98	57.63	-90.02	1,587.99	3,060.02	1,609.45	1,500.23	109.23	14.735	
9,800.00	6,947.76	10,016.08	6,948.50	55.41	58.97	-90.03	1,586.41	3,159.99	1,611.13	1,499.07	112.06	14.378	
9,900.00	6,947.67	10,116.07	6,948.44	56.85	60.33	-90.03	1,584.82	3,259.96	1,612.81	1,497.90	114.90	14.036	
10,000.00	6,947.58	10,216.05	6,948.38	58.29	61.70	-90.03	1,583.24	3,359.94	1,614.48	1,496.71	117.77	13.709	
10,100.00	6,947.49	10,316.04	6,948.32	59.75	63.08	-90.03	1,581.65	3,459.91	1,616.16	1,495.51	120.65	13.395	
10,200.00	6,947.40	10,416.03	6,948.26	61.21	64.47	-90.03	1,580.07	3,559.88	1,617.84	1,494.29	123.55	13.094	
10,300.00	6,947.31	10,516.01	6,948.20	62.68	65.87	-90.03	1,578.49	3,659.86	1,619.51	1,493.05	126.46	12.806	
10,400.00	6,947.22	10,616.00	6,948.14	64.15	67.28	-90.03	1,576.90	3,759.83	1,621.19	1,491.80	129.39	12.529	
10,500.00	6,947.13	10,715.98	6,948.08	65.63	68.69	-90.03	1,575.32	3,859.80	1,622.87	1,490.53	132.33	12.264	
10,600.00	6,947.04	10,815.97	6,948.02	67.12	70.12	-90.03	1,573.73	3,959.78	1,624.54	1,489.26	135.28	12.008	
10,700.00	6,946.95	10,915.96	6,947.96	68.61	71.55	-90.03	1,572.15	4,059.75	1,626.22	1,487.97	138.25	11.763	
10,800.00	6,946.86	11,015.94	6,947.90	70.11	72.99	-90.04	1,570.57	4,159.72	1,627.89	1,486.67	141.22	11.527	
10,900.00	6,946.77	11,115.93	6,947.84	71.61	74.44	-90.04	1,568.98	4,259.70	1,629.57	1,485.36	144.21	11.300	
11,000.00	6,946.68	11,215.91	6,947.78	73.11	75.89	-90.04	1,567.40	4,359.67	1,631.25	1,484.05	147.20	11.082	
11,100.00	6,946.59	11,315.90	6,947.72	74.62	77.35	-90.04	1,565.81	4,459.64	1,632.92	1,482.72	150.20	10.872	
11,200.00	6,946.50	11,415.89	6,947.66	76.14	78.81	-90.04	1,564.23	4,559.62	1,634.60	1,481.39	153.21	10.669	
11,300.00	6,946.41	11,515.87	6,947.60	77.65	80.28	-90.04	1,562.65	4,659.59	1,636.28	1,480.05	156.23	10.474	
11,400.00	6,946.32	11,615.86	6,947.53	79.18	81.76	-90.04	1,561.06	4,759.56	1,637.95	1,478.70	159.26	10.285	
11,500.00	6,946.23	11,715.84	6,947.47	80.70	83.24	-90.04	1,559.48	4,859.54	1,639.63	1,477.34	162.29	10.103	
11,600.00	6,946.14	11,815.83	6,947.41	82.23	84.72	-90.04	1,557.89	4,959.51	1,641.31	1,475.98	165.33	9.928	
11,700.00	6,946.05	11,915.82	6,947.35	83.76	86.21	-90.04	1,556.31	5,059.48	1,642.98	1,474.61	168.37	9.758	
11,800.00	6,945.96	12,015.80	6,947.29	85.29	87.70	-90.05	1,554.73	5,159.46	1,644.66	1,473.24	171.42	9.594	
11,900.00	6,945.87	12,115.79	6,947.23	86.82	89.19	-90.05	1,553.14	5,259.43	1,646.33	1,471.86	174.48	9.436	
12,000.00	6,945.78	12,215.77	6,947.17	88.36	90.69	-90.05	1,551.56	5,359.40	1,648.01	1,470.47	177.54	9.282	
12,100.00	6,945.69	12,315.76	6,947.11	89.90	92.20	-90.05	1,549.97	5,459.38	1,649.69	1,469.08	180.61	9.134	
12,200.00	6,945.60	12,415.75	6,947.05	91.44	93.70	-90.05	1,548.39	5,559.35	1,651.36	1,467.68	183.68	8.990	
12,300.00	6,945.51	12,515.73	6,946.99	92.99	95.21	-90.05	1,546.81	5,659.32	1,653.04	1,466.28	186.76	8.851	
12,400.00	6,945.42	12,615.72	6,946.93	94.53	96.72	-90.05	1,545.22	5,759.30	1,654.72	1,464.88	189.84	8.717	
12,500.00	6,945.33	12,715.70	6,946.87	96.08	98.24	-90.05	1,543.64	5,859.27	1,656.39	1,463.47	192.92	8.586	
12,600.00	6,945.24	12,815.69	6,946.81	97.63	99.76	-90.05	1,542.05	5,959.24	1,658.07	1,462.06	196.01	8.459	
12,700.00	6,945.15	12,915.67	6,946.75	99.18	101.28	-90.05	1,540.47	6,059.22	1,659.75	1,460.65	199.10	8.336	
12,800.00	6,945.06	13,015.66	6,946.69	100.74	102.80	-90.06	1,538.89	6,159.19	1,661.42	1,459.23	202.20	8.217	
12,900.00	6,944.96	13,115.65	6,946.63	102.29	104.33	-90.06	1,537.30	6,259.16	1,663.10	1,457.80	205.29	8.101	
13,000.00	6,944.87	13,215.63	6,946.57	103.85	105.85	-90.06	1,535.72	6,359.14	1,664.77	1,456.38	208.40	7.989	
13,100.00	6,944.78	13,315.62	6,946.51	105.40	107.38	-90.06	1,534.13	6,459.11	1,666.45	1,454.95	211.50	7.879	
13,200.00	6,944.69	13,415.60	6,946.45	106.96	108.91	-90.06	1,532.55	6,559.08	1,668.13	1,453.52	214.61	7.773	
13,300.00	6,944.60	13,515.59	6,946.39	108.52	110.45	-90.06	1,530.97	6,659.06	1,669.80	1,452.08	217.72	7.669	
13,400.00	6,944.51	13,615.58	6,946.33	110.08	111.98	-90.06	1,529.38	6,759.03	1,671.48	1,450.65	220.83	7.569	
13,500.00	6,944.42	13,715.56	6,946.27	111.65	113.52	-90.06	1,527.80	6,859.00	1,673.16	1,449.21	223.95	7.471	
13,600.00	6,944.33	13,815.55	6,946.21	113.21	115.06	-90.06	1,526.22	6,958.98	1,674.83	1,447.76	227.07	7.376	
13,700.00	6,944.24	13,915.53	6,946.15	114.78	116.60	-90.06	1,524.63	7,058.95	1,676.51	1,446.32	230.19	7.283	
13,800.00	6,944.15	14,015.52	6,946.09	116.34	118.14	-90.07	1,523.05	7,158.92	1,678.19	1,444.87	233.31	7.193	
13,900.00	6,944.06	14,115.51	6,946.03	117.91	119.69	-90.07	1,521.46	7,258.90	1,679.86	1,443.42	236.44	7.105	
14,000.00	6,943.97	14,215.49	6,945.97	119.48	121.23	-90.07	1,519.88	7,358.87	1,681.54	1,441.97	239.57	7.019	
14,100.00	6,943.88	14,315.48	6,945.91	121.05	122.78	-90.07	1,518.30	7,458.84	1,683.22	1,440.52	242.70	6.935	
14,200.00	6,943.79	14,415.46	6,945.85	122.62	124.33	-90.07	1,516.71	7,558.82	1,684.89	1,439.06	245.83	6.854	

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 #722H - Slot B05
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 #722H	**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	6,943.70	14,515.45	6,945.79	124.19	125.88	-90.07	1,515.13	7,658.79	1,686.57	1,437.61	248.96	6.774	
14,400.00	6,943.61	14,615.44	6,945.73	125.76	127.43	-90.07	1,513.54	7,758.76	1,688.24	1,436.15	252.10	6.697	
14,500.00	6,943.52	14,715.42	6,945.67	127.33	128.98	-90.07	1,511.96	7,858.74	1,689.92	1,434.69	255.23	6.621	
14,600.00	6,943.43	14,815.41	6,945.61	128.90	130.54	-90.07	1,510.38	7,958.71	1,691.60	1,433.22	258.37	6.547	
14,700.00	6,943.34	14,915.39	6,945.55	130.48	132.09	-90.07	1,508.79	8,058.68	1,693.27	1,431.76	261.51	6.475	
14,800.00	6,943.25	15,015.38	6,945.49	132.05	133.65	-90.07	1,507.21	8,158.66	1,694.95	1,430.29	264.66	6.404	
14,900.00	6,943.16	15,115.37	6,945.43	133.63	135.20	-90.08	1,505.62	8,258.63	1,696.63	1,428.83	267.80	6.335	
15,000.00	6,943.07	15,215.35	6,945.37	135.20	136.76	-90.08	1,504.04	8,358.60	1,698.30	1,427.36	270.94	6.268	
15,100.00	6,942.98	15,315.34	6,945.31	136.78	138.32	-90.08	1,502.46	8,458.58	1,699.98	1,425.89	274.09	6.202	
15,200.00	6,942.89	15,415.32	6,945.25	138.36	139.88	-90.08	1,500.87	8,558.55	1,701.66	1,424.42	277.24	6.138	
15,300.00	6,942.80	15,515.31	6,945.19	139.93	141.44	-90.08	1,499.29	8,658.52	1,703.33	1,422.94	280.39	6.075	
15,400.00	6,942.71	15,615.30	6,945.13	141.51	143.00	-90.08	1,497.70	8,758.50	1,705.01	1,421.47	283.54	6.013	
15,500.00	6,942.62	15,715.28	6,945.07	143.09	144.57	-90.08	1,496.12	8,858.47	1,706.68	1,420.00	286.69	5.953	
15,600.00	6,942.53	15,815.27	6,945.01	144.67	146.13	-90.08	1,494.54	8,958.44	1,708.36	1,418.52	289.84	5.894	
15,700.00	6,942.44	15,915.25	6,944.95	146.25	147.69	-90.08	1,492.95	9,058.42	1,710.04	1,417.04	293.00	5.836	
15,800.00	6,942.35	16,015.24	6,944.89	147.83	149.26	-90.08	1,491.37	9,158.39	1,711.71	1,415.56	296.15	5.780	
15,900.00	6,942.26	16,115.23	6,944.83	149.41	150.83	-90.08	1,489.78	9,258.37	1,713.39	1,414.08	299.31	5.725	
16,000.00	6,942.17	16,215.21	6,944.77	150.99	152.39	-90.09	1,488.20	9,358.34	1,715.07	1,412.60	302.46	5.670	
16,100.00	6,942.08	16,315.20	6,944.71	152.57	153.96	-90.09	1,486.62	9,458.31	1,716.74	1,411.12	305.62	5.617	
16,200.00	6,941.99	16,415.18	6,944.65	154.16	155.53	-90.09	1,485.03	9,558.29	1,718.42	1,409.64	308.78	5.565	
16,300.00	6,941.90	16,515.17	6,944.59	155.74	157.10	-90.09	1,483.45	9,658.26	1,720.10	1,408.15	311.94	5.514	
16,400.00	6,941.81	16,615.15	6,944.53	157.32	158.67	-90.09	1,481.86	9,758.23	1,721.77	1,406.67	315.10	5.464	
16,500.00	6,941.72	16,715.14	6,944.46	158.91	160.24	-90.09	1,480.28	9,858.21	1,723.45	1,405.18	318.26	5.415	
16,600.00	6,941.63	16,815.13	6,944.40	160.49	161.81	-90.09	1,478.70	9,958.18	1,725.13	1,403.70	321.43	5.367	
16,700.00	6,941.54	16,915.11	6,944.34	162.07	163.38	-90.09	1,477.11	10,058.15	1,726.80	1,402.21	324.59	5.320	
16,800.00	6,941.45	17,015.10	6,944.28	163.66	164.95	-90.09	1,475.53	10,158.13	1,728.48	1,400.72	327.76	5.274	
16,900.00	6,941.36	17,115.08	6,944.22	165.24	166.52	-90.09	1,473.94	10,258.10	1,730.15	1,399.23	330.92	5.228	
17,000.00	6,941.27	17,215.07	6,944.16	166.83	168.10	-90.09	1,472.36	10,358.07	1,731.83	1,397.74	334.09	5.184	
17,100.00	6,941.18	17,315.06	6,944.10	168.42	169.67	-90.10	1,470.78	10,458.05	1,733.51	1,396.25	337.25	5.140	
17,200.00	6,941.09	17,415.04	6,944.04	170.00	171.24	-90.10	1,469.19	10,558.02	1,735.18	1,394.76	340.42	5.097	
17,300.00	6,941.00	17,515.03	6,943.98	171.59	172.82	-90.10	1,467.61	10,657.99	1,736.86	1,393.27	343.59	5.055	
17,400.00	6,940.91	17,615.01	6,943.92	173.18	174.39	-90.10	1,466.02	10,757.97	1,738.54	1,391.78	346.76	5.014	
17,500.00	6,940.82	17,715.00	6,943.86	174.76	175.97	-90.10	1,464.44	10,857.94	1,740.21	1,390.29	349.93	4.973	
17,600.00	6,940.73	17,814.99	6,943.80	176.35	177.55	-90.10	1,462.86	10,957.91	1,741.89	1,388.79	353.10	4.933	
17,700.00	6,940.64	17,914.97	6,943.74	177.94	179.12	-90.10	1,461.27	11,057.89	1,743.57	1,387.30	356.27	4.894	
17,800.00	6,940.55	18,014.96	6,943.68	179.53	180.70	-90.10	1,459.69	11,157.86	1,745.24	1,385.80	359.44	4.855	
17,900.00	6,940.46	18,114.94	6,943.62	181.11	182.28	-90.10	1,458.10	11,257.83	1,746.92	1,384.31	362.61	4.818	
18,000.00	6,940.37	18,214.93	6,943.56	182.70	183.86	-90.10	1,456.52	11,357.81	1,748.60	1,382.81	365.78	4.780	
18,100.00	6,940.28	18,314.92	6,943.50	184.29	185.43	-90.10	1,454.94	11,457.78	1,750.27	1,381.31	368.96	4.744	
18,200.00	6,940.19	18,414.90	6,943.44	185.88	187.01	-90.11	1,453.35	11,557.75	1,751.95	1,379.82	372.13	4.708	
18,300.00	6,940.10	18,514.89	6,943.38	187.47	188.59	-90.11	1,451.77	11,657.73	1,753.62	1,378.32	375.30	4.673	
18,400.00	6,940.01	18,614.87	6,943.32	189.06	190.17	-90.11	1,450.18	11,757.70	1,755.30	1,376.82	378.48	4.638	
18,500.00	6,939.92	18,714.86	6,943.26	190.65	191.75	-90.11	1,448.60	11,857.67	1,756.98	1,375.32	381.65	4.604	
18,600.00	6,939.83	18,814.85	6,943.20	192.24	193.33	-90.11	1,447.02	11,957.65	1,758.65	1,373.82	384.83	4.570	
18,700.00	6,939.74	18,914.83	6,943.14	193.83	194.91	-90.11	1,445.43	12,057.62	1,760.33	1,372.32	388.01	4.537	
18,800.00	6,939.65	19,014.82	6,943.08	195.42	196.49	-90.11	1,443.85	12,157.59	1,762.01	1,370.82	391.18	4.504	
18,900.00	6,939.56	19,114.80	6,943.02	197.01	198.08	-90.11	1,442.26	12,257.57	1,763.68	1,369.32	394.36	4.472	
19,000.00	6,939.47	19,214.79	6,942.96	198.60	199.66	-90.11	1,440.68	12,357.54	1,765.36	1,367.82	397.54	4.441	
19,100.00	6,939.38	19,314.78	6,942.90	200.19	201.24	-90.11	1,439.10	12,457.51	1,767.04	1,366.32	400.72	4.410	
19,200.00	6,939.29	19,414.76	6,942.84	201.78	202.82	-90.11	1,437.51	12,557.49	1,768.71	1,364.82	403.90	4.379	
19,300.00	6,939.20	19,514.75	6,942.78	203.37	204.41	-90.12	1,435.93	12,657.46	1,770.39	1,363.31	407.07	4.349	
19,400.00	6,939.11	19,614.73	6,942.72	204.97	205.99	-90.12	1,434.34	12,757.43	1,772.07	1,361.81	410.25	4.319	

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 #722H - Slot B05
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 #722H	**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 **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	6,939.02	19,714.72	6,942.66	206.56	207.57	-90.12	1,432.76	12,857.41	1,773.74	1,360.31	413.43	4.290	
19,600.00	6,938.93	19,814.71	6,942.60	208.15	209.16	-90.12	1,431.18	12,957.38	1,775.42	1,358.80	416.61	4.262	
19,700.00	6,938.83	19,914.69	6,942.54	209.74	210.74	-90.12	1,429.59	13,057.35	1,777.09	1,357.30	419.79	4.233	
19,800.00	6,938.74	20,014.68	6,942.48	211.33	212.32	-90.12	1,428.01	13,157.33	1,778.77	1,355.80	422.97	4.205	
19,900.00	6,938.65	20,114.66	6,942.42	212.93	213.91	-90.12	1,426.42	13,257.30	1,780.45	1,354.29	426.16	4.178	
20,000.00	6,938.56	20,214.65	6,942.36	214.52	215.49	-90.12	1,424.84	13,357.27	1,782.12	1,352.79	429.34	4.151	
20,100.00	6,938.47	20,314.63	6,942.30	216.11	217.08	-90.12	1,423.26	13,457.25	1,783.80	1,351.28	432.52	4.124	
20,200.00	6,938.38	20,414.62	6,942.24	217.71	218.66	-90.12	1,421.67	13,557.22	1,785.48	1,349.77	435.70	4.098	
20,300.00	6,938.29	20,514.61	6,942.18	219.30	220.25	-90.12	1,420.09	13,657.19	1,787.15	1,348.27	438.89	4.072	
20,400.00	6,938.20	20,614.59	6,942.12	220.89	221.83	-90.12	1,418.50	13,757.17	1,788.83	1,346.76	442.07	4.047	
20,500.00	6,938.11	20,714.58	6,942.06	222.49	223.42	-90.13	1,416.92	13,857.14	1,790.51	1,345.25	445.25	4.021	
20,600.00	6,938.02	20,808.89	6,942.00	224.08	224.92	-90.13	1,415.43	13,951.44	1,792.19	1,343.81	448.39	3.997	
20,626.08	6,938.00	20,808.89	6,942.00	224.49	224.92	-90.13	1,415.43	13,951.44	1,792.90	1,343.97	448.93	3.994	SF

SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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	164.75	-19.29	5.26	20.00				
100.00	100.00	100.00	100.00	0.25	0.25	164.75	-19.29	5.26	20.00	19.50	0.50	39.849	
200.00	200.00	200.00	200.00	0.61	0.61	164.75	-19.29	5.26	20.00	18.78	1.22	16.409	
300.00	300.00	300.00	300.00	0.97	0.97	164.75	-19.29	5.26	20.00	18.06	1.94	10.331	
400.00	400.00	400.00	400.00	1.33	1.33	164.75	-19.29	5.26	20.00	17.35	2.65	7.539	
500.00	500.00	500.00	500.00	1.68	1.68	164.75	-19.29	5.26	20.00	16.63	3.37	5.935	CC, ES
535.00	535.00	534.76	534.76	1.81	1.80	154.48	-19.51	5.26	20.40	16.78	3.61	5.643	
600.00	599.99	599.25	599.23	2.04	2.02	156.27	-21.01	5.29	22.60	18.53	4.07	5.556	
700.00	699.99	698.18	698.02	2.40	2.36	159.40	-26.15	5.37	28.83	24.08	4.75	6.067	
800.00	799.98	796.55	796.02	2.76	2.69	162.03	-34.63	5.49	38.53	33.09	5.44	7.087	
900.00	899.97	894.15	892.91	3.12	3.04	163.91	-46.36	5.67	51.67	45.55	6.12	8.446	
1,000.00	999.96	990.76	988.36	3.48	3.39	165.19	-61.22	5.90	68.18	61.39	6.79	10.040	
1,100.00	1,099.96	1,086.17	1,082.09	3.84	3.76	166.06	-79.05	6.17	88.01	80.56	7.46	11.805	
1,200.00	1,199.95	1,180.21	1,173.84	4.19	4.14	166.67	-99.66	6.49	111.08	102.97	8.11	13.698	
1,300.00	1,299.94	1,277.12	1,268.03	4.55	4.55	167.09	-122.45	6.83	135.74	126.94	8.81	15.414	
1,400.00	1,399.93	1,374.03	1,362.22	4.91	4.97	167.39	-145.23	7.18	160.41	150.89	9.52	16.854	
1,500.00	1,499.93	1,470.93	1,456.41	5.27	5.39	167.60	-168.02	7.53	185.08	174.85	10.23	18.094	
1,600.00	1,599.92	1,567.84	1,550.60	5.63	5.82	167.77	-190.81	7.88	209.76	198.81	10.94	19.169	
1,700.00	1,699.91	1,664.75	1,644.79	5.99	6.26	167.90	-213.59	8.22	234.43	222.77	11.66	20.109	
1,800.00	1,799.90	1,761.65	1,738.97	6.34	6.70	168.00	-236.38	8.57	259.11	246.73	12.38	20.936	
1,900.00	1,899.90	1,858.56	1,833.16	6.70	7.14	168.09	-259.16	8.92	283.78	270.69	13.10	21.670	
2,000.00	1,999.89	1,955.47	1,927.35	7.06	7.58	168.16	-281.95	9.27	308.46	294.64	13.82	22.326	
2,100.00	2,099.88	2,052.37	2,021.54	7.42	8.02	168.23	-304.74	9.62	333.14	318.60	14.54	22.914	
2,200.00	2,199.87	2,149.28	2,115.73	7.78	8.47	168.28	-327.52	9.96	357.81	342.55	15.26	23.446	
2,300.00	2,299.87	2,246.19	2,209.92	8.14	8.92	168.33	-350.31	10.31	382.49	366.50	15.99	23.928	
2,400.00	2,399.86	2,343.09	2,304.11	8.50	9.37	168.37	-373.09	10.66	407.17	390.46	16.71	24.367	
2,500.00	2,499.85	2,440.00	2,398.30	8.85	9.82	168.40	-395.88	11.01	431.85	414.41	17.44	24.769	
2,600.00	2,599.85	2,536.91	2,492.49	9.21	10.27	168.44	-418.67	11.35	456.52	438.36	18.16	25.138	
2,700.00	2,699.84	2,633.82	2,586.68	9.57	10.72	168.47	-441.45	11.70	481.20	462.31	18.89	25.477	
2,800.00	2,799.83	2,730.72	2,680.87	9.93	11.18	168.49	-464.24	12.05	505.88	486.27	19.61	25.791	
2,900.00	2,899.82	2,827.63	2,775.06	10.29	11.63	168.52	-487.03	12.40	530.56	510.22	20.34	26.082	
3,000.00	2,999.82	2,924.54	2,869.25	10.65	12.08	168.54	-509.81	12.74	555.24	534.17	21.07	26.353	
3,100.00	3,099.81	3,021.44	2,963.43	11.01	12.54	168.56	-532.60	13.09	579.91	558.12	21.80	26.605	
3,200.00	3,199.80	3,118.35	3,057.62	11.36	12.99	168.58	-555.38	13.44	604.59	582.07	22.53	26.840	
3,300.00	3,299.79	3,215.26	3,151.81	11.72	13.45	168.59	-578.17	13.79	629.27	606.02	23.25	27.060	
3,400.00	3,399.79	3,312.16	3,246.00	12.08	13.91	168.61	-600.96	14.13	653.95	629.97	23.98	27.267	
3,500.00	3,499.78	3,409.07	3,340.19	12.44	14.36	168.62	-623.74	14.48	678.63	653.92	24.71	27.461	
3,600.00	3,599.77	3,505.98	3,434.38	12.80	14.82	168.64	-646.53	14.83	703.31	677.87	25.44	27.643	
3,700.00	3,699.76	3,602.88	3,528.57	13.16	15.27	168.65	-669.31	15.18	727.99	701.81	26.17	27.816	
3,800.00	3,799.76	3,699.79	3,622.76	13.52	15.73	168.66	-692.10	15.52	752.66	725.76	26.90	27.978	
3,900.00	3,899.75	3,796.70	3,716.95	13.87	16.19	168.67	-714.89	15.87	777.34	749.71	27.63	28.132	
4,000.00	3,999.74	3,893.60	3,811.14	14.23	16.65	168.68	-737.67	16.22	802.02	773.66	28.36	28.278	
4,100.00	4,099.73	3,990.51	3,905.33	14.59	17.10	168.69	-760.46	16.57	826.70	797.61	29.09	28.416	
4,200.00	4,199.73	4,087.42	3,999.52	14.95	17.56	168.70	-783.25	16.91	851.38	821.56	29.82	28.548	
4,300.00	4,299.72	4,184.33	4,093.71	15.31	18.02	168.71	-806.03	17.26	876.06	845.51	30.55	28.673	
4,400.00	4,399.71	4,281.23	4,187.89	15.67	18.48	168.72	-828.82	17.61	900.74	869.45	31.28	28.792	
4,500.00	4,499.70	4,378.14	4,282.08	16.03	18.94	168.73	-851.60	17.96	925.42	893.40	32.02	28.905	
4,600.00	4,599.70	4,475.05	4,376.27	16.38	19.39	168.73	-874.39	18.30	950.10	917.35	32.75	29.013	
4,700.00	4,699.69	4,571.95	4,470.46	16.74	19.85	168.74	-897.18	18.65	974.77	941.30	33.48	29.117	
4,800.00	4,799.68	4,668.86	4,564.65	17.10	20.31	168.75	-919.96	19.00	999.45	965.24	34.21	29.215	
4,900.00	4,899.67	4,765.77	4,658.84	17.46	20.77	168.75	-942.75	19.35	1,024.13	989.19	34.94	29.310	
5,000.00	4,999.67	4,862.67	4,753.03	17.82	21.23	168.76	-965.53	19.69	1,048.81	1,013.14	35.67	29.401	

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 #722H - Slot B05
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 #722H	**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
5,100.00	5,099.66	4,959.58	4,847.22	18.18	21.69	168.76	-988.32	20.04	1,073.49	1,037.09	36.40	29.488	
5,200.00	5,199.65	5,056.49	4,941.41	18.53	22.15	168.77	-1,011.11	20.39	1,098.17	1,061.03	37.14	29.571	
5,300.00	5,299.64	5,153.39	5,035.60	18.89	22.61	168.78	-1,033.89	20.74	1,122.85	1,084.98	37.87	29.651	
5,400.00	5,399.64	5,250.30	5,129.79	19.25	23.06	168.78	-1,056.68	21.08	1,147.53	1,108.93	38.60	29.728	
5,500.00	5,499.63	5,347.21	5,223.98	19.61	23.52	168.78	-1,079.47	21.43	1,172.21	1,132.87	39.33	29.802	
5,600.00	5,599.62	5,444.11	5,318.16	19.97	23.98	168.79	-1,102.25	21.78	1,196.88	1,156.82	40.07	29.873	
5,700.00	5,699.61	5,541.02	5,412.35	20.33	24.44	168.79	-1,125.04	22.13	1,221.56	1,180.77	40.80	29.941	
5,800.00	5,799.61	5,637.93	5,506.54	20.69	24.90	168.80	-1,147.82	22.48	1,246.24	1,204.71	41.53	30.007	
5,900.00	5,899.60	5,734.83	5,600.73	21.04	25.36	168.80	-1,170.61	22.82	1,270.92	1,228.66	42.26	30.071	
6,000.00	5,999.59	5,831.74	5,694.92	21.40	25.82	168.81	-1,193.40	23.17	1,295.60	1,252.60	43.00	30.133	
6,100.00	6,099.58	5,928.65	5,789.11	21.76	26.28	168.81	-1,216.18	23.52	1,320.28	1,276.55	43.73	30.192	
6,200.00	6,199.58	6,025.56	5,883.30	22.12	26.74	168.81	-1,238.97	23.87	1,344.96	1,300.50	44.46	30.249	
6,300.00	6,299.57	6,122.46	5,977.49	22.48	27.20	168.82	-1,261.75	24.21	1,369.64	1,324.44	45.20	30.304	
6,315.05	6,314.62	6,137.05	5,991.66	22.53	27.27	168.82	-1,265.18	24.27	1,373.35	1,328.05	45.31	30.313	
6,350.00	6,349.55	6,170.91	6,024.58	22.66	27.43	98.88	-1,273.15	24.39	1,381.93	1,336.37	45.56	30.332	
6,400.00	6,399.30	6,219.18	6,071.49	22.83	27.66	91.06	-1,284.50	24.56	1,394.04	1,348.12	45.92	30.357	
6,450.00	6,448.52	6,266.98	6,117.95	23.00	27.88	88.46	-1,295.74	24.73	1,405.91	1,359.63	46.28	30.378	
6,500.00	6,496.91	6,314.02	6,163.67	23.18	28.11	87.02	-1,306.80	24.90	1,417.54	1,370.90	46.64	30.396	
6,550.00	6,544.17	6,360.00	6,208.37	23.35	28.33	86.11	-1,317.61	25.07	1,428.95	1,381.96	46.99	30.410	
6,600.00	6,590.01	6,404.65	6,251.76	23.53	28.54	85.49	-1,328.11	25.23	1,440.20	1,392.86	47.34	30.423	
6,650.00	6,634.14	6,447.68	6,293.59	23.70	28.74	85.06	-1,338.22	25.38	1,451.35	1,403.67	47.69	30.436	
6,700.00	6,676.30	6,488.83	6,333.59	23.88	28.94	84.77	-1,347.90	25.53	1,462.50	1,414.47	48.03	30.450	
6,750.00	6,716.21	6,531.69	6,375.19	24.06	29.14	84.61	-1,358.03	26.99	1,473.70	1,425.30	48.40	30.447	
6,800.00	6,753.65	6,576.60	6,418.55	24.24	29.35	84.52	-1,368.74	31.60	1,484.89	1,436.08	48.80	30.426	
6,850.00	6,788.37	6,623.83	6,463.66	24.44	29.57	84.51	-1,380.05	39.83	1,496.01	1,446.78	49.24	30.385	
6,900.00	6,820.16	6,673.84	6,510.58	24.63	29.81	84.59	-1,392.01	52.26	1,507.02	1,457.32	49.70	30.322	
6,950.00	6,848.83	6,727.18	6,559.37	24.84	30.05	84.75	-1,404.66	69.67	1,517.82	1,467.63	50.20	30.237	
7,000.00	6,874.19	6,784.50	6,609.97	25.06	30.30	85.00	-1,418.05	93.00	1,528.34	1,477.61	50.72	30.131	
7,050.00	6,896.10	6,846.61	6,662.18	25.29	30.56	85.36	-1,432.18	123.46	1,538.45	1,487.18	51.27	30.005	
7,100.00	6,914.42	6,914.42	6,715.53	25.53	30.83	85.83	-1,447.01	162.56	1,548.03	1,496.19	51.85	29.858	
7,150.00	6,929.03	6,988.99	6,769.07	25.78	31.13	86.41	-1,462.40	212.06	1,556.92	1,504.49	52.43	29.693	
7,200.00	6,939.85	7,071.37	6,821.14	26.05	31.44	87.09	-1,478.05	273.88	1,564.90	1,511.87	53.04	29.507	
7,250.00	6,946.80	7,162.53	6,869.08	26.32	31.77	87.85	-1,493.39	349.79	1,571.74	1,518.09	53.65	29.296	
7,300.00	6,949.85	7,262.97	6,909.00	26.61	32.14	88.62	-1,507.54	440.74	1,577.16	1,522.87	54.29	29.053	
7,314.43	6,950.00	7,293.66	6,918.34	26.69	32.26	88.84	-1,511.23	469.75	1,578.41	1,523.94	54.47	28.975	
7,400.00	6,949.92	7,475.87	6,944.86	27.21	33.01	89.82	-1,526.50	648.72	1,582.62	1,526.94	55.68	28.421	
7,500.00	6,949.83	7,584.99	6,944.92	27.90	33.53	89.82	-1,531.90	757.70	1,584.29	1,527.27	57.02	27.784	
7,600.00	6,949.74	7,684.97	6,944.85	28.66	34.08	89.82	-1,536.82	857.56	1,585.95	1,527.47	58.48	27.120	
7,700.00	6,949.65	7,784.96	6,944.77	29.49	34.70	89.82	-1,541.74	957.43	1,587.62	1,527.54	60.07	26.428	
7,800.00	6,949.56	7,884.95	6,944.70	30.38	35.38	89.82	-1,546.67	1,057.29	1,589.28	1,527.49	61.79	25.720	
7,900.00	6,949.47	7,984.93	6,944.62	31.33	36.13	89.82	-1,551.59	1,157.16	1,590.95	1,527.32	63.63	25.005	
8,000.00	6,949.38	8,084.92	6,944.55	32.33	36.94	89.83	-1,556.51	1,257.02	1,592.61	1,527.04	65.57	24.290	
8,100.00	6,949.29	8,184.90	6,944.47	33.38	37.81	89.83	-1,561.43	1,356.89	1,594.27	1,526.67	67.60	23.583	
8,200.00	6,949.20	8,284.89	6,944.40	34.47	38.72	89.83	-1,566.35	1,456.75	1,595.94	1,526.21	69.73	22.888	
8,300.00	6,949.11	8,384.88	6,944.32	35.60	39.68	89.83	-1,571.28	1,556.62	1,597.60	1,525.67	71.93	22.210	
8,400.00	6,949.02	8,484.86	6,944.25	36.76	40.69	89.83	-1,576.20	1,656.48	1,599.26	1,525.05	74.21	21.551	
8,500.00	6,948.93	8,584.85	6,944.17	37.96	41.73	89.83	-1,581.12	1,756.35	1,600.93	1,524.37	76.55	20.913	
8,600.00	6,948.84	8,684.83	6,944.10	39.18	42.81	89.83	-1,586.04	1,856.21	1,602.59	1,523.63	78.96	20.297	
8,700.00	6,948.75	8,784.82	6,944.02	40.43	43.93	89.83	-1,590.96	1,956.08	1,604.25	1,522.84	81.42	19.704	
8,800.00	6,948.66	8,884.81	6,943.95	41.71	45.07	89.83	-1,595.88	2,055.94	1,605.92	1,521.99	83.93	19.134	
8,900.00	6,948.57	8,984.79	6,943.87	43.00	46.25	89.83	-1,600.81	2,155.81	1,607.58	1,521.10	86.49	18.588	
9,000.00	6,948.48	9,084.78	6,943.80	44.32	47.45	89.83	-1,605.73	2,255.67	1,609.25	1,520.16	89.08	18.064	

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 #722H - Slot B05
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 #722H	**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	Warning
9,100.00	6,948.39	9,184.77	6,943.72	45.66	48.67	89.83	-1,610.65	2,355.54	1,610.91	1,519.19	91.72	17.563	
9,200.00	6,948.30	9,284.75	6,943.65	47.01	49.92	89.83	-1,615.57	2,455.40	1,612.57	1,518.18	94.39	17.083	
9,300.00	6,948.21	9,384.74	6,943.57	48.38	51.18	89.83	-1,620.49	2,555.27	1,614.24	1,517.14	97.10	16.624	
9,400.00	6,948.12	9,484.72	6,943.50	49.76	52.47	89.84	-1,625.42	2,655.13	1,615.90	1,516.06	99.83	16.186	
9,500.00	6,948.03	9,584.71	6,943.42	51.16	53.77	89.84	-1,630.34	2,755.00	1,617.56	1,514.97	102.60	15.766	
9,600.00	6,947.94	9,684.70	6,943.34	52.56	55.09	89.84	-1,635.26	2,854.86	1,619.23	1,513.84	105.38	15.365	
9,700.00	6,947.85	9,784.68	6,943.27	53.98	56.42	89.84	-1,640.18	2,954.73	1,620.89	1,512.70	108.20	14.981	
9,800.00	6,947.76	9,884.67	6,943.19	55.41	57.77	89.84	-1,645.10	3,054.59	1,622.55	1,511.53	111.03	14.614	
9,900.00	6,947.67	9,984.65	6,943.12	56.85	59.13	89.84	-1,650.02	3,154.46	1,624.22	1,510.34	113.88	14.263	
10,000.00	6,947.58	10,084.64	6,943.04	58.29	60.51	89.84	-1,654.95	3,254.32	1,625.88	1,509.13	116.75	13.926	
10,100.00	6,947.49	10,184.63	6,942.97	59.75	61.89	89.84	-1,659.87	3,354.19	1,627.55	1,507.91	119.64	13.604	
10,200.00	6,947.40	10,284.61	6,942.89	61.21	63.29	89.84	-1,664.79	3,454.05	1,629.21	1,506.67	122.54	13.295	
10,300.00	6,947.31	10,384.60	6,942.82	62.68	64.69	89.84	-1,669.71	3,553.92	1,630.87	1,505.41	125.46	12.999	
10,400.00	6,947.22	10,484.59	6,942.74	64.15	66.11	89.84	-1,674.63	3,653.78	1,632.54	1,504.14	128.39	12.715	
10,500.00	6,947.13	10,584.57	6,942.67	65.63	67.53	89.84	-1,679.55	3,753.65	1,634.20	1,502.86	131.34	12.443	
10,600.00	6,947.04	10,684.56	6,942.59	67.12	68.96	89.84	-1,684.48	3,853.51	1,635.86	1,501.57	134.29	12.181	
10,700.00	6,946.95	10,784.54	6,942.52	68.61	70.40	89.84	-1,689.40	3,953.38	1,637.53	1,500.27	137.26	11.930	
10,800.00	6,946.86	10,884.53	6,942.44	70.11	71.85	89.84	-1,694.32	4,053.24	1,639.19	1,498.95	140.24	11.688	
10,900.00	6,946.77	10,984.52	6,942.37	71.61	73.30	89.85	-1,699.24	4,153.11	1,640.85	1,497.62	143.23	11.456	
11,000.00	6,946.68	11,084.50	6,942.29	73.11	74.76	89.85	-1,704.16	4,252.97	1,642.52	1,496.29	146.23	11.233	
11,100.00	6,946.59	11,184.49	6,942.22	74.62	76.22	89.85	-1,709.09	4,352.84	1,644.18	1,494.95	149.23	11.017	
11,200.00	6,946.50	11,284.47	6,942.14	76.14	77.69	89.85	-1,714.01	4,452.70	1,645.84	1,493.60	152.25	10.810	
11,300.00	6,946.41	11,384.46	6,942.07	77.65	79.17	89.85	-1,718.93	4,552.57	1,647.51	1,492.24	155.27	10.611	
11,400.00	6,946.32	11,484.45	6,941.99	79.18	80.65	89.85	-1,723.85	4,652.43	1,649.17	1,490.87	158.30	10.418	
11,500.00	6,946.23	11,584.43	6,941.92	80.70	82.13	89.85	-1,728.77	4,752.30	1,650.84	1,489.50	161.34	10.232	
11,600.00	6,946.14	11,684.42	6,941.84	82.23	83.62	89.85	-1,733.69	4,852.16	1,652.50	1,488.12	164.38	10.053	
11,700.00	6,946.05	11,784.41	6,941.77	83.76	85.11	89.85	-1,738.62	4,952.03	1,654.16	1,486.73	167.43	9.880	
11,800.00	6,945.96	11,884.39	6,941.69	85.29	86.61	89.85	-1,743.54	5,051.89	1,655.83	1,485.34	170.49	9.712	
11,900.00	6,945.87	11,984.38	6,941.62	86.82	88.11	89.85	-1,748.46	5,151.76	1,657.49	1,483.94	173.55	9.551	
12,000.00	6,945.78	12,084.36	6,941.54	88.36	89.62	89.85	-1,753.38	5,251.62	1,659.15	1,482.54	176.61	9.394	
12,100.00	6,945.69	12,184.35	6,941.47	89.90	91.13	89.85	-1,758.30	5,351.48	1,660.82	1,481.13	179.68	9.243	
12,200.00	6,945.60	12,284.34	6,941.39	91.44	92.64	89.85	-1,763.23	5,451.35	1,662.48	1,479.72	182.76	9.097	
12,300.00	6,945.51	12,384.32	6,941.32	92.99	94.15	89.85	-1,768.15	5,551.21	1,664.14	1,478.31	185.84	8.955	
12,400.00	6,945.42	12,484.31	6,941.24	94.53	95.67	89.86	-1,773.07	5,651.08	1,665.81	1,476.89	188.92	8.817	
12,500.00	6,945.33	12,584.29	6,941.17	96.08	97.19	89.86	-1,777.99	5,750.94	1,667.47	1,475.46	192.01	8.684	
12,600.00	6,945.24	12,684.28	6,941.09	97.63	98.71	89.86	-1,782.91	5,850.81	1,669.14	1,474.03	195.10	8.555	
12,700.00	6,945.15	12,784.27	6,941.02	99.18	100.24	89.86	-1,787.83	5,950.67	1,670.80	1,472.60	198.20	8.430	
12,800.00	6,945.06	12,884.25	6,940.94	100.74	101.77	89.86	-1,792.76	6,050.54	1,672.46	1,471.17	201.30	8.308	
12,900.00	6,944.96	12,984.24	6,940.87	102.29	103.30	89.86	-1,797.68	6,150.40	1,674.13	1,469.73	204.40	8.190	
13,000.00	6,944.87	13,084.23	6,940.79	103.85	104.83	89.86	-1,802.60	6,250.27	1,675.79	1,468.28	207.51	8.076	
13,100.00	6,944.78	13,184.21	6,940.72	105.40	106.36	89.86	-1,807.52	6,350.13	1,677.45	1,466.84	210.61	7.965	
13,200.00	6,944.69	13,284.20	6,940.64	106.96	107.90	89.86	-1,812.44	6,450.00	1,679.12	1,465.39	213.73	7.856	
13,300.00	6,944.60	13,384.18	6,940.56	108.52	109.44	89.86	-1,817.36	6,549.86	1,680.78	1,463.94	216.84	7.751	
13,400.00	6,944.51	13,484.17	6,940.49	110.08	110.98	89.86	-1,822.29	6,649.73	1,682.44	1,462.49	219.96	7.649	
13,500.00	6,944.42	13,584.16	6,940.41	111.65	112.52	89.86	-1,827.21	6,749.59	1,684.11	1,461.03	223.08	7.549	
13,600.00	6,944.33	13,684.14	6,940.34	113.21	114.07	89.86	-1,832.13	6,849.46	1,685.77	1,459.57	226.20	7.453	
13,700.00	6,944.24	13,784.13	6,940.26	114.78	115.61	89.86	-1,837.05	6,949.32	1,687.44	1,458.11	229.32	7.358	
13,800.00	6,944.15	13,884.11	6,940.19	116.34	117.16	89.86	-1,841.97	7,049.19	1,689.10	1,456.65	232.45	7.266	
13,900.00	6,944.06	13,984.10	6,940.11	117.91	118.71	89.87	-1,846.90	7,149.05	1,690.76	1,455.18	235.58	7.177	
14,000.00	6,943.97	14,084.09	6,940.04	119.48	120.26	89.87	-1,851.82	7,248.92	1,692.43	1,453.71	238.71	7.090	
14,100.00	6,943.88	14,184.07	6,939.96	121.05	121.81	89.87	-1,856.74	7,348.78	1,694.09	1,452.25	241.84	7.005	
14,200.00	6,943.79	14,284.06	6,939.89	122.62	123.36	89.87	-1,861.66	7,448.65	1,695.75	1,450.77	244.98	6.922	

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 #722H - Slot B05
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 #722H	**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
14,300.00	6,943.70	14,384.05	6,939.81	124.19	124.92	89.87	-1,866.58	7,548.51	1,697.42	1,449.30	248.12	6.841	
14,400.00	6,943.61	14,484.03	6,939.74	125.76	126.47	89.87	-1,871.50	7,648.38	1,699.08	1,447.83	251.26	6.762	
14,500.00	6,943.52	14,584.02	6,939.66	127.33	128.03	89.87	-1,876.43	7,748.24	1,700.74	1,446.35	254.40	6.685	
14,600.00	6,943.43	14,684.00	6,939.59	128.90	129.59	89.87	-1,881.35	7,848.11	1,702.41	1,444.87	257.54	6.610	
14,700.00	6,943.34	14,783.99	6,939.51	130.48	131.15	89.87	-1,886.27	7,947.97	1,704.07	1,443.39	260.68	6.537	
14,800.00	6,943.25	14,883.98	6,939.44	132.05	132.71	89.87	-1,891.19	8,047.84	1,705.74	1,441.91	263.83	6.465	
14,900.00	6,943.16	14,983.96	6,939.36	133.63	134.27	89.87	-1,896.11	8,147.70	1,707.40	1,440.43	266.97	6.395	
15,000.00	6,943.07	15,083.95	6,939.29	135.20	135.83	89.87	-1,901.04	8,247.57	1,709.06	1,438.94	270.12	6.327	
15,100.00	6,942.98	15,183.94	6,939.21	136.78	137.39	89.87	-1,905.96	8,347.43	1,710.73	1,437.46	273.27	6.260	
15,200.00	6,942.89	15,283.92	6,939.14	138.36	138.96	89.87	-1,910.88	8,447.30	1,712.39	1,435.97	276.42	6.195	
15,300.00	6,942.80	15,383.91	6,939.06	139.93	140.52	89.87	-1,915.80	8,547.16	1,714.05	1,434.48	279.57	6.131	
15,400.00	6,942.71	15,483.89	6,938.99	141.51	142.09	89.87	-1,920.72	8,647.03	1,715.72	1,432.99	282.73	6.068	
15,500.00	6,942.62	15,583.88	6,938.91	143.09	143.65	89.88	-1,925.64	8,746.89	1,717.38	1,431.50	285.88	6.007	
15,600.00	6,942.53	15,683.87	6,938.84	144.67	145.22	89.88	-1,930.57	8,846.76	1,719.04	1,430.01	289.04	5.947	
15,700.00	6,942.44	15,783.85	6,938.76	146.25	146.79	89.88	-1,935.49	8,946.62	1,720.71	1,428.51	292.19	5.889	
15,800.00	6,942.35	15,883.84	6,938.69	147.83	148.36	89.88	-1,940.41	9,046.49	1,722.37	1,427.02	295.35	5.832	
15,900.00	6,942.26	15,983.82	6,938.61	149.41	149.93	89.88	-1,945.33	9,146.35	1,724.04	1,425.52	298.51	5.775	
16,000.00	6,942.17	16,083.81	6,938.54	150.99	151.50	89.88	-1,950.25	9,246.22	1,725.70	1,424.03	301.67	5.720	
16,100.00	6,942.08	16,183.80	6,938.46	152.57	153.07	89.88	-1,955.18	9,346.08	1,727.36	1,422.53	304.83	5.667	
16,200.00	6,941.99	16,283.78	6,938.39	154.16	154.64	89.88	-1,960.10	9,445.95	1,729.03	1,421.03	307.99	5.614	
16,300.00	6,941.90	16,383.77	6,938.31	155.74	156.21	89.88	-1,965.02	9,545.81	1,730.69	1,419.53	311.16	5.562	
16,400.00	6,941.81	16,483.76	6,938.24	157.32	157.79	89.88	-1,969.94	9,645.68	1,732.35	1,418.03	314.32	5.511	
16,500.00	6,941.72	16,583.74	6,938.16	158.91	159.36	89.88	-1,974.86	9,745.54	1,734.02	1,416.53	317.49	5.462	
16,600.00	6,941.63	16,683.73	6,938.09	160.49	160.94	89.88	-1,979.78	9,845.41	1,735.68	1,415.03	320.65	5.413	
16,700.00	6,941.54	16,783.71	6,938.01	162.07	162.51	89.88	-1,984.71	9,945.27	1,737.34	1,413.53	323.82	5.365	
16,800.00	6,941.45	16,883.70	6,937.94	163.66	164.09	89.88	-1,989.63	10,045.14	1,739.01	1,412.02	326.98	5.318	
16,900.00	6,941.36	16,983.69	6,937.86	165.24	165.66	89.88	-1,994.55	10,145.00	1,740.67	1,410.52	330.15	5.272	
17,000.00	6,941.27	17,083.67	6,937.78	166.83	167.24	89.88	-1,999.47	10,244.87	1,742.34	1,409.01	333.32	5.227	
17,100.00	6,941.18	17,183.66	6,937.71	168.42	168.82	89.89	-2,004.39	10,344.73	1,744.00	1,407.51	336.49	5.183	
17,200.00	6,941.09	17,283.64	6,937.63	170.00	170.39	89.89	-2,009.31	10,444.60	1,745.66	1,406.00	339.66	5.139	
17,300.00	6,941.00	17,383.63	6,937.56	171.59	171.97	89.89	-2,014.24	10,544.46	1,747.33	1,404.50	342.83	5.097	
17,400.00	6,940.91	17,483.62	6,937.48	173.18	173.55	89.89	-2,019.16	10,644.33	1,748.99	1,402.99	346.00	5.055	
17,500.00	6,940.82	17,583.60	6,937.41	174.76	175.13	89.89	-2,024.08	10,744.19	1,750.65	1,401.48	349.17	5.014	
17,600.00	6,940.73	17,683.59	6,937.33	176.35	176.71	89.89	-2,029.00	10,844.06	1,752.32	1,399.97	352.35	4.973	
17,700.00	6,940.64	17,783.58	6,937.26	177.94	178.29	89.89	-2,033.92	10,943.92	1,753.98	1,398.46	355.52	4.934	
17,800.00	6,940.55	17,883.56	6,937.18	179.53	179.87	89.89	-2,038.85	11,043.79	1,755.64	1,396.95	358.69	4.895	
17,900.00	6,940.46	17,983.55	6,937.11	181.11	181.45	89.89	-2,043.77	11,143.65	1,757.31	1,395.44	361.87	4.856	
18,000.00	6,940.37	18,083.53	6,937.03	182.70	183.03	89.89	-2,048.69	11,243.52	1,758.97	1,393.93	365.04	4.819	
18,100.00	6,940.28	18,183.52	6,936.96	184.29	184.61	89.89	-2,053.61	11,343.38	1,760.64	1,392.41	368.22	4.781	
18,200.00	6,940.19	18,283.51	6,936.88	185.88	186.19	89.89	-2,058.53	11,443.25	1,762.30	1,390.90	371.40	4.745	
18,300.00	6,940.10	18,383.49	6,936.81	187.47	187.78	89.89	-2,063.45	11,543.11	1,763.96	1,389.39	374.57	4.709	
18,400.00	6,940.01	18,483.48	6,936.73	189.06	189.36	89.89	-2,068.38	11,642.98	1,765.63	1,387.88	377.75	4.674	
18,500.00	6,939.92	18,583.46	6,936.66	190.65	190.94	89.89	-2,073.30	11,742.84	1,767.29	1,386.36	380.93	4.639	
18,600.00	6,939.83	18,683.45	6,936.58	192.24	192.53	89.89	-2,078.22	11,842.70	1,768.95	1,384.85	384.11	4.605	
18,700.00	6,939.74	18,783.44	6,936.51	193.83	194.11	89.89	-2,083.14	11,942.57	1,770.62	1,383.33	387.29	4.572	
18,800.00	6,939.65	18,883.42	6,936.43	195.42	195.69	89.90	-2,088.06	12,042.43	1,772.28	1,381.82	390.47	4.539	
18,900.00	6,939.56	18,983.41	6,936.36	197.01	197.28	89.90	-2,092.99	12,142.30	1,773.94	1,380.30	393.65	4.506	
19,000.00	6,939.47	19,083.40	6,936.28	198.60	198.86	89.90	-2,097.91	12,242.16	1,775.61	1,378.78	396.83	4.475	
19,100.00	6,939.38	19,183.38	6,936.21	200.19	200.45	89.90	-2,102.83	12,342.03	1,777.27	1,377.27	400.01	4.443	
19,200.00	6,939.29	19,283.37	6,936.13	201.78	202.03	89.90	-2,107.75	12,441.89	1,778.94	1,375.75	403.19	4.412	
19,300.00	6,939.20	19,383.35	6,936.06	203.37	203.62	89.90	-2,112.67	12,541.76	1,780.60	1,374.23	406.37	4.382	
19,400.00	6,939.11	19,483.34	6,935.98	204.97	205.21	89.90	-2,117.59	12,641.62	1,782.26	1,372.71	409.55	4.352	

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 #722H - Slot B05
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 #722H	**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
19,500.00	6,939.02	19,583.33	6,935.91	206.56	206.79	89.90	-2,122.52	12,741.49	1,783.93	1,371.19	412.73	4.322	
19,600.00	6,938.93	19,683.31	6,935.83	208.15	208.38	89.90	-2,127.44	12,841.35	1,785.59	1,369.67	415.92	4.293	
19,700.00	6,938.83	19,783.30	6,935.76	209.74	209.97	89.90	-2,132.36	12,941.22	1,787.25	1,368.16	419.10	4.265	
19,800.00	6,938.74	19,883.28	6,935.68	211.33	211.55	89.90	-2,137.28	13,041.08	1,788.92	1,366.64	422.28	4.236	
19,900.00	6,938.65	19,983.27	6,935.61	212.93	213.14	89.90	-2,142.20	13,140.95	1,790.58	1,365.12	425.47	4.209	
20,000.00	6,938.56	20,083.26	6,935.53	214.52	214.73	89.90	-2,147.13	13,240.81	1,792.24	1,363.59	428.65	4.181	
20,100.00	6,938.47	20,183.24	6,935.46	216.11	216.32	89.90	-2,152.05	13,340.68	1,793.91	1,362.07	431.83	4.154	
20,200.00	6,938.38	20,283.23	6,935.38	217.71	217.90	89.90	-2,156.97	13,440.54	1,795.57	1,360.55	435.02	4.128	
20,300.00	6,938.29	20,383.22	6,935.31	219.30	219.49	89.90	-2,161.89	13,540.41	1,797.24	1,359.03	438.20	4.101	
20,400.00	6,938.20	20,483.20	6,935.23	220.89	221.08	89.90	-2,166.81	13,640.27	1,798.90	1,357.51	441.39	4.076	
20,500.00	6,938.11	20,583.19	6,935.16	222.49	222.67	89.90	-2,171.73	13,740.14	1,800.56	1,355.99	444.58	4.050	
20,600.00	6,938.02	20,683.17	6,935.08	224.08	224.26	89.91	-2,176.66	13,840.00	1,802.23	1,354.46	447.76	4.025	
20,626.08	6,938.00	20,709.25	6,935.06	224.49	224.67	89.91	-2,177.94	13,866.05	1,802.66	1,354.07	448.59	4.018	SF

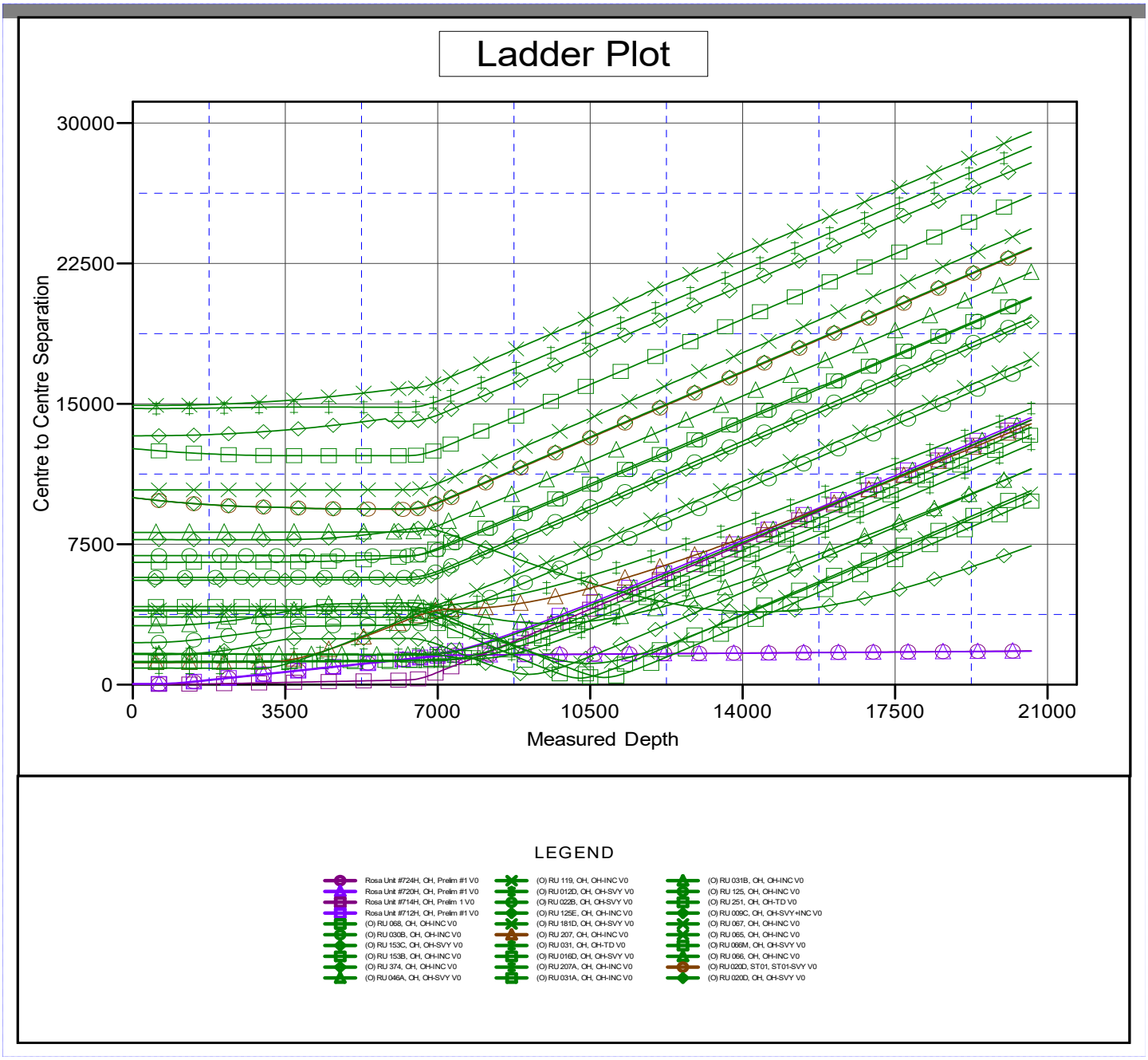
SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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 #722H - Slot B05
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

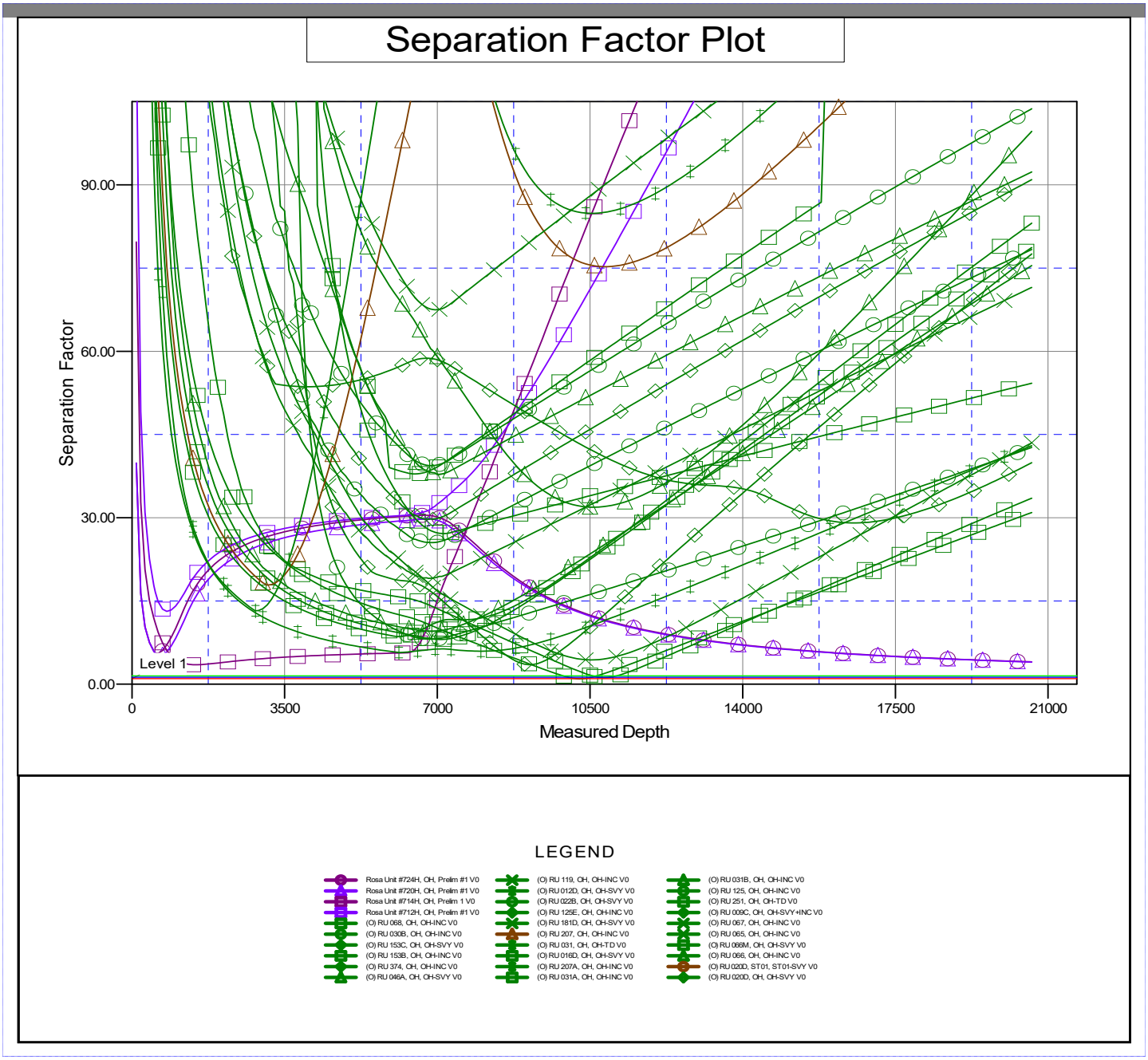
SDT

Anticollision Report

Company:	Logos Operating LLC	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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 #722H - Slot B05
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 #722H - Slot B05

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 #722H - Slot B05
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 #722H	**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 #722H - Slot B05

Well Position	**+N/-S**	0.00 usft	**Northing:**	2,147,479.19 usft	**Latitude:**	36.900702
	+E/-W	0.00 usft	**Easting:**	2,851,896.67 usft	**Longitude:**	-107.392806
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	49,574.67756568

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	91.87

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

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,625.82	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	
535.00	0.70	10.67	535.00	0.21	0.04	2.00	2.00	0.00	10.67	
6,315.05	0.70	10.67	6,314.62	69.61	13.12	0.00	0.00	0.00	0.00	
7,314.43	90.05	91.87	6,950.00	56.51	650.22	9.00	8.94	8.12	81.20	RU 722H POE-5
20,626.08	90.05	91.87	6,938.00	-377.47	13,954.79	0.00	0.00	0.00	0.00	RU 722H PBHL-5

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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									
535.00	0.70	10.67	535.00	0.21	0.04	0.03	2.00	2.00	0.00
Start 5780.05 hold at 535.00 MD									
600.00	0.70	10.67	599.99	0.99	0.19	0.15	0.00	0.00	0.00
700.00	0.70	10.67	699.99	2.19	0.41	0.34	0.00	0.00	0.00
800.00	0.70	10.67	799.98	3.39	0.64	0.53	0.00	0.00	0.00
900.00	0.70	10.67	899.97	4.59	0.87	0.72	0.00	0.00	0.00
1,000.00	0.70	10.67	999.96	5.79	1.09	0.90	0.00	0.00	0.00
1,100.00	0.70	10.67	1,099.96	6.99	1.32	1.09	0.00	0.00	0.00
1,200.00	0.70	10.67	1,199.95	8.19	1.54	1.28	0.00	0.00	0.00
1,300.00	0.70	10.67	1,299.94	9.40	1.77	1.46	0.00	0.00	0.00
1,400.00	0.70	10.67	1,399.93	10.60	2.00	1.65	0.00	0.00	0.00
1,500.00	0.70	10.67	1,499.93	11.80	2.22	1.84	0.00	0.00	0.00
1,600.00	0.70	10.67	1,599.92	13.00	2.45	2.02	0.00	0.00	0.00
1,700.00	0.70	10.67	1,699.91	14.20	2.68	2.21	0.00	0.00	0.00
1,800.00	0.70	10.67	1,799.90	15.40	2.90	2.40	0.00	0.00	0.00
1,900.00	0.70	10.67	1,899.90	16.60	3.13	2.58	0.00	0.00	0.00
2,000.00	0.70	10.67	1,999.89	17.80	3.35	2.77	0.00	0.00	0.00
2,100.00	0.70	10.67	2,099.88	19.00	3.58	2.96	0.00	0.00	0.00
2,200.00	0.70	10.67	2,199.87	20.20	3.81	3.15	0.00	0.00	0.00
2,300.00	0.70	10.67	2,299.87	21.40	4.03	3.33	0.00	0.00	0.00
2,400.00	0.70	10.67	2,399.86	22.60	4.26	3.52	0.00	0.00	0.00
2,433.14	0.70	10.67	2,433.00	23.00	4.33	3.58	0.00	0.00	0.00
Ojo Alamo									
2,500.00	0.70	10.67	2,499.85	23.80	4.49	3.71	0.00	0.00	0.00
2,543.15	0.70	10.67	2,543.00	24.32	4.58	3.79	0.00	0.00	0.00
Kirtland									
2,600.00	0.70	10.67	2,599.85	25.00	4.71	3.89	0.00	0.00	0.00
2,700.00	0.70	10.67	2,699.84	26.20	4.94	4.08	0.00	0.00	0.00
2,800.00	0.70	10.67	2,799.83	27.41	5.16	4.27	0.00	0.00	0.00
2,877.18	0.70	10.67	2,877.00	28.33	5.34	4.41	0.00	0.00	0.00
Fruitland									
2,900.00	0.70	10.67	2,899.82	28.61	5.39	4.45	0.00	0.00	0.00
3,000.00	0.70	10.67	2,999.82	29.81	5.62	4.64	0.00	0.00	0.00
3,032.19	0.70	10.67	3,032.00	30.19	5.69	4.70	0.00	0.00	0.00
T/Coals									
3,100.00	0.70	10.67	3,099.81	31.01	5.84	4.83	0.00	0.00	0.00
3,182.20	0.70	10.67	3,182.00	31.99	6.03	4.98	0.00	0.00	0.00
T/Coals									
3,200.00	0.70	10.67	3,199.80	32.21	6.07	5.01	0.00	0.00	0.00
3,300.00	0.70	10.67	3,299.79	33.41	6.29	5.20	0.00	0.00	0.00
3,355.21	0.70	10.67	3,355.00	34.07	6.42	5.30	0.00	0.00	0.00
Pictured Cliffs									
3,400.00	0.70	10.67	3,399.79	34.61	6.52	5.39	0.00	0.00	0.00
3,460.22	0.70	10.67	3,460.00	35.33	6.66	5.50	0.00	0.00	0.00
Lewis									
3,500.00	0.70	10.67	3,499.78	35.81	6.75	5.58	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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)
3,600.00	0.70	10.67	3,599.77	37.01	6.97	5.76	0.00	0.00	0.00
3,700.00	0.70	10.67	3,699.76	38.21	7.20	5.95	0.00	0.00	0.00
3,800.00	0.70	10.67	3,799.76	39.41	7.43	6.14	0.00	0.00	0.00
3,900.00	0.70	10.67	3,899.75	40.61	7.65	6.32	0.00	0.00	0.00
4,000.00	0.70	10.67	3,999.74	41.81	7.88	6.51	0.00	0.00	0.00
4,100.00	0.70	10.67	4,099.73	43.01	8.10	6.70	0.00	0.00	0.00
4,200.00	0.70	10.67	4,199.73	44.21	8.33	6.88	0.00	0.00	0.00
4,300.00	0.70	10.67	4,299.72	45.42	8.56	7.07	0.00	0.00	0.00
4,400.00	0.70	10.67	4,399.71	46.62	8.78	7.26	0.00	0.00	0.00
4,500.00	0.70	10.67	4,499.70	47.82	9.01	7.44	0.00	0.00	0.00
4,584.30	0.70	10.67	4,584.00	48.83	9.20	7.60	0.00	0.00	0.00
Chacra									
4,600.00	0.70	10.67	4,599.70	49.02	9.24	7.63	0.00	0.00	0.00
4,700.00	0.70	10.67	4,699.69	50.22	9.46	7.82	0.00	0.00	0.00
4,800.00	0.70	10.67	4,799.68	51.42	9.69	8.01	0.00	0.00	0.00
4,900.00	0.70	10.67	4,899.67	52.62	9.91	8.19	0.00	0.00	0.00
5,000.00	0.70	10.67	4,999.67	53.82	10.14	8.38	0.00	0.00	0.00
5,059.34	0.70	10.67	5,059.00	54.53	10.27	8.49	0.00	0.00	0.00
U/Cliff House									
5,100.00	0.70	10.67	5,099.66	55.02	10.37	8.57	0.00	0.00	0.00
5,200.00	0.70	10.67	5,199.65	56.22	10.59	8.75	0.00	0.00	0.00
5,300.00	0.70	10.67	5,299.64	57.42	10.82	8.94	0.00	0.00	0.00
5,362.36	0.70	10.67	5,362.00	58.17	10.96	9.06	0.00	0.00	0.00
Cliff House									
5,400.00	0.70	10.67	5,399.64	58.62	11.05	9.13	0.00	0.00	0.00
5,402.36	0.70	10.67	5,402.00	58.65	11.05	9.13	0.00	0.00	0.00
Menefee									
5,500.00	0.70	10.67	5,499.63	59.82	11.27	9.31	0.00	0.00	0.00
5,600.00	0.70	10.67	5,599.62	61.02	11.50	9.50	0.00	0.00	0.00
5,631.38	0.70	10.67	5,631.00	61.40	11.57	9.56	0.00	0.00	0.00
Point Lookout									
5,700.00	0.70	10.67	5,699.61	62.22	11.72	9.69	0.00	0.00	0.00
5,800.00	0.70	10.67	5,799.61	63.43	11.95	9.87	0.00	0.00	0.00
5,900.00	0.70	10.67	5,899.60	64.63	12.18	10.06	0.00	0.00	0.00
6,000.00	0.70	10.67	5,999.59	65.83	12.40	10.25	0.00	0.00	0.00
6,100.00	0.70	10.67	6,099.58	67.03	12.63	10.44	0.00	0.00	0.00
6,168.42	0.70	10.67	6,168.00	67.85	12.78	10.56	0.00	0.00	0.00
Mancos									
6,200.00	0.70	10.67	6,199.58	68.23	12.86	10.62	0.00	0.00	0.00
6,300.00	0.70	10.67	6,299.57	69.43	13.08	10.81	0.00	0.00	0.00
6,315.05	0.70	10.67	6,314.62	69.61	13.12	10.84	0.00	0.00	0.00
Start DLS 9.00 TFO 81.20									
6,350.00	3.33	79.87	6,349.55	70.00	14.15	11.86	9.00	7.51	198.00
6,400.00	7.78	86.80	6,399.30	70.44	18.96	16.66	9.00	8.92	13.85
6,450.00	12.27	88.69	6,448.52	70.75	27.66	25.34	9.00	8.98	3.77
6,500.00	16.77	89.57	6,496.91	70.93	40.19	37.86	9.00	8.99	1.77
6,550.00	21.26	90.09	6,544.17	70.97	56.48	54.13	9.00	8.99	1.04
6,600.00	25.76	90.43	6,590.01	70.87	76.42	74.07	9.00	9.00	0.69
6,650.00	30.26	90.68	6,634.14	70.64	99.89	97.54	9.00	9.00	0.50
6,700.00	34.76	90.87	6,676.30	70.27	126.76	124.40	9.00	9.00	0.38
6,750.00	39.26	91.02	6,716.21	69.77	156.84	154.48	9.00	9.00	0.30
6,800.00	43.76	91.15	6,753.65	69.15	189.96	187.61	9.00	9.00	0.25
6,830.26	46.48	91.21	6,775.00	68.71	211.40	209.05	9.00	9.00	0.22

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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)
Black Top									
6,850.00	48.26	91.25	6,788.37	68.39	225.92	223.56	9.00	9.00	0.20
6,900.00	52.76	91.34	6,820.16	67.52	264.48	262.14	9.00	9.00	0.18
6,950.00	57.26	91.42	6,848.83	66.53	305.42	303.09	9.00	9.00	0.16
7,000.00	61.75	91.50	6,874.19	65.43	348.48	346.16	9.00	9.00	0.15
7,050.00	66.25	91.56	6,896.10	64.23	393.39	391.09	9.00	9.00	0.13
7,100.00	70.75	91.63	6,914.42	62.94	439.88	437.60	9.00	9.00	0.13
7,150.00	75.25	91.69	6,929.03	61.56	487.67	485.40	9.00	9.00	0.12
7,200.00	79.75	91.74	6,939.85	60.10	536.45	534.20	9.00	9.00	0.11
7,250.00	84.25	91.80	6,946.80	58.57	585.93	583.70	9.00	9.00	0.11
7,300.00	88.75	91.85	6,949.85	56.98	635.80	633.60	9.00	9.00	0.11
7,314.43	90.05	91.87	6,950.00	56.51	650.22	648.03	9.00	9.00	0.11
Start 13311.65 hold at 7314.43 MD									
7,400.00	90.05	91.87	6,949.92	53.72	735.74	733.60	0.00	0.00	0.00
7,500.00	90.05	91.87	6,949.83	50.46	835.69	833.60	0.00	0.00	0.00
7,600.00	90.05	91.87	6,949.74	47.20	935.64	933.60	0.00	0.00	0.00
7,700.00	90.05	91.87	6,949.65	43.94	1,035.58	1,033.60	0.00	0.00	0.00
7,800.00	90.05	91.87	6,949.56	40.68	1,135.53	1,133.60	0.00	0.00	0.00
7,900.00	90.05	91.87	6,949.47	37.42	1,235.48	1,233.60	0.00	0.00	0.00
8,000.00	90.05	91.87	6,949.38	34.16	1,335.42	1,333.60	0.00	0.00	0.00
8,100.00	90.05	91.87	6,949.29	30.90	1,435.37	1,433.60	0.00	0.00	0.00
8,200.00	90.05	91.87	6,949.20	27.64	1,535.32	1,533.60	0.00	0.00	0.00
8,300.00	90.05	91.87	6,949.11	24.38	1,635.26	1,633.60	0.00	0.00	0.00
8,400.00	90.05	91.87	6,949.02	21.12	1,735.21	1,733.60	0.00	0.00	0.00
8,500.00	90.05	91.87	6,948.93	17.86	1,835.16	1,833.60	0.00	0.00	0.00
8,600.00	90.05	91.87	6,948.84	14.60	1,935.10	1,933.60	0.00	0.00	0.00
8,700.00	90.05	91.87	6,948.75	11.34	2,035.05	2,033.60	0.00	0.00	0.00
8,800.00	90.05	91.87	6,948.66	8.08	2,135.00	2,133.60	0.00	0.00	0.00
8,900.00	90.05	91.87	6,948.57	4.82	2,234.94	2,233.60	0.00	0.00	0.00
9,000.00	90.05	91.87	6,948.48	1.56	2,334.89	2,333.60	0.00	0.00	0.00
9,100.00	90.05	91.87	6,948.39	-1.70	2,434.84	2,433.60	0.00	0.00	0.00
9,200.00	90.05	91.87	6,948.30	-4.96	2,534.78	2,533.60	0.00	0.00	0.00
9,300.00	90.05	91.87	6,948.21	-8.22	2,634.73	2,633.60	0.00	0.00	0.00
9,400.00	90.05	91.87	6,948.12	-11.48	2,734.68	2,733.60	0.00	0.00	0.00
9,500.00	90.05	91.87	6,948.03	-14.74	2,834.62	2,833.60	0.00	0.00	0.00
9,600.00	90.05	91.87	6,947.94	-18.00	2,934.57	2,933.60	0.00	0.00	0.00
9,700.00	90.05	91.87	6,947.85	-21.26	3,034.52	3,033.60	0.00	0.00	0.00
9,800.00	90.05	91.87	6,947.76	-24.52	3,134.46	3,133.60	0.00	0.00	0.00
9,900.00	90.05	91.87	6,947.67	-27.78	3,234.41	3,233.60	0.00	0.00	0.00
10,000.00	90.05	91.87	6,947.58	-31.04	3,334.36	3,333.60	0.00	0.00	0.00
10,100.00	90.05	91.87	6,947.49	-34.30	3,434.31	3,433.60	0.00	0.00	0.00
10,200.00	90.05	91.87	6,947.40	-37.56	3,534.25	3,533.60	0.00	0.00	0.00
10,300.00	90.05	91.87	6,947.31	-40.82	3,634.20	3,633.60	0.00	0.00	0.00
10,400.00	90.05	91.87	6,947.22	-44.08	3,734.15	3,733.60	0.00	0.00	0.00
10,500.00	90.05	91.87	6,947.13	-47.34	3,834.09	3,833.60	0.00	0.00	0.00
10,600.00	90.05	91.87	6,947.04	-50.60	3,934.04	3,933.60	0.00	0.00	0.00
10,700.00	90.05	91.87	6,946.95	-53.86	4,033.99	4,033.60	0.00	0.00	0.00
10,800.00	90.05	91.87	6,946.86	-57.12	4,133.93	4,133.60	0.00	0.00	0.00
10,900.00	90.05	91.87	6,946.77	-60.38	4,233.88	4,233.60	0.00	0.00	0.00
11,000.00	90.05	91.87	6,946.68	-63.64	4,333.83	4,333.60	0.00	0.00	0.00
11,100.00	90.05	91.87	6,946.59	-66.90	4,433.77	4,433.60	0.00	0.00	0.00
11,200.00	90.05	91.87	6,946.50	-70.16	4,533.72	4,533.60	0.00	0.00	0.00
11,300.00	90.05	91.87	6,946.41	-73.42	4,633.67	4,633.60	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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)
11,400.00	90.05	91.87	6,946.32	-76.68	4,733.61	4,733.59	0.00	0.00	0.00
11,500.00	90.05	91.87	6,946.23	-79.94	4,833.56	4,833.59	0.00	0.00	0.00
11,600.00	90.05	91.87	6,946.14	-83.20	4,933.51	4,933.59	0.00	0.00	0.00
11,700.00	90.05	91.87	6,946.05	-86.46	5,033.45	5,033.59	0.00	0.00	0.00
11,800.00	90.05	91.87	6,945.96	-89.72	5,133.40	5,133.59	0.00	0.00	0.00
11,900.00	90.05	91.87	6,945.87	-92.98	5,233.35	5,233.59	0.00	0.00	0.00
12,000.00	90.05	91.87	6,945.78	-96.24	5,333.29	5,333.59	0.00	0.00	0.00
12,100.00	90.05	91.87	6,945.69	-99.50	5,433.24	5,433.59	0.00	0.00	0.00
12,200.00	90.05	91.87	6,945.60	-102.76	5,533.19	5,533.59	0.00	0.00	0.00
12,300.00	90.05	91.87	6,945.51	-106.03	5,633.13	5,633.59	0.00	0.00	0.00
12,400.00	90.05	91.87	6,945.42	-109.29	5,733.08	5,733.59	0.00	0.00	0.00
12,500.00	90.05	91.87	6,945.33	-112.55	5,833.03	5,833.59	0.00	0.00	0.00
12,600.00	90.05	91.87	6,945.24	-115.81	5,932.98	5,933.59	0.00	0.00	0.00
12,700.00	90.05	91.87	6,945.15	-119.07	6,032.92	6,033.59	0.00	0.00	0.00
12,800.00	90.05	91.87	6,945.06	-122.33	6,132.87	6,133.59	0.00	0.00	0.00
12,900.00	90.05	91.87	6,944.96	-125.59	6,232.82	6,233.59	0.00	0.00	0.00
13,000.00	90.05	91.87	6,944.87	-128.85	6,332.76	6,333.59	0.00	0.00	0.00
13,100.00	90.05	91.87	6,944.78	-132.11	6,432.71	6,433.59	0.00	0.00	0.00
13,200.00	90.05	91.87	6,944.69	-135.37	6,532.66	6,533.59	0.00	0.00	0.00
13,300.00	90.05	91.87	6,944.60	-138.63	6,632.60	6,633.59	0.00	0.00	0.00
13,400.00	90.05	91.87	6,944.51	-141.89	6,732.55	6,733.59	0.00	0.00	0.00
13,500.00	90.05	91.87	6,944.42	-145.15	6,832.50	6,833.59	0.00	0.00	0.00
13,600.00	90.05	91.87	6,944.33	-148.41	6,932.44	6,933.59	0.00	0.00	0.00
13,700.00	90.05	91.87	6,944.24	-151.67	7,032.39	7,033.59	0.00	0.00	0.00
13,800.00	90.05	91.87	6,944.15	-154.93	7,132.34	7,133.59	0.00	0.00	0.00
13,900.00	90.05	91.87	6,944.06	-158.19	7,232.28	7,233.59	0.00	0.00	0.00
14,000.00	90.05	91.87	6,943.97	-161.45	7,332.23	7,333.59	0.00	0.00	0.00
14,100.00	90.05	91.87	6,943.88	-164.71	7,432.18	7,433.59	0.00	0.00	0.00
14,200.00	90.05	91.87	6,943.79	-167.97	7,532.12	7,533.59	0.00	0.00	0.00
14,300.00	90.05	91.87	6,943.70	-171.23	7,632.07	7,633.59	0.00	0.00	0.00
14,400.00	90.05	91.87	6,943.61	-174.49	7,732.02	7,733.59	0.00	0.00	0.00
14,500.00	90.05	91.87	6,943.52	-177.75	7,831.96	7,833.59	0.00	0.00	0.00
14,600.00	90.05	91.87	6,943.43	-181.01	7,931.91	7,933.59	0.00	0.00	0.00
14,700.00	90.05	91.87	6,943.34	-184.27	8,031.86	8,033.59	0.00	0.00	0.00
14,800.00	90.05	91.87	6,943.25	-187.53	8,131.80	8,133.59	0.00	0.00	0.00
14,900.00	90.05	91.87	6,943.16	-190.79	8,231.75	8,233.59	0.00	0.00	0.00
15,000.00	90.05	91.87	6,943.07	-194.05	8,331.70	8,333.59	0.00	0.00	0.00
15,100.00	90.05	91.87	6,942.98	-197.31	8,431.65	8,433.59	0.00	0.00	0.00
15,200.00	90.05	91.87	6,942.89	-200.57	8,531.59	8,533.59	0.00	0.00	0.00
15,300.00	90.05	91.87	6,942.80	-203.83	8,631.54	8,633.59	0.00	0.00	0.00
15,400.00	90.05	91.87	6,942.71	-207.09	8,731.49	8,733.59	0.00	0.00	0.00
15,500.00	90.05	91.87	6,942.62	-210.35	8,831.43	8,833.59	0.00	0.00	0.00
15,600.00	90.05	91.87	6,942.53	-213.61	8,931.38	8,933.59	0.00	0.00	0.00
15,700.00	90.05	91.87	6,942.44	-216.87	9,031.33	9,033.59	0.00	0.00	0.00
15,800.00	90.05	91.87	6,942.35	-220.13	9,131.27	9,133.59	0.00	0.00	0.00
15,900.00	90.05	91.87	6,942.26	-223.39	9,231.22	9,233.59	0.00	0.00	0.00
16,000.00	90.05	91.87	6,942.17	-226.65	9,331.17	9,333.59	0.00	0.00	0.00
16,100.00	90.05	91.87	6,942.08	-229.91	9,431.11	9,433.59	0.00	0.00	0.00
16,200.00	90.05	91.87	6,941.99	-233.17	9,531.06	9,533.59	0.00	0.00	0.00
16,300.00	90.05	91.87	6,941.90	-236.43	9,631.01	9,633.59	0.00	0.00	0.00
16,400.00	90.05	91.87	6,941.81	-239.69	9,730.95	9,733.59	0.00	0.00	0.00
16,500.00	90.05	91.87	6,941.72	-242.95	9,830.90	9,833.59	0.00	0.00	0.00
16,600.00	90.05	91.87	6,941.63	-246.21	9,930.85	9,933.59	0.00	0.00	0.00
16,700.00	90.05	91.87	6,941.54	-249.47	10,030.79	10,033.59	0.00	0.00	0.00

SDT

Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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)
16,800.00	90.05	91.87	6,941.45	-252.73	10,130.74	10,133.59	0.00	0.00	0.00
16,900.00	90.05	91.87	6,941.36	-255.99	10,230.69	10,233.59	0.00	0.00	0.00
17,000.00	90.05	91.87	6,941.27	-259.25	10,330.63	10,333.59	0.00	0.00	0.00
17,100.00	90.05	91.87	6,941.18	-262.51	10,430.58	10,433.59	0.00	0.00	0.00
17,200.00	90.05	91.87	6,941.09	-265.77	10,530.53	10,533.59	0.00	0.00	0.00
17,300.00	90.05	91.87	6,941.00	-269.03	10,630.48	10,633.59	0.00	0.00	0.00
17,400.00	90.05	91.87	6,940.91	-272.29	10,730.42	10,733.59	0.00	0.00	0.00
17,500.00	90.05	91.87	6,940.82	-275.55	10,830.37	10,833.59	0.00	0.00	0.00
17,600.00	90.05	91.87	6,940.73	-278.81	10,930.32	10,933.59	0.00	0.00	0.00
17,700.00	90.05	91.87	6,940.64	-282.07	11,030.26	11,033.59	0.00	0.00	0.00
17,800.00	90.05	91.87	6,940.55	-285.33	11,130.21	11,133.59	0.00	0.00	0.00
17,900.00	90.05	91.87	6,940.46	-288.59	11,230.16	11,233.59	0.00	0.00	0.00
18,000.00	90.05	91.87	6,940.37	-291.85	11,330.10	11,333.59	0.00	0.00	0.00
18,100.00	90.05	91.87	6,940.28	-295.11	11,430.05	11,433.59	0.00	0.00	0.00
18,200.00	90.05	91.87	6,940.19	-298.37	11,530.00	11,533.59	0.00	0.00	0.00
18,300.00	90.05	91.87	6,940.10	-301.63	11,629.94	11,633.59	0.00	0.00	0.00
18,400.00	90.05	91.87	6,940.01	-304.89	11,729.89	11,733.59	0.00	0.00	0.00
18,500.00	90.05	91.87	6,939.92	-308.15	11,829.84	11,833.59	0.00	0.00	0.00
18,600.00	90.05	91.87	6,939.83	-311.41	11,929.78	11,933.59	0.00	0.00	0.00
18,700.00	90.05	91.87	6,939.74	-314.67	12,029.73	12,033.59	0.00	0.00	0.00
18,800.00	90.05	91.87	6,939.65	-317.93	12,129.68	12,133.59	0.00	0.00	0.00
18,900.00	90.05	91.87	6,939.56	-321.19	12,229.62	12,233.59	0.00	0.00	0.00
19,000.00	90.05	91.87	6,939.47	-324.45	12,329.57	12,333.59	0.00	0.00	0.00
19,100.00	90.05	91.87	6,939.38	-327.71	12,429.52	12,433.59	0.00	0.00	0.00
19,200.00	90.05	91.87	6,939.29	-330.97	12,529.46	12,533.59	0.00	0.00	0.00
19,300.00	90.05	91.87	6,939.20	-334.24	12,629.41	12,633.59	0.00	0.00	0.00
19,400.00	90.05	91.87	6,939.11	-337.50	12,729.36	12,733.59	0.00	0.00	0.00
19,500.00	90.05	91.87	6,939.02	-340.76	12,829.30	12,833.59	0.00	0.00	0.00
19,600.00	90.05	91.87	6,938.93	-344.02	12,929.25	12,933.59	0.00	0.00	0.00
19,700.00	90.05	91.87	6,938.83	-347.28	13,029.20	13,033.59	0.00	0.00	0.00
19,800.00	90.05	91.87	6,938.74	-350.54	13,129.15	13,133.59	0.00	0.00	0.00
19,900.00	90.05	91.87	6,938.65	-353.80	13,229.09	13,233.59	0.00	0.00	0.00
20,000.00	90.05	91.87	6,938.56	-357.06	13,329.04	13,333.59	0.00	0.00	0.00
20,100.00	90.05	91.87	6,938.47	-360.32	13,428.99	13,433.59	0.00	0.00	0.00
20,200.00	90.05	91.87	6,938.38	-363.58	13,528.93	13,533.59	0.00	0.00	0.00
20,300.00	90.05	91.87	6,938.29	-366.84	13,628.88	13,633.59	0.00	0.00	0.00
20,400.00	90.05	91.87	6,938.20	-370.10	13,728.83	13,733.59	0.00	0.00	0.00
20,500.00	90.05	91.87	6,938.11	-373.36	13,828.77	13,833.59	0.00	0.00	0.00
20,600.00	90.05	91.87	6,938.02	-376.62	13,928.72	13,933.59	0.00	0.00	0.00
20,626.08	90.05	91.87	6,938.00	-377.47	13,954.79	13,959.67	0.00	0.00	0.00
TD at 20626.08									

Released to Imaging: 10/25/2024 3:52:43 PM

SDT
Planning Report

Database:	EDM 5000 Multi User Db	**Local Co-ordinate Reference:**	Well Rosa Unit #722H - Slot B05
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 #722H	**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 722H SHL-5 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	2,147,479.18	2,851,896.67	36.900702	-107.392806
RU 722H PBHL-5 - plan hits target center - Point	0.00	0.00	6,938.00	-377.47	13,954.79	2,147,166.15	2,865,853.06	36.899656	-107.345081
RU 722H POE-5 - plan hits target center - Point	0.00	0.00	6,950.00	56.51	650.22	2,147,538.70	2,852,546.63	36.900857	-107.390582

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,433.14	2,433.00	Ojo Alamo			
2,543.15	2,543.00	Kirtland			
2,877.18	2,877.00	Fruitland			
3,032.19	3,032.00	T/Coals			
3,182.20	3,182.00	T/Coals			
3,355.21	3,355.00	Pictured Cliffs			
3,460.22	3,460.00	Lewis			
4,584.30	4,584.00	Chacra			
5,059.34	5,059.00	U/Cliff House			
5,362.36	5,362.00	Cliff House			
5,402.36	5,402.00	Menefee			
5,631.38	5,631.00	Point Lookout			
6,168.42	6,168.00	Mancos			
6,830.26	6,775.00	Black Top			

Plan Annotations

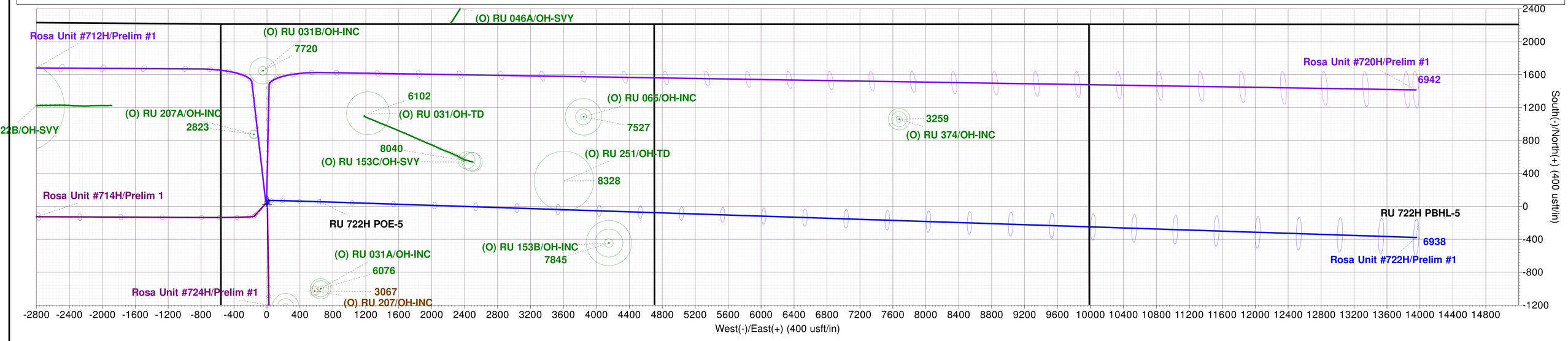
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.00	500.00	0.00	0.00	Start Build 2.00
535.00	535.00	0.21	0.04	Start 5780.05 hold at 535.00 MD
6,315.05	6,314.62	69.61	13.12	Start DLS 9.00 TFO 81.20
7,314.43	6,950.00	56.51	650.22	Start 13311.65 hold at 7314.43 MD
20,626.08	6,938.00	-377.47	13,954.79	TD at 20626.08

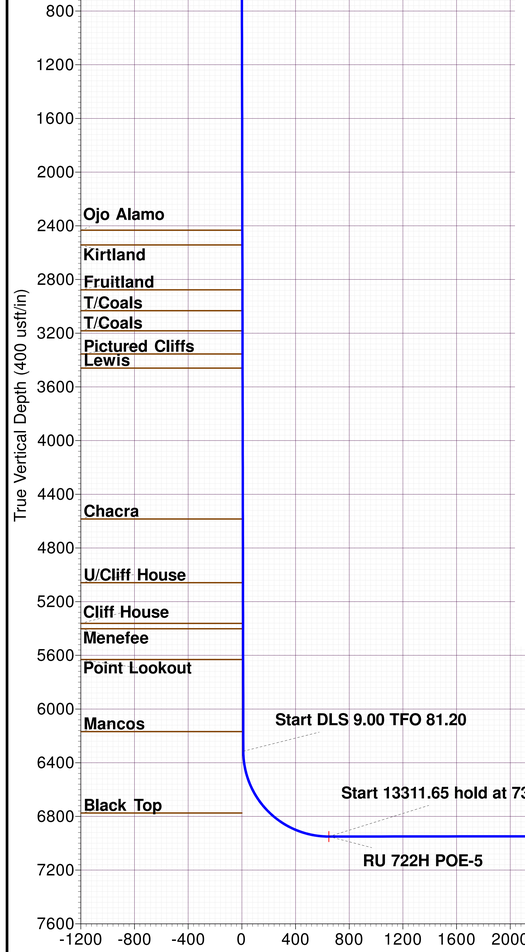
Received by OCD: 9/27/2024 11:32:21 AM

LOGOS ENERGY

County: Rio Arriba, NM (NAD83)
Site: Rosa Pad 26 - 5 Well
Well: Rosa Unit #722H
Depth Reference: 6300+30 @ 6330.00usft (H&P 530)
Rig: H&P 530
Plan: Prelim #1
Job #: Prelim

SCOUT DRILLING TECHNOLOGIES





SECTION DETAILS

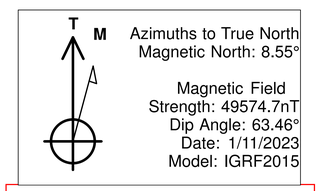
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
3	535.00	0.70	10.67	535.00	0.21	0.04	2.00	10.67	0.03	Start 5780.05 hold at 535.00 MD
4	6315.05	0.70	10.67	6314.62	69.61	13.12	0.00	0.00	10.84	Start DLS 9.00 TFO 81.20
5	7314.43	90.05	91.87	6950.00	56.51	650.22	9.00	81.20	648.03	Start 13311.65 hold at 7314.43 MD
6	20626.08	90.05	91.87	6938.00	-377.47	13954.79	0.00	0.00	13959.67	TD at 20626.08

DESIGN TARGET DETAILS

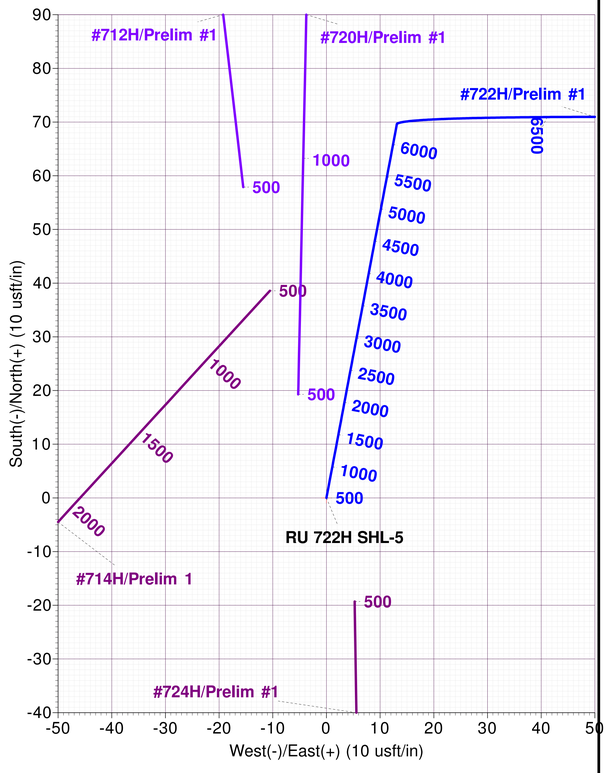
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RU 722H SHL-5	0.00	0.00	0.00	2147479.19	2851896.67	36.900702	-107.392806
RU 722H PBHL-5	6938.00	-377.47	13954.79	2147166.15	2865853.05	36.899656	-107.345081
RU 722H POE-5	6950.00	56.51	650.22	2147538.70	2852546.62	36.900857	-107.390582

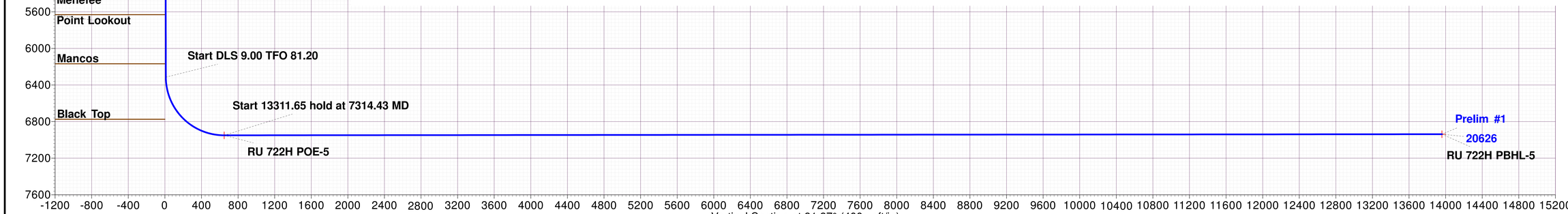
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2433.00	2433.14	Ojo Alamo
2543.00	2543.15	Kirtland
2877.00	2877.18	Fruitland
3032.00	3032.19	T/Coals
3182.00	3182.20	T/Coals
3355.00	3355.21	Pictured Cliffs
3460.00	3460.22	Lewis
4584.00	4584.30	Chacra
5059.00	5059.34	U/Cliff House
5362.00	5362.36	Cliff House
5402.00	5402.36	Menefee
5631.00	5631.38	Point Lookout
6168.00	6168.42	Mancos
6775.00	6830.26	Black Top



TOTAL CORRECTION: 8.55°





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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 722H**	GL Elevation:	6,300’
Surface Location:	Sec 17, T31N, R5W 2214’ FNL, 560’ FWL (36.900702º N, -107.392806º W – NAD83)	KB:	30’
Bottom Hole Location:	Sec 15, T31N, R5W 2588’ FNL, 1302’ FEL (36.899656º N, -107.345081º W – NAD83)	Measured Depth:	20,626’ (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	2433’	2433’	*POINT LOOKOUT	5631’	5631’
KIRTLAND	2543’	2543’	*MANCOS	6168’	6168’
*FRUITLAND	2877’	2877’	KICKOFF POINT	6315’	6315’
*PICTURED CLIFFS	3355’	3355’	LANDING POINT	7314’	6950’
LEWIS	3460’	3460’	TD	20626’	6938’
CHACRA	4584’	4584’			
*CLIFF HOUSE	5362’	5362’			
MENEFEE	5402’	5402’			

* 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:** 6,950' TVD x 0.43 = 2,989 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"	6,243'	9.625"	43.5 LBS	N-80 or equiv	LTC/BTC
PRODUCTION	8.5"	20,626'	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	5,743	500	0.3132	1.3	221	39	1.10	201	15.8
Stage 1 Lead	4,659	1,084	0.3132	1.3	441	79	1.90	232	12.4
					663	**118**		**433**	
Stage 2 Tail	4,059	600	0.3132	1.3	244	44	1.58	155	13.2
Stage 2 Lead	3,405	654	0.3132	1.3	266	47	1.90	140	12.4
					511	**91**		**295**	
Stage 3 Tail	2,755	650	0.3132	1.3	265	47	1.58	168	13.2
Stage 3 Lead	320	2,435	0.3132	1.3	991	177	1.58	628	12.4
Stage 3 Lead	-	320	1.4895	1	477	85	1.90	251	12.4
					1,733	**309**		**1046**	
					2,906	**518**		**1,774**	
Set Depth, ft RKB	6243								

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	**6,143**	**100**	**0.2531**	**1**	**25**	**5**	1.98	**13**	13.2
Open Hole Tail	**6,243**	**14,383**	**0.2291**	**1.15**	**3,800**	**677**	1.98	**1,919**	13.2
					3,825	**681**		**1,932**	
Set Depth, ft RKB	20626								

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 * 6,950' TVD = 1529 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.

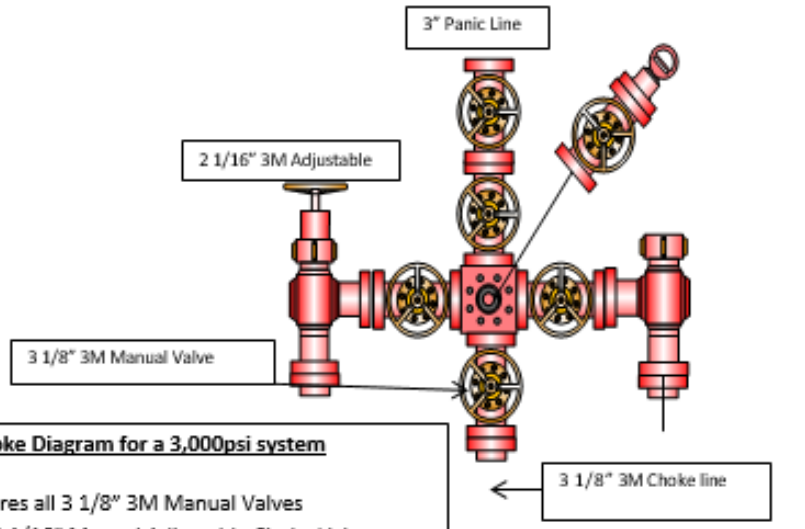
D. PRODUCTION TUBING

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.

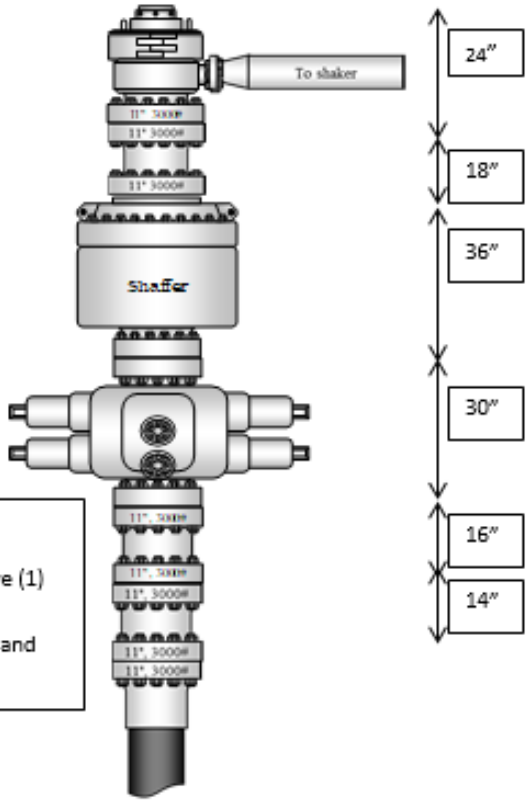
BOP Equipment

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 387917

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 387917
	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.	10/25/2024