

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☒ AMENDED REPORT
AS-DRILLED PLAT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35633	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 320689	⁵ Property Name ATHENA 2308 14L	⁶ Well Number 2H
⁷ OGRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 6878'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	14	23-N	8-W		2151	SOUTH	566	WEST	SAN JUAN

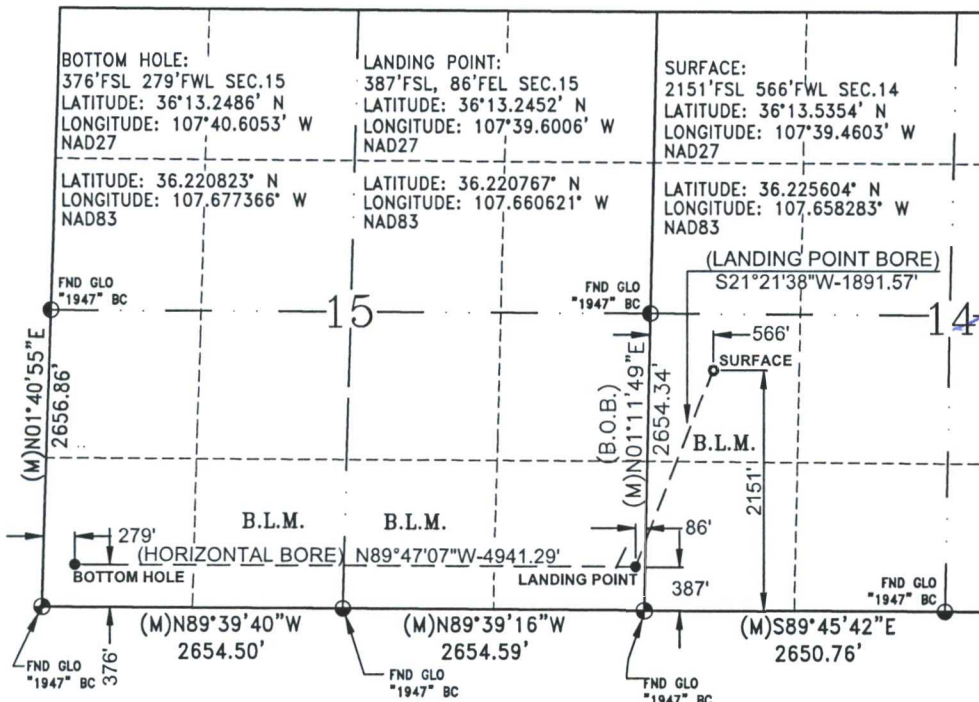
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	15	23-N	8-W		376	SOUTH	279	WEST	SAN JUAN

¹² Dedicated Acres 320.00 ACRES = S/2 SEC. 15	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. NSL 7630
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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

16



BASIS OF BEARING:

AS MEASURED BY GPS BETWEEN FOUND MONUMENTS AT THE SOUTHWEST
CORNER AND THE WEST QUARTER CORNER OF SECTION 14, TOWNSHIP 23
NORTH, RANGE 8 WEST, N.M.P.M. SAN JUAN COUNTY, NEW MEXICO.

LINE BEARS: N 01°11'49" E A DISTANCE OF 2654.34 FEET AS MEASURED BY
G.P.S. LOCAL GRID NAD83.

¹⁷ OPERATOR CERTIFICATION

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

Signature Tamra Sessions Date 4-11-18
Printed Name
tsessions@logosresourcesllc.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

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

APRIL 11, 2018
Date of Survey

Signature and Seal of Professional Surveyor



GLEN W. RUSSELL
Certificate Number 15703

CONFIDENTIAL

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☒ AMENDED REPORT
AS-DRILLED PLAT

WELL LOCATION AND ACREAGE DEDICATION PLAT

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⁴ Property Code 316583	⁵ Property Name ATHENA 2308 14L	⁶ Well Number 2H
⁷ GRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 6878'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	14	23-N	8-W		2151	SOUTH	566	WEST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

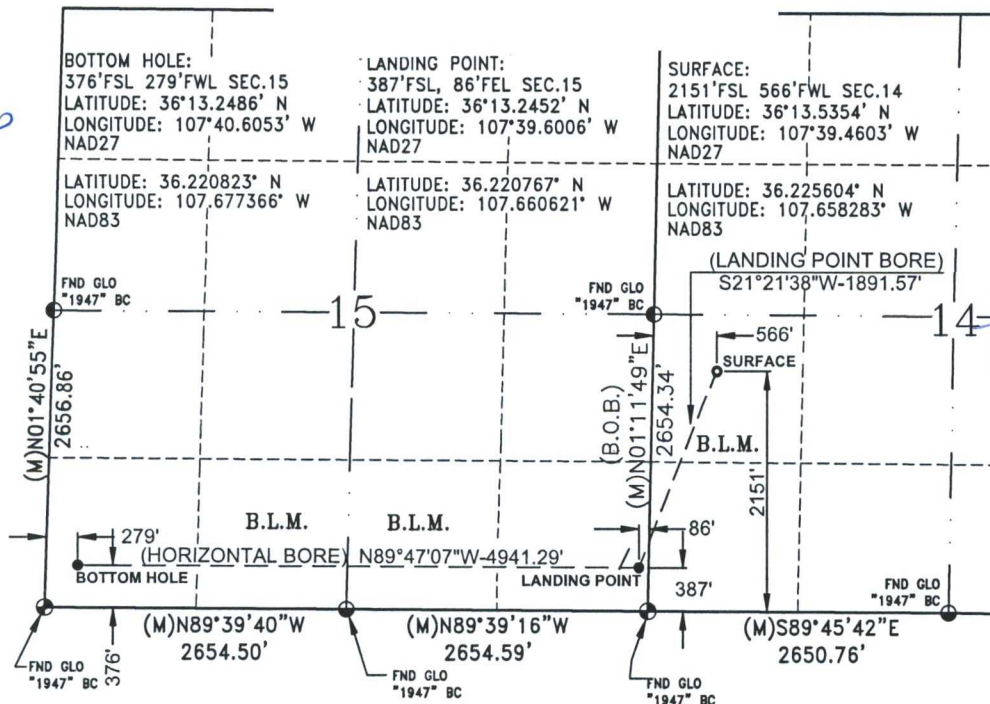
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	15	23-N	8-W		376	SOUTH	279	WEST	SAN JUAN

¹² Dedicated Acres 320.00 ACRES = S/2 SEC. 15	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. NSL-7630
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NO ALLOWABLE V

DENIED

UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
N APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

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

Tamra Sessions 4-11-18
Signature Date
Tamra Sessions
Printed Name
tsessions@logosresourcesllc.com
E-mail Address

18 SURVEYOR CERTIFICATION

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

APRIL 11, 2018
Date of Survey

Signature and Seal of Professional Surveyor



GLEN W. RUSSELL
Certificate Number

15703

BASIS OF BEARING:

AS MEASURED BY GPS BETWEEN FOUND MONUMENTS AT THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 14, TOWNSHIP 23 NORTH, RANGE 8 WEST, N.M.P.M. SAN JUAN COUNTY, NEW MEXICO.

LINE BEARS: N 01°11'49\"/>

CONFIDENTIAL

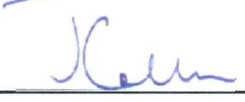


Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	Logos Operating
Well Name & No.	Athena 2308-14L 2H
County & State	San Juan, NM
SDI Job No.	OP.008356
Rig	Aztec 920

I, Janie Collins, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 415 feet to a measured depth of 10,869 feet is true and correct as determined from all available records.


Signature

6-Mar-18
Date

Janie Collins
Colorado District Well Planner
Scientific Drilling International



Survey Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Athena 2308-14L 2H
Project:	San Juan, NM NAD83	TVD Reference:	GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
Site:	Athena 2308-14L	MD Reference:	GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
Well:	Athena 2308-14L 2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Project	San Juan, 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	Athena 2308-14L				
Site Position:		Northing:	1,901,483.74 usft	Latitude:	36.2256570
From:	Lat/Long	Easting:	2,774,726.48 usft	Longitude:	-107.6582660
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.10 °

Well	Athena 2308-14L 2H					
Well Position	+N/-S	0.00 usft	Northing:	1,901,464.44 usft	Latitude:	36.2256040
	+E/-W	0.00 usft	Easting:	2,774,721.50 usft	Longitude:	-107.6582830
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,878.00 usft

Wellbore	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/18/2018	8.92	62.85	49,577

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	252.68	

Survey Program		Date	3/6/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
415.00	6,109.00	Survey #1 - MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
6,162.00	10,869.00	Survey #2 - Lateral MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

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
415.00	0.59	276.91	414.99	0.26	-2.12	1.95	0.14	0.14	0.00
First SDI Surface MWD Survey									
476.00	0.79	276.55	475.99	0.34	-2.85	2.62	0.33	0.33	-0.59
537.00	0.89	280.85	536.98	0.48	-3.73	3.42	0.19	0.16	7.05
597.00	1.53	224.43	596.97	0.00	-4.75	4.54	2.13	1.07	-94.03
657.00	2.34	207.48	656.94	-1.66	-5.88	6.11	1.64	1.35	-28.25
718.00	2.33	205.54	717.88	-3.89	-6.99	7.83	0.13	-0.02	-3.18
778.00	2.37	204.91	777.83	-6.11	-8.04	9.49	0.08	0.07	-1.05
840.00	2.33	200.73	839.78	-8.45	-9.02	11.13	0.28	-0.06	-6.74



Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 2H
TVD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
MD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

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)
900.00	2.32	199.42	899.73	-10.74	-9.86	12.61	0.09	-0.02	-2.18
961.00	2.43	195.18	960.68	-13.15	-10.61	14.04	0.34	0.18	-6.95
1,022.00	2.13	201.51	1,021.63	-15.45	-11.36	15.45	0.64	-0.49	10.38
1,082.00	2.09	209.43	1,081.59	-17.45	-12.31	16.94	0.49	-0.07	13.20
1,143.00	1.86	210.19	1,142.56	-19.27	-13.35	18.48	0.38	-0.38	1.25
1,203.00	1.76	207.87	1,202.53	-20.93	-14.27	19.85	0.21	-0.17	-3.87
1,264.00	1.75	210.35	1,263.50	-22.56	-15.18	21.21	0.13	-0.02	4.07
1,325.00	1.68	210.47	1,324.47	-24.13	-16.10	22.56	0.11	-0.11	0.20
1,386.00	1.38	208.42	1,385.45	-25.55	-16.91	23.75	0.50	-0.49	-3.36
1,446.00	1.34	194.63	1,445.43	-26.86	-17.43	24.64	0.55	-0.07	-22.98
1,507.00	1.36	202.83	1,506.41	-28.22	-17.89	25.48	0.32	0.03	13.44
1,568.00	1.11	210.32	1,567.40	-29.40	-18.47	26.38	0.49	-0.41	12.28
1,629.00	1.11	201.50	1,628.39	-30.46	-18.98	27.19	0.28	0.00	-14.46
1,690.00	1.23	202.36	1,689.38	-31.61	-19.45	27.98	0.20	0.20	1.41
1,751.00	0.67	208.89	1,750.37	-32.53	-19.87	28.65	0.93	-0.92	10.70
1,812.00	0.83	205.92	1,811.36	-33.24	-20.24	29.21	0.27	0.26	-4.87
1,873.00	0.87	207.27	1,872.36	-34.05	-20.64	29.84	0.07	0.07	2.21
1,933.00	0.45	181.48	1,932.35	-34.69	-20.86	30.24	0.84	-0.70	-42.98
1,994.00	0.74	158.45	1,993.35	-35.30	-20.72	30.29	0.61	0.48	-37.75
2,054.00	1.69	184.49	2,053.33	-36.54	-20.64	30.59	1.79	1.58	43.40
2,115.00	2.08	189.78	2,114.30	-38.53	-20.90	31.42	0.70	0.64	8.67
2,176.00	2.82	198.44	2,175.25	-41.04	-21.57	32.81	1.35	1.21	14.20
2,236.00	3.48	182.96	2,235.16	-44.26	-22.13	34.30	1.78	1.10	-25.80
2,297.00	4.49	175.64	2,296.01	-48.49	-22.04	35.48	1.85	1.66	-12.00
2,357.00	6.49	189.05	2,355.73	-54.18	-22.40	37.51	3.94	3.33	22.35
2,418.00	9.50	198.03	2,416.13	-62.37	-24.50	41.95	5.33	4.93	14.72
2,479.00	11.66	200.15	2,476.09	-72.95	-28.18	48.62	3.60	3.54	3.48
2,540.00	15.38	201.30	2,535.39	-86.28	-33.24	57.42	6.11	6.10	1.89
2,601.00	17.98	199.35	2,593.82	-102.70	-39.30	68.09	4.36	4.26	-3.20
2,662.00	20.40	196.36	2,651.43	-121.79	-45.42	79.61	4.28	3.97	-4.90
2,723.00	23.04	193.73	2,708.09	-143.59	-51.25	91.67	4.61	4.33	-4.31
2,782.00	24.82	191.14	2,762.02	-166.96	-56.38	103.53	3.50	3.02	-4.39
2,845.00	25.65	188.48	2,819.01	-193.42	-60.94	115.76	2.23	1.32	-4.22
2,909.00	27.23	188.02	2,876.32	-221.62	-65.03	128.06	2.49	2.47	-0.72
2,972.00	29.27	182.98	2,931.82	-251.28	-67.84	139.57	4.98	3.24	-8.00
3,036.00	31.20	181.03	2,987.11	-283.48	-68.95	150.22	3.38	3.02	-3.05
3,099.00	33.36	181.32	3,040.37	-317.12	-69.65	160.90	3.44	3.43	0.46
3,162.00	32.81	179.83	3,093.16	-351.50	-69.99	171.47	1.56	-0.87	-2.37
3,226.00	32.56	179.12	3,147.02	-386.06	-69.68	181.45	0.72	-0.39	-1.11
3,289.00	33.99	180.53	3,199.69	-420.62	-69.58	191.65	2.58	2.27	2.24
3,352.00	33.73	177.63	3,252.01	-455.71	-69.02	201.56	2.60	-0.41	-4.60
3,416.00	33.59	176.00	3,305.28	-491.13	-67.05	210.22	1.43	-0.22	-2.55
3,479.00	33.95	175.71	3,357.65	-526.06	-64.52	218.20	0.63	0.57	-0.46



Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 2H
TVD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
MD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

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)
3,543.00	34.73	176.19	3,410.50	-562.07	-61.97	226.49	1.29	1.22	0.75
3,606.00	36.09	176.01	3,461.84	-598.49	-59.49	234.96	2.17	2.16	-0.29
3,670.00	35.70	175.81	3,513.69	-635.91	-56.81	243.55	0.64	-0.61	-0.31
3,733.00	35.47	177.35	3,564.92	-672.51	-54.62	252.36	1.47	-0.37	2.44
3,796.00	35.22	178.48	3,616.31	-708.93	-53.30	261.93	1.11	-0.40	1.79
3,860.00	34.29	178.01	3,668.89	-745.39	-52.18	271.72	1.51	-1.45	-0.73
3,923.00	35.10	178.91	3,720.69	-781.24	-51.22	281.48	1.52	1.29	1.43
3,987.00	34.82	181.09	3,773.15	-817.91	-51.22	292.39	2.00	-0.44	3.41
4,050.00	33.31	180.82	3,825.33	-853.19	-51.81	303.46	2.41	-2.40	-0.43
4,113.00	33.55	181.72	3,877.91	-887.89	-52.58	314.52	0.87	0.38	1.43
4,176.00	35.62	184.29	3,929.78	-923.59	-54.47	326.96	4.02	3.29	4.08
4,239.00	37.80	186.44	3,980.28	-961.07	-58.01	341.50	4.02	3.46	3.41
4,301.00	37.64	186.27	4,029.33	-998.77	-62.21	356.73	0.31	-0.26	-0.27
4,364.00	36.64	185.60	4,079.55	-1,036.60	-66.14	371.75	1.71	-1.59	-1.06
4,427.00	34.97	184.25	4,130.64	-1,073.32	-69.32	385.71	2.93	-2.65	-2.14
4,490.00	33.51	183.63	4,182.72	-1,108.68	-71.76	398.57	2.38	-2.32	-0.98
4,552.00	31.17	182.63	4,235.10	-1,141.80	-73.58	410.16	3.87	-3.77	-1.61
4,615.00	28.02	181.80	4,289.87	-1,172.88	-74.79	420.57	5.04	-5.00	-1.32
Last SDI Surface MWD Survey									
4,675.00	28.28	185.03	4,342.78	-1,201.13	-76.48	430.60	2.58	0.43	5.38
First SDI Curve MWD Survey									
4,739.00	30.50	189.01	4,398.54	-1,232.28	-80.35	443.57	4.62	3.47	6.22
4,802.00	31.93	188.08	4,452.42	-1,264.56	-85.20	457.81	2.40	2.27	-1.48
4,866.00	34.21	188.44	4,506.05	-1,299.12	-90.22	472.89	3.58	3.56	0.56
4,897.00	36.47	190.42	4,531.34	-1,316.81	-93.16	480.96	8.17	7.29	6.39
4,929.00	37.95	195.16	4,556.83	-1,335.66	-97.46	490.68	10.08	4.63	14.81
4,960.00	38.94	200.53	4,581.11	-1,353.99	-103.37	501.78	11.23	3.19	17.32
4,992.00	38.34	203.90	4,606.11	-1,372.48	-110.92	514.49	6.84	-1.88	10.53
5,023.00	37.54	205.09	4,630.56	-1,389.83	-118.82	527.19	3.50	-2.58	3.84
5,055.00	36.93	204.16	4,656.04	-1,407.43	-126.89	540.14	2.59	-1.91	-2.91
5,086.00	37.39	205.42	4,680.74	-1,424.43	-134.74	552.69	2.87	1.48	4.06
5,118.00	38.84	208.12	4,705.92	-1,442.06	-143.64	566.44	6.90	4.53	8.44
5,149.00	40.44	208.91	4,729.79	-1,459.43	-153.08	580.63	5.41	5.16	2.55
5,181.00	41.44	212.68	4,753.97	-1,477.43	-163.82	596.24	8.33	3.13	11.78
5,213.00	40.74	217.22	4,778.09	-1,494.67	-175.86	612.86	9.58	-2.19	14.19
5,244.00	39.13	220.55	4,801.86	-1,510.16	-188.34	629.38	8.63	-5.19	10.74
5,276.00	38.69	224.06	4,826.77	-1,525.02	-201.86	646.72	7.02	-1.38	10.97
5,308.00	40.67	226.77	4,851.40	-1,539.35	-216.41	664.88	8.22	6.19	8.47
5,339.00	42.56	230.66	4,874.57	-1,552.92	-231.89	683.69	10.32	6.10	12.55
5,370.00	45.04	231.29	4,896.95	-1,566.42	-248.56	703.62	8.12	8.00	2.03
5,402.00	48.80	231.55	4,918.80	-1,581.00	-266.82	725.40	11.76	11.75	0.81
5,433.00	50.94	232.96	4,938.78	-1,595.50	-285.57	747.61	7.73	6.90	4.55
5,465.00	54.16	233.08	4,958.24	-1,610.78	-305.86	771.53	10.07	10.06	0.38
5,497.00	56.82	233.47	4,976.36	-1,626.54	-326.99	796.40	8.37	8.31	1.22

Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 2H
TVD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
MD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

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)
5,529.00	55.84	237.03	4,994.11	-1,641.72	-348.87	821.80	9.75	-3.06	11.13
5,560.00	55.88	239.18	5,011.51	-1,655.28	-370.65	846.63	5.74	0.13	6.94
5,592.00	57.20	242.79	5,029.15	-1,668.22	-393.99	872.77	10.28	4.13	11.28
5,623.00	59.76	246.03	5,045.36	-1,679.62	-417.82	898.91	12.15	8.26	10.45
5,655.00	63.22	248.32	5,060.64	-1,690.52	-443.74	926.90	12.51	10.81	7.16
5,687.00	66.86	249.68	5,074.14	-1,700.91	-470.82	955.84	12.01	11.38	4.25
5,719.00	70.10	250.98	5,085.88	-1,710.92	-498.85	985.58	10.81	10.13	4.06
5,750.00	72.59	252.06	5,095.79	-1,720.23	-526.70	1,014.95	8.68	8.03	3.48
5,782.00	74.53	253.02	5,104.85	-1,729.44	-555.98	1,045.64	6.71	6.06	3.00
5,813.00	76.14	254.56	5,112.70	-1,737.81	-584.77	1,075.62	7.08	5.19	4.97
5,845.00	77.17	255.66	5,120.08	-1,745.81	-614.86	1,106.72	4.64	3.22	3.44
5,877.00	76.80	258.14	5,127.29	-1,752.87	-645.23	1,137.82	7.64	-1.16	7.75
5,909.00	78.07	260.93	5,134.25	-1,758.54	-675.94	1,168.82	9.39	3.97	8.72
5,941.00	80.76	262.21	5,140.13	-1,763.15	-707.05	1,199.90	9.28	8.41	4.00
5,971.00	82.79	262.71	5,144.42	-1,767.05	-736.48	1,229.15	6.96	6.77	1.67
6,002.00	85.47	264.42	5,147.59	-1,770.50	-767.12	1,259.43	10.24	8.65	5.52
6,034.00	86.81	265.16	5,149.75	-1,773.40	-798.92	1,290.65	4.78	4.19	2.31
6,064.00	86.48	265.89	5,151.50	-1,775.74	-828.77	1,319.85	2.67	-1.10	2.43
6,097.00	87.92	267.35	5,153.11	-1,777.68	-861.68	1,351.83	6.21	4.36	4.42
6,109.00	88.49	267.05	5,153.49	-1,778.27	-873.66	1,363.45	5.37	4.75	-2.50
Last SDI Curve MWD Survey									
6,162.00	89.40	268.59	5,154.47	-1,780.28	-926.61	1,414.60	3.37	1.72	2.91
First SDI Lateral MWD Survey									
6,223.00	91.24	269.02	5,154.12	-1,781.56	-987.59	1,473.19	3.10	3.02	0.70
6,283.00	90.50	269.01	5,153.21	-1,782.59	-1,047.57	1,530.76	1.23	-1.23	-0.02
6,342.00	90.64	270.55	5,152.63	-1,782.81	-1,106.57	1,587.15	2.62	0.24	2.61
6,402.00	90.60	270.39	5,151.98	-1,782.32	-1,166.56	1,644.28	0.27	-0.07	-0.27
6,463.00	90.47	270.13	5,151.41	-1,782.04	-1,227.56	1,702.43	0.48	-0.21	-0.43
6,524.00	90.64	271.02	5,150.82	-1,781.43	-1,288.55	1,760.47	1.49	0.28	1.46
6,585.00	90.97	271.40	5,149.96	-1,780.14	-1,349.53	1,818.30	0.83	0.54	0.62
6,645.00	91.34	271.83	5,148.75	-1,778.45	-1,409.50	1,875.05	0.95	0.62	0.72
6,705.00	90.84	272.09	5,147.61	-1,776.40	-1,469.45	1,931.67	0.94	-0.83	0.43
6,766.00	90.57	272.95	5,146.86	-1,773.72	-1,530.39	1,989.04	1.48	-0.44	1.41
6,826.00	90.91	273.12	5,146.08	-1,770.54	-1,590.30	2,045.29	0.63	0.57	0.28
6,888.00	90.10	272.10	5,145.54	-1,767.72	-1,652.23	2,103.58	2.10	-1.31	-1.65
6,948.00	90.30	271.69	5,145.33	-1,765.74	-1,712.20	2,160.23	0.76	0.33	-0.68
7,009.00	91.91	272.18	5,144.15	-1,763.68	-1,773.15	2,217.81	2.76	2.64	0.80
7,070.00	91.31	271.83	5,142.44	-1,761.54	-1,834.08	2,275.35	1.14	-0.98	-0.57
7,130.00	89.77	272.05	5,141.87	-1,759.51	-1,894.05	2,331.99	2.59	-2.57	0.37
7,191.00	90.00	272.40	5,141.99	-1,757.14	-1,955.00	2,389.47	0.69	0.38	0.57
7,251.00	88.52	271.07	5,142.77	-1,755.33	-2,014.96	2,446.17	3.32	-2.47	-2.22
7,312.00	87.82	270.44	5,144.72	-1,754.52	-2,075.93	2,504.13	1.54	-1.15	-1.03
7,372.00	88.09	270.23	5,146.86	-1,754.17	-2,135.89	2,561.27	0.57	0.45	-0.35



Survey Report



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Wellbore: OH
Design: OH

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TVD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
MD Reference: GL 6878' & RKB 14' @ 6892.00usft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

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)
7,433.00	88.76	269.83	5,148.54	-1,754.14	-2,196.86	2,619.47	1.28	1.10	-0.66
7,494.00	89.29	270.15	5,149.57	-1,754.15	-2,257.86	2,677.70	1.01	0.87	0.52
7,555.00	90.27	269.75	5,149.81	-1,754.21	-2,318.85	2,735.95	1.74	1.61	-0.66
7,616.00	89.63	269.14	5,149.86	-1,754.80	-2,379.85	2,794.36	1.45	-1.05	-1.00
7,677.00	90.10	269.44	5,150.00	-1,755.55	-2,440.85	2,852.81	0.91	0.77	0.49
7,738.00	90.37	268.60	5,149.75	-1,756.60	-2,501.84	2,911.35	1.45	0.44	-1.38
7,799.00	90.67	268.97	5,149.20	-1,757.89	-2,562.82	2,969.95	0.78	0.49	0.61
7,860.00	91.04	268.80	5,148.29	-1,759.08	-2,623.80	3,028.52	0.67	0.61	-0.28
7,921.00	90.27	268.62	5,147.59	-1,760.45	-2,684.78	3,087.14	1.30	-1.26	-0.30
7,982.00	90.54	269.62	5,147.16	-1,761.39	-2,745.77	3,145.65	1.70	0.44	1.64
8,043.00	91.37	269.70	5,146.15	-1,761.75	-2,806.76	3,203.98	1.37	1.36	0.13
8,104.00	90.60	268.90	5,145.10	-1,762.49	-2,867.75	3,262.42	1.82	-1.26	-1.31
8,165.00	89.63	267.41	5,144.97	-1,764.46	-2,928.71	3,321.21	2.91	-1.59	-2.44
8,226.00	92.22	269.35	5,143.99	-1,766.18	-2,989.67	3,379.92	5.30	4.25	3.18
8,285.00	93.16	269.88	5,141.22	-1,766.58	-3,048.60	3,436.30	1.83	1.59	0.90
8,344.00	92.55	270.20	5,138.28	-1,766.54	-3,107.53	3,492.54	1.17	-1.03	0.54
8,405.00	92.02	270.45	5,135.85	-1,766.19	-3,168.48	3,550.62	0.96	-0.87	0.41
8,467.00	90.94	269.24	5,134.25	-1,766.36	-3,230.46	3,609.84	2.62	-1.74	-1.95
8,527.00	91.01	269.37	5,133.23	-1,767.09	-3,290.45	3,667.32	0.25	0.12	0.22
8,588.00	92.59	270.08	5,131.31	-1,767.38	-3,351.41	3,725.61	2.84	2.59	1.16
8,649.00	92.62	270.17	5,128.54	-1,767.25	-3,412.35	3,783.75	0.16	0.05	0.15
8,710.00	90.17	268.07	5,127.05	-1,768.18	-3,473.32	3,842.23	5.29	-4.02	-3.44
8,769.00	90.44	269.80	5,126.74	-1,769.28	-3,532.30	3,898.87	2.97	0.46	2.93
8,832.00	91.51	270.79	5,125.67	-1,768.96	-3,595.29	3,958.90	2.31	1.70	1.57
8,895.00	91.51	270.73	5,124.01	-1,768.12	-3,658.26	4,018.77	0.10	0.00	-0.10
8,957.00	91.01	270.14	5,122.64	-1,767.65	-3,720.25	4,077.80	1.25	-0.81	-0.95
9,021.00	91.38	270.75	5,121.31	-1,767.15	-3,784.23	4,138.74	1.11	0.58	0.95
9,084.00	92.55	273.45	5,119.15	-1,764.85	-3,847.14	4,198.11	4.67	1.86	4.29
9,147.00	91.38	273.75	5,116.99	-1,760.89	-3,909.98	4,256.92	1.92	-1.86	0.48
9,210.00	89.29	274.31	5,116.62	-1,756.47	-3,972.82	4,315.59	3.43	-3.32	0.89
9,271.00	91.74	275.63	5,116.07	-1,751.18	-4,033.58	4,372.03	4.56	4.02	2.16
9,336.00	90.50	274.35	5,114.80	-1,745.53	-4,098.32	4,432.15	2.74	-1.91	-1.97
9,399.00	89.03	274.63	5,115.06	-1,740.60	-4,161.13	4,490.64	2.38	-2.33	0.44
9,461.00	89.30	274.50	5,115.96	-1,735.66	-4,222.92	4,548.16	0.48	0.44	-0.21
9,523.00	89.09	274.09	5,116.83	-1,731.02	-4,284.74	4,605.80	0.74	-0.34	-0.66
9,584.00	90.30	272.70	5,117.16	-1,727.41	-4,345.63	4,662.85	3.02	1.98	-2.28
9,650.00	90.27	272.46	5,116.83	-1,724.44	-4,411.56	4,724.91	0.37	-0.05	-0.36
9,713.00	91.24	270.49	5,116.00	-1,722.82	-4,474.53	4,784.54	3.49	1.54	-3.13
9,776.00	91.51	270.30	5,114.49	-1,722.38	-4,537.51	4,844.54	0.52	0.43	-0.30
9,838.00	91.41	270.00	5,112.91	-1,722.22	-4,599.49	4,903.66	0.51	-0.16	-0.48
9,901.00	91.14	269.24	5,111.51	-1,722.64	-4,662.48	4,963.91	1.28	-0.43	-1.21
9,965.00	91.07	268.87	5,110.27	-1,723.69	-4,726.45	5,025.30	0.59	-0.11	-0.58
10,028.00	90.30	268.21	5,109.52	-1,725.30	-4,789.43	5,085.90	1.61	-1.22	-1.05
10,091.00	90.54	267.44	5,109.06	-1,727.69	-4,852.38	5,146.71	1.28	0.38	-1.22



Survey Report



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North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

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)
10,154.00	90.40	265.79	5,108.54	-1,731.41	-4,915.27	5,207.85	2.63	-0.22	-2.62
10,218.00	90.91	264.88	5,107.81	-1,736.61	-4,979.05	5,270.29	1.63	0.80	-1.42
10,282.00	91.01	264.43	5,106.74	-1,742.57	-5,042.76	5,332.89	0.72	0.16	-0.70
10,346.00	91.34	266.54	5,105.42	-1,747.61	-5,106.55	5,395.28	3.34	0.52	3.30
10,408.00	92.48	266.84	5,103.36	-1,751.19	-5,168.41	5,455.40	1.90	1.84	0.48
10,472.00	92.11	267.83	5,100.80	-1,754.16	-5,232.29	5,517.27	1.65	-0.58	1.55
10,534.00	91.65	271.28	5,098.76	-1,754.64	-5,294.24	5,576.56	5.61	-0.74	5.56
10,597.00	90.60	272.46	5,097.52	-1,752.59	-5,357.19	5,636.04	2.51	-1.67	1.87
10,660.00	88.05	273.46	5,098.27	-1,749.33	-5,420.10	5,695.13	4.35	-4.05	1.59
10,723.00	88.09	273.26	5,100.39	-1,745.64	-5,482.96	5,754.03	0.32	0.06	-0.32
10,785.00	88.15	272.44	5,102.42	-1,742.56	-5,544.85	5,812.20	1.33	0.10	-1.32
10,807.00	87.88	271.89	5,103.18	-1,741.73	-5,566.82	5,832.93	2.78	-1.23	-2.50
Last SDI Lateral MWD Survey									
10,869.00	87.88	271.89	5,105.48	-1,739.69	-5,628.74	5,891.44	0.00	0.00	0.00
Projection to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
415.00	414.99	0.26	-2.12	First SDI Surface MWD Survey
4,615.00	4,289.87	-1,172.88	-74.79	Last SDI Surface MWD Survey
4,675.00	4,342.78	-1,201.13	-76.48	First SDI Curve MWD Survey
6,109.00	5,153.49	-1,778.27	-873.66	Last SDI Curve MWD Survey
6,162.00	5,154.47	-1,780.28	-926.61	First SDI Lateral MWD Survey
10,807.00	5,103.18	-1,741.73	-5,566.82	Last SDI Lateral MWD Survey
10,869.00	5,105.48	-1,739.69	-5,628.74	Projection to TD

Checked By: _____ Approved By: _____ Date: _____