

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) 476-3480 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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☒ AMENDED REPORT
As-Drilled Plat

¹ API Number 30-045-35876	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 320689	⁵ Property Name ATHENA 2308 14L	⁶ Well Number 3H
⁷ GRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 6878'

¹⁰ Surface Location

UL or lot no. L	Section 14	Township 23-N	Range 8-W	Lot Idn	Feet from the 2200	North/South line SOUTH	Feet from the 578	East/West line WEST	County SAN JUAN
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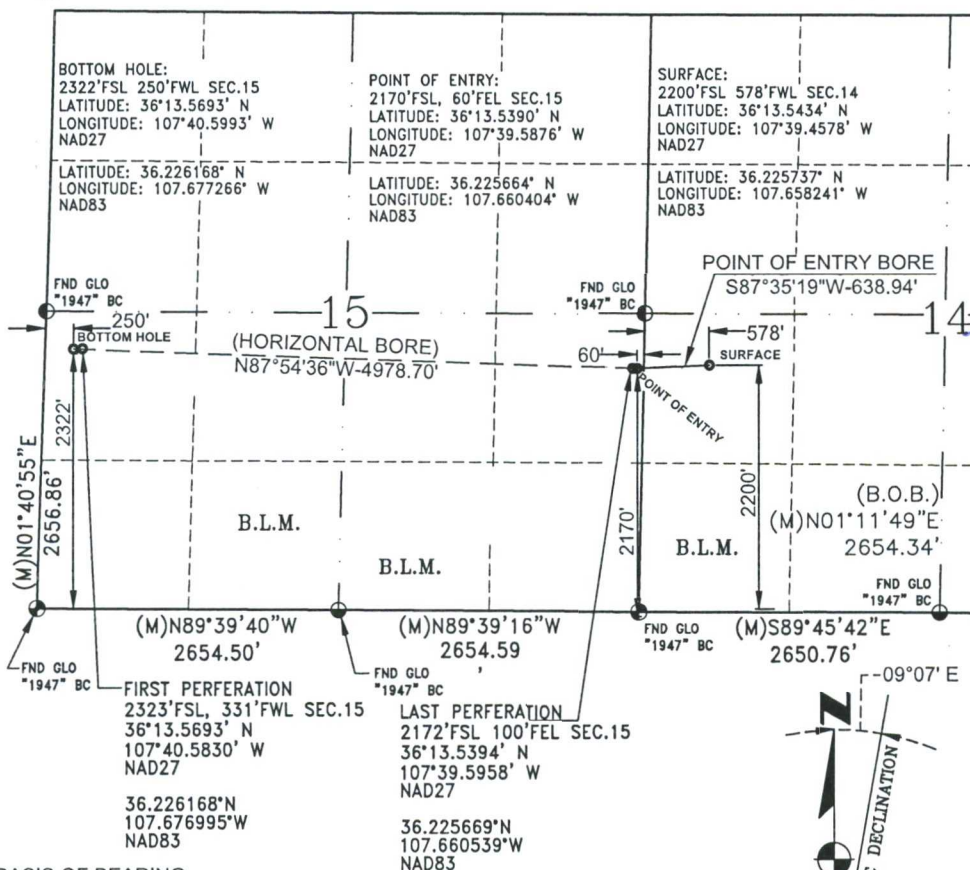
¹¹ Bottom Hole Location If Different From Surface

UL or lot no. L	Section 15	Township 23-N	Range 8-W	Lot Idn	Feet from the 2322	North/South line SOUTH	Feet from the 250	East/West line WEST	County SAN JUAN
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¹² Dedicated Acres 320.00 ACRES = S/2 SEC. 15	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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 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.

JULY 23, 2018
Date of Survey

Signature and Seal of Professional Surveyor



GLEN W. RUSSELL

Certificate Number

15703

CONFIDENTIAL



Logos Operating LLC

San Juan, NM NAD83

Athena 2308-14L

Athena 2308-14L 3H

OH

Design: OH

ENCLOSURE
JUL 27 2018
DISTRICT III

Standard Survey Report

09 July, 2018



www.scientificdrilling.com

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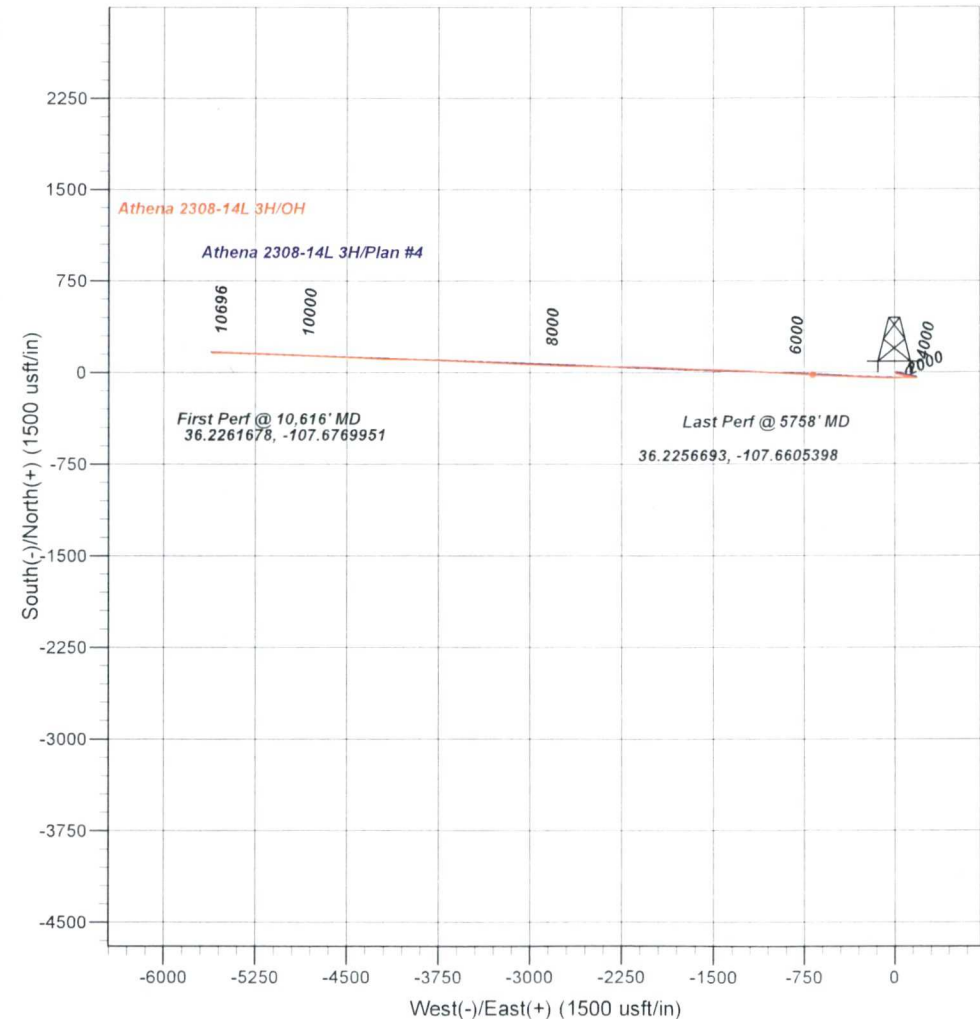
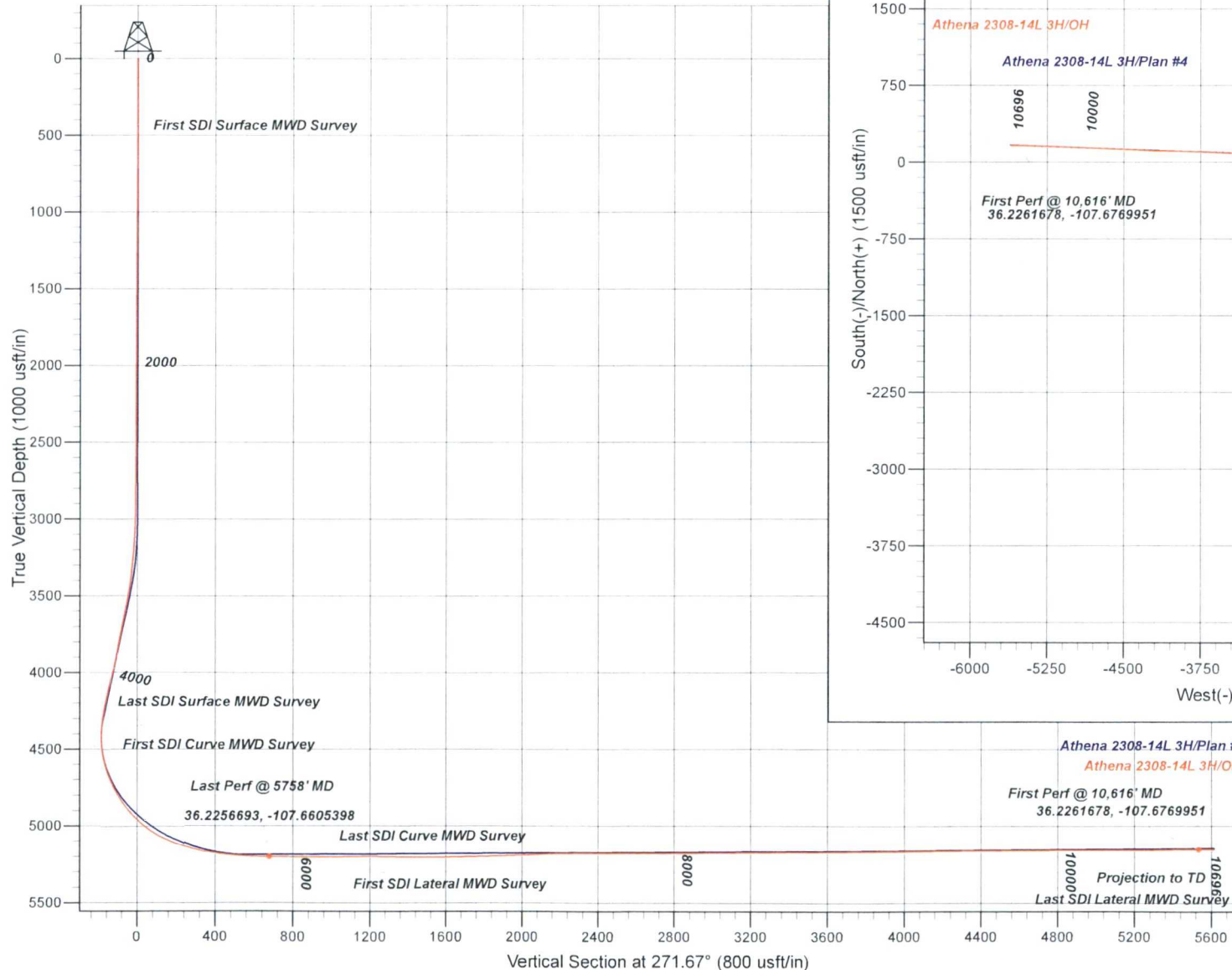
Company Name: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 3H
Wellbore: OH

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WELL DETAILS: Athena 2308-14L 3H

+N/-S	+E/-W	GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)	6878.00	Northing	Easting	Latitude	Longitude
0.00	0.00			1901512.88	2774733.79	36.2257370	-107.6582410



Design: OH (Athena 2308-14L 3H/OH)

Created By: Janie Collins Date: 11:45, July 09 2018

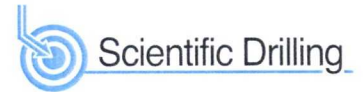
PROJECT DETAILS: San Juan, NM NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone

System Datum: Mean Sea Level
Local North: True



Scientific Drilling, Intl Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 3H
TVD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
MD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Project: San Juan, NM NAD83
Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Western Zone

System Datum: Mean Sea Level

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 3H

Well Position: +N/-S 0.00 usft Northing: 1,901,512.88 usft Latitude: 36.2257370
+E/-W 0.00 usft Easting: 2,774,733.80 usft Longitude: -107.6582410
Position Uncertainty: 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 6,878.00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/18/2018	8.90	62.83	49,548

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	271.67

Survey Program Date: 7/9/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
440.00	4,437.00	Survey #1 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM
4,484.00	5,860.00	Survey #2 - Curve MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM
5,952.00	10,696.00	Survey #3 - Lateral MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM

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
440.00	0.32	151.50	440.00	-1.08	0.59	-0.62	0.07	0.07	0.00
First SDI Surface MWD Survey									
533.00	0.42	149.80	533.00	-1.60	0.88	-0.93	0.11	0.11	-1.83
625.00	0.35	82.64	624.99	-1.86	1.33	-1.38	0.47	-0.08	-73.00
719.00	0.37	69.86	718.99	-1.72	1.90	-1.95	0.09	0.02	-13.60
814.00	0.37	63.23	813.99	-1.47	2.46	-2.50	0.05	0.00	-6.98
906.00	0.39	71.39	905.99	-1.24	3.02	-3.06	0.06	0.02	8.87
998.00	0.34	78.24	997.99	-1.08	3.59	-3.62	0.07	-0.05	7.45

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Scientific Drilling, Intl

Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 3H
TVD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
MD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
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)
1,092.00	0.29	101.13	1,091.99	-1.07	4.09	-4.12	0.14	-0.05	24.35
1,184.00	0.21	80.20	1,183.98	-1.09	4.49	-4.52	0.13	-0.09	-22.75
1,277.00	0.17	86.95	1,276.98	-1.05	4.79	-4.82	0.05	-0.04	7.26
1,369.00	0.14	60.73	1,368.98	-0.99	5.03	-5.06	0.08	-0.03	-28.50
1,462.00	0.34	124.78	1,461.98	-1.09	5.35	-5.38	0.33	0.22	68.87
1,557.00	0.47	130.76	1,556.98	-1.51	5.88	-5.92	0.14	0.14	6.29
1,651.00	0.33	135.56	1,650.98	-1.95	6.36	-6.42	0.15	-0.15	5.11
1,746.00	0.39	138.21	1,745.98	-2.39	6.77	-6.84	0.07	0.06	2.79
1,841.00	0.84	142.15	1,840.97	-3.18	7.41	-7.50	0.48	0.47	4.15
1,935.00	0.26	109.28	1,934.97	-3.79	8.04	-8.14	0.68	-0.62	-34.97
2,030.00	0.38	171.41	2,029.96	-4.18	8.29	-8.41	0.36	0.13	65.40
2,125.00	0.27	190.91	2,124.96	-4.71	8.29	-8.43	0.16	-0.12	20.53
2,219.00	0.42	249.44	2,218.96	-5.05	7.93	-8.07	0.38	0.16	62.27
2,313.00	0.64	172.37	2,312.96	-5.69	7.67	-7.84	0.73	0.23	-81.99
2,408.00	0.60	147.23	2,407.95	-6.63	8.01	-8.20	0.29	-0.04	-26.46
2,503.00	0.57	156.63	2,502.95	-7.48	8.47	-8.69	0.11	-0.03	9.89
2,597.00	0.86	165.00	2,596.94	-8.59	8.84	-9.09	0.33	0.31	8.90
2,692.00	1.07	177.12	2,691.93	-10.17	9.07	-9.36	0.31	0.22	12.76
2,787.00	0.88	189.61	2,786.91	-11.77	8.99	-9.33	0.30	-0.20	13.15
2,882.00	0.28	7.28	2,881.91	-12.26	8.90	-9.25	1.22	-0.63	187.02
2,976.00	1.14	115.93	2,975.90	-12.44	9.77	-10.13	1.34	0.91	115.59
3,071.00	1.97	100.40	3,070.87	-13.15	12.22	-12.60	0.97	0.87	-16.35
3,165.00	3.23	101.35	3,164.77	-13.97	16.41	-16.81	1.34	1.34	1.01
3,260.00	3.96	106.91	3,259.58	-15.45	22.17	-22.61	0.85	0.77	5.85
3,355.00	5.60	105.90	3,354.25	-17.67	29.77	-30.27	1.73	1.73	-1.06
3,450.00	7.19	99.11	3,448.66	-19.88	40.10	-40.66	1.85	1.67	-7.15
3,544.00	8.34	100.33	3,541.79	-22.04	52.61	-53.23	1.24	1.22	1.30
3,639.00	9.60	101.54	3,635.63	-24.86	67.15	-67.85	1.34	1.33	1.27
3,734.00	9.60	100.57	3,729.30	-27.89	82.70	-83.48	0.17	0.00	-1.02
3,829.00	8.26	103.62	3,823.15	-30.95	97.12	-97.98	1.50	-1.41	3.21
3,923.00	9.65	99.57	3,916.00	-33.85	111.45	-112.39	1.62	1.48	-4.31
4,018.00	11.49	102.08	4,009.38	-37.16	128.56	-129.59	2.00	1.94	2.64
4,113.00	11.43	104.93	4,102.49	-41.56	146.91	-148.06	0.60	-0.06	3.00
4,207.00	9.15	102.11	4,194.97	-45.53	163.22	-164.47	2.48	-2.43	-3.00
4,294.00	7.91	102.65	4,281.01	-48.29	175.82	-177.15	1.43	-1.43	0.62
4,342.00	4.91	97.67	4,328.70	-49.29	181.08	-182.44	6.35	-6.25	-10.38
4,389.00	2.52	87.11	4,375.60	-49.51	184.11	-185.47	5.27	-5.09	-22.47
4,437.00	0.57	342.33	4,423.59	-49.23	185.09	-186.45	5.67	-4.06	-218.29
Last SDI Surface MWD Survey									
4,484.00	3.10	284.82	4,470.56	-48.68	183.79	-185.13	6.03	5.38	-122.36
First SDI Curve MWD Survey									
4,531.00	6.26	276.61	4,517.40	-48.06	180.01	-181.34	6.86	6.72	-17.47
4,578.00	9.31	274.72	4,563.96	-47.45	173.68	-174.99	6.51	6.49	-4.02
4,626.00	12.78	274.40	4,611.06	-46.72	164.51	-165.80	7.23	7.23	-0.67



Scientific Drilling, Intl
Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 3H
TVD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
MD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
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)
4,673.00	15.68	269.65	4,656.62	-46.36	152.98	-154.26	6.65	6.17	-10.11
4,720.00	19.34	266.56	4,701.43	-46.87	138.85	-140.16	8.03	7.79	-6.57
4,767.00	23.04	263.85	4,745.25	-48.32	121.93	-123.29	8.14	7.87	-5.77
4,815.00	24.87	266.65	4,789.11	-49.92	102.51	-103.93	4.49	3.81	5.83
4,863.00	27.63	271.36	4,832.17	-50.25	81.30	-82.73	7.20	5.75	9.81
4,910.00	31.19	270.98	4,873.10	-49.78	58.23	-59.66	7.58	7.57	-0.81
4,957.00	34.57	270.35	4,912.57	-49.49	32.72	-34.15	7.23	7.19	-1.34
5,005.00	38.23	272.18	4,951.20	-48.84	4.25	-5.68	7.95	7.63	3.81
5,052.00	42.53	272.17	4,986.99	-47.68	-26.17	24.76	9.15	9.15	-0.02
5,100.00	48.19	272.91	5,020.70	-46.16	-60.27	58.90	11.84	11.79	1.54
5,147.00	53.37	272.66	5,050.41	-44.40	-96.63	95.29	11.03	11.02	-0.53
5,194.00	58.39	272.29	5,076.77	-42.72	-135.49	134.19	10.70	10.68	-0.79
5,241.00	63.04	270.32	5,099.75	-41.80	-176.46	175.16	10.55	9.89	-4.19
5,289.00	66.03	270.64	5,120.39	-41.44	-219.79	218.49	6.26	6.23	0.67
5,336.00	69.21	271.28	5,138.28	-40.71	-263.24	261.94	6.88	6.77	1.36
5,384.00	72.61	271.60	5,153.98	-39.57	-308.57	307.29	7.11	7.08	0.67
5,431.00	75.72	271.11	5,166.80	-38.50	-353.77	352.50	6.69	6.62	-1.04
5,479.00	79.50	271.80	5,177.10	-37.31	-400.63	399.37	8.00	7.88	1.44
5,526.00	82.66	272.28	5,184.39	-35.65	-447.03	445.80	6.80	6.72	1.02
5,574.00	83.51	272.65	5,190.17	-33.60	-494.63	493.44	1.93	1.77	0.77
5,621.00	85.43	273.29	5,194.69	-31.18	-541.35	540.21	4.30	4.09	1.36
5,674.00	87.31	272.32	5,198.05	-28.59	-594.18	593.09	3.99	3.55	-1.83
5,758.00	88.38	273.06	5,201.21	-24.65	-678.02	677.02	1.55	1.27	0.88
36.2256693, -107.6605398 - Last Perf @ 5758' MD									
5,766.72	88.49	273.14	5,201.45	-24.18	-686.73	685.73	1.55	1.27	0.88
5,860.00	89.09	273.00	5,203.42	-19.18	-779.85	778.96	0.66	0.64	-0.15
Last SDI Curve MWD Survey									
5,952.00	90.44	273.50	5,203.79	-13.97	-871.70	870.92	1.56	1.47	0.54
First SDI Lateral MWD Survey									
6,045.00	90.03	273.45	5,203.41	-8.33	-964.53	963.88	0.44	-0.44	-0.05
6,137.00	90.64	273.75	5,202.88	-2.55	-1,056.34	1,055.82	0.74	0.66	0.33
6,231.00	90.40	272.95	5,202.02	2.94	-1,150.18	1,149.78	0.89	-0.26	-0.85
6,326.00	89.50	272.26	5,202.10	7.26	-1,245.08	1,244.76	1.19	-0.95	-0.73
6,418.00	89.40	272.19	5,202.99	10.83	-1,337.01	1,336.75	0.13	-0.11	-0.08
6,510.00	89.06	272.17	5,204.22	14.33	-1,428.93	1,428.74	0.37	-0.37	-0.02
6,604.00	90.97	272.65	5,204.20	18.28	-1,522.84	1,522.73	2.10	2.03	0.51
6,696.00	91.11	272.78	5,202.53	22.64	-1,614.72	1,614.70	0.21	0.15	0.14
6,789.00	91.48	272.63	5,200.43	27.02	-1,707.60	1,707.66	0.43	0.40	-0.16
6,881.00	91.31	272.35	5,198.19	31.02	-1,799.48	1,799.62	0.36	-0.18	-0.30
6,974.00	92.05	272.34	5,195.46	34.82	-1,892.36	1,892.58	0.80	0.80	-0.01
7,069.00	93.22	272.20	5,191.09	38.58	-1,987.19	1,987.47	1.24	1.23	-0.15
7,164.00	93.19	271.73	5,185.78	41.84	-2,081.98	2,082.32	0.49	-0.03	-0.49
7,258.00	91.71	270.71	5,181.76	43.83	-2,175.87	2,176.23	1.91	-1.57	-1.09



Scientific Drilling, Intl

Survey Report



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 Site: Athena 2308-14L
 Well: Athena 2308-14L 3H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 3H
 TVD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
 MD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
 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)
7,353.00	89.83	269.75	5,180.49	44.22	-2,270.86	2,271.18	2.22	-1.98	-1.01
7,447.00	89.66	270.33	5,180.91	44.28	-2,364.86	2,365.14	0.64	-0.18	0.62
7,542.00	90.30	269.80	5,180.94	44.39	-2,459.85	2,460.10	0.87	0.67	-0.56
7,637.00	90.87	271.69	5,179.97	45.62	-2,554.84	2,555.08	2.08	0.60	1.99
7,731.00	90.60	272.87	5,178.76	49.36	-2,648.75	2,649.07	1.29	-0.29	1.26
7,826.00	89.97	272.02	5,178.29	53.42	-2,743.66	2,744.06	1.11	-0.66	-0.89
7,921.00	90.07	271.86	5,178.26	56.63	-2,838.61	2,839.05	0.20	0.11	-0.17
8,016.00	90.67	272.22	5,177.64	60.01	-2,933.55	2,934.05	0.74	0.63	0.38
8,111.00	90.90	272.12	5,176.34	63.61	-3,028.47	3,029.04	0.26	0.24	-0.11
8,205.00	90.48	271.32	5,175.21	66.43	-3,122.42	3,123.03	0.96	-0.45	-0.85
8,300.00	90.37	273.44	5,174.51	70.38	-3,217.33	3,218.01	2.23	-0.12	2.23
8,395.00	90.47	273.17	5,173.81	75.85	-3,312.17	3,312.97	0.30	0.11	-0.28
8,489.00	90.84	272.99	5,172.74	80.90	-3,406.03	3,406.94	0.44	0.39	-0.19
8,584.00	91.28	272.99	5,170.98	85.86	-3,500.88	3,501.90	0.46	0.46	0.00
8,679.00	90.37	271.89	5,169.61	89.90	-3,595.78	3,596.88	1.50	-0.96	-1.16
8,774.00	90.37	271.80	5,169.00	92.96	-3,690.73	3,691.87	0.09	0.00	-0.09
8,868.00	90.67	271.92	5,168.14	96.01	-3,784.68	3,785.87	0.34	0.32	0.13
8,963.00	90.97	272.14	5,166.78	99.38	-3,879.61	3,880.86	0.39	0.32	0.23
9,058.00	90.84	271.82	5,165.28	102.66	-3,974.54	3,975.84	0.36	-0.14	-0.34
9,152.00	90.20	271.24	5,164.43	105.17	-4,068.50	4,069.84	0.92	-0.68	-0.62
9,247.00	90.54	271.18	5,163.82	107.17	-4,163.48	4,164.83	0.36	0.36	-0.06
9,342.00	91.08	273.65	5,162.47	111.18	-4,258.38	4,259.81	2.66	0.57	2.60
9,437.00	90.67	272.77	5,161.02	116.49	-4,353.22	4,354.76	1.02	-0.43	-0.93
9,531.00	90.00	271.91	5,160.47	120.33	-4,447.13	4,448.75	1.16	-0.71	-0.91
9,625.00	89.80	271.21	5,160.64	122.89	-4,541.10	4,542.75	0.77	-0.21	-0.74
9,721.00	90.87	273.07	5,160.08	126.48	-4,637.02	4,638.74	2.24	1.11	1.94
9,816.00	90.47	272.11	5,158.97	130.77	-4,731.92	4,733.72	1.09	-0.42	-1.01
9,911.00	89.56	271.93	5,158.94	134.12	-4,826.86	4,828.72	0.98	-0.96	-0.19
10,005.00	90.84	273.69	5,158.61	138.72	-4,920.74	4,922.69	2.32	1.36	1.87
10,100.00	90.40	272.11	5,157.58	143.53	-5,015.61	5,017.66	1.73	-0.46	-1.66
10,195.00	89.50	270.25	5,157.67	145.49	-5,110.58	5,112.65	2.18	-0.95	-1.96
10,289.00	89.97	272.65	5,158.10	147.86	-5,204.55	5,206.64	2.60	0.50	2.55
10,384.00	90.44	272.31	5,157.76	151.98	-5,299.46	5,301.63	0.61	0.49	-0.36
10,479.00	90.67	271.67	5,156.84	155.27	-5,394.39	5,396.63	0.72	0.24	-0.67
10,573.00	90.07	270.54	5,156.23	157.09	-5,488.37	5,490.62	1.36	-0.64	-1.20
10,616.00	90.25	270.18	5,156.11	157.36	-5,531.37	5,533.61	0.93	0.42	-0.83
36.2261678, -107.6769951 - First Perf @ 10,616' MD									
10,637.00	90.34	270.01	5,156.01	157.39	-5,552.37	5,554.60	0.93	0.42	-0.83
Last SDI Lateral MWD Survey									
10,696.00	90.34	270.01	5,155.66	157.40	-5,611.37	5,613.57	0.00	0.00	0.00
Projection to TD									



Scientific Drilling, Intl
Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Athena 2308-14L
Well: Athena 2308-14L 3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Athena 2308-14L 3H
TVD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
MD Reference: GL 6878' & RKB 25' @ 6903.00usft (Aztec 1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
440.00	440.00	-1.08	0.59	First SDI Surface MWD Survey
4,437.00	4,423.59	-49.23	185.09	Last SDI Surface MWD Survey
4,484.00	4,470.56	-48.68	183.79	First SDI Curve MWD Survey
5,758.00	5,201.21	-24.65	-678.02	36.2256693, -107.6605398
5,758.00	5,201.21	-24.65	-678.02	Last Perf @ 5758' MD
5,860.00	5,203.42	-19.18	-779.85	Last SDI Curve MWD Survey
5,952.00	5,203.79	-13.97	-871.70	First SDI Lateral MWD Survey
10,616.00	5,156.11	157.36	-5,531.37	36.2261678, -107.6769951
10,616.00	5,156.11	157.36	-5,531.37	First Perf @ 10,616' MD
10,637.00	5,156.01	157.39	-5,552.37	Last SDI Lateral MWD Survey
10,696.00	5,155.66	157.40	-5,611.37	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



End of Well Report for Athena 2308-14L 3H

Job Number: OP.010962	Region:	Lease/Block: Athena 2308-14L	Company Rep. #1: James Retherford
Customer:	Field: Logos - Athena Pad	API No. 30-045-35876	Company Rep. #2: Randy Edgeington
Well Name: Athena 2308-14L 3H	Project: San Juan, NM NAD83	Start Date: Friday, June 15, 2018	Geologist: Softrock
Rig Name: AD 1000	Structure: Athena 2308-14L	End Date: Monday, June 18, 2018	Directional Supervisor: Charles Paladino

Personnel Summary

Directional Drillers				MWD Operators				Gyro Surveyors			
Name	Start Date	End Date	Days	Name	Start Date	End Date	Days	Name	Start Date	End Date	Days
Matthew Schlaegel	6/15/2018	6/23/2018	9	William Kanavalov	6/15/2018	6/23/2018	9				
Jerry Kawaguchi	6/15/2018	6/19/2018	5	Tyson Rellergert	6/15/2018	6/19/2018	5				
Ryan Newell	6/19/2018	6/23/2018	5	Richard Tomlinson	6/20/2018	6/23/2018	4				

Drilling Summary

Start Depth:	356.00ft	End Depth:	4,261.00ft	Below Rotary Hours:	19.58hrs	Circulating Hours:	13.10hrs
Total Depth Drilled:	3,905.00ft	Total Drilled Hours:	9.55hrs	Ave. Total ROP:	408.90ft/hr	Percent Drilling:	48.77%
Total Rotating:	3,792.00ft	Rotating Hours:	8.22hrs	Ave. Rotating ROP:	461.50ft/hr	Percent Rotating:	97.11%
Total Sliding:	113.00ft	Sliding Hours:	1.33hrs	Ave. Sliding ROP:	84.75ft/hr	Percent Sliding:	2.89%

Pump Details

#	Model	Liner Size (in)	Liner Rating (%)	Volume Efficiency (%)	Vol. per Stroke (gal(US))	Maximum Pressure (psi)	Maximum Flow (gpm(US))
1							
2							
3							

Drilling Parameters - BHA # 1_Intermediate

	Min	Max		Min	Max
WOB (lbf)	2	5	SPP Off Bottom (psi)	1000	1950
Pick Up (lbf)	50	104	SPP On Bottom (psi)	1100	2485
Slack Off (lbf)	50	98	Delta Pressure (psi)	100	535
Rot. Off Bottom (lbf)	50	101	Flow Rate (gpm(US))	600	600
Bottom Hole Temp (°F)	76.0	118.0	Pump Rate (SPM)	170	170
Rotary Speed (RPM)	70	70	Motor Speed (RPM)	168	238
Surface Torque (ft-lbs)	2	8			

Bit Record - BHA # 1_Intermediate

Bit Number:	1	Description:	Reed TK56 w/ 7 x 12's
Manufacturer:	Reed	TFA:	0.773in ²
Model:	TK56	Bit Diameter:	8 3/4in
Type:	PDC Bit	Bit Hours:	9.55Hrs.
Serial Number:	A237593	Bit Footage:	3,905.00ft
Reason for pulling out of hole:		Condition:	No Dull Characteristics
Change BHA			

Motor Properties - BHA # 1_Intermediate

Description:	6 1/2" Mud Motor (Lobe 7.8 - 5.0 stage)	Motor Type:	6 1/2" Mud Motor	Manufacturer:	SDI	Model:	Titan II	Serial Number:	65005	Lobe/Stage:	7.8/5.0
Mud Type:	KCL	Stabilizer Type:		Rubber Type:	NBRHR	Pressure Drop:	150psi	Rev. Rate:	0.28Rev/gal(US)	Fit Type:	Standard
Pad OD:	6 13/16in	NB Stabilizer:	0	Bit to Bend:	4.83ft	Bend Angle:	1.75°	Sliding Footage:	113.00ft	Rotor Jet:	032's
Motor Footage:	3,905.00ft	Below Rotary Hours:	19.58hrs	Circulating Hours:	13.10hrs	Rotating Footage:	3,792.00ft	Rotating Hours:	8.22hrs	Sliding Hours:	1.33hrs
Proposed Build Rate:	10.00"/100ft	Actual Build Rate:	14.00"/100ft	Date/Time In:	6/15/2018 12:01 AM	Date/Time Out:	6/18/2018 9:45 PM	Number of Stalls:	0	Stall Duration:	0.00mins
Motor Failed:	No	Condition:	Good	Extended Motor:	No						

Motor Discussion

Motor performed good with motor yields ranging from 12-15"/100. Drilled vertical to 3000' and build 2"/100 to 10 INC and hold tangent to 4260'. POOH for Curve BHA. Motor passed surface inspection & drained without issue. L/D with 13.10 D&C Hrs.

Drillstring Components - BHA # 1_Intermediate (BHA#1 Intermediate)

Item #	Description	Vendor	Serial No.	Outside Diameter (in)	Inside Diameter (in)	Linear Weight (lbs/ft)	Component Weight (lbf)	Top Connection	Length (ft)	Total Length (ft)
1	Reed TK56 w/ 7 x 12's	Reed	A237593	8 3/4	2	80.00	80	4 1/2 REG	1.00	1.00
2	6 1/2" Mud Motor (Lobe 7.8 - 5.0 stage)	SDI	65005	6 1/2	2	0.00	0	4 1/2 XH	24.63	25.63
3	6-1/2" NM Flex Pony	SDI	125-202F	6 1/2	3 1/4	83.00	807	4 1/2 XH	9.72	35.35
4	6-1/2" NM Flex DC	SDI	122-1054F	6 1/2	3 1/4	83.00	2573	4 1/2 XH	31.00	66.35
5	EM HOS	SDI	8-812	6 1/2	3 1/4	85.00	177	4 1/2 XH	2.08	68.43
6	6-1/2" Gap Sub	SDI	69-920	6 1/2	2 3/4	85.00	407	4 1/2 XH	4.79	73.22
7	6-1/2" NMPC	SDI	125-157	6 1/2	3 1/4	85.00	816	4 1/2 XH	9.60	82.82
8	6-1/2" NMDC	SDI	122-743	6 1/2	3 1/4	85.00	2597	4 1/2 XH	30.55	113.37
9	X/O	SDI	DR7478	6 1/2	2 3/4	85.00	318	4 1/2 IF	3.74	117.11
10	8.625" DLR Reamer	REED	413-BIZ	6 1/2	2 1/2	85.00	339	4 1/2 IF	3.99	121.10