

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

DISTRICT III
1000 Rio Braxos 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) 478-3480 Fax: (505) 476-3482

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

☒ AMENDED REPORT
As-Drilled Plat

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35687		² Pool Code 47540	³ Pool Name NAGEEZI GALLUP
⁴ Property Code 317282	⁵ Property Name HEROS 2308 09LCom		⁶ Well Number #2H
⁷ OGRID No. 289408	⁸ Operator Name LOGOS OPERATING, LLC		⁹ Elevation 6913

¹⁰ Surface Location

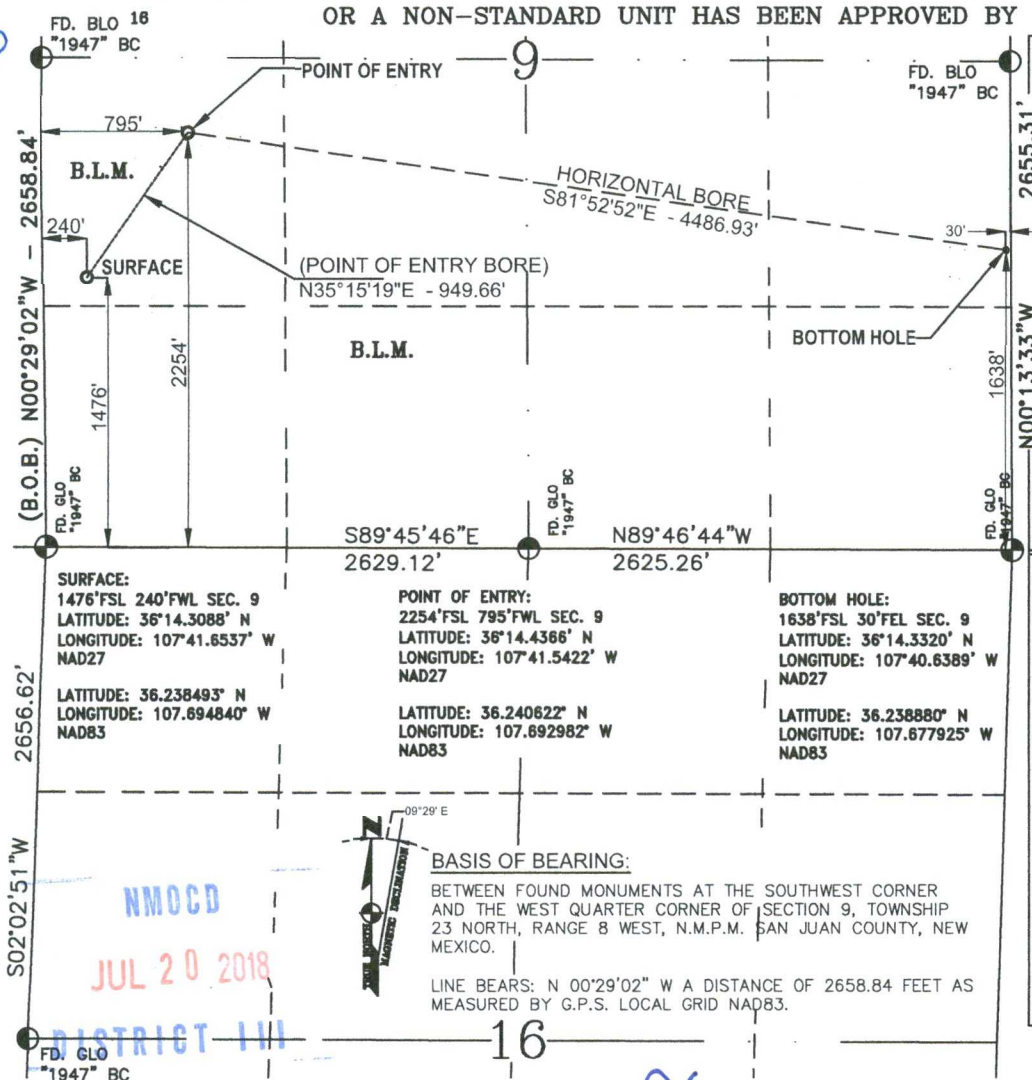
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	9	23-N	8-W		1476	SOUTH	240	WEST	SAN JUAN

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
1	9	23-N	8-W		1638	SOUTH	30	EAST	SAN JUAN

¹³ Dedicated Acres Sec. 9 S/2; Sec. 16 N/2 640 acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-14783
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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



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 working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Marie E Florez Date 7/19/2018
 Printed Name Marie E Florez
 E-mail Address mflorez@logosresourcesllc.com

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.

JUNE 20, 2018
Date of Survey

Signature and Seal of Professional Surveyor

A circular seal with a rope-like border. The outer ring contains the text "GLEN W. RUSSELL" at the top and "LICENSED PROFESSIONAL SURVEYOR" at the bottom. The inner circle contains the text "NEW MEXICO" at the top and the license number "15703" in the center.

GLEN W. RUSSELL
Certificate Number 15703

CONFIDENTIAL

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Logos Operating LLC

San Juan, NM NAD83

Heros 2308-09L

Heros 2308-09L 2H - Slot 2H

OH

Design: OH

Standard Survey Report

07 June, 2018

NMOCB
JUL 20 2018
DISTRICT III



Scientific Drilling

www.scientificdrilling.com

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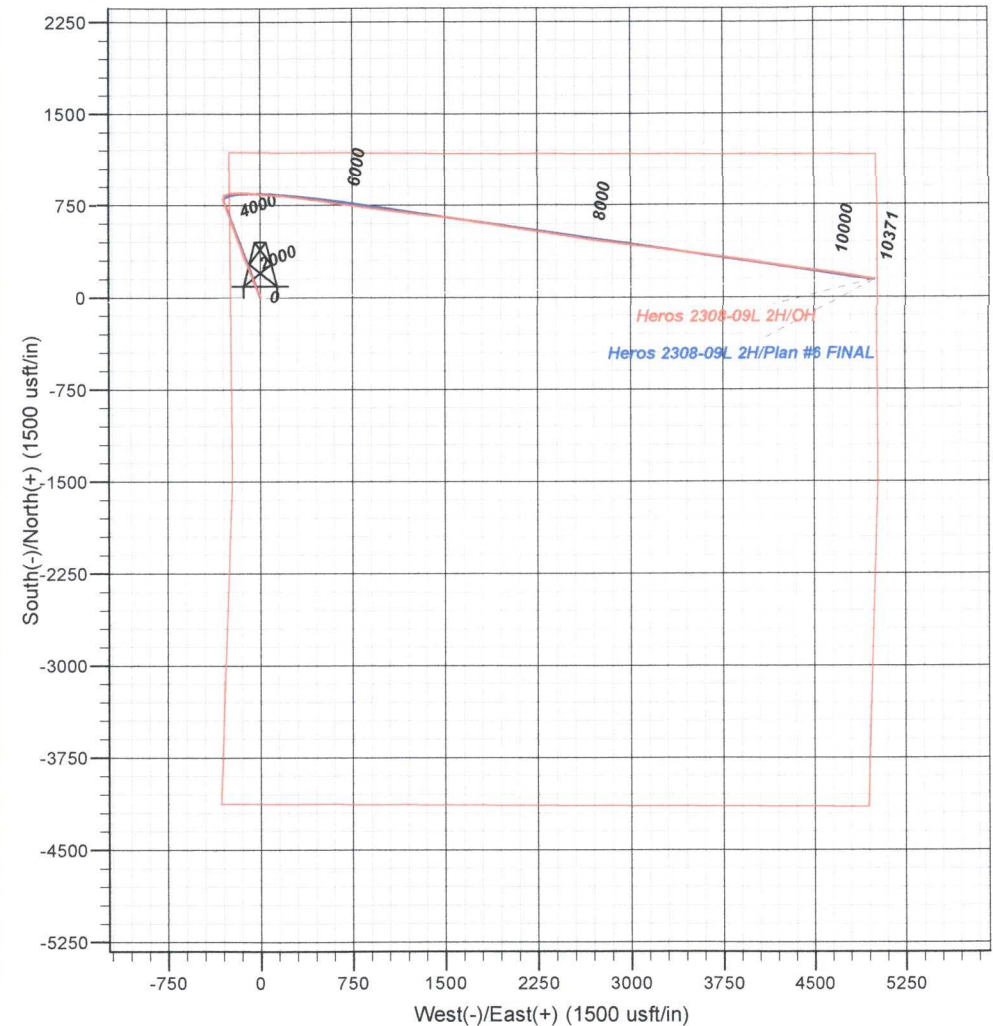
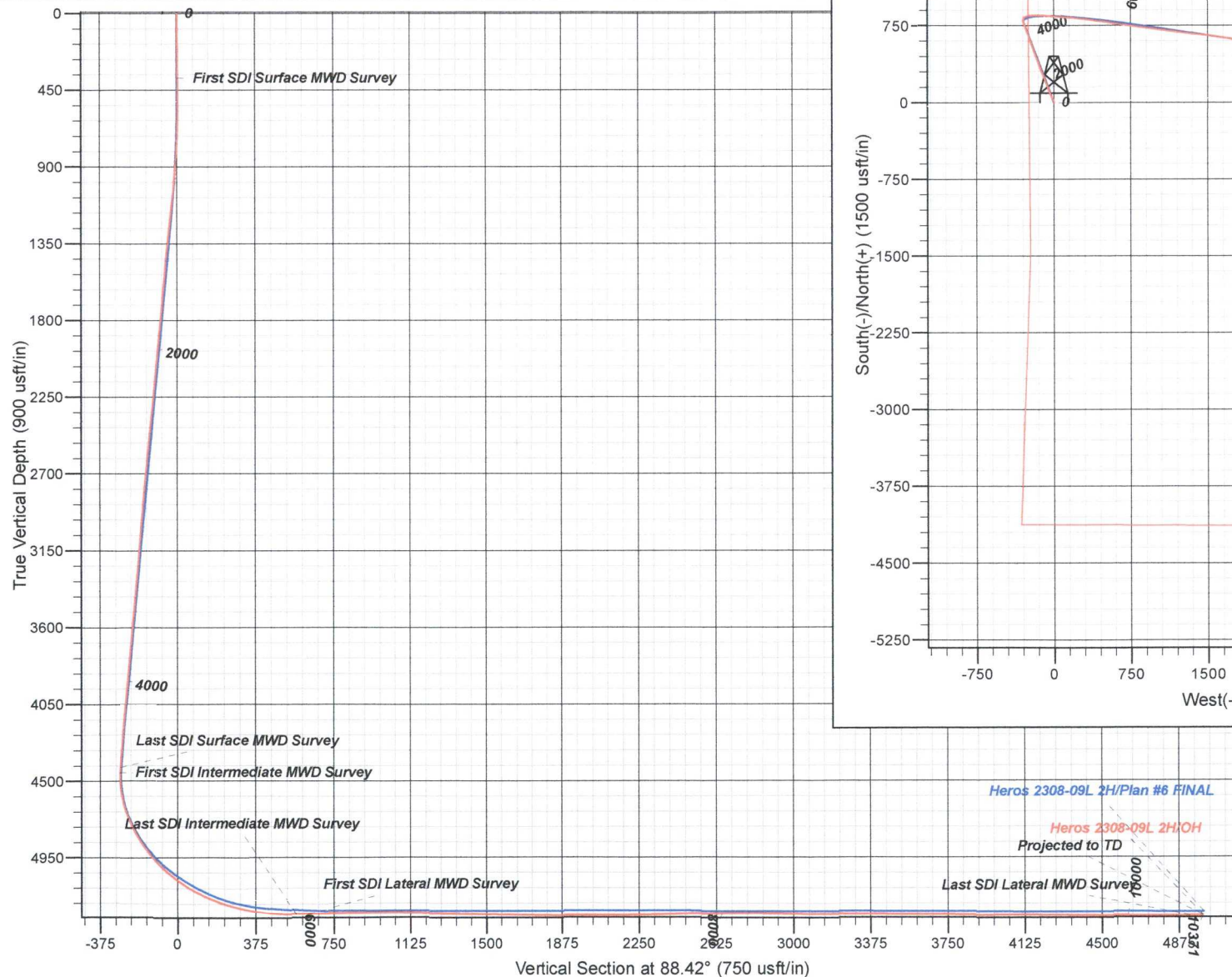
Company Name: Logos Operating LLC
 Project: San Juan, NM NAD83
 Site: Heros 2308-09L
 Well: Heros 2308-09L 2H
 Wellbore: OH

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WELL DETAILS: Heros 2308-09L 2H

+N/-S	+E/-W	GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000) 6913.00	North	East	Latitude	Longitude	
0.00	0.00		1906138.88	2763932.56	36.2384930	-107.6948400	2H



Design: OH (Heros 2308-09L 2H/OH)

Created By: Janie Collins Date: 17:38, June 07 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	Local Co-ordinate Reference:	Well Heros 2308-09L 2H - Slot 2H
Project:	San Juan, NM NAD83	TVD Reference:	GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000)
Site:	Heros 2308-09L	MD Reference:	GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000)
Well:	Heros 2308-09L 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	Heros 2308-09L		
Site Position:		Northing:	1,906,138.89 usft
From:	Map	Easting:	2,763,932.56 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	36.2384930
		Longitude:	-107.6948400
		Grid Convergence:	0.08 °

Well	Heros 2308-09L 2H - Slot 2H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	36.2384930
		Longitude:	-107.6948400
		Ground Level:	6,913.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	5/15/2018	8.92
		Dip Angle (°)	62.83
		Field Strength (nT)	49,557

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)
	0.00	0.00	0.00
		Direction (°)	88.42

Survey Program	Date 6/7/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
381.00	6,039.00	Survey #1 - Surface MWD Survey (OH)	MWD+HDGM
4,548.00	5,885.00	Survey #2 - Curve MWD Survey (OH)	MWD+HDGM
6,131.00	10,371.00	Survey #3 - Lateral MWD Survey (OH)	MWD+HDGM
		Description	
		OWSG MWD + HDGM	
		OWSG 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
381.00	0.82	69.11	380.99	0.97	2.55	2.57	0.22	0.22	0.00
First SDI Surface MWD Survey									
442.00	0.90	71.47	441.98	1.28	3.41	3.44	0.14	0.13	3.87
535.00	2.20	342.64	534.95	3.22	3.57	3.66	2.54	1.40	-95.52
628.00	3.43	333.85	627.84	7.42	1.81	2.01	1.40	1.32	-9.45
722.00	4.04	335.61	721.64	12.96	-0.80	-0.44	0.66	0.65	1.87
814.00	5.44	329.51	813.32	19.67	-4.35	-3.80	1.62	1.52	-6.63
907.00	7.89	333.66	905.69	29.19	-9.42	-8.61	2.68	2.63	4.46

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Scientific Drilling, Intl
Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Heros 2308-09L
Well: Heros 2308-09L 2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Heros 2308-09L 2H - Slot 2H
TVD Reference: GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000)
MD Reference: GL 6913' & RKB 25' @ 6938.00usft (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)
999.00	10.98	335.37	996.43	42.81	-15.87	-14.69	3.37	3.36	1.86
1,092.00	12.91	336.85	1,087.42	60.42	-23.65	-21.97	2.10	2.08	1.59
1,185.00	13.46	336.79	1,177.96	79.92	-32.00	-29.78	0.59	0.59	-0.06
1,278.00	15.16	335.31	1,268.07	100.92	-41.34	-38.55	1.87	1.83	-1.59
1,370.00	15.70	340.26	1,356.76	123.57	-50.57	-47.15	1.55	0.59	5.38
1,463.00	13.37	341.09	1,446.78	145.58	-58.31	-54.27	2.52	-2.51	0.89
1,557.00	12.47	340.10	1,538.40	165.41	-65.29	-60.70	0.99	-0.96	-1.05
1,652.00	12.63	338.40	1,631.13	184.71	-72.60	-67.48	0.42	0.17	-1.79
1,747.00	12.49	338.22	1,723.86	203.91	-80.24	-74.58	0.15	-0.15	-0.19
1,841.00	11.32	333.51	1,815.83	221.60	-88.12	-81.98	1.62	-1.24	-5.01
1,936.00	11.81	335.65	1,908.91	238.80	-96.29	-89.67	0.69	0.52	2.25
2,031.00	11.95	339.09	2,001.87	256.85	-103.81	-96.69	0.76	0.15	3.62
2,125.00	12.83	341.55	2,093.68	275.84	-110.58	-102.94	1.09	0.94	2.62
2,220.00	14.23	339.68	2,186.04	296.80	-117.98	-109.75	1.54	1.47	-1.97
2,314.00	13.73	338.64	2,277.26	318.02	-126.05	-117.24	0.60	-0.53	-1.11
2,408.00	13.17	337.46	2,368.68	338.30	-134.22	-124.84	0.66	-0.60	-1.26
2,503.00	13.98	338.94	2,461.03	359.01	-142.49	-132.54	0.93	0.85	1.56
2,598.00	14.59	341.20	2,553.09	381.04	-150.47	-139.91	0.87	0.64	2.38
2,693.00	14.48	340.25	2,645.05	403.55	-158.34	-147.16	0.28	-0.12	-1.00
2,787.00	14.34	338.83	2,736.09	425.46	-166.52	-154.72	0.40	-0.15	-1.51
2,882.00	13.57	340.93	2,828.29	446.97	-174.41	-162.02	0.97	-0.81	2.21
2,977.00	12.57	337.32	2,920.83	467.04	-182.04	-169.09	1.36	-1.05	-3.80
3,071.00	12.22	340.85	3,012.64	485.88	-189.24	-175.77	0.89	-0.37	3.76
3,166.00	12.79	342.72	3,105.38	505.41	-195.67	-181.66	0.74	0.60	1.97
3,261.00	13.92	342.37	3,197.81	526.35	-202.25	-187.66	1.19	1.19	-0.37
3,356.00	13.52	342.33	3,290.10	547.82	-209.08	-193.90	0.42	-0.42	-0.04
3,451.00	12.94	342.71	3,382.58	568.55	-215.61	-199.85	0.62	-0.61	0.40
3,545.00	13.52	338.70	3,474.09	588.84	-222.73	-206.41	1.15	0.62	-4.27
3,641.00	13.15	336.02	3,567.50	609.27	-231.25	-214.36	0.75	-0.39	-2.79
3,735.00	13.15	339.04	3,659.04	629.03	-239.42	-221.98	0.73	0.00	3.21
3,830.00	12.40	338.95	3,751.68	648.64	-246.95	-228.97	0.79	-0.79	-0.09
3,925.00	13.59	339.92	3,844.25	668.64	-254.44	-235.91	1.27	1.25	1.02
4,019.00	12.91	339.97	3,935.75	688.88	-261.83	-242.74	0.72	-0.72	0.05
4,114.00	13.25	341.27	4,028.28	709.16	-268.96	-249.31	0.47	0.36	1.37
4,209.00	13.18	340.92	4,120.77	729.71	-276.00	-255.77	0.11	-0.07	-0.37
4,304.00	12.24	338.55	4,213.44	749.32	-283.22	-262.45	1.13	-0.99	-2.49
4,399.00	11.04	338.02	4,306.48	767.13	-290.31	-269.05	1.27	-1.26	-0.56
4,485.00	10.80	339.88	4,390.93	782.33	-296.16	-274.48	0.50	-0.28	2.16
4,517.00	10.56	338.35	4,422.37	787.87	-298.28	-276.44	1.16	-0.75	-4.78
Last SDI Surface MWD Survey									
4,548.00	11.08	349.23	4,452.82	793.43	-299.88	-277.89	6.79	1.68	35.10
First SDI Intermediate MWD Survey									
4,580.00	11.25	0.81	4,484.22	799.58	-300.41	-278.25	7.02	0.53	36.19
4,611.00	12.05	14.10	4,514.59	805.74	-299.58	-277.25	9.01	2.58	42.87



Scientific Drilling, Intl
Survey Report



Company:	Logos Operating LLC	Local Co-ordinate Reference:	Well Heros 2308-09L 2H - Slot 2H
Project:	San Juan, NM NAD83	TVD Reference:	GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000)
Site:	Heros 2308-09L	MD Reference:	GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000)
Well:	Heros 2308-09L 2H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)
4,643.00	13.19	25.97	4,545.82	812.26	-297.17	-274.66	8.83	3.56	37.09
4,675.00	13.89	33.61	4,576.93	818.75	-293.44	-270.76	6.00	2.19	23.88
4,706.00	14.07	46.80	4,607.02	824.43	-288.63	-265.79	10.27	0.58	42.55
4,737.00	14.60	57.26	4,637.06	829.12	-282.60	-259.63	8.52	1.71	33.74
4,769.00	16.22	64.15	4,667.91	833.25	-275.18	-252.10	7.63	5.06	21.53
4,800.00	18.11	69.83	4,697.53	836.80	-266.76	-243.59	8.14	6.10	18.32
4,832.00	20.05	75.27	4,727.78	839.91	-256.79	-233.53	8.22	6.06	17.00
4,864.00	21.07	80.46	4,757.74	842.26	-245.81	-222.49	6.52	3.19	16.22
4,895.00	22.60	85.12	4,786.52	843.69	-234.38	-211.03	7.45	4.94	15.03
4,927.00	25.41	85.56	4,815.75	844.74	-221.40	-198.03	8.80	8.78	1.38
4,958.00	26.98	86.31	4,843.56	845.71	-207.75	-184.36	5.18	5.06	2.42
4,990.00	28.31	87.67	4,871.91	846.49	-192.93	-169.52	4.60	4.16	4.25
5,021.00	30.95	88.63	4,898.85	846.98	-177.61	-154.19	8.65	8.52	3.10
5,053.00	33.15	89.34	4,925.97	847.27	-160.63	-137.21	6.97	6.88	2.22
5,084.00	35.79	91.36	4,951.53	847.16	-143.09	-119.68	9.28	8.52	6.52
5,116.00	37.81	92.85	4,977.15	846.45	-123.94	-100.55	6.90	6.31	4.66
5,148.00	39.31	93.38	5,002.18	845.36	-104.02	-80.68	4.80	4.69	1.66
5,179.00	41.50	94.61	5,025.78	843.96	-83.98	-60.68	7.52	7.06	3.97
5,211.00	44.67	95.49	5,049.15	842.03	-62.21	-38.97	10.08	9.91	2.75
5,242.00	47.31	96.81	5,070.68	839.63	-40.05	-16.88	9.05	8.52	4.26
5,274.00	49.92	96.80	5,091.84	836.79	-16.21	6.87	8.16	8.16	-0.03
5,306.00	51.89	95.30	5,112.02	834.18	8.49	31.48	7.15	6.16	-4.69
5,337.00	54.22	93.50	5,130.65	832.28	33.19	56.12	8.83	7.52	-5.81
5,369.00	57.33	92.85	5,148.65	830.82	59.60	82.49	9.86	9.72	-2.03
5,400.00	60.07	93.01	5,164.75	829.46	86.05	108.89	8.85	8.84	0.52
5,432.00	62.27	93.61	5,180.18	827.84	114.04	136.82	7.07	6.88	1.88
5,464.00	64.81	94.17	5,194.44	825.90	142.62	165.33	8.09	7.94	1.75
5,495.00	67.71	94.35	5,206.92	823.79	170.91	193.56	9.37	9.35	0.58
5,527.00	70.58	94.23	5,218.31	821.55	200.73	223.30	8.98	8.97	-0.38
5,552.00	71.27	97.16	5,226.48	819.21	224.23	246.74	11.41	2.76	11.72
5,575.00	71.69	96.02	5,233.78	816.71	245.90	268.32	5.04	1.83	-4.96
5,606.00	73.42	94.61	5,243.08	813.97	275.34	297.68	7.07	5.58	-4.55
5,637.00	75.62	96.00	5,251.35	811.20	305.09	327.34	8.31	7.10	4.48
5,668.00	77.51	97.01	5,258.55	807.79	335.04	357.19	6.87	6.10	3.26
5,699.00	79.35	97.92	5,264.77	803.84	365.16	387.18	6.60	5.94	2.94
5,729.00	81.54	98.77	5,269.75	799.55	394.42	416.32	7.82	7.30	2.83
5,760.00	83.03	99.11	5,273.91	794.77	424.77	446.52	4.93	4.81	1.10
5,791.00	85.21	99.45	5,277.09	789.80	455.20	476.80	7.12	7.03	1.10
5,822.00	87.23	98.92	5,279.13	784.86	485.73	507.19	6.74	6.52	-1.71
5,854.00	89.19	98.81	5,280.13	779.94	517.34	538.64	6.13	6.13	-0.34
5,885.00	91.01	98.92	5,280.08	775.16	547.96	569.13	5.88	5.87	0.35
Last SDI Intermediate MWD Survey									
5,947.00	91.03	98.55	5,278.97	765.74	609.23	630.12	0.59	0.03	-0.59



Scientific Drilling, Intl Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Heros 2308-09L
Well: Heros 2308-09L 2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Heros 2308-09L 2H - Slot 2H
TVD Reference: GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000)
MD Reference: GL 6913' & RKB 25' @ 6938.00usft (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)
First SDI Lateral MWD Survey									
6,131.00	91.08	97.46	5,275.59	740.12	791.41	811.51	0.59	0.03	-0.59
6,224.00	90.30	97.32	5,274.47	728.16	883.63	903.37	0.85	-0.84	-0.15
6,317.00	89.63	97.51	5,274.53	716.16	975.85	995.22	0.75	-0.72	0.20
6,410.00	88.66	97.61	5,275.92	703.92	1,068.03	1,087.03	1.05	-1.04	0.11
6,503.00	88.72	97.37	5,278.04	691.80	1,160.21	1,178.85	0.27	0.06	-0.26
6,595.00	89.63	96.78	5,279.37	680.47	1,251.50	1,269.79	1.18	0.99	-0.64
6,688.00	89.29	96.09	5,280.24	670.05	1,343.91	1,361.87	0.83	-0.37	-0.74
6,782.00	88.92	96.65	5,281.71	659.62	1,437.32	1,454.96	0.71	-0.39	0.60
6,876.00	88.86	97.82	5,283.53	647.79	1,530.55	1,547.83	1.25	-0.06	1.24
6,971.00	89.19	98.07	5,285.15	634.66	1,624.62	1,641.51	0.44	0.35	0.26
7,066.00	88.79	99.02	5,286.82	620.55	1,718.55	1,735.01	1.08	-0.42	1.00
7,160.00	89.43	98.98	5,288.28	605.84	1,811.39	1,827.40	0.68	0.68	-0.04
7,255.00	89.36	98.93	5,289.29	591.06	1,905.22	1,920.79	0.09	-0.07	-0.05
7,349.00	90.07	99.36	5,289.75	576.12	1,998.03	2,013.15	0.88	0.76	0.46
7,444.00	89.90	99.21	5,289.78	560.79	2,091.78	2,106.45	0.24	-0.18	-0.16
7,539.00	91.04	99.31	5,289.00	545.50	2,185.54	2,199.75	1.20	1.20	0.11
7,633.00	91.28	98.82	5,287.10	530.70	2,278.34	2,292.11	0.58	0.26	-0.52
7,728.00	91.11	98.75	5,285.12	516.19	2,372.21	2,385.54	0.19	-0.18	-0.07
7,823.00	91.54	98.24	5,282.92	502.16	2,466.14	2,479.05	0.70	0.45	-0.54
7,918.00	92.12	98.72	5,279.88	488.16	2,560.05	2,572.54	0.79	0.61	0.51
8,013.00	90.94	98.33	5,277.35	474.08	2,653.97	2,666.03	1.31	-1.24	-0.41
8,107.00	89.97	98.37	5,276.60	460.43	2,746.97	2,758.62	1.03	-1.03	0.04
8,202.00	89.19	97.86	5,277.30	447.02	2,841.01	2,852.26	0.98	-0.82	-0.54
8,297.00	89.09	97.27	5,278.72	434.52	2,935.18	2,946.04	0.63	-0.11	-0.62
8,392.00	89.25	97.34	5,280.10	422.44	3,029.39	3,039.89	0.18	0.17	0.07
8,487.00	88.89	96.73	5,281.64	410.80	3,123.67	3,133.81	0.75	-0.38	-0.64
8,582.00	89.77	98.47	5,282.75	398.24	3,217.82	3,227.58	2.05	0.93	1.83
8,677.00	90.54	97.69	5,282.50	384.89	3,311.88	3,321.23	1.15	0.81	-0.82
8,771.00	89.52	98.48	5,282.45	371.67	3,404.94	3,413.89	1.37	-1.09	0.84
8,866.00	89.63	97.87	5,283.15	358.16	3,498.97	3,507.52	0.65	0.12	-0.64
8,961.00	89.36	96.98	5,283.99	345.88	3,593.17	3,601.34	0.98	-0.28	-0.94
9,056.00	89.66	97.96	5,284.80	333.53	3,687.36	3,695.15	1.08	0.32	1.03
9,150.00	89.77	97.63	5,285.27	320.78	3,780.49	3,787.90	0.37	0.12	-0.35
9,245.00	89.16	99.71	5,286.16	306.47	3,874.39	3,881.37	2.28	-0.64	2.19
9,339.00	89.78	98.57	5,287.03	291.53	3,967.19	3,973.72	1.38	0.66	-1.21
9,434.00	90.44	98.60	5,286.84	277.35	4,061.13	4,067.23	0.70	0.69	0.03
9,529.00	89.93	99.19	5,286.54	262.66	4,154.99	4,160.65	0.82	-0.54	0.62
9,623.00	89.87	98.10	5,286.70	248.54	4,247.92	4,253.15	1.16	-0.06	-1.16
9,718.00	88.99	97.24	5,287.65	235.86	4,342.06	4,346.91	1.30	-0.93	-0.91
9,813.00	88.52	98.01	5,289.71	223.25	4,436.20	4,440.67	0.95	-0.49	0.81
9,907.00	89.56	97.20	5,291.28	210.82	4,529.35	4,533.45	1.40	1.11	-0.86
10,002.00	89.93	97.39	5,291.71	198.75	4,623.58	4,627.31	0.44	0.39	0.20
10,097.00	89.83	99.48	5,291.91	184.82	4,717.55	4,720.85	2.20	-0.11	2.20



Scientific Drilling, Intl
Survey Report



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Heros 2308-09L
Well: Heros 2308-09L 2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Heros 2308-09L 2H - Slot 2H
TVD Reference: GL 6913' & RKB 25' @ 6938.00usft (Aztec 1000)
MD Reference: GL 6913' & RKB 25' @ 6938.00usft (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)
10,192.00	90.34	99.18	5,291.77	169.42	4,811.29	4,814.14	0.62	0.54	-0.32
10,287.00	90.60	99.11	5,290.99	154.32	4,905.08	4,907.47	0.28	0.27	-0.07
10,308.00	90.70	98.97	5,290.75	151.02	4,925.82	4,928.11	0.82	0.48	-0.67
Last SDI Lateral MWD Survey									
10,371.00	90.70	98.97	5,289.98	141.20	4,988.05	4,990.04	0.00	0.00	0.00
Projected to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
381.00	380.99	0.97	2.55	First SDI Surface MWD Survey
4,517.00	4,422.37	787.87	-298.28	Last SDI Surface MWD Survey
4,548.00	4,452.82	793.43	-299.88	First SDI Intermediate MWD Survey
5,885.00	5,280.08	775.16	547.96	Last SDI Intermediate MWD Survey
5,947.00	5,278.97	765.74	609.23	First SDI Lateral MWD Survey
10,308.00	5,290.75	151.02	4,925.82	Last SDI Lateral MWD Survey
10,371.00	5,289.98	141.20	4,988.05	Projected to TD

Checked By: _____ Approved By: _____ Date: _____