

NMOC

DEC 12 2019

DISTRICT I
1626 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
611 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1283 Fax: (505) 748-0720

DISTRICT III
1000 Rio Bravo 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) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

DISTRICT III

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

☒ AMENDED REPORT
☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35858	² Pool Code 98080	³ Pool Name NAGEEZI UNIT MANCOS OIL POOL
⁴ Property Code 325268	⁵ Property Name NAGEEZI UNIT	⁶ Well Number 509H
⁷ GRID No. 371838	⁸ Operator Name DJR OPERATING, LLC	⁹ Elevation 6747

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
A	9	23N	9W		260'	NORTH	369'	EAST	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
0	10	23N	9W		359'	SOUTH	3548'	EAST	SAN JUAN

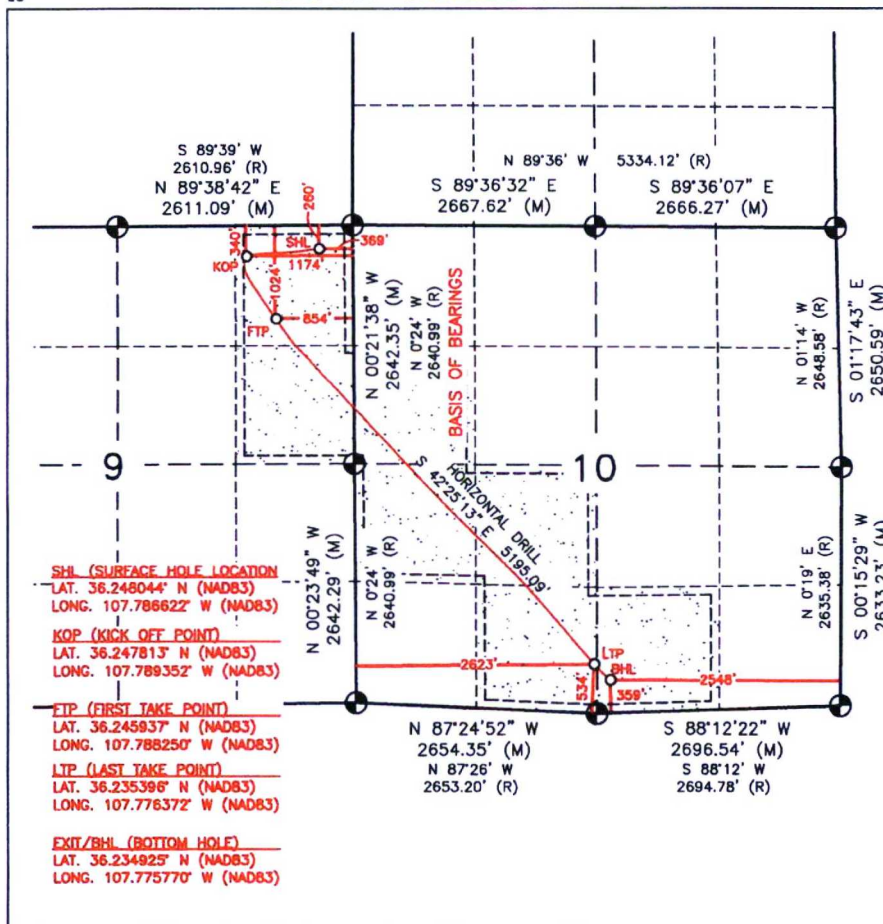
¹² Dedicated Acres
SW/NW, NW/SW, NE/SW, SE/SW AND SW/SE SEC. 10
(200 ACRES), NE/NE & SE/NE SEC 9 (80 ACRES)
= 280 ACRES TOTAL

¹³ Joint or Infill¹⁴ Consolidation Code¹⁵ Order No.

R-13856, R-13856A

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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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.

Shaw-Marie Ford 12/05/19
Signature Date

Shaw-Marie Ford

Printed Name

sford@djrlc.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.

DECEMBER 4, 2019

Date of Survey

Signature and Seal of Professional Surveyor:



A

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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. 86210
Phone: (575) 748-1883 Fax: (575) 748-9720

DISTRICT III

1000 Rio Brazos Ed., 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

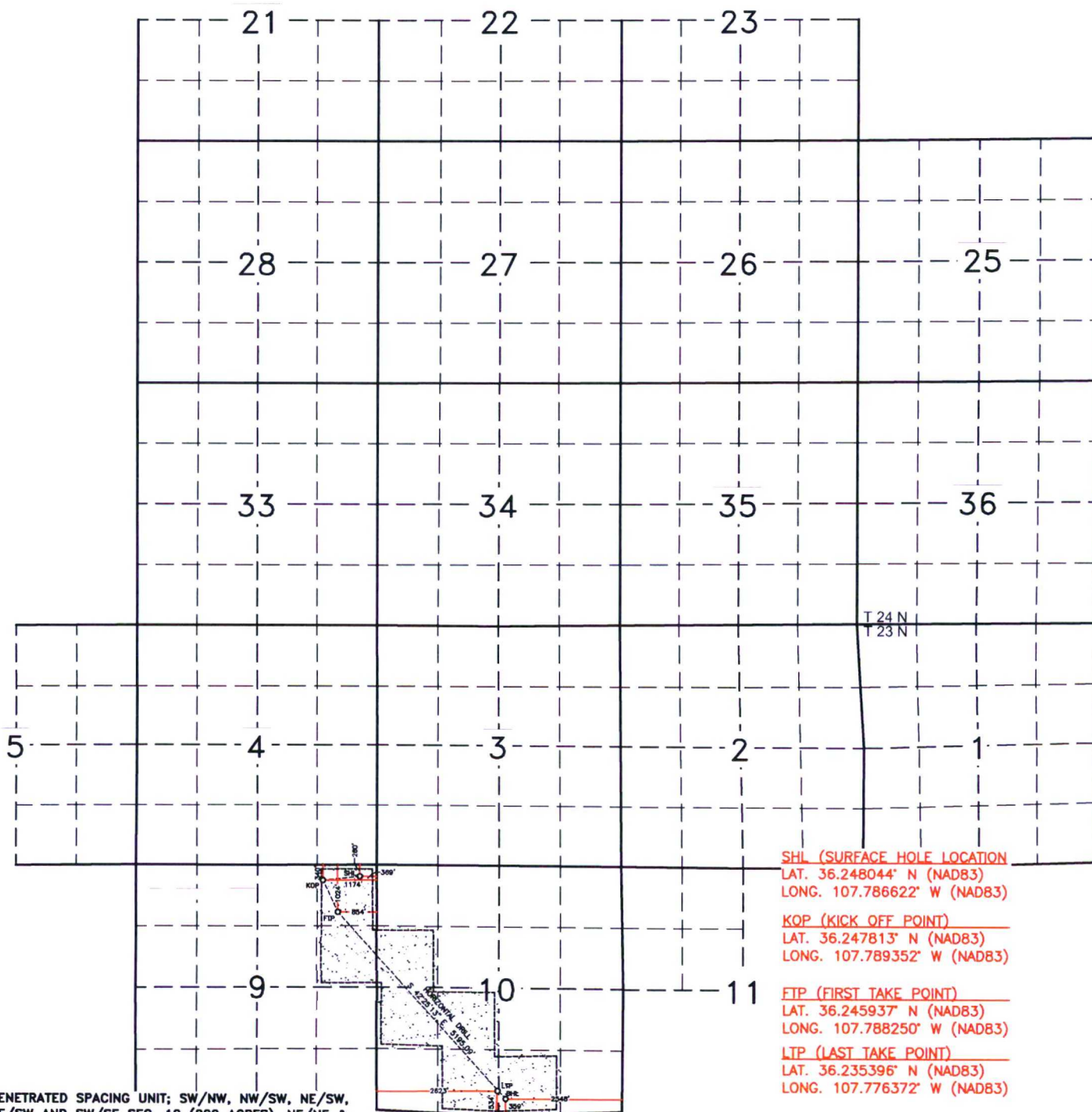
DJR OPERATING, LTD
NAGEEZI UNIT #509H

Form C-102
Revised August 1, 2011

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☐ AMENDED REPORT

☒ AS-DRILLED



PENETRATED SPACING UNIT; SW/NW, NW/SW, NE/SW,
SE/SW AND SW/SE SEC. 10 (200 ACRES), NE/NE &
SE/NE SEC 9 (80 ACRES) = 280 ACRES TOTAL
10,415.12 ACRES:
SEC. 21-23 (S/2); 25-28, 33-36, 1-4, 9-10 (ALL);
5 (W/2); 11 (NW/4) - UNDIVIDED UNIT

SHL (SURFACE HOLE LOCATION)
LAT. 36.248044° N (NAD83)
LONG. 107.786622° W (NAD83)

KOP (KICK OFF POINT)
LAT. 36.247813° N (NAD83)
LONG. 107.789352° W (NAD83)

FTP (FIRST TAKE POINT)
LAT. 36.245937° N (NAD83)
LONG. 107.788250° W (NAD83)

LTP (LAST TAKE POINT)
LAT. 36.235396° N (NAD83)
LONG. 107.776372° W (NAD83)

EXIT/BHL (BOTTOM HOLE)
LAT. 36.234925° N (NAD83)
LONG. 107.775770° W (NAD83)



Scientific Drilling

Directional Survey Certification

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

Operator	DJR Operating
Well Name & No.	Nageezi A09 2309 509H
County & State	San Juan, NM
SDI Job No.	OP.022153
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 435 feet to a measured depth of 10,824 feet is true and correct as determined from all available records.


Signature

25-Nov-19
Date

Janie Collins

Colorado District Well Planner
Scientific Drilling International



Scientific Drilling, Intl

Survey Report



Company: DJR Operating
Project: Nageezi Unit
Site: A09 2309
Well: 509H
Wellbore: Original drilling
Design: Original drilling

Local Co-ordinate Reference: Well 509H
TVD Reference: GL 6748' & RKB 14' @ 6762.00usft (Aztec 920)
MD Reference: GL 6748' & RKB 14' @ 6762.00usft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Project	Nageezi Unit		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	A09 2309		
Site Position:		Northing:	1,909,589.82 usft
From:	Lat/Long	Easting:	2,736,895.26 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	36.2480440
		Longitude:	-107.7865190
		Grid Convergence:	0.03 °

Well	509H		
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:	36.2480440
		Longitude:	-107.7866220
		Ground Level:	6,748.00 usft

Wellbore	Original drilling		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	10/31/2019	8.83
		Dip Angle (°)	62.75
		Field Strength (nT)	49,422

Design	Original drilling		
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 (°)	146.183

Survey Program	Date 11/20/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
435.00	4,108.00	Survey #1 - Surface MWD Survey (Original)	MWD+HDGM
4,169.00	5,200.00	Survey #2 - Curve MWD Survey (Original)	MWD+HDGM
5,264.00	10,824.00	Survey #3 - Lateral MWD Survey (Original)	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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	435.00	0.38	177.590	435.00	-1.44	0.06	1.23	0.09	0.09	0.00
	496.00	1.57	234.590	495.99	-2.13	-0.61	1.43	2.29	1.95	93.44
	557.00	2.51	245.480	556.95	-3.17	-2.51	1.23	1.66	1.54	17.85
	618.00	3.66	248.930	617.86	-4.42	-5.54	0.59	1.91	1.89	5.66
	679.00	3.57	252.070	678.74	-5.71	-9.16	-0.36	0.36	-0.15	5.15
	740.00	4.59	254.850	739.58	-6.93	-13.33	-1.66	1.70	1.67	4.56
	801.00	6.17	263.640	800.31	-7.93	-18.94	-3.95	2.91	2.59	14.41
	862.00	7.32	268.720	860.89	-8.38	-26.08	-7.56	2.12	1.89	8.33



Scientific Drilling, Intl
Survey Report



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Project: Nageezi Unit
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Wellbore: Original drilling
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MD Reference: GL 6748' & RKB 14' @ 6762.00usft (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)
923.00	8.28	268.610	921.33	-8.57	-34.36	-12.00	1.57	1.57	-0.18
983.00	9.15	267.030	980.63	-8.92	-43.44	-16.76	1.50	1.45	-2.63
1,044.00	9.82	263.450	1,040.80	-9.77	-53.46	-21.63	1.46	1.10	-5.87
1,105.00	10.44	258.040	1,100.85	-11.51	-64.03	-26.08	1.86	1.02	-8.87
1,166.00	10.64	255.490	1,160.82	-14.06	-74.89	-29.99	0.83	0.33	-4.18
1,226.00	11.97	254.630	1,219.65	-17.10	-86.25	-33.80	2.23	2.22	-1.43
1,287.00	12.42	258.160	1,279.28	-20.12	-98.77	-38.25	1.43	0.74	5.79
1,348.00	12.86	260.170	1,338.80	-22.63	-111.88	-43.47	1.02	0.72	3.30
1,409.00	13.43	260.690	1,398.20	-24.93	-125.56	-49.16	0.95	0.93	0.85
1,471.00	14.27	262.170	1,458.40	-27.14	-140.24	-55.50	1.47	1.35	2.39
1,532.00	14.82	265.930	1,517.44	-28.72	-155.47	-62.66	1.79	0.90	6.16
1,593.00	15.11	265.490	1,576.38	-29.90	-171.17	-70.43	0.51	0.48	-0.72
1,653.00	14.90	265.540	1,634.33	-31.11	-186.66	-78.04	0.35	-0.35	0.08
1,714.00	14.52	263.700	1,693.33	-32.56	-202.08	-85.41	0.99	-0.62	-3.02
1,775.00	14.05	262.570	1,752.44	-34.36	-217.02	-92.24	0.90	-0.77	-1.85
1,835.00	13.82	263.790	1,810.68	-36.07	-231.37	-98.80	0.62	-0.38	2.03
1,896.00	13.79	266.680	1,869.92	-37.28	-245.87	-105.86	1.13	-0.05	4.74
1,958.00	13.84	268.500	1,930.12	-37.90	-260.66	-113.58	0.71	0.08	2.94
2,019.00	14.88	268.260	1,989.22	-38.33	-275.78	-121.64	1.71	1.70	-0.39
2,080.00	15.10	267.600	2,048.14	-38.90	-291.55	-129.94	0.46	0.36	-1.08
2,140.00	15.24	268.280	2,106.05	-39.47	-307.24	-138.20	0.38	0.23	1.13
2,200.00	15.41	269.280	2,163.92	-39.80	-323.09	-146.74	0.52	0.28	1.67
2,261.00	15.42	268.670	2,222.72	-40.09	-339.31	-155.53	0.27	0.02	-1.00
2,322.00	15.39	269.110	2,281.53	-40.41	-355.51	-164.28	0.20	-0.05	0.72
2,382.00	15.45	268.840	2,339.37	-40.69	-371.46	-172.92	0.16	0.10	-0.45
2,442.00	14.73	267.510	2,397.30	-41.19	-387.07	-181.20	1.33	-1.20	-2.22
2,503.00	14.41	267.810	2,456.34	-41.81	-402.40	-189.21	0.54	-0.52	0.49
2,564.00	13.83	266.890	2,515.50	-42.50	-417.27	-196.92	1.02	-0.95	-1.51
2,625.00	13.30	266.270	2,574.80	-43.35	-431.55	-204.16	0.90	-0.87	-1.02
2,686.00	12.93	265.280	2,634.20	-44.37	-445.35	-210.99	0.71	-0.61	-1.62
2,747.00	12.42	264.380	2,693.72	-45.57	-458.68	-217.41	0.90	-0.84	-1.48
2,808.00	13.16	265.960	2,753.20	-46.71	-472.14	-223.96	1.34	1.21	2.59
2,868.00	13.62	268.400	2,811.57	-47.38	-486.01	-231.12	1.21	0.77	4.07
2,929.00	13.24	267.750	2,870.91	-47.86	-500.17	-238.60	0.67	-0.62	-1.07
2,990.00	12.71	267.420	2,930.35	-48.44	-513.85	-245.74	0.88	-0.87	-0.54
3,051.00	13.66	266.580	2,989.74	-49.17	-527.75	-252.87	1.59	1.56	-1.38
3,112.00	13.80	265.250	3,049.00	-50.20	-542.19	-260.04	0.57	0.23	-2.18
3,173.00	13.78	264.760	3,108.24	-51.47	-556.67	-267.05	0.19	-0.03	-0.80
3,234.00	13.64	263.460	3,167.50	-52.95	-571.05	-273.83	0.55	-0.23	-2.13
3,295.00	13.56	263.930	3,226.79	-54.52	-585.31	-280.45	0.22	-0.13	0.77
3,357.00	13.14	263.840	3,287.11	-56.05	-599.55	-287.11	0.68	-0.68	-0.15
3,418.00	13.58	268.440	3,346.47	-56.99	-613.60	-294.15	1.89	0.72	7.54
3,480.00	13.93	264.590	3,406.69	-57.89	-628.30	-301.58	1.58	0.56	-6.21

Company: DJR Operating
Project: Nageezi Unit
Site: A09 2309
Well: 509H
Wellbore: Original drilling
Design: Original drilling

Local Co-ordinate Reference: Well 509H
TVD Reference: GL 6748' & RKB 14' @ 6762.00usft (Aztec 920)
MD Reference: GL 6748' & RKB 14' @ 6762.00usft (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)
3,541.00	14.50	261.270	3,465.82	-59.74	-643.16	-308.31	1.63	0.93	-5.44
3,601.00	14.86	263.150	3,523.86	-61.80	-658.23	-314.99	1.00	0.60	3.13
3,662.00	16.28	263.980	3,582.62	-63.63	-674.50	-322.52	2.36	2.33	1.36
3,723.00	17.31	264.470	3,641.02	-65.40	-692.03	-330.81	1.70	1.69	0.80
3,784.00	17.28	264.360	3,699.26	-67.16	-710.08	-339.39	0.07	-0.05	-0.18
3,843.00	16.69	263.900	3,755.69	-68.93	-727.23	-347.47	1.03	-1.00	-0.78
3,904.00	15.72	263.050	3,814.26	-70.86	-744.14	-355.28	1.64	-1.59	-1.39
3,965.00	14.98	262.770	3,873.09	-72.85	-760.16	-362.54	1.22	-1.21	-0.46
4,047.00	13.38	257.690	3,952.59	-76.21	-779.95	-370.76	2.47	-1.95	-6.20
4,108.00	12.12	255.630	4,012.08	-79.30	-793.05	-375.48	2.20	-2.07	-3.38
4,169.00	12.99	235.910	4,071.65	-84.73	-804.93	-377.58	7.13	1.43	-32.33
4,230.00	15.74	213.100	4,130.79	-95.52	-815.14	-374.30	10.23	4.51	-37.39
4,291.00	19.45	194.010	4,188.97	-112.32	-822.13	-364.23	11.17	6.08	-31.30
4,353.00	22.05	186.550	4,246.96	-133.91	-825.95	-348.42	5.97	4.19	-12.03
4,414.00	24.98	183.320	4,302.89	-158.15	-828.01	-329.43	5.25	4.80	-5.30
4,475.00	27.33	175.620	4,357.65	-184.98	-827.68	-306.95	6.76	3.85	-12.62
4,536.00	29.42	166.500	4,411.35	-213.53	-823.11	-280.69	7.88	3.43	-14.95
4,597.00	28.27	160.210	4,464.79	-241.70	-814.72	-252.62	5.32	-1.89	-10.31
4,657.00	29.92	154.600	4,517.23	-268.59	-803.49	-224.03	5.31	2.75	-9.35
4,717.00	31.64	153.420	4,568.77	-296.18	-790.03	-193.61	3.04	2.87	-1.97
4,778.00	34.85	149.040	4,619.79	-325.45	-773.90	-160.32	6.57	5.26	-7.18
4,839.00	39.96	148.820	4,668.23	-357.17	-754.78	-123.32	8.38	8.38	-0.36
4,870.00	43.46	149.910	4,691.37	-374.92	-744.27	-102.73	11.53	11.29	3.52
4,900.00	47.42	149.370	4,712.41	-393.36	-733.47	-81.40	13.26	13.20	-1.80
4,931.00	53.01	148.250	4,732.24	-413.73	-721.13	-57.61	18.24	18.03	-3.61
4,961.00	58.86	146.740	4,749.04	-434.67	-707.77	-32.77	19.94	19.50	-5.03
4,992.00	64.76	145.720	4,763.68	-457.37	-692.59	-5.46	19.25	19.03	-3.29
5,075.00	72.44	144.910	4,793.94	-520.86	-648.63	71.75	9.30	9.25	-0.98
5,138.00	77.97	144.500	4,810.02	-570.55	-613.45	132.61	8.80	8.78	-0.65
5,200.00	84.59	145.490	4,819.42	-620.72	-578.32	193.85	10.79	10.68	1.60
5,264.00	88.28	146.280	4,823.40	-673.60	-542.50	257.71	5.90	5.77	1.23
5,326.00	90.24	145.980	4,824.20	-725.07	-507.95	319.70	3.20	3.16	-0.48
5,389.00	91.04	146.370	4,823.49	-777.40	-472.88	382.70	1.41	1.27	0.62
5,453.00	91.18	146.460	4,822.25	-830.71	-437.49	446.69	0.26	0.22	0.14
5,516.00	90.34	144.820	4,821.42	-882.71	-401.94	509.68	2.92	-1.33	-2.60
5,579.00	89.40	141.660	4,821.56	-933.17	-364.24	572.58	5.23	-1.49	-5.02
5,641.00	90.00	141.500	4,821.89	-981.75	-325.71	634.38	1.00	0.97	-0.26
5,704.00	90.24	140.820	4,821.75	-1,030.82	-286.20	697.14	1.14	0.38	-1.08
5,767.00	90.81	141.010	4,821.18	-1,079.72	-246.48	759.87	0.95	0.90	0.30
5,830.00	89.33	139.830	4,821.10	-1,128.27	-206.34	822.55	3.00	-2.35	-1.87
5,894.00	89.43	139.270	4,821.79	-1,176.97	-164.82	886.12	0.89	0.16	-0.88
5,957.00	89.76	139.220	4,822.24	-1,224.69	-123.70	948.65	0.53	0.52	-0.08
6,020.00	91.75	138.120	4,821.41	-1,271.99	-82.10	1,011.10	3.61	3.16	-1.75



Scientific Drilling, Intl
Survey Report



Company: DJR Operating
Project: Nageezi Unit
Site: A09 2309
Well: 509H
Wellbore: Original drilling
Design: Original drilling

Local Co-ordinate Reference: Well 509H
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North Reference: True
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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)
6,083.00	91.71	137.440	4,819.51	-1,318.63	-39.78	1,073.40	1.08	-0.06	-1.08
6,146.00	90.60	135.980	4,818.24	-1,364.47	3.40	1,135.52	2.91	-1.76	-2.32
6,209.00	90.71	135.350	4,817.52	-1,409.53	47.43	1,197.46	1.02	0.17	-1.00
6,272.00	90.98	135.920	4,816.59	-1,454.56	91.48	1,259.39	1.00	0.43	0.90
6,335.00	91.24	135.750	4,815.37	-1,499.75	135.36	1,321.35	0.49	0.41	-0.27
6,397.00	90.50	136.030	4,814.42	-1,544.26	178.51	1,382.35	1.28	-1.19	0.45
6,460.00	90.44	136.430	4,813.91	-1,589.75	222.09	1,444.40	0.64	-0.10	0.63
6,523.00	90.84	136.290	4,813.20	-1,635.34	265.56	1,506.47	0.67	0.63	-0.22
6,586.00	90.44	135.850	4,812.50	-1,680.71	309.27	1,568.49	0.94	-0.63	-0.70
6,648.00	90.74	135.630	4,811.86	-1,725.11	352.54	1,629.46	0.60	0.48	-0.35
6,711.00	90.71	135.350	4,811.06	-1,770.03	396.70	1,691.36	0.45	-0.05	-0.44
6,772.00	89.63	135.980	4,810.88	-1,813.66	439.33	1,751.33	2.05	-1.77	1.03
6,832.00	89.70	137.100	4,811.23	-1,857.21	480.60	1,810.48	1.87	0.12	1.87
6,892.00	89.63	137.790	4,811.59	-1,901.41	521.17	1,869.78	1.16	-0.12	1.15
6,952.00	89.66	137.620	4,811.96	-1,945.79	561.55	1,929.13	0.29	0.05	-0.28
7,014.00	89.70	136.980	4,812.30	-1,991.35	603.60	1,990.38	1.03	0.06	-1.03
7,074.00	89.83	136.580	4,812.55	-2,035.08	644.68	2,049.58	0.70	0.22	-0.67
7,135.00	89.56	136.360	4,812.87	-2,079.30	686.70	2,109.70	0.57	-0.44	-0.36
7,196.00	90.00	137.510	4,813.11	-2,123.87	728.35	2,169.91	2.02	0.72	1.89
7,257.00	90.17	138.080	4,813.02	-2,169.05	769.33	2,230.25	0.98	0.28	0.93
7,318.00	90.07	137.240	4,812.89	-2,214.14	810.41	2,290.58	1.39	-0.16	-1.38
7,379.00	90.34	137.920	4,812.67	-2,259.17	851.56	2,350.89	1.20	0.44	1.11
7,440.00	91.44	137.990	4,811.72	-2,304.47	892.41	2,411.26	1.81	1.80	0.11
7,501.00	91.51	137.810	4,810.15	-2,349.71	933.29	2,471.60	0.32	0.11	-0.30
7,562.00	91.78	137.710	4,808.40	-2,394.85	974.28	2,531.92	0.47	0.44	-0.16
7,622.00	90.81	136.780	4,807.05	-2,438.90	1,015.00	2,591.17	2.24	-1.62	-1.55
7,683.00	90.64	135.800	4,806.28	-2,482.99	1,057.15	2,651.26	1.63	-0.28	-1.61
7,744.00	90.88	135.530	4,805.47	-2,526.61	1,099.77	2,711.23	0.59	0.39	-0.44
7,804.00	90.88	135.810	4,804.54	-2,569.53	1,141.69	2,770.21	0.47	0.00	0.47
7,865.00	91.01	135.620	4,803.54	-2,613.19	1,184.28	2,830.19	0.38	0.21	-0.31
7,926.00	90.57	136.730	4,802.70	-2,657.19	1,226.52	2,890.26	1.96	-0.72	1.82
7,987.00	90.84	137.480	4,801.95	-2,701.88	1,268.03	2,950.49	1.31	0.44	1.23
8,048.00	90.67	136.820	4,801.14	-2,746.60	1,309.51	3,010.72	1.12	-0.28	-1.08
8,110.00	90.10	137.640	4,800.73	-2,792.11	1,351.61	3,071.97	1.61	-0.92	1.32
8,171.00	90.10	138.030	4,800.62	-2,837.32	1,392.56	3,132.32	0.64	0.00	0.64
8,232.00	89.83	137.010	4,800.66	-2,882.31	1,433.76	3,192.62	1.73	-0.44	-1.67
8,292.00	90.91	137.080	4,800.27	-2,926.22	1,474.64	3,251.86	1.80	1.80	0.12
8,353.00	91.21	137.030	4,799.14	-2,970.87	1,516.19	3,312.08	0.50	0.49	-0.08
8,414.00	90.24	136.700	4,798.37	-3,015.38	1,557.89	3,372.27	1.68	-1.59	-0.54
8,474.00	90.20	136.610	4,798.14	-3,059.01	1,599.08	3,431.44	0.16	-0.07	-0.15
8,535.00	90.13	137.150	4,797.96	-3,103.54	1,640.77	3,491.64	0.89	-0.11	0.89
8,597.00	90.27	136.190	4,797.75	-3,148.63	1,683.32	3,552.78	1.56	0.23	-1.55
8,658.00	90.60	136.400	4,797.28	-3,192.73	1,725.46	3,612.87	0.64	0.54	0.34
8,719.00	90.37	138.260	4,796.77	-3,237.58	1,766.80	3,673.14	3.07	-0.38	3.05



Scientific Drilling, Intl
Survey Report



Company: DJR Operating
Project: Nageezi Unit
Site: A09 2309
Well: 509H
Wellbore: Original drilling
Design: Original drilling

Local Co-ordinate Reference: Well 509H
TVD Reference: GL 6748' & RKB 14' @ 6762.00usft (Aztec 920)
MD Reference: GL 6748' & RKB 14' @ 6762.00usft (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)
8,779.00	90.77	139.010	4,796.17	-3,282.61	1,806.45	3,732.62	1.42	0.67	1.25
8,839.00	90.71	138.590	4,795.40	-3,327.75	1,845.97	3,792.12	0.71	-0.10	-0.70
8,900.00	90.54	138.620	4,794.73	-3,373.50	1,886.30	3,852.58	0.28	-0.28	0.05
8,961.00	90.57	138.370	4,794.14	-3,419.19	1,926.73	3,913.03	0.41	0.05	-0.41
9,021.00	90.60	138.210	4,793.53	-3,463.97	1,966.64	3,972.46	0.27	0.05	-0.27
9,081.00	90.40	137.510	4,793.00	-3,508.46	2,006.90	4,031.82	1.21	-0.33	-1.17
9,142.00	89.83	136.980	4,792.88	-3,553.25	2,048.31	4,092.08	1.28	-0.93	-0.87
9,203.00	89.73	136.690	4,793.12	-3,597.74	2,090.04	4,152.27	0.50	-0.16	-0.48
9,264.00	91.07	136.440	4,792.69	-3,642.04	2,131.98	4,212.41	2.23	2.20	-0.41
9,324.00	91.15	136.210	4,791.53	-3,685.43	2,173.40	4,271.51	0.41	0.13	-0.38
9,385.00	90.30	135.460	4,790.76	-3,729.18	2,215.90	4,331.52	1.86	-1.39	-1.23
9,447.00	90.50	134.850	4,790.32	-3,773.14	2,259.62	4,392.37	1.04	0.32	-0.98
9,507.00	89.90	134.020	4,790.11	-3,815.14	2,302.46	4,451.11	1.71	-1.00	-1.38
9,568.00	90.03	135.250	4,790.15	-3,858.00	2,345.87	4,510.88	2.03	0.21	2.02
9,629.00	90.67	136.500	4,789.78	-3,901.78	2,388.34	4,570.89	2.30	1.05	2.05
9,690.00	91.44	137.780	4,788.65	-3,946.49	2,429.82	4,631.12	2.45	1.26	2.10
9,751.00	88.72	136.880	4,788.57	-3,991.34	2,471.16	4,691.38	4.70	-4.46	-1.48
9,812.00	89.97	138.070	4,789.27	-4,036.29	2,512.39	4,751.68	2.83	2.05	1.95
9,872.00	89.40	137.500	4,789.60	-4,080.72	2,552.70	4,811.03	1.34	-0.95	-0.95
9,934.00	90.94	137.400	4,789.41	-4,126.40	2,594.63	4,872.31	2.49	2.48	-0.16
9,995.00	92.69	139.450	4,787.48	-4,172.00	2,635.08	4,932.72	4.42	2.87	3.36
10,056.00	90.60	140.680	4,785.73	-4,218.75	2,674.22	4,993.34	3.98	-3.43	2.02
10,118.00	88.56	139.080	4,786.18	-4,266.16	2,714.17	5,054.96	4.18	-3.29	-2.58
10,179.00	89.13	140.020	4,787.41	-4,312.57	2,753.73	5,115.54	1.80	0.93	1.54
10,240.00	87.51	139.990	4,789.20	-4,359.28	2,792.92	5,176.15	2.66	-2.66	-0.05
10,301.00	91.01	141.310	4,789.99	-4,406.44	2,831.59	5,236.85	6.13	5.74	2.16
10,362.00	88.49	138.200	4,790.26	-4,452.99	2,870.99	5,297.46	6.56	-4.13	-5.10
10,422.00	86.64	134.330	4,792.81	-4,496.29	2,912.42	5,356.49	7.14	-3.08	-6.45
10,482.00	85.46	133.180	4,796.94	-4,537.69	2,955.66	5,414.95	2.74	-1.97	-1.92
10,543.00	87.00	132.920	4,800.95	-4,579.24	3,000.13	5,474.22	2.56	2.52	-0.43
10,604.00	88.62	133.710	4,803.28	-4,621.05	3,044.48	5,533.64	2.95	2.66	1.30
10,665.00	90.10	134.310	4,803.96	-4,663.43	3,088.35	5,593.26	2.62	2.43	0.98
10,726.00	90.40	134.150	4,803.70	-4,705.98	3,132.06	5,652.94	0.56	0.49	-0.26
10,773.00	90.07	134.000	4,803.50	-4,738.67	3,165.83	5,698.90	0.77	-0.70	-0.32
10,824.00	90.07	134.000	4,803.44	-4,774.10	3,202.51	5,748.75	0.00	0.00	0.00



Scientific Drilling, Intl
Survey Report



Company: DJR Operating
Project: Nageezi Unit
Site: A09 2309
Well: 509H
Wellbore: Original drilling
Design: Original drilling

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well 509H
GL 6748' & RKB 14' @ 6762.00usft (Aztec 920)
GL 6748' & RKB 14' @ 6762.00usft (Aztec 920)
True
Minimum Curvature
Grand Junction District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
435.00	435.00	-1.44	0.06	First SDI Surface MWD Survey
4,108.00	4,012.08	-79.30	-793.05	Last SDI Surface MWD Survey
4,169.00	4,071.65	-84.73	-804.93	First SDI Curve MWD Survey
5,200.00	4,819.42	-620.72	-578.32	Last SDI Curve MWD Survey
5,264.00	4,823.40	-673.60	-542.50	First SDI Lateral MWD Survey
10,773.00	4,803.50	-4,738.67	3,165.83	Last SDI Lateral MWD Survey
10,824.00	4,803.44	-4,774.10	3,202.51	Projection to TD

Checked By: _____ Approved By: _____ Date: _____