

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 3/27/2020

Operator: DJR **Well Name and Number:** Nageezi Unit 313H

API#: 30-045-38209 , **Section:** 35, **Township:** 24N, **Range:** 9 W

Conditions of Approval: (See the below checked and handwritten conditions)

☒ Notify appropriate OCD district office 24hrs prior to spud, casing & cement.

☒ If cement does not circulate on any casing string or stage tool a CBL will be required. Contact the regulatory agencies prior to proceeding.

☒ Hold C-104 for directional survey & "As Drilled" Plat

☐ Hold C-104 for: ☐ NSL, ☐ NSP, ☐ DHC, ☐ 5.9 Compliance

☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned

☒ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:

- A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
- A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
- A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C

☒ Any change of plans must adhere to 19.15.7.14(A)(1). Field operation changes requiring immediate approval must be approved by the District Office prior to implementation.

☒ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the freshwater zone or zones and shall immediately set in cement the water protection string

☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84

☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.



NMOCD Approved by Signature

11/23/2020
Date

Form 3160-3
(June 2015)NMOCD REC'D
11-17-20UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. N0G14031919	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name NAVAJO NATION	
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☒ Multiple Zone		7. If Unit or CA Agreement, Name and No. NMNM 132981A	
2. Name of Operator DJR OPERATING LLC		8. Lease Name and Well No. NAGEEZI UNIT	
3a. Address 1700 LINCOLN STREET, SUITE 2800, DENVER, CO 802		9. API Well No. 313H 30-045-38209	
3b. Phone No. (include area code) (505) 632-3476		10. Field and Pool, or Exploratory BASIN MANCOS	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWNE / 2303 FNL / 2268 FEL / LAT 36.271497 / LONG -107.757763 At proposed prod. zone NESE / 2024 FSL / 399 FEL / LAT 36.254578 / LONG -107.733535		11. Sec., T. R. M. or Blk. and Survey or Area SEC 35/T24N/R9W/NMP	
14. Distance in miles and direction from nearest town or post office* 37 miles		12. County or Parish SAN JUAN	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 2303 feet	16. No of acres in lease 160	17. Spacing Unit dedicated to this well 561.86	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet	19. Proposed Depth 5314 feet / 15144 feet	20. BLM/BIA Bond No. in file IND: B010611	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6899 feet	22. Approximate date work will start* 08/15/2020	23. Estimated duration 10 days	
24. Attachments			
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)			
1. Well plat certified by a registered surveyor.		4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).	
2. A Drilling Plan.		5. Operator certification.	
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).		6. Such other site specific information and/or plans as may be requested by the BLM.	
25. Signature (Electronic Submission)	Name (Printed/Typed) SHAW N / Ph: (505) 632-3476	Date 04/15/2020	
Title Regulatory Specialist			
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) RICHARD FIELDS / Ph: (505) 564-7612	Date 11/13/2020	
Title Field Manager			
Office Farmington Field Office			
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.			
Conditions of approval, if any, are attached.			
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.			

(Continued on page 2)

*(Instructions on page 2)



Approval Date: 11/13/2020

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 Bravo Rd., Artesia, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-8460 Fax: (505) 478-8462

State of New Mexico
Energy, Minerals & Natural Resources Department

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-38209		*Pool Code 98080	*Pool Name NAGEEZI UNIT MANCOS OIL POOL
*Property Code 325268	*Property Name NAGEEZI UNIT		*Well Number 313H
*GRID No. 371838	*Operator Name DJR OPERATING, LLC		*Elevation 6899'

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
G	35	24N	9W		2303'	NORTH	2268'	EAST	SAN JUAN

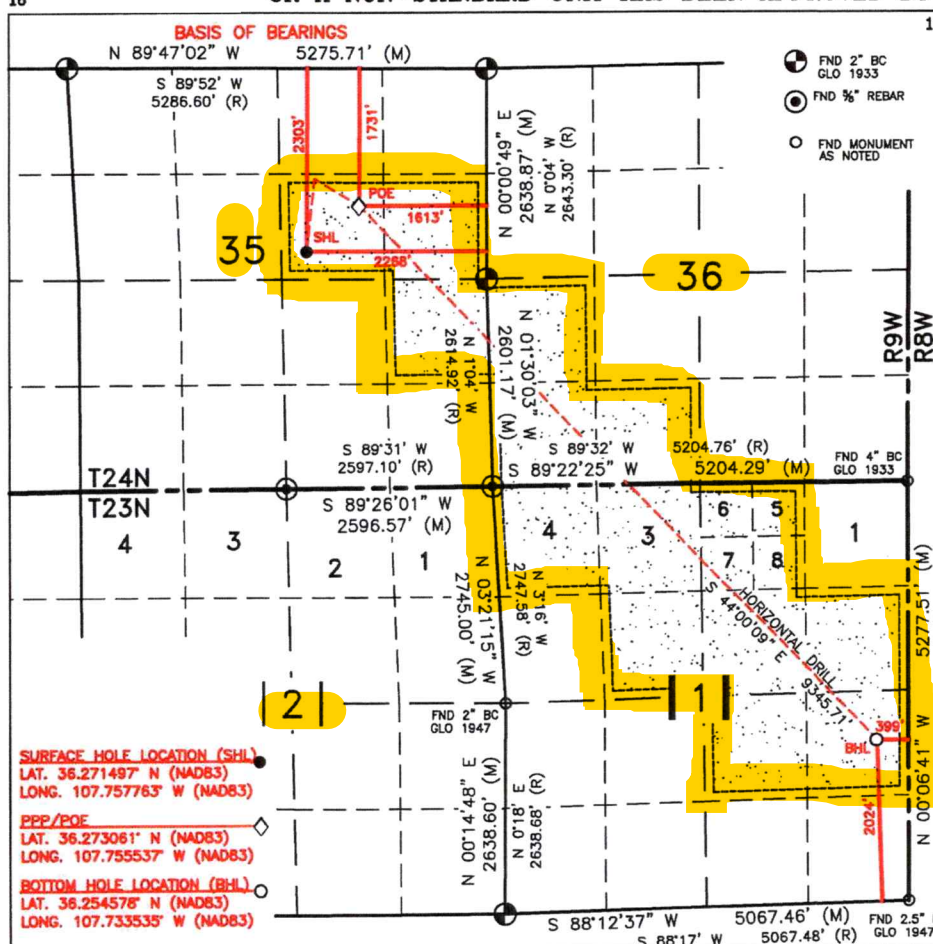
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	1	23N	9W		2024'	SOUTH	399'	EAST	SAN JUAN

¹² Dedicated Acres PENETRATED SPACING UNIT; SEC 35: SW/NE, SE/NE & NE/SE (120 AC.); SEC 36: NW/SW, SW/SW & SE/SW (120 AC.); SEC 1: NW/NW, NE/NW, SE/NW, NW/NE, SW/NE, SE/NE, NW/SE & NE/SE (321.86 AC.) = 561.86 ACRES	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13856 R-13856A
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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 TOTAL ACRES 562.25



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 6/12/20
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.

OCTOBER 7, 2019

Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number 11393

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State of New Mexico
Energy, Minerals & Natural Resources Department

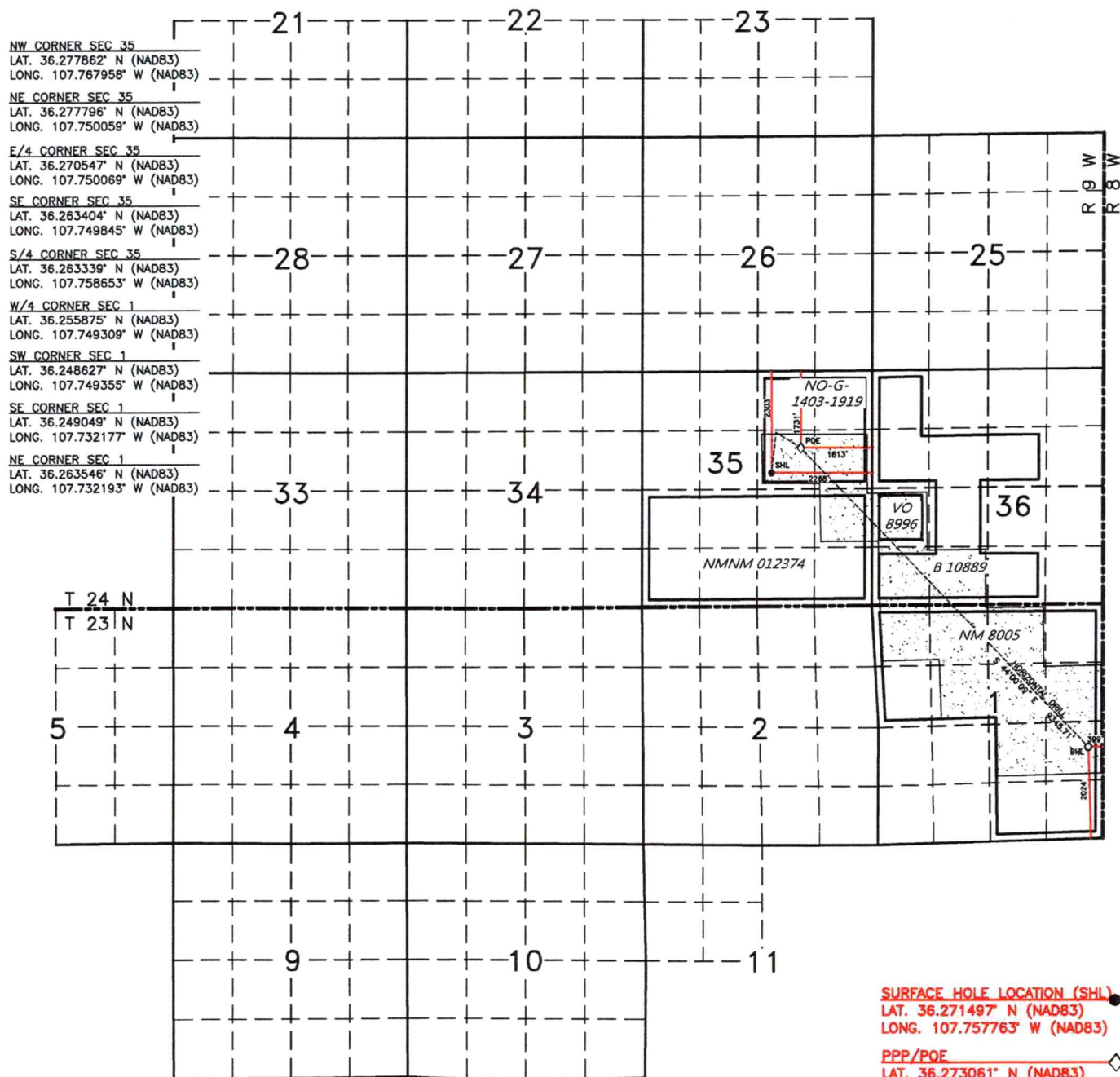
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☐ AMENDED REPORT

DJR OPERATING, LLC
NAGEEZI UNIT #313H



SURFACE HOLE LOCATION (SHL)
LAT. 36.271497° N (NAD83)
LONG. 107.757763° W (NAD83)

PPP/POE
LAT. 36.273061° N (NAD83)
LONG. 107.755537° W (NAD83)

BOTTOM HOLE LOCATION (BHL)
LAT. 36.254578° N (NAD83)
LONG. 107.733535° W (NAD83)

PENETRATED SPACING UNIT:
SEC 35: SW/NE, SE/NE & NE/SE (120 AC.); SEC 36:
NW/SW, SW/SW & SE/SW (120 AC.); SEC 1: NW/NW,
NE/NW, SE/NW, NW/NE, SW/NE, SE/NE, NW/SE & NE/SE
(321.86 AC.) = 561.86 ACRES

TOTAL 10,415.12 ACRES: T24N R9W, SEC. 21-23 (S/2), 25-28, 33-36, 1-4,
9-10 (ALL); T25N R9W, SEC. 5 (W/2), 11 (NW/4) - UNDIVIDED UNIT

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

☐ AMENDED REPORT

NAGEEZI UNIT #313H

1270.90 LINEAR FEET OF WELLBORE WITHIN
NO-G-1403-1919
LOCATED IN THE SW/NE & SE/NE OF SECTION 35,
T24N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

WELLBORE	NS-FOOT	NS INDICATOR	EW-FOOT	EW INDICATOR	LATITUDE	LONGITUDE
FROM	1731	FNL	1613	FEL	36.273061° N	107.755537° W
TO	2642	FNL	730	FEL	36.270548° N	107.752545° W

1079.89 LINEAR FEET OF WELLBORE WITHIN
NMNM 012374
LOCATED IN THE NE/SE OF SECTION 35,
T24N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

WELLBORE	NS-FOOT	NS INDICATOR	EW-FOOT	EW INDICATOR	LATITUDE	LONGITUDE
FROM	2642	FNL	730	FEL	36.270548° N	107.752545° W
TO	1824	FSL	0	FEL	36.268412° N	107.750002° W

717.07 LINEAR FEET OF WELLBORE WITHIN
VO 8996
LOCATED IN THE NW/SW OF SECTION 36,
T24N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

WELLBORE	NS-FOOT	NS INDICATOR	EW-FOOT	EW INDICATOR	LATITUDE	LONGITUDE
FROM	1824	FSL	0	FWL	36.268412° N	107.750002° W
TO	1302	FSL	484	FWL	36.266994° N	107.748314° W

1791.92 LINEAR FEET OF WELLBORE WITHIN
B 10889
LOCATED IN THE SW/SW & SE/SW OF SECTION 36,
T24N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

WELLBORE	NS-FOOT	NS INDICATOR	EW-FOOT	EW INDICATOR	LATITUDE	LONGITUDE
FROM	1302	FSL	484	FWL	36.266994° N	107.748314° W
TO	0	FSL	1695	FWL	36.263450° N	107.744095° W

4485.93 LINEAR FEET OF WELLBORE WITHIN
NM 8005
LOCATED IN THE NE/NW (LOT 3), SW/NW/NE (LOT 7),
SW/NE, SE/NE & NE/SE OF SECTION 1,
T23N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

WELLBORE	NS-FOOT	NS INDICATOR	EW-FOOT	EW INDICATOR	LATITUDE	LONGITUDE
FROM	0	FNL	1695	FWL	36.263450° N	107.744095° W
TO	2024	FSL	399	FEL	36.254578° N	107.733535° W

Rev 0



DRILLING PLAN Nageezi Unit 313H San Juan County, New Mexico

Surface Location

2268-ft FEL & 2303-ft FNL
Sec 35 T24N R09W
Graded Elevation 6899' MSL
RKB Elevation 6913' (14' KB)

SHL Geographical Coordinates (NAD-83)

Latitude 36.2714970° N
Longitude 107.7577630° W

Kick Off Point for Horizontal Build Curve

4698-ft MD
4596-ft TVD

Local Coordinates (from SHL)

907-ft North
95-ft East

Heel Location (Pay zone entry)

1613-ft FEL & 1731-ft FNL
Sec 35 T24N R09W

Heel Geographical Coordinates (NAD-83)

Latitude 36.2730613° N
Longitude 107.75553750° W

Bottom Hole Location (TD)

399-ft FEL & 2024-ft FSL
Sec 1 T23N R09W

BHL Geographical Coordinates (NAD-83)

Latitude 36.2545779° N
Longitude 107.7335354° W

Well objectives

This well is planned as a 9350-ft lateral in the Gallup C R3 sand.

Bottom Hole temperature and pressure

The temperature in the Gallup C R3 horizontal objective is 141°F. Bottom hole pressure in the Gallup C R3 is forecast to be 1985 psi.

Formation Tops (Sd = Sand; Sh = Shale; Siltstone = Slt, Coal = C; W = water; O = oil; G = gas; NP = no penetration)

Name	MD (ft)	TVD (ft)	Lithology	Pore fluid	Expected Pore Pressure (ppg)	Planned Mud Weight (ppg)
Ojo Alamo	856	854	Sd	W	8.3	8.4 – 8.8
Kirtland	942	938	Sh	-	8.3	8.4 – 8.8
Fruitland	1262	1250	C	G	8.3	9.0 - 9.5
Pictured Cliffs	1613	1592	Sd	W	8.3	9.0 - 9.5
Lewis	1711	1687	Sh	-		9.0 - 9.5
Chacra	2418	2376	Sd	-	8.3	9.0 - 9.5
Menefee	3150	3088	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	4150	4062	Sd	-	8.3	9.0 - 9.5
Mancos	4323	4230	Sh	-		9.0 - 9.5
Mancos Silt	4655	4554	Slt	O/G	6.6	9.0 - 9.5
Gallup A	5187	5052	Slt	O/G	6.6	9.0 - 9.5
Gallup B	5241	5094	Sd	O/G	6.6	8.8 - 9.0
Gallup C	5425	5213	Sd	O/G	6.6	8.8 - 9.0
Target	5798	5314	Sd	O/G	6.6	8.8 - 9.0

Casing Program

Casing OD	Hole Size	Weight (#/ft)	Grade	Coupling	MD Top	MD Bottom	TVD Top	TVD Bottom	Top of Cement
9-5/8"	12-1/4"	36	K-55	STC	surf	0	surf	350	surface
7"	8-3/4"	26	K-55	LTC	surf	5735	surf	5312	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5453	15144	5227	5226	5453

Note: all casing will be new

Rev 0



Casing Design Load Cases

		Casing String		
	Description	9-5/8" Surface	7" Intermediate	4-1/2" Production Liner
Collapse	Full internal evacuation ¹	✓	✓	✓
	Cementing	✓	✓	✓
Burst	Pressure test	✓ ²	✓ ²	✓
	Gas kick		✓ ³	
	Fracture at shoe, 1/3 BHP at surface		✓ ⁴	
	Injection down casing			✓ ⁵
Axial	Dynamic load on casing coupling ⁶	✓	✓	✓
Axial	Overpull ⁷	✓	✓	✓

Note

- 1 Fluid level at shoe, air column to surface, pore pressure outside
- 2 Tested to 80% of minimum internal yield with freshwater inside, pore pressure outside
- 3 50 bbl kick at TD, 0.50 ppg intensity, 4" drill pipe, 9.0 ppg mud, fracture gradient at shoe
- 4 2060 psi BHP, 687 psi surface pressure, 12.5 ppg EMW shoe integrity
- 5 Surface stimulation pressure of 8000 psi on 8.3 ppg fluid column. Stimulation will be down frac string, so load does not apply to 7" intermediate casing.
- 6 Shock load from abrupt pipe deceleration, evaluated against coupling rating
- 7 Overpull values as follows: Surface casing 20,000 lbs, Intermediate & Production 100,000 lbs

Casing Design Factors

		Design Factors			
Casing string	Casing OD	Burst	Collapse	Axial	Triaxial
Surface	9-5/8"	1.25	13.38	8.16	1.56
Intermediate	7"	1.25	1.50	1.68	1.34
Production liner	4-1/2"	1.37	3.68	1.88	1.69

Cement Design

9-5/8" Surface Casing

	Lead
Name	Redi-Mix
Type	I-II
Planned top	Surface
Density (ppg)	14.50
Yield (cf/sx)	1.61
Mix water (gal/sx)	7.41
Volume (sx)	114
Volume (bbls)	33
Volume (cu. ft.)	185
Excess %	50

7" Intermediate Casing

	Lead	Tail
	BJ Services	BJ Services
Type	III	Poz/G
Planned top	Surface	4198-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	2.34	1.50
Mix water (gal/sx)	13.26	7.20
Volume (sx)	420	253
Volume (bbls)	175	67
Volume (cu.ft.)	984	379
Excess %	50	50

Rev 0

4-1/2" Production Liner

	BJ Services
Type	Poz/G
Planned top	5453-ft
Density (ppg)	13.3
Yield (cf/sx)	1.56
Mix water (gal/sx)	7.71
Volume (sx)	815
Volume (bbls)	227
Volume (cu.ft)	1274
Excess %	40

Wellhead & Pressure Control

The well head will be an 11" 5M multi-bowl system. A 3M BOPE conforming to Onshore Order #2 will be installed on the surface casing. The BOP and accumulator will meet API 16D and 16E respectively.

A PVT mud monitoring system and a trip tank will be rigged up and operational for all hole intervals. An electronic geolograph will be employed to monitor and record drilling data (ROP, WOB, SPM, Pressure, RPM and torque).

Mud Program

Surface hole will be drilled with a fresh water, native mud system. In intermediate hole, a low weight 7% KCl LSND drilling fluid will be used, with KCl providing chemical stability for the young shales and clays present in the interval. In production hole a LSND system with polymer and lubricant additives is programmed. Sufficient drill water and mud additives will be on hand to maintain adequate pit volumes and maintain well control.

Hole Section	Fluid type	Interval (MD)	Density (ppg)	Funnel Viscosity	Yield Point	Fluid Loss (cc/30 min)
Surface	Fresh water spud mud	0 – 350	8.4 – 8.8	32 – 44	2 – 12	NC
Intermediate	7% KCl Low solids, non-dispersed	350 – 5735	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5735 – 15144	8.8 – 9.2	34 – 38	6 – 8	6 – 8

Cores, tests and logs

Wellbore surveying: Drift (inclination only) surveys will be obtained in surface hole. MWD directional surveys will be taken in intermediate and production hole.

Logging while drilling: None in surface hole. MWD GR in intermediate and production hole.

Mud logging: a two-person mud logging unit with C1 – C4 gas analysis will be operational in intermediate and production hole.

Electric logging: No open hole electric logs are programmed. A cased hole GR/CCL will be run during completions for perforating depth control.

Cuttings and drilling fluids management

- ✓ A closed loop, steel tank-based circulating system will be used. In addition to the rig solids control equipment, a dewatering centrifuge and chemical flocculation system will be operational to strip solids from the whole mud. All solids will be collected in 3-sided bins and will then be put into transports with a bucket loader. Drying agents will be used if necessary. The solids will be taken to a licensed commercial disposal facility. Whole mud will be dewatered back to drill water and used as make up for subsequent wells or hauled off for disposal. A diagram of the closed loop system is included.

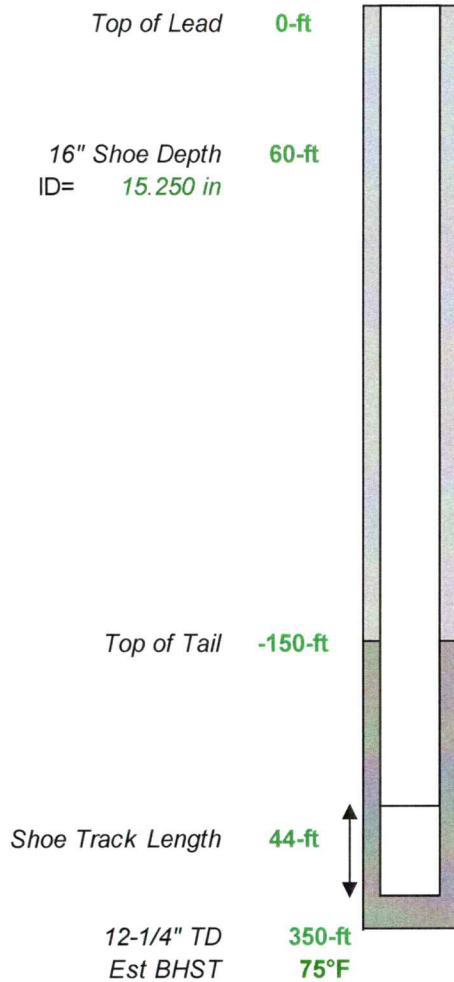
Completion

It is envisioned that this well will be completed with a multi-stage sand frac, using the plug and perf technique. After drilling out the plugs, the current plan is to install a 2-7/8" plunger-assisted gas lift tubing string. The stimulation and completion plan will be sundried at a later date.

Rev 0



9-5/8" Surface Casing & Cementing



Assumed Hole Size **12.2500** in
 Casing OD **9.6250** in
 Casing ID **8.9210** in

% Excess Lead **50%**
 % Excess Tail

Capacity CH Ann **0.1359** bbl/ft
 Capacity OH Ann **0.0558** bbl/ft
 Capacity Pipe **0.0773** bbl/ft

9-5/8" 36# K-55 ST&C

Pipe OD **9.625** in
 Coupling OD **10.625** in
 ID **8.921** in
 Drift **8.765** in
 Burst **3520** psi
 Collapse **2020** psi
 Tensile (body) **564** kips
 Tensile (joint) **423** kips
 Min Torque **1830** ft-lbs
 Opt Torque **2440** ft-lbs
 Max Torque **3050** ft-lbs

Lead Slurry

Properties

Redi Mix Type I/II
 20% Fly Ash
 Density **14.50** ppg
 Yield **1.61** cf/sk
 Total Mix Fluid **7.41** gal/sk
 Est pump time (70Bc) **NA**
 8-hr compressive **475** psi
 24-hr compressive **1375** psi

Tail Slurry

Properties

None
 Density ppg
 Yield cf/sk
 Total Mix Fluid gal/sk
 Est pump time (70Bc)
 50 psi strength in
 24/72 hr strength psi

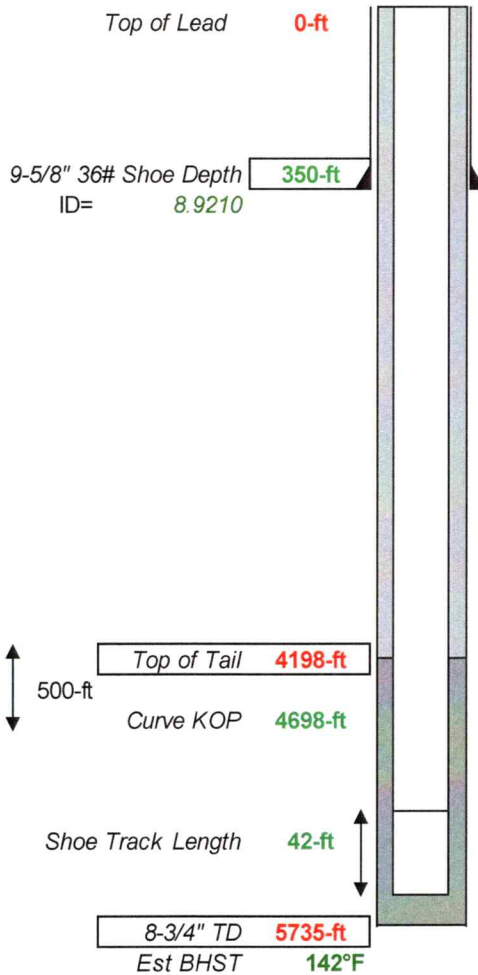
Volumes

Lead Volume **33** bbls **114** sx
 Tail Volume bbls sx
 Displacement **24** bbls
 Total Volume **56** bbls

Rev 0



7" Intermediate Casing & Cementing Nageezi Unit 313H



Assumed Hole Size Lead	8.7500 in
Assumed Hole Size Tail	8.7500 in
Casing OD	7.0000 in
Casing ID	6.2760 in

% OH Excess Lead	60%
% OH Excess Tail	60%

Capacity CH Ann	0.0297 bbl/ft
Capacity OH Ann Lead	0.0268 bbl/ft
Capacity OH Ann Tail	0.0268 bbl/ft
Capacity Pipe	0.0383 bbl/ft

7" 26# K-55 LT&C

Pipe OD	7.000 in
Weight	26 lbs/ft
Grade	K-55
Coupling	LTC
Coupling OD	7.656 in
ID	6.276 in
Drift	6.151 in
Burst	4980 psi
Collapse	4320 psi
Tensile (body)	415 kips
Tensile (joint)	401 kips
Min Torque	3008 ft-lbs
Opt Torque	4010 ft-lbs
Max Torque	5013 ft-lbs

BJ Lead Slurry

Type III	
BA-90	5 lb/sx%
KCI	3.00%
GW-86	0.10%
FL-66	0.20%
R-3	0.50%
FP-25	0.30%

Properties

Density	12.30 ppg
Yield	2.3404 cf/sk
Total Mix Fluid	13.26 gal/sk
Thickening Time	3:11 hr:min
Time to 50 psi (80°F)	5:10 hr:min
24-hr UCA (80°F)	659 psi

BJ Tail Slurry

G+Pozz	50:50
BA-90	3 lb/sx
FL-66	0.40%
FP-25	0.30%
Sod. Met	0.50%
Gyp	3.00%

Properties

Density	13.50 ppg
Yield	1.4946 cf/sk
Total Mix Fluid	7.24 gal/sk
Thickening Time	3:26 hr:min
Time to 50 psi (135°F)	2:55 hr:min
Time to 500 psi (135°F)	6:40 hr:min

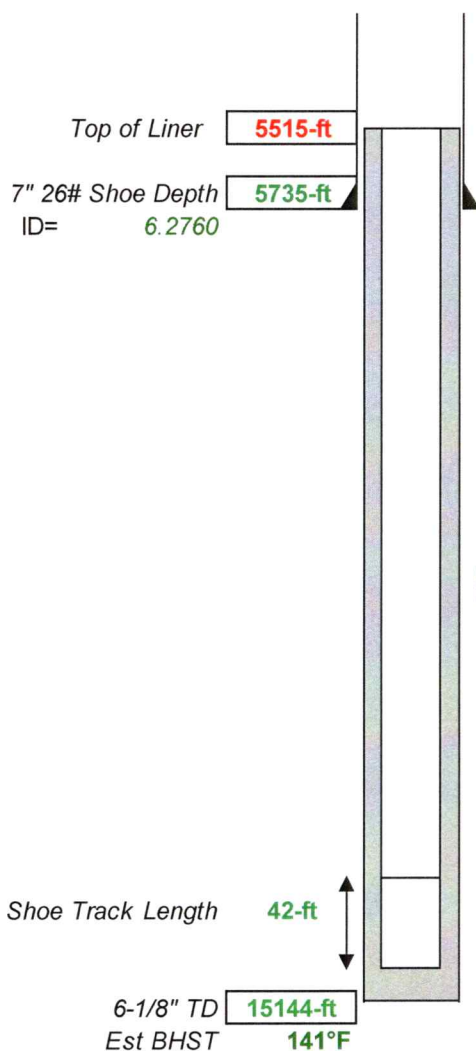
Volumes

Lead Volume	175 bbls	420 sx
Tail Volume	67 bbls	253 sx
Approx Displacement	218 bbls	
Total Volume	461 bbls	

Rev 0



4-1/2" Liner Cementing Nageezi Unit 313H

Assumed Hole Size **6.1250** inCasing OD **4.5000** inCasing ID **4.0000** in% Excess Open Hole **40%**Capacity CH Ann **0.0186** bbl/ftCapacity OH Ann **0.0168** bbl/ftCapacity Pipe **0.0155** bbl/ft

4-1/2" 11.6# HCP-110 BTC

Pipe OD **4.500** inWeight **11.6** lbs/ftGrade **P-110**Coupling **LTC**Coupling OD **5.000** inID **4.000** inDrift **3.875** inBurst **10690** psiCollapse **8650** psiTensile (body) **367** kipsTensile (joint) **385** kipsMin Torque **ft-lbs**Opt Torque **Triangle** ft-lbsMax Torque **ft-lbs**

BJ Lead Slurry		Properties	
G+Pozz	50:50	Density	13.30 ppg
BA-90	3 lb/sx	Yield	1.5629 cf/sk
GW-86	0.10%	Total Mix Fluid	7.70 gal/sk
R-3	0.40%	Thickening Time	6:04 hr:min
FP-25	30.00%	Time to 50 psi (147°F)	7:15 hr:min
FL-24	0.40%	24-hr UCA (147°F)	1293 psi
Gel	4.00%		
Volumes			
Lead Volume	226 bbls	811 sx	
Approx Displacement	164 bbls		
Total Volume	389 bbls		



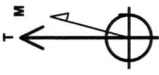
Company: DJR Operating
Project: Nageezi Unit
Site: G35 2409
Well: 313H
Wellbore: Original Drilling
Design: APD

PROJECT DETAILS: Nageezi Unit

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



Azimuths to True North
Magnetic North: 8.78°
Magnetic Field
Strength: 49430.5nT
Dip Angle: 62.80°
Date: 12/20/2019
Model: HDGM_FILE



CASING DETAILS

TVD	MD	Name
350.00	350.00	Surface Casing
5311.55735.30		Intermediate Casing

FORMATION DETAILS

MDPath	Formation
854.00	Ojo Alamo
938.00	Kirtland
1250.00	Fruitland
1261.81	Pictured Cliffs
1592.00	Lewis
1687.00	Chacra
2376.00	Menefee
3088.00	Point Lookout
4062.00	Mancos
4230.00	Mancos Silt
4554.38	Gallup A
5052.00	Gallup B
5094.00	Gallup C
5241.25	
5213.00	

WELL DETAILS: 313H

GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)

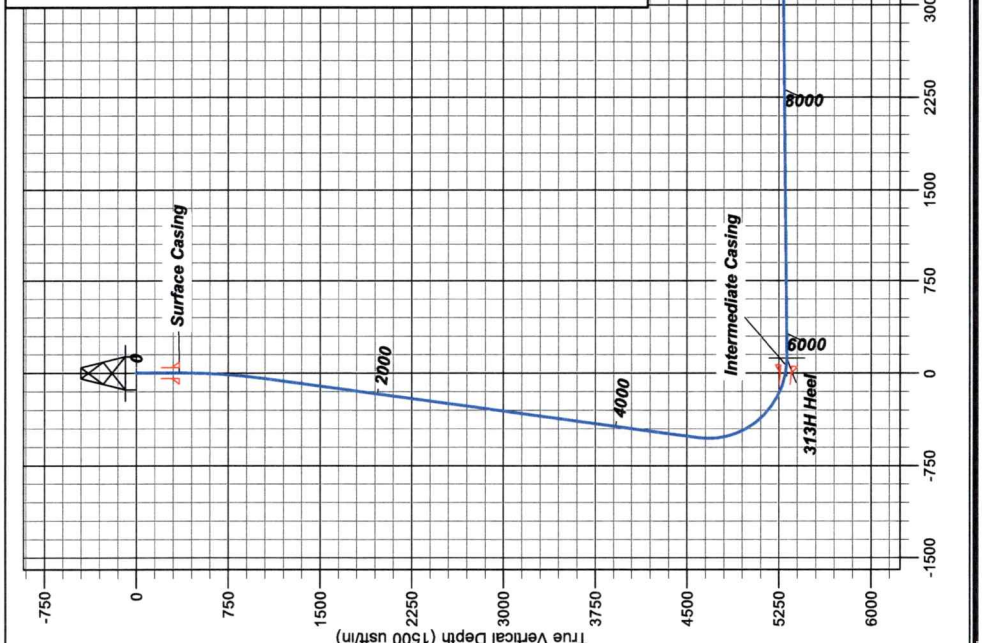
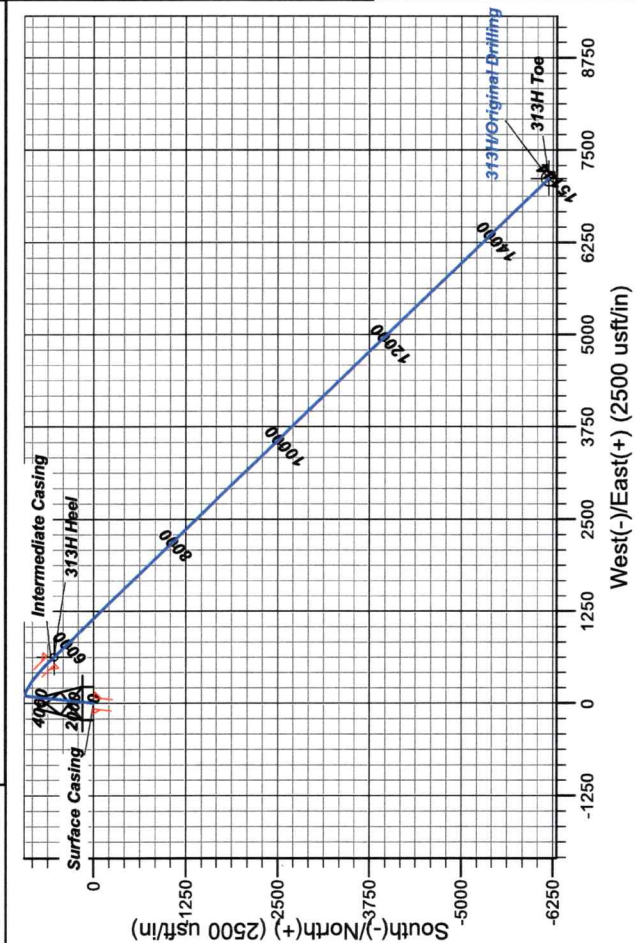
+N/-S	+E/-W	Longitude
0.00	0.00	7
1918162.49	2745394.06	-107.7576730

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Longitude
313H Heel	5314.00	539.60	629.47	-107.7555375
313H Toe	5226.00	-6187.92	7116.59	-107.7353554

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VSecl	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
375.00	0.00	0.000	375.00	0.00	0.00	0.00	0.00	0.00	
1034.67	13.19	5.956	1028.86	75.21	7.85	2.00	5.96	-43.43	
4698.04	13.19	5.956	4595.53	906.82	94.61	0.00	0.00	-523.61	
5797.84	90.54	136.042	5314.00	539.60	629.47	9.00	129.24	120.96	313H Heel
15143.96	90.54	136.042	5226.00	-6187.92	7116.59	0.00	0.00	9430.60	313H Toe





DJR Operating

Nageezi Unit

G35 2409

313H - Slot 7

Original Drilling

Plan: APD

Standard Planning Report

09 January, 2020



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Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 313H - Slot 7
Company:	DJR Operating	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site:	G35 2409	North Reference:	True
Well:	313H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

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	G35 2409				
Site Position:		Northing:	1,918,072.88 usft	Latitude:	36.2713330
From:	Lat/Long	Easting:	2,745,314.54 usft	Longitude:	-107.7579430
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.04 °

Well	313H - Slot 7					
Well Position	+N/-S	89.55 usft	Northing:	1,918,162.49 usft	Latitude:	36.2715790
	+E/-W	79.59 usft	Easting:	2,745,394.06 usft	Longitude:	-107.7576730
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,899.00 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	12/20/2019	8.78	62.80	49,430.50000000

Design	APD				
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	131.007	

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
375.00	0.00	0.000	375.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,034.67	13.19	5.956	1,028.86	75.21	7.85	2.00	2.00	0.00	5.96	
4,698.04	13.19	5.956	4,595.53	906.82	94.61	0.00	0.00	0.00	0.00	
5,797.84	90.54	136.042	5,314.00	539.60	629.47	9.00	7.03	11.83	129.24	313H Heel
15,143.96	90.54	136.042	5,226.00	-6,187.93	7,116.59	0.00	0.00	0.00	0.00	313H Toe



Scientific Drilling, Intl

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 313H - Slot 7
Company:	DJR Operating	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site:	G35 2409	North Reference:	True
Well:	313H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
375.00	0.00	0.000	375.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.50	5.956	400.00	0.11	0.01	-0.06	2.00	2.00	0.00
500.00	2.50	5.956	499.96	2.71	0.28	-1.57	2.00	2.00	0.00
600.00	4.50	5.956	599.77	8.78	0.92	-5.07	2.00	2.00	0.00
700.00	6.50	5.956	699.30	18.32	1.91	-10.58	2.00	2.00	0.00
800.00	8.50	5.956	798.44	31.30	3.27	-18.07	2.00	2.00	0.00
900.00	10.50	5.956	897.06	47.71	4.98	-27.55	2.00	2.00	0.00
1,000.00	12.50	5.956	995.05	67.54	7.05	-39.00	2.00	2.00	0.00
1,034.67	13.19	5.956	1,028.86	75.21	7.85	-43.43	2.00	2.00	0.00
1,100.00	13.19	5.956	1,092.46	90.04	9.39	-51.99	0.00	0.00	0.00
1,200.00	13.19	5.956	1,189.82	112.74	11.76	-65.10	0.00	0.00	0.00
1,300.00	13.19	5.956	1,287.18	135.44	14.13	-78.20	0.00	0.00	0.00
1,400.00	13.19	5.956	1,384.54	158.14	16.50	-91.31	0.00	0.00	0.00
1,500.00	13.19	5.956	1,481.90	180.84	18.87	-104.42	0.00	0.00	0.00
1,600.00	13.19	5.956	1,579.26	203.54	21.24	-117.53	0.00	0.00	0.00
1,700.00	13.19	5.956	1,676.62	226.24	23.60	-130.64	0.00	0.00	0.00
1,800.00	13.19	5.956	1,773.98	248.94	25.97	-143.74	0.00	0.00	0.00
1,900.00	13.19	5.956	1,871.34	271.64	28.34	-156.85	0.00	0.00	0.00
2,000.00	13.19	5.956	1,968.70	294.34	30.71	-169.96	0.00	0.00	0.00
2,100.00	13.19	5.956	2,066.06	317.04	33.08	-183.07	0.00	0.00	0.00
2,200.00	13.19	5.956	2,163.42	339.74	35.45	-196.18	0.00	0.00	0.00
2,300.00	13.19	5.956	2,260.78	362.45	37.82	-209.28	0.00	0.00	0.00
2,400.00	13.19	5.956	2,358.14	385.15	40.18	-222.39	0.00	0.00	0.00
2,500.00	13.19	5.956	2,455.50	407.85	42.55	-235.50	0.00	0.00	0.00
2,599.99	13.19	5.956	2,552.86	430.55	44.92	-248.61	0.00	0.00	0.00
2,699.99	13.19	5.956	2,650.22	453.25	47.29	-261.71	0.00	0.00	0.00
2,799.99	13.19	5.956	2,747.58	475.95	49.66	-274.82	0.00	0.00	0.00
2,899.99	13.19	5.956	2,844.94	498.65	52.03	-287.93	0.00	0.00	0.00
2,999.99	13.19	5.956	2,942.31	521.35	54.40	-301.04	0.00	0.00	0.00
3,099.99	13.19	5.956	3,039.67	544.05	56.76	-314.15	0.00	0.00	0.00
3,199.99	13.19	5.956	3,137.03	566.75	59.13	-327.25	0.00	0.00	0.00
3,299.99	13.19	5.956	3,234.39	589.45	61.50	-340.36	0.00	0.00	0.00
3,399.99	13.19	5.956	3,331.75	612.15	63.87	-353.47	0.00	0.00	0.00
3,499.99	13.19	5.956	3,429.11	634.85	66.24	-366.58	0.00	0.00	0.00
3,599.99	13.19	5.956	3,526.47	657.55	68.61	-379.68	0.00	0.00	0.00
3,699.99	13.19	5.956	3,623.83	680.25	70.97	-392.79	0.00	0.00	0.00
3,799.99	13.19	5.956	3,721.19	702.96	73.34	-405.90	0.00	0.00	0.00
3,899.99	13.19	5.956	3,818.55	725.66	75.71	-419.01	0.00	0.00	0.00
3,999.99	13.19	5.956	3,915.91	748.36	78.08	-432.12	0.00	0.00	0.00
4,099.99	13.19	5.956	4,013.27	771.06	80.45	-445.22	0.00	0.00	0.00
4,199.99	13.19	5.956	4,110.63	793.76	82.82	-458.33	0.00	0.00	0.00
4,299.99	13.19	5.956	4,207.99	816.46	85.19	-471.44	0.00	0.00	0.00
4,399.99	13.19	5.956	4,305.35	839.16	87.55	-484.55	0.00	0.00	0.00
4,499.99	13.19	5.956	4,402.71	861.86	89.92	-497.65	0.00	0.00	0.00
4,599.99	13.19	5.956	4,500.07	884.56	92.29	-510.76	0.00	0.00	0.00
4,698.04	13.19	5.956	4,595.53	906.82	94.61	-523.61	0.00	0.00	0.00
4,699.99	13.08	6.557	4,597.43	907.26	94.66	-523.87	9.00	-5.66	30.80
4,799.99	10.21	50.131	4,695.54	924.22	102.77	-528.88	9.00	-2.87	43.57



Scientific Drilling, Intl

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 313H - Slot 7
Company:	DJR Operating	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site:	G35 2409	North Reference:	True
Well:	313H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

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)
4,899.99	14.06	90.105	4,793.46	929.89	121.76	-518.27	9.00	3.85	39.97
4,999.99	21.24	108.424	4,888.76	924.13	151.15	-492.31	9.00	7.19	18.32
5,099.99	29.41	117.366	4,979.10	907.08	190.22	-451.64	9.00	8.17	8.94
5,199.99	37.93	122.622	5,062.27	879.17	238.01	-397.26	9.00	8.52	5.26
5,299.99	46.61	126.171	5,136.20	841.07	293.35	-330.51	9.00	8.68	3.55
5,399.99	55.38	128.822	5,199.08	793.74	354.86	-253.02	9.00	8.76	2.65
5,499.99	64.19	130.961	5,249.37	738.32	421.05	-166.72	9.00	8.81	2.14
5,599.99	73.02	132.802	5,285.82	676.20	490.26	-73.72	9.00	8.84	1.84
5,699.99	81.87	134.475	5,307.53	608.89	560.81	23.68	9.00	8.85	1.67
5,797.84	90.54	136.042	5,314.00	539.60	629.47	120.96	9.00	8.86	1.60
5,799.99	90.54	136.042	5,313.98	538.05	630.96	123.09	0.00	0.00	0.00
5,899.99	90.54	136.042	5,313.04	466.07	700.37	222.70	0.00	0.00	0.00
5,999.99	90.54	136.042	5,312.10	394.09	769.78	322.31	0.00	0.00	0.00
6,099.99	90.54	136.042	5,311.16	322.11	839.19	421.92	0.00	0.00	0.00
6,199.99	90.54	136.042	5,310.21	250.13	908.60	521.53	0.00	0.00	0.00
6,299.99	90.54	136.042	5,309.27	178.14	978.01	621.14	0.00	0.00	0.00
6,399.99	90.54	136.042	5,308.33	106.16	1,047.42	720.75	0.00	0.00	0.00
6,499.99	90.54	136.042	5,307.39	34.18	1,116.83	820.36	0.00	0.00	0.00
6,599.99	90.54	136.042	5,306.45	-37.80	1,186.24	919.97	0.00	0.00	0.00
6,699.99	90.54	136.042	5,305.51	-109.78	1,255.65	1,019.58	0.00	0.00	0.00
6,799.99	90.54	136.042	5,304.56	-181.76	1,325.06	1,119.19	0.00	0.00	0.00
6,899.99	90.54	136.042	5,303.62	-253.75	1,394.47	1,218.80	0.00	0.00	0.00
6,999.99	90.54	136.042	5,302.68	-325.73	1,463.88	1,318.41	0.00	0.00	0.00
7,099.99	90.54	136.042	5,301.74	-397.71	1,533.29	1,418.02	0.00	0.00	0.00
7,199.99	90.54	136.042	5,300.80	-469.69	1,602.70	1,517.63	0.00	0.00	0.00
7,299.99	90.54	136.042	5,299.86	-541.67	1,672.11	1,617.24	0.00	0.00	0.00
7,399.99	90.54	136.042	5,298.91	-613.65	1,741.52	1,716.85	0.00	0.00	0.00
7,499.99	90.54	136.042	5,297.97	-685.64	1,810.93	1,816.46	0.00	0.00	0.00
7,599.98	90.54	136.042	5,297.03	-757.62	1,880.33	1,916.07	0.00	0.00	0.00
7,699.98	90.54	136.042	5,296.09	-829.60	1,949.74	2,015.68	0.00	0.00	0.00
7,799.98	90.54	136.042	5,295.15	-901.58	2,019.15	2,115.28	0.00	0.00	0.00
7,899.98	90.54	136.042	5,294.21	-973.56	2,088.56	2,214.89	0.00	0.00	0.00
7,999.98	90.54	136.042	5,293.27	-1,045.54	2,157.97	2,314.50	0.00	0.00	0.00
8,099.98	90.54	136.042	5,292.32	-1,117.53	2,227.38	2,414.11	0.00	0.00	0.00
8,199.98	90.54	136.042	5,291.38	-1,189.51	2,296.79	2,513.72	0.00	0.00	0.00
8,299.98	90.54	136.042	5,290.44	-1,261.49	2,366.20	2,613.33	0.00	0.00	0.00
8,399.98	90.54	136.042	5,289.50	-1,333.47	2,435.61	2,712.94	0.00	0.00	0.00
8,499.98	90.54	136.042	5,288.56	-1,405.45	2,505.02	2,812.55	0.00	0.00	0.00
8,599.98	90.54	136.042	5,287.62	-1,477.44	2,574.43	2,912.16	0.00	0.00	0.00
8,699.98	90.54	136.042	5,286.67	-1,549.42	2,643.84	3,011.77	0.00	0.00	0.00
8,799.98	90.54	136.042	5,285.73	-1,621.40	2,713.25	3,111.38	0.00	0.00	0.00
8,899.98	90.54	136.042	5,284.79	-1,693.38	2,782.66	3,210.99	0.00	0.00	0.00
8,999.98	90.54	136.042	5,283.85	-1,765.36	2,852.07	3,310.60	0.00	0.00	0.00
9,099.98	90.54	136.042	5,282.91	-1,837.34	2,921.48	3,410.21	0.00	0.00	0.00
9,199.98	90.54	136.042	5,281.97	-1,909.33	2,990.89	3,509.82	0.00	0.00	0.00
9,299.98	90.54	136.042	5,281.03	-1,981.31	3,060.30	3,609.43	0.00	0.00	0.00
9,399.98	90.54	136.042	5,280.08	-2,053.29	3,129.71	3,709.04	0.00	0.00	0.00
9,499.98	90.54	136.042	5,279.14	-2,125.27	3,199.12	3,808.65	0.00	0.00	0.00
9,599.98	90.54	136.042	5,278.20	-2,197.25	3,268.53	3,908.26	0.00	0.00	0.00
9,699.98	90.54	136.042	5,277.26	-2,269.23	3,337.94	4,007.87	0.00	0.00	0.00
9,799.98	90.54	136.042	5,276.32	-2,341.22	3,407.35	4,107.47	0.00	0.00	0.00
9,899.98	90.54	136.042	5,275.38	-2,413.20	3,476.76	4,207.08	0.00	0.00	0.00



Scientific Drilling, Intl

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 313H - Slot 7
Company:	DJR Operating	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site:	G35 2409	North Reference:	True
Well:	313H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

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)
9,999.98	90.54	136.042	5,274.43	-2,485.18	3,546.17	4,306.69	0.00	0.00	0.00
10,099.98	90.54	136.042	5,273.49	-2,557.16	3,615.58	4,406.30	0.00	0.00	0.00
10,199.98	90.54	136.042	5,272.55	-2,629.14	3,684.99	4,505.91	0.00	0.00	0.00
10,299.98	90.54	136.042	5,271.61	-2,701.13	3,754.40	4,605.52	0.00	0.00	0.00
10,399.98	90.54	136.042	5,270.67	-2,773.11	3,823.81	4,705.13	0.00	0.00	0.00
10,499.98	90.54	136.042	5,269.73	-2,845.09	3,893.22	4,804.74	0.00	0.00	0.00
10,599.98	90.54	136.042	5,268.78	-2,917.07	3,962.62	4,904.35	0.00	0.00	0.00
10,699.98	90.54	136.042	5,267.84	-2,989.05	4,032.03	5,003.96	0.00	0.00	0.00
10,799.98	90.54	136.042	5,266.90	-3,061.03	4,101.44	5,103.57	0.00	0.00	0.00
10,899.98	90.54	136.042	5,265.96	-3,133.02	4,170.85	5,203.18	0.00	0.00	0.00
10,999.98	90.54	136.042	5,265.02	-3,205.00	4,240.26	5,302.79	0.00	0.00	0.00
11,099.98	90.54	136.042	5,264.08	-3,276.98	4,309.67	5,402.40	0.00	0.00	0.00
11,199.98	90.54	136.042	5,263.14	-3,348.96	4,379.08	5,502.01	0.00	0.00	0.00
11,299.98	90.54	136.042	5,262.19	-3,420.94	4,448.49	5,601.62	0.00	0.00	0.00
11,399.98	90.54	136.042	5,261.25	-3,492.92	4,517.90	5,701.23	0.00	0.00	0.00
11,499.98	90.54	136.042	5,260.31	-3,564.91	4,587.31	5,800.84	0.00	0.00	0.00
11,599.98	90.54	136.042	5,259.37	-3,636.89	4,656.72	5,900.45	0.00	0.00	0.00
11,699.98	90.54	136.042	5,258.43	-3,708.87	4,726.13	6,000.06	0.00	0.00	0.00
11,799.98	90.54	136.042	5,257.49	-3,780.85	4,795.54	6,099.67	0.00	0.00	0.00
11,899.98	90.54	136.042	5,256.54	-3,852.83	4,864.95	6,199.27	0.00	0.00	0.00
11,999.98	90.54	136.042	5,255.60	-3,924.81	4,934.36	6,298.88	0.00	0.00	0.00
12,099.98	90.54	136.042	5,254.66	-3,996.80	5,003.77	6,398.49	0.00	0.00	0.00
12,199.98	90.54	136.042	5,253.72	-4,068.78	5,073.18	6,498.10	0.00	0.00	0.00
12,299.98	90.54	136.042	5,252.78	-4,140.76	5,142.59	6,597.71	0.00	0.00	0.00
12,399.98	90.54	136.042	5,251.84	-4,212.74	5,212.00	6,697.32	0.00	0.00	0.00
12,499.98	90.54	136.042	5,250.90	-4,284.72	5,281.41	6,796.93	0.00	0.00	0.00
12,599.98	90.54	136.042	5,249.95	-4,356.71	5,350.82	6,896.54	0.00	0.00	0.00
12,699.97	90.54	136.042	5,249.01	-4,428.69	5,420.23	6,996.15	0.00	0.00	0.00
12,799.97	90.54	136.042	5,248.07	-4,500.67	5,489.64	7,095.76	0.00	0.00	0.00
12,899.97	90.54	136.042	5,247.13	-4,572.65	5,559.05	7,195.37	0.00	0.00	0.00
12,999.97	90.54	136.042	5,246.19	-4,644.63	5,628.46	7,294.98	0.00	0.00	0.00
13,099.97	90.54	136.042	5,245.25	-4,716.61	5,697.87	7,394.59	0.00	0.00	0.00
13,199.97	90.54	136.042	5,244.30	-4,788.60	5,767.28	7,494.20	0.00	0.00	0.00
13,299.97	90.54	136.042	5,243.36	-4,860.58	5,836.69	7,593.81	0.00	0.00	0.00
13,399.97	90.54	136.042	5,242.42	-4,932.56	5,906.10	7,693.42	0.00	0.00	0.00
13,499.97	90.54	136.042	5,241.48	-5,004.54	5,975.51	7,793.03	0.00	0.00	0.00
13,599.97	90.54	136.042	5,240.54	-5,076.52	6,044.91	7,892.64	0.00	0.00	0.00
13,699.97	90.54	136.042	5,239.60	-5,148.50	6,114.32	7,992.25	0.00	0.00	0.00
13,799.97	90.54	136.042	5,238.65	-5,220.49	6,183.73	8,091.86	0.00	0.00	0.00
13,899.97	90.54	136.042	5,237.71	-5,292.47	6,253.14	8,191.47	0.00	0.00	0.00
13,999.97	90.54	136.042	5,236.77	-5,364.45	6,322.55	8,291.07	0.00	0.00	0.00
14,099.97	90.54	136.042	5,235.83	-5,436.43	6,391.96	8,390.68	0.00	0.00	0.00
14,199.97	90.54	136.042	5,234.89	-5,508.41	6,461.37	8,490.29	0.00	0.00	0.00
14,299.97	90.54	136.042	5,233.95	-5,580.39	6,530.78	8,589.90	0.00	0.00	0.00
14,399.97	90.54	136.042	5,233.01	-5,652.38	6,600.19	8,689.51	0.00	0.00	0.00
14,499.97	90.54	136.042	5,232.06	-5,724.36	6,669.60	8,789.12	0.00	0.00	0.00
14,599.97	90.54	136.042	5,231.12	-5,796.34	6,739.01	8,888.73	0.00	0.00	0.00
14,699.97	90.54	136.042	5,230.18	-5,868.32	6,808.42	8,988.34	0.00	0.00	0.00
14,799.97	90.54	136.042	5,229.24	-5,940.30	6,877.83	9,087.95	0.00	0.00	0.00
14,899.97	90.54	136.042	5,228.30	-6,012.29	6,947.24	9,187.56	0.00	0.00	0.00
14,999.97	90.54	136.042	5,227.36	-6,084.27	7,016.65	9,287.17	0.00	0.00	0.00
15,099.97	90.54	136.042	5,226.41	-6,156.25	7,086.06	9,386.78	0.00	0.00	0.00



Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 313H - Slot 7
Company:	DJR Operating	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site:	G35 2409	North Reference:	True
Well:	313H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

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)
15,143.96	90.54	136.042	5,226.00	-6,187.93	7,116.59	9,430.60	0.00	0.00	0.00

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
313H Toe - plan hits target center - Circle (radius 100.00)	0.00	0.000	5,226.00	-6,187.93	7,116.59	1,911,980.13	2,752,515.48	36.2545779	-107.7335354
313H Heel - plan hits target center - Circle (radius 50.00)	0.00	0.000	5,314.00	539.60	629.47	1,918,702.58	2,746,023.11	36.2730613	-107.7555375

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
350.00	350.00	Surface Casing	9.62	12.25	
5,735.30	5,311.57	Intermediate Casing	7.00	8.75	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
856.26	854.00	Ojo Alamo		0.00	0.000	
941.69	938.00	Kirtland		0.00	0.000	
1,261.81	1,250.00	Fruitland		0.00	0.000	
1,613.08	1,592.00	Pictured Cliffs		0.00	0.000	
1,710.66	1,687.00	Lewis		0.00	0.000	
2,418.34	2,376.00	Chacra		0.00	0.000	
3,149.64	3,088.00	Menefee		0.00	0.000	
4,150.04	4,062.00	Point Lookout		0.00	0.000	
4,322.60	4,230.00	Mancos		0.00	0.000	
4,655.38	4,554.00	Mancos Silt		0.00	0.000	
5,187.07	5,052.00	Gallup A		0.00	0.000	
5,241.25	5,094.00	Gallup B		0.00	0.000	
5,425.20	5,213.00	Gallup C		0.00	0.000	



DJR Operating

Nageezi Unit

G35 2409

313H

Original Drilling

APD

Anticollision Report

09 January, 2020



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Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference	APD
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum ellipse separation of 1,000.00 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program		Date	1/9/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,143.96	APD (Original Drilling)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary						
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
G35 2409						
308H - Original Drilling - APD	300.00	300.00	39.66	37.92	22.766	CC
308H - Original Drilling - APD	400.00	400.00	39.75	37.29	16.164	ES
308H - Original Drilling - APD	600.00	598.12	51.03	47.16	13.216	SF
309H - Original Drilling - APD	300.00	300.00	79.87	78.13	45.844	CC
309H - Original Drilling - APD	400.00	399.38	80.05	77.60	32.636	ES
309H - Original Drilling - APD	15,143.96	14,238.17	1,225.52	754.81	2.604	SF
310H - Original Drilling - APD	300.00	300.00	59.63	57.89	34.228	CC
310H - Original Drilling - APD	400.00	400.00	59.72	57.26	24.284	ES
310H - Original Drilling - APD	600.00	595.88	72.44	68.59	18.798	SF
632H - Original Drilling - APD	300.00	300.00	19.97	18.23	11.462	CC
632H - Original Drilling - APD	800.00	802.46	22.66	17.31	4.234	ES
632H - Original Drilling - APD	900.00	902.41	25.17	19.07	4.131	SF

Offset Design	G35 2409 - 308H - Original Drilling - APD										Offset Site Error:	0.00 usft
Survey Program:	0-MWD+IGRF										Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation	Separation Factor	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
0.00	0.00	0.00	0.00	0.00	0.00	-138.03	-29.49	-26.52	39.66			
100.00	100.00	100.00	100.00	0.15	0.15	-138.03	-29.49	-26.52	39.66	39.35	0.31	128.654
200.00	200.00	200.00	200.00	0.51	0.51	-138.03	-29.49	-26.52	39.66	38.64	1.03	38.686
300.00	300.00	300.00	300.00	0.87	0.87	-138.03	-29.49	-26.52	39.66	37.92	1.74	22.766 CC
300.01	300.01	300.01	300.01	0.87	0.87	-138.03	-29.49	-26.52	39.66	37.92	1.74	22.765
400.00	400.00	400.00	400.00	1.23	1.23	-144.08	-29.49	-26.52	39.75	37.29	2.46	16.164 ES
500.00	499.96	499.21	499.19	1.59	1.57	-148.14	-31.09	-25.90	42.77	39.61	3.16	13.533
600.00	599.77	598.12	597.98	1.95	1.91	-156.38	-35.62	-24.16	51.03	47.16	3.86	13.216 SF
700.00	699.30	697.03	696.74	2.32	2.25	-163.58	-40.72	-22.19	63.82	59.25	4.57	13.964
800.00	798.44	795.37	794.93	2.72	2.60	-168.81	-45.79	-20.23	80.66	75.38	5.28	15.273
900.00	897.07	893.04	892.44	3.13	2.95	-172.48	-50.82	-18.29	101.35	95.36	5.99	16.912
1,000.00	995.05	989.89	989.15	3.59	3.31	-175.04	-55.81	-16.36	125.69	118.99	6.70	18.749
1,100.00	1,092.46	1,086.04	1,085.15	4.07	3.66	-176.86	-60.77	-14.45	152.85	145.44	7.41	20.619
1,200.00	1,189.82	1,182.13	1,181.09	4.57	4.01	-178.13	-65.72	-12.54	180.32	172.20	8.12	22.218

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 308H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,300.00	1,287.18	1,278.22	1,277.04	5.09	4.37	-179.07	-70.67	-10.62	207.84	199.02	8.82	23.559		
1,400.00	1,384.54	1,374.31	1,372.98	5.61	4.72	-179.79	-75.63	-8.71	235.41	225.87	9.53	24.696		
1,500.00	1,481.90	1,470.39	1,468.92	6.13	5.08	179.64	-80.58	-6.80	263.00	252.75	10.24	25.672		
1,600.00	1,579.26	1,566.48	1,564.86	6.67	5.44	179.18	-85.53	-4.89	290.61	279.65	10.96	26.518		
1,700.00	1,676.62	1,662.57	1,660.80	7.20	5.79	178.80	-90.48	-2.98	318.23	306.56	11.68	27.257		
1,800.00	1,773.98	1,758.66	1,756.15	7.74	6.15	178.47	-95.44	-1.06	345.87	333.48	12.39	27.908		
1,900.00	1,871.35	1,854.75	1,852.69	8.28	6.51	178.20	-100.39	0.85	373.51	360.40	13.11	28.486		
2,000.00	1,968.71	1,950.84	1,948.63	8.82	6.87	177.97	-105.34	2.76	401.16	387.33	13.83	29.002		
2,100.00	2,066.07	2,046.93	2,044.57	9.36	7.22	177.76	-110.29	4.67	428.82	414.27	14.55	29.465		
2,200.00	2,163.43	2,143.02	2,140.52	9.90	7.58	177.58	-115.25	6.58	456.48	441.21	15.28	29.884		
2,300.00	2,260.79	2,239.11	2,236.46	10.45	7.94	177.42	-120.20	8.50	484.15	468.15	16.00	30.263		
2,400.00	2,358.15	2,335.19	2,332.40	11.00	8.30	177.28	-125.15	10.41	511.81	495.09	16.72	30.609		
2,500.00	2,455.51	2,431.28	2,428.34	11.54	8.66	177.15	-130.10	12.32	539.49	522.04	17.44	30.925		
2,600.00	2,552.87	2,527.37	2,524.28	12.09	9.02	177.04	-135.06	14.23	567.16	548.99	18.17	31.216		
2,700.00	2,650.23	2,623.46	2,620.23	12.64	9.38	176.93	-140.01	16.14	594.83	575.94	18.89	31.483		
2,800.00	2,747.59	2,719.55	2,716.17	13.19	9.74	176.84	-144.96	18.06	622.51	602.89	19.62	31.731		
2,900.00	2,844.95	2,815.64	2,812.11	13.73	10.10	176.75	-149.91	19.97	650.19	629.84	20.34	31.960		
3,000.00	2,942.31	2,911.73	2,908.05	14.28	10.46	176.67	-154.87	21.88	677.87	656.80	21.07	32.173		
3,100.00	3,039.67	3,007.82	3,003.99	14.83	10.82	176.60	-159.82	23.79	705.55	683.75	21.80	32.371		
3,200.00	3,137.03	3,103.91	3,099.94	15.38	11.17	176.53	-164.77	25.70	733.23	710.70	22.52	32.556		
3,300.00	3,234.39	3,199.99	3,195.88	15.93	11.53	176.47	-169.72	27.62	760.91	737.66	23.25	32.730		
3,400.00	3,331.75	3,296.08	3,291.82	16.48	11.89	176.41	-174.68	29.53	788.59	764.62	23.98	32.892		
3,500.00	3,429.11	3,392.17	3,387.76	17.03	12.25	176.35	-179.63	31.44	816.28	791.57	24.70	33.045		
3,600.00	3,526.47	3,488.26	3,483.71	17.58	12.61	176.30	-184.58	33.35	843.96	818.53	25.43	33.189		
3,700.00	3,623.83	3,584.35	3,579.65	18.14	12.97	176.25	-189.53	35.26	871.64	845.49	26.16	33.324		
3,800.00	3,721.20	3,680.44	3,675.59	18.69	13.33	176.21	-194.49	37.18	899.33	872.45	26.88	33.452		
3,900.00	3,818.56	3,776.53	3,771.53	19.24	13.69	176.17	-199.44	39.09	927.02	899.40	27.61	33.573		
4,000.00	3,915.92	3,872.62	3,867.47	19.79	14.05	176.13	-204.39	41.00	954.70	926.36	28.34	33.688		
4,100.00	4,013.28	3,968.71	3,963.42	20.34	14.41	176.09	-209.34	42.91	982.39	953.32	29.07	33.796		
4,200.00	4,110.64	4,064.79	4,059.36	20.89	14.77	176.05	-214.30	44.82	1,010.08	980.28	29.80	33.900		
4,300.00	4,208.00	4,160.88	4,155.30	21.44	15.13	176.02	-219.25	46.74	1,037.76	1,007.24	30.52	33.998		
4,400.00	4,305.36	4,256.97	4,251.24	22.00	15.49	175.99	-224.20	48.65	1,065.45	1,034.20	31.25	34.091		
4,500.00	4,402.72	4,352.26	4,346.47	22.55	15.85	175.95	-229.15	50.56	1,093.13	1,061.39	31.97	34.179		
4,600.00	4,500.08	4,448.26	4,442.31	23.10	16.21	175.91	-234.10	52.47	1,120.81	1,088.57	32.69	34.267		
4,700.00	4,597.44	4,544.26	4,538.21	23.65	16.57	175.87	-239.05	54.38	1,148.49	1,116.25	33.41	34.355		
4,800.00	4,694.80	4,640.26	4,634.11	24.20	16.93	175.83	-244.00	56.29	1,176.17	1,143.91	34.13	34.443		
4,900.00	4,792.16	4,736.82	4,730.57	24.75	17.29	175.79	-248.95	58.20	1,203.85	1,171.59	34.85	34.531		
5,000.00	4,889.52	4,832.58	4,826.23	25.30	17.65	175.75	-253.90	60.11	1,231.53	1,199.27	35.57	34.619		
5,100.00	4,986.88	4,928.64	4,922.19	25.85	18.01	175.71	-258.85	62.02	1,259.21	1,226.95	36.29	34.707		
5,200.00	5,084.24	5,024.60	5,018.05	26.40	18.37	175.67	-263.80	63.93	1,286.89	1,254.63	37.01	34.795		
5,300.00	5,181.60	5,120.56	5,113.91	26.95	18.73	175.63	-268.75	65.84	1,314.57	1,282.31	37.73	34.883		
5,400.00	5,278.96	5,216.42	5,209.67	27.50	19.09	175.59	-273.70	67.75	1,342.25	1,310.00	38.45	34.971		
5,500.00	5,376.32	5,312.58	5,305.73	28.05	19.45	175.55	-278.65	69.66	1,369.93	1,337.68	39.17	35.059		
5,600.00	5,473.68	5,408.64	5,401.79	28.60	19.81	175.51	-283.60	71.57	1,397.61	1,365.36	39.89	35.147		
5,700.00	5,571.04	5,504.60	5,497.65	29.15	20.17	175.47	-288.55	73.48	1,425.29	1,393.04	40.61	35.235		
5,800.00	5,668.40	5,599.96	5,592.91	29.70	20.53	175.43	-293.50	75.39	1,452.97	1,420.72	41.33	35.323		
5,900.00	5,765.76	5,696.32	5,689.17	30.25	20.89	175.39	-298.45	77.30	1,480.65	1,448.40	42.05	35.411		
6,000.00	5,863.12	5,792.68	5,785.43	30.80	21.25	175.35	-303.40	79.21	1,508.33	1,476.08	42.77	35.499		
6,100.00	5,960.48	5,889.04	5,881.69	31.35	21.61	175.31	-308.35	81.12	1,536.01	1,503.76	43.49	35.587		
6,200.00	6,057.84	5,985.40	5,977.95	31.90	21.97	175.27	-313.30	83.03	1,563.69	1,531.44	44.21	35.675		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 308H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,300.00	5,309.27	4,917.88	4,876.32	30.23	17.36	65.51	-132.60	-57.16	1,164.31	1,124.62	39.68	29.340		
6,400.00	5,308.33	4,899.99	4,862.48	31.97	17.32	64.83	-140.59	-49.13	1,209.18	1,168.94	40.23	30.053		
6,500.00	5,307.39	4,849.99	4,822.16	33.80	17.21	62.89	-161.36	-28.12	1,258.81	1,218.36	40.45	31.122		
6,600.00	5,306.45	4,849.99	4,822.16	35.71	17.21	62.89	-161.36	-28.12	1,313.19	1,272.13	41.06	31.981		
6,700.00	5,305.51	4,799.99	4,779.64	37.68	17.10	60.91	-179.74	-9.32	1,371.71	1,330.51	41.20	33.297		
6,800.00	5,304.56	4,799.99	4,779.64	39.70	17.10	60.91	-179.74	-9.32	1,433.92	1,392.23	41.69	34.393		
6,900.00	5,303.62	4,776.70	4,759.17	41.77	17.06	59.98	-187.46	-1.35	1,499.72	1,457.77	41.95	35.750		
7,000.00	5,302.68	4,749.99	4,735.20	43.88	17.00	58.91	-195.63	7.16	1,568.77	1,526.62	42.14	37.224		
7,100.00	5,301.74	4,749.99	4,735.20	46.02	17.00	58.91	-195.63	7.16	1,640.40	1,597.92	42.48	38.619		
7,200.00	5,300.80	4,749.99	4,735.20	48.19	17.00	58.91	-195.63	7.16	1,714.87	1,672.12	42.76	40.108		
7,300.00	5,299.86	4,720.86	4,708.53	50.39	16.94	57.75	-203.69	15.64	1,791.04	1,748.20	42.84	41.810		
7,400.00	5,298.91	4,699.99	4,689.10	52.62	16.90	56.92	-208.91	21.19	1,869.55	1,826.61	42.94	43.537		
7,500.00	5,297.97	4,699.99	4,689.10	54.86	16.90	56.92	-208.91	21.19	1,949.66	1,906.53	43.13	45.202		
7,600.00	5,297.03	4,699.99	4,689.10	57.12	16.90	56.92	-208.91	21.19	2,031.53	1,988.24	43.29	46.926		
7,700.00	5,296.09	4,699.99	4,689.10	59.40	16.90	56.92	-208.91	21.19	2,114.96	2,071.53	43.43	48.700		
7,800.00	5,295.15	4,673.30	4,663.91	61.70	16.84	55.86	-214.91	27.66	2,199.11	2,155.67	43.44	50.626		
7,900.00	5,294.21	4,649.99	4,641.63	64.00	16.78	54.95	-219.52	32.72	2,284.95	2,241.50	43.45	52.584		
8,000.00	5,293.27	4,649.99	4,641.63	66.32	16.78	54.95	-219.52	32.72	2,371.44	2,327.89	43.55	54.451		
8,100.00	5,292.32	4,649.99	4,641.63	68.65	16.78	54.95	-219.52	32.72	2,458.95	2,415.32	43.64	56.350		
8,200.00	5,291.38	4,649.99	4,641.63	70.99	16.78	54.95	-219.52	32.72	2,547.39	2,503.67	43.71	58.278		
8,300.00	5,290.44	4,649.99	4,641.63	73.34	16.78	54.95	-219.52	32.72	2,636.64	2,592.87	43.77	60.233		
8,400.00	5,289.50	4,649.99	4,641.63	75.69	16.78	54.95	-219.52	32.72	2,726.65	2,682.82	43.83	62.209		
8,500.00	5,288.56	4,649.99	4,641.63	78.06	16.78	54.95	-219.52	32.72	2,817.33	2,773.45	43.88	64.206		
8,600.00	5,287.62	4,625.07	4,617.56	80.43	16.72	53.98	-223.78	37.49	2,908.05	2,864.20	43.86	66.308		
8,700.00	5,286.67	4,620.55	4,613.16	82.80	16.71	53.81	-224.48	38.29	2,999.68	2,955.79	43.89	68.349		
8,800.00	5,285.73	4,599.99	4,593.08	85.18	16.66	53.02	-227.38	41.65	3,092.03	3,048.15	43.87	70.475		
8,900.00	5,284.79	4,599.99	4,593.08	87.57	16.66	53.02	-227.38	41.65	3,184.47	3,140.56	43.91	72.519		
9,000.00	5,283.85	4,599.99	4,593.08	89.96	16.66	53.02	-227.38	41.65	3,277.37	3,233.42	43.95	74.575		
9,100.00	5,282.91	4,599.99	4,593.08	92.36	16.66	53.02	-227.38	41.65	3,370.67	3,326.69	43.98	76.641		
9,200.00	5,281.97	4,599.99	4,593.08	94.76	16.66	53.02	-227.38	41.65	3,464.34	3,420.33	44.01	78.717		
9,300.00	5,281.02	4,599.99	4,593.08	97.16	16.66	53.02	-227.38	41.65	3,558.36	3,514.32	44.04	80.802		
9,400.00	5,280.08	4,599.99	4,593.08	99.57	16.66	53.02	-227.38	41.65	3,652.69	3,608.63	44.06	82.894		
9,500.00	5,279.14	4,599.99	4,593.08	101.98	16.66	53.02	-227.38	41.65	3,747.32	3,703.23	44.09	84.992		
9,600.00	5,278.20	4,599.99	4,593.08	104.39	16.66	53.02	-227.38	41.65	3,842.22	3,798.11	44.12	87.095		
9,700.00	5,277.26	4,599.99	4,593.08	106.81	16.66	53.02	-227.38	41.65	3,937.38	3,893.24	44.14	89.204		
9,800.00	5,276.32	4,599.99	4,593.08	109.23	16.66	53.02	-227.38	41.65	4,032.77	3,988.60	44.16	91.316		
9,900.00	5,275.38	4,599.99	4,593.08	111.65	16.66	53.02	-227.38	41.65	4,128.37	4,084.19	44.19	93.432		
10,000.00	5,274.43	4,599.99	4,593.08	114.07	16.66	53.02	-227.38	41.65	4,224.18	4,179.97	44.21	95.550		
10,100.00	5,273.49	4,576.41	4,569.89	116.50	16.60	52.13	-230.12	44.94	4,319.69	4,275.50	44.19	97.744		
10,200.00	5,272.55	4,574.19	4,567.71	118.93	16.59	52.05	-230.35	45.22	4,415.78	4,371.56	44.21	99.872		
10,300.00	5,271.61	4,572.07	4,565.61	121.36	16.59	51.97	-230.56	45.49	4,512.02	4,467.78	44.24	102.001		
10,400.00	5,270.67	4,549.99	4,543.75	123.79	16.53	51.15	-232.45	47.93	4,608.77	4,564.54	44.22	104.212		
10,500.00	5,269.73	4,549.99	4,543.75	126.22	16.53	51.15	-232.45	47.93	4,705.24	4,660.99	44.25	106.332		
10,600.00	5,268.78	4,549.99	4,543.75	128.66	16.53	51.15	-232.45	47.93	4,801.86	4,757.58	44.28	108.452		
10,700.00	5,267.84	4,549.99	4,543.75	131.09	16.53	51.15	-232.45	47.93	4,898.62	4,854.31	44.30	110.572		
10,800.00	5,266.90	4,549.99	4,543.75	133.53	16.53	51.15	-232.45	47.93	4,995.50	4,951.17	44.33	112.691		
10,900.00	5,265.96	4,549.99	4,543.75	135.97	16.53	51.15	-232.45	47.93	5,092.50	5,048.14	44.36	114.810		
11,000.00	5,265.02	4,549.99	4,543.75	138.41	16.53	51.15	-232.45	47.93	5,189.62	5,145.23	44.38	116.927		
11,100.00	5,264.08	4,549.99	4,543.75	140.85	16.53	51.15	-232.45	47.93	5,286.84	5,242.43	44.41	119.043		
11,200.00	5,263.14	4,549.99	4,543.75	143.30	16.53	51.15	-232.45	47.93	5,384.17	5,339.73	44.44	121.158		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 308H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
11,300.00	5,262.19	4,549.99	4,543.75	145.74	16.53	51.15	-232.45	47.93	5,481.59	5,437.12	44.47	123.270		
11,400.00	5,261.25	4,549.99	4,543.75	148.19	16.53	51.15	-232.45	47.93	5,579.10	5,534.60	44.50	125.380		
11,500.00	5,260.31	4,549.99	4,543.75	150.63	16.53	51.15	-232.45	47.93	5,676.70	5,632.17	44.53	127.488		
11,600.00	5,259.37	4,549.99	4,543.75	153.08	16.53	51.15	-232.45	47.93	5,774.38	5,729.83	44.56	129.593		
11,700.00	5,258.43	4,549.99	4,543.75	155.53	16.53	51.15	-232.45	47.93	5,872.14	5,827.55	44.59	131.695		
11,800.00	5,257.49	4,549.99	4,543.75	157.98	16.53	51.15	-232.45	47.93	5,969.98	5,925.36	44.62	133.794		
11,900.00	5,256.54	4,549.99	4,543.75	160.43	16.53	51.15	-232.45	47.93	6,067.88	6,023.23	44.65	135.890		
12,000.00	5,255.60	4,549.99	4,543.75	162.88	16.53	51.15	-232.45	47.93	6,165.85	6,121.17	44.69	137.982		
12,100.00	5,254.66	4,549.99	4,543.75	165.33	16.53	51.15	-232.45	47.93	6,263.89	6,219.17	44.72	140.071		
12,200.00	5,253.72	4,549.99	4,543.75	167.78	16.53	51.15	-232.45	47.93	6,361.99	6,317.23	44.75	142.156		
12,300.00	5,252.78	4,549.99	4,543.75	170.24	16.53	51.15	-232.45	47.93	6,460.14	6,415.35	44.79	144.236		
12,400.00	5,251.84	4,549.99	4,543.75	172.69	16.53	51.15	-232.45	47.93	6,558.35	6,513.53	44.82	146.313		
12,500.00	5,250.89	4,549.99	4,543.75	175.14	16.53	51.15	-232.45	47.93	6,656.62	6,611.76	44.86	148.385		
12,600.00	5,249.95	4,549.99	4,543.75	177.60	16.53	51.15	-232.45	47.93	6,754.93	6,710.04	44.90	150.453		
12,700.00	5,249.01	4,549.99	4,543.75	180.05	16.53	51.15	-232.45	47.93	6,853.30	6,808.36	44.93	152.517		
12,800.00	5,248.07	4,549.99	4,543.75	182.51	16.53	51.15	-232.45	47.93	6,951.71	6,906.74	44.97	154.575		
12,900.00	5,247.13	4,549.99	4,543.75	184.97	16.53	51.15	-232.45	47.93	7,050.16	7,005.15	45.01	156.629		
13,000.00	5,246.19	4,549.99	4,543.75	187.42	16.53	51.15	-232.45	47.93	7,148.66	7,103.61	45.05	158.678		
13,100.00	5,245.25	4,549.99	4,543.75	189.88	16.53	51.15	-232.45	47.93	7,247.20	7,202.11	45.09	160.722		
13,200.00	5,244.30	4,549.99	4,543.75	192.34	16.53	51.15	-232.45	47.93	7,345.78	7,300.65	45.13	162.761		
13,300.00	5,243.36	4,549.99	4,543.75	194.80	16.53	51.15	-232.45	47.93	7,444.40	7,399.23	45.17	164.794		
13,400.00	5,242.42	4,549.99	4,543.75	197.26	16.53	51.15	-232.45	47.93	7,543.05	7,497.84	45.22	166.822		
13,500.00	5,241.48	4,549.99	4,543.75	199.72	16.53	51.15	-232.45	47.93	7,641.74	7,596.48	45.26	168.845		
13,600.00	5,240.54	4,549.99	4,543.75	202.18	16.53	51.15	-232.45	47.93	7,740.46	7,695.16	45.30	170.862		
13,700.00	5,239.60	4,549.99	4,543.75	204.64	16.53	51.15	-232.45	47.93	7,839.22	7,793.87	45.35	172.874		
13,800.00	5,238.65	4,549.99	4,543.75	207.10	16.53	51.15	-232.45	47.93	7,938.00	7,892.61	45.39	174.879		
13,900.00	5,237.71	4,549.99	4,543.75	209.56	16.53	51.15	-232.45	47.93	8,036.82	7,991.38	45.44	176.879		
14,000.00	5,236.77	4,549.99	4,543.75	212.02	16.53	51.15	-232.45	47.93	8,135.66	8,090.18	45.48	178.873		
14,100.00	5,235.83	4,526.70	4,520.60	214.48	16.46	50.31	-233.85	49.95	8,234.08	8,188.58	45.50	180.955		
14,200.00	5,234.89	4,526.03	4,519.92	216.95	16.46	50.28	-233.88	50.00	8,332.95	8,287.40	45.55	182.940		
14,300.00	5,233.95	4,525.37	4,519.27	219.41	16.46	50.26	-233.91	50.05	8,431.85	8,386.25	45.60	184.919		
14,400.00	5,233.01	4,524.72	4,518.62	221.87	16.46	50.23	-233.94	50.09	8,530.78	8,485.13	45.65	186.892		
14,500.00	5,232.06	4,524.09	4,517.99	224.33	16.45	50.21	-233.96	50.14	8,629.72	8,584.03	45.69	188.859		
14,600.00	5,231.12	4,523.48	4,517.38	226.80	16.45	50.19	-233.99	50.18	8,728.70	8,682.95	45.74	190.819		
14,700.00	5,230.18	4,499.99	4,493.95	229.26	16.38	49.35	-234.69	51.54	8,828.13	8,782.36	45.77	192.891		
14,800.00	5,229.24	4,499.99	4,493.95	231.73	16.38	49.35	-234.69	51.54	8,927.12	8,881.30	45.82	194.836		
14,900.00	5,228.30	4,499.99	4,493.95	234.19	16.38	49.35	-234.69	51.54	9,026.14	8,980.27	45.87	196.775		
15,000.00	5,227.36	4,499.99	4,493.95	236.65	16.38	49.35	-234.69	51.54	9,125.17	9,079.25	45.92	198.707		
15,100.00	5,226.41	4,499.99	4,493.95	239.12	16.38	49.35	-234.69	51.54	9,224.23	9,178.25	45.98	200.633		
15,143.96	5,226.00	4,499.99	4,493.95	240.20	16.38	49.35	-234.69	51.54	9,267.78	9,221.78	46.00	201.478		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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COMPASS 5000.15 Build 91D



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 309H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-138.37	-59.70	-53.06	79.87					
100.00	100.00	100.00	100.00	0.15	0.15	-138.37	-59.70	-53.06	79.87	79.56	0.31	259.072		
200.00	200.00	200.00	200.00	0.51	0.51	-138.37	-59.70	-53.06	79.87	78.84	1.03	77.903		
300.00	300.00	300.00	300.00	0.87	0.87	-138.37	-59.70	-53.06	79.87	78.13	1.74	45.844 CC		
300.01	300.01	300.01	300.01	0.87	0.87	-138.37	-59.70	-53.06	79.87	78.13	1.74	45.842		
400.00	400.00	399.38	399.38	1.23	1.22	-144.40	-59.80	-53.09	80.05	77.60	2.45	32.636 ES		
500.00	499.96	496.69	496.65	1.59	1.55	-146.06	-62.17	-53.81	84.54	81.40	3.14	26.927		
600.00	599.77	593.15	592.94	1.95	1.88	-149.30	-67.64	-55.47	95.22	91.38	3.84	24.803		
700.00	699.30	690.14	689.56	2.32	2.23	-153.09	-75.75	-57.93	111.91	107.36	4.54	24.623		
800.00	798.44	787.72	786.74	2.72	2.60	-156.53	-84.18	-60.48	132.43	127.17	5.26	25.193		
900.00	897.07	884.48	883.10	3.13	2.97	-159.45	-92.55	-63.02	156.50	150.53	5.97	26.220		
1,000.00	995.05	980.29	978.53	3.59	3.34	-161.89	-100.83	-65.53	184.10	177.41	6.68	27.557		
1,100.00	1,092.46	1,075.30	1,073.14	4.07	3.70	-163.98	-109.05	-68.03	214.48	207.09	7.39	29.031		
1,200.00	1,189.82	1,170.24	1,167.69	4.57	4.08	-165.61	-117.26	-70.52	245.27	237.18	8.09	30.324		
1,300.00	1,287.18	1,265.17	1,262.24	5.09	4.45	-166.88	-125.46	-73.01	276.20	267.41	8.79	31.418		
1,400.00	1,384.54	1,360.11	1,356.79	5.61	4.82	-167.90	-133.67	-75.49	307.22	297.73	9.50	32.351		
1,500.00	1,481.90	1,455.05	1,451.34	6.13	5.19	-168.73	-141.88	-77.98	338.32	328.12	10.20	33.156		
1,600.00	1,579.26	1,549.99	1,545.89	6.67	5.57	-169.42	-150.09	-80.47	369.47	358.56	10.91	33.856		
1,700.00	1,676.62	1,644.92	1,640.44	7.20	5.95	-170.00	-158.29	-82.96	400.67	389.04	11.62	34.469		
1,800.00	1,773.98	1,739.86	1,734.99	7.74	6.32	-170.50	-166.50	-85.45	431.89	419.56	12.34	35.011		
1,900.00	1,871.35	1,834.80	1,829.54	8.28	6.70	-170.93	-174.71	-87.94	463.14	450.09	13.05	35.493		
2,000.00	1,968.71	1,929.74	1,924.08	8.82	7.07	-171.31	-182.92	-90.43	494.41	480.65	13.76	35.924		
2,100.00	2,066.07	2,024.67	2,018.63	9.36	7.45	-171.64	-191.13	-92.92	525.70	511.23	14.48	36.311		
2,200.00	2,163.43	2,119.61	2,113.18	9.90	7.83	-171.94	-199.33	-95.41	557.01	541.81	15.19	36.662		
2,300.00	2,260.79	2,214.55	2,207.73	10.45	8.21	-172.20	-207.54	-97.90	588.32	572.41	15.91	36.980		
2,400.00	2,358.15	2,309.49	2,302.28	11.00	8.58	-172.44	-215.75	-100.39	619.64	603.02	16.63	37.270		
2,500.00	2,455.51	2,404.42	2,396.83	11.54	8.96	-172.65	-223.96	-102.88	650.98	633.63	17.34	37.535		
2,600.00	2,552.87	2,499.36	2,491.38	12.09	9.34	-172.84	-232.16	-105.37	682.32	664.26	18.06	37.779		
2,700.00	2,650.23	2,594.30	2,585.93	12.64	9.72	-173.02	-240.37	-107.86	713.66	694.89	18.78	38.003		
2,800.00	2,747.59	2,689.24	2,680.48	13.19	10.10	-173.18	-248.58	-110.35	745.02	725.52	19.50	38.211		
2,900.00	2,844.95	2,784.18	2,775.03	13.73	10.47	-173.33	-256.79	-112.84	776.37	756.16	20.22	38.404		
3,000.00	2,942.31	2,879.11	2,869.58	14.28	10.85	-173.47	-265.00	-115.33	807.74	786.80	20.94	38.583		
3,100.00	3,039.67	2,974.05	2,964.13	14.83	11.23	-173.60	-273.20	-117.82	839.10	817.45	21.65	38.749		
3,200.00	3,137.03	3,068.99	3,058.68	15.38	11.61	-173.72	-281.41	-120.31	870.47	848.10	22.37	38.905		
3,300.00	3,234.39	3,163.93	3,153.23	15.93	11.99	-173.83	-289.62	-122.80	901.84	878.75	23.09	39.051		
3,400.00	3,331.75	3,258.86	3,247.78	16.48	12.37	-173.93	-297.83	-125.29	933.22	909.41	23.81	39.187		
3,500.00	3,429.11	3,353.80	3,342.33	17.03	12.75	-174.03	-306.04	-127.78	964.60	940.06	24.53	39.315		
3,600.00	3,526.47	3,448.74	3,436.88	17.58	13.13	-174.12	-314.24	-130.27	995.98	970.72	25.26	39.436		
3,700.00	3,623.83	3,543.68	3,531.42	18.14	13.50	-174.20	-322.45	-132.76	1,027.36	1,001.38	25.98	39.550		
3,800.00	3,721.20	3,638.61	3,625.97	18.69	13.88	-174.28	-330.66	-135.25	1,058.74	1,032.05	26.70	39.658		
3,900.00	3,818.56	3,733.55	3,720.52	19.24	14.26	-174.35	-338.87	-137.74	1,090.13	1,062.71	27.42	39.759		
4,000.00	3,915.92	3,828.49	3,815.07	19.79	14.64	-174.42	-347.07	-140.23	1,121.52	1,093.38	28.14	39.855		
4,100.00	4,013.28	3,923.43	3,909.62	20.34	15.02	-174.49	-355.28	-142.72	1,152.91	1,124.04	28.86	39.947		
4,200.00	4,110.64	4,018.36	4,004.17	20.89	15.40	-174.55	-363.49	-145.21	1,184.30	1,154.71	29.58	40.033		
4,300.00	4,208.00	4,113.30	4,098.72	21.44	15.78	-174.61	-371.70	-147.70	1,215.69	1,185.38	30.30	40.115		
4,400.00	4,305.36	4,208.24	4,193.27	22.00	16.16	-174.67	-379.91	-150.19	1,247.08	1,216.05	31.03	40.194		
4,500.00	4,402.72	4,303.18	4,287.82	22.55	16.54	-174.73	-388.11	-152.68	1,278.47	1,246.72	31.75	40.268		
4,600.00	4,500.08	4,398.12	4,382.37	23.10	16.92	-174.78	-396.32	-155.17	1,309.87	1,277.40	32.47	40.339		
4,700.00	4,597.44	4,493.05	4,476.92	23.65	17.30	-174.84	-404.53	-157.66	1,341.26	1,308.07	33.19	40.407		
4,800.00	4,694.80	4,589.09	4,572.56	24.13	17.68	-174.89	-412.73	-160.17	1,368.20	1,334.30	33.90	40.359		
4,900.00	4,792.16	4,685.61	4,668.69	24.47	18.06	-174.94	-421.18	-162.70	1,386.31	1,351.74	34.58	40.094		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 309H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,888.77	4,731.42	4,714.22	24.67	18.25	82.44	-426.09	-162.96	1,397.22	1,362.37	34.85	40.091		
5,100.00	4,979.11	4,774.72	4,756.94	24.76	18.44	74.54	-432.87	-161.09	1,402.94	1,367.88	35.06	40.011		
5,200.00	5,062.27	4,817.87	4,799.00	24.75	18.63	70.83	-441.66	-157.19	1,403.59	1,368.32	35.27	39.792		
5,300.00	5,136.21	4,849.99	4,829.86	24.66	18.78	69.10	-449.50	-152.97	1,399.50	1,364.07	35.43	39.500		
5,400.00	5,199.09	4,899.99	4,876.93	24.51	19.03	69.16	-463.84	-144.20	1,390.81	1,354.92	35.88	38.759		
5,500.00	5,249.37	4,949.99	4,922.58	24.32	19.29	70.28	-480.73	-132.79	1,378.26	1,341.73	36.54	37.724		
5,600.00	5,285.82	4,987.26	4,955.50	24.14	19.49	71.90	-494.90	-122.62	1,362.42	1,325.12	37.30	36.523		
5,700.00	5,307.53	5,028.06	4,990.33	24.00	19.72	74.28	-511.91	-109.89	1,344.12	1,305.73	38.39	35.016		
5,800.00	5,313.98	5,067.73	5,022.83	24.07	19.96	77.14	-529.88	-95.97	1,324.26	1,284.54	39.72	33.336		
5,900.00	5,313.04	5,110.41	5,056.16	24.64	20.23	78.62	-550.70	-79.35	1,306.82	1,265.51	41.31	31.633		
6,000.00	5,312.10	5,161.25	5,093.44	25.72	20.58	80.28	-577.41	-57.44	1,294.57	1,251.42	43.15	29.999		
6,100.00	5,311.16	5,221.96	5,134.21	27.07	21.05	82.11	-611.77	-28.44	1,286.94	1,241.69	45.25	28.441		
6,200.00	5,310.21	5,294.27	5,176.93	28.58	21.67	84.05	-655.79	9.76	1,283.10	1,235.46	47.65	26.929		
6,300.00	5,309.27	5,379.36	5,218.40	30.23	22.53	85.94	-711.17	59.19	1,281.94	1,231.57	50.37	25.449		
6,320.41	5,309.08	5,398.33	5,226.27	30.58	22.74	86.30	-723.95	70.79	1,281.91	1,230.94	50.98	25.147		
6,400.00	5,308.33	5,477.10	5,253.38	31.97	23.69	87.54	-778.33	120.83	1,282.15	1,228.68	53.48	23.975		
6,500.00	5,307.39	5,584.98	5,275.36	33.80	25.17	88.57	-855.05	193.24	1,282.49	1,225.52	56.96	22.514		
6,600.00	5,306.45	5,694.40	5,279.75	35.71	26.85	88.81	-933.47	269.26	1,282.10	1,221.43	60.67	21.132		
6,700.00	5,305.51	5,794.39	5,278.77	37.68	28.52	88.81	-1,004.99	339.15	1,281.44	1,217.04	64.40	19.898		
6,800.00	5,304.56	5,894.39	5,277.80	39.70	30.30	88.81	-1,076.51	409.03	1,280.78	1,212.48	68.29	18.754		
6,900.00	5,303.62	5,994.39	5,276.82	41.77	32.19	88.80	-1,148.03	478.91	1,280.12	1,207.79	72.32	17.700		
7,000.00	5,302.68	6,094.39	5,275.85	43.88	34.15	88.80	-1,219.55	548.80	1,279.45	1,202.99	76.46	16.733		
7,100.00	5,301.74	6,194.38	5,274.87	46.02	36.17	88.80	-1,291.06	618.68	1,278.79	1,198.09	80.70	15.846		
7,200.00	5,300.80	6,294.38	5,273.90	48.19	38.25	88.80	-1,362.58	688.57	1,278.13	1,193.11	85.02	15.034		
7,300.00	5,299.86	6,394.38	5,272.92	50.39	40.38	88.80	-1,434.10	758.45	1,277.47	1,188.06	89.40	14.289		
7,400.00	5,298.91	6,494.38	5,271.95	52.62	42.55	88.79	-1,505.62	828.33	1,276.80	1,182.96	93.85	13.605		
7,500.00	5,297.97	6,594.38	5,270.97	54.86	44.75	88.79	-1,577.14	898.22	1,276.14	1,177.80	98.34	12.976		
7,600.00	5,297.03	6,694.37	5,270.00	57.12	46.98	88.79	-1,648.66	968.10	1,275.48	1,172.60	102.88	12.397		
7,700.00	5,296.09	6,794.37	5,269.02	59.40	49.23	88.79	-1,720.17	1,037.98	1,274.82	1,167.36	107.46	11.863		
7,800.00	5,295.15	6,894.37	5,268.05	61.70	51.51	88.78	-1,791.69	1,107.87	1,274.16	1,162.08	112.07	11.369		
7,900.00	5,294.21	6,994.37	5,267.07	64.00	53.81	88.78	-1,863.21	1,177.75	1,273.49	1,156.78	116.71	10.911		
8,000.00	5,293.27	7,094.36	5,266.09	66.32	56.12	88.78	-1,934.73	1,247.64	1,272.83	1,151.45	121.38	10.487		
8,100.00	5,292.32	7,194.36	5,265.12	68.65	58.44	88.78	-2,006.25	1,317.52	1,272.17	1,146.10	126.07	10.091		
8,200.00	5,291.38	7,294.36	5,264.14	70.99	60.78	88.78	-2,077.77	1,387.40	1,271.51	1,140.73	130.78	9.723		
8,300.00	5,290.44	7,394.36	5,263.17	73.34	63.13	88.77	-2,149.28	1,457.29	1,270.85	1,135.34	135.50	9.379		
8,400.00	5,289.50	7,494.36	5,262.19	75.69	65.50	88.77	-2,220.80	1,527.17	1,270.18	1,129.94	140.25	9.057		
8,500.00	5,288.56	7,594.35	5,261.22	78.06	67.86	88.77	-2,292.32	1,597.05	1,269.52	1,124.51	145.01	8.755		
8,600.00	5,287.62	7,694.35	5,260.24	80.43	70.24	88.77	-2,363.84	1,666.94	1,268.86	1,119.08	149.78	8.472		
8,700.00	5,286.67	7,794.35	5,259.27	82.80	72.63	88.77	-2,435.36	1,736.82	1,268.20	1,113.63	154.56	8.205		
8,800.00	5,285.73	7,894.35	5,258.29	85.18	75.02	88.76	-2,506.88	1,806.71	1,267.54	1,108.18	159.36	7.954		
8,900.00	5,284.79	7,994.34	5,257.32	87.57	77.42	88.76	-2,578.39	1,876.59	1,266.87	1,102.71	164.16	7.717		
9,000.00	5,283.85	8,094.34	5,256.34	89.96	79.82	88.76	-2,649.91	1,946.47	1,266.21	1,097.23	168.98	7.493		
9,100.00	5,282.91	8,194.34	5,255.37	92.36	82.23	88.76	-2,721.43	2,016.36	1,265.55	1,091.75	173.80	7.282		
9,200.00	5,281.97	8,294.34	5,254.39	94.76	84.64	88.75	-2,792.95	2,086.24	1,264.89	1,086.25	178.63	7.081		
9,300.00	5,281.02	8,394.34	5,253.42	97.16	87.06	88.75	-2,864.47	2,156.12	1,264.22	1,080.75	183.47	6.891		
9,400.00	5,280.08	8,494.33	5,252.44	99.57	89.48	88.75	-2,935.99	2,226.01	1,263.56	1,075.25	188.31	6.710		
9,500.00	5,279.14	8,594.33	5,251.47	101.98	91.91	88.75	-3,007.50	2,295.89	1,262.90	1,069.74	193.16	6.538		
9,600.00	5,278.20	8,694.33	5,250.49	104.39	94.33	88.75	-3,079.02	2,365.78	1,262.24	1,064.22	198.02	6.374		
9,700.00	5,277.26	8,794.33	5,249.52	106.81	96.77	88.74	-3,150.54	2,435.66	1,261.58	1,058.70	202.88	6.218		
9,800.00	5,276.32	8,894.32	5,248.54	109.23	99.20	88.74	-3,222.06	2,505.54	1,260.91	1,053.17	207.75	6.069		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 309H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,900.00	5,275.38	8,994.32	5,247.57	111.65	101.64	88.74	-3,293.58	2,575.43	1,260.25	1,047.64	212.62	5.927		
10,000.00	5,274.43	9,094.32	5,246.59	114.07	104.07	88.74	-3,365.10	2,645.31	1,259.59	1,042.10	217.49	5.791		
10,100.00	5,273.49	9,194.32	5,245.62	116.50	106.52	88.73	-3,436.61	2,715.19	1,258.93	1,036.56	222.37	5.661		
10,200.00	5,272.55	9,294.32	5,244.64	118.93	108.96	88.73	-3,508.13	2,785.08	1,258.27	1,031.01	227.25	5.537		
10,300.00	5,271.61	9,394.31	5,243.67	121.36	111.40	88.73	-3,579.65	2,854.96	1,257.60	1,025.47	232.14	5.418		
10,400.00	5,270.67	9,494.31	5,242.69	123.79	113.85	88.73	-3,651.17	2,924.85	1,256.94	1,019.92	237.03	5.303		
10,500.00	5,269.73	9,594.31	5,241.71	126.22	116.30	88.73	-3,722.69	2,994.73	1,256.28	1,014.36	241.92	5.193		
10,600.00	5,268.78	9,694.31	5,240.74	128.66	118.75	88.72	-3,794.20	3,064.61	1,255.62	1,008.81	246.81	5.087		
10,700.00	5,267.84	9,794.30	5,239.76	131.09	121.20	88.72	-3,865.72	3,134.50	1,254.96	1,003.25	251.71	4.986		
10,800.00	5,266.90	9,894.30	5,238.79	133.53	123.65	88.72	-3,937.24	3,204.38	1,254.29	997.69	256.61	4.888		
10,900.00	5,265.96	9,994.30	5,237.81	135.97	126.11	88.72	-4,008.76	3,274.26	1,253.63	992.12	261.51	4.794		
11,000.00	5,265.02	10,094.30	5,236.84	138.41	128.57	88.71	-4,080.28	3,344.15	1,252.97	986.55	266.41	4.703		
11,100.00	5,264.08	10,194.30	5,235.86	140.85	131.02	88.71	-4,151.80	3,414.03	1,252.31	980.99	271.32	4.616		
11,200.00	5,263.14	10,294.29	5,234.89	143.30	133.48	88.71	-4,223.31	3,483.92	1,251.65	975.42	276.23	4.531		
11,300.00	5,262.19	10,394.29	5,233.91	145.74	135.94	88.71	-4,294.83	3,553.80	1,250.98	969.84	281.14	4.450		
11,400.00	5,261.25	10,494.29	5,232.94	148.19	138.40	88.71	-4,366.35	3,623.68	1,250.32	964.27	286.05	4.371		
11,500.00	5,260.31	10,594.29	5,231.96	150.63	140.86	88.70	-4,437.87	3,693.57	1,249.66	958.69	290.97	4.295		
11,600.00	5,259.37	10,694.29	5,230.99	153.08	143.32	88.70	-4,509.39	3,763.45	1,249.00	953.12	295.88	4.221		
11,700.00	5,258.43	10,794.28	5,230.01	155.53	145.79	88.70	-4,580.91	3,833.33	1,248.34	947.54	300.80	4.150		
11,800.00	5,257.49	10,894.28	5,229.04	157.98	148.25	88.70	-4,652.42	3,903.22	1,247.67	941.96	305.72	4.081		
11,900.00	5,256.54	10,994.28	5,228.06	160.43	150.71	88.69	-4,723.94	3,973.10	1,247.01	936.37	310.64	4.014		
12,000.00	5,255.60	11,094.28	5,227.09	162.88	153.18	88.69	-4,795.46	4,042.99	1,246.35	930.79	315.56	3.950		
12,100.00	5,254.66	11,194.27	5,226.11	165.33	155.65	88.69	-4,866.98	4,112.87	1,245.69	925.21	320.48	3.887		
12,200.00	5,253.72	11,294.27	5,225.14	167.78	158.11	88.69	-4,938.50	4,182.75	1,245.02	919.62	325.40	3.826		
12,300.00	5,252.78	11,394.27	5,224.16	170.24	160.58	88.69	-5,010.02	4,252.64	1,244.36	914.03	330.33	3.767		
12,400.00	5,251.84	11,494.27	5,223.19	172.69	163.05	88.68	-5,081.53	4,322.52	1,243.70	908.45	335.25	3.710		
12,500.00	5,250.89	11,594.27	5,222.21	175.14	165.52	88.68	-5,153.05	4,392.41	1,243.04	902.86	340.18	3.654		
12,600.00	5,249.95	11,694.26	5,221.24	177.60	167.98	88.68	-5,224.57	4,462.29	1,242.38	897.27	345.11	3.600		
12,700.00	5,249.01	11,794.26	5,220.26	180.05	170.45	88.68	-5,296.09	4,532.17	1,241.71	891.68	350.04	3.547		
12,800.00	5,248.07	11,894.26	5,219.29	182.51	172.92	88.67	-5,367.61	4,602.06	1,241.05	886.09	354.97	3.496		
12,900.00	5,247.13	11,994.26	5,218.31	184.97	175.39	88.67	-5,439.13	4,671.94	1,240.39	880.49	359.90	3.447		
13,000.00	5,246.19	12,094.25	5,217.33	187.42	177.87	88.67	-5,510.64	4,741.82	1,239.73	874.90	364.83	3.398		
13,100.00	5,245.25	12,194.25	5,216.36	189.88	180.34	88.67	-5,582.16	4,811.71	1,239.07	869.30	369.76	3.351		
13,200.00	5,244.30	12,294.25	5,215.38	192.34	182.81	88.67	-5,653.68	4,881.59	1,238.40	863.71	374.69	3.305		
13,300.00	5,243.36	12,394.25	5,214.41	194.80	185.28	88.66	-5,725.20	4,951.48	1,237.74	858.11	379.63	3.260		
13,400.00	5,242.42	12,494.25	5,213.43	197.26	187.75	88.66	-5,796.72	5,021.36	1,237.08	852.52	384.56	3.217		
13,500.00	5,241.48	12,594.24	5,212.46	199.72	190.23	88.66	-5,868.24	5,091.24	1,236.42	846.92	389.50	3.174		
13,600.00	5,240.54	12,694.24	5,211.48	202.18	192.70	88.66	-5,939.75	5,161.13	1,235.76	841.32	394.43	3.133		
13,700.00	5,239.60	12,794.24	5,210.51	204.64	195.17	88.65	-6,011.27	5,231.01	1,235.09	835.72	399.37	3.093		
13,800.00	5,238.65	12,894.24	5,209.53	207.10	197.65	88.65	-6,082.79	5,300.89	1,234.43	830.12	404.31	3.053		
13,900.00	5,237.71	12,994.23	5,208.56	209.56	200.12	88.65	-6,154.31	5,370.78	1,233.77	824.52	409.25	3.015		
14,000.00	5,236.77	13,094.23	5,207.58	212.02	202.60	88.65	-6,225.83	5,440.66	1,233.11	818.92	414.18	2.977		
14,100.00	5,235.83	13,194.23	5,206.61	214.48	205.07	88.64	-6,297.35	5,510.55	1,232.45	813.32	419.12	2.941		
14,200.00	5,234.89	13,294.23	5,205.63	216.95	207.55	88.64	-6,368.86	5,580.43	1,231.78	807.72	424.06	2.905		
14,300.00	5,233.95	13,394.23	5,204.66	219.41	210.02	88.64	-6,440.38	5,650.31	1,231.12	802.12	429.00	2.870		
14,400.00	5,233.01	13,494.22	5,203.68	221.87	212.50	88.64	-6,511.90	5,720.20	1,230.46	796.52	433.94	2.836		
14,500.00	5,232.06	13,594.22	5,202.71	224.33	214.98	88.64	-6,583.42	5,790.08	1,229.80	790.91	438.88	2.802		
14,600.00	5,231.12	13,694.22	5,201.73	226.80	217.45	88.63	-6,654.94	5,859.96	1,229.14	785.31	443.83	2.769		
14,700.00	5,230.18	13,794.22	5,200.76	229.26	219.93	88.63	-6,726.46	5,929.85	1,228.47	779.71	448.77	2.737		
14,800.00	5,229.24	13,894.21	5,199.78	231.73	222.41	88.63	-6,797.97	5,999.73	1,227.81	774.10	453.71	2.706		
14,900.00	5,228.30	13,994.21	5,198.81	234.19	224.88	88.63	-6,869.49	6,069.62	1,227.15	768.50	458.65	2.676		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 309H - Original Drilling - APD													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,000.00	5,227.36	14,094.21	5,197.83	236.65	227.36	88.62	-6,941.01	6,139.50	1,226.49	762.89	463.60	2.646	
15,100.00	5,226.41	14,194.21	5,196.86	239.12	229.84	88.62	-7,012.53	6,209.38	1,225.83	757.29	468.54	2.616	
15,143.96	5,226.00	14,238.17	5,196.43	240.20	230.93	88.62	-7,043.97	6,240.11	1,225.52	754.81	470.71	2.604 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 310H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-138.14	-44.41	-39.79	59.63					
100.00	100.00	100.00	100.00	0.15	0.15	-138.14	-44.41	-39.79	59.63	59.32	0.31	193.425		
200.00	200.00	200.00	200.00	0.51	0.51	-138.14	-44.41	-39.79	59.63	58.61	1.03	58.163		
300.00	300.00	300.00	300.00	0.87	0.87	-138.14	-44.41	-39.79	59.63	57.89	1.74	34.228 CC		
300.01	300.01	300.01	300.01	0.87	0.87	-138.14	-44.41	-39.79	59.63	57.89	1.74	34.226		
400.00	400.00	400.00	400.00	1.23	1.23	-144.15	-44.41	-39.79	59.72	57.26	2.46	24.284 ES		
500.00	499.96	498.33	498.32	1.59	1.57	-146.53	-46.10	-39.76	63.15	59.99	3.16	20.001		
600.00	599.77	595.88	595.73	1.95	1.90	-151.65	-51.10	-39.64	72.44	68.59	3.85	18.798 SF		
700.00	699.30	691.97	691.47	2.32	2.24	-157.54	-59.27	-39.46	88.28	83.72	4.56	19.380		
800.00	798.44	785.96	784.80	2.72	2.59	-162.79	-70.36	-39.21	111.02	105.77	5.25	21.145		
900.00	897.07	877.28	875.08	3.13	2.96	-166.95	-84.07	-38.90	140.62	134.69	5.93	23.708		
1,000.00	995.05	965.85	962.18	3.59	3.34	-170.11	-100.09	-38.54	176.80	170.20	6.59	26.809		
1,100.00	1,092.46	1,057.07	1,051.68	4.07	3.76	-172.55	-117.74	-38.15	217.02	209.74	7.28	29.806		
1,200.00	1,189.82	1,148.21	1,141.09	4.57	4.19	-174.27	-135.38	-37.75	257.67	249.72	7.95	32.425		
1,300.00	1,287.18	1,239.34	1,230.50	5.09	4.63	-175.52	-153.02	-37.35	298.45	289.82	8.63	34.585		
1,400.00	1,384.54	1,330.48	1,319.91	5.61	5.07	-176.47	-170.66	-36.96	339.33	330.02	9.31	36.434		
1,500.00	1,481.90	1,421.61	1,409.32	6.13	5.52	-177.22	-188.30	-36.56	380.28	370.27	10.00	38.023		
1,600.00	1,579.26	1,512.75	1,498.73	6.67	5.97	-177.82	-205.95	-36.16	421.26	410.57	10.69	39.400		
1,700.00	1,676.62	1,603.88	1,588.14	7.20	6.43	-178.32	-223.59	-35.77	462.28	450.89	11.39	40.603		
1,800.00	1,773.98	1,695.02	1,677.55	7.74	6.88	-178.73	-241.23	-35.37	503.32	491.24	12.08	41.662		
1,900.00	1,871.35	1,786.15	1,766.96	8.28	7.34	-179.09	-258.87	-34.98	544.38	531.60	12.78	42.600		
2,000.00	1,968.71	1,877.29	1,856.37	8.82	7.80	-179.39	-276.51	-34.58	585.45	571.97	13.48	43.438		
2,100.00	2,066.07	1,968.42	1,945.78	9.36	8.26	-179.65	-294.15	-34.18	626.54	612.36	14.18	44.189		
2,200.00	2,163.43	2,059.55	2,035.19	9.90	8.73	-179.88	-311.79	-33.79	667.63	652.75	14.88	44.866		
2,300.00	2,260.79	2,150.69	2,124.60	10.45	9.19	-179.91	-329.43	-33.39	708.74	693.15	15.58	45.479		
2,400.00	2,358.15	2,241.82	2,214.01	11.00	9.65	-179.73	-347.07	-32.99	749.85	733.56	16.29	46.038		
2,500.00	2,455.51	2,332.96	2,303.42	11.54	10.12	-179.57	-364.71	-32.60	790.96	773.97	16.99	46.548		
2,600.00	2,552.87	2,424.09	2,392.83	12.09	10.58	-179.42	-382.35	-32.20	832.08	814.38	17.70	47.016		
2,700.00	2,650.23	2,515.23	2,482.24	12.64	11.05	-179.29	-399.99	-31.80	873.21	854.80	18.40	47.446		
2,800.00	2,747.59	2,606.36	2,571.65	13.19	11.52	-179.17	-417.63	-31.41	914.33	895.22	19.11	47.843		
2,900.00	2,844.95	2,697.50	2,661.06	13.73	11.98	-179.06	-435.27	-31.01	955.47	935.65	19.82	48.210		
3,000.00	2,942.31	2,788.63	2,750.47	14.28	12.45	-178.96	-452.91	-30.62	996.60	976.07	20.53	48.551		
3,100.00	3,039.67	2,879.77	2,839.88	14.83	12.92	-178.86	-470.55	-30.22	1,037.74	1,016.50	21.24	48.869		
3,200.00	3,137.03	2,970.90	2,929.29	15.38	13.39	-178.78	-488.19	-29.82	1,078.87	1,056.93	21.94	49.165		
3,300.00	3,234.39	3,062.03	3,018.70	15.93	13.86	-178.70	-505.83	-29.43	1,120.02	1,097.36	22.65	49.441		
3,400.00	3,331.75	3,153.17	3,108.11	16.48	14.32	-178.62	-523.47	-29.03	1,161.16	1,137.79	23.36	49.700		
3,500.00	3,429.11	3,244.30	3,197.52	17.03	14.79	-178.55	-541.11	-28.63	1,202.30	1,178.23	24.07	49.943		
3,600.00	3,526.47	3,335.44	3,286.93	17.58	15.26	-178.49	-558.75	-28.24	1,243.45	1,218.66	24.78	50.171		
3,700.00	3,623.83	3,426.57	3,376.34	18.14	15.73	-178.43	-576.39	-27.84	1,284.59	1,259.10	25.49	50.387		
3,800.00	3,721.20	3,517.71	3,465.75	18.69	16.20	-178.37	-594.03	-27.44	1,325.74	1,299.53	26.21	50.589		
3,900.00	3,818.56	3,608.84	3,555.16	19.24	16.67	-178.32	-611.67	-27.05	1,366.89	1,339.97	26.92	50.781		
4,000.00	3,915.92	3,699.98	3,644.57	19.79	17.14	-178.27	-629.31	-26.65	1,408.04	1,380.41	27.63	50.962		
4,100.00	4,013.28	3,791.11	3,733.98	20.34	17.61	-178.22	-646.95	-26.25	1,449.19	1,420.85	28.34	51.134		
4,200.00	4,110.64	3,882.25	3,823.39	20.89	18.08	-178.18	-664.59	-25.86	1,490.34	1,461.28	29.05	51.296		
4,300.00	4,208.00	3,973.38	3,912.80	21.44	18.55	-178.13	-682.23	-25.46	1,531.49	1,501.72	29.77	51.451		
4,400.00	4,305.36	4,064.52	4,002.21	22.00	19.02	-178.09	-699.87	-25.07	1,572.64	1,542.16	30.48	51.598		
4,500.00	4,402.72	4,211.59	4,152.99	22.55	19.57	-178.04	-717.50	-24.67	1,613.79	1,583.21	31.19	51.739		
4,600.00	4,500.08	4,297.00	4,238.12	23.10	19.96	-177.99	-735.13	-24.27	1,654.94	1,624.36	31.90	51.879		
4,700.00	4,597.44	4,382.45	4,323.24	23.65	20.35	-177.94	-752.76	-23.87	1,696.09	1,665.41	32.61	52.019		
4,800.00	4,694.80	4,469.77	4,410.30	24.13	20.99	-177.89	-770.39	-23.47	1,737.24	1,706.56	33.32	52.159		
4,900.00	4,793.47	4,562.41	4,502.23	24.47	21.34	-177.84	-788.02	-23.07	1,778.39	1,747.71	34.03	52.299		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 310H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,888.77	6,217.59	5,288.04	24.67	29.41	120.75	-73.31	-871.85	1,483.52	1,435.16	48.36	30.675		
5,100.00	4,979.11	6,178.88	5,287.72	24.76	28.73	111.81	-101.09	-844.89	1,477.53	1,429.16	48.37	30.547		
5,159.08	5,029.25	6,149.39	5,287.48	24.75	28.22	108.02	-122.25	-824.35	1,476.66	1,428.52	48.14	30.675		
5,200.00	5,062.27	6,126.24	5,287.29	24.75	27.83	105.73	-138.86	-808.23	1,477.04	1,429.14	47.89	30.840		
5,300.00	5,136.21	6,060.97	5,286.76	24.66	26.75	100.87	-185.69	-762.77	1,480.65	1,433.58	47.06	31.461		
5,400.00	5,199.09	5,984.67	5,286.14	24.51	25.55	96.76	-240.44	-709.63	1,486.70	1,440.65	46.05	32.286		
5,500.00	5,249.37	5,899.22	5,285.44	24.32	24.30	93.38	-301.76	-650.12	1,493.48	1,448.43	45.04	33.157		
5,600.00	5,285.82	5,806.73	5,284.69	24.14	23.09	90.85	-368.12	-585.71	1,499.44	1,455.20	44.24	33.895		
5,700.00	5,307.53	5,704.66	5,283.62	24.00	22.09	89.27	-441.34	-514.61	1,503.35	1,459.62	43.73	34.378		
5,800.00	5,313.98	5,572.05	5,265.36	24.07	22.12	88.16	-533.80	-421.65	1,503.07	1,459.62	43.45	34.594		
5,900.00	5,313.04	5,450.67	5,225.39	24.64	22.35	86.67	-612.17	-338.29	1,499.70	1,455.94	43.76	34.268		
6,000.00	5,312.10	5,347.02	5,174.77	25.72	22.54	84.75	-672.15	-270.76	1,496.14	1,451.56	44.58	33.560		
6,100.00	5,311.16	5,261.75	5,122.70	27.07	22.68	82.76	-715.48	-219.08	1,494.00	1,448.31	45.69	32.697		
6,131.16	5,310.86	5,238.63	5,107.09	27.53	22.72	82.16	-726.18	-205.80	1,493.85	1,447.78	46.07	32.425		
6,200.00	5,310.21	5,192.70	5,074.33	28.58	22.78	80.90	-746.02	-180.47	1,494.67	1,447.71	46.95	31.832		
6,300.00	5,309.27	5,136.87	5,031.57	30.23	22.83	79.26	-767.47	-151.72	1,499.20	1,450.91	48.29	31.046		
6,400.00	5,308.33	5,091.44	4,994.62	31.97	22.86	77.85	-782.65	-130.12	1,508.31	1,458.67	49.64	30.384		
6,500.00	5,307.39	5,049.99	4,959.37	33.80	22.88	76.50	-794.66	-111.91	1,522.47	1,471.51	50.95	29.879		
6,600.00	5,306.45	5,023.10	4,935.81	35.71	22.88	75.61	-801.48	-100.91	1,541.86	1,489.61	52.25	29.509		
6,700.00	5,305.51	4,999.99	4,915.15	37.68	22.88	74.82	-806.72	-91.98	1,566.59	1,513.12	53.47	29.298		
6,800.00	5,304.56	4,974.90	4,892.33	39.70	22.86	73.96	-811.75	-82.84	1,596.57	1,542.01	54.56	29.263		
6,900.00	5,303.62	4,949.99	4,869.31	41.77	22.85	73.09	-816.06	-74.37	1,631.67	1,576.14	55.52	29.386		
7,000.00	5,302.68	4,949.99	4,869.31	43.88	22.85	73.09	-816.06	-74.37	1,671.67	1,615.15	56.52	29.576		
7,100.00	5,301.74	4,925.08	4,845.95	46.02	22.82	72.21	-819.69	-66.50	1,716.15	1,658.92	57.23	29.987		
7,200.00	5,300.80	4,899.99	4,822.13	48.19	22.80	71.33	-822.64	-59.20	1,765.11	1,707.30	57.82	30.530		
7,300.00	5,299.86	4,899.99	4,822.13	50.39	22.80	71.33	-822.64	-59.20	1,817.86	1,759.39	58.47	31.092		
7,400.00	5,298.91	4,899.99	4,822.13	52.62	22.80	71.33	-822.64	-59.20	1,874.46	1,815.45	59.01	31.764		
7,500.00	5,297.97	4,882.27	4,805.15	54.86	22.77	70.70	-824.29	-54.43	1,934.34	1,875.00	59.34	32.595		
7,600.00	5,297.03	4,874.19	4,797.36	57.12	22.75	70.41	-824.93	-52.36	1,997.38	1,937.72	59.66	33.477		
7,700.00	5,296.09	4,849.99	4,773.92	59.40	22.71	69.54	-826.40	-46.56	2,063.48	2,003.68	59.80	34.507		
7,800.00	5,295.15	4,849.99	4,773.92	61.70	22.71	69.54	-826.40	-46.56	2,131.80	2,071.75	60.05	35.501		
7,900.00	5,294.21	4,849.99	4,773.92	64.00	22.71	69.54	-826.40	-46.56	2,202.54	2,142.29	60.24	36.561		
8,000.00	5,293.27	4,849.99	4,773.92	66.32	22.71	69.54	-826.40	-46.56	2,275.47	2,215.08	60.39	37.679		
8,100.00	5,292.32	4,849.99	4,773.92	68.65	22.71	69.54	-826.40	-46.56	2,350.40	2,289.90	60.50	38.850		
8,200.00	5,291.38	4,849.99	4,773.92	70.99	22.71	69.54	-826.40	-46.56	2,427.14	2,366.56	60.57	40.069		
8,300.00	5,290.44	4,849.99	4,773.92	73.34	22.71	69.54	-826.40	-46.56	2,505.51	2,444.89	60.62	41.331		
8,400.00	5,289.50	4,830.19	4,754.60	75.69	22.67	68.84	-827.10	-42.27	2,585.06	2,524.54	60.51	42.719		
8,500.00	5,288.56	4,826.40	4,750.89	78.06	22.66	68.70	-827.19	-41.50	2,666.14	2,605.65	60.50	44.071		
8,600.00	5,287.62	4,822.86	4,747.42	80.43	22.65	68.57	-827.25	-40.79	2,748.46	2,687.99	60.47	45.454		
8,700.00	5,286.67	4,799.99	4,724.95	82.80	22.60	67.76	-827.32	-36.53	2,832.21	2,771.91	60.30	46.970		
8,800.00	5,285.73	4,799.99	4,724.95	85.18	22.60	67.76	-827.32	-36.53	2,916.58	2,856.30	60.27	48.391		
8,900.00	5,284.79	4,799.99	4,724.95	87.57	22.60	67.76	-827.32	-36.53	3,001.90	2,941.66	60.24	49.836		
9,000.00	5,283.85	4,799.99	4,724.95	89.96	22.60	67.76	-827.32	-36.53	3,088.10	3,027.91	60.19	51.304		
9,100.00	5,282.91	4,799.99	4,724.95	92.36	22.60	67.76	-827.32	-36.53	3,175.12	3,114.98	60.14	52.793		
9,200.00	5,281.97	4,799.99	4,724.95	94.76	22.60	67.76	-827.32	-36.53	3,262.88	3,202.79	60.09	54.300		
9,300.00	5,281.02	4,799.99	4,724.95	97.16	22.60	67.76	-827.32	-36.53	3,351.32	3,291.29	60.03	55.824		
9,400.00	5,280.08	4,799.99	4,724.95	99.57	22.60	67.76	-827.32	-36.53	3,440.40	3,380.43	59.97	57.364		
9,500.00	5,279.14	4,799.99	4,724.95	101.98	22.60	67.76	-827.32	-36.53	3,530.06	3,470.15	59.91	58.919		
9,600.00	5,278.20	4,799.99	4,724.95	104.39	22.60	67.76	-827.32	-36.53	3,620.27	3,560.41	59.85	60.486		
9,700.00	5,277.26	4,799.99	4,724.95	106.81	22.60	67.76	-827.32	-36.53	3,710.97	3,651.18	59.79	62.066		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 310H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,800.00	5,276.32	4,799.99	4,724.95	109.23	22.60	67.76	-827.32	-36.53	3,802.15	3,742.42	59.73	63.656		
9,900.00	5,275.38	4,799.99	4,724.95	111.65	22.60	67.76	-827.32	-36.53	3,893.75	3,834.08	59.67	65.257		
10,000.00	5,274.43	4,799.99	4,724.95	114.07	22.60	67.76	-827.32	-36.53	3,985.76	3,926.15	59.61	66.866		
10,100.00	5,273.49	4,799.99	4,724.95	116.50	22.60	67.76	-827.32	-36.53	4,078.15	4,018.60	59.55	68.485		
10,200.00	5,272.55	4,799.99	4,724.95	118.93	22.60	67.76	-827.32	-36.53	4,170.88	4,111.39	59.49	70.111		
10,300.00	5,271.61	4,799.99	4,724.95	121.36	22.60	67.76	-827.32	-36.53	4,263.95	4,204.52	59.43	71.743		
10,400.00	5,270.67	4,799.99	4,724.95	123.79	22.60	67.76	-827.32	-36.53	4,357.32	4,297.94	59.38	73.383		
10,500.00	5,269.73	4,799.99	4,724.95	126.22	22.60	67.76	-827.32	-36.53	4,450.98	4,391.66	59.32	75.028		
10,600.00	5,268.78	4,799.99	4,724.95	128.66	22.60	67.76	-827.32	-36.53	4,544.91	4,485.64	59.27	76.679		
10,700.00	5,267.84	4,799.99	4,724.95	131.09	22.60	67.76	-827.32	-36.53	4,639.10	4,579.87	59.22	78.334		
10,800.00	5,266.90	4,799.99	4,724.95	133.53	22.60	67.76	-827.32	-36.53	4,733.52	4,674.35	59.17	79.994		
10,900.00	5,265.96	4,799.99	4,724.95	135.97	22.60	67.76	-827.32	-36.53	4,828.17	4,769.04	59.13	81.657		
11,000.00	5,265.02	4,777.40	4,702.67	138.41	22.53	66.95	-826.80	-32.87	4,922.59	4,863.63	58.96	83.492		
11,100.00	5,264.08	4,776.38	4,701.66	140.85	22.53	66.92	-826.77	-32.72	5,017.61	4,958.70	58.91	85.172		
11,200.00	5,263.14	4,775.39	4,700.68	143.30	22.53	66.88	-826.73	-32.57	5,112.82	5,053.95	58.87	86.855		
11,300.00	5,262.19	4,774.43	4,699.74	145.74	22.52	66.85	-826.69	-32.43	5,208.20	5,149.38	58.82	88.541		
11,400.00	5,261.25	4,773.51	4,698.82	148.19	22.52	66.81	-826.66	-32.29	5,303.76	5,244.97	58.78	90.229		
11,500.00	5,260.31	4,772.62	4,697.94	150.63	22.52	66.78	-826.62	-32.17	5,399.47	5,340.73	58.74	91.918		
11,600.00	5,259.37	4,749.99	4,675.55	153.08	22.45	65.98	-825.40	-29.17	5,495.74	5,437.16	58.58	93.815		
11,700.00	5,258.43	4,749.99	4,675.55	155.53	22.45	65.98	-825.40	-29.17	5,591.71	5,533.16	58.55	95.503		
11,800.00	5,257.49	4,749.99	4,675.55	157.98	22.45	65.98	-825.40	-29.17	5,687.83	5,629.31	58.52	97.191		
11,900.00	5,256.54	4,749.99	4,675.55	160.43	22.45	65.98	-825.40	-29.17	5,784.08	5,725.58	58.50	98.880		
12,000.00	5,255.60	4,749.99	4,675.55	162.88	22.45	65.98	-825.40	-29.17	5,880.45	5,821.98	58.47	100.570		
12,100.00	5,254.66	4,749.99	4,675.55	165.33	22.45	65.98	-825.40	-29.17	5,976.94	5,918.50	58.45	102.260		
12,200.00	5,253.72	4,749.99	4,675.55	167.78	22.45	65.98	-825.40	-29.17	6,073.55	6,015.12	58.43	103.951		
12,300.00	5,252.78	4,749.99	4,675.55	170.24	22.45	65.98	-825.40	-29.17	6,170.26	6,111.86	58.41	105.641		
12,400.00	5,251.84	4,749.99	4,675.55	172.69	22.45	65.98	-825.40	-29.17	6,267.08	6,208.69	58.39	107.332		
12,500.00	5,250.89	4,749.99	4,675.55	175.14	22.45	65.98	-825.40	-29.17	6,364.00	6,305.62	58.37	109.022		
12,600.00	5,249.95	4,749.99	4,675.55	177.60	22.45	65.98	-825.40	-29.17	6,461.01	6,402.65	58.36	110.712		
12,700.00	5,249.01	4,749.99	4,675.55	180.05	22.45	65.98	-825.40	-29.17	6,558.11	6,499.76	58.35	112.401		
12,800.00	5,248.07	4,749.99	4,675.55	182.51	22.45	65.98	-825.40	-29.17	6,655.29	6,596.96	58.33	114.090		
12,900.00	5,247.13	4,749.99	4,675.55	184.97	22.45	65.98	-825.40	-29.17	6,752.56	6,694.24	58.32	115.777		
13,000.00	5,246.19	4,749.99	4,675.55	187.42	22.45	65.98	-825.40	-29.17	6,849.91	6,791.59	58.32	117.464		
13,100.00	5,245.25	4,749.99	4,675.55	189.88	22.45	65.98	-825.40	-29.17	6,947.33	6,889.02	58.31	119.149		
13,200.00	5,244.30	4,749.99	4,675.55	192.34	22.45	65.98	-825.40	-29.17	7,044.82	6,986.52	58.30	120.833		
13,300.00	5,243.36	4,749.99	4,675.55	194.80	22.45	65.98	-825.40	-29.17	7,142.39	7,084.09	58.30	122.516		
13,400.00	5,242.42	4,749.99	4,675.55	197.26	22.45	65.98	-825.40	-29.17	7,240.02	7,181.72	58.29	124.197		
13,500.00	5,241.48	4,749.99	4,675.55	199.72	22.45	65.98	-825.40	-29.17	7,337.71	7,279.42	58.29	125.877		
13,600.00	5,240.54	4,749.99	4,675.55	202.18	22.45	65.98	-825.40	-29.17	7,435.46	7,377.17	58.29	127.555		
13,700.00	5,239.60	4,749.99	4,675.55	204.64	22.45	65.98	-825.40	-29.17	7,533.28	7,474.98	58.29	129.230		
13,800.00	5,238.65	4,749.99	4,675.55	207.10	22.45	65.98	-825.40	-29.17	7,631.15	7,572.85	58.30	130.904		
13,900.00	5,237.71	4,749.99	4,675.55	209.56	22.45	65.98	-825.40	-29.17	7,729.07	7,670.77	58.30	132.576		
14,000.00	5,236.77	4,749.99	4,675.55	212.02	22.45	65.98	-825.40	-29.17	7,827.05	7,768.75	58.30	134.246		
14,100.00	5,235.83	4,749.99	4,675.55	214.48	22.45	65.98	-825.40	-29.17	7,925.08	7,866.77	58.31	135.914		
14,200.00	5,234.89	4,749.99	4,675.55	216.95	22.45	65.98	-825.40	-29.17	8,023.16	7,964.84	58.32	137.579		
14,300.00	5,233.95	4,749.99	4,675.55	219.41	22.45	65.98	-825.40	-29.17	8,121.28	8,062.95	58.33	139.242		
14,400.00	5,233.01	4,749.99	4,675.55	221.87	22.45	65.98	-825.40	-29.17	8,219.45	8,161.11	58.33	140.902		
14,500.00	5,232.06	4,749.99	4,675.55	224.33	22.45	65.98	-825.40	-29.17	8,317.66	8,259.32	58.35	142.560		
14,600.00	5,231.12	4,749.99	4,675.55	226.80	22.45	65.98	-825.40	-29.17	8,415.92	8,357.56	58.36	144.215		
14,700.00	5,230.18	4,749.99	4,675.55	229.26	22.45	65.98	-825.40	-29.17	8,514.21	8,455.84	58.37	145.867		
14,800.00	5,229.24	4,749.99	4,675.55	231.73	22.45	65.98	-825.40	-29.17	8,612.55	8,554.16	58.38	147.517		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													G35 2409 - 310H - Original Drilling - APD		Offset Site Error:		0.00 usft	
Survey Program:													0-MWD+IGRF		Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning					
14,900.00	5,228.30	4,749.99	4,675.55	234.19	22.45	65.98	-825.40	-29.17	8,710.92	8,652.52	58.40	149.164						
15,000.00	5,227.36	4,749.99	4,675.55	236.65	22.45	65.98	-825.40	-29.17	8,809.33	8,750.91	58.41	150.808						
15,100.00	5,226.41	4,749.99	4,675.55	239.12	22.45	65.98	-825.40	-29.17	8,907.77	8,849.34	58.43	152.448						
15,143.96	5,226.00	4,749.99	4,675.55	240.20	22.45	65.98	-825.40	-29.17	8,951.06	8,892.62	58.44	153.170						

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 632H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-138.39	-14.93	-13.26	19.97					
100.00	100.00	100.00	100.00	0.15	0.15	-138.39	-14.93	-13.26	19.97	19.66	0.31	64.775		
200.00	200.00	200.00	200.00	0.51	0.51	-138.39	-14.93	-13.26	19.97	18.94	1.03	19.478		
300.00	300.00	300.00	300.00	0.87	0.87	-138.39	-14.93	-13.26	19.97	18.23	1.74	11.462 CC		
300.02	300.02	300.02	300.02	0.87	0.87	-138.39	-14.93	-13.26	19.97	18.23	1.74	11.461		
400.00	400.00	400.00	400.00	1.23	1.23	-144.52	-14.93	-13.26	20.06	17.60	2.46	8.156		
500.00	499.96	500.59	500.57	1.59	1.59	-145.97	-13.18	-13.05	20.75	17.57	3.18	6.530		
600.00	599.77	601.21	601.05	1.95	1.96	-147.40	-7.92	-12.42	21.41	17.51	3.90	5.493		
700.00	699.30	701.86	701.30	2.32	2.32	-148.84	0.85	-11.38	22.04	17.42	4.62	4.770		
800.00	798.44	802.46	801.14	2.72	2.71	-150.31	13.07	-9.92	22.66	17.31	5.35	4.234 ES		
900.00	897.07	902.41	900.16	3.13	3.11	-154.01	26.56	-8.31	25.17	19.07	6.09	4.131 SF		
1,000.00	995.05	1,002.20	999.03	3.59	3.52	-159.52	40.03	-6.70	31.00	24.17	6.83	4.539		
1,100.00	1,092.46	1,101.78	1,097.68	4.07	3.94	-164.42	53.48	-5.09	39.67	32.10	7.57	5.243		
1,200.00	1,189.82	1,201.34	1,196.31	4.57	4.35	-167.61	66.92	-3.49	48.73	40.42	8.30	5.868		
1,300.00	1,287.18	1,300.90	1,294.95	5.09	4.78	-169.80	80.36	-1.88	57.89	48.84	9.05	6.400		
1,400.00	1,384.54	1,400.45	1,393.58	5.61	5.20	-171.38	93.79	-0.28	67.11	57.32	9.79	6.855		
1,500.00	1,481.90	1,500.01	1,492.22	6.13	5.62	-172.59	107.23	1.33	76.37	65.83	10.54	7.248		
1,600.00	1,579.26	1,599.57	1,590.85	6.67	6.05	-173.53	120.67	2.93	85.65	74.37	11.29	7.590		
1,700.00	1,676.62	1,699.13	1,689.49	7.20	6.48	-174.29	134.11	4.54	94.96	82.92	12.04	7.890		
1,800.00	1,773.98	1,798.69	1,788.12	7.74	6.90	-174.91	147.55	6.14	104.27	91.49	12.79	8.154		
1,900.00	1,871.35	1,898.25	1,886.76	8.28	7.33	-175.44	160.99	7.75	113.60	100.06	13.54	8.390		
2,000.00	1,968.71	1,997.81	1,985.39	8.82	7.76	-175.88	174.43	9.35	122.94	108.64	14.29	8.601		
2,100.00	2,066.07	2,097.37	2,084.03	9.36	8.19	-176.26	187.87	10.96	132.28	117.23	15.05	8.790		
2,200.00	2,163.43	2,196.93	2,182.66	9.90	8.62	-176.59	201.31	12.56	141.62	125.82	15.80	8.961		
2,300.00	2,260.79	2,296.49	2,281.30	10.45	9.05	-176.87	214.75	14.17	150.98	134.42	16.56	9.117		
2,400.00	2,358.15	2,396.05	2,379.93	11.00	9.49	-177.13	228.19	15.77	160.33	143.01	17.32	9.259		
2,500.00	2,455.51	2,495.61	2,478.57	11.54	9.92	-177.36	241.63	17.38	169.69	151.61	18.07	9.389		
2,600.00	2,552.87	2,595.16	2,577.20	12.09	10.35	-177.56	255.07	18.98	179.05	160.22	18.83	9.509		
2,700.00	2,650.23	2,694.72	2,675.84	12.64	10.78	-177.74	268.51	20.59	188.41	168.82	19.59	9.619		
2,800.00	2,747.59	2,794.28	2,774.47	13.19	11.21	-177.91	281.95	22.19	197.77	177.42	20.35	9.721		
2,900.00	2,844.95	2,893.84	2,873.11	13.73	11.65	-178.06	295.39	23.80	207.13	186.03	21.10	9.815		
3,000.00	2,942.31	2,993.40	2,971.74	14.28	12.08	-178.20	308.83	25.40	216.50	194.64	21.86	9.903		
3,100.00	3,039.67	3,092.96	3,070.38	14.83	12.51	-178.32	322.27	27.01	225.87	203.25	22.62	9.985		
3,200.00	3,137.03	3,192.52	3,169.01	15.38	12.94	-178.44	335.71	28.61	235.23	211.86	23.38	10.062		
3,300.00	3,234.39	3,292.08	3,267.64	15.93	13.38	-178.55	349.15	30.22	244.60	220.47	24.14	10.133		
3,400.00	3,331.75	3,391.64	3,366.28	16.48	13.81	-178.65	362.59	31.82	253.97	229.08	24.90	10.201		
3,500.00	3,429.11	3,491.20	3,464.91	17.03	14.24	-178.74	376.03	33.43	263.34	237.69	25.66	10.264		
3,600.00	3,526.47	3,590.76	3,563.55	17.58	14.68	-178.82	389.47	35.03	272.71	246.30	26.42	10.324		
3,700.00	3,623.83	3,690.32	3,662.18	18.14	15.11	-178.90	402.91	36.64	282.09	254.91	27.18	10.380		
3,800.00	3,721.20	3,789.87	3,760.82	18.69	15.54	-178.98	416.35	38.24	291.46	263.52	27.94	10.433		
3,900.00	3,818.56	3,889.43	3,859.45	19.24	15.98	-179.05	429.79	39.85	300.83	272.13	28.70	10.484		
4,000.00	3,915.92	3,988.99	3,958.09	19.79	16.41	-179.12	443.23	41.45	310.20	280.75	29.46	10.531		
4,100.00	4,013.28	4,088.55	4,056.72	20.34	16.84	-179.18	456.67	43.06	319.58	289.36	30.22	10.577		
4,200.00	4,110.64	4,188.11	4,155.36	20.89	17.28	-179.24	470.10	44.66	328.95	297.97	30.98	10.620		
4,300.00	4,208.00	4,287.67	4,253.99	21.44	17.71	-179.29	483.54	46.27	338.32	306.59	31.74	10.661		
4,400.00	4,305.36	4,387.23	4,352.63	22.00	18.14	-179.34	496.98	47.87	347.70	315.20	32.50	10.700		
4,500.00	4,402.72	4,486.79	4,451.26	22.55	18.58	-179.39	510.42	49.48	357.07	323.82	33.26	10.737		
4,600.00	4,500.08	4,586.35	4,549.90	23.10	19.01	-179.44	523.86	51.08	366.45	332.43	34.02	10.773		
4,700.00	4,597.44	4,685.91	4,648.53	23.65	19.44	-179.91	537.30	52.69	375.82	341.04	34.78	10.807		
4,800.00	4,695.55	4,789.48	4,751.13	24.13	19.90	-179.83	551.35	54.29	380.10	344.55	35.55	10.893		
4,900.00	4,793.47	4,935.53	4,892.63	24.47	20.65	-179.07	564.47	43.35	367.82	331.46	36.37	10.115		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 632H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,888.77	5,043.91	4,991.02	24.67	21.32	101.08	623.41	20.53	343.44	305.83	37.61	9.131		
5,100.00	4,979.11	5,112.07	5,048.55	24.76	21.80	104.31	653.61	0.06	324.39	284.44	39.95	8.121		
5,144.94	5,017.50	5,131.91	5,064.54	24.75	21.95	105.47	663.18	-6.75	321.91	280.84	41.07	7.838		
5,200.00	5,062.27	5,150.00	5,078.81	24.75	22.09	106.04	672.19	-13.27	325.97	283.73	42.25	7.716		
5,300.00	5,136.21	5,164.06	5,089.67	24.66	22.20	103.16	679.38	-18.56	354.40	311.28	43.12	8.220		
5,400.00	5,199.09	5,164.19	5,089.78	24.51	22.20	96.12	679.45	-18.61	405.58	362.81	42.78	9.482		
5,500.00	5,249.37	5,150.00	5,078.81	24.32	22.09	84.95	672.19	-13.27	471.28	429.41	41.87	11.255		
5,600.00	5,285.82	5,136.47	5,068.17	24.14	21.98	73.38	665.42	-8.36	544.17	502.73	41.44	13.132		
5,700.00	5,307.53	5,113.66	5,049.85	24.00	21.81	61.74	654.37	-0.47	619.29	578.20	41.09	15.071		
5,800.00	5,313.98	5,086.95	5,027.80	24.07	21.62	52.28	642.00	8.13	693.27	652.28	40.99	16.912		
5,900.00	5,313.04	5,050.00	4,996.31	24.64	21.36	49.67	625.93	18.89	768.31	727.55	40.76	18.848		
6,000.00	5,312.10	5,050.00	4,996.31	25.72	21.36	49.67	625.93	18.89	846.95	805.56	41.39	20.460		
6,100.00	5,311.16	5,016.99	4,967.29	27.07	21.14	47.47	612.66	27.33	928.33	887.11	41.22	22.524		
6,200.00	5,310.21	5,000.00	4,952.06	28.58	21.03	46.38	606.23	31.24	1,012.35	971.02	41.33	24.494		
6,300.00	5,309.27	4,982.65	4,936.31	30.23	20.93	45.31	599.97	34.93	1,098.39	1,056.98	41.40	26.529		
6,400.00	5,308.33	4,968.13	4,922.98	31.97	20.84	44.43	594.95	37.78	1,186.09	1,144.61	41.48	28.591		
6,500.00	5,307.39	4,950.00	4,906.18	33.80	20.73	43.38	588.99	41.01	1,275.22	1,233.72	41.50	30.730		
6,600.00	5,306.45	4,950.00	4,906.18	35.71	20.73	43.38	588.99	41.01	1,365.52	1,323.83	41.70	32.750		
6,700.00	5,305.51	4,932.47	4,889.75	37.68	20.63	42.40	583.54	43.82	1,456.75	1,415.07	41.68	34.950		
6,800.00	5,304.56	4,922.66	4,880.49	39.70	20.57	41.86	580.64	45.24	1,548.89	1,507.16	41.73	37.115		
6,900.00	5,303.62	4,900.00	4,858.93	41.77	20.44	40.66	574.30	48.14	1,641.97	1,600.30	41.67	39.409		
7,000.00	5,302.68	4,900.00	4,858.93	43.88	20.44	40.66	574.30	48.14	1,735.32	1,693.54	41.77	41.540		
7,100.00	5,301.74	4,900.00	4,858.93	46.02	20.44	40.66	574.30	48.14	1,829.37	1,787.51	41.86	43.697		
7,200.00	5,300.80	4,900.00	4,858.93	48.19	20.44	40.66	574.30	48.14	1,924.03	1,882.09	41.94	45.876		
7,300.00	5,299.86	4,900.00	4,858.93	50.39	20.44	40.66	574.30	48.14	2,019.19	1,977.19	42.00	48.073		
7,400.00	5,298.91	4,878.30	4,838.07	52.62	20.33	39.57	568.75	50.39	2,114.33	2,072.40	41.94	50.416		
7,500.00	5,297.97	4,872.67	4,832.63	54.86	20.30	39.30	567.39	50.90	2,210.06	2,168.10	41.96	52.669		
7,600.00	5,297.03	4,850.00	4,810.61	57.12	20.18	38.22	562.27	52.57	2,306.40	2,264.50	41.90	55.048		
7,700.00	5,296.09	4,850.00	4,810.61	59.40	20.18	38.22	562.27	52.57	2,402.57	2,360.62	41.95	57.276		
7,800.00	5,295.15	4,850.00	4,810.61	61.70	20.18	38.22	562.27	52.57	2,499.03	2,457.04	41.99	59.513		
7,900.00	5,294.21	4,850.00	4,810.61	64.00	20.18	38.22	562.27	52.57	2,595.76	2,553.73	42.03	61.758		
8,000.00	5,293.27	4,850.00	4,810.61	66.32	20.18	38.22	562.27	52.57	2,692.73	2,650.67	42.07	64.010		
8,100.00	5,292.32	4,850.00	4,810.61	68.65	20.18	38.22	562.27	52.57	2,789.92	2,747.82	42.10	66.267		
8,200.00	5,291.38	4,850.00	4,810.61	70.99	20.18	38.22	562.27	52.57	2,887.30	2,845.16	42.13	68.528		
8,300.00	5,290.44	4,850.00	4,810.61	73.34	20.18	38.22	562.27	52.57	2,984.85	2,942.68	42.16	70.792		
8,400.00	5,289.50	4,850.00	4,810.61	75.69	20.18	38.22	562.27	52.57	3,082.56	3,040.36	42.19	73.059		
8,500.00	5,288.56	4,850.00	4,810.61	78.06	20.18	38.22	562.27	52.57	3,180.41	3,138.19	42.22	75.328		
8,600.00	5,287.62	4,850.00	4,810.61	80.43	20.18	38.22	562.27	52.57	3,278.39	3,236.14	42.25	77.598		
8,700.00	5,286.67	4,826.64	4,787.76	82.80	20.07	37.17	557.57	53.71	3,375.98	3,333.77	42.20	79.992		
8,800.00	5,285.73	4,824.00	4,785.17	85.18	20.06	37.06	557.08	53.80	3,474.07	3,431.84	42.22	82.275		
8,900.00	5,284.79	4,821.49	4,782.70	87.57	20.05	36.95	556.62	53.88	3,572.25	3,530.00	42.25	84.558		
9,000.00	5,283.85	4,800.00	4,761.53	89.96	19.94	36.04	552.95	54.28	3,670.85	3,628.64	42.21	86.957		
9,100.00	5,282.91	4,800.00	4,761.53	92.36	19.94	36.04	552.95	54.28	3,769.13	3,726.88	42.24	89.221		
9,200.00	5,281.97	4,800.00	4,761.53	94.76	19.94	36.04	552.95	54.28	3,867.49	3,825.22	42.28	91.484		
9,300.00	5,281.02	4,800.00	4,761.53	97.16	19.94	36.04	552.95	54.28	3,965.94	3,923.63	42.31	93.746		
9,400.00	5,280.08	4,800.00	4,761.53	99.57	19.94	36.04	552.95	54.28	4,064.46	4,022.12	42.34	96.006		
9,500.00	5,279.14	4,800.00	4,761.53	101.98	19.94	36.04	552.95	54.28	4,163.05	4,120.68	42.37	98.264		
9,600.00	5,278.20	4,800.00	4,761.53	104.39	19.94	36.04	552.95	54.28	4,261.70	4,219.31	42.40	100.519		
9,700.00	5,277.26	4,800.00	4,761.53	106.81	19.94	36.04	552.95	54.28	4,360.42	4,318.00	42.43	102.772		
9,800.00	5,276.32	4,800.00	4,761.53	109.23	19.94	36.04	552.95	54.28	4,459.20	4,416.74	42.46	105.022		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design G35 2409 - 632H - Original Drilling - APD													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+IGRF													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,900.00	5,275.38	4,800.00	4,761.53	111.65	19.94	36.04	552.95	54.28	4,558.03	4,515.54	42.49	107.268		
10,000.00	5,274.43	4,800.00	4,761.53	114.07	19.94	36.04	552.95	54.28	4,656.91	4,614.38	42.52	109.511		
10,100.00	5,273.49	4,800.00	4,761.53	116.50	19.94	36.04	552.95	54.28	4,755.83	4,713.27	42.56	111.750		
10,200.00	5,272.55	4,800.00	4,761.53	118.93	19.94	36.04	552.95	54.28	4,854.80	4,812.21	42.59	113.985		
10,300.00	5,271.61	4,800.00	4,761.53	121.36	19.94	36.04	552.95	54.28	4,953.81	4,911.19	42.63	116.216		
10,400.00	5,270.67	4,800.00	4,761.53	123.79	19.94	36.04	552.95	54.28	5,052.86	5,010.20	42.66	118.443		
10,500.00	5,269.73	4,800.00	4,761.53	126.22	19.94	36.04	552.95	54.28	5,151.95	5,109.25	42.70	120.665		
10,600.00	5,268.78	4,800.00	4,761.53	128.66	19.94	36.04	552.95	54.28	5,251.07	5,208.34	42.73	122.883		
10,700.00	5,267.84	4,790.46	4,752.11	131.09	19.90	35.65	551.49	54.30	5,350.15	5,307.40	42.75	125.152		
10,800.00	5,266.90	4,789.27	4,750.93	133.53	19.90	35.60	551.32	54.29	5,449.31	5,406.52	42.78	127.367		
10,900.00	5,265.96	4,778.88	4,740.64	135.97	19.85	35.19	549.85	54.18	5,548.58	5,505.77	42.80	129.636		
11,000.00	5,265.02	4,778.88	4,740.64	138.41	19.85	35.19	549.85	54.18	5,647.78	5,604.94	42.84	131.833		
11,100.00	5,264.08	4,778.88	4,740.64	140.85	19.85	35.19	549.85	54.18	5,747.01	5,704.13	42.88	134.025		
11,200.00	5,263.14	4,778.88	4,740.64	143.30	19.85	35.19	549.85	54.18	5,846.26	5,803.34	42.92	136.211		
11,300.00	5,262.19	4,778.88	4,740.64	145.74	19.85	35.19	549.85	54.18	5,945.54	5,902.58	42.96	138.392		
11,400.00	5,261.25	4,778.88	4,740.64	148.19	19.85	35.19	549.85	54.18	6,044.84	6,001.84	43.00	140.567		
11,500.00	5,260.31	4,778.88	4,740.64	150.63	19.85	35.19	549.85	54.18	6,144.17	6,101.12	43.05	142.736		
11,600.00	5,259.37	4,778.88	4,740.64	153.08	19.85	35.19	549.85	54.18	6,243.52	6,200.43	43.09	144.899		
11,700.00	5,258.43	4,778.88	4,740.64	155.53	19.85	35.19	549.85	54.18	6,342.89	6,299.75	43.13	147.056		
11,800.00	5,257.49	4,778.88	4,740.64	157.98	19.85	35.19	549.85	54.18	6,442.27	6,399.10	43.18	149.206		
11,900.00	5,256.54	4,773.22	4,735.03	160.43	19.83	34.97	549.09	54.09	6,541.68	6,498.47	43.21	151.388		
12,000.00	5,255.60	4,763.69	4,725.59	162.88	19.78	34.60	547.80	53.94	6,641.09	6,597.85	43.24	153.590		
12,100.00	5,254.66	4,754.16	4,716.15	165.33	19.74	34.25	546.52	53.79	6,740.50	6,697.23	43.27	155.786		
12,200.00	5,253.72	4,744.63	4,706.71	167.78	19.70	33.90	545.23	53.63	6,839.92	6,796.62	43.30	157.975		
12,300.00	5,252.78	4,735.09	4,697.26	170.24	19.66	33.56	543.94	53.48	6,939.34	6,896.01	43.33	160.158		
12,400.00	5,251.84	4,725.56	4,687.82	172.69	19.62	33.23	542.66	53.33	7,038.76	6,995.40	43.36	162.335		
12,500.00	5,250.89	4,716.03	4,678.38	175.14	19.58	32.90	541.37	53.17	7,138.19	7,094.80	43.39	164.505		
12,600.00	5,249.95	4,706.50	4,668.94	177.60	19.53	32.58	540.08	53.02	7,237.62	7,194.20	43.43	166.669		
12,700.00	5,249.01	4,696.97	4,659.49	180.05	19.49	32.27	538.80	52.86	7,337.06	7,293.60	43.46	168.826		
12,800.00	5,248.07	4,687.44	4,650.05	182.51	19.45	31.96	537.51	52.71	7,436.49	7,393.00	43.49	170.976		
12,900.00	5,247.13	4,677.91	4,640.61	184.97	19.41	31.67	536.22	52.56	7,535.93	7,492.40	43.53	173.120		
13,000.00	5,246.19	4,668.38	4,631.17	187.42	19.37	31.37	534.94	52.40	7,635.38	7,591.81	43.57	175.257		
13,100.00	5,245.25	4,658.85	4,621.72	189.88	19.33	31.09	533.65	52.25	7,734.82	7,691.22	43.60	177.387		
13,200.00	5,244.30	4,649.32	4,612.28	192.34	19.29	30.81	532.36	52.10	7,834.27	7,790.63	43.64	179.510		
13,300.00	5,243.36	4,639.79	4,602.84	194.80	19.24	30.53	531.08	51.94	7,933.72	7,890.04	43.68	181.626		
13,400.00	5,242.42	4,630.26	4,593.40	197.26	19.20	30.27	529.79	51.79	8,033.17	7,989.45	43.72	183.735		
13,500.00	5,241.48	4,620.72	4,583.95	199.72	19.16	30.00	528.50	51.64	8,132.63	8,088.86	43.76	185.837		
13,600.00	5,240.54	4,611.19	4,574.51	202.18	19.12	29.75	527.22	51.48	8,232.08	8,188.28	43.80	187.932		
13,700.00	5,239.60	4,601.66	4,565.07	204.64	19.08	29.49	525.93	51.33	8,331.54	8,287.70	43.85	190.020		
13,800.00	5,238.65	4,592.13	4,555.63	207.10	19.04	29.25	524.64	51.17	8,431.00	8,387.11	43.89	192.100		
13,900.00	5,237.71	4,582.60	4,546.19	209.56	18.99	29.00	523.36	51.02	8,530.47	8,486.53	43.93	194.174		
14,000.00	5,236.77	4,573.07	4,536.74	212.02	18.95	28.77	522.07	50.87	8,629.93	8,585.95	43.98	196.239		
14,100.00	5,235.83	4,563.54	4,527.30	214.48	18.91	28.53	520.78	50.71	8,729.40	8,685.38	44.02	198.298		
14,200.00	5,234.89	4,554.01	4,517.86	216.95	18.87	28.30	519.50	50.56	8,828.87	8,784.80	44.07	200.349		
14,300.00	5,233.95	4,544.48	4,508.42	219.41	18.83	28.08	518.21	50.41	8,928.34	8,884.22	44.11	202.392		
14,400.00	5,233.01	4,534.95	4,498.97	221.87	18.79	27.86	516.92	50.25	9,027.81	8,983.65	44.16	204.428		
14,500.00	5,232.06	4,525.42	4,489.53	224.33	18.75	27.64	515.64	50.10	9,127.28	9,083.07	44.21	206.457		
14,600.00	5,231.12	4,515.88	4,480.09	226.80	18.70	27.43	514.35	49.95	9,226.76	9,182.50	44.26	208.478		
14,700.00	5,230.18	4,506.35	4,470.65	229.26	18.66	27.22	513.07	49.79	9,326.23	9,281.93	44.31	210.491		
14,800.00	5,229.24	4,496.82	4,461.20	231.73	18.62	27.02	511.78	49.64	9,425.71	9,381.35	44.36	212.497		
14,900.00	5,228.30	4,487.29	4,451.76	234.19	18.58	26.82	510.49	49.48	9,525.19	9,480.78	44.41	214.495		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	
G35 2409 - 632H - Original Drilling - APD													0.00 usft	
Survey Program: 0-MWD+IGRF													Offset Well Error:	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,000.00	5,227.36	4,477.76	4,442.32	236.65	18.54	26.62	509.21	49.33	9,624.67	9,580.21	44.46	216.486		
15,100.00	5,226.41	4,468.23	4,432.88	239.12	18.50	26.43	507.92	49.18	9,724.15	9,679.64	44.51	218.469		
15,143.96	5,226.00	4,464.04	4,428.72	240.20	18.48	26.34	507.35	49.11	9,767.89	9,723.35	44.53	219.338		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Scientific Drilling, Intl

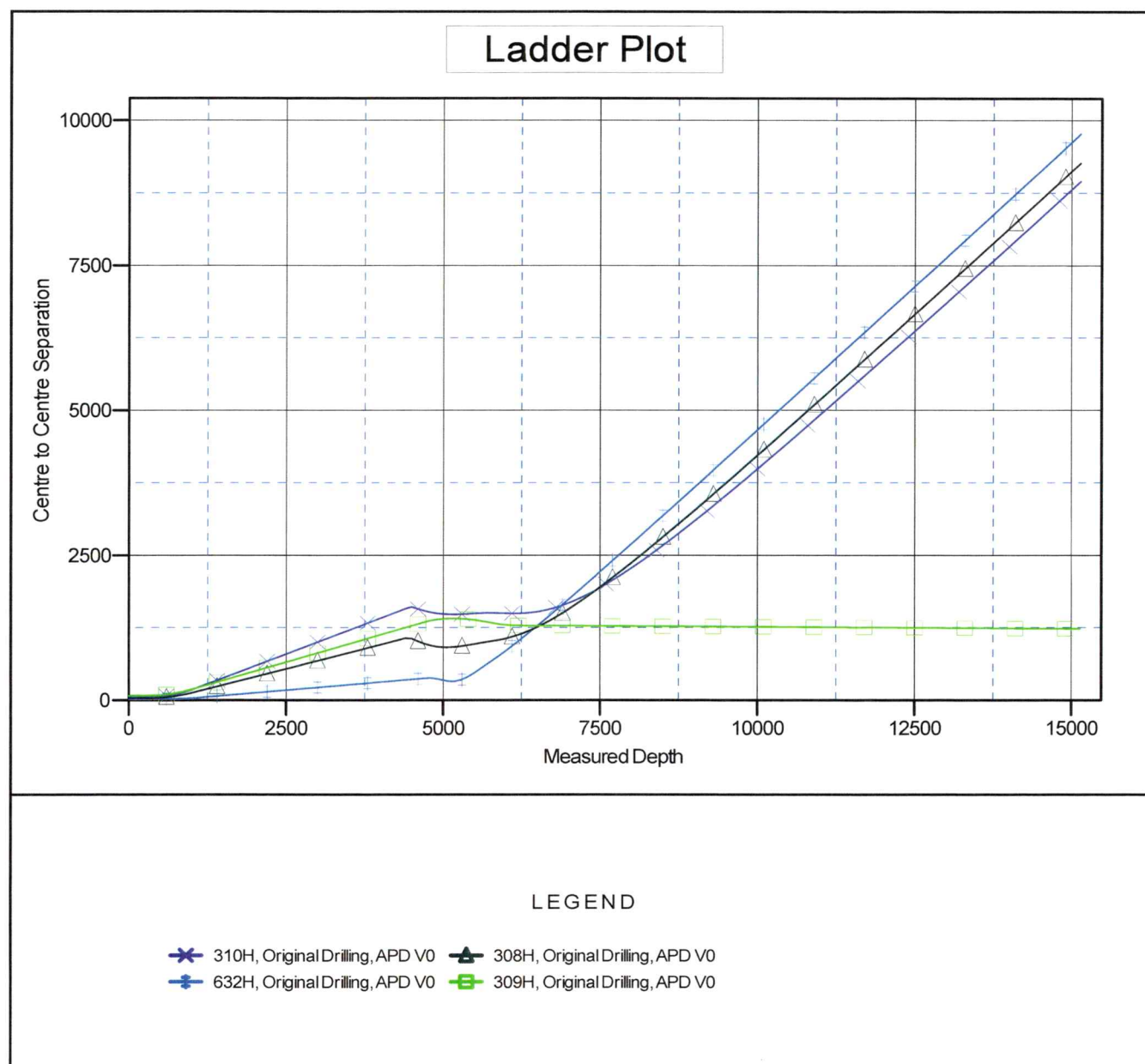
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6899' & RKB 14' @ 6913.00usft (A)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.8333334

Coordinates are relative to: 313H - Slot 7
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.04°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



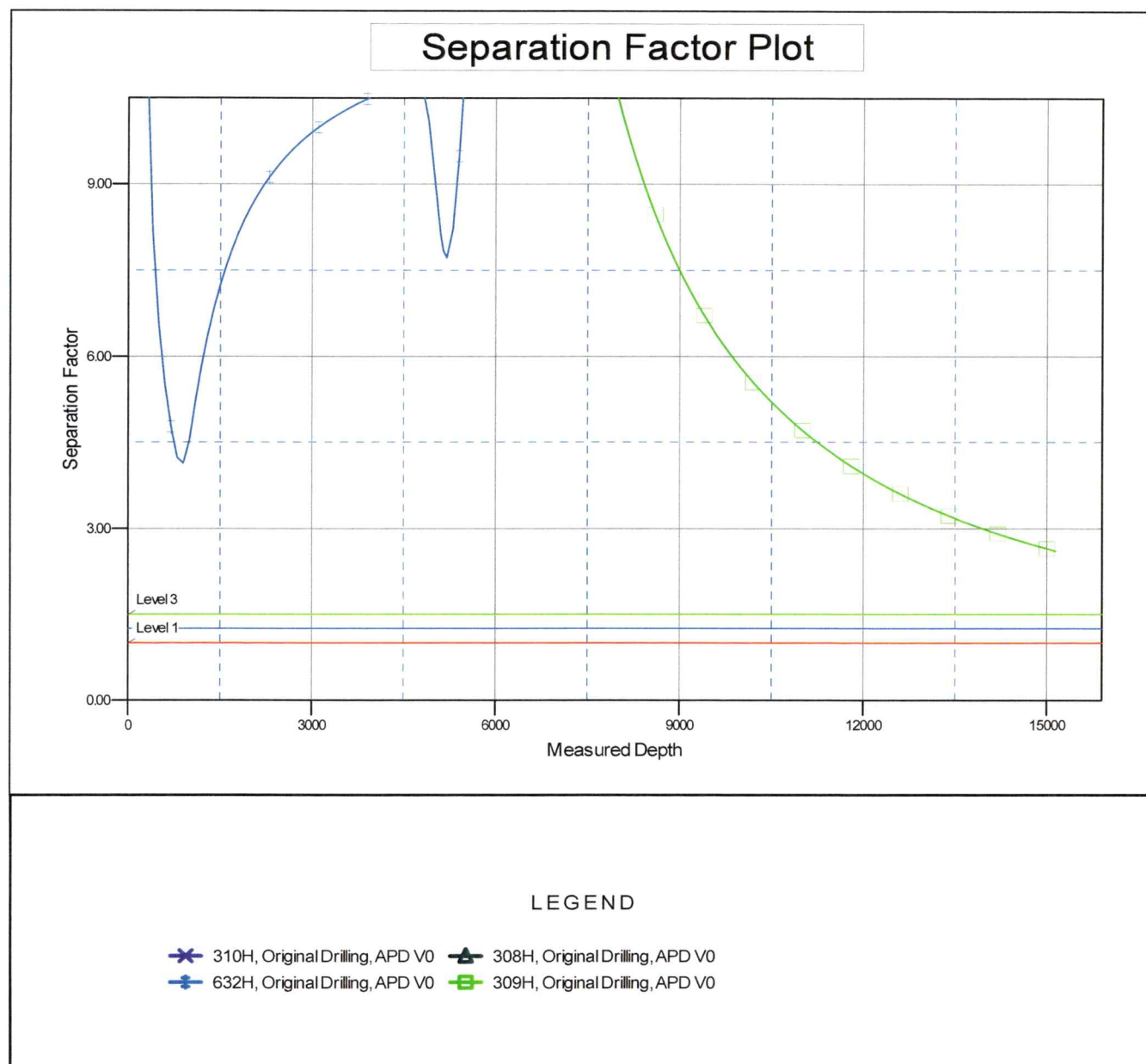
Scientific Drilling, Intl
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 313H - Slot 7
Project:	Nageezi Unit	TVD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Reference Site:	G35 2409	MD Reference:	GL 6899' & RKB 14' @ 6913.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	313H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6899' & RKB 14' @ 6913.00usft (A)
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: 313H - Slot 7
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.04°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

G35-2409

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 2/4/2020☒ OriginalOperator & OGRID No.: DJR Operating LLC. ; 371838☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Nageezi Unit 308H	Pending	SWNE, Section 35, T24N, R9W	2333' FNL, 2295' FEL	850	Flared	
Nageezi Unit 309H	Pending	SWNE, Section 35, T24N, R9W	2363' FNL, 2321' FEL	975	Flared	
Nageezi Unit 310H	Pending	SWNE, Section 35, T24N, R9W	2348' FNL, 2308' FEL	975	Flared	
Nageezi Unit 313H	Pending	SWNE, Section 35, T24N, R9W	2303' FNL, 2268' FEL	960	Flared	
Nageezi Unit 632H	Pending	SWNE, Section 35, T24N, R9W	2318' FNL, 2282' FEL	975	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to **Enterprise Field Services, LLC (Enterprise)** and will be connected to **Enterprise's** low/high pressure gathering system located in **San Juan** County, New Mexico. It will require approximately **11,270'** of pipeline to connect the facility to DJR Operating LLC. low/high pressure **Escrito Trunk in Sec. 3, T23N, R9W** which ties into **Enterprise's** existing pipeline in **Section 12, T24N, R10W**. **DJR Operating LLC.** provides (periodically) to **Enterprise** a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, **DJR Operating LLC.** and **Enterprise** have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at the **Chaco Processing Plant** located in **Sec. 16, Twn 26N, Rng 12W, San Juan** County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on **Enterprise** system at that time. Based on current information, it is **DJR Operating LLC.'s** belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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

COMMENTS

Action 16828

COMMENTS

Operator:				OGRID:		Action Number:		Action Type:	
	DJR OPERATING, LLC	1 Road 3263	Aztec, NM87410		371838		16828		FORM 3160-3

Created By	Comment	Comment Date
ahvermersch	See attached letter for NMOCD COA's	02/03/2021

District I
1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 16828

CONDITIONS OF APPROVAL

Operator:	DJR OPERATING, LLC	1 Road 3263	Aztec, NM87410	OGRID:	371838	Action Number:	16828	Action Type:	FORM 3160-3
OCD Reviewer	Condition								
ahvermersch	Notify OCD 24 hours prior to casing & cement								