

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: 3/17/2020

Operator: DJR **Well Name and Number:** Nageezi Unit 305H

API#: 30-045-38201 , **Section:** 2, **Township:** 23N, **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

12/7/2020
Date

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER 1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other 1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☒ Multiple Zone		5. Lease Serial No. V09132 6. If Indian, Allottee or Tribe Name NAVAJO NATION 7. If Unit or CA Agreement, Name and No. NMNM 132981A 8. Lease Name and Well No. NAGEEZI UNIT 305H 9. API Well No. 30-045-38201
2. Name of Operator DJR OPERATING LLC 3a. Address 1700 LINCOLN STREET, SUITE 2800, DENVER, CO 802 3b. Phone No. (include area code) (505) 632-3476		10. Field and Pool, or Exploratory NAGEEZI UNIT HZ OIL POOL/NAGEEZI 11. Sec., T. R. M. or Blk. and Survey or Area SEC 2/T23N/R9W/NMP
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNE / 93 FNL / 1503 FEL / LAT 36.263108 / LONG -107.754921 At proposed prod. zone NESW / 1411 FSL / 1926 FWL / LAT 36.281735 / LONG -107.778927		12. County or Parish SAN JUAN 13. State NM
14. Distance in miles and direction from nearest town or post office* 38 miles 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 91 feet 16. No of acres in lease 484 17. Spacing Unit dedicated to this well 481.05		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 5280 feet 19. Proposed Depth 5325 feet / 15149 feet 20. BLM/BIA Bond No. in file IND: B010611
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6982 feet 22. Approximate date work will start* 07/22/2020 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.
2. A Drilling Plan.
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). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature (Electronic Submission) Title Regulatory Specialist	Name (Printed/Typed) SHAW N / Ph: (505) 632-3476	Date 03/17/2020
Approved by (Signature) (Electronic Submission) Title Field Manager	Name (Printed/Typed) RICHARD FIELDS / Ph: (505) 564-7612 Office Farmington Field Office	Date 11/19/2020

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)

Form C-102
Revised August 1, 2011

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1283 Fax: (505) 748-9780

DISTRICT III
1000 Rio Brazos Rd., Artes, N.M. 87410
Phone: (505) 834-6175 Fax: (505) 834-6170

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

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

**Submit one copy to appropriate
District Office**

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-38201	² Pool Code 98080	³ Pool Name NAGEEZI UNIT MANCOS OIL POOL
⁴ Property Code 325268	⁵ Property Name NAGEEZI UNIT	⁶ Well Number 305H
⁷ OGRIID No. 371838	⁸ Operator Name DJR OPERATING, LLC	⁹ Elevation 6982'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
B	2	23N	9W	2	93'	NORTH	1503'	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot	Feet from the	North/South line	Feet from the	East/West line	County
K	27	24N	9W	1411'		SOUTH	1926'	WEST	SAN JUAN

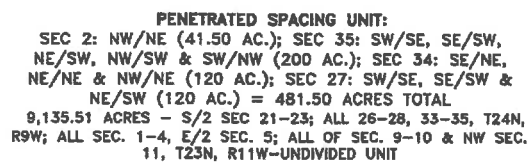
¹³ Dedicated Acres SEC 2: NW/NE (41.50 AC.); SEC 35: SW/SE, SE/SW, NE/SW, NW/SW & SW/NW (200 AC.); SEC 34: SE/NE, NE/NE & NW/NE (120 AC.); SEC 27: SW/SE, SE/SW & NE/SW (120 AC.) = 401.50 ACRES TOTAL	¹⁴ Joint or Infill	¹⁵ Consolidation Code	¹⁶ Order No. R-13856 R-13856A
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED

16 **HSU=481.05** OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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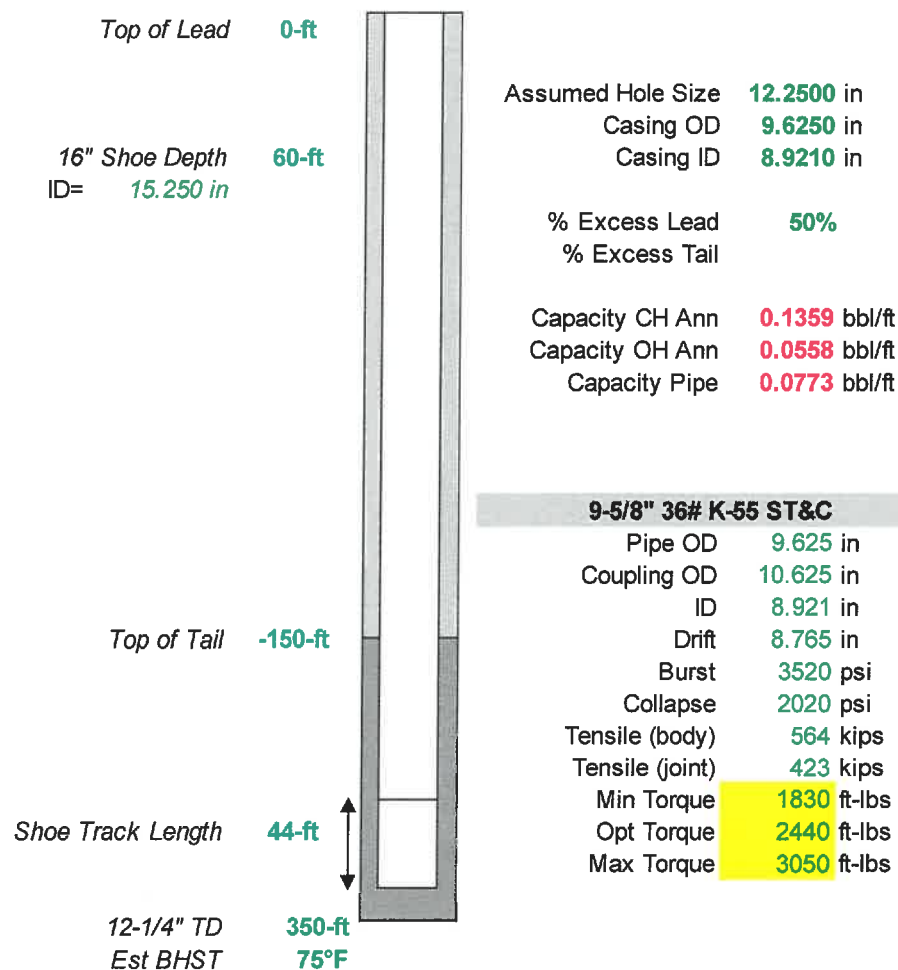
DISTRICT IV
1820 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3450 Fax: (505) 478-3459

☐ AMENDED REPORT

Rev 0



9-5/8" Surface Casing & Cementing



Lead Slurry

Properties

Redi Mix Type I/ii	Density	14.50 ppg
20% Fly Ash	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

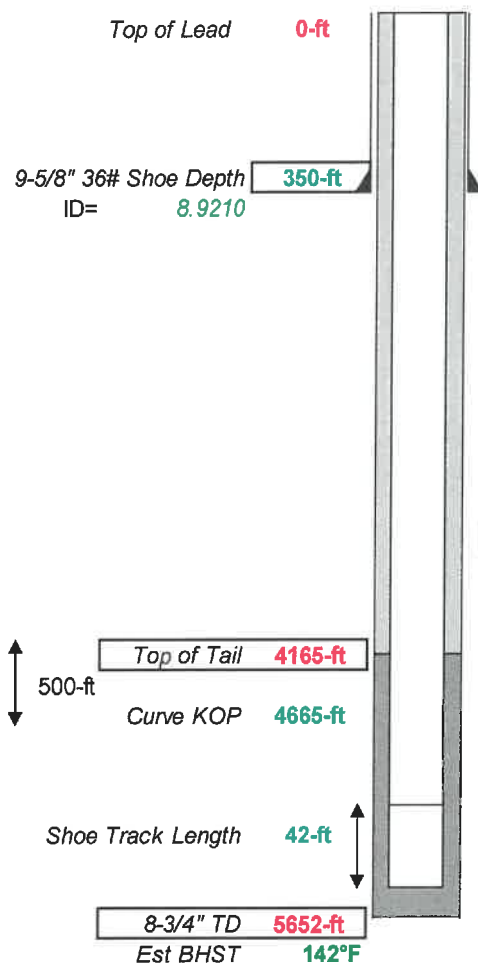
Volumes

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 305H



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

Properties	
Type III	Density 12.30 ppg
BA-90 5 lb/sx%	Yield 2.3404 cf/sk
KCI 3.00%	Total Mix Fluid 13.26 gal/sk
GW-86 0.10%	Thickening Time 3:11 hr:min
FL-66 0.20%	Time to 50 psi (80°F) 5:10 hr:min
R-3 0.50%	24-hr UCA (80°F) 659 psi
FP-25 0.30%	

BJ Tail Slurry

Properties	
G+Pozz 50:50	Density 13.50 ppg
BA-90 3 lb/sx	Yield 1.4946 cf/sk
FL-66 0.40%	Total Mix Fluid 7.24 gal/sk
FP-25 0.30%	Thickening Time 3:26 hr:min
Sod. Met 0.50%	Time to 50 psi (135°F) 2:55 hr:min
Gyp 3.00%	Time to 500 psi (135°F) 6:40 hr:min

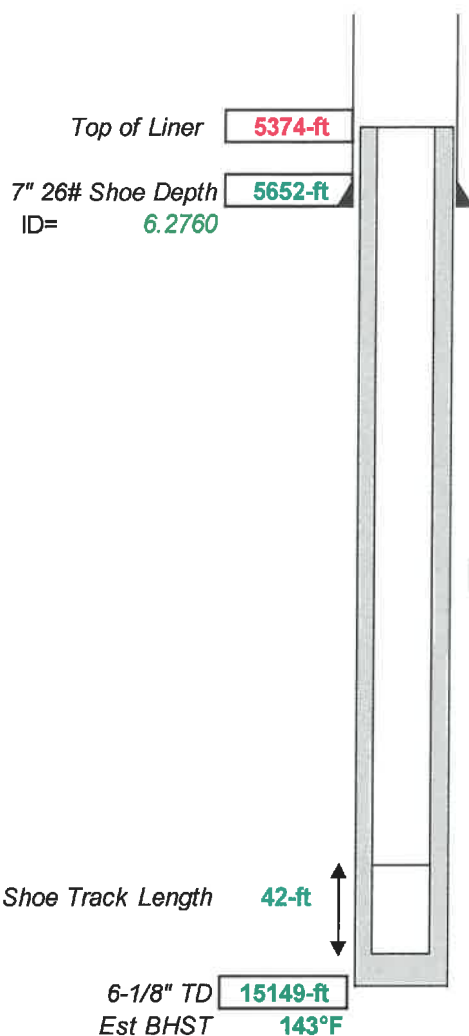
Volumes

Lead Volume	174 bbls	417 sx
Tail Volume	65 bbls	245 sx
Approx Displacement	215 bbls	
Total Volume	454 bbls	

Rev 0



4-1/2" Liner Cementing Nageezi Unit 305H

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

G+Pozz **50:50**
 BA-90 **3 lb/sx**
 GW-86 **0.10%**
 R-3 **0.40%**
 FP-25 **30.00%**
 FL-24 **0.40%**
 Gel **4.00%**

Properties

Density **13.30** ppg
 Yield **1.5629** cf/sk
 Total Mix Fluid **7.70** gal/sk
 Thickening Time **6:04** hr:min
 Time to 50 psi (147°F) **7:15** hr:min
 24-hr UCA (147°F) **1293** psi

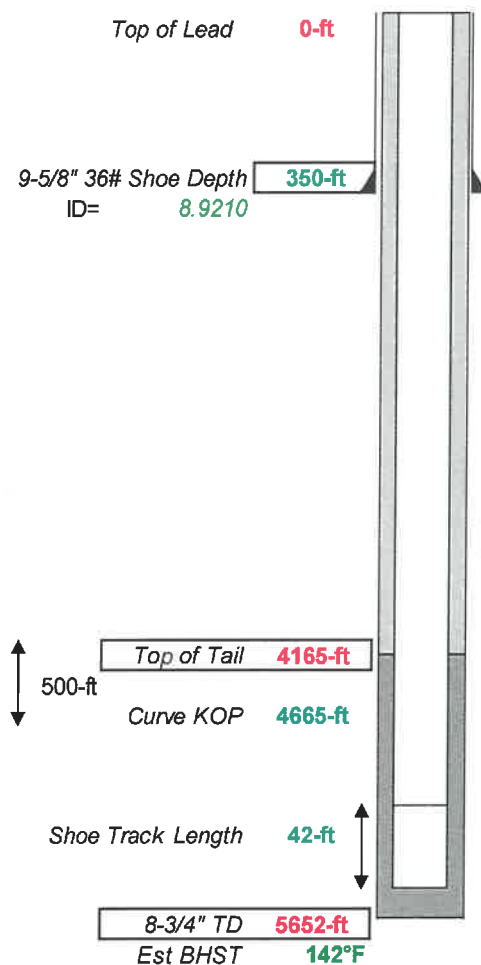
Volumes

Lead Volume **229** bbls **822** sx
 Approx Displacement **164** bbls
 Total Volume **393** bbls

Rev 0



7" Intermediate Casing & Cementing Nageezi Unit 305H



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%
KCl	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

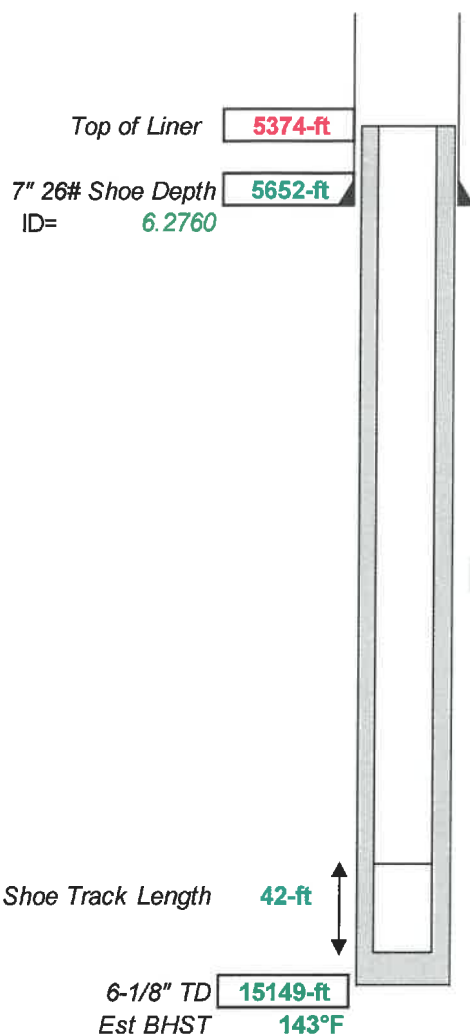
Volumes

Lead Volume	174 bbls	417 sx
Tail Volume	65 bbls	245 sx
Approx Displacement	215 bbls	
Total Volume	454 bbls	

Rev 0



4-1/2" Liner Cementing Nageezi Unit 305H

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

G+Pozz **50:50**BA-90 **3 lb/sx**GW-86 **0.10%**R-3 **0.40%**FP-25 **30.00%**FL-24 **0.40%**Gel **4.00%**

Properties

Density **13.30** ppgYield **1.5629** cf/skTotal Mix Fluid **7.70** gal/skThickening Time **6:04** hr:minTime to 50 psi (147°F) **7:15** hr:min24-hr UCA (147°F) **1293** psi

Volumes

Lead Volume **229** bbls **822** sxApprox Displacement **164** bblsTotal Volume **393** bbls

Rev 0



DRILLING PLAN Nageezi Unit 305H San Juan County, New Mexico

Surface Location

1503-ft FEL & 93-ft FNL
Sec 2 T23N R09W
Graded Elevation 6982' MSL
RKB Elevation 6996' (14' KB)

SHL Geographical Coordinates (NAD-83)

Latitude 36.2631080° N
Longitude 107.7549210° W

Kick Off Point for Horizontal Build Curve

4665-ft MD
4647-ft TVD

Local Coordinates (from SHL)

389-ft South
3-ft East

Heel Location (Pay zone entry)

1967-ft FEL & 60-ft FNL
Sec 2 T23N R9W

Heel Geographical Coordinates (NAD-83)

Latitude 36.2631903° N
Longitude 107.75651130° W

Bottom Hole Location (TD)

1926-ft FWL & 1411-ft FSL
Sec 27 T24N R9W

BHL Geographical Coordinates (NAD-83)

Latitude 36.2817351° N
Longitude 107.7789266° W

Well objectives

This well is planned as a 9450-ft lateral in the Gallup C R3 sand.

Bottom Hole temperature and pressure

The temperature in the Gallup C R3 horizontal objective is 143°F. Bottom hole pressure in the Gallup C R3 is forecast to be 1985 psi.

Formation Tops (Sd = Sand; Sh = Shale; Siltstone = Stl, 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	866	865	Sd	W	8.3	8.4 – 8.8
Kirtland	951	949	Sh	-	8.3	8.4 – 8.8
Fruitland	1264	1261	C	G	8.3	9.0 - 9.5
Pictured Cliffs	1608	1603	Sd	W	8.3	9.0 - 9.5
Lewis	1703	1698	Sh	-		9.0 - 9.5
Chacra	2395	2387	Sd	-	8.3	9.0 - 9.5
Menefee	3110	3099	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	4089	4073	Sd	-	8.3	9.0 - 9.5
Mancos	4257	4241	Sh	-		9.0 - 9.5
Mancos Silt	4583	4565	Stl	O/G	6.6	9.0 - 9.5
Gallup A	5108	5063	Stl	O/G	6.6	9.0 - 9.5
Gallup B	5161	5105	Sd	O/G	6.6	8.8 - 9.0
Gallup C	5344	5224	Sd	O/G	6.6	8.8 - 9.0
Target	5702	5325	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	350	surf	350	surface
7"	8-3/4"	26	K-55	LTC	surf	5652	surf	5323	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5374	15149	5240	5408	5374

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
Type	BJ Services	BJ Services
Planned top	III	Poz/G
Density (ppg)	Surface	4165-ft
Yield (cf/sx)	12.30	13.50
Mix water (gal/sx)	2.34	1.50
Volume (sx)	13.26	7.20
Volume (bbls)	417	245
Volume (cu.ft.)	174	65
Excess %	976	367
	50	50

Rev 0

4-1/2" Production Liner

	BJ Services
Type	Poz/G
Planned top	5374-ft
Density (ppg)	13.3
Yield (cf/sx)	1.56
Mix water (gal/sx)	7.71
Volume (sx)	822
Volume (bbls)	229
Volume (cu.ft)	1285
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 geograph 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 – 5652	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5652 – 15149	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.

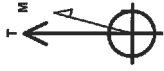


Company: DJR Operating
Project: Nageezi Unit
Site: B02 2309
Well: 305H
Wellbore: Original Drilling
Design: APD

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

Scientific Drilling



Azimuths to True North
Magnetic North: 8.78°
Magnetic Field
Strength: 49421.4nT
Dip Angle: 62.78°
Date: 12/20/2019
Model: HDGM_FILE

WELL DETAILS: 305H

GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
+N/-S +E/-W Northing Easting Longitude
0.00 0.00 1915079.49 2746207.76 36.2631080 -107.7549210 2

Plan: APD (305H/Original Drilling)

Created By: Janie Collins Date: 9:57, January 07 2020

DESIGN/TARGET DETAILS

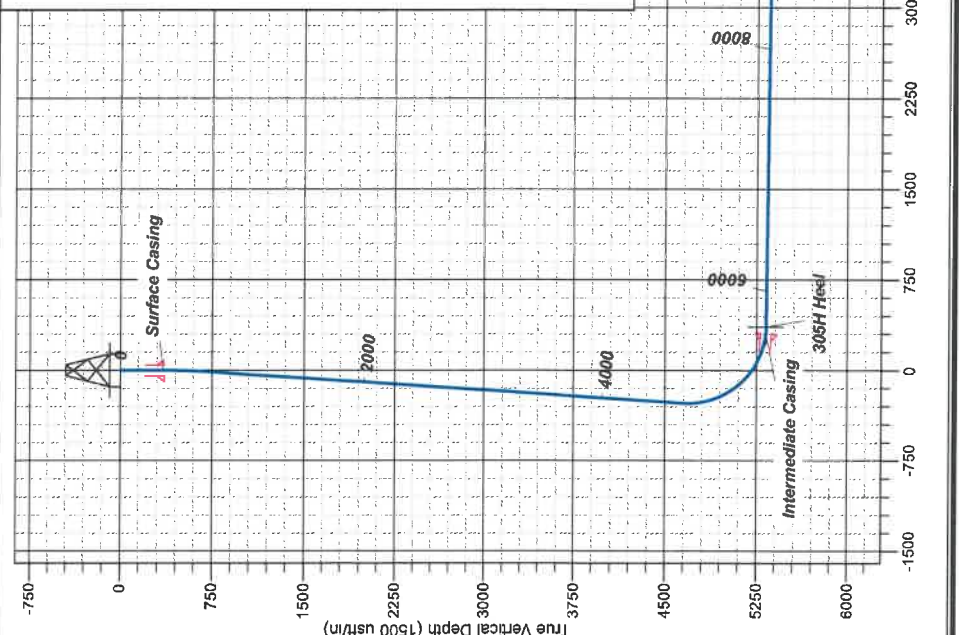
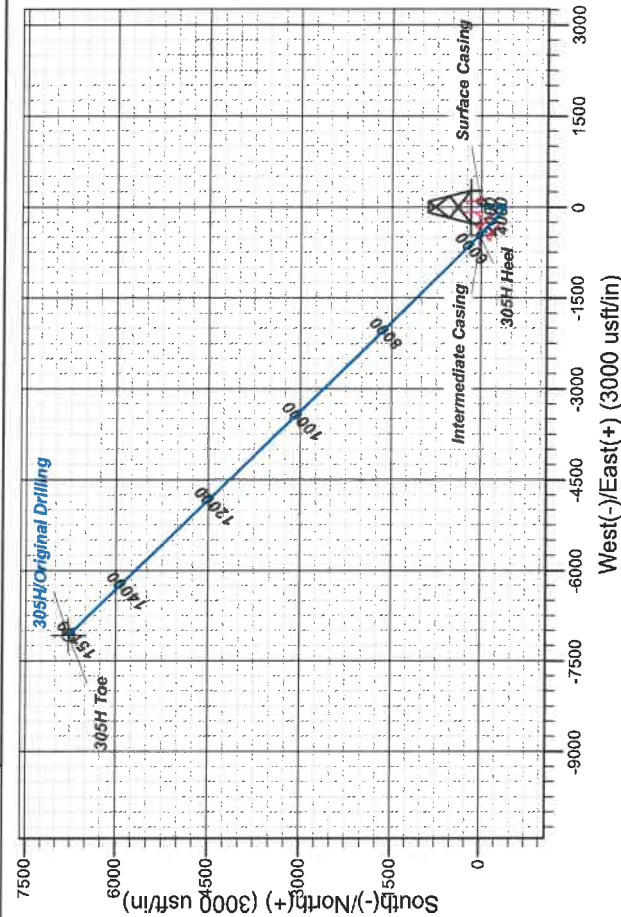
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
305H Heel	5325.00	29.96	-468.82	1915109.07	2745738.91	36.2631903	-107.7565113
305H Toe	5408.00	6781.59	-7075.21	1921855.35	2739127.06	36.2817351	-107.7789265

SECTION DETAILS

MD	Inc	Asl	TVD	+N/-S	+E/-W	Dleg	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	
643.80	5.38	179.577	643.40	-12.80	0.09	2.00	179.58	-8.79	
4664.97	5.38	179.577	4664.89	-388.33	2.88	0.00	0.00	-271.48	
1702.36	89.50	315.623	5325.00	29.96	-468.82	9.00	135.95	359.19	305H Heel
15148.83	89.50	315.623	5408.00	6781.59	-7075.21	0.00	0.00	9900.44	305H Toe

CASING DETAILS

TVD	MD	Name
350.00	350.00	Surface Casing
5322.66652.29		Intermediate Casing



FORMATION DETAILS

MDPath	Formation
865.00	Ojo Alamo
949.00	Kirtland
1261.00	Fruitland
1603.00	Pictured Cliffs
1698.00	Lewis
2387.00	Chacra
3099.00	Menefee
4073.00	Point Lookout
4241.00	Mancos
4565.00	Mancos Silt
5063.00	Gallup A
5105.00	Gallup B
5224.00	Gallup C



DJR Operating

Nageezi Unit

B02 2309

305H - Slot 2

Original Drilling

Plan: APD

Standard Planning Report

07 January, 2020



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Scientific Drilling, Intl

Planning Report

Database:	Grand Junction	Local Co-ordinate Reference:	Well 305H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site:	B02 2309	North Reference:	True
Well:	305H	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	B02 2309			
Site Position:		Northing:	1,915,079.49 usft	Latitude: 36.2631080
From:	Map	Easting:	2,746,207.76 usft	Longitude: -107.7549210
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: 0.05 °

Well	305H - Slot 2			
Well Position	+N/-S	0.00 usft	Northing: 1,915,079.49 usft	Latitude: 36.2631080
	+E/-W	0.00 usft	Easting: 2,746,207.76 usft	Longitude: -107.7549210
Position Uncertainty	0.00 usft	Wellhead Elevation:		Ground Level: 6,982.00 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	12/20/2019	8.78	62.78	49,421.40000000

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	313.786

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	
643.80	5.38	179.577	643.40	-12.60	0.09	2.00	2.00	0.00	179.58	
4,664.97	5.38	179.577	4,646.89	-389.33	2.88	0.00	0.00	0.00	0.00	
5,702.36	89.50	315.623	5,325.00	29.96	-468.82	9.00	8.11	13.11	135.95	305H Heel
15,148.83	89.50	315.623	5,408.00	6,781.59	-7,075.21	0.00	0.00	0.00	0.00	305H Toe



Scientific Drilling, Intl

Planning Report

Database:	Grand Junction	Local Co-ordinate Reference:	Well 305H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site:	B02 2309	North Reference:	True
Well:	305H	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	179.577	400.00	-0.11	0.00	-0.08	2.00	2.00	0.00
500.00	2.50	179.577	499.96	-2.73	0.02	-1.90	2.00	2.00	0.00
600.00	4.50	179.577	599.77	-8.83	0.07	-6.16	2.00	2.00	0.00
643.80	5.38	179.577	643.40	-12.60	0.09	-8.79	2.00	2.00	0.00
700.00	5.38	179.577	699.36	-17.87	0.13	-12.46	0.00	0.00	0.00
800.00	5.38	179.577	798.92	-27.24	0.20	-18.99	0.00	0.00	0.00
900.00	5.38	179.577	898.48	-36.60	0.27	-25.52	0.00	0.00	0.00
1,000.00	5.38	179.577	998.04	-45.97	0.34	-32.06	0.00	0.00	0.00
1,100.00	5.38	179.577	1,097.60	-55.34	0.41	-38.59	0.00	0.00	0.00
1,200.00	5.38	179.577	1,197.16	-64.71	0.48	-45.12	0.00	0.00	0.00
1,300.00	5.38	179.577	1,296.72	-74.08	0.55	-51.66	0.00	0.00	0.00
1,400.00	5.38	179.577	1,396.28	-83.45	0.62	-58.19	0.00	0.00	0.00
1,500.00	5.38	179.577	1,495.84	-92.82	0.69	-64.72	0.00	0.00	0.00
1,600.00	5.38	179.577	1,595.40	-102.19	0.76	-71.25	0.00	0.00	0.00
1,700.00	5.38	179.577	1,694.96	-111.55	0.82	-77.79	0.00	0.00	0.00
1,800.00	5.38	179.577	1,794.52	-120.92	0.89	-84.32	0.00	0.00	0.00
1,900.00	5.38	179.577	1,894.08	-130.29	0.96	-90.85	0.00	0.00	0.00
2,000.00	5.38	179.577	1,993.64	-139.66	1.03	-97.39	0.00	0.00	0.00
2,100.00	5.38	179.577	2,093.20	-149.03	1.10	-103.92	0.00	0.00	0.00
2,200.00	5.38	179.577	2,192.76	-158.40	1.17	-110.45	0.00	0.00	0.00
2,300.00	5.38	179.577	2,292.32	-167.77	1.24	-116.98	0.00	0.00	0.00
2,400.00	5.38	179.577	2,391.88	-177.14	1.31	-123.52	0.00	0.00	0.00
2,500.00	5.38	179.577	2,491.44	-186.50	1.38	-130.05	0.00	0.00	0.00
2,600.00	5.38	179.577	2,591.00	-195.87	1.45	-136.58	0.00	0.00	0.00
2,700.00	5.38	179.577	2,690.56	-205.24	1.52	-143.12	0.00	0.00	0.00
2,800.00	5.38	179.577	2,790.12	-214.61	1.59	-149.65	0.00	0.00	0.00
2,900.00	5.38	179.577	2,889.68	-223.98	1.66	-156.18	0.00	0.00	0.00
3,000.00	5.38	179.577	2,989.24	-233.35	1.72	-162.71	0.00	0.00	0.00
3,100.00	5.38	179.577	3,088.80	-242.72	1.79	-169.25	0.00	0.00	0.00
3,200.00	5.38	179.577	3,188.36	-252.09	1.86	-175.78	0.00	0.00	0.00
3,300.00	5.38	179.577	3,287.92	-261.45	1.93	-182.31	0.00	0.00	0.00
3,400.00	5.38	179.577	3,387.48	-270.82	2.00	-188.85	0.00	0.00	0.00
3,500.00	5.38	179.577	3,487.04	-280.19	2.07	-195.38	0.00	0.00	0.00
3,600.00	5.38	179.577	3,586.60	-289.56	2.14	-201.91	0.00	0.00	0.00
3,700.00	5.38	179.577	3,686.16	-298.93	2.21	-208.44	0.00	0.00	0.00
3,800.00	5.38	179.577	3,785.72	-308.30	2.28	-214.98	0.00	0.00	0.00
3,900.00	5.38	179.577	3,885.28	-317.67	2.35	-221.51	0.00	0.00	0.00
4,000.00	5.38	179.577	3,984.84	-327.04	2.42	-228.04	0.00	0.00	0.00
4,100.00	5.38	179.577	4,084.40	-336.40	2.49	-234.58	0.00	0.00	0.00
4,200.00	5.38	179.577	4,183.96	-345.77	2.56	-241.11	0.00	0.00	0.00
4,300.00	5.38	179.577	4,283.52	-355.14	2.62	-247.64	0.00	0.00	0.00
4,400.00	5.38	179.577	4,383.08	-364.51	2.69	-254.17	0.00	0.00	0.00
4,500.00	5.38	179.577	4,482.64	-373.88	2.76	-260.71	0.00	0.00	0.00
4,600.00	5.38	179.577	4,582.20	-383.25	2.83	-267.24	0.00	0.00	0.00
4,664.97	5.38	179.577	4,646.89	-389.33	2.88	-271.48	0.00	0.00	0.00
4,700.00	3.80	214.784	4,681.81	-391.93	2.23	-272.81	9.00	-4.49	100.50
4,800.00	9.08	291.551	4,781.28	-391.75	-7.02	-266.01	9.00	5.28	76.77



Scientific Drilling, Intl Planning Report

Database:	Grand Junction	Local Co-ordinate Reference:	Well 305H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site:	B02 2309	North Reference:	True
Well:	305H	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)
4,900.00	17.67	303.832	4,878.49	-380.38	-27.01	-243.71	9.00	8.59	12.28
5,000.00	26.53	308.142	4,971.06	-358.09	-57.25	-206.46	9.00	8.86	4.31
5,100.00	35.45	310.396	5,056.70	-325.44	-96.98	-155.18	9.00	8.93	2.25
5,200.00	44.41	311.835	5,133.31	-283.22	-145.24	-91.13	9.00	8.95	1.44
5,300.00	53.37	312.874	5,198.99	-232.48	-200.83	-15.88	9.00	8.97	1.04
5,400.00	62.35	313.696	5,252.13	-174.46	-262.38	68.70	9.00	8.97	0.82
5,500.00	71.32	314.392	5,291.43	-110.59	-328.39	160.54	9.00	8.98	0.70
5,600.00	80.30	315.017	5,315.91	-42.46	-397.22	257.38	9.00	8.98	0.63
5,700.00	89.28	315.609	5,324.98	28.28	-467.17	356.83	9.00	8.98	0.59
5,702.36	89.50	315.623	5,325.00	29.96	-468.82	359.19	9.00	8.98	0.59
5,800.00	89.50	315.623	5,325.86	99.75	-537.11	456.78	0.00	0.00	0.00
5,900.00	89.50	315.623	5,326.74	171.22	-607.04	556.72	0.00	0.00	0.00
6,000.00	89.50	315.623	5,327.62	242.69	-676.98	656.67	0.00	0.00	0.00
6,100.00	89.50	315.623	5,328.49	314.17	-746.91	756.61	0.00	0.00	0.00
6,200.00	89.50	315.623	5,329.37	385.64	-816.85	856.56	0.00	0.00	0.00
6,300.00	89.50	315.623	5,330.25	457.11	-886.78	956.50	0.00	0.00	0.00
6,400.00	89.50	315.623	5,331.13	528.58	-956.72	1,056.44	0.00	0.00	0.00
6,500.00	89.50	315.623	5,332.01	600.06	-1,026.65	1,156.39	0.00	0.00	0.00
6,600.00	89.50	315.623	5,332.89	671.53	-1,096.59	1,256.33	0.00	0.00	0.00
6,700.00	89.50	315.623	5,333.77	743.00	-1,166.52	1,356.28	0.00	0.00	0.00
6,800.00	89.50	315.623	5,334.64	814.47	-1,236.46	1,456.22	0.00	0.00	0.00
6,900.00	89.50	315.623	5,335.52	885.95	-1,306.39	1,556.17	0.00	0.00	0.00
7,000.00	89.50	315.623	5,336.40	957.42	-1,376.33	1,656.11	0.00	0.00	0.00
7,100.00	89.50	315.623	5,337.28	1,028.89	-1,446.26	1,756.06	0.00	0.00	0.00
7,200.00	89.50	315.623	5,338.16	1,100.36	-1,516.20	1,856.00	0.00	0.00	0.00
7,300.00	89.50	315.623	5,339.04	1,171.84	-1,586.13	1,955.95	0.00	0.00	0.00
7,400.00	89.50	315.623	5,339.92	1,243.31	-1,656.07	2,055.89	0.00	0.00	0.00
7,500.00	89.50	315.623	5,340.79	1,314.78	-1,726.00	2,155.84	0.00	0.00	0.00
7,600.00	89.50	315.623	5,341.67	1,386.25	-1,795.94	2,255.78	0.00	0.00	0.00
7,700.00	89.50	315.623	5,342.55	1,457.73	-1,865.87	2,355.73	0.00	0.00	0.00
7,800.00	89.50	315.623	5,343.43	1,529.20	-1,935.81	2,455.67	0.00	0.00	0.00
7,900.00	89.50	315.623	5,344.31	1,600.67	-2,005.74	2,555.62	0.00	0.00	0.00
8,000.00	89.50	315.623	5,345.19	1,672.14	-2,075.68	2,655.56	0.00	0.00	0.00
8,100.00	89.50	315.623	5,346.07	1,743.62	-2,145.61	2,755.51	0.00	0.00	0.00
8,200.00	89.50	315.623	5,346.95	1,815.09	-2,215.55	2,855.45	0.00	0.00	0.00
8,300.00	89.50	315.623	5,347.82	1,886.56	-2,285.48	2,955.40	0.00	0.00	0.00
8,400.00	89.50	315.623	5,348.70	1,958.03	-2,355.42	3,055.34	0.00	0.00	0.00
8,500.00	89.50	315.623	5,349.58	2,029.51	-2,425.35	3,155.28	0.00	0.00	0.00
8,600.00	89.50	315.623	5,350.46	2,100.98	-2,495.29	3,255.23	0.00	0.00	0.00
8,700.00	89.50	315.623	5,351.34	2,172.45	-2,565.22	3,355.17	0.00	0.00	0.00
8,800.00	89.50	315.623	5,352.22	2,243.92	-2,635.16	3,455.12	0.00	0.00	0.00
8,900.00	89.50	315.623	5,353.10	2,315.40	-2,705.09	3,555.06	0.00	0.00	0.00
9,000.00	89.50	315.623	5,353.97	2,386.87	-2,775.03	3,655.01	0.00	0.00	0.00
9,100.00	89.50	315.623	5,354.85	2,458.34	-2,844.96	3,754.95	0.00	0.00	0.00
9,200.00	89.50	315.623	5,355.73	2,529.81	-2,914.90	3,854.90	0.00	0.00	0.00
9,300.00	89.50	315.623	5,356.61	2,601.29	-2,984.83	3,954.84	0.00	0.00	0.00
9,400.00	89.50	315.623	5,357.49	2,672.76	-3,054.77	4,054.79	0.00	0.00	0.00
9,500.00	89.50	315.623	5,358.37	2,744.23	-3,124.70	4,154.73	0.00	0.00	0.00
9,600.00	89.50	315.623	5,359.25	2,815.70	-3,194.64	4,254.68	0.00	0.00	0.00
9,700.00	89.50	315.623	5,360.12	2,887.18	-3,264.57	4,354.62	0.00	0.00	0.00
9,800.00	89.50	315.623	5,361.00	2,958.65	-3,334.51	4,454.57	0.00	0.00	0.00
9,900.00	89.50	315.623	5,361.88	3,030.12	-3,404.44	4,554.51	0.00	0.00	0.00



Scientific Drilling, Intl Planning Report

Database:	Grand Junction	Local Co-ordinate Reference:	Well 305H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site:	B02 2309	North Reference:	True
Well:	305H	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)
10,000.00	89.50	315.623	5,362.76	3,101.59	-3,474.38	4,654.46	0.00	0.00	0.00
10,100.00	89.50	315.623	5,363.64	3,173.07	-3,544.31	4,754.40	0.00	0.00	0.00
10,200.00	89.50	315.623	5,364.52	3,244.54	-3,614.25	4,854.35	0.00	0.00	0.00
10,300.00	89.50	315.623	5,365.40	3,316.01	-3,684.19	4,954.29	0.00	0.00	0.00
10,400.00	89.50	315.623	5,366.28	3,387.48	-3,754.12	5,054.24	0.00	0.00	0.00
10,500.00	89.50	315.623	5,367.15	3,458.96	-3,824.06	5,154.18	0.00	0.00	0.00
10,600.00	89.50	315.623	5,368.03	3,530.43	-3,893.99	5,254.12	0.00	0.00	0.00
10,700.00	89.50	315.623	5,368.91	3,601.90	-3,963.93	5,354.07	0.00	0.00	0.00
10,800.00	89.50	315.623	5,369.79	3,673.37	-4,033.86	5,454.01	0.00	0.00	0.00
10,900.00	89.50	315.623	5,370.67	3,744.85	-4,103.80	5,553.96	0.00	0.00	0.00
11,000.00	89.50	315.623	5,371.55	3,816.32	-4,173.73	5,653.90	0.00	0.00	0.00
11,100.00	89.50	315.623	5,372.43	3,887.79	-4,243.67	5,753.85	0.00	0.00	0.00
11,200.00	89.50	315.623	5,373.30	3,959.26	-4,313.60	5,853.79	0.00	0.00	0.00
11,300.00	89.50	315.623	5,374.18	4,030.74	-4,383.54	5,953.74	0.00	0.00	0.00
11,400.00	89.50	315.623	5,375.06	4,102.21	-4,453.47	6,053.68	0.00	0.00	0.00
11,500.00	89.50	315.623	5,375.94	4,173.68	-4,523.41	6,153.63	0.00	0.00	0.00
11,600.00	89.50	315.623	5,376.82	4,245.15	-4,593.34	6,253.57	0.00	0.00	0.00
11,700.00	89.50	315.623	5,377.70	4,316.63	-4,663.28	6,353.52	0.00	0.00	0.00
11,800.00	89.50	315.623	5,378.58	4,388.10	-4,733.21	6,453.46	0.00	0.00	0.00
11,900.00	89.50	315.623	5,379.45	4,459.57	-4,803.15	6,553.41	0.00	0.00	0.00
12,000.00	89.50	315.623	5,380.33	4,531.04	-4,873.08	6,653.35	0.00	0.00	0.00
12,100.00	89.50	315.623	5,381.21	4,602.52	-4,943.02	6,753.30	0.00	0.00	0.00
12,200.00	89.50	315.623	5,382.09	4,673.99	-5,012.95	6,853.24	0.00	0.00	0.00
12,300.00	89.50	315.623	5,382.97	4,745.46	-5,082.89	6,953.19	0.00	0.00	0.00
12,400.00	89.50	315.623	5,383.85	4,816.93	-5,152.82	7,053.13	0.00	0.00	0.00
12,500.00	89.50	315.623	5,384.73	4,888.41	-5,222.76	7,153.08	0.00	0.00	0.00
12,600.00	89.50	315.623	5,385.61	4,959.88	-5,292.69	7,253.02	0.00	0.00	0.00
12,700.00	89.50	315.623	5,386.48	5,031.35	-5,362.63	7,352.96	0.00	0.00	0.00
12,800.00	89.50	315.623	5,387.36	5,102.82	-5,432.56	7,452.91	0.00	0.00	0.00
12,900.00	89.50	315.623	5,388.24	5,174.30	-5,502.50	7,552.85	0.00	0.00	0.00
13,000.00	89.50	315.623	5,389.12	5,245.77	-5,572.43	7,652.80	0.00	0.00	0.00
13,100.00	89.50	315.623	5,390.00	5,317.24	-5,642.37	7,752.74	0.00	0.00	0.00
13,200.00	89.50	315.623	5,390.88	5,388.71	-5,712.30	7,852.69	0.00	0.00	0.00
13,300.00	89.50	315.623	5,391.76	5,460.19	-5,782.24	7,952.63	0.00	0.00	0.00
13,400.00	89.50	315.623	5,392.63	5,531.66	-5,852.17	8,052.58	0.00	0.00	0.00
13,500.00	89.50	315.623	5,393.51	5,603.13	-5,922.11	8,152.52	0.00	0.00	0.00
13,600.00	89.50	315.623	5,394.39	5,674.60	-5,992.04	8,252.47	0.00	0.00	0.00
13,700.00	89.50	315.623	5,395.27	5,746.08	-6,061.98	8,352.41	0.00	0.00	0.00
13,800.00	89.50	315.623	5,396.15	5,817.55	-6,131.91	8,452.36	0.00	0.00	0.00
13,900.00	89.50	315.623	5,397.03	5,889.02	-6,201.85	8,552.30	0.00	0.00	0.00
14,000.00	89.50	315.623	5,397.91	5,960.49	-6,271.78	8,652.25	0.00	0.00	0.00
14,100.00	89.50	315.623	5,398.78	6,031.97	-6,341.72	8,752.19	0.00	0.00	0.00
14,200.00	89.50	315.623	5,399.66	6,103.44	-6,411.65	8,852.14	0.00	0.00	0.00
14,300.00	89.50	315.623	5,400.54	6,174.91	-6,481.59	8,952.08	0.00	0.00	0.00
14,400.00	89.50	315.623	5,401.42	6,246.38	-6,551.52	9,052.03	0.00	0.00	0.00
14,500.00	89.50	315.623	5,402.30	6,317.86	-6,621.46	9,151.97	0.00	0.00	0.00
14,600.00	89.50	315.623	5,403.18	6,389.33	-6,691.39	9,251.92	0.00	0.00	0.00
14,700.00	89.50	315.623	5,404.06	6,460.80	-6,761.33	9,351.86	0.00	0.00	0.00
14,800.00	89.50	315.623	5,404.94	6,532.27	-6,831.26	9,451.80	0.00	0.00	0.00
14,900.00	89.50	315.623	5,405.81	6,603.75	-6,901.20	9,551.75	0.00	0.00	0.00
15,000.00	89.50	315.623	5,406.69	6,675.22	-6,971.13	9,651.69	0.00	0.00	0.00
15,100.00	89.50	315.623	5,407.57	6,746.69	-7,041.07	9,751.64	0.00	0.00	0.00



Scientific Drilling, Intl Planning Report

Database:	Grand Junction	Local Co-ordinate Reference:	Well 305H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site:	B02 2309	North Reference:	True
Well:	305H	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)
15,148.83	89.50	315.623	5,408.00	6,781.59	-7,075.21	9,800.44	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
305H Heel - plan hits target center - Circle (radius 50.00)	0.00	0.000	5,325.00	29.96	-468.82	1,915,109.07	2,745,738.92	36.2631903	-107.7565113
305H Toe - plan hits target center - Circle (radius 100.00)	0.00	0.000	5,408.00	6,781.59	-7,075.21	1,921,855.35	2,739,127.06	36.2817351	-107.7789266

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	
5,652.29	5,322.60	Intermediate Casing	7.00	8.75	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
866.37	865.00	Ojo Alamo		0.00	0.000	
950.74	949.00	Kirtland		0.00	0.000	
1,264.12	1,261.00	Fruitland		0.00	0.000	
1,607.63	1,603.00	Pictured Cliffs		0.00	0.000	
1,703.05	1,698.00	Lewis		0.00	0.000	
2,395.10	2,387.00	Chacra		0.00	0.000	
3,110.24	3,099.00	Menefee		0.00	0.000	
4,088.55	4,073.00	Point Lookout		0.00	0.000	
4,257.29	4,241.00	Mancos		0.00	0.000	
4,582.72	4,565.00	Mancos Silt		0.00	0.000	
5,107.77	5,063.00	Gallup A		0.00	0.000	
5,161.49	5,105.00	Gallup B		0.00	0.000	
5,344.00	5,224.00	Gallup C		0.00	0.000	



DJR Operating

Nageezi Unit

B02 2309

305H

Original Drilling

APD

Anticollision Report

07 January, 2020



www.scientificdrilling.com



Scientific Drilling, Intl

Anticollision Report

Company:	DJR Operating	Local Co-ordinate Reference:	Well 305H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Reference Site:	B02 2309	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	305H	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	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.00 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	1/7/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,148.83	APD (Original Drilling)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
B02 2309						
306H - Original Drilling - APD	300.00	300.00	19.86	18.12	11.400	CC
306H - Original Drilling - APD	400.00	400.00	19.96	17.51	8.131	ES
306H - Original Drilling - APD	5,337.20	5,345.28	213.72	175.74	5.628	SF
307H - Original Drilling - APD	300.00	300.00	60.04	58.30	34.464	CC
307H - Original Drilling - APD	400.00	399.58	60.23	57.78	24.549	ES
307H - Original Drilling - APD	15,148.83	14,376.79	636.17	170.26	1.365	Level 3, SF
622H - Original Drilling - APD	300.00	300.00	39.85	38.11	22.872	CC
622H - Original Drilling - APD	400.00	400.00	39.95	37.49	16.274	ES
622H - Original Drilling - APD	500.00	498.78	43.71	40.56	13.899	SF

Offset Design	B02 2309 - 306H - Original Drilling - APD												Offset Site Error:	0.00 usft
Survey Program:	0-MWD+IGRF												Offset Well Error:	0.00 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	23.64	18.19	7.96	19.86					
100.00	100.00	100.00	100.00	0.15	0.15	23.64	18.19	7.96	19.86	19.55	0.31	64.423		
200.00	200.00	200.00	200.00	0.51	0.51	23.64	18.19	7.96	19.86	18.84	1.03	19.372		
300.00	300.00	300.00	300.00	0.87	0.87	23.64	18.19	7.96	19.86	18.12	1.74	11.400	CC	
300.01	300.01	300.01	300.01	0.87	0.87	23.64	18.19	7.96	19.86	18.12	1.74	11.399		
400.00	400.00	400.00	400.00	1.23	1.23	-156.06	18.19	7.96	19.96	17.51	2.45	8.131	ES	
500.00	499.96	499.84	499.82	1.56	1.56	-153.15	18.98	6.41	22.63	19.49	3.14	7.201		
600.00	599.77	599.09	598.93	1.90	1.94	-176.27	21.32	1.80	30.21	26.37	3.85	7.854		
700.00	699.36	697.98	697.54	2.27	2.30	173.65	24.71	-4.88	42.91	38.35	4.56	9.407		
800.00	798.92	796.92	796.19	2.65	2.87	168.26	28.13	-11.63	56.68	51.41	5.27	10.753		
900.00	898.48	895.86	894.84	3.03	3.04	164.99	31.55	-18.38	70.75	64.76	5.99	11.818		
1,000.00	998.04	994.80	993.49	3.42	3.41	162.80	34.97	-25.13	84.97	78.27	6.71	12.669		
1,100.00	1,097.60	1,093.74	1,092.14	3.81	3.79	161.25	38.39	-31.87	99.28	91.85	7.43	13.362		
1,200.00	1,197.16	1,192.68	1,190.79	4.20	4.16	160.08	41.81	-38.62	113.65	105.49	8.16	13.933		
1,300.00	1,296.72	1,291.62	1,289.44	4.59	4.54	158.18	45.23	-45.37	128.04	119.16	8.88	14.412		
1,400.00	1,396.28	1,390.56	1,388.09	4.99	4.92	156.46	48.65	-52.11	142.47	132.85	9.81	14.819		

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



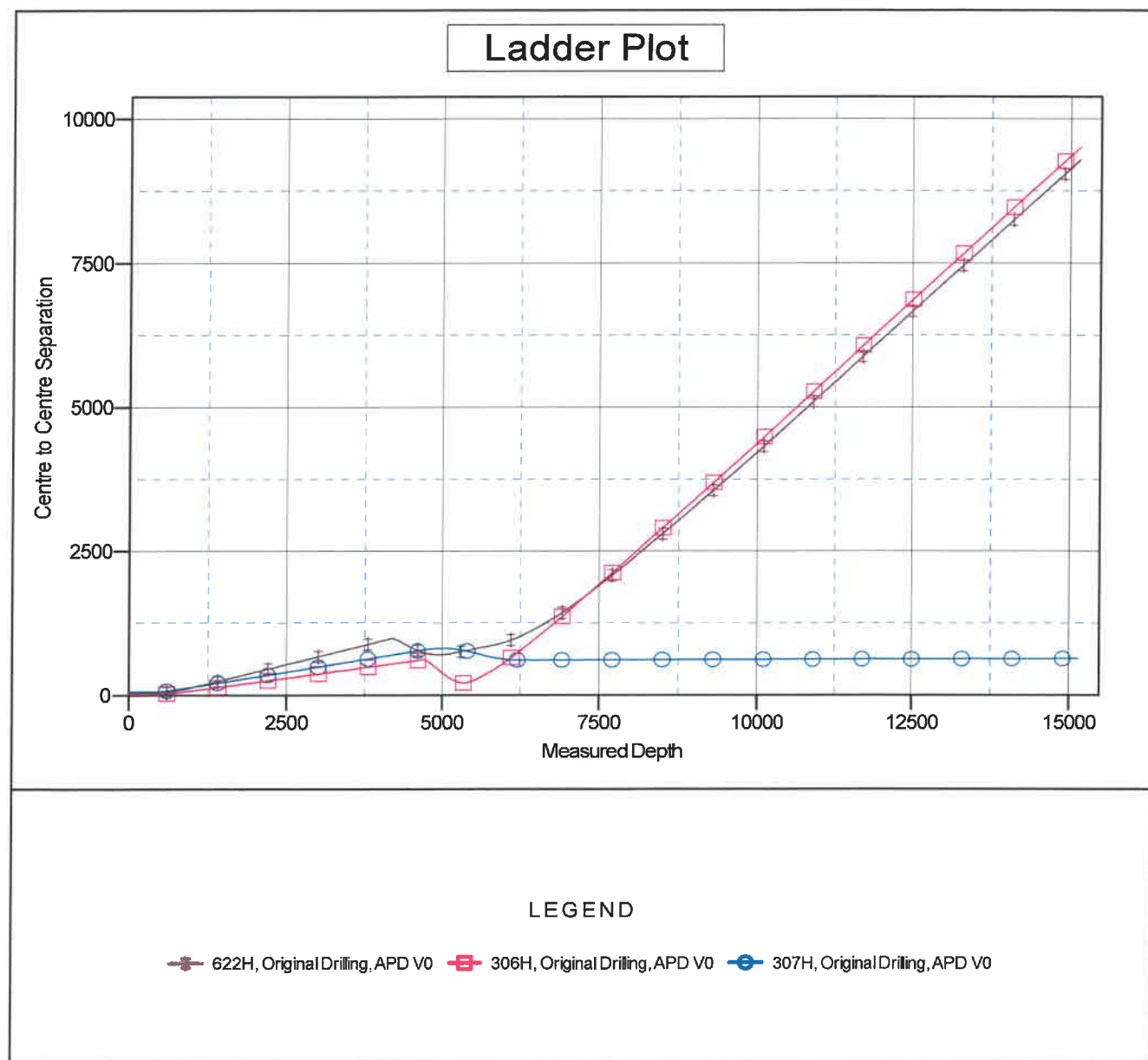
Scientific Drilling, Intl

Anticollision Report

Company:	DJR Operating	Local Co-ordinate Reference:	Well 305H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Reference Site:	B02 2309	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	305H	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 6982' & RKB 14' @ 6996.00usft (A)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833334

Coordinates are relative to: 305H - Slot 2
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.05°



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 305H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Reference Site:	B02 2309	MD Reference:	GL 6982' & RKB 14' @ 6996.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	305H	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 6982' & RKB 14' @ 6996.00usft (A)

Offset Depths are relative to Offset Datum

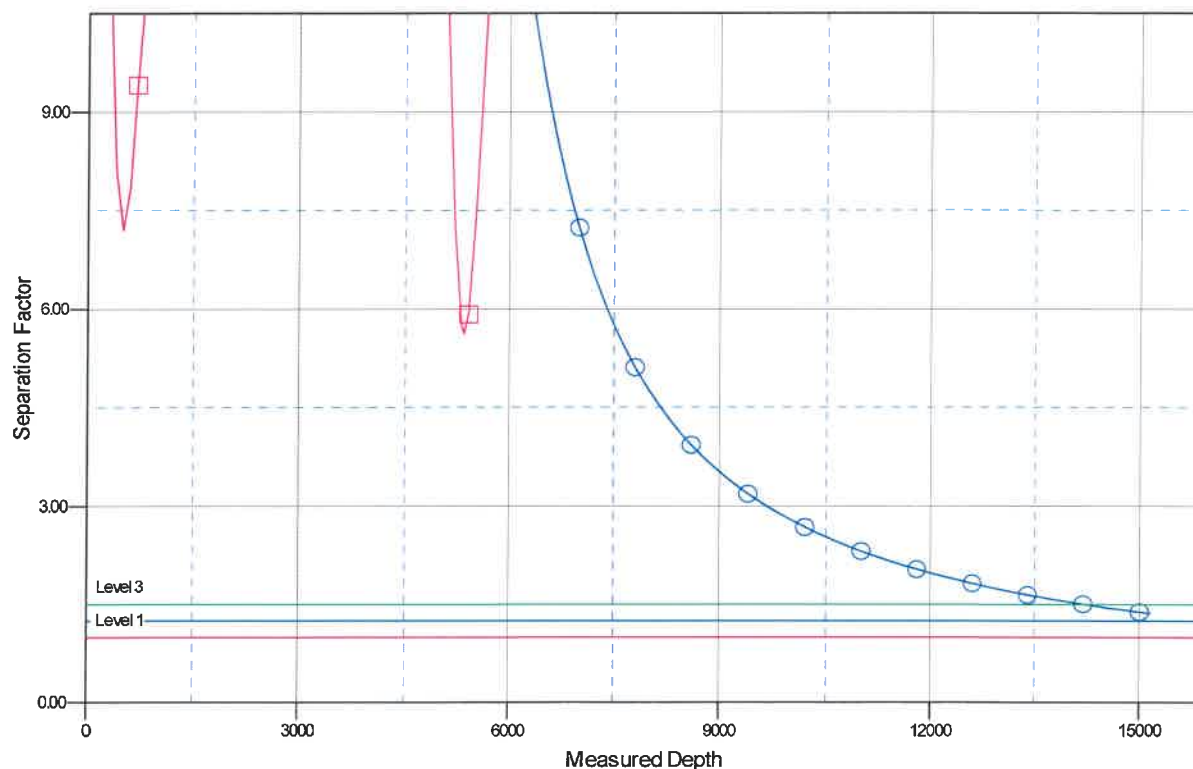
Central Meridian is -107.8333334

Coordinates are relative to: 305H - Slot 2

Coordinate System is US State Plane 1983, New Mexico Western Zone

Grid Convergence at Surface is: 0.05°

Separation Factor Plot



LEGEND

— 622H, Original Drilling, APD V0 — 306H, Original Drilling, APD V0 — 307H, Original Drilling, APD V0

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

1/7/2020 9:53:33AM

Page 15

COMPASS 5000.15 Build 91D

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

☒ Original

Operator & 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 305H	Pending	NWNE, Section 2, T23N, R9W	93' FNL, 1503' FEL	975	Flared	
Nageezi Unit 306H	Pending	NWNE, Section 2, T23N, R9W	75' FNL, 1494' FEL	650	Flared	
Nageezi Unit 307H	Pending	NWNE, Section 2, T23N, R9W	38' FNL, 1476' FEL	850	Flared	
Nageezi Unit 622H	Pending	NWNE, Section 2, T23N, R9W	57' FNL, 1485' FEL	644	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 11,322' 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 15636

COMMENTS

Operator:			OGRID:	Action Number:	Action Type:
DJR OPERATING, LLC 1 Road 3263 Aztec, NM87410			371838	15636	FORM 3160-3
Created By	Comment			Comment Date	
ahvermersch	See BLM cover letter for OCD COA's			01/26/2021	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
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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 15636

CONDITIONS OF APPROVAL

Operator: DJR OPERATING, LLC 1 Road 3263 Aztec, NM87410				OGRID: 371838	Action Number: 15636	Action Type: FORM 3160-3
OCD Reviewer				Condition		
ahvermersch				None		