State of New Mexico
Energy, Minerals and Natural Resources Department

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 3160-5 form.

Operator Signature Date: **Original APD 3/2/2015**
Sundry Date 8/6/2019

WELL INFORMATION:
DJR OPERATING, LLC
30-045-35649 NAGEEZI UNIT #627H

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

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- ✓ Hold C-104 for directional survey & "As Drilled" Plat
- ○ Hold C-104 for NSL, NSP, DHC,
- ○ 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
- ✓ 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 fresh water zone or zones and shall immediately set in cement the water protection string
- ✓ Submit Gas Capture Plan form prior to spudding or initiating recompletions operations.
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84

28

RECEIVED

AUG 06 2019

Farmington Field Office
Bureau of Land Management

Form 3160-5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – *Other instructions on page 2.*

5. Lease Serial No.
NMSF 078860

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit of CA/Agreement, Name and/or No.
NMNM 132981A

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
NAGEEZI UNIT #627H

2. Name of Operator
DJR Operating LLC.

9. API Well No.
30-045-35649

3a. Address
1 Road 3263
Aztec, New Mexico 87410

3b. Phone No. *(include area code)*
505-632-3476

10. Field and Pool or Exploratory Area
BASIN MANCOS

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
SHL: 1133' FSL and 447' FWL Section 30, T24N, R8W
BHL: 1079' FSL and 1639' FEL Section 23, T24N, R9W

11. County or Parish, State
San Juan County, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other Name Change, BHL Change & New Dill Plan
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

KR

DJR Operating LLC. has an approved APD for the proposed well, Escrito M30-2408 02H (API 30-045-35649) which will now be part of the NAGEEZI UNIT. DJR Operating is submitting this sundry to change the well name from Escrito M30-2408 02H to the Nageezi Unit 627H (API #30-045-35649).

Please find attached an updated C-102 package reflecting the Name change, BHL change and the new drilling plan.

NMOCD

SEP 18 2019

DISTRICT III

New property code See C-102

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
Steven Merrell

Title Regulatory Specialist

Signature Steven Merrell

Date 08/06/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

ACCEPTED FOR RECORD

Approved by

Title

SEP 16 2019
Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

FARMINGTON FIELD OFFICE
BY:

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.

(Instructions on page 2)

NMOCD

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

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

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-35649	98080	NAGEEZI UNIT MANCOS OIL POOL

[4] Property Code	[5] Property Name	[6] Well Number
325268	NAGEEZI UNIT	627H

[7] OGRID No.	[8] Operator Name	[9] Elevation
371838	DJR OPERATING, LLC	6800.6'

[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
M	30	24N	8W	4	1133'	SOUTH	447'	WEST	SAN JUAN

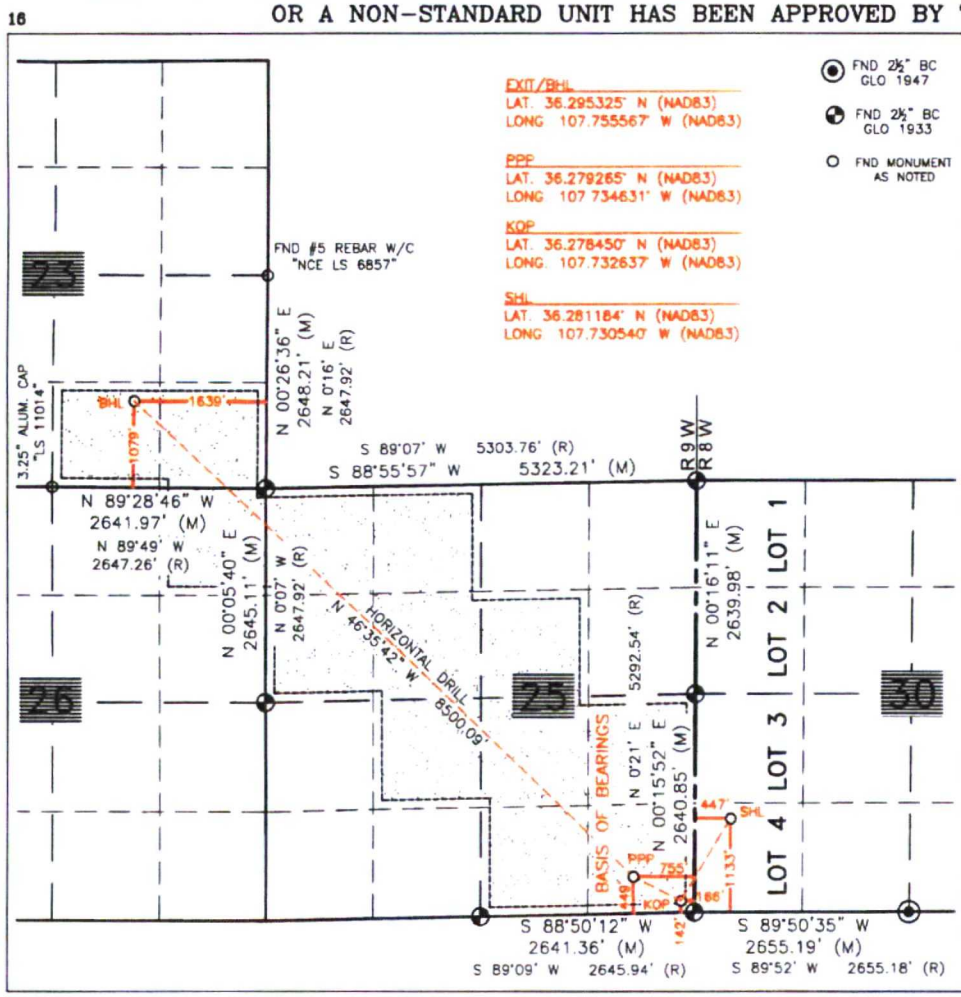
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	23	24N	9W		1079'	SOUTH	1639'	EAST	SAN JUAN

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
PENETRATED SPACING UNIT; SEC 25: SE/4, SW/NE, NE/SW & NW/4 (400 AC.); SEC 26: NE/NE (40 AC.) SEC 23: SE/SE & SW/SE (80 AC.) = 520 ACRES			R-13856, R-13856A

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

[16]



[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.

Steven Merrell 8/6/19
Signature Date

Steven Merrell
Printed Name

Smerrell@djrllc.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.

APRIL 1, 2014
Date of Survey

Signature and Seal of Professional Surveyor:

HENRY P. BROADHURST NEW MEXICO 11393 PROFESSIONAL SURVEYOR

Certificate Number

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
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State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

DJR OPERATING, LLC
NAGEEZI UNIT #627H

NW CORNER SEC 25
LAT. 36.292318° N (NAD83)
LONG. 107.750036° W (NAD83)

NE CORNER SEC 25
LAT. 36.292576° N (NAD83)
LONG. 107.731976° W (NAD83)

SE CORNER SEC 25
LAT. 36.278070° N (NAD83)
LONG. 107.732078° W (NAD83)

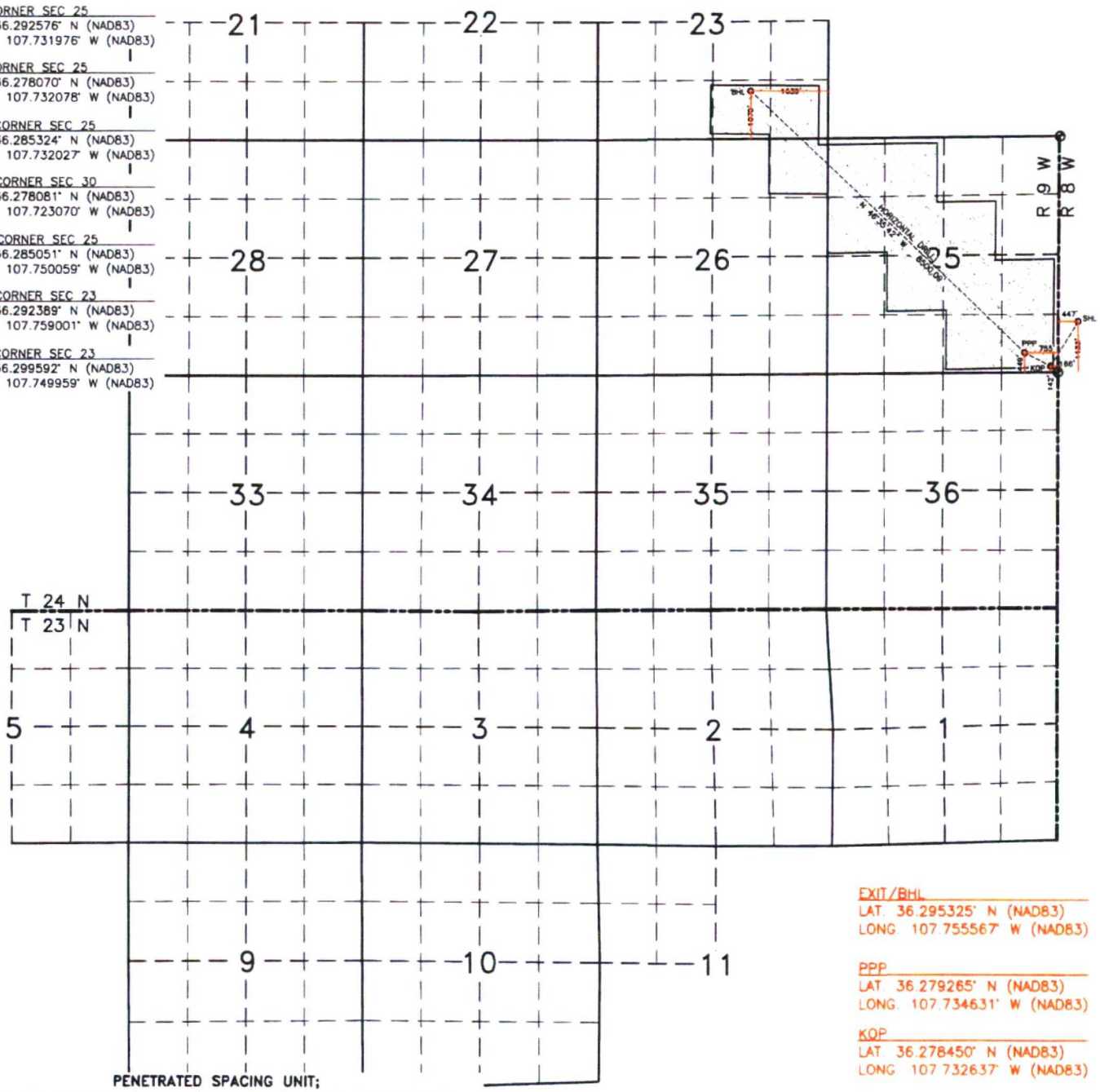
E/4 CORNER SEC 25
LAT. 36.285324° N (NAD83)
LONG. 107.732027° W (NAD83)

S/4 CORNER SEC 30
LAT. 36.278081° N (NAD83)
LONG. 107.723070° W (NAD83)

W/4 CORNER SEC 25
LAT. 36.285051° N (NAD83)
LONG. 107.750059° W (NAD83)

S/4 CORNER SEC 23
LAT. 36.292389° N (NAD83)
LONG. 107.759001° W (NAD83)

E/4 CORNER SEC 23
LAT. 36.299592° N (NAD83)
LONG. 107.749959° W (NAD83)



EXIT/BHL
LAT. 36.295325° N (NAD83)
LONG. 107.755567° W (NAD83)

PPP
LAT. 36.279265° N (NAD83)
LONG. 107.734631° W (NAD83)

KOP
LAT. 36.278450° N (NAD83)
LONG. 107.732637° W (NAD83)

SHL
LAT. 36.281184° N (NAD83)
LONG. 107.730540° W (NAD83)

PENETRATED SPACING UNIT;
SEC 25: SE/4, SW/NE, NE/SW & NW/4 (400 AC.); SEC 26: NE/NE (40 AC.) SEC 23: SE/SE & SW/SE (80 AC.) = 520 ACRES
TOTAL 10,415.12 ACRES: T24N R9W, SEC. 21-23 (S/2), 25-28, 33-36, 1-4, 9-10 (ALL); T23N R9W, SEC. 5 (W/2), 11 (NW/4) - UNDIVIDED UNIT

DJR Operating

DRILLING PLAN
Nageezi Unit 627H
San Juan County, New Mexico

Surface Location
447-ft FWL & 1133-ft FSL
Sec 30 T24N R08W
Graded Elevation 6801' MSL
RKB Elevation 6826' (25' KB)

SHL Geographical Coordinates (NAD-83)
Latitude 36.2811840° N
Longitude 107.7305400° W

Kick Off Point for Horizontal Build Curve
4825-ft MD
4657-ft TVD

Local Coordinates (from SHL)
996-ft South
617-ft West

First Take Point (Heel target)
5858-ft MD
755-ft FEL & 449-ft FSL
Sec 25 T24N R09W

FTP Geographical Coordinates (NAD-83)
Latitude 36.27926467° N
Longitude 107.73463093° W

Last Take Point (Toe target & BHL)
14358-ft MD
1639-ft FEL & 1079-ft FSL
Sec 23 T24N R09W

LTP Geographical Coordinates (NAD-83)
Latitude 36.2953253° N
Longitude 107.7555670° W

Well objectives
This well is planned as a 8500-ft lateral in the Gallup CR3 sand.

Bottom Hole temperature and pressure
The temperature in the Gallup CR3 horizontal objective is 142.0°F. Bottom hole pressure in the Gallup CR3 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	921	917	Sd	W	8.3	8.4 – 8.8
Kirtland	1061	1053	Sh	-	8.3	8.4 – 8.8
Fruitland	1458	1433	C	G	8.3	9.0 - 9.5
Picture Cliffs	1678	1644	Sd	W	8.3	9.0 - 9.5
Lewis	1784	1745	Sh	-		9.0 - 9.5
Chacra	2252	2481	Sd	-	8.3	9.0 - 9.5
Menefee	3252	3151	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	4181	4041	Sd	-	8.3	9.0 - 9.5
Mancos	4359	4211	Sh	-		9.0 - 9.5
Mancos Silt	4713	4550	Slt	O/G	6.6	9.0 - 9.5
Gallup A	5239	5034	Slt	O/G	6.6	9.0 - 9.5
Gallup B	5279	5065	Sd	O/G	6.6	8.8 -9.0
Gallup C	5450	5180	Sd	O/G	6.6	8.8 -9.0
Target	5791	5304	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	5848	surf	5304	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5648	14358	5270	5363	5648

Note: all casing will be new

Casing Design Load Cases

	Description	Casing String 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

Casing string	Casing OD	Design Factors 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

Additives: A=Accelerator; B=Bond Enhancer; De=Defoamer; Di=Dispersant; Ex=Extender; Fl=Fluid Loss L=Lost Circulation; R=Retarder; SA=Suspending Agent; THX=Thixotropic Additive; V=Viscosifier

9-5/8" Surface Casing	Lead
Name	Redi-Mix
Type	I-II
Additives	20% Fly Ash
Planned top	Surface
Density (ppg)	14.50
Yield (cf/sx)	1.61
Mix water (gal/sx)	7.41
Volume (sx)	114
Volume (bbls)	33

7" Intermediate Casing	Lead	Tail
Halliburton Name	ECONOCEM	VARICEM
Type	Poz/G	Poz/G
Additives	Ex, L, SA	Ex, Fl, SA, L, THX
Planned top	Surface	3859-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	1.90	1.31
Mix water (gal/sx)	10.03	5.81
Volume (sx)	498	395
Volume (bbls)	170	92

4-1/2" Production Liner	Lead
Halliburton Name	EXTENDACEM
Type	Poz/G
Additives	B, De, Di, Fl, Re, V
Planned top	5648-ft
Density (ppg)	13.3
Yield (cf/sx)	1.36
Mix water (gal/sx)	6.01
Volume (sx)	890
Volume (bbls)	216

Wellhead & Pressure Control
The well head will be an 11" 5M multi-bowl system. A 2M 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 – 5848	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5848 – 14358	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.

DJR Operating

Pad name : M30 2409 pad
Well name : Nageezi Unit #627H

SHL Latitude : 36.28118400
SHL Longitude : -107.73054000

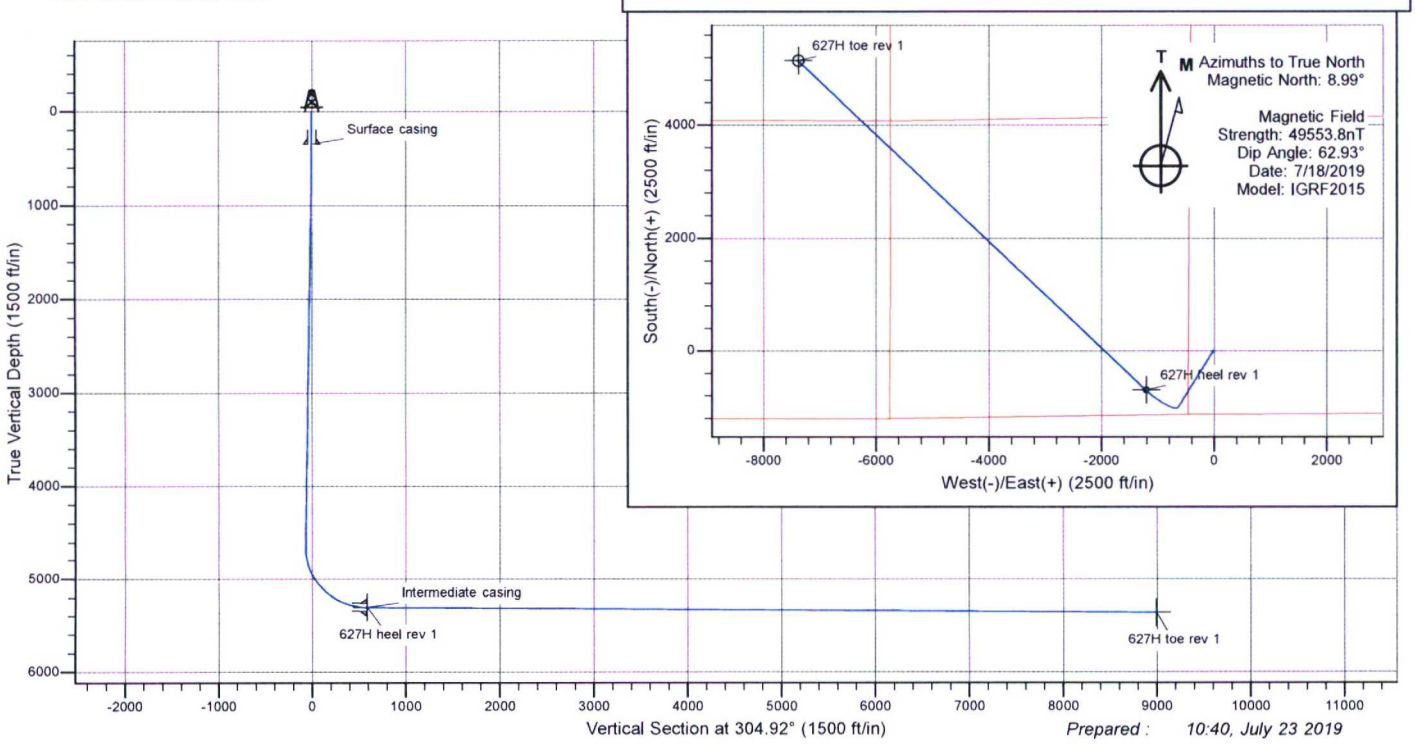
US State Plane 1983
North American Datum 1983
New Mexico Western Zone

TRAJECTORY DETAILS
Pad elevation : 6801 RIG @ 6826ft (AD #1000)

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0	0.00	0.00	0	0	0	0.00	0.00	0	
425	0.00	0.00	425	0	0	0.00	0.00	0	
1095	16.74	211.81	1085	-83	-51	2.50	211.81	-5	
4825	16.74	211.81	4657	-996	-617	0.00	0.00	-64	
5858	89.60	313.47	5304	-699	-1206	9.00	101.29	589	627H heel rev 1
14358	89.60	313.47	5363	5149	-7375	0.00	0.00	8994	627H toe rev 1

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
627H heel rev 1	5304	-699	-1206	1920966	2752183	36.27926467	-107.73463093
627H toe rev 1	5363	5149	-7375	1926807	2746008	36.29532530	-107.75556704



Prepared : 10:40, July 23 2019

DJR Operating

Nageezi Unit
M30 2409 pad
627H

Original drilling

Plan: APD

Standard Planning Report

23 July, 2019

Planning Report

Database:	EDM	**Local Co-ordinate Reference:**	Well 627H
Company:	DJR Operating	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Project:	Nageezi Unit	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site:	M30 2409 pad	**North Reference:**	True
Well:	627H	**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 M30 2409 pad

Site Position:		**Northing:**	1,921,666 usft	**Latitude:**	36.28118400
From:	Lat/Long	**Easting:**	2,753,388 usft	**Longitude:**	-107.73054000
Position Uncertainty:	0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.06 °

Well 627H

Well Position	**+N/-S**	0 ft	**Northing:**	1,921,666 usft	**Latitude:**	36.28118400
	+E/-W	0 ft	**Easting:**	2,753,388 usft	**Longitude:**	-107.73054000
Position Uncertainty		0 ft	**Wellhead Elevation:**		**Ground Level:**	6801 ft

Wellbore Original drilling

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	7/18/2019	8.99	62.93	49,553.82986513

Design APD

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0	0	0	304.92	

Plan Survey Tool Program **Date** 7/23/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0	14,358	APD (Original drilling)	MWD+IGRF	
				OWSG MWD + IGRF or WI	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	
425	0.00	0.00	425	0	0	0.00	0.00	0.00	0.00	
1095	16.74	211.81	1085	-83	-51	2.50	2.50	0.00	211.81	
4825	16.74	211.81	4657	-996	-617	0.00	0.00	0.00	0.00	
5858	89.60	313.47	5304	-699	-1206	9.00	7.05	9.84	101.29	627H heel rev 1
14,358	89.60	313.47	5363	5149	-7375	0.00	0.00	0.00	0.00	627H toe rev 1

Database:	EDM	**Local Co-ordinate Reference:**	Well 627H
Company:	DJR Operating	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Project:	Nageezi Unit	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site:	M30 2409 pad	**North Reference:**	True
Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0	0.00	0.00	0	0	0	0	0.00	0.00	0.00
100	0.00	0.00	100	0	0	0	0.00	0.00	0.00
200	0.00	0.00	200	0	0	0	0.00	0.00	0.00
300	0.00	0.00	300	0	0	0	0.00	0.00	0.00
350	0.00	0.00	350	0	0	0	0.00	0.00	0.00
Surface casing									
400	0.00	0.00	400	0	0	0	0.00	0.00	0.00
425	0.00	0.00	425	0	0	0	0.00	0.00	0.00
500	1.87	211.81	500	-1	-1	0	2.50	2.50	0.00
600	4.37	211.81	600	-6	-4	0	2.50	2.50	0.00
700	6.87	211.81	699	-14	-9	-1	2.50	2.50	0.00
800	9.37	211.81	798	-26	-16	-2	2.50	2.50	0.00
900	11.87	211.81	897	-42	-26	-3	2.50	2.50	0.00
921	12.40	211.81	917	-45	-28	-3	2.50	2.50	0.00
Ojo Alamo									
1000	14.37	211.81	994	-61	-38	-4	2.50	2.50	0.00
1061	15.90	211.81	1053	-75	-46	-5	2.50	2.50	0.00
Kirtland									
1095	16.74	211.81	1085	-83	-51	-5	2.50	2.50	0.00
1100	16.74	211.81	1090	-84	-52	-5	0.00	0.00	0.00
1200	16.74	211.81	1186	-108	-67	-7	0.00	0.00	0.00
1300	16.74	211.81	1282	-133	-82	-8	0.00	0.00	0.00
1400	16.74	211.81	1378	-157	-98	-10	0.00	0.00	0.00
1458	16.74	211.81	1433	-171	-106	-11	0.00	0.00	0.00
Fruitland									
1500	16.74	211.81	1473	-182	-113	-12	0.00	0.00	0.00
1600	16.74	211.81	1569	-206	-128	-13	0.00	0.00	0.00
1678	16.74	211.81	1644	-225	-140	-14	0.00	0.00	0.00
Picture Cliffs									
1700	16.74	211.81	1665	-231	-143	-15	0.00	0.00	0.00
1784	16.74	211.81	1745	-251	-156	-16	0.00	0.00	0.00
Lewis									
1800	16.74	211.81	1761	-255	-158	-16	0.00	0.00	0.00
1900	16.74	211.81	1856	-280	-173	-18	0.00	0.00	0.00
2000	16.74	211.81	1952	-304	-189	-19	0.00	0.00	0.00
2100	16.74	211.81	2048	-329	-204	-21	0.00	0.00	0.00
2200	16.74	211.81	2144	-353	-219	-23	0.00	0.00	0.00
2300	16.74	211.81	2239	-378	-234	-24	0.00	0.00	0.00
2400	16.74	211.81	2335	-402	-249	-26	0.00	0.00	0.00
2500	16.74	211.81	2431	-427	-265	-27	0.00	0.00	0.00
2552	16.74	211.81	2481	-439	-272	-28	0.00	0.00	0.00
Chacra									
2600	16.74	211.81	2527	-451	-280	-29	0.00	0.00	0.00
2700	16.74	211.81	2622	-476	-295	-30	0.00	0.00	0.00
2800	16.74	211.81	2718	-500	-310	-32	0.00	0.00	0.00
2900	16.74	211.81	2814	-525	-325	-34	0.00	0.00	0.00
3000	16.74	211.81	2910	-549	-340	-35	0.00	0.00	0.00
3100	16.74	211.81	3006	-573	-356	-37	0.00	0.00	0.00
3200	16.74	211.81	3101	-598	-371	-38	0.00	0.00	0.00
3252	16.74	211.81	3151	-611	-379	-39	0.00	0.00	0.00
Menefee									
3300	16.74	211.81	3197	-622	-386	-40	0.00	0.00	0.00
3400	16.74	211.81	3293	-647	-401	-41	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 627H
Company:	DJR Operating	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Project:	Nageezi Unit	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site:	M30 2409 pad	**North Reference:**	True
Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3500	16.74	211.81	3389	-671	-416	-43	0.00	0.00	0.00
3600	16.74	211.81	3484	-696	-432	-44	0.00	0.00	0.00
3700	16.74	211.81	3580	-720	-447	-46	0.00	0.00	0.00
3800	16.74	211.81	3676	-745	-462	-48	0.00	0.00	0.00
3900	16.74	211.81	3772	-769	-477	-49	0.00	0.00	0.00
4000	16.74	211.81	3867	-794	-492	-51	0.00	0.00	0.00
4100	16.74	211.81	3963	-818	-507	-52	0.00	0.00	0.00
4181	16.74	211.81	4041	-838	-520	-54	0.00	0.00	0.00
Point Lookout									
4200	16.74	211.81	4059	-843	-523	-54	0.00	0.00	0.00
4300	16.74	211.81	4155	-867	-538	-55	0.00	0.00	0.00
4359	16.74	211.81	4211	-882	-547	-56	0.00	0.00	0.00
Mancos									
4400	16.74	211.81	4250	-892	-553	-57	0.00	0.00	0.00
4500	16.74	211.81	4346	-916	-568	-59	0.00	0.00	0.00
4600	16.74	211.81	4442	-941	-583	-60	0.00	0.00	0.00
4700	16.74	211.81	4538	-965	-599	-62	0.00	0.00	0.00
4713	16.74	211.81	4550	-968	-600	-62	0.00	0.00	0.00
Mancos Silt									
4800	16.74	211.81	4633	-990	-614	-63	0.00	0.00	0.00
4825	16.74	211.81	4657	-996	-617	-64	0.00	0.00	0.00
4850	16.44	219.68	4681	-1002	-622	-64	9.00	-1.18	31.27
4900	16.75	235.44	4729	-1011	-632	-60	9.00	0.60	31.53
4950	18.16	249.73	4777	-1018	-645	-53	9.00	2.83	28.57
5000	20.46	261.47	4824	-1022	-661	-43	9.00	4.60	23.47
5050	23.38	270.66	4871	-1023	-680	-28	9.00	5.85	18.39
5100	26.73	277.79	4916	-1021	-701	-10	9.00	6.69	14.27
5150	30.35	283.39	4960	-1017	-724	12	9.00	7.25	11.19
5200	34.16	287.87	5002	-1010	-750	37	9.00	7.63	8.96
5239	37.25	290.80	5034	-1002	-772	59	9.00	7.87	7.48
Gallup A									
5250	38.11	291.53	5043	-1000	-778	65	9.00	7.98	6.80
5279	40.45	293.38	5065	-993	-795	83	9.00	8.05	6.35
Gallup B									
5300	42.16	294.60	5081	-987	-807	97	9.00	8.13	5.84
5350	46.27	297.22	5117	-972	-839	131	9.00	8.23	5.24
5400	50.43	299.50	5150	-954	-872	169	9.00	8.33	4.56
5450	54.61	301.51	5180	-934	-906	208	9.00	8.41	4.04
Gallup C									
5500	58.88	303.34	5208	-911	-941	250	9.00	8.47	3.64
5550	63.13	305.00	5232	-887	-977	294	9.00	8.52	3.33
5600	67.41	306.55	5253	-860	-1014	339	9.00	8.55	3.08
5650	71.70	307.99	5270	-832	-1051	386	9.00	8.58	2.90
5700	76.00	309.37	5284	-802	-1089	434	9.00	8.60	2.76
5750	80.31	310.70	5294	-770	-1126	482	9.00	8.62	2.66
5791	83.84	311.76	5300	-744	-1157	523	9.00	8.63	2.59
Target									
5800	84.62	311.99	5301	-738	-1163	532	9.00	8.63	2.57
5848	88.77	313.22	5304	-705	-1199	579	9.00	8.63	2.55
Intermediate casing									
5850	88.94	313.27	5304	-704	-1200	581	9.00	8.63	2.54
5858	89.60	313.47	5304	-699	-1206	589	9.00	8.63	2.54
627H heel rev 1									

Database:	EDM	**Local Co-ordinate Reference:**	Well 627H
Company:	DJR Operating	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Project:	Nageezi Unit	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site:	M30 2409 pad	**North Reference:**	True
Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5900	89.60	313.47	5304	-670	-1236	631	0.00	0.00	0.00
6000	89.60	313.47	5305	-601	-1309	729	0.00	0.00	0.00
6100	89.60	313.47	5306	-532	-1382	828	0.00	0.00	0.00
6200	89.60	313.47	5306	-463	-1454	927	0.00	0.00	0.00
6300	89.60	313.47	5307	-394	-1527	1026	0.00	0.00	0.00
6400	89.60	313.47	5308	-326	-1599	1125	0.00	0.00	0.00
6500	89.60	313.47	5308	-257	-1672	1224	0.00	0.00	0.00
6600	89.60	313.47	5309	-188	-1745	1323	0.00	0.00	0.00
6700	89.60	313.47	5310	-119	-1817	1422	0.00	0.00	0.00
6800	89.60	313.47	5310	-50	-1890	1521	0.00	0.00	0.00
6900	89.60	313.47	5311	18	-1962	1619	0.00	0.00	0.00
7000	89.60	313.47	5312	87	-2035	1718	0.00	0.00	0.00
7100	89.60	313.47	5312	156	-2107	1817	0.00	0.00	0.00
7200	89.60	313.47	5313	225	-2180	1916	0.00	0.00	0.00
7300	89.60	313.47	5314	294	-2253	2015	0.00	0.00	0.00
7400	89.60	313.47	5315	362	-2325	2114	0.00	0.00	0.00
7500	89.60	313.47	5315	431	-2398	2213	0.00	0.00	0.00
7600	89.60	313.47	5316	500	-2470	2312	0.00	0.00	0.00
7700	89.60	313.47	5317	569	-2543	2411	0.00	0.00	0.00
7800	89.60	313.47	5317	637	-2615	2509	0.00	0.00	0.00
7900	89.60	313.47	5318	706	-2688	2608	0.00	0.00	0.00
8000	89.60	313.47	5319	775	-2761	2707	0.00	0.00	0.00
8100	89.60	313.47	5319	844	-2833	2806	0.00	0.00	0.00
8200	89.60	313.47	5320	913	-2906	2905	0.00	0.00	0.00
8300	89.60	313.47	5321	981	-2978	3004	0.00	0.00	0.00
8400	89.60	313.47	5321	1050	-3051	3103	0.00	0.00	0.00
8500	89.60	313.47	5322	1119	-3123	3202	0.00	0.00	0.00
8600	89.60	313.47	5323	1188	-3196	3301	0.00	0.00	0.00
8700	89.60	313.47	5324	1257	-3269	3399	0.00	0.00	0.00
8800	89.60	313.47	5324	1325	-3341	3498	0.00	0.00	0.00
8900	89.60	313.47	5325	1394	-3414	3597	0.00	0.00	0.00
9000	89.60	313.47	5326	1463	-3486	3696	0.00	0.00	0.00
9100	89.60	313.47	5326	1532	-3559	3795	0.00	0.00	0.00
9200	89.60	313.47	5327	1601	-3632	3894	0.00	0.00	0.00
9300	89.60	313.47	5328	1669	-3704	3993	0.00	0.00	0.00
9400	89.60	313.47	5328	1738	-3777	4092	0.00	0.00	0.00
9500	89.60	313.47	5329	1807	-3849	4191	0.00	0.00	0.00
9600	89.60	313.47	5330	1876	-3922	4289	0.00	0.00	0.00
9700	89.60	313.47	5330	1944	-3994	4388	0.00	0.00	0.00
9800	89.60	313.47	5331	2013	-4067	4487	0.00	0.00	0.00
9900	89.60	313.47	5332	2082	-4140	4586	0.00	0.00	0.00
10,000	89.60	313.47	5333	2151	-4212	4685	0.00	0.00	0.00
10,100	89.60	313.47	5333	2220	-4285	4784	0.00	0.00	0.00
10,200	89.60	313.47	5334	2288	-4357	4883	0.00	0.00	0.00
10,300	89.60	313.47	5335	2357	-4430	4982	0.00	0.00	0.00
10,400	89.60	313.47	5335	2426	-4502	5081	0.00	0.00	0.00
10,500	89.60	313.47	5336	2495	-4575	5179	0.00	0.00	0.00
10,600	89.60	313.47	5337	2564	-4648	5278	0.00	0.00	0.00
10,700	89.60	313.47	5337	2632	-4720	5377	0.00	0.00	0.00
10,800	89.60	313.47	5338	2701	-4793	5476	0.00	0.00	0.00
10,900	89.60	313.47	5339	2770	-4865	5575	0.00	0.00	0.00
11,000	89.60	313.47	5340	2839	-4938	5674	0.00	0.00	0.00
11,100	89.60	313.47	5340	2908	-5010	5773	0.00	0.00	0.00
11,200	89.60	313.47	5341	2976	-5083	5872	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well 627H
Company:	DJR Operating	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Project:	Nageezi Unit	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site:	M30 2409 pad	**North Reference:**	True
Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,300	89.60	313.47	5342	3045	-5156	5971	0.00	0.00	0.00
11,400	89.60	313.47	5342	3114	-5228	6069	0.00	0.00	0.00
11,500	89.60	313.47	5343	3183	-5301	6168	0.00	0.00	0.00
11,600	89.60	313.47	5344	3252	-5373	6267	0.00	0.00	0.00
11,700	89.60	313.47	5344	3320	-5446	6366	0.00	0.00	0.00
11,800	89.60	313.47	5345	3389	-5519	6465	0.00	0.00	0.00
11,900	89.60	313.47	5346	3458	-5591	6564	0.00	0.00	0.00
12,000	89.60	313.47	5346	3527	-5664	6663	0.00	0.00	0.00
12,100	89.60	313.47	5347	3595	-5736	6762	0.00	0.00	0.00
12,200	89.60	313.47	5348	3664	-5809	6860	0.00	0.00	0.00
12,300	89.60	313.47	5349	3733	-5881	6959	0.00	0.00	0.00
12,400	89.60	313.47	5349	3802	-5954	7058	0.00	0.00	0.00
12,500	89.60	313.47	5350	3871	-6027	7157	0.00	0.00	0.00
12,600	89.60	313.47	5351	3939	-6099	7256	0.00	0.00	0.00
12,700	89.60	313.47	5351	4008	-6172	7355	0.00	0.00	0.00
12,800	89.60	313.47	5352	4077	-6244	7454	0.00	0.00	0.00
12,900	89.60	313.47	5353	4146	-6317	7553	0.00	0.00	0.00
13,000	89.60	313.47	5353	4215	-6389	7652	0.00	0.00	0.00
13,100	89.60	313.47	5354	4283	-6462	7750	0.00	0.00	0.00
13,200	89.60	313.47	5355	4352	-6535	7849	0.00	0.00	0.00
13,300	89.60	313.47	5355	4421	-6607	7948	0.00	0.00	0.00
13,400	89.60	313.47	5356	4490	-6680	8047	0.00	0.00	0.00
13,500	89.60	313.47	5357	4559	-6752	8146	0.00	0.00	0.00
13,600	89.60	313.47	5358	4627	-6825	8245	0.00	0.00	0.00
13,700	89.60	313.47	5358	4696	-6897	8344	0.00	0.00	0.00
13,800	89.60	313.47	5359	4765	-6970	8443	0.00	0.00	0.00
13,900	89.60	313.47	5360	4834	-7043	8542	0.00	0.00	0.00
14,000	89.60	313.47	5360	4902	-7115	8640	0.00	0.00	0.00
14,100	89.60	313.47	5361	4971	-7188	8739	0.00	0.00	0.00
14,200	89.60	313.47	5362	5040	-7260	8838	0.00	0.00	0.00
14,300	89.60	313.47	5362	5109	-7333	8937	0.00	0.00	0.00
14,358	89.60	313.47	5363	5149	-7375	8994	0.00	0.00	0.00
627H toe rev 1									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
627H heel rev 1 - plan hits target center - Circle (radius 50)	0.00	0.00	5304	-699	-1206	1,920,966	2,752,183	36.27926467	-107.73463094
627H toe rev 1 - plan hits target center - Circle (radius 100)	0.00	0.00	5363	5149	-7375	1,926,807	2,746,008	36.29532530	-107.75556705

Database:	EDM	**Local Co-ordinate Reference:**	Well 627H
Company:	DJR Operating	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Project:	Nageezi Unit	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site:	M30 2409 pad	**North Reference:**	True
Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
350	350	Surface casing	9.625	12.250
5848	5304	Intermediate casing	7.000	8.750

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
921	917	Ojo Alamo		0.00	
1061	1053	Kirtland		0.00	
1458	1433	Fruitland		0.00	
1678	1644	Picture Cliffs		0.00	
1784	1745	Lewis		0.00	
2552	2481	Chacra		0.00	
3252	3151	Menefee		0.00	
4181	4041	Point Lookout		0.00	
4359	4211	Mancos		0.00	
4713	4550	Mancos Silt		0.00	
5239	5034	Gallup A		0.00	
5279	5065	Gallup B		0.00	
5450	5180	Gallup C		0.00	
5791	5300	Target		0.00	

DJR Operating

Nageezi Unit
M30 2409 pad
627H

Original drilling
APD

Anticollision Report

23 July, 2019

Anticollision Report

Company:	DJR Operating	**Local Co-ordinate Reference:**	Well 627H
Project:	Nageezi Unit	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Reference Site:	M30 2409 pad	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site Error:	0 ft	**North Reference:**	True
Reference Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original drilling	**Database:**	EDM
Reference Design:	APD	**Offset TVD Reference:**	Offset Datum

Reference	APD		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 7/23/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0	14,358	APD (Original drilling)	MWD+IGRF	OWSG MWD + IGRF or WMM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
M30 2409 pad						
628H - Original drilling - APD	425	425	30	28	11.587	CC, ES
628H - Original drilling - APD	11,000	10,201	1267	991	4.590	SF

Offset Design M30 2409 pad - 628H - Original drilling - APD — **Offset Site Error:** 0 ft

Survey Program: 0-MWD+IGRF — **Offset Well Error:** 0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0	0	0	0	0	0	14.74	29	8	30				
100	100	100	100	0	0	14.74	29	8	30	30	0.27	112.007	
200	200	200	200	0	0	14.74	29	8	30	29	0.99	30.547	
300	300	300	300	1	1	14.74	29	8	30	28	1.70	17.685	
400	400	400	400	1	1	14.74	29	8	30	28	2.42	12.445	
425	425	425	425	1	1	14.74	29	8	30	28	2.60	11.587	CC, ES
500	500	500	500	2	2	162.63	29	7	31	28	3.12	10.065	
600	600	599	599	2	2	158.76	32	3	38	34	3.82	9.937	
700	699	698	697	2	2	153.92	36	-3	50	46	4.53	11.040	
800	798	797	796	3	3	152.22	40	-11	66	61	5.26	12.620	
900	897	894	893	3	3	152.47	45	-18	87	81	6.01	14.421	
1000	994	992	990	4	3	153.56	49	-26	111	104	6.76	16.363	
1095	1085	1082	1080	4	4	154.86	53	-33	137	129	7.48	18.298	
1100	1090	1087	1086	4	4	154.95	53	-33	139	131	7.53	18.393	
1200	1186	1183	1181	5	4	156.35	58	-40	168	160	8.28	20.301	
1300	1282	1278	1276	5	4	157.33	62	-47	198	189	9.04	21.882	
1400	1378	1374	1371	6	5	158.06	66	-55	228	218	9.81	23.208	
1500	1473	1469	1466	7	5	158.62	70	-62	257	247	10.58	24.335	
1600	1569	1565	1561	7	6	159.06	75	-69	287	276	11.35	25.302	
1700	1665	1660	1656	8	6	159.42	79	-76	317	305	12.13	26.141	
1800	1761	1756	1751	8	6	159.71	83	-83	347	334	12.91	26.875	
1900	1856	1851	1846	9	7	159.97	88	-91	377	363	13.69	27.522	
2000	1952	1946	1941	10	7	160.18	92	-98	406	392	14.47	28.096	
2100	2048	2042	2036	10	7	160.36	96	-105	436	421	15.25	28.609	
2200	2144	2137	2131	11	8	160.52	100	-112	466	450	16.04	29.070	

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

Anticollision Report

Company:	DJR Operating	**Local Co-ordinate Reference:**	Well 627H
Project:	Nageezi Unit	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Reference Site:	M30 2409 pad	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site Error:	0 ft	**North Reference:**	True
Reference Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original drilling	**Database:**	EDM
Reference Design:	APD	**Offset TVD Reference:**	Offset Datum

Offset Design M30 2409 pad - 628H - Original drilling - APD — **Offset Site Error:** 0 ft

Survey Program: 0-MWD+IGRF — **Offset Well Error:** 0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2300	2239	2233	2226	12	8	160.67	105	-119	496	479	16.82	29.486	
2400	2335	2328	2321	12	9	160.79	109	-127	526	508	17.61	29.864	
2500	2431	2424	2416	13	9	160.90	113	-134	556	537	18.40	30.208	
2600	2527	2519	2512	14	9	161.00	118	-141	586	566	19.18	30.523	
2700	2622	2614	2607	14	10	161.09	122	-148	615	595	19.97	30.812	
2800	2718	2710	2702	15	10	161.18	126	-156	645	624	20.76	31.079	
2900	2814	2805	2797	16	10	161.25	130	-163	675	654	21.55	31.325	
3000	2910	2901	2892	16	11	161.32	135	-170	705	683	22.34	31.553	
3100	3006	2996	2987	17	11	161.38	139	-177	735	712	23.13	31.765	
3200	3101	3092	3082	18	12	161.44	143	-184	765	741	23.92	31.963	
3300	3197	3187	3177	18	12	161.50	148	-192	794	770	24.71	32.148	
3400	3293	3283	3272	19	12	161.55	152	-199	824	799	25.51	32.320	
3500	3389	3378	3367	19	13	161.59	156	-206	854	828	26.30	32.482	
3600	3484	3473	3462	20	13	161.64	161	-213	884	857	27.09	32.634	
3700	3580	3569	3557	21	13	161.68	165	-220	914	886	27.88	32.778	
3800	3676	3664	3652	21	14	161.71	169	-228	944	915	28.67	32.913	
3900	3772	3760	3747	22	14	161.75	173	-235	974	944	29.47	33.040	
4000	3867	3855	3842	23	15	161.78	178	-242	1003	973	30.26	33.161	
4100	3963	3951	3938	23	15	161.81	182	-249	1033	1002	31.05	33.275	
4200	4059	4046	4033	24	15	161.84	186	-257	1063	1031	31.85	33.384	
4300	4155	4141	4128	25	16	161.87	191	-264	1093	1060	32.64	33.487	
4400	4250	4237	4223	25	16	161.90	195	-271	1123	1089	33.44	33.584	
4500	4346	4332	4318	26	16	161.92	199	-278	1153	1119	34.23	33.678	
4600	4442	4428	4413	27	17	161.95	203	-285	1183	1148	35.02	33.766	
4700	4538	4523	4508	27	17	161.97	208	-293	1212	1177	35.82	33.851	
4800	4633	4619	4603	28	18	161.99	212	-300	1242	1206	36.61	33.932	
4825	4657	4642	4627	28	18	162.00	213	-302	1250	1213	36.81	33.952	
4850	4681	4666	4651	28	18	153.89	214	-303	1257	1220	37.01	33.965	
4900	4729	4715	4699	29	18	137.89	216	-307	1270	1233	37.41	33.952	
4950	4777	4763	4747	29	18	123.69	219	-311	1281	1243	37.81	33.889	
5000	4824	4788	4771	29	18	112.07	220	-313	1291	1253	38.02	33.949	
5050	4871	4812	4796	30	18	103.13	222	-316	1299	1261	38.23	33.986	
5100	4916	4837	4820	30	19	96.37	225	-319	1307	1268	38.44	33.994	
5150	4960	4850	4833	30	19	91.12	226	-322	1313	1275	38.52	34.091	
5200	5002	4887	4868	30	19	87.44	232	-329	1318	1279	38.87	33.913	
5250	5043	4900	4881	30	19	84.36	235	-332	1322	1284	38.96	33.946	
5300	5081	4936	4915	31	19	82.37	242	-341	1325	1286	39.36	33.676	
5350	5117	4950	4928	31	19	80.58	245	-344	1327	1288	39.47	33.627	
5400	5150	4986	4961	31	19	79.67	255	-355	1328	1288	39.94	33.248	
5450	5180	5011	4984	31	19	78.95	262	-363	1328	1288	40.29	32.953	
5500	5208	5036	5006	31	20	78.57	270	-372	1327	1286	40.69	32.601	
5550	5232	5062	5028	32	20	78.49	279	-382	1324	1283	41.14	32.191	
5600	5253	5087	5049	32	20	78.67	288	-392	1321	1280	41.65	31.724	
5650	5270	5112	5070	32	20	79.10	297	-403	1318	1275	42.23	31.203	
5700	5284	5138	5090	32	20	79.74	308	-415	1313	1270	42.86	30.633	
5750	5294	5164	5110	32	21	80.59	319	-427	1308	1264	43.56	30.021	
5800	5301	5189	5129	33	21	81.64	331	-440	1302	1257	44.31	29.376	
5850	5304	5215	5147	33	21	82.86	343	-453	1295	1250	45.13	28.705	
5858	5304	5219	5150	33	21	83.07	345	-455	1294	1249	45.26	28.600	
5900	5304	5242	5166	33	21	83.75	356	-468	1289	1243	46.00	28.026	
6000	5305	5300	5202	34	22	85.37	386	-501	1280	1232	47.93	26.704	
6100	5306	5372	5242	35	23	87.13	427	-545	1274	1224	50.32	25.323	

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

Anticollision Report

Company:	DJR Operating	**Local Co-ordinate Reference:**	Well 627H
Project:	Nageezi Unit	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Reference Site:	M30 2409 pad	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site Error:	0 ft	**North Reference:**	True
Reference Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original drilling	**Database:**	EDM
Reference Design:	APD	**Offset TVD Reference:**	Offset Datum

Offset Design M30 2409 pad - 628H - Original drilling - APD — **Offset Site Error:** 0 ft

Survey Program: 0-MWD+IGRF — **Offset Well Error:** 0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6200	5306	5450	5277	36	24	88.69	474	-596	1271	1218	52.99	23.991	
6300	5307	5541	5307	37	25	90.00	533	-658	1270	1214	56.17	22.614	
6400	5308	5637	5325	39	27	90.78	597	-727	1270	1210	59.66	21.286	
6500	5308	5736	5329	40	29	90.94	665	-799	1270	1206	63.39	20.033	
6600	5309	5836	5330	42	30	90.95	734	-872	1270	1203	67.29	18.872	
6700	5310	5936	5331	44	32	90.95	803	-944	1270	1198	71.32	17.803	
6800	5310	6036	5331	45	34	90.95	871	-1017	1270	1194	75.48	16.821	
6900	5311	6136	5332	47	36	90.95	940	-1090	1270	1190	79.74	15.921	
7000	5312	6236	5333	49	39	90.95	1009	-1162	1270	1185	84.09	15.097	
7100	5312	6336	5333	51	41	90.95	1078	-1235	1269	1181	88.51	14.342	
7200	5313	6436	5334	54	43	90.95	1146	-1307	1269	1176	92.99	13.650	
7300	5314	6536	5335	56	45	90.95	1215	-1380	1269	1172	97.53	13.014	
7400	5315	6636	5336	58	47	90.95	1284	-1453	1269	1167	102.11	12.430	
7500	5315	6736	5336	60	50	90.95	1353	-1525	1269	1162	106.74	11.891	
7600	5316	6836	5337	62	52	90.95	1421	-1598	1269	1158	111.40	11.393	
7700	5317	6936	5338	65	54	90.96	1490	-1671	1269	1153	116.09	10.932	
7800	5317	7036	5338	67	57	90.96	1559	-1743	1269	1148	120.80	10.504	
7900	5318	7136	5339	69	59	90.96	1628	-1816	1269	1143	125.54	10.107	
8000	5319	7236	5340	71	61	90.96	1696	-1888	1269	1138	130.31	9.737	
8100	5319	7336	5341	74	64	90.96	1765	-1961	1269	1134	135.09	9.392	
8200	5320	7436	5341	76	66	90.96	1834	-2034	1269	1129	139.89	9.069	
8300	5321	7536	5342	78	69	90.96	1903	-2106	1269	1124	144.70	8.767	
8400	5321	7636	5343	81	71	90.96	1971	-2179	1269	1119	149.53	8.483	
8500	5322	7736	5343	83	73	90.96	2040	-2252	1268	1114	154.37	8.217	
8600	5323	7836	5344	85	76	90.96	2109	-2324	1268	1109	159.23	7.966	
8700	5324	7936	5345	88	78	90.96	2177	-2397	1268	1104	164.09	7.729	
8800	5324	8036	5346	90	81	90.96	2246	-2469	1268	1099	168.96	7.506	
8900	5325	8136	5346	93	83	90.97	2315	-2542	1268	1094	173.85	7.295	
9000	5326	8236	5347	95	86	90.97	2384	-2615	1268	1089	178.74	7.095	
9100	5326	8336	5348	97	88	90.97	2452	-2687	1268	1084	183.63	6.905	
9200	5327	8436	5348	100	90	90.97	2521	-2760	1268	1079	188.54	6.725	
9300	5328	8536	5349	102	93	90.97	2590	-2833	1268	1074	193.45	6.554	
9400	5328	8636	5350	105	95	90.97	2659	-2905	1268	1069	198.36	6.391	
9500	5329	8736	5351	107	98	90.97	2727	-2978	1268	1064	203.29	6.236	
9600	5330	8836	5351	109	100	90.97	2796	-3050	1268	1059	208.21	6.088	
9700	5330	8936	5352	112	103	90.97	2865	-3123	1268	1054	213.14	5.947	
9800	5331	9036	5353	114	105	90.97	2934	-3196	1267	1049	218.08	5.812	
9900	5332	9136	5353	117	108	90.97	3002	-3268	1267	1044	223.02	5.683	
10,000	5333	9236	5354	119	110	90.97	3071	-3341	1267	1039	227.96	5.559	
10,100	5333	9336	5355	122	113	90.98	3140	-3414	1267	1034	232.91	5.441	
10,200	5334	9436	5356	124	115	90.98	3209	-3486	1267	1029	237.86	5.327	
10,300	5335	9536	5356	127	118	90.98	3277	-3559	1267	1024	242.82	5.218	
10,400	5335	9636	5357	129	120	90.98	3346	-3631	1267	1019	247.77	5.114	
10,500	5336	9736	5358	131	123	90.98	3415	-3704	1267	1014	252.73	5.013	
10,600	5337	9836	5358	134	125	90.98	3484	-3777	1267	1009	257.69	4.916	
10,700	5337	9936	5359	136	128	90.98	3552	-3849	1267	1004	262.66	4.823	
10,800	5338	10,036	5360	139	130	90.98	3621	-3922	1267	999	267.62	4.733	
10,900	5339	10,136	5361	141	133	90.98	3690	-3995	1267	994	272.59	4.647	
10,966	5339	10,201	5361	143	134	90.98	3734	-4042	1267	991	275.82	4.592	
11,000	5340	10,201	5361	144	134	90.98	3734	-4042	1267	991	276.03	4.590 SF	
11,100	5340	10,201	5361	146	134	90.98	3734	-4042	1274	998	275.53	4.623	
11,200	5341	10,201	5361	149	134	90.98	3734	-4042	1288	1015	273.44	4.711	

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

Anticollision Report

Company:	DJR Operating	**Local Co-ordinate Reference:**	Well 627H
Project:	Nageezi Unit	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Reference Site:	M30 2409 pad	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site Error:	0 ft	**North Reference:**	True
Reference Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original drilling	**Database:**	EDM
Reference Design:	APD	**Offset TVD Reference:**	Offset Datum

Offset Design M30 2409 pad - 628H - Original drilling - APD — **Offset Site Error:** 0 ft

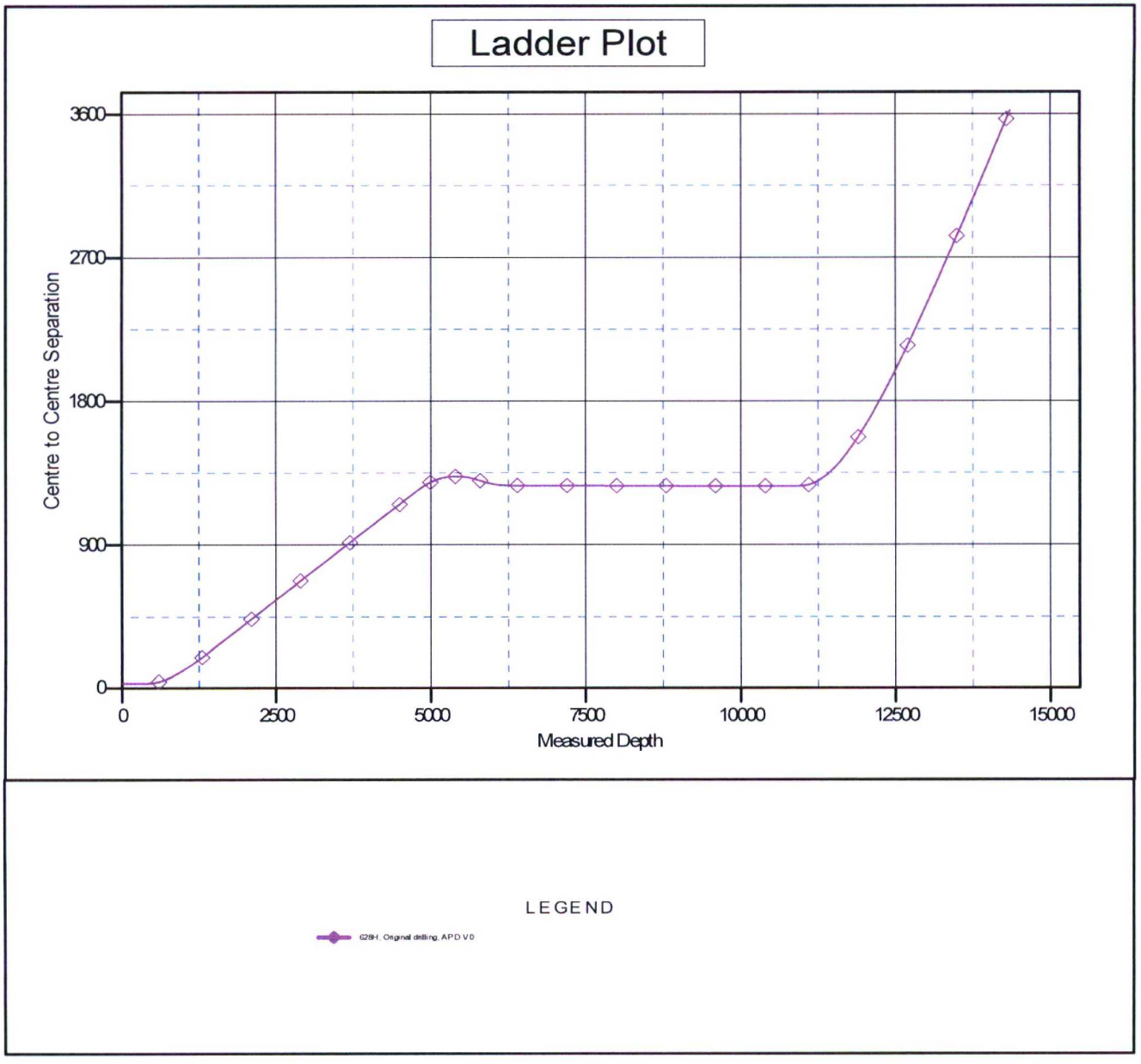
Survey Program: 0-MWD+IGRF — **Offset Well Error:** 0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,300	5342	10,201	5361	151	134	90.98	3734	-4042	1310	1040	269.88	4.854	
11,400	5342	10,201	5361	154	134	90.98	3734	-4042	1339	1074	265.07	5.052	
11,500	5343	10,201	5361	156	134	90.98	3734	-4042	1375	1115	259.25	5.303	
11,600	5344	10,201	5361	159	134	90.98	3734	-4042	1417	1164	252.65	5.607	
11,700	5344	10,201	5361	161	134	90.98	3734	-4042	1464	1219	245.53	5.963	
11,800	5345	10,201	5361	164	134	90.98	3734	-4042	1517	1279	238.10	6.370	
11,900	5346	10,201	5361	166	134	90.98	3734	-4042	1574	1343	230.52	6.828	
12,000	5346	10,201	5361	169	134	90.98	3734	-4042	1635	1412	222.95	7.335	
12,100	5347	10,201	5361	171	134	90.98	3734	-4042	1700	1485	215.50	7.890	
12,200	5348	10,201	5361	173	134	90.98	3734	-4042	1769	1560	208.24	8.493	
12,300	5349	10,201	5361	176	134	90.98	3734	-4042	1840	1639	201.24	9.142	
12,400	5349	10,201	5361	178	134	90.98	3734	-4042	1914	1719	194.53	9.837	
12,500	5350	10,201	5361	181	134	90.98	3734	-4042	1990	1801	188.13	10.576	
12,600	5351	10,201	5361	183	134	90.98	3734	-4042	2068	1886	182.05	11.358	
12,700	5351	10,201	5361	186	134	90.98	3734	-4042	2148	1971	176.28	12.183	
12,800	5352	10,201	5361	188	134	90.98	3734	-4042	2229	2058	170.84	13.049	
12,900	5353	10,201	5361	191	134	90.98	3734	-4042	2312	2146	165.69	13.954	
13,000	5353	10,201	5361	193	134	90.98	3734	-4042	2396	2236	160.84	14.899	
13,100	5354	10,201	5361	196	134	90.98	3734	-4042	2482	2326	156.27	15.882	
13,200	5355	10,201	5361	198	134	90.98	3734	-4042	2568	2416	151.96	16.901	
13,300	5355	10,201	5361	201	134	90.98	3734	-4042	2656	2508	147.90	17.957	
13,400	5356	10,201	5361	203	134	90.98	3734	-4042	2744	2600	144.08	19.046	
13,500	5357	10,201	5361	206	134	90.98	3734	-4042	2833	2693	140.47	20.170	
13,600	5358	10,201	5361	208	134	90.98	3734	-4042	2923	2786	137.07	21.326	
13,700	5358	10,201	5361	211	134	90.98	3734	-4042	3013	2880	133.86	22.513	
13,800	5359	10,201	5361	213	134	90.98	3734	-4042	3104	2974	130.82	23.730	
13,900	5360	10,201	5361	216	134	90.98	3734	-4042	3196	3068	127.96	24.977	
14,000	5360	10,201	5361	218	134	90.98	3734	-4042	3288	3163	125.25	26.252	
14,100	5361	10,201	5361	221	134	90.98	3734	-4042	3381	3258	122.69	27.554	
14,200	5362	10,201	5361	223	134	90.98	3734	-4042	3474	3353	120.26	28.883	
14,300	5362	10,201	5361	226	134	90.98	3734	-4042	3567	3449	117.97	30.236	
14,358	5363	10,201	5361	227	134	90.98	3734	-4042	3621	3504	116.69	31.032	

Anticollision Report

Company:	DJR Operating	**Local Co-ordinate Reference:**	Well 627H
Project:	Nageezi Unit	**TVD Reference:**	RIG @ 6826ft (AD #1000)
Reference Site:	M30 2409 pad	**MD Reference:**	RIG @ 6826ft (AD #1000)
Site Error:	0 ft	**North Reference:**	True
Reference Well:	627H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original drilling	**Database:**	EDM
Reference Design:	APD	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RIG @ 6826ft (AD #1000)	Coordinates are relative to: 627H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Western Zone
Central Meridian is -107.83333333	Grid Convergence at Surface is: 0.06°



Anticollision Report

Company:	DJR Operating	**Local Co-ordinate Reference:**	Well 627H
Project:	Nageezi Unit	**TVD Reference:**	RIG @ 6826ft (AD #1000)
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