

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 3160-5 form.

Operator Signature Date: **Original APD 3/13/2015**
Sundry Date 8/6/2019

WELL INFORMATION:
DJR OPERATING, LLC
30-045-35669 Betonnie Tsosie Wash Unit #720H

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

RECEIVED

AUG 06 2019

Form 3160-5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT Farmington Field Office
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.

1. Type of Well

☒ Oil Well☐ Gas Well☐ Other2. Name of Operator
DJR Operating LLC.3a. Address
1 Road 3263
Aztec, New Mexico 874103b. Phone No. (include area code)
505-632-34764. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SHL: 1308' FNL and 17' FEL Section 3, T22N, R8W
BHL: 667' FSL and 1428' FEL Section 28, T23N, R8W5. Lease Serial No.
NMNM 904686. If Indian, Allottee or Tribe Name
N/A7. If Unit of CA/Agreement, Name and/or No.
NMNM 135219A8. Well Name and No.
BETONNIE TSOSIE WASH UNIT #720H9. API Well No.
30-045-3566910. Field and Pool or Exploratory Area
BASIN MANCOS11. 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☐ Subsequent Report☐ Final Abandonment Notice☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Fracture Treat☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other Name Change,

BHL Change &

New Dill Plan

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 recompleat 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 recompleat 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.)

DJR Operating LLC. has an approved APD for the proposed well, Lybrook A03-2208 01H (API 30-045-35669) which will now be part of the BETONNIE TSOSIE WASH UNIT. DJR Operating is submitting this sundry to change the well name from Lybrook A03-2208 01H to the Betonnie Tsosie Wash Unit 720H (API #30-045-35669).

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

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

Steven Merrell

Title Regulatory Specialist

Signature

Date 08/06/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Office

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.

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) 748-1253 Fax: (575) 748-0720

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30045-35269	*Pool Code 98175	*Pool Name BETONNIE TSOSIE WASH UNIT; MANCOS OIL POOL
*Property Code 325179	*Property Name BETONNIE TSOSIE WASH UNIT	*Well Number 720H
*GRID No. 371838	*Operator Name DJR OPERATING, LLC	*Elevation 6880.0'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	3	22N	8W	1	1308'	NORTH	17'	EAST	SAN JUAN

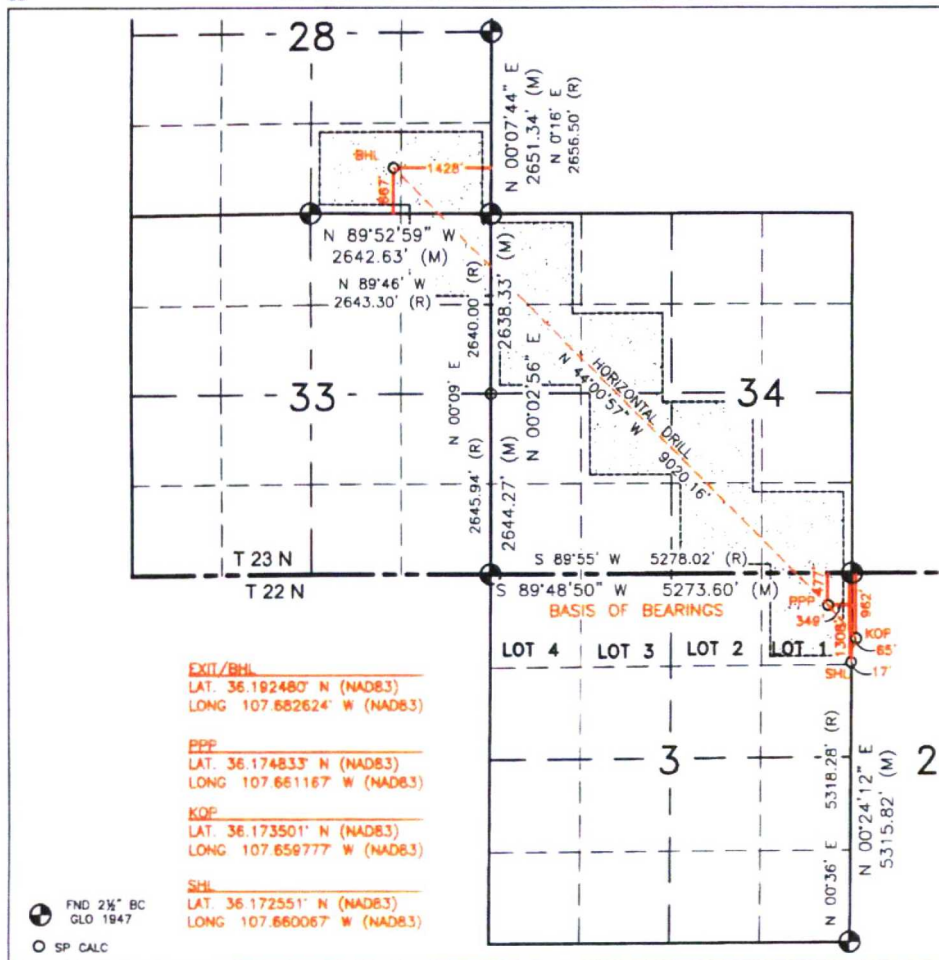
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	28	23N	8W		667'	SOUTH	1428'	EAST	SAN JUAN

¹² Dedicated Acres PENETRATED SPACING UNIT; SEC 3: LOT 1 (40.53 AC.); SEC 34: SE/SE, SW/SE, NW/SE, NE/SW, SE/NW, SW/NW & NW/NW (280 AC.); SEC 33: NE/NE, NE/W (40 AC.); SEC. 28: SW/SE & SE/SE (80 AC.) = 440.53 ACRES	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13930, R-13930A
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Steven Merrell 8/6/19
Signature Date
Steven Merrell
Printed Name
Smerrell@djrlc.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.
MAY 13, 2014

Date of Survey
Signature and Seal of Professional Surveyor:



11393

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State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

DJR OPERATING, LLC
BETONNIE TSOSIE WASH UNIT #720H

PENETRATED SPACING UNIT;

SEC 3: LOT 1 (40.53 AC.); SEC 34: SE/SE, SW/SE,
NW/SE, NE/SW, SE/NW, SW/NW & NW/NW (280
AC.); SEC 33: NE/NE, NE/4 (40 AC.); SEC. 28:
SW/SE & SE/SE (80 AC.) = 440.53 ACRES
13,137.00 ACRES - ALL SEC 18, T23N, R7W;
ALL 11, 13, 14, 21-23, 26-28, 33-35, T23N, R8W; ALL 3-5, 7, 8, 10,
6 (E/2 & SW/4), 9 (E/2 & NW/4), T22N R8W - UNDIVIDED UNIT

SE CORNER SEC 3

LAT. 36.161541° N (NAD83)
LONG. 107.660129° W (NAD83)

NE CORNER SEC 3

LAT. 36.176144° N (NAD83)
LONG. 107.659970° W (NAD83)

NW CORNER SEC 3

LAT. 36.176121° N (NAD83)
LONG. 107.677838° W (NAD83)

NE CORNER SEC 33

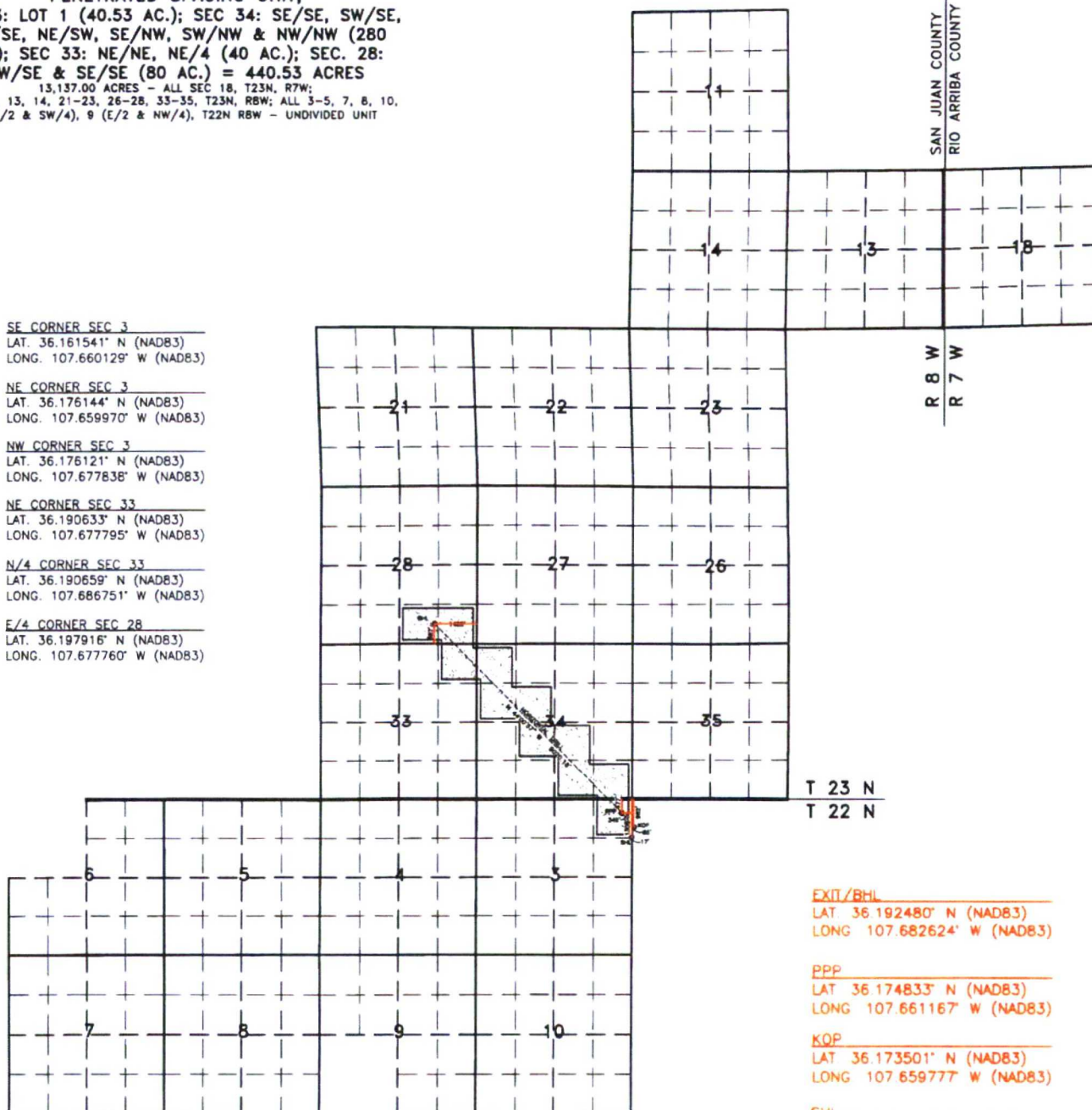
LAT. 36.190633° N (NAD83)
LONG. 107.677795° W (NAD83)

N/4 CORNER SEC 33

LAT. 36.190659° N (NAD83)
LONG. 107.686751° W (NAD83)

E/4 CORNER SEC 28

LAT. 36.197916° N (NAD83)
LONG. 107.677760° W (NAD83)



T 23 N
T 22 N

EXIT/BHL

LAT. 36.192480° N (NAD83)
LONG. 107.682624° W (NAD83)

PPP

LAT. 36.174833° N (NAD83)
LONG. 107.661167° W (NAD83)

KOP

LAT. 36.173501° N (NAD83)
LONG. 107.659777° W (NAD83)

SHL

LAT. 36.172551° N (NAD83)
LONG. 107.660067° W (NAD83)

DRILLING PLAN **Betonne Tsosie Wash Unit 720H** **San Juan County, New Mexico**

Surface Location
 17-ft FEL & 1308-ft FNL
 Sec 3 T22N R08W
 Graded Elevation 6880' MSL
 RKB Elevation 6905' (25' KB)

SHL Geographical Coordinates (NAD-83)
 Latitude 36.1725510° N
 Longitude 107.6600670° W

Kick Off Point for Horizontal Build Curve
 4288-ft MD
 4272-ft TVD

Local Coordinates (from SHL)
 346-ft North
 85-ft East

First Take Point (Heel target)
 5254-ft MD
 349-ft FEL & 477-ft FNL
 Sec 3 T22N R08W

FTP Geographical Coordinates (NAD-83)
 Latitude 36.174833° N
 Longitude 107.66116700° W

Last Take Point (Toe target & BHL)
 14274-ft MD
 1428-ft FEL & 667-ft FSL
 Sec 28 T23N R08W

LTP Geographical Coordinates (NAD-83)
 Latitude 36.1924804° N
 Longitude 107.6826244° W

Well objectives

This well is planned as a 9020-ft lateral in the Gallup CR2 sand.

Bottom Hole temperature and pressure

The temperature in the Gallup CR2 horizontal objective is 136.0°F. Bottom hole pressure in the Gallup CR2 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	461	461	Sd	W	8.3	8.4 - 8.8
Kirtland	701	700	Sh	-	8.3	8.4 - 8.8
Fruitland	986	984	C	G	8.3	9.0 - 9.5
Picture Cliffs	1238	1235	Sd	W	8.3	9.0 - 9.5
Lewis	1389	1385	Sh	-		9.0 - 9.5
Chacra	1985	1979	Sd	-	8.3	9.0 - 9.5
Menefee	2693	2683	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	3619	3605	Sd	-	8.3	9.0 - 9.5
Mancos	3798	3784	Sh	-		9.0 - 9.5
Mancos Silt	4081	4065	Slt	O/G	6.6	9.0 - 9.5
Gallup A	4591	4558	Slt	O/G	6.6	9.0 - 9.5
Gallup B	4653	4610	Sd	O/G	6.6	8.8 - 9.0
Gallup C	4813	4727	Sd	O/G	6.6	8.8 - 9.0
Target	5254	4875	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	5244	surf	4875	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5044	14274	4840	4919	5044

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 EMWV 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; FI=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, FI, SA, L, THX
Planned top	Surface	3298-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	1.90	1.31
Mix water (gal/sx)	10.03	5.81
Volume (sx)	423	387
Volume (bbls)	145	90

4-1/2" Production Liner	Lead
Halliburton Name	EXTENDACEM
Type	Poz/G
Additives	B, De, Di, Fl, Re, V
Planned top	5044-ft
Density (ppg)	13.3
Yield (cf/sx)	1.36
Mix water (gal/sx)	6.01
Volume (sx)	941
Volume (bbls)	228

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 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 – 5244	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5244 – 14274	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

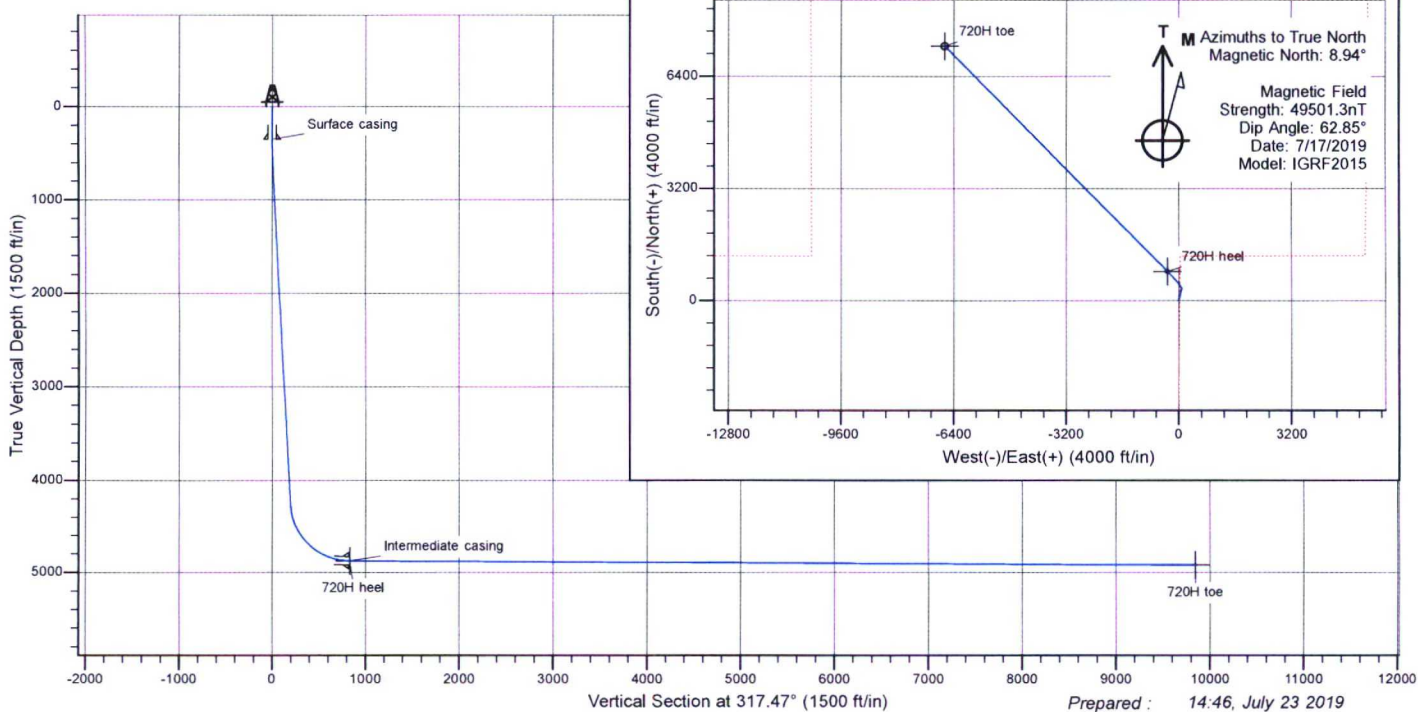
It is envisioned that this well will be completed with a multi-stage sand frac, using the plug and perf technique. After drilling out the plugs, the current plan is to install a 2-7/8" plunger-assisted gas lift tubing string. The stimulation and completion plan will be sundried at a later date.



Pad name : A03 2308 Pad
Well name : Betonnie Tsosie Wash Unit #720H

SHL Latitude : 36.17255100
 SHL Longitude : -107.66006700

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



DJR Operating

Betonnies Tsosie Unit

A03 2308 Pad

720H

Original drilling

Plan: APD

Standard Planning Report

23 July, 2019

Planning Report

Database: EDM
Company: DJR Operating
Project: Bettonnie Tsose Unit
Site: A03 2308 Pad
Well: # 720H
Wellbore: Original drilling
Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	Bettonnie Tsose 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	A03 2308 Pad		
Site Position:		Northing:	1,882,121 usft
From:	Lat/Long	Easting:	2,774,230 usft
Position Uncertainty:	0 ft	Slot Radius:	13.200 in
		Latitude:	36.17246800
		Longitude:	-107.66006600
		Grid Convergence:	0.10 °

Well	# 720H		
Well Position	+N/-S	30 ft	Northing:
	+E/-W	0 ft	Easting:
Position Uncertainty	0 ft	Wellhead Elevation:	
		Latitude:	36.17255100
		Longitude:	-107.66006700
		Ground Level:	6880 ft

Wellbore	Original drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/17/2019	8.94	62.85	49,501.28378563

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	317.47	

Plan Survey Tool Program		Date 7/23/2019			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0	14,274	APD (Original drilling)	MWD+IGRF	
				OWSG MWD + IGRF or W	

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	
375	0.00	0.00	375	0	0	0.00	0.00	0.00	0.00	
590	5.38	13.83	590	10	2	2.50	2.50	0.00	13.83	
4288	5.38	13.83	4272	346	85	0.00	0.00	0.00	0.00	
5254	89.72	315.42	4875	831	-325	9.00	8.73	-6.05	-58.54	720H heel
14,274	89.72	315.42	4919	7255	-6656	0.00	0.00	0.00	0.00	720H toe

Planning Report

Database: EDM
Company: DJR Operating
Project: Bettonnie Tsoie Unit
Site: A03 2308 Pad
Well: # 720H
Wellbore: Original drilling
Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature

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									
375	0.00	0.00	375	0	0	0	0.00	0.00	0.00
400	0.62	13.83	400	0	0	0	2.50	2.50	0.00
500	3.12	13.83	500	3	1	2	2.50	2.50	0.00
562	4.68	13.83	562	7	2	4	2.50	2.50	0.00
Ojo Alamo									
590	5.38	13.83	590	10	2	6	2.50	2.50	0.00
600	5.38	13.83	600	11	3	6	0.00	0.00	0.00
700	5.38	13.83	699	20	5	11	0.00	0.00	0.00
701	5.38	13.83	700	20	5	11	0.00	0.00	0.00
Kirtland									
800	5.38	13.83	799	29	7	16	0.00	0.00	0.00
900	5.38	13.83	898	38	9	22	0.00	0.00	0.00
986	5.38	13.83	984	46	11	26	0.00	0.00	0.00
Fruitland									
1000	5.38	13.83	998	47	12	27	0.00	0.00	0.00
1100	5.38	13.83	1097	56	14	32	0.00	0.00	0.00
1200	5.38	13.83	1197	65	16	37	0.00	0.00	0.00
1238	5.38	13.83	1235	69	17	39	0.00	0.00	0.00
Picture Cliffs									
1300	5.38	13.83	1297	74	18	42	0.00	0.00	0.00
1389	5.38	13.83	1385	82	20	47	0.00	0.00	0.00
Lewis									
1400	5.38	13.83	1396	83	21	48	0.00	0.00	0.00
1500	5.38	13.83	1496	93	23	53	0.00	0.00	0.00
1600	5.38	13.83	1595	102	25	58	0.00	0.00	0.00
1700	5.38	13.83	1695	111	27	63	0.00	0.00	0.00
1800	5.38	13.83	1794	120	29	68	0.00	0.00	0.00
1900	5.38	13.83	1894	129	32	74	0.00	0.00	0.00
1985	5.38	13.83	1979	137	34	78	0.00	0.00	0.00
Chacra									
2000	5.38	13.83	1993	138	34	79	0.00	0.00	0.00
2100	5.38	13.83	2093	147	36	84	0.00	0.00	0.00
2200	5.38	13.83	2193	156	38	89	0.00	0.00	0.00
2300	5.38	13.83	2292	165	41	94	0.00	0.00	0.00
2400	5.38	13.83	2392	174	43	100	0.00	0.00	0.00
2500	5.38	13.83	2491	184	45	105	0.00	0.00	0.00
2600	5.38	13.83	2591	193	47	110	0.00	0.00	0.00
2693	5.38	13.83	2683	201	49	115	0.00	0.00	0.00
Menefee									
2700	5.38	13.83	2690	202	50	115	0.00	0.00	0.00
2800	5.38	13.83	2790	211	52	120	0.00	0.00	0.00
2900	5.38	13.83	2890	220	54	125	0.00	0.00	0.00
3000	5.38	13.83	2989	229	56	131	0.00	0.00	0.00
3100	5.38	13.83	3089	238	59	136	0.00	0.00	0.00
3200	5.38	13.83	3188	247	61	141	0.00	0.00	0.00
3300	5.38	13.83	3288	256	63	146	0.00	0.00	0.00
3400	5.38	13.83	3387	265	65	151	0.00	0.00	0.00

Planning Report

Database: EDM
Company: DJR Operating
Project: Betonnies Tsoie Unit
Site: A03 2308 Pad
Well: # 720H
Wellbore: Original drilling
Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	5.38	13.83	3487	275	68	157	0.00	0.00	0.00
3600	5.38	13.83	3586	284	70	162	0.00	0.00	0.00
3619	5.38	13.83	3605	285	70	163	0.00	0.00	0.00
Point Lookout									
3700	5.38	13.83	3686	293	72	167	0.00	0.00	0.00
3798	5.38	13.83	3784	302	74	172	0.00	0.00	0.00
Mancos									
3800	5.38	13.83	3786	302	74	172	0.00	0.00	0.00
3900	5.38	13.83	3885	311	77	177	0.00	0.00	0.00
4000	5.38	13.83	3985	320	79	183	0.00	0.00	0.00
4081	5.38	13.83	4065	327	81	187	0.00	0.00	0.00
Mancos Silt									
4100	5.38	13.83	4084	329	81	188	0.00	0.00	0.00
4200	5.38	13.83	4184	338	83	193	0.00	0.00	0.00
4288	5.38	13.83	4272	346	85	198	0.00	0.00	0.00
4300	6.00	5.08	4283	347	85	198	9.00	5.28	-73.69
4350	9.54	343.88	4333	354	84	204	9.00	7.08	-42.40
4400	13.66	334.66	4382	363	81	213	9.00	8.23	-18.43
4450	17.96	329.72	4430	375	74	226	9.00	8.60	-9.88
4500	22.33	326.65	4477	390	65	243	9.00	8.75	-6.14
4550	26.75	324.55	4522	407	54	264	9.00	8.83	-4.20
4591	30.35	323.27	4558	423	42	283	9.00	8.87	-3.16
Gallup A									
4600	31.18	323.01	4566	427	39	288	9.00	8.89	-2.75
4650	35.64	321.82	4608	448	22	315	9.00	8.90	-2.38
4653	35.87	321.76	4610	450	21	317	9.00	8.92	-2.11
Gallup B									
4700	40.10	320.86	4647	472	3	346	9.00	8.92	-1.90
4750	44.57	320.07	4684	498	-18	379	9.00	8.94	-1.59
4800	49.04	319.39	4718	526	-42	416	9.00	8.95	-1.36
4813	50.22	319.23	4727	534	-48	426	9.00	8.95	-1.24
Gallup C									
4850	53.52	318.80	4750	555	-67	455	9.00	8.95	-1.16
4900	57.99	318.27	4778	586	-95	496	9.00	8.96	-1.05
4950	62.48	317.79	4803	619	-124	540	9.00	8.96	-0.96
5000	66.96	317.35	4824	652	-154	585	9.00	8.96	-0.88
5050	71.44	316.94	4842	686	-186	631	9.00	8.97	-0.82
5100	75.93	316.55	4856	721	-219	679	9.00	8.97	-0.78
5150	80.41	316.17	4866	757	-253	728	9.00	8.97	-0.75
5200	84.90	315.81	4872	792	-287	778	9.00	8.97	-0.73
5244	88.84	315.49	4875	824	-318	822	9.00	8.97	-0.72
Intermediate casing									
5254	89.72	315.42	4875	831	-325	832	9.00	8.97	-0.72
Target									
5300	89.72	315.42	4875	864	-357	878	0.00	0.00	0.00
5400	89.72	315.42	4876	935	-427	978	0.00	0.00	0.00
5500	89.72	315.42	4876	1006	-497	1078	0.00	0.00	0.00
5600	89.72	315.42	4877	1077	-568	1178	0.00	0.00	0.00
5700	89.72	315.42	4877	1149	-638	1278	0.00	0.00	0.00
5800	89.72	315.42	4878	1220	-708	1377	0.00	0.00	0.00
5900	89.72	315.42	4878	1291	-778	1477	0.00	0.00	0.00
6000	89.72	315.42	4879	1362	-848	1577	0.00	0.00	0.00
6100	89.72	315.42	4879	1433	-919	1677	0.00	0.00	0.00

Planning Report

Database: EDM
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Project: Bettonie Tsosie Unit
Site: A03 2308 Pad
Well: # 720H
Wellbore: Original drilling
Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
6200	89.72	315.42	4880	1505	-989	1777	0.00	0.00	0.00
6300	89.72	315.42	4880	1576	-1059	1877	0.00	0.00	0.00
6400	89.72	315.42	4881	1647	-1129	1977	0.00	0.00	0.00
6500	89.72	315.42	4881	1718	-1199	2077	0.00	0.00	0.00
6600	89.72	315.42	4882	1790	-1270	2177	0.00	0.00	0.00
6700	89.72	315.42	4882	1861	-1340	2277	0.00	0.00	0.00
6800	89.72	315.42	4883	1932	-1410	2377	0.00	0.00	0.00
6900	89.72	315.42	4883	2003	-1480	2477	0.00	0.00	0.00
7000	89.72	315.42	4884	2074	-1550	2577	0.00	0.00	0.00
7100	89.72	315.42	4884	2146	-1621	2677	0.00	0.00	0.00
7200	89.72	315.42	4884	2217	-1691	2777	0.00	0.00	0.00
7300	89.72	315.42	4885	2288	-1761	2876	0.00	0.00	0.00
7400	89.72	315.42	4885	2359	-1831	2976	0.00	0.00	0.00
7500	89.72	315.42	4886	2431	-1901	3076	0.00	0.00	0.00
7600	89.72	315.42	4886	2502	-1971	3176	0.00	0.00	0.00
7700	89.72	315.42	4887	2573	-2042	3276	0.00	0.00	0.00
7800	89.72	315.42	4887	2644	-2112	3376	0.00	0.00	0.00
7900	89.72	315.42	4888	2715	-2182	3476	0.00	0.00	0.00
8000	89.72	315.42	4888	2787	-2252	3576	0.00	0.00	0.00
8100	89.72	315.42	4889	2858	-2322	3676	0.00	0.00	0.00
8200	89.72	315.42	4889	2929	-2393	3776	0.00	0.00	0.00
8300	89.72	315.42	4890	3000	-2463	3876	0.00	0.00	0.00
8400	89.72	315.42	4890	3072	-2533	3976	0.00	0.00	0.00
8500	89.72	315.42	4891	3143	-2603	4076	0.00	0.00	0.00
8600	89.72	315.42	4891	3214	-2673	4176	0.00	0.00	0.00
8700	89.72	315.42	4892	3285	-2744	4276	0.00	0.00	0.00
8800	89.72	315.42	4892	3357	-2814	4376	0.00	0.00	0.00
8900	89.72	315.42	4893	3428	-2884	4475	0.00	0.00	0.00
9000	89.72	315.42	4893	3499	-2954	4575	0.00	0.00	0.00
9100	89.72	315.42	4894	3570	-3024	4675	0.00	0.00	0.00
9200	89.72	315.42	4894	3641	-3094	4775	0.00	0.00	0.00
9300	89.72	315.42	4895	3713	-3165	4875	0.00	0.00	0.00
9400	89.72	315.42	4895	3784	-3235	4975	0.00	0.00	0.00
9500	89.72	315.42	4896	3855	-3305	5075	0.00	0.00	0.00
9600	89.72	315.42	4896	3926	-3375	5175	0.00	0.00	0.00
9700	89.72	315.42	4897	3998	-3445	5275	0.00	0.00	0.00
9800	89.72	315.42	4897	4069	-3516	5375	0.00	0.00	0.00
9900	89.72	315.42	4898	4140	-3586	5475	0.00	0.00	0.00
10,000	89.72	315.42	4898	4211	-3656	5575	0.00	0.00	0.00
10,100	89.72	315.42	4899	4282	-3726	5675	0.00	0.00	0.00
10,200	89.72	315.42	4899	4354	-3796	5775	0.00	0.00	0.00
10,300	89.72	315.42	4900	4425	-3867	5875	0.00	0.00	0.00
10,400	89.72	315.42	4900	4496	-3937	5974	0.00	0.00	0.00
10,500	89.72	315.42	4901	4567	-4007	6074	0.00	0.00	0.00
10,600	89.72	315.42	4901	4639	-4077	6174	0.00	0.00	0.00
10,700	89.72	315.42	4902	4710	-4147	6274	0.00	0.00	0.00
10,800	89.72	315.42	4902	4781	-4218	6374	0.00	0.00	0.00
10,900	89.72	315.42	4903	4852	-4288	6474	0.00	0.00	0.00
11,000	89.72	315.42	4903	4923	-4358	6574	0.00	0.00	0.00
11,100	89.72	315.42	4904	4995	-4428	6674	0.00	0.00	0.00
11,200	89.72	315.42	4904	5066	-4498	6774	0.00	0.00	0.00
11,300	89.72	315.42	4904	5137	-4568	6874	0.00	0.00	0.00
11,400	89.72	315.42	4905	5208	-4639	6974	0.00	0.00	0.00
11,500	89.72	315.42	4905	5280	-4709	7074	0.00	0.00	0.00

Planning Report

Database: EDM
Company: DJR Operating
Project: Betonnie Tsosie Unit
Site: A03 2308 Pad
Well: # 720H
Wellbore: Original drilling
Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
11,600	89.72	315.42	4906	5351	-4779	7174	0.00	0.00	0.00
11,700	89.72	315.42	4906	5422	-4849	7274	0.00	0.00	0.00
11,800	89.72	315.42	4907	5493	-4919	7374	0.00	0.00	0.00
11,900	89.72	315.42	4907	5565	-4990	7473	0.00	0.00	0.00
12,000	89.72	315.42	4908	5636	-5060	7573	0.00	0.00	0.00
12,100	89.72	315.42	4908	5707	-5130	7673	0.00	0.00	0.00
12,200	89.72	315.42	4909	5778	-5200	7773	0.00	0.00	0.00
12,300	89.72	315.42	4909	5849	-5270	7873	0.00	0.00	0.00
12,400	89.72	315.42	4910	5921	-5341	7973	0.00	0.00	0.00
12,500	89.72	315.42	4910	5992	-5411	8073	0.00	0.00	0.00
12,600	89.72	315.42	4911	6063	-5481	8173	0.00	0.00	0.00
12,700	89.72	315.42	4911	6134	-5551	8273	0.00	0.00	0.00
12,800	89.72	315.42	4912	6206	-5621	8373	0.00	0.00	0.00
12,900	89.72	315.42	4912	6277	-5692	8473	0.00	0.00	0.00
13,000	89.72	315.42	4913	6348	-5762	8573	0.00	0.00	0.00
13,100	89.72	315.42	4913	6419	-5832	8673	0.00	0.00	0.00
13,200	89.72	315.42	4914	6490	-5902	8773	0.00	0.00	0.00
13,300	89.72	315.42	4914	6562	-5972	8873	0.00	0.00	0.00
13,400	89.72	315.42	4915	6633	-6042	8973	0.00	0.00	0.00
13,500	89.72	315.42	4915	6704	-6113	9072	0.00	0.00	0.00
13,600	89.72	315.42	4916	6775	-6183	9172	0.00	0.00	0.00
13,700	89.72	315.42	4916	6847	-6253	9272	0.00	0.00	0.00
13,800	89.72	315.42	4917	6918	-6323	9372	0.00	0.00	0.00
13,900	89.72	315.42	4917	6989	-6393	9472	0.00	0.00	0.00
14,000	89.72	315.42	4918	7060	-6464	9572	0.00	0.00	0.00
14,100	89.72	315.42	4918	7132	-6534	9672	0.00	0.00	0.00
14,200	89.72	315.42	4919	7203	-6604	9772	0.00	0.00	0.00
14,274	89.72	315.42	4919	7255	-6656	9846	0.00	0.00	0.00

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
720H heel - plan hits target center - Circle (radius 50)	0.00	0.00	4875	831	-325	1,882,981	2,773,904	36.17483300	-107.66116700
720H toe - plan hits target center - Circle (radius 100)	0.00	0.00	4919	7255	-6656	1,889,395	2,767,561	36.19248040	-107.68262440

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
350	350	Surface casing	9.625	12.250
5244	4875	Intermediate casing	7.000	8.750

Planning Report

Database: EDM
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Site: A03 2308 Pad
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Local Co-ordinate Reference: Well # 720H
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MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
562	562	Ojo Alamo		0.00	
701	700	Kirtland		0.00	
986	984	Fruitland		0.00	
1238	1235	Picture Cliffs		0.00	
1389	1385	Lewis		0.00	
1985	1979	Chacra		0.00	
2693	2683	Menefee		0.00	
3619	3605	Point Lookout		0.00	
3798	3784	Mancos		0.00	
4081	4065	Mancos Silt		0.00	
4591	4558	Gallup A		0.00	
4653	4610	Gallup B		0.00	
4813	4727	Gallup C		0.00	
5254	4875	Target		0.00	

DJR Operating

Betonne Tsoie Unit

A03 2308 Pad

720H

Original drilling

APD

Anticollision Report

23 July, 2019

Anticollision Report

Company: DJR Operating
Project: Bettonnie Tsoie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 720H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM
Offset TVD Reference: Offset Datum

Reference APD

Filter type: NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method: Stations
Depth Range: Unlimited
Results Limited by: Maximum center-center distance of 10,000 ft
Warning Levels Evaluated at: 2.00 Sigma

Error Model: ISCWSA
Scan Method: Closest Approach 3D
Error Surface: Pedal Curve
Casing Method: Not applied

Survey Tool Program Date 7/23/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0	14,274	APD (Original drilling)	MWD+IGRF	OWSG MWD + IGRF or WMM

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A03 2308 Pad						
# 717H - Original drilling - APD rev 2	375	375	30	28	13.486 CC	
# 717H - Original drilling - APD rev 2	400	400	30	28	12.542 ES	
# 717H - Original drilling - APD rev 2	14,200	14,593	1285	801	2.656 SF	

Offset Design A03 2308 Pad - # 717H - Original drilling - APD rev 2

Survey Program: 0-MWD+IGRF													Offset Site Error:	0 ft
Reference													Offset Well Error:	0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		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	179.44	-30	0	30					
100	100	100	100	0	0	179.44	-30	0	30	30	0.27	112.385		
200	200	200	200	0	0	179.44	-30	0	30	29	0.99	30.650		
300	300	300	300	1	1	179.44	-30	0	30	29	1.70	17.745		
375	375	375	375	1	1	179.44	-30	0	30	28	2.24	13.486 CC		
400	400	400	400	1	1	165.68	-30	0	30	28	2.42	12.542 ES		
500	500	499	499	2	2	167.47	-31	0	34	31	3.13	10.859		
590	590	587	587	2	2	171.59	-34	-2	44	40	3.76	11.644		
600	600	597	597	2	2	172.08	-34	-2	45	41	3.84	11.801		
700	699	693	693	2	2	176.41	-41	-6	62	58	4.52	13.805		
800	799	788	787	3	3	179.69	-52	-12	84	79	5.20	16.100		
900	898	881	879	3	3	-177.83	-65	-20	109	103	5.86	18.592		
1000	998	974	969	3	3	-175.94	-81	-30	138	131	6.53	21.142		
1100	1097	1069	1062	4	4	-174.60	-99	-40	168	161	7.22	23.242		
1200	1197	1164	1156	4	4	-173.66	-116	-50	198	190	7.91	24.995		
1300	1297	1260	1249	5	5	-172.97	-134	-60	228	219	8.62	26.420		
1400	1396	1355	1342	5	5	-172.44	-151	-71	258	248	9.32	27.635		
1500	1496	1451	1435	5	6	-172.02	-169	-81	288	278	10.03	28.674		
1600	1595	1546	1528	6	6	-171.68	-186	-91	318	307	10.74	29.572		
1700	1695	1641	1622	6	7	-171.40	-204	-101	348	336	11.45	30.355		
1800	1794	1737	1715	7	7	-171.16	-221	-111	378	366	12.17	31.043		
1900	1894	1832	1808	7	8	-170.96	-239	-122	408	395	12.88	31.652		
2000	1993	1928	1901	7	8	-170.79	-256	-132	438	424	13.60	32.196		
2100	2093	2023	1994	8	9	-170.64	-274	-142	468	453	14.31	32.683		

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

Anticollision Report

Company: DJR Operating
Project: Betonnie Tsosie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 720H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM
Offset TVD Reference: Offset Datum

Offset Design A03 2308 Pad - # 717H - Original drilling - APD rev 2													Offset Site Error:	0 ft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2200	2193	2118	2088	8	9	-170.50	-291	-152	498	483	15.03	33.123		
2300	2292	2214	2181	9	10	-170.38	-309	-163	528	512	15.75	33.521		
2400	2392	2309	2274	9	10	-170.28	-326	-173	558	541	16.46	33.883		
2500	2491	2404	2367	9	11	-170.18	-344	-183	588	571	17.18	34.215		
2600	2591	2500	2460	10	11	-170.10	-361	-193	618	600	17.90	34.519		
2700	2690	2595	2554	10	12	-170.02	-379	-204	648	629	18.62	34.799		
2800	2790	2691	2647	11	12	-169.95	-396	-214	678	659	19.34	35.057		
2900	2890	2786	2740	11	13	-169.89	-414	-224	708	688	20.06	35.296		
3000	2989	2881	2833	11	13	-169.83	-431	-234	738	717	20.78	35.519		
3100	3089	2977	2926	12	14	-169.77	-449	-244	768	747	21.50	35.726		
3200	3188	3072	3020	12	14	-169.72	-466	-255	798	776	22.22	35.919		
3300	3288	3167	3113	13	15	-169.67	-484	-265	828	805	22.94	36.100		
3400	3387	3263	3206	13	15	-169.63	-501	-275	858	835	23.66	36.269		
3500	3487	3358	3299	13	16	-169.59	-519	-285	888	864	24.38	36.428		
3600	3586	3454	3392	14	16	-169.55	-536	-296	918	893	25.11	36.578		
3700	3686	3549	3486	14	17	-169.52	-554	-306	948	923	25.83	36.719		
3800	3786	3644	3579	15	18	-169.48	-571	-316	978	952	26.55	36.852		
3900	3885	3740	3672	15	18	-169.45	-589	-326	1008	981	27.27	36.978		
4000	3985	3835	3765	15	19	-169.42	-606	-336	1038	1010	27.99	37.097		
4100	4084	3930	3859	16	19	-169.39	-624	-347	1068	1040	28.72	37.210		
4200	4184	4026	3952	16	20	-169.37	-641	-357	1099	1069	29.44	37.317		
4288	4272	4110	4034	16	20	-169.34	-657	-366	1125	1095	30.08	37.407		
4300	4283	4121	4045	16	20	-160.32	-659	-367	1129	1098	30.16	37.419		
4350	4333	4169	4091	17	20	-138.01	-667	-372	1145	1114	30.53	37.493		
4400	4382	4215	4137	17	21	-127.73	-676	-377	1162	1131	30.90	37.600		
4450	4430	4261	4181	17	21	-121.76	-684	-382	1180	1149	31.27	37.739		
4500	4477	4384	4302	17	21	-118.52	-700	-402	1199	1166	32.19	37.240		
4550	4522	4549	4457	18	22	-115.80	-694	-454	1214	1181	33.16	36.610		
4600	4566	4688	4577	18	23	-112.85	-665	-518	1226	1192	33.91	36.139		
4650	4608	4886	4718	18	23	-108.94	-590	-634	1233	1199	34.95	35.287		
4700	4647	5034	4793	19	24	-105.05	-511	-735	1238	1202	36.21	34.188		
4750	4684	5138	4827	19	24	-101.88	-447	-808	1240	1203	37.57	33.010		
4800	4718	5268	4848	19	25	-97.92	-359	-902	1241	1201	39.47	31.432		
4840	4744	5320	4849	20	26	-96.14	-322	-939	1241	1200	40.64	30.525		
4850	4750	5329	4849	20	26	-95.84	-316	-944	1241	1200	40.90	30.333		
4900	4778	5370	4849	20	26	-94.43	-287	-974	1241	1199	42.14	29.452		
4950	4803	5413	4849	21	27	-93.11	-256	-1004	1242	1199	43.43	28.598		
5000	4824	5459	4850	21	27	-91.93	-224	-1036	1243	1199	44.65	27.847		
5050	4842	5505	4850	22	28	-90.90	-191	-1069	1245	1198	46.29	26.889		
5100	4856	5553	4850	23	29	-90.07	-157	-1103	1246	1198	47.85	26.039		
5150	4866	5602	4850	23	29	-89.44	-122	-1137	1247	1198	49.54	25.174		
5200	4872	5652	4850	24	30	-89.04	-87	-1172	1248	1197	51.26	24.344		
5254	4875	5706	4851	25	31	-88.88	-49	-1210	1248	1195	53.19	23.470		
5300	4875	5752	4851	26	32	-88.88	-16	-1243	1248	1194	54.88	22.748		
5400	4876	5852	4851	28	34	-88.88	55	-1313	1249	1190	58.70	21.275		
5500	4876	5952	4852	30	36	-88.87	126	-1384	1249	1187	62.68	19.930		
5600	4877	6052	4852	31	38	-88.87	197	-1454	1250	1183	66.80	18.707		
5700	4877	6152	4852	34	40	-88.87	268	-1525	1250	1179	71.03	17.599		
5800	4878	6252	4853	36	42	-88.87	339	-1595	1250	1175	75.35	16.596		
5900	4878	6352	4853	38	44	-88.86	410	-1666	1251	1171	79.74	15.685		
6000	4879	6452	4854	40	46	-88.86	481	-1736	1251	1167	84.21	14.859		
6100	4879	6552	4854	42	48	-88.86	552	-1807	1252	1163	88.72	14.107		

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

Anticollision Report

Company: DJR Operating
Project: Betonnie Tsosie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 720H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM
Offset TVD Reference: Offset Datum

Offset Design A03 2308 Pad - # 717H - Original drilling - APD rev 2													Offset Site Error:	0 ft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
6200	4880	6652	4855	44	51	-88.85	623	-1877	1252	1159	93.29	13.421		
6300	4880	6752	4855	47	53	-88.85	694	-1947	1252	1154	97.89	12.794		
6400	4881	6852	4855	49	55	-88.85	765	-2018	1253	1150	102.53	12.219		
6500	4881	6952	4856	51	57	-88.85	835	-2088	1253	1146	107.20	11.690		
6600	4882	7052	4856	54	60	-88.84	906	-2159	1254	1142	111.90	11.203		
6700	4882	7152	4857	56	62	-88.84	977	-2229	1254	1137	116.62	10.753		
6800	4883	7252	4857	58	64	-88.84	1048	-2300	1254	1133	121.36	10.336		
6900	4883	7352	4858	61	67	-88.84	1119	-2370	1255	1129	126.12	9.949		
7000	4884	7452	4858	63	69	-88.83	1190	-2441	1255	1124	130.89	9.589		
7100	4884	7552	4858	65	72	-88.83	1261	-2511	1256	1120	135.68	9.254		
7200	4884	7652	4859	68	74	-88.83	1332	-2582	1256	1115	140.48	8.940		
7300	4885	7752	4859	70	76	-88.82	1403	-2652	1256	1111	145.29	8.647		
7400	4885	7852	4860	73	79	-88.82	1474	-2723	1257	1107	150.12	8.371		
7500	4886	7952	4860	75	81	-88.82	1545	-2793	1257	1102	154.95	8.113		
7600	4886	8052	4860	77	84	-88.82	1616	-2864	1258	1098	159.80	7.869		
7700	4887	8152	4861	80	86	-88.81	1687	-2934	1258	1093	164.65	7.640		
7800	4887	8252	4861	82	88	-88.81	1758	-3004	1258	1089	169.50	7.423		
7900	4888	8352	4862	85	91	-88.81	1829	-3075	1259	1084	174.37	7.219		
8000	4888	8452	4862	87	93	-88.81	1900	-3145	1259	1080	179.24	7.025		
8100	4889	8552	4863	89	96	-88.80	1971	-3216	1259	1075	184.11	6.841		
8200	4889	8652	4863	92	98	-88.80	2042	-3286	1260	1071	188.99	6.666		
8300	4890	8752	4863	94	100	-88.80	2113	-3357	1260	1066	193.88	6.500		
8400	4890	8852	4864	97	103	-88.79	2184	-3427	1261	1062	198.77	6.342		
8500	4891	8952	4864	99	105	-88.79	2254	-3498	1261	1057	203.67	6.192		
8600	4891	9052	4865	102	108	-88.79	2325	-3568	1261	1053	208.56	6.048		
8700	4892	9152	4865	104	110	-88.79	2396	-3639	1262	1048	213.47	5.911		
8800	4892	9252	4865	107	113	-88.78	2467	-3709	1262	1044	218.37	5.780		
8900	4893	9352	4866	109	115	-88.78	2538	-3780	1263	1039	223.28	5.655		
9000	4893	9452	4866	111	118	-88.78	2609	-3850	1263	1035	228.19	5.535		
9100	4894	9552	4867	114	120	-88.78	2680	-3921	1263	1030	233.10	5.420		
9200	4894	9652	4867	116	122	-88.77	2751	-3991	1264	1026	238.02	5.310		
9300	4895	9752	4868	119	125	-88.77	2822	-4062	1264	1021	242.94	5.204		
9400	4895	9852	4868	121	127	-88.77	2893	-4132	1265	1017	247.86	5.102		
9500	4896	9952	4868	124	130	-88.76	2964	-4202	1265	1012	252.78	5.004		
9600	4896	10,052	4869	126	132	-88.76	3035	-4273	1265	1008	257.71	4.910		
9700	4897	10,152	4869	129	135	-88.76	3106	-4343	1266	1003	262.63	4.819		
9800	4897	10,252	4870	131	137	-88.76	3177	-4414	1266	999	267.56	4.732		
9900	4898	10,352	4870	134	140	-88.75	3248	-4484	1267	994	272.49	4.648		
10,000	4898	10,452	4871	136	142	-88.75	3319	-4555	1267	990	277.43	4.567		
10,100	4899	10,552	4871	138	145	-88.75	3390	-4625	1267	985	282.36	4.488		
10,200	4899	10,652	4871	141	147	-88.75	3461	-4696	1268	980	287.29	4.413		
10,300	4900	10,752	4872	143	149	-88.74	3532	-4766	1268	976	292.23	4.339		
10,400	4900	10,852	4872	146	152	-88.74	3603	-4837	1269	971	297.17	4.269		
10,500	4901	10,952	4873	148	154	-88.74	3673	-4907	1269	967	302.11	4.200		
10,600	4901	11,052	4873	151	157	-88.74	3744	-4978	1269	962	307.05	4.134		
10,700	4902	11,152	4873	153	159	-88.73	3815	-5048	1270	958	311.99	4.070		
10,800	4902	11,252	4874	156	162	-88.73	3886	-5119	1270	953	316.93	4.007		
10,900	4903	11,352	4874	158	164	-88.73	3957	-5189	1270	949	321.87	3.947		
11,000	4903	11,452	4875	161	167	-88.72	4028	-5259	1271	944	326.82	3.889		
11,100	4904	11,552	4875	163	169	-88.72	4099	-5330	1271	940	331.76	3.832		
11,200	4904	11,652	4876	166	172	-88.72	4170	-5400	1272	935	336.71	3.777		
11,300	4904	11,752	4876	168	174	-88.72	4241	-5471	1272	930	341.65	3.723		

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

Anticollision Report

Company: DJR Operating
Project: Bettonie Tsoie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 720H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM
Offset TVD Reference: Offset Datum

Offset Design A03 2308 Pad - # 717H - Original drilling - APD rev 2												Offset Site Error:	0 ft
Survey Program: 0-MWD+IGRF												Offset Well Error:	0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,400	4905	11,852	4876	171	177	-88.71	4312	-5541	1272	926	346.60	3.671	
11,500	4905	11,952	4877	173	179	-88.71	4383	-5612	1273	921	351.55	3.621	
11,600	4906	12,052	4877	176	182	-88.71	4454	-5682	1273	917	356.50	3.572	
11,700	4906	12,152	4878	178	184	-88.71	4525	-5753	1274	912	361.45	3.524	
11,800	4907	12,252	4878	180	186	-88.70	4596	-5823	1274	908	366.40	3.477	
11,900	4907	12,352	4878	183	189	-88.70	4667	-5894	1274	903	371.35	3.432	
12,000	4908	12,452	4879	185	191	-88.70	4738	-5964	1275	899	376.30	3.388	
12,100	4908	12,552	4879	188	194	-88.70	4809	-6035	1275	894	381.25	3.345	
12,200	4909	12,652	4880	190	196	-88.69	4880	-6105	1276	889	386.20	3.303	
12,300	4909	12,752	4880	193	199	-88.69	4951	-6176	1276	885	391.16	3.262	
12,400	4910	12,852	4881	195	201	-88.69	5022	-6246	1276	880	396.11	3.222	
12,500	4910	12,952	4881	198	204	-88.68	5092	-6316	1277	876	401.06	3.183	
12,600	4911	13,052	4881	200	206	-88.68	5163	-6387	1277	871	406.02	3.146	
12,700	4911	13,152	4882	203	209	-88.68	5234	-6457	1278	867	410.97	3.109	
12,800	4912	13,252	4882	205	211	-88.68	5305	-6528	1278	862	415.93	3.073	
12,900	4912	13,352	4883	208	214	-88.67	5376	-6598	1278	857	420.89	3.037	
13,000	4913	13,452	4883	210	216	-88.67	5447	-6669	1279	853	425.84	3.003	
13,100	4913	13,552	4884	213	219	-88.67	5518	-6739	1279	848	430.80	2.969	
13,200	4914	13,652	4884	215	221	-88.67	5589	-6810	1280	844	435.76	2.936	
13,300	4914	13,752	4884	218	224	-88.66	5660	-6880	1280	839	440.71	2.904	
13,400	4915	13,852	4885	220	226	-88.66	5731	-6951	1280	835	445.67	2.873	
13,500	4915	13,952	4885	223	229	-88.66	5802	-7021	1281	830	450.63	2.842	
13,600	4916	14,052	4886	225	231	-88.66	5873	-7092	1281	826	455.59	2.812	
13,700	4916	14,152	4886	228	234	-88.65	5944	-7162	1281	821	460.55	2.783	
13,800	4917	14,252	4886	230	236	-88.65	6015	-7233	1282	816	465.51	2.754	
13,900	4917	14,352	4887	232	238	-88.65	6086	-7303	1282	812	470.47	2.726	
14,000	4918	14,452	4887	235	241	-88.65	6157	-7374	1283	807	475.43	2.698	
14,100	4918	14,552	4888	237	243	-88.64	6228	-7444	1283	803	480.39	2.671	
14,200	4919	14,593	4888	240	244	-88.64	6257	-7473	1285	801	483.66	2.656 SF	
14,274	4919	14,593	4888	242	244	-88.64	6257	-7473	1291	807	483.79	2.668	

Anticollision Report

Company: DJR Operating
Project: Bettonnie Tsosie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 720H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM
Offset TVD Reference: Offset Datum

Reference Depths are relative to RIG @ 6905ft (AD #1000)

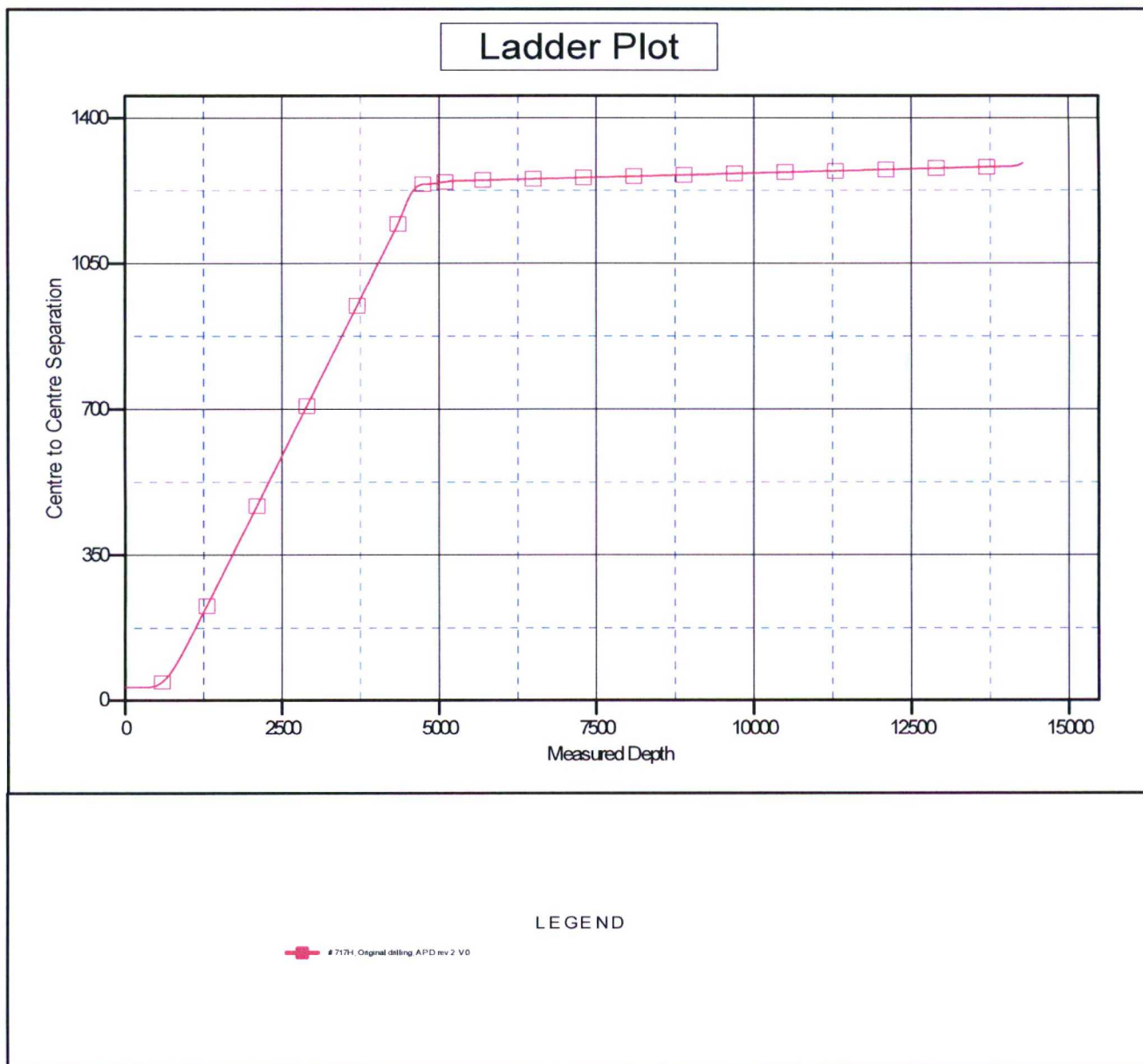
Offset Depths are relative to Offset Datum

Central Meridian is -107.83333333

Coordinates are relative to: # 720H

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

Grid Convergence at Surface is: 0.10°



Anticollision Report

Company: DJR Operating
Project: Bettonnie Tsoie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 720H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD

Local Co-ordinate Reference: Well # 720H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM
Offset TVD Reference: Offset Datum

Reference Depths are relative to RIG @ 6905ft (AD #1000)

Offset Depths are relative to Offset Datum

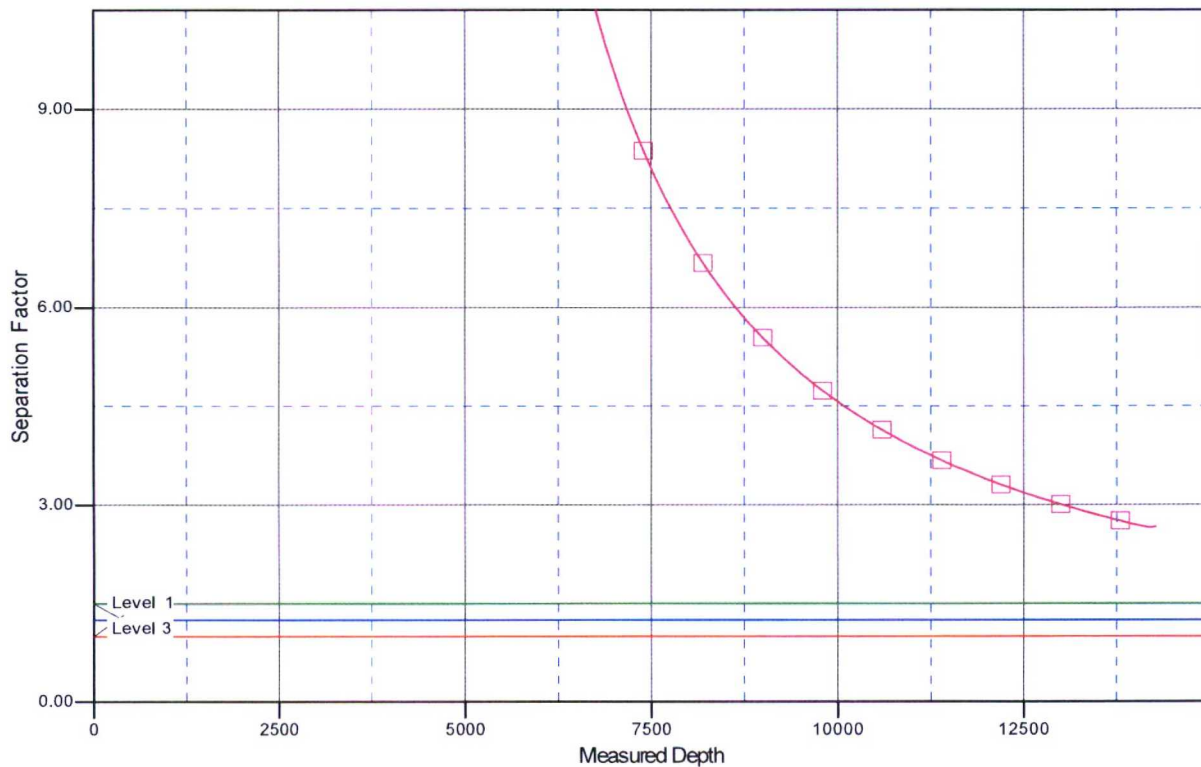
Central Meridian is -107.83333333

Coordinates are relative to: # 720H

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

Grid Convergence at Surface is: 0.10°

Separation Factor Plot



LEGEND

■ # 717H, Original drilling APD rev 2 V0