

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

AUG 06 2019

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.

Farmington Field Office

Bureau of Land Management

5. Lease Serial No.
NMNM 90468

6. Indian, Allottee or Tribe Name
N/A

SUBMIT IN TRIPLICATE – Other instructions on page 2.

1. Type of Well

☒ Oil Well

☐ Gas Well

☐ Other

2. Name of Operator
DJR Operating LLC.

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

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

7. If Unit of CA/Agreement, Name and/or No.
NMNM 135219A

8. Well Name and No.
BETONNIE TSOSIE WASH UNIT #717H

9. API Well No.
30-045-35668

10. Field and Pool or Exploratory Area
BASIN MANCOS

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SHL: 1338' FNL and 17' FEL Section 3, T22N, R8W
BHL: 334' FNL and 2241' FEL Section 33, T23N, R8W

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
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Name Change, BHL Change & New Dill Plan
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ 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 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 02H (API 30-045-35668) 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 02H to the Betonnies Tsosie Wash Unit 717H (API #30-045-35668).

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

**ADHERE TO PREVIOUS NMOCD
CONDITIONS OF APPROVAL**

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

Steven Merrell

Date 08/06/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

ACCEPTED FOR RECORD

Approved by

Title

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

SEP 16 2019

FARMINGTON FIELD OFFICE

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

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-8161 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., Artec, 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

¹ API Number 30-045-35668	² Pool Code 98175	³ Pool Name BETONNIE TSOSIE WASH UNIT; MANCOS OIL POOL
⁴ Property Code 325179	⁵ Property Name BETONNIE TSOSIE WASH UNIT	⁶ Well Number 717H
⁷ OGRID No. 371838	⁸ Operator Name DJR OPERATING, LLC	⁹ 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 H	3	22N	8W	1	1338'	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
B	33	23N	8W		334'	NORTH	2241'	EAST	SAN JUAN

13 Dedicated Acres PENETRATED SPACING UNIT
SEC 3: NE/4 & NE/NW (202.43 AC.); SEC 34:
SW/SE, SW/4, SW/NW (240 AC.); SEC 28:
NE/SE, NE/4 (200 AC.) = 642.43 ACRES

¹³ Joint or Infill

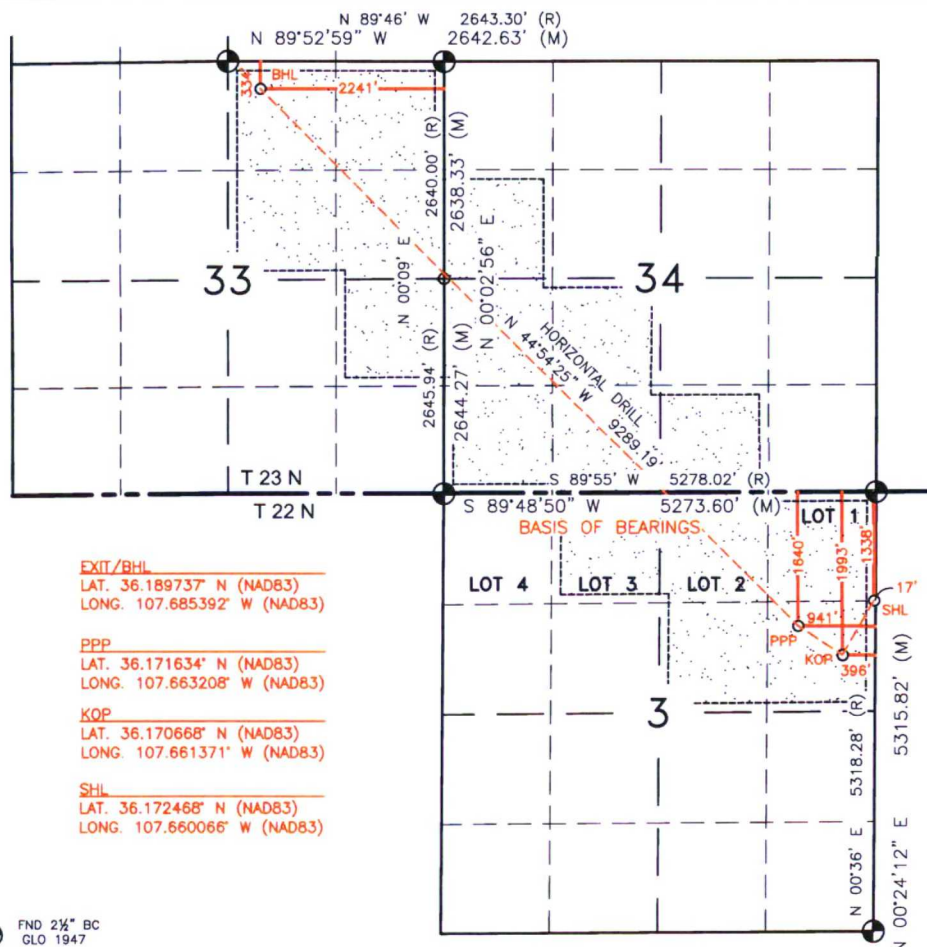
14 Consolidation Code

15 Order No.

R-13930, R-13930A

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.

Signature John D. [Signature] Date 8/6/19

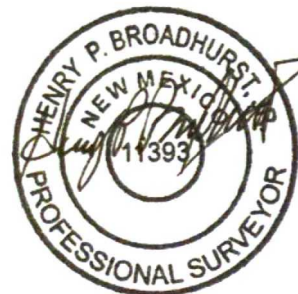
Steven Merrell
Printed Name
Smerrell@djrlc.com
E-mail Address

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

DISTRICT I

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

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State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

OIL CONSERVATION DIVISION

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

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

DJR OPERATING, LLC
BETONNIE TSOSIE WASH UNIT #717H

PENETRATED SPACING UNIT:

SEC 3: NE/4 & NE/NW (202.43 AC.); SEC 34:
SW/SE, SW/4, SW/NW (240 AC.); SEC 28:

NE/SE, NE/4 (200 AC.) = 642.43 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

SF CORNER SEC 3
LAT. 36.161541' N (NAD83)
LONG. 107.660129' W (NAD83)

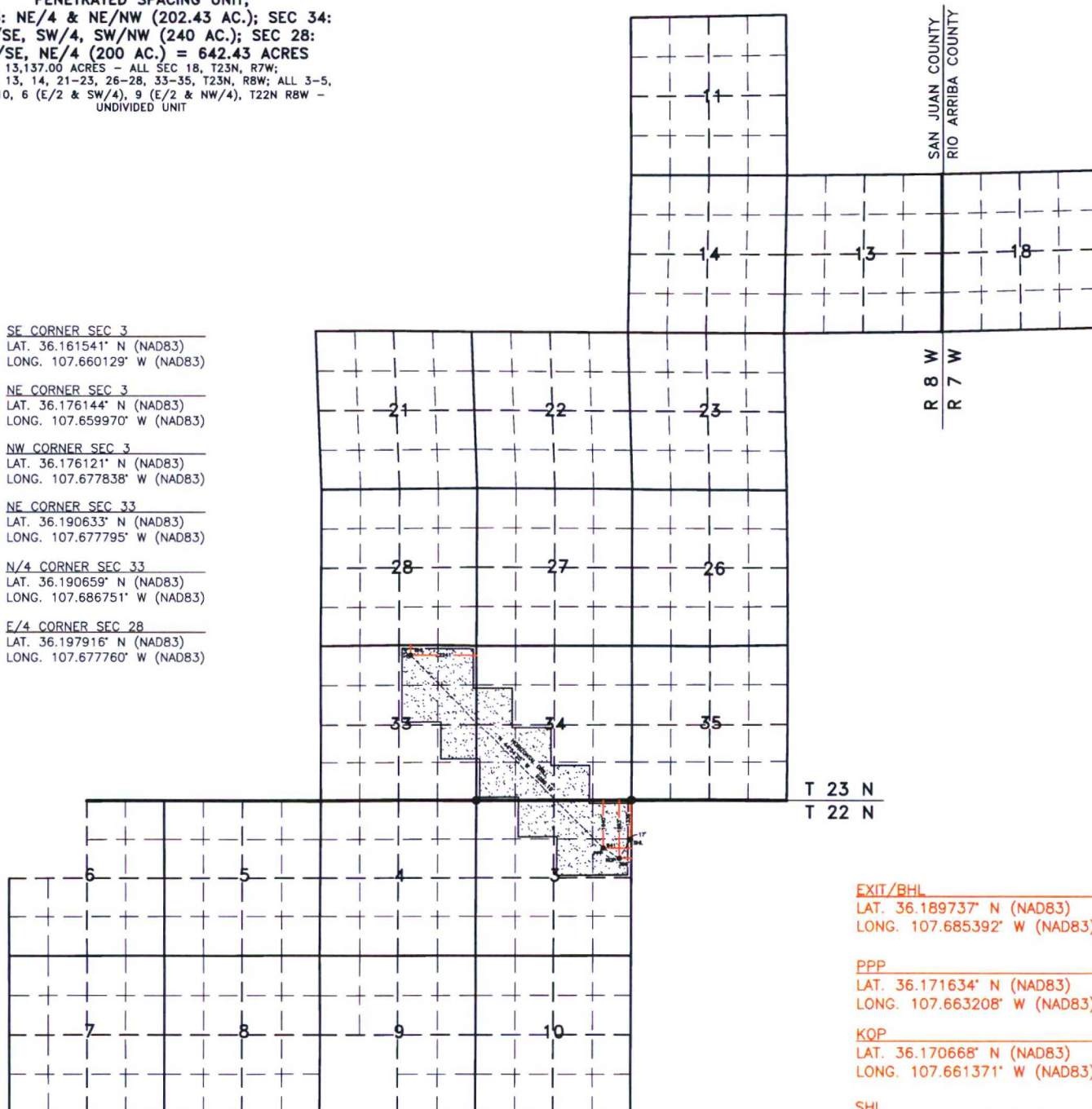
NE CORNER SEC 3
LAT. 36.176144' N (NAD83)
LONG. 107.659970' W (NAD83)

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)



EXIT/BHL
LAT. 36.189737' N (NAD83)
LONG. 107.685392' W (NAD83)

PPP
LAT. 36.171634' N (NAD83)
LONG. 107.663208' W (NAD83)

KOP
LAT. 36.170668' N (NAD83)
LONG. 107.661371' W (NAD83)

SHL
LAT. 36.172468' N (NAD83)
LONG. 107.660066' W (NAD83)

DRILLING PLAN **Betonne Tsoie Wash Unit 717H** **San Juan County, New Mexico**

Surface Location
 17-ft FEL & 1338-ft FNL
 Sec 3 T22N R08W
 Graded Elevation 6880' MSL
 RKB Elevation 6905' (25' KB)

SHL Geographical Coordinates (NAD-83)

Latitude 36.1724680° N
 Longitude 107.6600660° W

Kick Off Point for Horizontal Build Curve
 4272-ft MD
 4192-ft TVD

Local Coordinates (from SHL)

656-ft South
 384-ft West

First Take Point (Heel target)
 5304-ft MD
 941-ft FEL & 1640-ft FNL
 Sec 3 T22N R08W

FTP Geographical Coordinates (NAD-83)

Latitude 36.17163355° N
 Longitude 107.66320751° W

Last Take Point (Toe target & BHL)
 14593-ft MD
 2241-ft FEL & 334-ft FNL
 Sec 33 T23N R08W

LTP Geographical Coordinates (NAD-83)

Latitude 36.18973652° N
 Longitude 107.6853923° W

Well objectives

This well is planned as a 9290-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	700	700	Sh	-	8.3	8.4 - 8.8
Fruitland	989	984	C	G	8.3	9.0 - 9.5
Picture Cliffs	1246	1235	Sd	W	8.3	9.0 - 9.5
Lewis	1399	1385	Sh	-		9.0 - 9.5
Chacra	2007	1979	Sd	-	8.3	9.0 - 9.5
Menefee	2698	2654	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	3641	3576	Sd	-	8.3	9.0 - 9.5
Mancos	3825	3755	Sh	-		9.0 - 9.5
Mancos Silt	4112	4036	Slt	O/G	6.6	9.0 - 9.5
Gallup A	4630	4529	Slt	O/G	6.6	9.0 - 9.5
Gallup B	4693	4581	Sd	O/G	6.6	8.8 - 9.0
Gallup C	4854	4698	Sd	O/G	6.6	8.8 - 9.0
Target	5304	4849	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	5294	surf	4849	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5094	14593	4815	4888	5094

Note: all casing will be new

Casing Design Load Cases

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

Note

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

Casing Design Factors

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

Cement Design

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
Halliburton Name	ECONOCEM
Type	Poz/G
Additives	Ex, L, SA
Planned top	Surface
Density (ppg)	12.30
Yield (cf/sx)	1.90
Mix water (gal/sx)	10.03
Volume (sx)	426
Volume (bbls)	146

	Tail
	VARICEM
	Poz/G
	Ex, FI, SA, L, THX
	3325-ft
	13.50
	1.31
	5.81
	391
	91

4-1/2" Production Liner	Lead
Halliburton Name	EXTENDACEM
Type	Poz/G
Additives	B, De, Di, FI, Re, V
Planned top	5094-ft
Density (ppg)	13.3
Yield (cf/sx)	1.36
Mix water (gal/sx)	6.01
Volume (sx)	967
Volume (bbls)	234

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 – 5294	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5294 – 14593	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

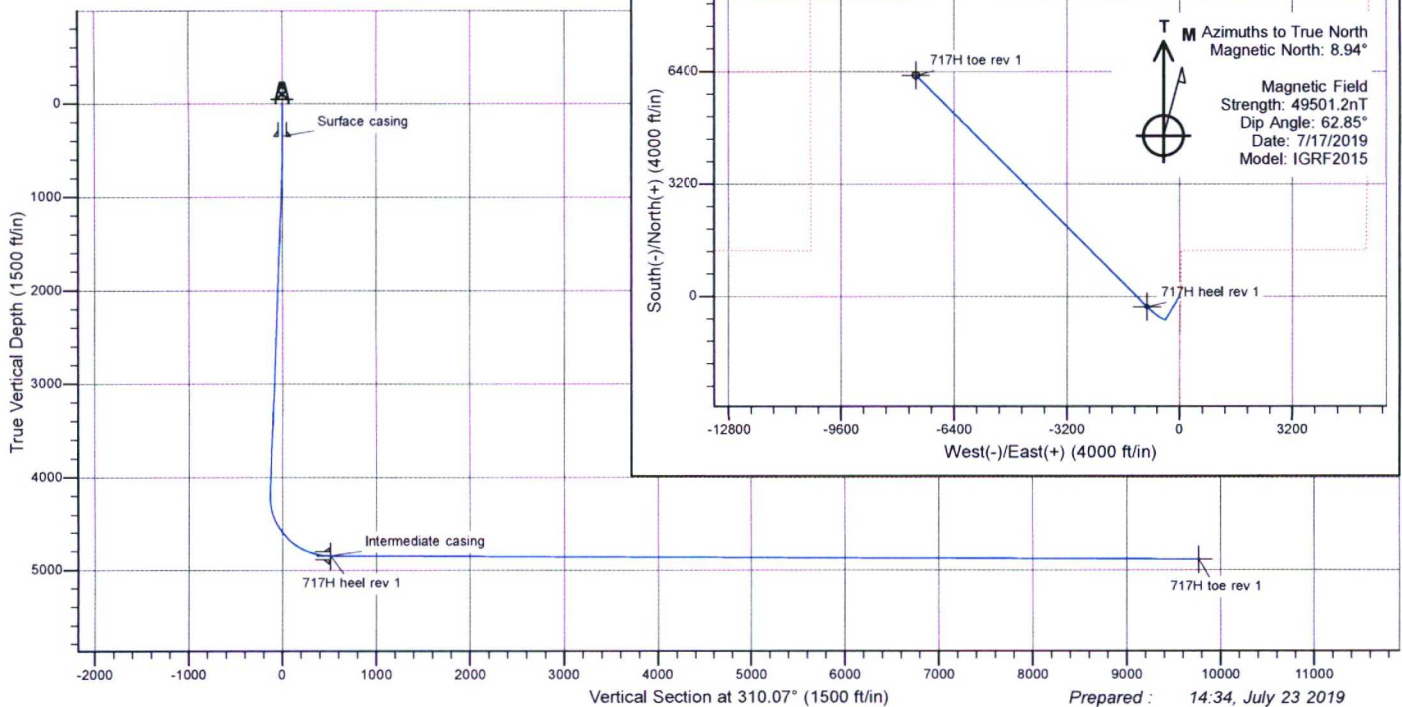
It is envisioned that this well will be completed with a multi-stage sand frac, using the plug and perf technique. After drilling out the plugs, the current plan is to install a 2-7/8" plunger-assisted gas lift tubing string. The stimulation and completion plan will be sundried at a later date.



Pad name : A03 2308 Pad
Well name : Betonnie Tsosie Wash Unit #717H

SHL Latitude : 36.17246800
 SHL Longitude : -107.66006600

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



TRAJECTORY DETAILS									
Pad elevation : 6880 RIG @ 6905ft (AD #1000)									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
0	0.00	0.00	0	0	0	0.00	0.00	0	
450	0.00	0.00	450	0	0	0.00	0.00	0	
941	12.27	210.31	937	-45	-26	2.50	210.31	-9	
4272	12.27	210.31	4192	-656	-384	0.00	0.00	-129	
5304	89.76	315.20	4849	-304	-927	9.00	104.61	514	717H heel rev 1
14593	89.76	315.20	4888	6287	-7473	0.00	0.00	9766	717H toe rev 1

TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
717H heel rev 1	4849	-304	-927	1881816	2773303	36.17163355	-107.66320751
717H toe rev 1	4888	6287	-7473	1888395	2766746	36.18973652	-107.68539231

DJR Operating

Betonnies Tsosie Unit

A03 2308 Pad

717H

Original drilling

Plan: APD rev 2

Standard Planning Report

23 July, 2019

Planning Report

Database: EDM
Company: DJR Operating
Project: Bettonnie Tsoie Unit
Site: A03 2308 Pad
Well: # 717H
Wellbore: Original drilling
Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
TVD Reference: RIG @ 6905ft (AD #1000)
MD Reference: RIG @ 6905ft (AD #1000)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	Bettonnie Tsoie 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	Latitude:	36.17246800
From:	Lat/Long	Easting:	2,774,230 usft	Longitude:	-107.66006600
Position Uncertainty:	0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.10 °

Well	# 717H					
Well Position	+N/-S	0 ft	Northing:	1,882,121 usft	Latitude:	36.17246800
	+E/-W	0 ft	Easting:	2,774,230 usft	Longitude:	-107.66006600
Position Uncertainty		0 ft	Wellhead Elevation:		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	49,501.23698536

Design	APD rev 2			
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	310.07

Plan Survey Tool Program	Date	7/23/2019			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0	14,593	APD rev 2 (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	
450	0.00	0.00	450	0	0	0.00	0.00	0.00	0.00	
941	12.27	210.31	937	-45	-26	2.50	2.50	0.00	210.31	
4272	12.27	210.31	4192	-656	-384	0.00	0.00	0.00	0.00	
5304	89.76	315.20	4849	-304	-927	9.00	7.51	10.16	104.61	717H heel rev 1
14,593	89.76	315.20	4888	6287	-7473	0.00	0.00	0.00	0.00	717H toe rev 1

Planning Report

Database: EDM
Company: DJR Operating
Project: Bettonnie Tsosie Unit
Site: A03 2308 Pad
Well: # 717H
Wellbore: Original drilling
Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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									
400	0.00	0.00	400	0	0	0	0.00	0.00	0.00
450	0.00	0.00	450	0	0	0	0.00	0.00	0.00
500	1.25	210.31	500	0	0	0	2.50	2.50	0.00
562	2.80	210.31	562	-2	-1	0	2.50	2.50	0.00
Ojo Alamo									
600	3.75	210.31	600	-4	-2	-1	2.50	2.50	0.00
700	6.25	210.31	700	-12	-7	-2	2.49	2.49	0.00
Kirtland									
800	8.75	210.31	799	-23	-13	-5	2.51	2.51	0.00
900	11.25	210.31	897	-38	-22	-7	2.50	2.50	0.00
941	12.27	210.31	937	-45	-26	-9	2.50	2.50	0.00
989	12.27	210.31	984	-54	-32	-11	0.00	0.00	0.00
Fruitland									
1000	12.27	210.31	995	-56	-33	-11	0.00	0.00	0.00
1100	12.27	210.31	1093	-74	-43	-15	0.00	0.00	0.00
1200	12.27	210.31	1190	-93	-54	-18	0.00	0.00	0.00
1246	12.27	210.31	1235	-101	-59	-20	0.00	0.00	0.00
Picture Cliffs									
1300	12.27	210.31	1288	-111	-65	-22	0.00	0.00	0.00
1399	12.27	210.31	1385	-129	-76	-25	0.00	0.00	0.00
Lewis									
1400	12.27	210.31	1386	-129	-76	-25	0.00	0.00	0.00
1500	12.27	210.31	1483	-148	-86	-29	0.00	0.00	0.00
1600	12.27	210.31	1581	-166	-97	-33	0.00	0.00	0.00
1700	12.27	210.31	1679	-184	-108	-36	0.00	0.00	0.00
1800	12.27	210.31	1777	-203	-119	-40	0.00	0.00	0.00
1900	12.27	210.31	1874	-221	-129	-43	0.00	0.00	0.00
2000	12.27	210.31	1972	-239	-140	-47	0.00	0.00	0.00
2007	12.27	210.31	1979	-241	-141	-47	0.00	0.00	0.00
Chacra									
2100	12.27	210.31	2070	-258	-151	-51	0.00	0.00	0.00
2200	12.27	210.31	2168	-276	-161	-54	0.00	0.00	0.00
2300	12.27	210.31	2265	-294	-172	-58	0.00	0.00	0.00
2400	12.27	210.31	2363	-313	-183	-61	0.00	0.00	0.00
2500	12.27	210.31	2461	-331	-194	-65	0.00	0.00	0.00
2600	12.27	210.31	2558	-349	-204	-69	0.00	0.00	0.00
2698	12.27	210.31	2654	-367	-215	-72	0.00	0.00	0.00
Menefee									
2700	12.27	210.31	2656	-368	-215	-72	0.00	0.00	0.00
2800	12.27	210.31	2754	-386	-226	-76	0.00	0.00	0.00
2900	12.27	210.31	2852	-404	-236	-79	0.00	0.00	0.00
3000	12.27	210.31	2949	-423	-247	-83	0.00	0.00	0.00
3100	12.27	210.31	3047	-441	-258	-87	0.00	0.00	0.00
3200	12.27	210.31	3145	-460	-269	-90	0.00	0.00	0.00
3300	12.27	210.31	3242	-478	-279	-94	0.00	0.00	0.00
3400	12.27	210.31	3340	-496	-290	-97	0.00	0.00	0.00
3500	12.27	210.31	3438	-515	-301	-101	0.00	0.00	0.00

Planning Report

Database: EDM
Company: DJR Operating
Project: Bettonie Tsosie Unit
Site: A03 2308 Pad
Well: # 717H
Wellbore: Original drilling
Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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)
3600	12.27	210.31	3536	-533	-312	-105	0.00	0.00	0.00
3641	12.27	210.31	3576	-540	-316	-106	0.00	0.00	0.00
Point Lookout									
3700	12.27	210.31	3633	-551	-322	-108	0.00	0.00	0.00
3800	12.27	210.31	3731	-570	-333	-112	0.00	0.00	0.00
3825	12.27	210.31	3755	-574	-336	-113	0.00	0.00	0.00
Mancos									
3900	12.27	210.31	3829	-588	-344	-115	0.00	0.00	0.00
4000	12.27	210.31	3926	-606	-354	-119	0.00	0.00	0.00
4100	12.27	210.31	4024	-625	-365	-123	0.00	0.00	0.00
4112	12.27	210.31	4036	-627	-366	-123	0.00	0.00	0.00
Mancos Silt									
4200	12.27	210.31	4122	-643	-376	-126	0.00	0.00	0.00
4272	12.27	210.31	4192	-656	-384	-129	0.00	0.00	0.00
4300	11.88	222.44	4220	-661	-387	-129	9.00	-1.37	42.62
4350	12.49	243.69	4269	-667	-395	-127	9.00	1.22	42.51
4400	14.51	261.01	4317	-670	-406	-121	9.00	4.06	34.64
4450	17.47	273.39	4365	-671	-420	-110	9.00	5.92	24.75
4500	20.97	282.02	4412	-669	-436	-97	9.00	7.00	17.26
4550	24.79	288.19	4458	-663	-455	-79	9.00	7.63	12.34
4600	28.79	292.77	4503	-656	-476	-58	9.00	8.00	9.16
4630	31.24	294.98	4529	-649	-490	-43	9.00	8.20	7.41
Gallup A									
4650	32.91	296.30	4546	-645	-499	-33	9.00	8.30	6.57
4693	36.48	298.74	4581	-634	-521	-9	9.00	8.39	5.73
Gallup B									
4700	37.11	299.12	4587	-631	-525	-5	9.00	8.45	5.16
4750	41.36	301.44	4626	-616	-552	26	9.00	8.51	4.64
4800	45.66	303.40	4662	-597	-581	60	9.00	8.59	3.91
4850	49.98	305.09	4696	-576	-612	97	9.00	8.65	3.38
4854	50.31	305.21	4698	-574	-614	100	9.00	8.67	3.14
Gallup C									
4900	54.32	306.57	4726	-553	-644	137	9.00	8.69	2.96
4950	58.69	307.90	4754	-528	-677	178	9.00	8.72	2.66
5000	63.06	309.12	4778	-501	-711	222	9.00	8.75	2.43
5050	67.44	310.24	4799	-472	-746	267	9.00	8.77	2.25
5100	71.83	311.29	4816	-441	-781	314	9.00	8.78	2.11
5150	76.23	312.29	4830	-409	-817	362	9.00	8.79	2.00
5200	80.63	313.26	4840	-376	-853	411	9.00	8.80	1.93
5250	85.03	314.20	4846	-341	-889	461	9.00	8.80	1.88
5294	88.91	315.02	4849	-311	-920	504	9.00	8.81	1.86
Intermediate casing									
5304	89.76	315.20	4849	-304	-927	514	9.00	8.81	1.85
5325	89.76	315.20	4849	-288	-943	536	0.00	0.00	0.00
Target									
5400	89.76	315.20	4849	-235	-995	610	0.00	0.00	0.00
5500	89.76	315.20	4850	-164	-1066	710	0.00	0.00	0.00
5600	89.76	315.20	4850	-94	-1136	809	0.00	0.00	0.00
5700	89.76	315.20	4851	-23	-1206	909	0.00	0.00	0.00
5800	89.76	315.20	4851	48	-1277	1008	0.00	0.00	0.00
5900	89.76	315.20	4851	119	-1347	1108	0.00	0.00	0.00
6000	89.76	315.20	4852	190	-1418	1208	0.00	0.00	0.00
6100	89.76	315.20	4852	261	-1488	1307	0.00	0.00	0.00

Planning Report

Database: EDM
Company: DJR Operating
Project: Bettonie Tsosie Unit
Site: A03 2308 Pad
Well: # 717H
Wellbore: Original drilling
Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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	89.76	315.20	4853	332	-1559	1407	0.00	0.00	0.00
6300	89.76	315.20	4853	403	-1629	1506	0.00	0.00	0.00
6400	89.76	315.20	4854	474	-1700	1606	0.00	0.00	0.00
6500	89.76	315.20	4854	545	-1770	1706	0.00	0.00	0.00
6600	89.76	315.20	4854	616	-1841	1805	0.00	0.00	0.00
6700	89.76	315.20	4855	687	-1911	1905	0.00	0.00	0.00
6800	89.76	315.20	4855	758	-1982	2004	0.00	0.00	0.00
6900	89.76	315.20	4856	829	-2052	2104	0.00	0.00	0.00
7000	89.76	315.20	4856	900	-2123	2204	0.00	0.00	0.00
7100	89.76	315.20	4856	971	-2193	2303	0.00	0.00	0.00
7200	89.76	315.20	4857	1042	-2264	2403	0.00	0.00	0.00
7300	89.76	315.20	4857	1113	-2334	2502	0.00	0.00	0.00
7400	89.76	315.20	4858	1184	-2404	2602	0.00	0.00	0.00
7500	89.76	315.20	4858	1255	-2475	2702	0.00	0.00	0.00
7600	89.76	315.20	4859	1326	-2545	2801	0.00	0.00	0.00
7700	89.76	315.20	4859	1396	-2616	2901	0.00	0.00	0.00
7800	89.76	315.20	4859	1467	-2686	3000	0.00	0.00	0.00
7900	89.76	315.20	4860	1538	-2757	3100	0.00	0.00	0.00
8000	89.76	315.20	4860	1609	-2827	3200	0.00	0.00	0.00
8100	89.76	315.20	4861	1680	-2898	3299	0.00	0.00	0.00
8200	89.76	315.20	4861	1751	-2968	3399	0.00	0.00	0.00
8300	89.76	315.20	4861	1822	-3039	3498	0.00	0.00	0.00
8400	89.76	315.20	4862	1893	-3109	3598	0.00	0.00	0.00
8500	89.76	315.20	4862	1964	-3180	3698	0.00	0.00	0.00
8600	89.76	315.20	4863	2035	-3250	3797	0.00	0.00	0.00
8700	89.76	315.20	4863	2106	-3321	3897	0.00	0.00	0.00
8800	89.76	315.20	4864	2177	-3391	3996	0.00	0.00	0.00
8900	89.76	315.20	4864	2248	-3461	4096	0.00	0.00	0.00
9000	89.76	315.20	4864	2319	-3532	4195	0.00	0.00	0.00
9100	89.76	315.20	4865	2390	-3602	4295	0.00	0.00	0.00
9200	89.76	315.20	4865	2461	-3673	4395	0.00	0.00	0.00
9300	89.76	315.20	4866	2532	-3743	4494	0.00	0.00	0.00
9400	89.76	315.20	4866	2603	-3814	4594	0.00	0.00	0.00
9500	89.76	315.20	4867	2674	-3884	4693	0.00	0.00	0.00
9600	89.76	315.20	4867	2745	-3955	4793	0.00	0.00	0.00
9700	89.76	315.20	4867	2815	-4025	4893	0.00	0.00	0.00
9800	89.76	315.20	4868	2886	-4096	4992	0.00	0.00	0.00
9900	89.76	315.20	4868	2957	-4166	5092	0.00	0.00	0.00
10,000	89.76	315.20	4869	3028	-4237	5191	0.00	0.00	0.00
10,100	89.76	315.20	4869	3099	-4307	5291	0.00	0.00	0.00
10,200	89.76	315.20	4869	3170	-4378	5391	0.00	0.00	0.00
10,300	89.76	315.20	4870	3241	-4448	5490	0.00	0.00	0.00
10,400	89.76	315.20	4870	3312	-4519	5590	0.00	0.00	0.00
10,500	89.76	315.20	4871	3383	-4589	5689	0.00	0.00	0.00
10,600	89.76	315.20	4871	3454	-4659	5789	0.00	0.00	0.00
10,700	89.76	315.20	4872	3525	-4730	5889	0.00	0.00	0.00
10,800	89.76	315.20	4872	3596	-4800	5988	0.00	0.00	0.00
10,900	89.76	315.20	4872	3667	-4871	6088	0.00	0.00	0.00
11,000	89.76	315.20	4873	3738	-4941	6187	0.00	0.00	0.00
11,100	89.76	315.20	4873	3809	-5012	6287	0.00	0.00	0.00
11,200	89.76	315.20	4874	3880	-5082	6387	0.00	0.00	0.00
11,300	89.76	315.20	4874	3951	-5153	6486	0.00	0.00	0.00
11,400	89.76	315.20	4875	4022	-5223	6586	0.00	0.00	0.00
11,500	89.76	315.20	4875	4093	-5294	6685	0.00	0.00	0.00

Planning Report

Database: EDM
Company: DJR Operating
Project: Betonnie Tsosie Unit
Site: A03 2308 Pad
Well: # 717H
Wellbore: Original drilling
Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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	89.76	315.20	4875	4164	-5364	6785	0.00	0.00	0.00
11,700	89.76	315.20	4876	4234	-5435	6885	0.00	0.00	0.00
11,800	89.76	315.20	4876	4305	-5505	6984	0.00	0.00	0.00
11,900	89.76	315.20	4877	4376	-5576	7084	0.00	0.00	0.00
12,000	89.76	315.20	4877	4447	-5646	7183	0.00	0.00	0.00
12,100	89.76	315.20	4877	4518	-5716	7283	0.00	0.00	0.00
12,200	89.76	315.20	4878	4589	-5787	7383	0.00	0.00	0.00
12,300	89.76	315.20	4878	4660	-5857	7482	0.00	0.00	0.00
12,400	89.76	315.20	4879	4731	-5928	7582	0.00	0.00	0.00
12,500	89.76	315.20	4879	4802	-5998	7681	0.00	0.00	0.00
12,600	89.76	315.20	4880	4873	-6069	7781	0.00	0.00	0.00
12,700	89.76	315.20	4880	4944	-6139	7881	0.00	0.00	0.00
12,800	89.76	315.20	4880	5015	-6210	7980	0.00	0.00	0.00
12,900	89.76	315.20	4881	5086	-6280	8080	0.00	0.00	0.00
13,000	89.76	315.20	4881	5157	-6351	8179	0.00	0.00	0.00
13,100	89.76	315.20	4882	5228	-6421	8279	0.00	0.00	0.00
13,200	89.76	315.20	4882	5299	-6492	8379	0.00	0.00	0.00
13,300	89.76	315.20	4882	5370	-6562	8478	0.00	0.00	0.00
13,400	89.76	315.20	4883	5441	-6633	8578	0.00	0.00	0.00
13,500	89.76	315.20	4883	5512	-6703	8677	0.00	0.00	0.00
13,600	89.76	315.20	4884	5583	-6774	8777	0.00	0.00	0.00
13,700	89.76	315.20	4884	5653	-6844	8877	0.00	0.00	0.00
13,800	89.76	315.20	4885	5724	-6914	8976	0.00	0.00	0.00
13,900	89.76	315.20	4885	5795	-6985	9076	0.00	0.00	0.00
14,000	89.76	315.20	4885	5866	-7055	9175	0.00	0.00	0.00
14,100	89.76	315.20	4886	5937	-7126	9275	0.00	0.00	0.00
14,200	89.76	315.20	4886	6008	-7196	9375	0.00	0.00	0.00
14,300	89.76	315.20	4887	6079	-7267	9474	0.00	0.00	0.00
14,400	89.76	315.20	4887	6150	-7337	9574	0.00	0.00	0.00
14,500	89.76	315.20	4888	6221	-7408	9673	0.00	0.00	0.00
14,593	89.76	315.20	4888	6287	-7473	9766	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
717H heel rev 1 - plan hits target center - Circle (radius 50)	0.00	0.00	4849	-304	-927	1,881,816	2,773,303	36.17163355	-107.66320751
717H toe rev 1 - plan hits target center - Circle (radius 100)	0.00	0.00	4888	6287	-7473	1,888,395	2,766,746	36.18973652	-107.68539231

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
350	350	Surface casing	9.625	12.250
5294	4849	Intermediate casing	7.000	8.750

Planning Report

Database: EDM
Company: DJR Operating
Project: Betonnie Tsosie Unit
Site: A03 2308 Pad
Well: # 717H
Wellbore: Original drilling
Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
TVD Reference: RIG @ 6905ft (AD #1000)
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	
700	700	Kirtland		0.00	
989	984	Fruitland		0.00	
1246	1235	Picture Cliffs		0.00	
1399	1385	Lewis		0.00	
2007	1979	Chacra		0.00	
2698	2654	Menefee		0.00	
3641	3576	Point Lookout		0.00	
3825	3755	Mancos		0.00	
4112	4036	Mancos Silt		0.00	
4630	4529	Gallup A		0.00	
4693	4581	Gallup B		0.00	
4854	4698	Gallup C		0.00	
5325	4849	Target		0.00	

DJR Operating

**Betonne Tsoie Unit
A03 2308 Pad
717H**

**Original drilling
APD rev 2**

Anticollision Report

23 July, 2019

Anticollision Report

Company: DJR Operating
Project: Bettonie Tsosie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 717H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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 rev 2		
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	14,593	APD rev 2 (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						
# 720H - Original drilling - APD	306	306	30	28	17.339 CC	
# 720H - Original drilling - APD	400	400	30	28	12.546 ES	
# 720H - Original drilling - APD	14,593	14,136	1283	801	2.661 SF	

Offset Design A03 2308 Pad - # 720H - Original drilling - APD

Survey Program: 0-MWD+IGRF										Offset Well Error:				0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0	0	0	0	0	0	-0.56	30	0	30					
100	100	100	100	0	0	-0.56	30	0	30	30	0.27	112.385		
200	200	200	200	0	0	-0.56	30	0	30	29	0.99	30.650		
300	300	300	300	1	1	-0.56	30	0	30	29	1.70	17.745		
306	306	306	306	1	1	-0.56	30	0	30	28	1.74	17.339 CC		
400	400	400	400	1	1	-0.50	30	0	30	28	2.42	12.546 ES		
450	450	449	449	1	1	-0.02	31	0	31	29	2.78	11.305		
500	500	498	498	2	2	150.95	33	0	34	31	3.13	10.860		
600	600	596	596	2	2	155.52	41	2	45	41	3.82	11.833		
700	700	694	694	2	2	159.85	49	4	63	58	4.53	13.820		
800	799	792	791	3	3	163.13	58	7	84	79	5.24	16.083		
900	897	888	887	3	3	165.59	67	9	110	104	5.95	18.523		
941	937	927	925	3	3	166.41	71	10	122	116	6.24	19.529		
1000	995	984	982	4	3	167.50	76	11	140	133	6.65	20.977		
1100	1093	1079	1077	4	4	168.81	85	13	169	162	7.35	23.060		
1200	1190	1175	1172	4	4	169.73	93	15	199	191	8.05	24.775		
1300	1288	1270	1267	5	5	170.41	102	17	229	221	8.75	26.208		
1400	1386	1365	1362	5	5	170.93	111	19	259	250	9.45	27.422		
1500	1483	1461	1457	6	5	171.35	119	22	289	279	10.16	28.462		
1600	1581	1556	1552	7	6	171.68	128	24	319	308	10.87	29.362		
1700	1679	1652	1647	7	6	171.96	137	26	349	338	11.58	30.149		
1800	1777	1747	1742	8	6	172.20	145	28	379	367	12.30	30.841		
1900	1874	1842	1837	8	7	172.40	154	30	409	396	13.01	31.456		
2000	1972	1938	1931	9	7	172.57	163	32	439	426	13.73	32.004		

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: # 717H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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 - # 720H - Original drilling - APD													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		
2100	2070	2033	2026	9	8	172.72	171	34	469	455	14.44	32.497		
2200	2168	2128	2121	10	8	172.85	180	37	499	484	15.16	32.942		
2300	2265	2224	2216	10	8	172.97	189	39	529	513	15.88	33.345		
2400	2363	2319	2311	11	9	173.07	197	41	559	543	16.59	33.712		
2500	2461	2415	2406	11	9	173.17	206	43	589	572	17.31	34.049		
2600	2558	2510	2501	12	9	173.25	215	45	619	601	18.03	34.357		
2700	2656	2605	2596	12	10	173.33	223	47	650	631	18.75	34.642		
2800	2754	2701	2691	13	10	173.40	232	49	680	660	19.47	34.904		
2900	2852	2796	2786	13	11	173.47	241	52	710	689	20.19	35.148		
3000	2949	2892	2881	14	11	173.52	249	54	740	719	20.91	35.374		
3100	3047	2987	2976	15	11	173.58	258	56	770	748	21.63	35.585		
3200	3145	3082	3071	15	12	173.63	267	58	800	777	22.35	35.782		
3300	3242	3178	3166	16	12	173.68	275	60	830	807	23.07	35.966		
3400	3340	3273	3261	16	12	173.72	284	62	860	836	23.79	36.139		
3500	3438	3368	3356	17	13	173.76	293	64	890	865	24.51	36.301		
3600	3536	3464	3451	17	13	173.80	301	66	920	895	25.23	36.454		
3700	3633	3559	3546	18	14	173.83	310	69	950	924	25.96	36.598		
3800	3731	3655	3641	18	14	173.87	319	71	980	953	26.68	36.734		
3900	3829	3750	3736	19	14	173.90	327	73	1010	983	27.40	36.862		
4000	3926	3845	3831	19	15	173.93	336	75	1040	1012	28.12	36.984		
4100	4024	3941	3926	20	15	173.96	345	77	1070	1041	28.84	37.100		
4200	4122	4036	4021	21	15	173.98	353	79	1100	1071	29.57	37.209		
4272	4192	4104	4089	21	16	174.00	360	81	1122	1092	30.08	37.284		
4300	4220	4131	4116	21	16	161.45	362	81	1130	1100	30.29	37.307		
4350	4269	4179	4163	21	16	139.70	367	82	1144	1113	30.65	37.311		
4400	4317	4227	4211	22	16	122.20	371	84	1156	1125	31.01	37.272		
4450	4365	4275	4258	22	16	109.93	375	85	1166	1135	31.36	37.195		
4500	4412	4300	4283	22	16	101.32	378	85	1176	1144	31.55	37.275		
4550	4458	4338	4322	22	17	95.49	382	85	1185	1153	31.84	37.209		
4600	4503	4368	4351	22	17	91.21	387	83	1193	1161	32.07	37.198		
4650	4546	4400	4382	23	17	88.12	394	80	1201	1168	32.33	37.132		
4700	4587	4428	4409	23	17	85.76	400	77	1207	1175	32.58	37.065		
4750	4626	4450	4430	23	17	83.89	405	74	1214	1181	32.79	37.015		
4800	4662	4488	4466	23	17	82.82	417	67	1219	1186	33.19	36.729		
4850	4696	4519	4495	23	18	81.96	426	61	1224	1190	33.56	36.463		
4900	4726	4550	4522	23	18	81.39	437	53	1228	1194	33.98	36.136		
4950	4754	4582	4551	23	18	81.12	450	44	1231	1197	34.48	35.711		
5000	4778	4615	4579	24	18	81.07	463	34	1234	1199	35.05	35.217		
5050	4799	4650	4608	24	18	81.29	479	22	1237	1201	35.72	34.624		
5100	4816	4681	4633	24	18	81.58	493	10	1238	1202	36.42	34.003		
5150	4830	4715	4659	24	19	82.10	510	-3	1240	1202	37.22	33.310		
5200	4840	4750	4684	25	19	82.78	528	-19	1240	1202	38.10	32.553		
5250	4846	4787	4710	25	19	83.66	549	-36	1241	1202	39.09	31.744		
5304	4849	4827	4736	26	20	84.76	572	-56	1241	1200	40.22	30.847		
5320	4849	4840	4744	26	20	85.13	580	-62	1241	1200	40.64	30.524		
5400	4849	4907	4782	27	20	86.88	621	-99	1241	1199	42.54	29.183		
5500	4850	5006	4826	28	21	88.92	686	-158	1244	1199	45.44	27.377		
5600	4850	5118	4860	29	23	90.46	765	-232	1247	1198	48.89	25.500		
5700	4851	5241	4875	31	25	91.11	852	-316	1248	1195	52.83	23.629		
5800	4851	5343	4875	33	27	91.12	925	-388	1249	1192	56.59	22.063		
5900	4851	5443	4876	35	28	91.13	996	-458	1249	1189	60.49	20.649		
6000	4852	5543	4876	37	30	91.13	1067	-528	1249	1185	64.53	19.362		

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

Anticollision Report

Company: DJR Operating
Project: Bettonie Tsosie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 717H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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 - # 720H - Original drilling - APD														Offset Site Error:	0 ft
Survey Program: 0-MWD+IGRF														Offset Well Error:	0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
6100	4852	5643	4877	39	32	91.13		1138	-598	1250	1181	68.70	18.193		
6200	4853	5743	4877	41	34	91.13		1209	-668	1250	1177	72.97	17.133		
6300	4853	5843	4878	43	37	91.14		1281	-739	1251	1173	77.32	16.173		
6400	4854	5943	4878	45	39	91.14		1352	-809	1251	1169	81.75	15.302		
6500	4854	6043	4879	47	41	91.14		1423	-879	1251	1165	86.24	14.511		
6600	4854	6143	4879	49	43	91.14		1494	-949	1252	1161	90.78	13.790		
6700	4855	6243	4880	52	45	91.15		1566	-1019	1252	1157	95.36	13.131		
6800	4855	6343	4880	54	48	91.15		1637	-1090	1253	1153	99.98	12.528		
6900	4856	6443	4881	56	50	91.15		1708	-1160	1253	1148	104.63	11.975		
7000	4856	6543	4881	59	52	91.16		1779	-1230	1253	1144	109.32	11.465		
7100	4856	6643	4882	61	55	91.16		1850	-1300	1254	1140	114.02	10.996		
7200	4857	6743	4882	63	57	91.16		1922	-1370	1254	1135	118.75	10.561		
7300	4857	6843	4883	66	59	91.16		1993	-1441	1255	1131	123.50	10.158		
7400	4858	6943	4883	68	62	91.17		2064	-1511	1255	1127	128.27	9.784		
7500	4858	7043	4884	70	64	91.17		2135	-1581	1255	1122	133.05	9.435		
7600	4859	7143	4884	73	66	91.17		2207	-1651	1256	1118	137.84	9.110		
7700	4859	7243	4885	75	69	91.17		2278	-1721	1256	1113	142.65	8.806		
7800	4859	7343	4885	77	71	91.18		2349	-1791	1257	1109	147.47	8.520		
7900	4860	7443	4886	80	74	91.18		2420	-1862	1257	1105	152.30	8.253		
8000	4860	7543	4886	82	76	91.18		2492	-1932	1257	1100	157.13	8.001		
8100	4861	7643	4887	85	78	91.19		2563	-2002	1258	1096	161.98	7.764		
8200	4861	7743	4887	87	81	91.19		2634	-2072	1258	1091	166.83	7.541		
8300	4861	7843	4888	89	83	91.19		2705	-2142	1258	1087	171.69	7.330		
8400	4862	7943	4888	92	86	91.19		2776	-2213	1259	1082	176.56	7.130		
8500	4862	8043	4889	94	88	91.20		2848	-2283	1259	1078	181.43	6.941		
8600	4863	8143	4889	97	90	91.20		2919	-2353	1260	1073	186.31	6.761		
8700	4863	8243	4890	99	93	91.20		2990	-2423	1260	1069	191.20	6.590		
8800	4864	8343	4890	102	95	91.20		3061	-2493	1260	1064	196.08	6.428		
8900	4864	8443	4891	104	98	91.21		3133	-2564	1261	1060	200.98	6.274		
9000	4864	8543	4891	106	100	91.21		3204	-2634	1261	1055	205.87	6.126		
9100	4865	8643	4892	109	103	91.21		3275	-2704	1262	1051	210.77	5.986		
9200	4865	8743	4892	111	105	91.22		3346	-2774	1262	1046	215.68	5.851		
9300	4866	8843	4893	114	108	91.22		3417	-2844	1262	1042	220.58	5.723		
9400	4866	8943	4893	116	110	91.22		3489	-2914	1263	1037	225.49	5.600		
9500	4867	9043	4893	119	112	91.22		3560	-2985	1263	1033	230.40	5.482		
9600	4867	9143	4894	121	115	91.23		3631	-3055	1264	1028	235.32	5.370		
9700	4867	9243	4894	124	117	91.23		3702	-3125	1264	1024	240.24	5.261		
9800	4868	9343	4895	126	120	91.23		3774	-3195	1264	1019	245.16	5.157		
9900	4868	9443	4895	129	122	91.23		3845	-3265	1265	1015	250.08	5.057		
10,000	4869	9543	4896	131	125	91.24		3916	-3336	1265	1010	255.00	4.961		
10,100	4869	9643	4896	133	127	91.24		3987	-3406	1266	1006	259.93	4.869		
10,200	4869	9743	4897	136	130	91.24		4058	-3476	1266	1001	264.86	4.780		
10,300	4870	9843	4897	138	132	91.25		4130	-3546	1266	997	269.78	4.694		
10,400	4870	9943	4898	141	135	91.25		4201	-3616	1267	992	274.72	4.611		
10,500	4871	10,043	4898	143	137	91.25		4272	-3687	1267	987	279.65	4.531		
10,600	4871	10,143	4899	146	140	91.25		4343	-3757	1268	983	284.58	4.454		
10,700	4872	10,243	4899	148	142	91.26		4415	-3827	1268	978	289.52	4.379		
10,800	4872	10,343	4900	151	144	91.26		4486	-3897	1268	974	294.45	4.307		
10,900	4872	10,443	4900	153	147	91.26		4557	-3967	1269	969	299.39	4.238		
11,000	4873	10,543	4901	156	149	91.26		4628	-4038	1269	965	304.33	4.170		
11,100	4873	10,643	4901	158	152	91.27		4700	-4108	1269	960	309.27	4.105		
11,200	4874	10,743	4902	161	154	91.27		4771	-4178	1270	956	314.21	4.041		

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

Anticollision Report

Company: DJR Operating
Project: Betonnie Tsoie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 717H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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 - # 720H - Original drilling - APD													Offset Site Error:	0 ft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
				(ft)	(ft)		+N/-S (ft)	+E/-W (ft)						
11,300	4874	10,843	4902	163	157	91.27	4842	-4248	1270	951	319.16	3.980		
11,400	4875	10,943	4903	165	159	91.27	4913	-4318	1271	947	324.10	3.921		
11,500	4875	11,043	4903	168	162	91.28	4984	-4388	1271	942	329.04	3.863		
11,600	4875	11,143	4904	170	164	91.28	5056	-4459	1271	937	333.99	3.807		
11,700	4876	11,243	4904	173	167	91.28	5127	-4529	1272	933	338.93	3.752		
11,800	4876	11,343	4905	175	169	91.29	5198	-4599	1272	928	343.88	3.700		
11,900	4877	11,443	4905	178	172	91.29	5269	-4669	1273	924	348.83	3.648		
12,000	4877	11,543	4906	180	174	91.29	5341	-4739	1273	919	353.78	3.598		
12,100	4877	11,643	4906	183	177	91.29	5412	-4810	1273	915	358.73	3.550		
12,200	4878	11,743	4907	185	179	91.30	5483	-4880	1274	910	363.68	3.503		
12,300	4878	11,843	4907	188	182	91.30	5554	-4950	1274	906	368.63	3.457		
12,400	4879	11,943	4908	190	184	91.30	5625	-5020	1275	901	373.58	3.412		
12,500	4879	12,043	4908	193	186	91.30	5697	-5090	1275	896	378.53	3.368		
12,600	4880	12,143	4909	195	189	91.31	5768	-5161	1275	892	383.48	3.326		
12,700	4880	12,243	4909	198	191	91.31	5839	-5231	1276	887	388.43	3.284		
12,800	4880	12,343	4910	200	194	91.31	5910	-5301	1276	883	393.39	3.244		
12,900	4881	12,443	4910	203	196	91.31	5982	-5371	1277	878	398.34	3.205		
13,000	4881	12,543	4911	205	199	91.32	6053	-5441	1277	874	403.30	3.166		
13,100	4882	12,643	4911	207	201	91.32	6124	-5511	1277	869	408.25	3.129		
13,200	4882	12,743	4912	210	204	91.32	6195	-5582	1278	865	413.21	3.092		
13,300	4882	12,843	4912	212	206	91.33	6266	-5652	1278	860	418.16	3.057		
13,400	4883	12,943	4913	215	209	91.33	6338	-5722	1279	855	423.12	3.022		
13,500	4883	13,043	4913	217	211	91.33	6409	-5792	1279	851	428.08	2.988		
13,600	4884	13,143	4913	220	214	91.33	6480	-5862	1279	846	433.03	2.954		
13,700	4884	13,243	4914	222	216	91.34	6551	-5933	1280	842	437.99	2.922		
13,800	4885	13,343	4914	225	219	91.34	6623	-6003	1280	837	442.95	2.890		
13,900	4885	13,443	4915	227	221	91.34	6694	-6073	1280	833	447.91	2.859		
14,000	4885	13,543	4915	230	224	91.34	6765	-6143	1281	828	452.86	2.828		
14,100	4886	13,643	4916	232	226	91.35	6836	-6213	1281	823	457.82	2.799		
14,200	4886	13,743	4916	235	229	91.35	6908	-6284	1282	819	462.78	2.769		
14,300	4887	13,843	4917	237	231	91.35	6979	-6354	1282	814	467.74	2.741		
14,400	4887	13,943	4917	240	234	91.35	7050	-6424	1282	810	472.70	2.713		
14,500	4888	14,043	4918	242	236	91.36	7121	-6494	1283	805	477.66	2.686		
14,593	4888	14,136	4918	244	238	91.36	7187	-6559	1283	801	482.27	2.661 SF		

Anticollision Report

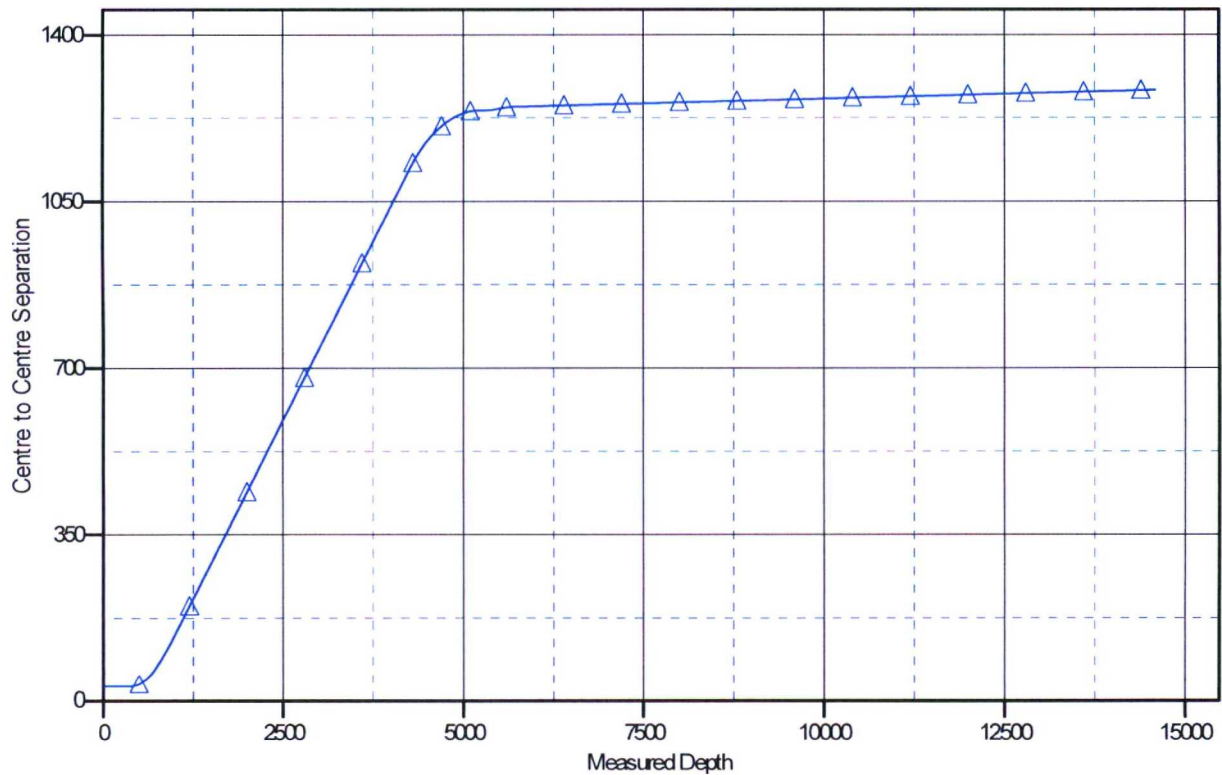
Company: DJR Operating
Project: Bettonnie Tsosie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 717H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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: # 717H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.10°

Ladder Plot



LEGEND

— # 720H, Original drilling, APD V0

Anticollision Report

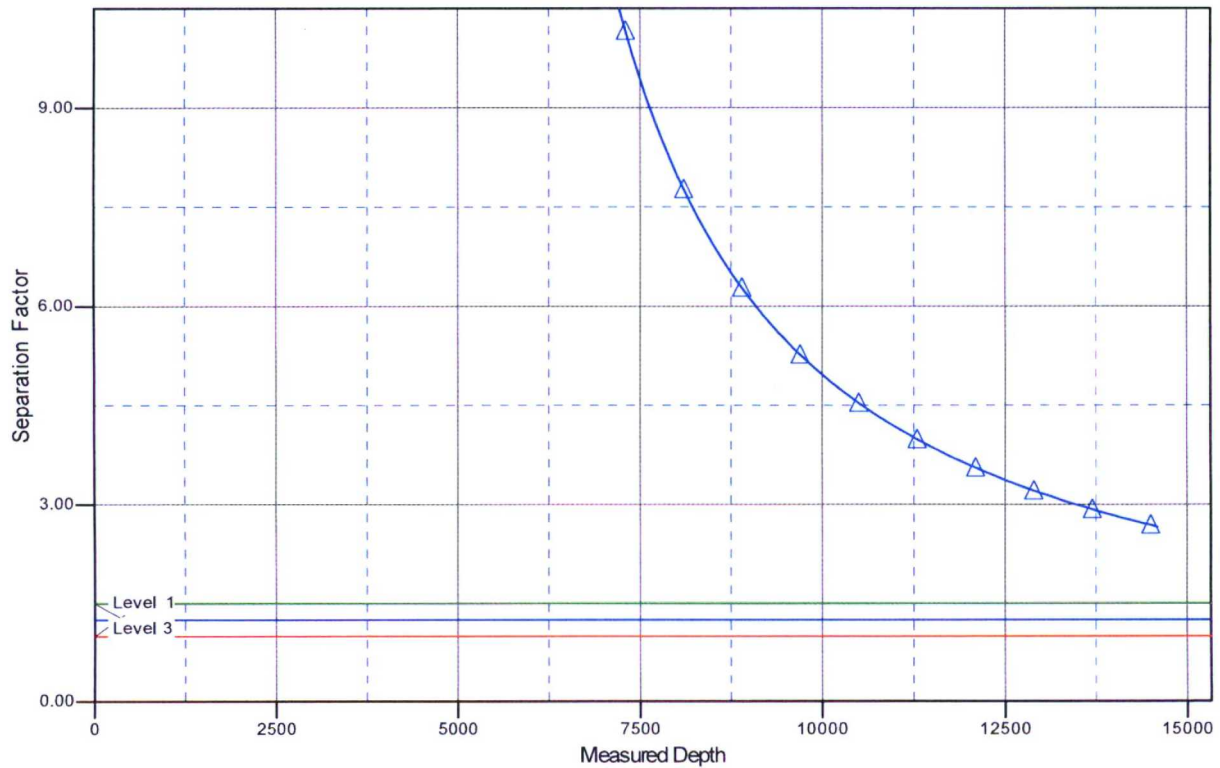
Company: DJR Operating
Project: Bettonnie Tsosie Unit
Reference Site: A03 2308 Pad
Site Error: 0 ft
Reference Well: # 717H
Well Error: 0 ft
Reference Wellbore: Original drilling
Reference Design: APD rev 2

Local Co-ordinate Reference: Well # 717H
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: # 717H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.10°

Separation Factor Plot



LEGEND

—▲— # 720H, Original drilling, APD V0