Form 3160-3 FORM APPROVED OMB No. 1004-0137 (June 2015) Expires: January 31, 2018 **UNITED STATES** DEPARTMENT OF THE INTERIOR 5. Lease Serial No. BUREAU OF LAND MANAGEMENT APPLICATION FOR PERMIT TO DRILL OR REENTER 6. If Indian, Allotee or Tribe Name 7. If Unit or CA Agreement, Name and No. DRILL REENTER 1a. Type of work: 1b. Type of Well: Oil Well Gas Well Other 8. Lease Name and Well No. 1c. Type of Completion: Hydraulic Fracturing Single Zone Multiple Zone 2. Name of Operator 9. API Well No. 30-043-21509 10. Field and Pool, or Exploratory 3a. Address 3b. Phone No. (include area code) 4. Location of Well (Report location clearly and in accordance with any State requirements.\*) 11. Sec., T. R. M. or Blk. and Survey or Area At surface At proposed prod. zone 14. Distance in miles and direction from nearest town or post office\* 12. County or Parish 13. State 15. Distance from proposed\* 16. No of acres in lease 17. Spacing Unit dedicated to this well location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 18. Distance from proposed location\* 19. Proposed Depth 20. BLM/BIA Bond No. in file to nearest well, drilling, completed, applied for, on this lease, ft. 22. Approximate date work will start\* 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 23. Estimated duration 24. Attachments The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable) 1. Well plat certified by a registered surveyor. 4. Bond to cover the operations unless covered by an existing bond on file (see 2. A Drilling Plan. Item 20 above). 3. A Surface Use Plan (if the location is on National Forest System Lands, the 5. Operator certification. SUPO must be filed with the appropriate Forest Service Office). 6. Such other site specific information and/or plans as may be requested by the 25. Signature Name (Printed/Typed) Date Title Approved by (Signature) Name (Printed/Typed) Date Title Office Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Conditions of approval, if any, are attached. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

APPROVED WITH CONDITIONS

\*(Instructions on page 2)

DISTRICT I
1825 N. French Dr., Hobbs, N.M. 88240
Phone: (676) 393-6161 Fax: (576) 393-0720
DISTRICT II
511 S. First St., Artesia, N.M. 88210
Phone: (676) 748-1283 Fax: (676) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Astec, N.M. 87410
Phone: (506) 334-6176 Fax: (506) 334-6170
DISTRICT IV
1220 S. S. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3480 Fax: (506) 478-3482

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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

# WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code	<sup>3</sup> Pool Name				
30-043-21509	98174	OIL POOL				
<sup>4</sup> Property Code	<sup>5</sup> Pro	Well Number				
325267	NORTH A	320H				
OGRID No.	<sup>8</sup> Ope	erator Name	<sup>9</sup> Elevation			
371838	DJR OP	6902'				

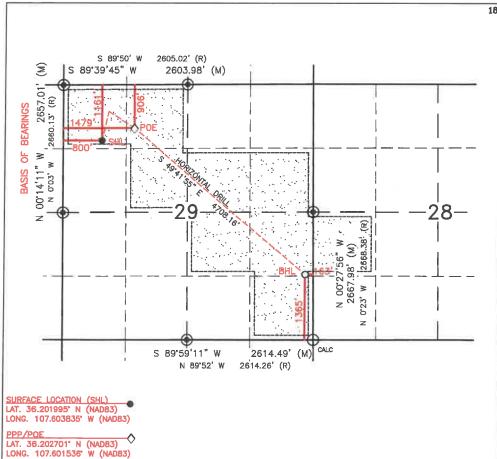
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	29	23N	7W		1161'	NORTH	800'	WEST	SANDOVAL

<sup>11</sup> 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
1	29	23N	7W		1365'	SOUTH	163'	EAST	SANDOVAL
Dedicated Acres SEC 29: NW/NW, NW/SE, NE/SE &	NE/NW, SE/ SE/SE (320	) AC.); SEC 2	SE/NE,	oint or Infill	<sup>14</sup> Consolidation C	ode	<sup>15</sup> Order No.		1.
NW/SW (40 AC.)	= 360 ACRE	S			1		R-14081	R-14081A	

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



18 17 OPERATOR CERTIFICATION

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

Shaw-Marie Ford 08/31/20
Signature Date

Shaw-Marie Ford

Printed Name

sford@djrllc.com

E-mail Address

# SURVEYOR CERTIFICATION

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

JULY 24, 2020

Date of Survey Signature and Seal of Professional Surveyor:



Certificate Number

11393

BOTTOM HOLE LOCATION (BHL)O LAT. 36.194311" N (NAD83) LONG. 107.589392" W (NAD83) DISTRICT I
1625 N. Trench Dr., Hobbs, N.M. 88240
Phone: (676) 393-6161 Fax: (676) 393-0720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (676) 748-1283 Fax: (676) 748-9720
DISTRICT III
1000 Rio Braxos Rd., Astec, N.M. 67410
Phone: (605) 334-6178 Fax: (606) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 67605
Phone: (605) 476-3460 Fax: (506) 476-3462

State of New Mexico Energy, Minerals & Natural Resources Department

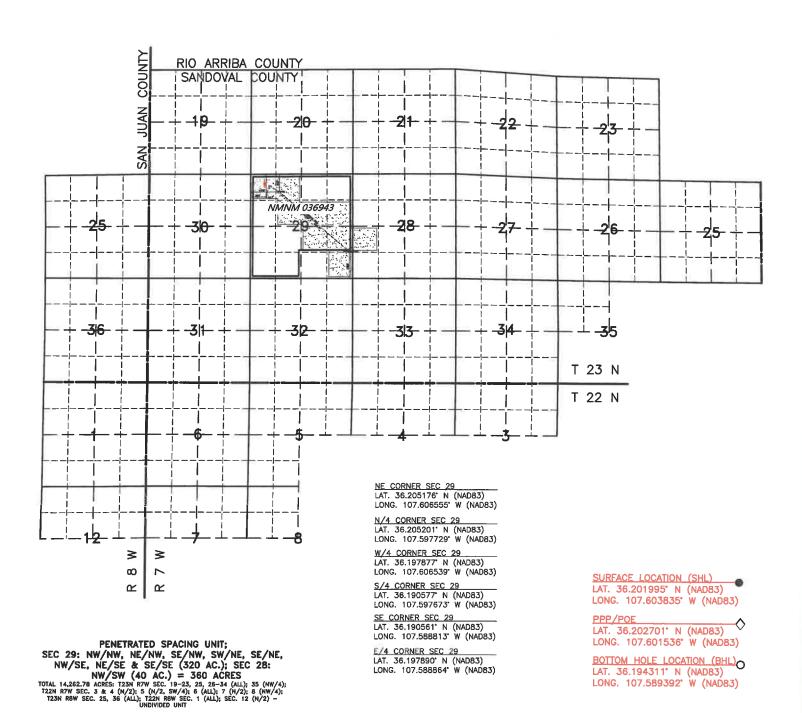
Form C-102 Revised August 1, 2011

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

☐ AMENDED REPORT

DJR OPERATING, LLC NORTH ALAMITO UNIT #320H



Released to Imaging: 12/9/2022 12:07:43 PM

# State of New Mexico Energy, Minerals and Natural Resources Department

Submit Electronically Via E-permitting

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

# NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

# Section 1 – Plan Description Effective May 25, 2021

I. Operator:DJR Op	erating, I	LC		<b>OGRID:</b> 371	838		<b>Date:</b> 09/2	6_/_2022_
II. Type: ⊠ Original □	] Amendi	nent due	to □ 19.15.27	7.9.D(6)(a) NMA	AC □ 19.1	15.27.9.D(6)(b)	NMAC □ Other	
If Other, please describe:								
III. Well(s): Provide the be recompleted from a si						or set of wells	proposed to be di	rilled or proposed to
Well Name	API	U	LSTR	Footage	S	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
N. Alamito Unit 320H	TBD	D-29-23	N-07W	1161 FNL x 800	FWL	220	330	110
N. Alamito Unit 565H	TBD	D-29-23	N-07W	1170 FNL x 818	FWL	370	550	120
IV. Central Delivery Po V. Anticipated Schedule proposed to be recomplete	e: Provid	e the follo	owing informa	tion for each ne	w or reco	mpleted well or		
Well Name		API	Spud Date	TD Reached	Co	ompletion	Initial Flow	First Production
			1	Date		encement Date	Back Date	Date
N. Alamito Unit 320H		TBD	01/06/2023	01/17/2023	0	2/12/2023	02/23/2023	02/24/2023
N. Alamito Unit 565H		TBD	01/07/2023	01/18/2023		2/12/2023	02/23/2023	02/24/2023
VI. Separation Equipm	——— ent: ⊠ A	ttach a co	omplete descr	ption of how Or	erator wi	ll size senaratio	on equipment to o	ptimize gas capture.

VII. Operational Practices: 

Attach a complete description of the actions Operator will take to comply with the requirements of

VIII. Best Management Practices: 

Attach a complete description of Operator's best management practices to minimize venting

Page 1 of 4

during active and planned maintenance.

Subsection A through F of 19.15.27.8 NMAC.

# Section 2 – Enhanced Plan EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☑ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

# IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

# X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. $\square$ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the
production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of
the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural	gas gathering system 🗆 w	vill □ will not have	capacity to gather	100% of the anticipated	natural gas
production volume from the well p	prior to the date of first pro	oduction.			

XIII. Line Pressure. Operator $\square$ does $\square$ does not anticipate that its existing well(s) connected to the same segment, or portion,	of the
natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new we	ll(s).

$\overline{}$	A 1 .	O 1	, 1		1 4.	•	4 41 .	ased line pressi	
	Attach (	Inerator	'c nlan 1	o manage	nroduction	in rechange	to the incre	aced line nrecei	110

XIV. Confidentiality: $\square$ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for	the information provided in
Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC and attaches a full description	n of the specific information
for which confidentiality is asserted and the basis for such assertion.	

# Section 3 - Certifications <u>Effective May 25, 2021</u>

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

🗵 Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system: or ☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. If Operator checks this box, Operator will select one of the following: Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or Venting and Flaring Plan. 

Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including: power generation on lease: (a)

- power generation for grid; (b)
- compression on lease; (c)
- (d) liquids removal on lease;
- reinjection for underground storage; (e)
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- fuel cell production; and (h)
- other alternative beneficial uses approved by the division. (i)

# **Section 4 - Notices**

- 1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:
- Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or
- Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.
- 2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:
Printed Name: Shaw-Marie Ford
Title: Regulatory Specialist
E-mail Address: sford@djrllc.com
Date: 09/26/2022
Phone: 505-716-3297
OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:



# **SEPARATION EQUIPMENT**

DJR Operating, LLC (DJR) has pulled representative pressurized samples from wells in the same producing formation. DJR has utilized these samples in process simulations to determine the amount of gas anticipated in each stage of the process and utilized this information with a safety factor to size the equipment listed below:

Separation equipment will be set as follows:

- o Individual 3 phase separator will be set for the individual well.
- o The separator will be sized based on the anticipated volume of the well and the pressure of the lines utilized for oil, gas, and water takeaway.
- o The 3 phase production separator will be equipped with a 0.75 MMBtu/hr indirect fired heater.

# Heater treaters will be set as follows:

- o Individual heater treaters will be set for the individual well.
- o The heater treaters are sized based on the anticipated combined volume of oil and produced water predicted to come from the initial 3 phase separator.
- Oil will be separated from the produced water and the oil/produced water will be sent to its respective tanks.
- o The combined oil and natural gas stream is routed to the Vapor Recovery Tower.

# Vapor Recovery Equipment will be set as follows:

- The Vapor Recovery Tower has been sized, based on the anticipated volume of gas from the heater treater and oil and water tanks.
- The Vapor Recovery Unit has been sized, based on the anticipated volume of gas from the heater treater and oil and water tanks. The Vapor Recovery Unit is utilized to push the recovered gas into the sales pipeline.

# Production storage tanks will be set as follows:

- The oil and produced water tanks utilize a closed vent capture system to ensure all breathing, working, and flashing losses are routed to the Vapor Recovery Tower and Vapor Recovery Unit.
- Each of the production storage tanks will be equipped with a 0.5 MMBtu/hr indirect heater.

1 Road 3263 Aztec, NM 87410 Phone (505) 632-3476 Fax (505) 632-8151



# **VENTING and FLARING**

DJR Operating, LLC (DJR) has a natural gas system available prior to startup of completion operations. DJR utilizes a Vapor Recovery Unit System and sells all natural gas except during periods of startup, shutdown, maintenance, or malfunction for the gas capturing equipment, including the vapor recovery tower, vapor recovery unit, storage tanks, and pipelines.

Currently, DJR utilizes the following from list A-I of Section 3 for its operations to minimize flaring:

- a) DJR utilizes natural gas-powered generators to power its leases where grid power isn't available.
- b) When electrical grid power is unavailable, natural gas generators will be used for major equipment onsite.
- c) DJR's in service compression will be natural gas powered.
- d) Should liquids removal, such as dehydration be required, units will be powered by natural gas.

DJR will only flare gas during the following times:

- o Scheduled maintenance for gas capturing equipment including:
  - Vapor Recovery Tower
  - o Vapor Recovery Unit
  - Storage tanks
  - o Pipelines
  - o Emergency flaring



# **OPERATIONAL PRACTICES**

# 19.15.27.8 A. Venting and Flaring of Natural Gas

DJR Operating, LLC (DJR) understands the requirements of NMAC 19.15.27.8 which states that the venting and flaring of natural gas during drilling, completion or production that constitutes waste as defined in 19.15.2 are prohibited.

# 19.15.27.8 B. Venting and flaring during drilling operations

- o DJR shall capture or combust natural gas if technically feasible during drilling operations using best industry practices.
- A flare stack with a 100% capacity for expected volumes will be set on location of the facility at least 100 feet from the nearest surface hole location, well heads, and storage tanks.
- o In the event of an emergency, DJR will vent natural gas in order to avoid substantial impact. DJR shall report the vented or flared gas to the NMOCD.

# 19.15.27.8 E. Venting and flaring during completion or recompletion operations

During Completion Operations, DJR utilizes the following:

- o DJR facilities are built and ready from day 1 of Flowback.
- o Individual well test separators will be set to properly separate gas and liquids. Temporary test separator will be utilized initially to process volumes. In addition, separators will be tied into flowback tanks which will be tied into the gas processing equipment for sales down a pipeline. See Separation Equipment for details.
- Should the facility not yet be capable of processing gas, or the gas does not meet quality standards, then storage tanks will be set that are tied into gas busters or temporary flare to manage natural gas. This flare would meet the following requirements:
  - 1) An appropriately sized flare stack with an automatic igniter.
  - 2) DJR analyzes the natural gas samples twice per week.
  - 3) DJR routes the natural gas into a gathering pipeline as soon as the pipeline specifications are met.
  - 4) DJR provides the NMOCD with pipeline specifications and natural gas data.

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# 19.15.27.8 D. Venting and flaring during production operations

During Production Operations DJR will not vent or flare natural gas except under the following circumstances:

- 1. During an emergency or malfunction
- 2. To unload or clean-up liquid holdup in a well to atmospheric pressure, provided:
  - a. DJR does not vent after the well achieves a stabilized rate and pressure.
  - b. DJR will remain present on-site during liquids unloading by manual purging and tall all reasonable actions to achieve a stabilized rate and pressure at the earliest practical time.
  - c. DJR will optimize the system to minimize natural gas venting on any well equipped with a plunger lift or auto control system.
  - d. Best Management Practices will be used during downhole well maintenance.
- 3. During the first year of production from an exploratory well provided:
  - a. DJR receives approval from the NMOCD.
  - b. DJR remains in compliance with the NM gas capture requirements.
  - c. DJR submits an updated C-129 form to the NMOCD.
- 4. During the following activities unless prohibited:
  - a. Gauging or sampling a storage tank or low-pressure production vessel.
  - b. Loading out liquids from a storage tank.
  - c. Repair and maintenance.
  - d. Normal operation of gas activated pneumatic controller or pump.
  - e. Normal operation of a storage tank but not including venting from a thief hatch.
  - f. Normal operation of dehydration units.
  - g. Normal operations of compressors, compressor engines, turbines, valves, flanges, and connectors.
  - h. During a bradenhead, packer leakage test, or production test lasting less than 24-hours.
  - i. When natural gas does not meet the gathering pipeline specifications.
  - j. Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities.

# 19.15.27.8 E. Performance standards

- 1. DJR has utilized process simulations with a safety factor to design all separation and storage equipment. The equipment is routed to a Vapor Recovery System and utilizes a flare as back up for periods of startup, shutdown, maintenance, or malfunction of the VRU System.
- 2. DJR will install a flare that designed to handle the full volume of vapors from the facility in case of the VRU failure and it its designed with an auto ignition system.
- 3. Flare stacks will appropriately sized and designed to ensure proper combustion efficiency.

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- a. Flare stacks installed or replaced will be equipped with an automatic ignitor or continuous pilot.
- b. Previously installed flare stacks will be retrofitted with an automatic ignitor, continuous pilot, or technology that alerts DJR of flare malfunction within 18 months after May 25, 2021.
- c. Flare stacks replaced after May 25, 2021, will be equipped with an automatic ignitor or continuous pilot if located at a well or facility with average daily production of 60,000 cubic feet of natural gas or less.
- d. Flare stacks will be located at least 100 feet from the well and storage tanks and securely anchored.
- 4. DJR will conduct an AVO inspection on all components for leaks and defects on a weekly basis.
- 5. DJR will make and keep records of AVO inspections which will be available to the NMOCD for at least 5 years.
- 6. DJR may use a remote or automated monitoring technology to detect leaks and releases in lieu of AVO inspections with prior NMOCD approval.
- 7. Facilities will be designed to minimize waste.
- 8. DJR will resolve emergencies as promptly as possible.

# 19.15.27.8 F. Measurement or estimation of vented and flared natural gas

- 1. DJR will have meters on both the low- and high-pressure sides of the flares and the volumes will be recorded in DJR's SCADA system.
- 2. DJR will install equipment to measure the volume of flared natural gas that has an average daily production of 60,000 cubic feet or greater of natural gas.
- 3. DJR's measuring equipment will conform to the industry standards.
- 4. The measurement system is designed such that it cannot be bypassed except for inspections and servicing meters.
- 5. DJR will estimate the volume of vented or flared natural gas using a methodology that can be independently verified if metering is not practicable due to low flow rate or pressure.
- 6. DJR will estimate the volume of flared and vented natural gas based on the results of an annual GOR test for wells that do not require measuring equipment reported on Form C-116.
- 7. DJR will install measuring equipment whenever the NMOCD determines that metering is necessary.



# BEST MANAGEMENT PRACTICES

DJR Operating, LLC (DJR) utilizes the following Best Management Practices to minimize venting during active and planned maintenance.

DJR has a closed vent capture system to route emissions from the heater treater, tanks, and vapor recovery to the vapor recovery unit with an enclosed combustion device (ECD) for backup. The system is designed such that if the vapor recovery unit is taken out of service for any reason, the vapors will be routed to the ECD for combustion.

DJR will isolate and attempt to route all vapors to the vapor recovery unit or ECD prior to opening any lines for maintenance to minimize venting from the equipment.

DJR shall notify the NMOCD of venting or flaring that exceeds 50 MCF but less than 500 MCF in volume that either resulted from an emergency or malfunction, or an event lasting over eight hours or more cumulatively within any 24-hour period from a single event by filing a form C-129 no later than 15 days following the discovery or commencement of venting or flaring.

DJR shall notify the NMOCD verbally or by e-mail within 24-hours following discovery or commencement of venting or flaring that exceeds 500 MCF in volume or otherwise qualifies as a major release as defined in 19.15.29.7 NMAC from a single event and provide the information required in form C-129 to the NMOCD no later than 15 days that verifies, updates, or corrects the verbal or e-mail notification.

DJR will install measuring equipment to conform to industry standards such as American Petroleum Institute (API) Manual of Petroleum Measurement Standards (MPMS) Chapter 14.10 Measurement of Flow to Flares.

DJRs measuring equipment shall not be designed or equipped with a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

DJR shall report the volume of vented and flared natural gas for each well or facility at which venting or flaring occurred on a monthly basis.

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# DRILLING PLAN North Alamito #320H Sandoval County, New Mexico

**Surface Location** 

800-ft FWL & 1161-ft FNL Sec 29 T23N R07W Graded Elevation 6902' MSL RKB Elevation 6916' (14' KB) **SHL Geographical Coordinates (NAD-83)** 

Latitude 36.2019950° N Longitude 107.6038350° W

**Kick Off Point for Horizontal Build Curve** 

4534-ft MD 4486-ft TVD **Local Coordinates (from SHL)** 

596-ft North 134-ft East

**Heel Location (Pay zone entry)** 

1479-ft FWL & 906-ft FNL Sec 29 T23N R07W **Heel Geographical Coordinates (NAD-83)** 

Latitude 36.2027009° N Longitude 107.60153620° W

**Bottom Hole Location (TD)** 

163-ft FEL & 1365-ft FSL Sec 29 T23N R07W **BHL Geographical Coordinates (NAD-83)** 

Latitude 36.1943111° N Longitude 107.5893916° W

# Well objectives

This well is planned as a 4710-ft lateral in the Gallup C sand.

### **Bottom Hole temperature and pressure**

The temperature in the Gallup C horizontal objective is 140°F. Bottom hole pressure in the Gallup C 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	961	958	Sd	W	8.3	8.4 – 8.8
Kirtland	1061	1057	Sh	-	8.3	8.4 – 8.8
Fruitland	1249	1242	С	G	8.3	9.0 - 9.5
Pictured Cliffs	1545	1535	Sd	W	8.3	9.0 - 9.5
Lewis	1661	1649	Sh	-		9.0 - 9.5
Chacra	2372	2352	Sd	-	8.3	9.0 - 9.5
Menefee	3092	3063	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	3951	3911	Sd	-	8.3	9.0 - 9.5
Mancos	4140	4098	Sh	-		9.0 - 9.5
Mancos Silt	4433	4387	SIt	O/G	6.6	9.0 - 9.5
Gallup A	4947	4876	SIt	O/G	6.6	9.0 - 9.5
Gallup B	4997	4916	Sd	O/G	6.6	8.8 -9.0
Gallup C	5135	5015	Sd	O/G	6.6	8.8 -9.0
Target	5580	5163	Sd	O/G	6.6	8.8 -9.0

# **Casing Program**

Casing	Hole	Weight			MD	MD	TVD	TVD	Top of Cement
OD	Size	(#/ft)	Grade	Coupling	Top	Bottom	Top	Bottom	·
9-5/8"	12-1/4"	36	K-55	STC	surf	350	surf	350	surface
7"	8-3/4"	26	K-55	LTC	surf	5524	surf	5161	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5244	10288	5077	5168	5244

Note: all casing will be new

Rev 2



# **Casing Design Load Cases**

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

# Note #

- 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
- 50 bbl kick at TD, 0.50 ppg intensity, 4" drill pipe, 9.0 ppg mud, fracture gradient at shoe 2060 psi BHP, 687 psi surface pressure, 12.5 ppg EMW shoe integrity
- 4 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
- Overpull values as follows: Surface casing 20,000 lbs, Intermediate & Production 100,000 lbs

# **Casing Design Factors**

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

# **Cement Design**

9-5/8" Surface Casing	<u>Lead</u>
Name	Redi-Mix
Туре	1-11
Planned top	Surface
Density (ppg)	14.50
Yield (cf/sx)	1.61
Mix water (gal/sx)	7.41
Volume (sx)	114
Volume (bbls)	33
Volume (cu. ft.)	185
Excess %	50

7" Intermediate Casing	Lead	Tail
	BJ Services	BJ Services
Type	III	Poz/G
Planned top	Surface	4034-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	2.34	1.50
Mix water (gal/sx)	13.26	7.20
Volume (sx)	392	238
Volume (bbls)	163	63
Volume (cu.ft.)	917	356
Excess %	55	55

Rev 2



# 4-1/2" Production Liner

	BJ Services
Type	Poz/G
Planned top	5244-ft
Density (ppg)	13.3
Yield (cf/sx)	1.56
Mix water (gal/sx)	7.71
Volume (sx)	423
Volume (bbls)	118
Volume (cu.ft)	661
Excess %	40

### **Wellhead & Pressure Control**

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

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

# **Mud Program**

Surface hole will be drilled with a fresh water, native mud system. In intermediate hole, a low weight 7% KCI LSND drilling fluid will be used, with KCI 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% KCI Low solids, non- dispersed	350 – 5524	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5524 – 10288	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.

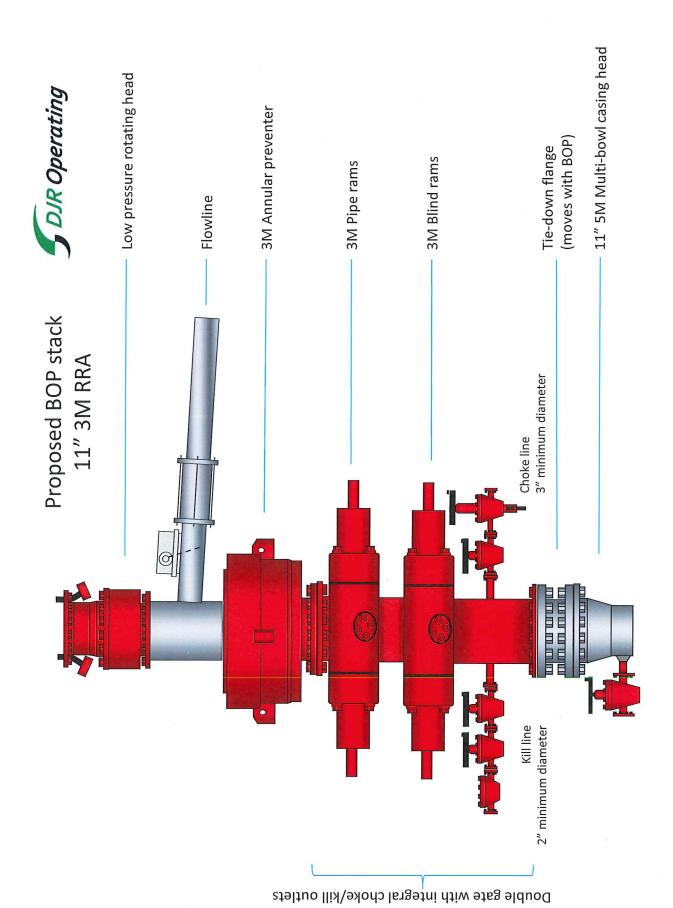
Electric logging: No open hole electric logs are programmed. A cased hole GR/CCL will be run during completions for perforating depth control.

### **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.

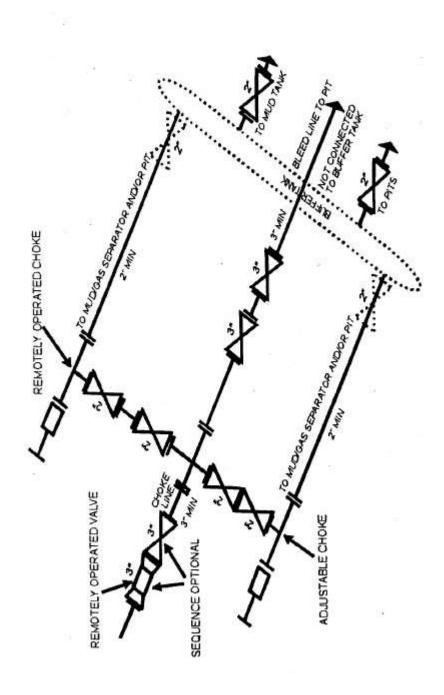
### Completion

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.

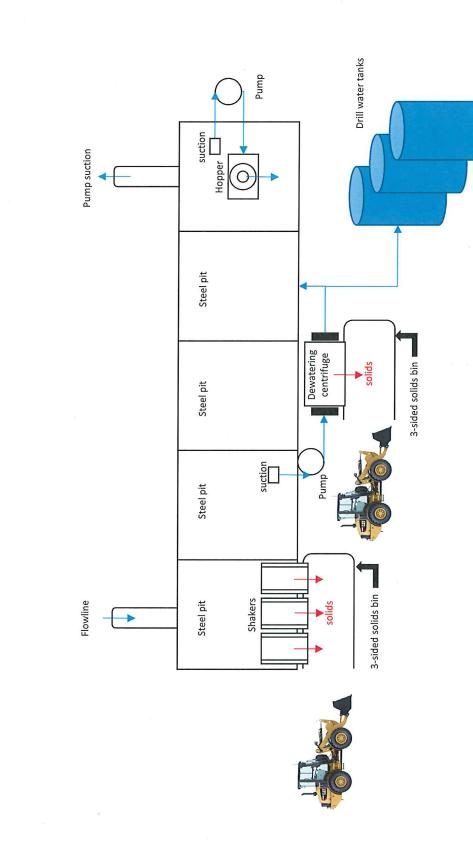


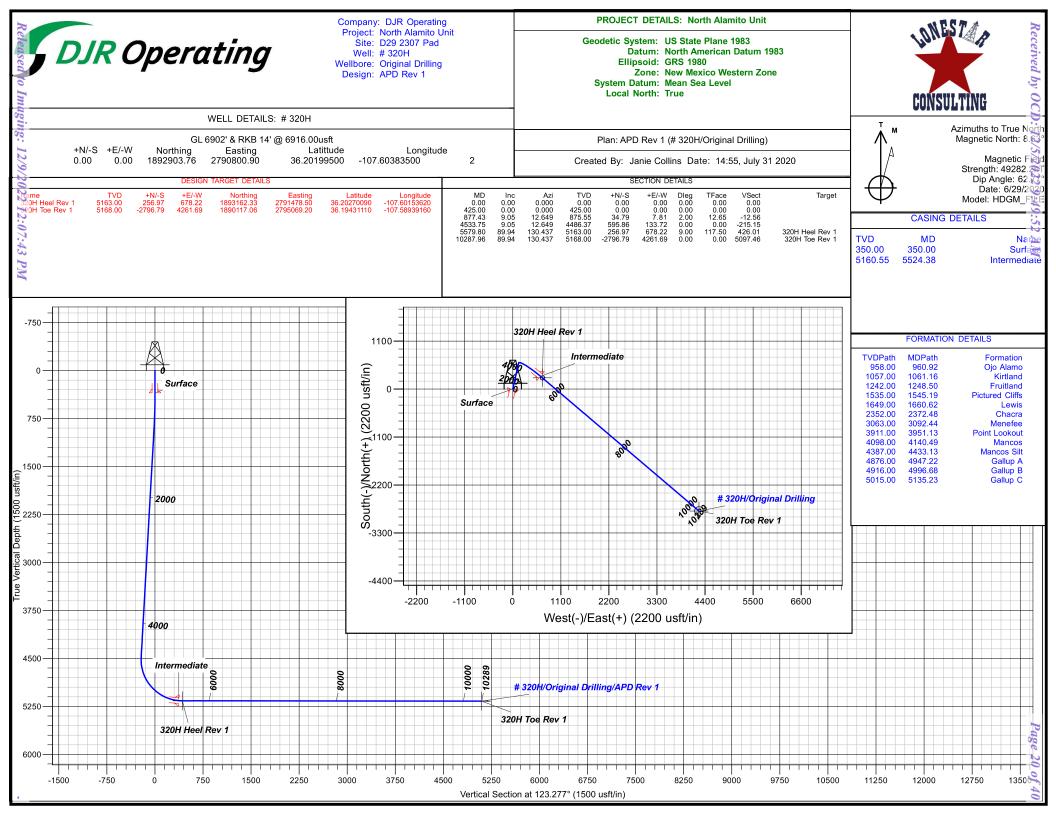


# Choke Manifold Actual system to conform with Onshore Order 2











# **DJR Operating**

North Alamito Unit D29 2307 Pad # 320H - Slot 2

**Original Drilling** 

Plan: APD Rev 1

# **Standard Planning Report**

31 July, 2020





Planning Report



DJR Database:

Design:

Company: **DJR** Operating Project: North Alamito Unit Site: D29 2307 Pad Well: # 320H Wellbore: **Original Drilling** 

**Local Co-ordinate Reference:** 

TVD Reference: MD Reference: North Reference:

**Survey Calculation Method:** 

Well # 320H - Slot 2

GL 6902' & RKB 14' @ 6916.00usft GL 6902' & RKB 14' @ 6916.00usft

Minimum Curvature

Project North Alamito Unit

US State Plane 1983 Map System: North American Datum 1983

APD Rev 1

Geo Datum: New Mexico Western Zone Map Zone:

System Datum:

Mean Sea Level

D29 2307 Pad Site

Northing: 1,892,894.34 usft Site Position: Latitude: 36.20196900 From: Lat/Long Easting: 2,790,818.63 usft Longitude: -107.60377500 **Position Uncertainty:** 0.00 usft Slot Radius: **Grid Convergence:** 0.14 13.20 in

Well #320H - Slot 2

**Well Position** +N/-S 9.46 usft Northing: 1,892,903.76 usft Latitude: 36.20199500 +E/-W -17.70 usft Easting: 2,790,800.90 usft Longitude: -107.60383500

**Position Uncertainty** 0.00 usft Wellhead Elevation: **Ground Level:** 6,902.00 usft

Wellbore Original Drilling Magnetics **Model Name** Sample Date Declination **Dip Angle** Field Strength (°) (°) (nT) 6/29/2020 49.282.20000000 HDGM FILE 8.63 62.77

APD Rev 1 Design Audit Notes: Version: Phase: PLAN Tie On Depth: 0.00 Vertical Section: Depth From (TVD) +N/-S +E/-W Direction (usft) (usft) (usft) (°) 0.00 0.00 0.00 123.277

7/31/2020 **Plan Survey Tool Program** Date

**Depth From** Depth To

(usft) (usft) Survey (Wellbore) **Tool Name** Remarks

0.00 10,287.96 APD Rev 1 (Original Drilling) MWD+HDGM

OWSG MWD + HDGM

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
425.00	0.00	0.000	425.00	0.00	0.00	0.00	0.00	0.00	0.00	
877.43	9.05	12.649	875.55	34.79	7.81	2.00	2.00	0.00	12.65	
4,533.75	9.05	12.649	4,486.37	595.86	133.72	0.00	0.00	0.00	0.00	
5,579.80	89.94	130.437	5,163.00	256.97	678.22	9.00	7.73	11.26	117.50	320H Heel Rev 1
10,287.96	89.94	130.437	5,168.00	-2,796.79	4,261.69	0.00	0.00	0.00	0.00	320H Toe Rev 1

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# **Lonestar Consulting, LLC**

Planning Report



Database: Company:

Project:

Site:

DJR

DJR Operating

DJR Operating
North Alamito Unit
D29 2307 Pad

Well: # 320H
Wellbore: Original Drilling
Design: APD Rev 1

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Well # 320H - Slot 2

GL 6902' & RKB 14' @ 6916.00usft GL 6902' & RKB 14' @ 6916.00usft

True

Minimum Curvature

Design:	APD Rev 1								
Planned Survey									
Planned Survey									
Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100ft)	(°/100ft)	(°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
425.00	0.00	0.000	425.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	1.50	12.649	499.99	0.00	0.00	-0.35	2.00	2.00	0.00
600.00	3.50	12.649	599.89	5.21	1.17	-1.88	2.00	2.00	0.00
700.00	5.50	12.649	699.58	12.87	2.89	-4.65	2.00	2.00	0.00
800.00	7.50	12.649	798.93	23.91	5.37	-8.63	2.00	2.00	0.00
877.43	9.05	12.649	875.55	34.79	7.81	-12.56	2.00	2.00	0.00
900.00	9.05	12.649	897.84	38.25	8.58	-13.81	0.00	0.00	0.00
1,000.00	9.05	12.649	996.60	53.60	12.03	-19.35	0.00	0.00	0.00
1,100.00	9.05	12.649	1,095.35	68.94	15.47	-24.89	0.00	0.00	0.00
1,200.00	9.05	12.649	1,194.11	84.29	18.92	-30.43	0.00	0.00	0.00
1,300.00	9.05	12.649	1,292.86	99.63	22.36	-35.97	0.00	0.00	0.00
1,400.00	9.05	12.649	1,391.62	114.98	25.80	-41.51	0.00	0.00	0.00
1,500.00	9.05	12.649	1,490.37	130.32	29.25	-47.05	0.00	0.00	0.00
1,600.00	9.05	12.649	1,589.13	145.67	32.69	-52.60	0.00	0.00	0.00
1,700.00	9.05	12.649	1,687.89	161.01	36.13	-58.14	0.00	0.00	0.00
1,800.00	9.05	12.649	1.786.64	176.36	39.58	-63.68	0.00	0.00	0.00
1,900.00	9.05	12.649	1,885.40	191.70	43.02	-69.22	0.00	0.00	0.00
2,000.00	9.05	12.649	1,984.15	207.05	46.47	-74.76	0.00	0.00	0.00
2,100.00	9.05	12.649	2,082.91	222.40	49.91	-80.30	0.00	0.00	0.00
2,200.00	9.05	12.649	2,181.66	237.74	53.35	-85.84	0.00	0.00	0.00
2,300.00	9.05	12.649	2,280.42	253.09	56.80	-91.38	0.00	0.00	0.00
2,400.00	9.05	12.649	2,379.17	268.43	60.24	-96.92	0.00	0.00	0.00
2,500.00	9.05	12.649	2,477.93	283.78	63.68	-102.46	0.00	0.00	0.00
2,600.00	9.05	12.649	2,576.69	299.12	67.13	-108.00	0.00	0.00	0.00
2,700.00	9.05	12.649	2,675.44	314.47	70.57	-113.54	0.00	0.00	0.00
								0.00	
2,800.00 2,900.00	9.05 9.05	12.649 12.649	2,774.20 2,872.95	329.81 345.16	74.02 77.46	-119.08 -124.62	0.00 0.00	0.00 0.00	0.00 0.00
3,000.00	9.05	12.649	2,672.95 2,971.71	360.50	80.90	-124.62	0.00	0.00	0.00
3,100.00	9.05	12.649	3,070.46	375.85	84.35	-135.71	0.00	0.00	0.00
3,200.00	9.05	12.649	3,169.22	391.19	87.79	-141.25	0.00	0.00	0.00
3,300.00	9.05	12.649	3,267.97	406.54	91.23	-146.79	0.00	0.00	0.00
3,400.00	9.05	12.649	3,366.73	421.89	94.68	-152.33	0.00	0.00	0.00
3,500.00	9.05	12.649	3,465.49	437.23	98.12 101.57	-157.87	0.00	0.00	0.00
3,600.00 3,700.00	9.05 9.05	12.649 12.649	3,564.24 3,663.00	452.58 467.92	101.57 105.01	-163.41 -168.95	0.00 0.00	0.00 0.00	0.00 0.00
3,800.00	9.05	12.649	3,761.75	483.27	108.45	-174.49	0.00	0.00	0.00
3,900.00	9.05	12.649	3,860.51	498.61	111.90	-180.03	0.00	0.00	0.00
4,000.00	9.05	12.649	3,959.26	513.96	115.34	-185.57	0.00	0.00	0.00
4,100.00	9.05	12.649	4,058.02	529.30	118.78	-191.11	0.00	0.00	0.00
4,200.00	9.05	12.649	4,156.77	544.65	122.23	-196.65	0.00	0.00	0.00
4,300.00	9.05	12.649	4,255.53	559.99	125.67	-202.19	0.00	0.00	0.00
4,400.00	9.05	12.649	4,354.29	575.34	129.12	-207.73	0.00	0.00	0.00
4,500.00	9.05	12.649	4,453.04	590.69	132.56	-213.28	0.00	0.00	0.00
4,533.75	9.05	12.649	4,486.37	595.86	133.72	-215.15	0.00	0.00	0.00
4,600.00	8.21	52.843	4,551.93	603.81	138.64	-215.40	9.00	-1.27	60.67
4,700.00	13.39	94.155	4,650.26	607.29	155.91	-202.87	9.00	5.18	41.31
4,800.00	21.26	109.219	4,745.69	600.47	184.63	-175.11	9.00	7.87	15.06
4,900.00	29.76	116.183	4,835.88	583.51	224.11	-132.80	9.00	8.50	6.96
5,000.00	38.47	120.235	4,918.60	556.84	273.36	-76.99	9.00	8.71	4.05
-									

DJR Operating

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# **Lonestar Consulting, LLC**

Planning Report



Database: DJR

Company: DJR Operating
Project: North Alamito Unit
Site: D29 2307 Pad
Well: # 320H
Wellbore: Original Drilling

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Well # 320H - Slot 2

GL 6902' & RKB 14' @ 6916.00usft GL 6902' & RKB 14' @ 6916.00usft

True

Minimum Curvature

Design:	APD Rev 1								
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.00	47.28	122.971	4,991.82	521.12	331.17	-9.06	9.00	8.81	2.74
5,200.00	56.14	125.021	5,053.72	477.21	396.13	69.34	9.00	8.86	2.05
5,300.00	65.02	126.682	5,102.80	426.20	466.62	156.26	9.00	8.88	1.66
5,400.00 5,500.00	73.92 82.83	128.118 129.430	5,137.84 5,157.97	369.35 308.06	540.92 617.19	249.57 346.96	9.00 9.00	8.90 8.91	1.44 1.31
5,579.80	89.94	130.437	5,163.00	256.97	678.22	426.01	9.00	8.91	1.26
5,600.00	89.94	130.437	5,163.02	243.87	693.59	446.06	0.00	0.00	0.00
5,700.00	89.94	130.437	5,163.13	179.01	769.70	545.28	0.00	0.00	0.00
5,800.00	89.94	130.437	5,163.23	114.15	845.81	644.50	0.00	0.00	0.00
5,900.00	89.94	130.437	5,163.34	49.29	921.93	743.72	0.00	0.00	0.00
6,000.00	89.94	130.437	5,163.45	-15.58	998.04	842.94	0.00	0.00	0.00
6,100.00	89.94	130.437	5,163.55	-80.44	1,074.15	942.16	0.00	0.00	0.00
6,200.00	89.94	130.437	5,163.66	-145.30	1,150.26	1,041.38	0.00	0.00	0.00
6,300.00	89.94	130.437	5,163.76	-210.16	1,226.37	1,140.60	0.00	0.00	0.00
6,400.00	89.94	130.437	5,163.87	-275.02	1,302.49	1,239.82	0.00	0.00	0.00
6,500.00	89.94	130.437	5,163.98	-339.88	1,378.60	1,339.04	0.00	0.00	0.00
6,600.00	89.94	130.437	5,164.08	-404.74	1,454.71	1,438.26	0.00	0.00	0.00
6,700.00	89.94	130.437	5,164.19	-469.60	1,530.82	1,537.48	0.00	0.00	0.00
6,800.00	89.94	130.437	5,164.30	-534.46	1,606.93	1,636.70	0.00	0.00	0.00
6,900.00	89.94	130.437	5,164.40	-599.32	1,683.05	1,735.92	0.00	0.00	0.00
7,000.00	89.94	130.437	5,164.51	-664.19	1,759.16	1,835.14	0.00	0.00	0.00
7,100.00	89.94	130.437	5,164.61	-729.05	1,835.27	1,934.36	0.00	0.00	0.00
7,200.00	89.94	130.437	5,164.72	-793.91	1,911.38	2,033.58	0.00	0.00	0.00
7,300.00	89.94	130.437	5,164.83	-858.77	1,987.49	2,132.80	0.00	0.00	0.00
7,400.00	89.94	130.437	5,164.93	-923.63	2,063.61	2,232.02	0.00	0.00	0.00
7,500.00	89.94	130.437	5,165.04	-988.49	2,139.72	2,331.24	0.00	0.00	0.00
7,600.00	89.94	130.437	5,165.15	-1,053.35	2,215.83	2,430.46	0.00	0.00	0.00
7,700.00	89.94	130.437	5,165.25	-1,118.21	2,291.94	2,529.68	0.00	0.00	0.00
7,800.00	89.94	130.437	5,165.36	-1,183.07	2,368.05	2,628.90	0.00	0.00	0.00
7,900.00	89.94	130.437	5,165.46	-1,247.94	2,444.17	2,728.12	0.00	0.00	0.00
8,000.00	89.94	130.437	5,165.57	-1,312.80	2,520.28	2,827.34	0.00	0.00	0.00
8,100.00	89.94	130.437	5,165.68	-1,377.66	2,596.39	2,926.56	0.00	0.00	0.00
8,200.00	89.94	130.437	5,165.78	-1,442.52	2,672.50	3,025.78	0.00	0.00	0.00
8,300.00	89.94	130.437	5,165.89	-1,507.38	2,748.61	3,125.00	0.00	0.00	0.00
8,400.00	89.94	130.437	5,166.00	-1,572.24	2,824.73	3,224.22	0.00	0.00	0.00
8,500.00	89.94	130.437	5,166.10	-1,637.10	2,900.84	3,323.44	0.00	0.00	0.00
8,600.00	89.94	130.437	5,166.21	-1,701.96	2,976.95	3,422.66	0.00	0.00	0.00
8,700.00	89.94	130.437	5,166.31	-1,766.82	3,053.06	3,521.88	0.00	0.00	0.00
8,800.00	89.94	130.437	5,166.42	-1,831.68	3,129.17	3,621.10	0.00	0.00	0.00
8,900.00 9,000.00	89.94 89.94	130.437 130.437	5,166.53 5,166.63	-1,896.55 -1,961.41	3,205.29 3,281.40	3,720.32 3,819.54	0.00 0.00	0.00 0.00	0.00 0.00
9,100.00	89.94	130.437	5,166.74	-2,026.27	3,357.51	3,918.76	0.00	0.00	0.00
9,200.00	89.94	130.437	5,166.84	-2,020.27	3,433.62	4,017.98	0.00	0.00	0.00
9,300.00	89.94	130.437	5,166.95	-2,155.99	3,509.73	4,117.20	0.00	0.00	0.00
9,400.00	89.94	130.437	5,167.06	-2,220.85	3,585.85	4,216.42	0.00	0.00	0.00
9,500.00	89.94	130.437	5,167.16	-2,285.71	3,661.96	4,315.64	0.00	0.00	0.00
9,600.00	89.94	130.437	5,167.27	-2,350.57	3,738.07	4,414.86	0.00	0.00	0.00
9,700.00	89.94	130.437	5,167.38	-2,415.43	3,814.18	4,514.08	0.00	0.00	0.00
9,800.00	89.94	130.437	5,167.48	-2,480.30	3,890.29	4,613.30	0.00	0.00	0.00
9,900.00	89.94	130.437	5,167.59	-2,545.16	3,966.41	4,712.52	0.00	0.00	0.00
10,000.00	89.94	130.437	5,167.69	-2,610.02	4,042.52	4,811.74	0.00	0.00	0.00
10,100.00	89.94	130.437	5,167.80	-2,674.88	4,118.63	4,910.96	0.00	0.00	0.00
10,200.00	89.94	130.437	5,167.91	-2,739.74	4,194.74	5,010.18	0.00	0.00	0.00
10,287.96	89.94	130.437	5,168.00	-2,796.79	4,261.69	5,097.46	0.00	0.00	0.00



Planning Report



Database: DJR

Company: DJR Operating
Project: North Alamito Unit
Site: D29 2307 Pad

Well: # 320H
Wellbore: Original Drilling
Design: APD Rev 1

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Well # 320H - Slot 2

GL 6902' & RKB 14' @ 6916.00usft GL 6902' & RKB 14' @ 6916.00usft

True

Minimum Curvature

PI	ar	۱n	مم	1 6	 m	Δ,	,

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100ft)	(°/100ft)	(°/100ft)

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
320H Heel Rev 1 - plan hits target cent - Circle (radius 50.00		0.000	5,163.00	256.97	678.22	1,893,162.34	2,791,478.51	36.20270090	-107.60153620
320H Toe Rev 1 - plan hits target cent - Circle (radius 100.0		0.000	5,168.00	-2,796.79	4,261.69	1,890,117.06	2,795,069.20	36.19431110	-107.58939160

Casing Points							
	Measured Depth (usft)	Vertical Depth (usft)		Name	Casing Diameter (in)	Hole Diameter (in)	
	350.00 5,524.38	350.00 5,160.55	Surface Intermediate		9.62 7.00	12.25 8.75	

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	960.92	958.00	Ojo Alamo		0.00	0.000
	1,061.16	1,057.00	Kirtland		0.00	0.000
	1,248.50	1,242.00	Fruitland		0.00	0.000
	1,545.19	1,535.00	Pictured Cliffs		0.00	0.000
	1,660.62	1,649.00	Lewis		0.00	0.000
	2,372.48	2,352.00	Chacra		0.00	0.000
	3,092.44	3,063.00	Menefee		0.00	0.000
	3,951.13	3,911.00	Point Lookout		0.00	0.000
	4,140.49	4,098.00	Mancos		0.00	0.000
	4,433.13	4,387.00	Mancos Silt		0.00	0.000
	4,947.22	4,876.00	Gallup A		0.00	0.000
	4,996.68	4,916.00	Gallup B		0.00	0.000
	5,135.23	5,015.00	Gallup C		0.00	0.000



# **DJR Operating**

North Alamito Unit D29 2307 Pad # 320H

Original Drilling APD Rev 1

# **Anticollision Report**

31 July, 2020



# **DJR** Operating

# **Lonestar Consulting, LLC**

# Anticollision Report



Company: **DJR** Operating Project: North Alamito Unit Reference Site: D29 2307 Pad Site Error: 0.00 usft Reference Well: # 320H Well Error: 0.00 usft

TVD Reference: MD Reference: North Reference: **Survey Calculation Method:** 

Output errors are at Database:

Local Co-ordinate Reference:

Offset TVD Reference:

Offset Datum

Well # 320H - Slot 2

Minimum Curvature

2.00 sigma

DJR

GL 6902' & RKB 14' @ 6916.00usft

GL 6902' & RKB 14' @ 6916.00usft

Reference APD Rev 1

Reference Wellbore

Reference Design:

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 ellipse separation of 1,000.00 usft **Error Surface:** Pedal Curve Warning Levels Evaluated at: 2.00 Sigma Casing Method: Not applied

Date 7/31/2020 Survey Tool Program

**Original Drilling** 

APD Rev 1

From То

(usft) (usft) Survey (Wellbore) **Tool Name** Description

MWD+HDGM OWSG MWD + HDGM 0.00 10,287.96 APD Rev 1 (Original Drilling)

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Dista Between Centres (usft)	nce Between Ellipses (usft)	Separation Factor	Warning
D29 2307 Pad						
# 565H - Original Drilling - APD Rev 1 # 565H - Original Drilling - APD Rev 1 # 565H - Original Drilling - APD Rev 1	425.00 500.00 800.00	425.00 500.05 800.12	20.07 20.24 24.45	17.43 17.06 19.11	7.608 CC 6.374 ES 4.575 SF	

Offset De	sign	D29 230	)7 Pad - ;	# 565H - Ori	iginal Drill	ling - APD F	Rev 1						Offset Site Error:	0.00 usft
Survey Prog		WD+HDGM											Offset Well Error:	0.00 usft
Refer		Offse		Semi Major					Dista					
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbor	e Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	i dotoi		
0.00	0.00	0.00	0.00	0.00	0.00	118.13	-9.46	17.70	20.07					
100.00	100.00	100.00	100.00	0.15	0.15	118.13	-9.46	17.70	20.07	19.77	0.31	65.113		
200.00	200.00	200.00	200.00	0.51	0.51	118.13	-9.46	17.70	20.07	19.05	1.03	19.579		
300.00	300.00	300.00	300.00	0.87	0.87	118.13	-9.46	17.70	20.07	18.33	1.74	11.522		
400.00	400.00	400.00	400.00	1.23	1.23	118.13	-9.46	17.70	20.07	17.61	2.46	8.163		
425.00	425.00	425.00	425.00	1.32	1.32	118.13	-9.46	17.70	20.07	17.43	2.64	7.608 C	C	
500.00	499.99	500.05	500.04	1.59	1.59	105.39	-8.56	18.08	20.24	17.06	3.18	6.374 E	3	
600.00	599.89	600.12	600.01	1.95	1.95	105.00	-4.52	19.74	20.97	17.08	3.89	5.389		
700.00	699.58	700.16	699.74	2.31	2.31	104.47	2.70	22.72	22.28	17.67	4.61	4.832		
800.00	798.93	800.12	799.29	2.68	2.67	109.03	11.06	26.16	24.45	19.11	5.34	4.575 SI	=	
877.43	875.55	877.41	876.27	2.97	2.95	116.68	17.52	28.83	27.21	21.29	5.92	4.598		
900.00	897.84	899.93	898.70	3.05	3.04	119.17	19.40	29.60	28.24	22.16	6.09	4.641		
1,000.00	996.60	999.69	998.04	3.44	3.41	128.21	27.74	33.04	33.35	26.52	6.83	4.884		
1,100.00	1,095.35	1,099.44	1,097.38	3.83	3.78	134.74	36.08	36.48	39.05	31.49	7.57	5.160		
1,200.00	1,194.11	1,199.19	1,196.73	4.23	4.15	139.56	44.42	39.92	45.14	36.83	8.31	5.433		
1,300.00	1,292.86	1,298.94	1,296.07	4.63	4.52	143.22	52.76	43.35	51.46	42.41	9.05	5.689		
1,400.00	1,391.62	1,398.70	1,395.41	5.03	4.89	146.07	61.10	46.79	57.95	48.16	9.78	5.922		
1,500.00	1,490.37	1,498.45	1,494.76	5.44	5.27	148.34	69.43	50.23	64.55	54.03	10.52	6.134		
1,600.00	1,589.13	1,598.20	1,594.10	5.84	5.64	150.19	77.77	53.67	71.23	59.97	11.26	6.325		
1,700.00	1,687.89	1,697.95	1,693.45	6.25	6.01	151.72	86.11	57.10	77.98	65.98	12.00	6.497		
1,800.00	1,786.64	1,797.70	1,792.79	6.66	6.39	153.00	94.45	60.54	84.77	72.03	12.74	6.653		
1,900.00	1,885.40	1,897.46	1,892.13	7.07	6.76	154.10	102.79	63.98	91.60	78.12	13.48	6.795		
2,000.00	1,984.15	1,997.21	1,991.48	7.48	7.14	155.04	111.13	67.42	98.46	84.24	14.22	6.924		
2,100.00	2,082.91	2,096.96	2,090.82	7.89	7.51	155.86	119.47	70.85	105.34	90.38	14.96	7.041		



# Anticollision Report



DJR Operating Company: Project: North Alamito Unit D29 2307 Pad Reference Site: 0.00 usft Site Error: Reference Well: # 320H Well Error: 0.00 usft

Reference Wellbore

Reference Design:

Original Drilling

APD Rev 1

Well # 320H - Slot 2 Local Co-ordinate Reference: TVD Reference: MD Reference:

GL 6902' & RKB 14' @ 6916.00usft GL 6902' & RKB 14' @ 6916.00usft

North Reference:

**Survey Calculation Method:** Minimum Curvature

Output errors are at 2.00 sigma Database: DJR

Offset TVD Reference: Offset Datum

Offset De	sign	D29 23	07 Pad - i	# 565H - Or	iginal Dril	ling - APD R	lev 1						Offset Site Error:	0.00 usft
Survey Prog	ram: 0-M	IWD+HDGM											Offset Well Error:	0.00 usft
Refer Measured Depth	ence Vertical Depth	Offs Measured Depth	et Vertical Depth	Semi Major Reference	Axis Offset	Highside Toolface	Offset Wellbor	re Centre +E/-W	Dista Between Centres	ance Between Ellipses	Minimum Separation	Separation Factor	Warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
2,200.00	2,181.66	2,196.71	2,190.17	8.30	7.89	156.58	127.80	74.29	112.23	96.53	15.70	7.149		
2,300.00	2,280.42	2,296.47	2,289.51	8.71	8.26	157.22	136.14	77.73	119.15	102.71	16.44	7.247		
2,400.00	2,379.17	2,396.22	2,388.85	9.12	8.63	157.78	144.48	81.17	126.08	108.90	17.18	7.338		
2,500.00	2,477.93	2,495.97	2,488.20	9.53	9.01	158.29	152.82	84.60	133.01	115.09	17.92	7.422		
2,600.00	2,576.69	2,595.72	2,587.54	9.94	9.38	158.74	161.16	88.04	139.96	121.30	18.66	7.500		
2,700.00	2,675.44	2,695.48	2,686.89	10.35	9.76	159.16	169.50	91.48	146.92	127.51	19.40	7.572		
2,800.00	2,774.20	2,795.23	2,786.23	10.77	10.14	159.53	177.84	94.92	153.88	133.74	20.14	7.639		
2,900.00	2,872.95	2,894.98	2,885.57	11.18	10.51	159.88	186.17	98.35	160.85	139.96	20.88	7.702		
3,000.00	2,971.71	2,994.73	2,984.92	11.59	10.89	160.19	194.51	101.79	167.82	146.20	21.62	7.761		
3,100.00	3,070.46	3,094.49	3,084.26	12.00	11.26	160.48	202.85	105.23	174.80	152.43	22.37	7.815		
3,200.00	3,169.22	3,194.24	3,183.61	12.42	11.64	160.75	211.19	108.67	181.78	158.67	23.11	7.867		
3,300.00	3,267.97	3,293.99	3,282.95	12.83	12.01	161.00	219.53	112.10	188.77	164.92	23.85	7.915		
3,400.00	3,366.73	3,393.74	3,382.29	13.24	12.39	161.23	227.87	115.54	195.76	171.17	24.59	7.961		
3,500.00	3,465.49	3,493.50	3,481.64	13.66	12.76	161.44	236.21	118.98	202.75	177.42	25.33	8.004		
3,600.00	3,564.24	3,593.25	3,580.98	14.07	13.14	161.64	244.55	122.42	209.74	183.67	26.07	8.045		
3,700.00	3,663.00	3,693.00	3,680.32	14.48	13.51	161.83	252.88	125.86	216.74	189.93	26.81	8.083		
3,800.00	3,761.75	3,792.75	3,779.67	14.90	13.89	162.00	261.22	129.29	223.74	196.18	27.55	8.120		
3,900.00	3,860.51	3,892.51	3,879.01	15.31	14.26	162.17	269.56	132.73	230.74	202.44	28.30	8.155		
4,000.00	3,959.26	3,992.26	3,978.36	15.72	14.64	162.32	277.90	136.17	237.74	208.71	29.04	8.188		
4,100.00	4,058.02	4,092.01	4,077.70	16.14	15.02	162.47	286.24	139.61	244.75	214.97	29.78	8.219		
4,200.00	4,156.77	4,191.76	4,177.04	16.55	15.39	162.61	294.58	143.04	251.75	221.23	30.52	8.249		
4,300.00	4,255.53	4,291.52	4,276.39	16.96	15.77	162.74	302.92	146.48	258.76	227.50	31.26	8.277		
4,400.00	4,354.29	4,391.27	4,375.73	17.38	16.14	162.86	311.25	149.92	265.77	233.77	32.00	8.304		
4,500.00	4,453.04	4,491.02	4,475.08	17.79	16.52	162.98	319.59	153.36	272.78	240.04	32.74	8.330		
4,533.75	4,486.37	4,524.69	4,508.61	17.93	16.65	163.02	322.41	154.52	275.15	242.15	33.00	8.339		
4,550.00	4,502.43	4,540.91	4,524.76	18.00	16.71	154.27	323.76	155.07	276.14	243.03	33.12	8.339		
4,600.00	4,551.93	4,600.18	4,583.76	18.19	16.93	123.94	329.20	156.57	277.03	243.52	33.51	8.267		
4,650.00	4,601.31	4,670.11	4,652.79	18.38	17.20	101.48	339.74	153.59	272.13	238.32	33.80	8.051		
4,700.00	4,650.26	4,734.21	4,714.82	18.54	17.45	91.55	353.72	145.83	261.86	227.91	33.95	7.713		
4,750.00	4,698.49	4,790.14	4,767.50	18.70	17.66	89.91	369.17	135.18	248.17	214.06	34.11	7.275		
4,800.00	4,745.69	4,836.97	4,810.23	18.84	17.85	92.77	384.36	123.56	233.66	199.24	34.42	6.788		
4,850.00	4,791.59	4,874.79	4,843.67	18.96	18.00	97.44	398.06	112.40	221.43	186.48	34.94	6.337		
4,900.00	4,835.88	4,904.36	4,869.06	19.08	18.12	101.99	409.63	102.62	214.70	179.15	35.55	6.039		
4,917.10	4,850.61	4,912.76	4,876.14	19.11	18.15	103.29	413.05	99.67	214.19	178.45	35.74	5.993		
4,950.00	4,878.31	4,926.68	4,887.74	19.18	18.21	105.28	418.84	94.62	216.21	180.21	36.00	6.005		
5,000.00	4,918.60	4,942.78	4,900.96	19.27	18.28	106.81	425.74	88.54	227.28	191.22	36.06	6.302		
5,050.00	4,956.52	4,950.00	4,906.81	19.35	18.31	105.52	428.90	85.72	247.57	211.96	35.62	6.951		
5,100.00	4,991.82	4,960.10	4,906.61	19.35	18.35	105.52	428.90	81.70	275.40	240.15	35.02	7.813		
5,150.00	5,024.29	4,962.88	4,917.13	19.42	18.36	104.23	433.40	80.57	308.96	274.24	34.72	8.899		
5,200.00	5,053.72	4,962.57	4,916.88	19.57	18.36	94.41	434.50	80.70	346.48	312.22	34.26	10.113		
5,250.00	5,079.95		4,914.55	19.71	18.35	87.20	433.19	81.88	386.61	352.69	33.91	11.400		
E 200 00	E 100 00	4.050.00	4 000 04	20.00	10.04	77.00	400.00	05 70	400.07	204.07	22 50	10 700		
5,300.00 5,350.00	5,102.80 5,122.14	4,950.00 4,950.00	4,906.81 4,906.81	20.02 20.47	18.31 18.31	77.98 71.06	428.90 428.90	85.72 85.72	428.37 470.91	394.87 437.27	33.50 33.64	12.786 13.998		
5,400.00	5,122.14	4,938.99	4,897.87	21.01	18.26	62.41	428.90 424.10	85.72 89.99	513.73	480.21	33.54	15.330		
5,450.00	5,149.81	4,936.99	4,889.70	21.62	18.22	55.07	419.85	93.74	556.38	522.84	33.54	16.587		
5,500.00	5,149.61	4,929.05	4,880.48	22.29	18.17	48.75	415.19	93.74	598.52	564.89	33.63	17.795		
5,550.00 5,579.80	5,162.28 5,163.00	4,900.00 4,900.00	4,865.36 4,865.36	23.01 23.45	18.10 18.10	42.99 40.92	407.88 407.88	104.12 104.12	639.92 664.04	606.31 630.13	33.61 33.91	19.037 19.580		
5,600.00	5,163.00	4,900.00	4,865.36	23.45	18.10	40.92	407.88	104.12	680.43	646.32	34.11	19.560		
5,700.00	5,163.02	4,869.08	4,865.36	25.42	17.97	38.78	407.88 395.91	114.19	762.90	728.60	34.11	22.245		
5,800.00	5,163.13	4,850.00	4,838.69	25.42	17.97	38.78 37.54	395.91	114.19	762.90 847.94	813.29	34.30	24.468		
0,000.00	0,100.23	4,000.00	7,021.07	21.23	17.30	37.54	300.34	113.03	347.34	313.28	54.00	24.400		
5,900.00	5,163.34	4,829.59	4,803.59	29.18	17.82	36.28	381.84	125.55	935.00	900.09	34.91	26.782		



# Anticollision Report



DJR Operating Company: Project: North Alamito Unit D29 2307 Pad Reference Site: Site Error: 0.00 usft Reference Well: # 320H Well Error: 0.00 usft

Reference Wellbore

Reference Design:

Original Drilling

APD Rev 1

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference:

Well # 320H - Slot 2 GL 6902' & RKB 14' @ 6916.00usft GL 6902' & RKB 14' @ 6916.00usft

**Survey Calculation Method:** Minimum Curvature Output errors are at 2.00 sigma

Database: DJR

Offset TVD Reference: Offset Datum

Offset De	•		77 Pad - 1	# 565H - Ori	iginai Dril	ling - APD R	ev 1						Offset Site Error:	0.00 us
urvey Prog Refer		WD+HDGM Offse	+	Semi Major	Ayis				Dista	ance			Offset Well Error:	0.00 us
leasured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbor	e Centre	Between	Between	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
6,000.00	5,163.45	4,800.00	4,776.61	31.24	17.70	34.58	372.20	132.94	1,023.92	988.94	34.98	29.270		
6,100.00	5,163.55	4,800.00	4,776.61	33.38	17.70	34.58	372.20	132.94	1,113.77	1,078.36	35.41	31.453		
6,200.00	5,163.66	4,800.00	4,776.61	35.59	17.70	34.58	372.20	132.94	1,205.22	1,169.47	35.75	33.712		
6,300.00	5,163.76	4,773.29	4,751.80	37.87	17.60	33.15	364.21	138.76	1,297.11	1,261.35	35.76	36.271		
6,400.00	5,163.87	4,750.00	4,729.86	40.20	17.51	32.00	357.78	143.19	1,390.25	1,354.44	35.80	38.832		
6,500.00	5,163.98	4,750.00	4,729.86	42.56	17.51	32.00	357.78	143.19	1,483.72	1,447.69	36.03	41.181		
6,600.00	5,164.08	4,750.00	4,729.86	44.97	17.51	32.00	357.78	143.19	1,578.00	1,541.78	36.22	43.567		
6,700.00	5,164.19	4,750.00	4,729.86	47.40	17.51	32.00	357.78	143.19	1,672.94	1,636.56	36.38	45.982		
6,800.00	5,164.30	4,727.92	4,708.81	49.86	17.42	30.96	352.17	146.80	1,767.93	1,731.55	36.38	48.594		
6,900.00	5,164.40	4,720.94	4,702.11	52.34	17.42	30.65	350.49	147.83	1,863.53	1,827.06	36.47	51.096		
7,000.00	5,164.51	4,700.00	4,681.90	54.84	17.31	29.75	345.75	150.57	1,959.71	1,923.23	36.47	53.731		
7,100.00	5,164.61	4,700.00	4,681.90	57.36	17.31	29.75	345.75	150.57	2,055.83	2,019.24	36.59	56.192		
7,200.00	5,164.72	4,700.00	4,681.90	59.89	17.31	29.75	345.75	150.57	2,152.30	2,115.62	36.69	58.666		
7,300.00	5,164.83	4,700.00	4,681.90	62.43	17.31	29.75	345.75	150.57	2,249.09	2,212.31	36.78	61.151		
7,400.00	5,164.93	4,700.00	4,681.90	64.99	17.31	29.75	345.75	150.57	2,346.14	2,309.28	36.86	63.645		
7,500.00	5,165.04	4,700.00	4,681.90	67.55	17.31	29.75	345.75	150.57	2,443.43	2,406.49	36.94	66.146		
7,600.00	5,165.15	4,700.00	4,681.90	70.13	17.31	29.75	345.75	150.57	2,540.93	2,503.92	37.01	68.652		
7,700.00	5,165.25	4,700.00	4,681.90	72.71	17.31	29.75	345.75	150.57	2,638.62	2,601.54	37.08	71.163		
7,800.00	5,165.36	4,676.32	4,658.86	75.30	17.22	28.79	340.92	153.05	2,735.93	2,698.88	37.05	73.836		
7,900.00	5,165.46	4,672.76	4,655.38	77.90	17.21	28.65	340.24	153.37	2,833.77	2,796.66	37.10	76.372		
8,000.00	5,165.57	4,650.00	4,633.04	80.50	17.12	27.79	336.20	155.04	2,932.09	2,895.00	37.09	79.060		
8,100.00	5,165.68	4,650.00	4,633.04	83.11	17.12	27.79	336.20	155.04	3,030.05	2,992.90	37.15	81.567		
8,200.00	5,165.78	4,650.00	4,633.04	85.72	17.12	27.79	336.20	155.04	3,128.14	3,090.93	37.21	84.075		
8,300.00	5,165.89	4,650.00	4,633.04	88.33	17.12	27.79	336.20	155.04	3,226.35	3,189.09	37.26	86.583		
8,400.00	5,166.00	4,650.00	4,633.04	90.96	17.12	27.79	336.20	155.04	3,324.67	3,287.35	37.32	89.090		
8,500.00	5,166.10	4,650.00	4,633.04	93.58	17.12	27.79	336.20	155.04	3,423.08	3,385.71	37.37	91.595		
8,600.00	5,166.21	4,650.00	4,633.04	96.21	17.12	27.79	336.20	155.04	3,521.58	3,484.16	37.42	94.099		
8,700.00	5,166.31	4,650.00	4,633.04	98.84	17.12	27.79	336.20	155.04	3,620.17	3,582.69	37.48	96.601		
8,800.00	5,166.42	4,650.00	4,633.04	101.47	17.12	27.79	336.20	155.04	3,718.83	3,681.30	37.53	99.099		
8,900.00	5,166.53	4,650.00	4,633.04	104.11	17.12	27.79	336.20	155.04	3,817.56	3,779.98	37.58	101.594		
9,000.00	5,166.63	4,650.00	4,633.04	106.75	17.12	27.79	336.20	155.04	3,916.35	3,878.73	37.63	104.085		
9,100.00	5,166.74	4,650.00	4,633.04	109.39	17.12	27.79	336.20	155.04	4,015.21	3,977.53	37.68	106.573		
9,200.00	5,166.84	4,650.00	4,633.04	112.03	17.12	27.79	336.20	155.04	4,114.12	4,076.39	37.73	109.055		
9,300.00	5,166.95	4,650.00	4,633.04	114.68	17.12	27.79	336.20	155.04	4,213.08	4,175.31	37.77	111.534		
9,400.00	5,167.06	4,650.00	4,633.04	117.32	17.12	27.79	336.20	155.04	4,312.09	4,274.27	37.82	114.006		
9,500.00	5,167.16	4,650.00	4,633.04	119.97	17.12	27.79	336.20	155.04	4,411.14	4,373.27	37.87	116.474		
9,600.00	5,167.27	4,650.00	4,633.04	122.62	17.12	27.79	336.20	155.04	4,510.24	4,472.32	37.92	118.936		
9,700.00	5,167.38	4,650.00	4,633.04	125.27	17.12	27.79	336.20	155.04	4,609.37	4,571.40	37.97	121.392		
9,800.00	5,167.48	4,650.00	4,633.04	127.93	17.12	27.79	336.20	155.04	4,708.54	4,670.52	38.02	123.842		
9,900.00	5,167.59	4,650.00	4,633.04	130.58	17.12	27.79	336.20	155.04	4,807.75	4,769.68	38.07	126.286		
10,000.00	5,167.69	4,627.40	4,610.74	133.24	17.03	26.99	332.71	156.10	4,906.54	4,868.47	38.07	128.882		
10 100 00	E 407.00	4 600 07	4 600 40	405.00	47.00	20.04	200 50	450.44	E 005 75	4.007.00	00.40	194 000		
10,100.00	5,167.80	4,626.07	4,609.43	135.89	17.03	26.94	332.52	156.14	5,005.75	4,967.63	38.12	131.322		
10,200.00	5,167.91	4,624.80	4,608.16	138.55	17.02	26.90	332.34	156.18	5,104.99	5,066.83	38.17	133.755		
10,287.96	5,168.00	4,623.71	4,607.09	140.89	17.02	26.86	332.19	156.21	5,192.31	5,154.10	38.21	135.889		
10,288.86	5,168.00	4,623.70	4,607.08	140.91	17.02	26.86	332.19	156.21	5,193.20	5,152.38	40.82	127.217		



# Anticollision Report



Company: DJR Operating
Project: North Alamito Unit
Reference Site: D29 2307 Pad
Site Error: 0.00 usft
Reference Well: # 320H
Well Error: 0.00 usft
Reference Wellbore Original Drilling

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference:

Well # 320H - Slot 2 GL 6902' & RKB 14' @ 6916.00usft GL 6902' & RKB 14' @ 6916.00usft

Survey Calculation Method: Minimum Curvature

Output errors are at 2.00 sigma
Database: DJR
Offset TVD Reference: Offset Datum

Reference Depths are relative to GL 6902' & RKB 14' @ 6916.00usft

APD Rev 1

Offset Depths are relative to Offset Datum

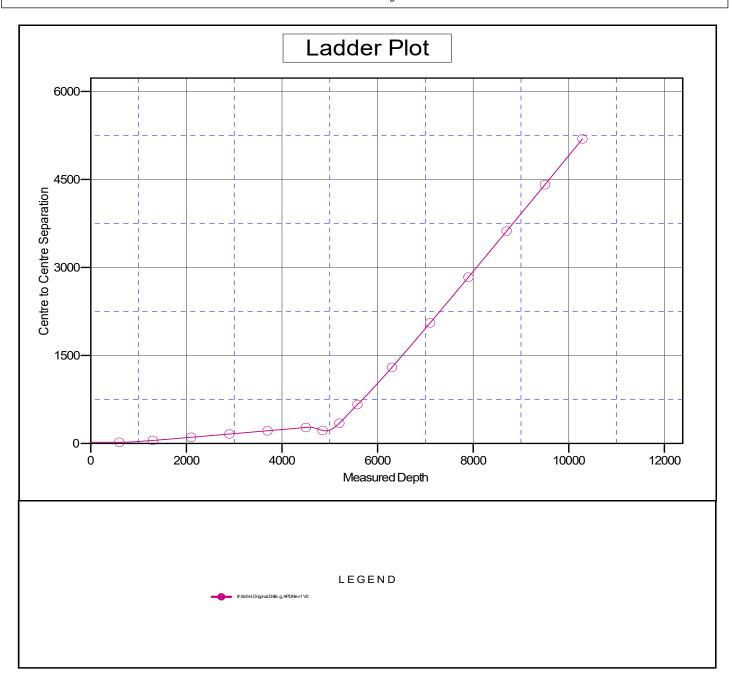
Central Meridian is -107.83333333

Reference Design:

Coordinates are relative to: # 320H - Slot 2

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

Grid Convergence at Surface is: 0.14°



# **DJR** Operating

# **Lonestar Consulting, LLC**

# Anticollision Report



Company: **DJR** Operating Project: North Alamito Unit D29 2307 Pad Reference Site: Site Error: 0.00 usft # 320H Reference Well: Well Error: 0.00 usft Reference Wellbore **Original Drilling** 

Local Co-ordinate Reference: Well # 320H - Slot 2 TVD Reference: GL 6902' & RKB 14' @ 6916.00usft MD Reference:

GL 6902' & RKB 14' @ 6916.00usft

North Reference: Minimum Curvature **Survey Calculation Method:** 

Output errors are at 2.00 sigma Database: DJR

Offset TVD Reference: Offset Datum

Reference Depths are relative to GL 6902' & RKB 14' @ 6916.00usft

APD Rev 1

Offset Depths are relative to Offset Datum

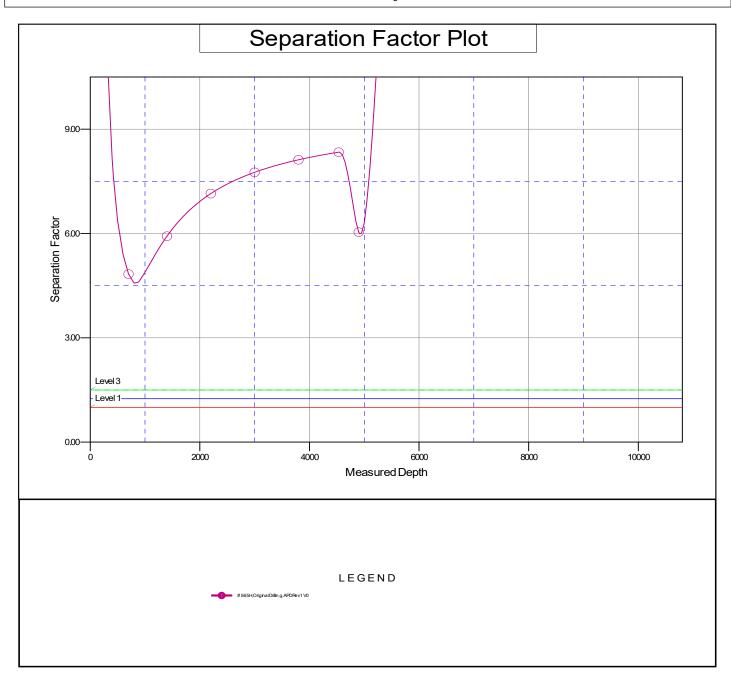
Reference Design:

Central Meridian is -107.83333333

Coordinates are relative to: # 320H - Slot 2

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

Grid Convergence at Surface is: 0.14°





# United States Department of the Interior



BUREAU OF LAND MANAGEMENT Farmington District Office 6251 College Blvd, Suite A Farmington, New Mexico 87402

In Reply Refer To: 3162.3-1(NMF0110)

# \* DJR OPERATING LLC

# #320H NORTH ALAMITO UNIT

Lease: NMNM036943

SH: NW1/4NW1/4 Section 29, T.23 N., R.7W.

Sandoval County, New Mexico

BH: NE1/4 SE1/4 Section 29, T.23 N., R7 W.

Sandoval County, New Mexico

\*Above Data Required on Well Sign

# GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when **checked**:

A. Note all surface/drilling conditions of approval attached.
B. The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated
C. Test the surface casing to a minimum of psi for 30 minutes.
D. Test all casing strings below the surface casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield burst) for a minimum of 30 minutes.
E.  Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, Farmington District Office, Branch of Reservoir Management, 6251 College Blvd. Suite A, Farmington, New Mexico 87402. The effective date of the agreement must be <b>prior</b> to any sales.
F.   The use of co-flex hose is authorized contingent upon the following:
<b>1.</b> From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as
practical, hobbled on both ends and anchored to prevent whip.  The go flex hose pressure rating must be at least commensurate with approved BOPE.
3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

INTERIOR REGION 7 • UPPER COLORADO BASIN

COLORADO, NEW MEXICO, UTAH, WYOMING

# I. GENERAL

- A. Full compliance with all applicable laws, regulations, and Onshore Orders, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.
- B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).
- C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.
- D. For Wildcat wells only, a drilling operations progress report is to be submitted, to the BLM-Field Office, weekly from the spud date until the well is completed and the Well Completion Report (Form 3160-4) is filed. The report should be on 8-1/2 x 11 inch paper, and each page should identify the well by; operator's name, well number, location and lease number.
- E. As soon as practical, notice is required of all blowouts, fires and accidents involving lifethreatening injuries or loss of life. (See NTL-3A).
- F. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a notice of intent (on a Sundry Notice, Form 3160-5) within three business days (original and three copies of Federal leases and an original and four copies on Indian leases). Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to at Virgil Lucero at 505-793-1836.
- G. The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.
- H. Unless drilling operations are commenced within two years, approval of the Application for Permit to Drill will expire. A written request for a two years extension may be granted if submitted prior to expiration.
- I. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all time, unless the well is secured with blowout preventers or cement plugs.
- J. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.

# II. REPORTING REQUIREMENTS

- A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.
- B. The following reports shall be filed with the BLM-Authorized Officer within 30 days after the work is completed.
  - 1 .Original and three copies on Federal and an Original and five copies on Indian leases of Sundry Notice (Form 3150-5), giving complete information concerning.
    - a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of any and all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.
    - b. Intervals tested, perforated (include; size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.
    - c. Subsequent Report of Abandonment, show the manner in which the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.
  - 2. Well Completion Report (Form 3160-4) will be submitted with 30 days after well has been completed.
    - a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.
  - 3. Submit a cement evaluation log, if cement is not circulated to surface.

# III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results. 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

# IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of \* Days or 50 MMCF following its (completion)(recompletion), whichever first occurs, without the prior, written approval of the authorized officer. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

\*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the first gas to surface.

# V. SAFETY

- A. All rig heating stoves are to be of the explosion-proof type.
- B. Rig safety lines are to be installed.
- C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

# VI. CHANGE OF PLANS OR ABANDONMENT

- A. Any changes of plans required in order to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.F.
- B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.F. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.
- C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

# VII. PHONE NUMBERS

- A. For BOPE tests, cementing, and plugging operations the phone number is 505-564-7750 and must be called 24 hours in advance in order that a BLM representative may witness the operations.
- B. Emergency program changes after hours contact:

Virgil Lucero (505) 793-1836 Joe Killins (505) 564-7736

# **BLM Farmington Field Office**

# Conditions of Approval DOI-BLM-NM-F010-2021-0046-EA

North Alamito Unit N17-2307 well pad, access road, pipeline, production facilities, staging area:

North Alamito Unit Well Numbers 05H, 06H

North Alamito Unit A19-2307 well pad, access road, pipeline, production facilities, staging area:
North Alamito Unit Well Numbers 102H, 106H

North Alamito Unit D29-2307 well pad, access road, pipeline, production facilities, G tank/staging area:
North Alamito Unit Well Numbers 320H, 565H

North Alamito Unit L29-2307 well pad, access road, pipeline, production facilities, staging area:
North Alamito Unit Well Numbers 236H, 534H

# September 2022

The following conditions of approval will apply to DJR Operating, LLC's North Alamito Unit well pads, associated facilities, and items listed in the above paragraph, unless a particular Surface Managing Agency or private surface owner has supplied to Bureau of Land Management and the operator a contradictory environmental stipulation. The failure of the operator to comply with these requirements may result in an assessment or civil penalties pursuant to 43 CFR 3163.1 or 3163.2.

**Disclaimers:** BLM's approval of the APD does not relieve the lessee and operator from obtaining any other authorizations that may be required by the BIA, Navajo Tribe, State or other jurisdictional entities.

**Copy of Plans:** A complete copy of the APD package, including: Surface Use Plan of Operations, Bare Soil Reclamation Plan, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

Review of NEPA documents: It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in Environmental Assessment DOI-BLM-NM-F010-2021-0040-EA, entitled "North Alamito Unit L29-2307, D29-2307, A19-2307, and N17-2307 Cluster Oil and Natural Gas Wells Project". Copies of the EA, Decision Record, and Finding of No Significant Impact may be obtained from the BLM FFO public room, or online at eplanning.blm.gov.

Best Management Practices (BMPs): Farmington Field Office established environmental Best Management Practices (BMP's) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMP's are found in the Gold Book, Fourth Edition-Revised 2007. Farmington Field Office BMP's are integrated into the Environmental Assessment, Surface Use Plan of Operations, Bare Soil Reclamation Plan, and COAs.

**Construction & Reclamation Notification:** The operator or their contractor will contact Randy McKee, BLM Environmental Protection Specialist at (505) 564-7708 or email (RMcKee@blm.gov), at least 48 hours prior to any construction or reclamation on this project. The operator or their contractor will contact the grazing permittee and fee surface owner to give notice at least 10 days prior to start of construction operations.

**Weather:** No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 6 inches deep, the soil shall be deemed too wet.

**Stockpile of Soil**: The top 6 inches of soil material will be stripped and stockpiled in the construction zones around the pad [construction zones may be restricted or deleted to provide resource avoidance]. The stockpiled soil will be

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free of brush and tree limbs, trunks and roots. The stockpiled soil material will be spread on the reclaimed portions of the pad [including the cut and fill slopes] prior to re-seeding. Spreading shall not be done when the ground or topsoil is frozen or wet.

Grazing Permittee Notification and Concerns: The operator will notify the grazing lease operator(s) at least ten business days prior to beginning any construction activity to ensure there will be no conflicts between construction activities and livestock grazing operations. The operator is not obligated to cease or delay construction unless directed by the AO. Any range improvement (fences, pipelines, ponds, etc.) disturbed by construction activities will be repaired immediately following construction and will be repaired to the condition the improvement was in prior to disturbance. Cattle guards will be installed to replace any livestock fencing or gates removed for road construction.

**Paleontology:** "Any paleontological resource discovered by the Operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant scientific values. The Holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the Holder." A paleo monitor will be required during initial construction of the D29-2307 pipeline corridor between STA 152+73.43 and STA 165+83.45 in case of buried fossil material where undisturbed Nacimiento badlands exist.

**Wildlife:** Migratory Bird Nest Survey: For any construction activities that exceed 4.0 acres of ground disturbance from 5/15 to 7/31 within the same lease, a migratory bird nest survey is required prior to any new ground disturbance.

Nest surveys will be conducted within 48 hours of scheduled construction by BLM/FFO personnel or approved biologist. Any active nests will require a disturbance buffer to eliminate impacts to nesting birds. Active nests will not be disturbed.

Applicant will adhere to timing limitations and management measures if any new raptor nests are discovered within the project area. These timing limitations are species specific depending on the raptor that is discovered. The following timing limitations may apply:

Raptor Species of Nest	Timing Limitation
Discovered	
Bald Eagle	March 1-June 30
Burrowing Owl	April 1-August 15
Golden Eagle	February 1-June 30
Other Raptors	March 1- June 30

**Storage Tanks:** All open top permanent production or storage tanks regardless of diameter made of fiberglass, steel, or other material used for the containment of oil, condensate, produced water and or other production waste shall be screened, netted, or otherwise covered to protect migratory birds and other wildlife from access.

**Special Status Plant Species and Animal Species:** DJR will attain the services of an approved (by BLM) horticulturist, as required in 2017 policy. The horticulturist will conduct and/or oversee any transplanting of Clover's cactus directly impacted by proposed project. A transplant plan with all the pertinent details will be submitted to BLM/FFO prior to any transplant effort. The transplant plan will require approval by the BLM New Mexico State Office, A transplant permit is also required by the State of New Mexico prior to any cacti removal. DJR will monitor the transplant population for a minimum of 5 years. Annual reports will be submitted to the BLM/FFO biologist/botanist.

Cultural Resources: Six Class III Archaeological Surveys (NMCRIS No. 148551; BLM Report No. 2021(III)007.1F, NMCRIS No. 147835; BLM Report No. 2021(III)007F, NMCRIS No. 129521; BLM Report No. 2014(II)023F, NMCRIS No. 142848; BLM Report No. 2019(IV)013F, NMCRIS No. 129656; BLM Report No. 2014(II)043F, & NMCRIS No. 146878; BLM Report No. 2021(I)006F) were conducted in the proposed project area.

**Approval Date: 12/02/2022** 

Four cultural sites (LA178150, LA178097, LA198931, & LA198932) were discovered in close proximity to the proposed project areas. LA198931 and LA198932 were both given Undetermined eligibility statuses for listing on the NRHP, and LA178150 and LA178097 were both called Eligible for listing on the NRHP. All four of these sites will require site protection fencing and archaeological monitoring.

# **Cultural Resources Stipulations:**

A. BLM Report Number: 2021(III)007.1F

<u>Project Name:</u> **Rerouted Road and Pipeline** - North Alamito Unit (NAU) #106H/#102H and North Alamito Unit (NAU)#06H/#05H Well Pads, Gas and Liquids Pipelines, Access Roads, and Staging Area.

<u>Project Sponsor:</u> DJR Operating LLC.

# 1. SITE PROTECTION AND EMPLOYEE EDUCATION:

All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

# 2. ARCHAEOLOGICAL MONITORING IS REQUIRED:

A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.

The monitor will:

- Ensure that site protection barriers are located as indicated on the attached maps in the vicinity of LA198931, & LA198932.
- Observe all construction activities within 100' of LA198931, & LA198932.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

### 3. SITE PROTECTION BARRIER:

- The temporary site protection barriers will be erected prior to the beginning of construction. The barriers will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barriers will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.
- The barriers will be placed as indicated on the attached maps of the report.
- There will be no surface-disturbing activities or vehicle traffic past the barriers.
- **B.** BLM Report Number: 2021(I)006F

<u>Project Name: NAU L29-2307 and NAU D29-2307 Well Pads, Gas and Liquids Pipelines, Access Roads, G Tank and Staging Area.</u>

Project Sponsor: DJR Operating LLC.

## 1. SITE PROTECTION AND EMPLOYEE EDUCATION:

All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16

U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

# 2. ARCHAEOLOGICAL MONITORING IS REQUIRED:

A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.

### The monitor will:

- Ensure that site protection barriers are located as indicated on the attached maps in the vicinity of LA178097, & LA178150.
- Observe all surface disturbing activities within 100' of LA178097, & LA178150.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

# 3. SITE PROTECTION BARRIER:

- The temporary site protection barriers will be erected prior to construction. The barriers will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barriers will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.
- The barriers will be placed as indicated on the attached map of the report.
- There will be no surface-disturbing activities or vehicle traffic past the barriers.

**Note:** If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

# **Fee Surface Contact Information:**

Owner: Jason W. Gallegos; 101 Ortega Road NW; Albuquerque, NM 87114; 505-261-1068

**Approval Date: 12/02/2022** 

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

811 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 163701

# **CONDITIONS**

Operator:	OGRID:
DJR OPERATING, LLC	371838
1 Road 3263	Action Number:
Aztec, NM 87410	163701
	Action Type:
	[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

## CONDITIONS

Created By	Condition	Condition Date
kpickford	Notify OCD 24 hours prior to casing & cement	12/9/2022
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/9/2022
kpickford	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	12/9/2022
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	12/9/2022
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	12/9/2022