

Form 3160-3
(June 2015)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM109393
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☒ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator DJR OPERATING LLC		8. Lease Name and Well No. LYBROOK I20 2207
3a. Address 1700 LINCOLN STREET, SUITE 2800, DENVER, CO 802		9. API Well No. 03H
3b. Phone No. (include area code) (505) 632-3476		10. Field and Pool, or Exploratory BASIN MANCOS/LYBROOK GALLUP
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NESE / 1391 FSL / 448 FEL / LAT 36.1213235 / LONG -107.5908238 At proposed prod. zone SENE / 2336 FNL / 717 FEL / LAT 36.1113605 / LONG -107.574272		11. Sec., T. R. M. or Blk. and Survey or Area SEC 20/T22N/R7W/NMP
14. Distance in miles and direction from nearest town or post office* 65 miles		12. County or Parish SANDOVAL
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 448 feet		13. State NM
16. No of acres in lease 400.0		17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet		20. BLM/BIA Bond No. in file FED: NMB001464
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6826 feet		22. Approximate date work will start* 11/12/2021
		23. Estimated duration 10 days
24. Attachments		
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)		
1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).		4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification. 6. Such other site specific information and/or plans as may be requested by the BLM.
25. Signature (Electronic Submission)	Name (Printed/Typed) SHAW-MARIE FORD / Ph: (505) 632-3476	Date 05/12/2021
Title Regulatory Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) DAVE J MANKIEWICZ / Ph: (505) 564-7761	Date 04/07/2022
Title AFM-Minerals		
Office Farmington Field 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

(Continued on page 2)

*(Instructions on page 2)

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

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

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

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21499	² Pool Code 52860	³ Pool Name RUSTY GALLUP OIL POOL
⁴ Property Code 332798	⁵ Property Name LYBROOK I20	⁶ Well Number 3H
⁷ OGRID No. 371838	⁸ Operator Name DJR OPERATING, LLC	⁹ Elevation 6826

¹⁰ Surface Location

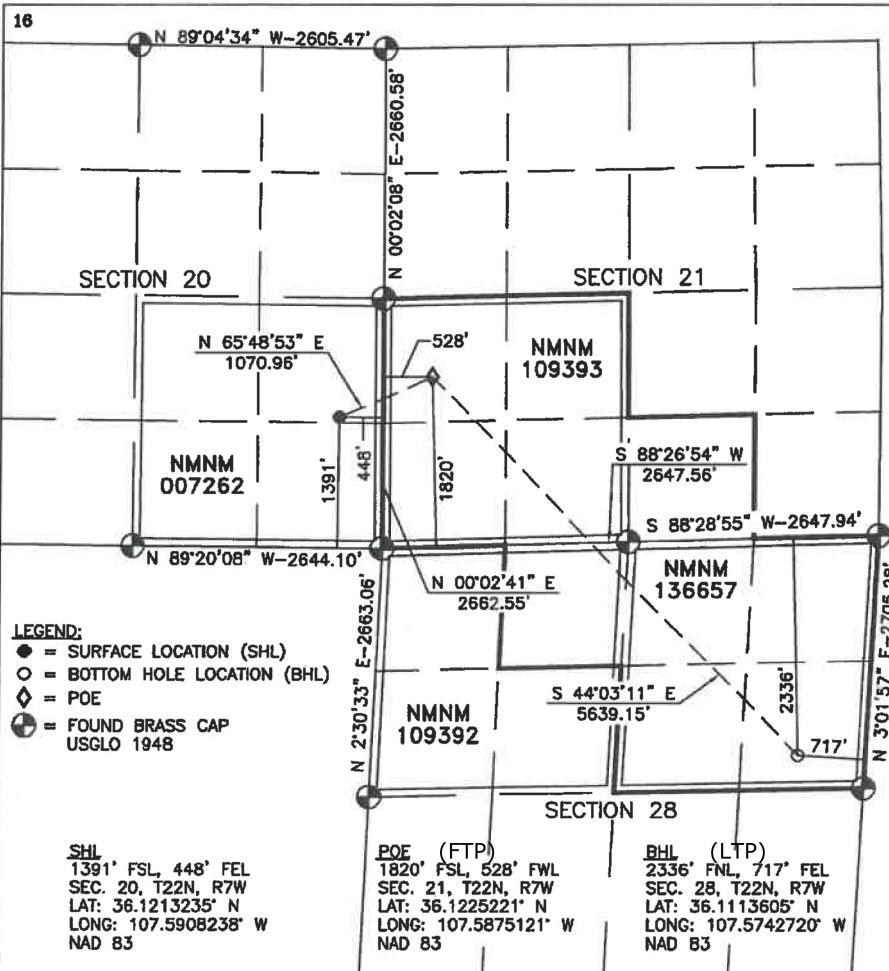
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	20	22 N	7 W		1391	SOUTH	448	EAST	SANDOVAL

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
H	28	22 N	7 W		2336	NORTH	717	EAST	SANDOVAL

¹² Dedicated Acres SEC 21: SW/4, SW/4SE/4 SEC 28: NE/4NW/4, NE/4 TOTAL ACRES: 400.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--	-------------------------------	----------------------------------	-------------------------

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

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.

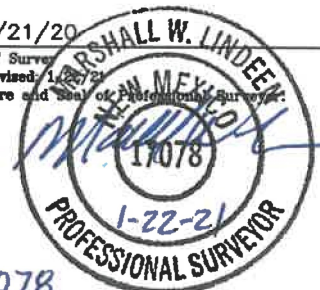
Shaw-Marie Ford 02/09/2021
Signature Date
Shaw-Marie Ford
Printed Name
sford@djrlc.com
E-mail Address

¹⁸ 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.

08/21/20

Date of Survey
Plat Revised: 1/25/21
Signature and Seal of Professional Surveyor

17078
Certificate Number

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 Operating, LLC **OGRID:** 371838 **Date:** 04 / 27 / 2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Lybrook I20-2207 01H	TBD	I-20-22N-07W	1428 FSL x 462 FEL	173	213	62
Lybrook I20-2207 02H	TBD	I-20-22N-07W	1410 FSL x 455 FEL	253	311	90
Lybrook I20-2207 03H	TBD	I-20-22N-07W	1391 FSL x 448 FEL	254	313	90
Lybrook I20-2207 04H	TBD	I-20-22N-07W	1372 FSL x 441 FEL	168	207	60

IV. Central Delivery Point Name: Ignacio Gas Processing Plant [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Lybrook I20-2207 01H	TBD	06/11/2023	06/21/2023	09/01/2023	09/11/2023	09/21/2023
Lybrook I20-2207 02H	TBD	06/12/2023	07/01/2023	09/01/2023	09/11/2023	09/21/2023
Lybrook I20-2207 03H	TBD	06/13/2023	07/11/2023	09/01/2023	09/11/2023	09/21/2023
Lybrook I20-2207 04H	TBD	06/14/2023	07/21/2023	09/01/2023	09/11/2023	09/21/2023

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

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. ☐ 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 ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ 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 well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ 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 of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

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:

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

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) 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

(b) 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: <i>Shaw-Marie Ford</i>
Printed Name: Shaw-Marie Ford
Title: Regulatory Specialist
E-mail Address: sford@djrlc.com
Date: 04/27/2022
Phone: 505-716-3297
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:



DJR OPERATING, LLC.
OGRID NO: 371838
NATURAL GAS MANAGEMENT PLAN
LYBROOK I20-2207 01H, 02H, 03H, 04H
NESE I-20-22N-07W

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:

- Individual 3 phase separator will be set for the individual well.
- 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.
- The 3 phase production separator will be equipped with a 0.75 MMBtu/hr indirect fired heater.

Heater treaters will be set as follows:

- Individual heater treaters will be set for the individual well.
- 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.
- 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.



DJR OPERATING, LLC.
OGRID NO: 371838
NATURAL GAS MANAGEMENT PLAN
LYBROOK I20-2207 01H, 02H, 03H, 04H
NESE I-20-22N-07W

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:

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



DJR OPERATING, LLC.
OGRID NO: 371838
NATURAL GAS MANAGEMENT PLAN
LYBROOK I20-2207 01H, 02H, 03H, 04H
NESE I-20-22N-07W

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

- 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.
- 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:

- DJR facilities are built and ready from day 1 of Flowback.
- 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.



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 take 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 is designed with an auto ignition system.
3. Flare stacks will appropriately sized and designed to ensure proper combustion efficiency.



- 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.



DJR OPERATING, LLC.
OGRID NO: 371838
NATURAL GAS MANAGEMENT PLAN
LYBROOK I20-2207 01H, 02H, 03H, 04H
NESE I-20-22N-07W

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.

DJR's 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.

Rev 0



DRILLING PLAN

Lybrook I20 2207 #003H

Sandoval County, New Mexico

Surface Location

462-ft FEL & 1428-ft FSL
 Sec 20 T22N R07W
 Graded Elevation 6826' MSL
 RKB Elevation 6840' (14' KB)

SHL Geographical Coordinates (NAD-83)

Latitude 36.1214266° N
 Longitude 107.5908716° W

Kick Off Point for Horizontal Build Curve

4116-ft MD
 4009-ft TVD

Local Coordinates (from SHL)

740-ft North
 430-ft East

Heel Location (Pay zone entry)

528-ft FWL & 1820-ft FSL
 Sec 21 T22N R07W

Heel Geographical Coordinates (NAD-83)

Latitude 36.1225221° N
 Longitude 107.58751210° W

Bottom Hole Location (TD)

717-ft FEL & 2336-ft FNL
 Sec 28 T22N R07W

BHL Geographical Coordinates (NAD-83)

Latitude 36.1113605° N
 Longitude 107.5742720° W

Well objectives

This well is planned as a 5640-ft lateral in the Gallup C sand.

Bottom Hole temperature and pressure

The temperature in the Gallup C horizontal objective is 133°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	500	500	Sd	W	8.3	8.4 – 8.8
Kirtland	646	646	Sh	-	8.3	8.4 – 8.8
Fruitland	916	913	C	G	8.3	9.0 - 9.5
Pictured Cliffs	1128	1120	Sd	W	8.3	9.0 - 9.5
Lewis	1219	1208	Sh	-		9.0 - 9.5
Chacra	1909	1875	Sd	-	8.3	9.0 - 9.5
Menefee	2658	2599	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	3609	3519	Sd	-	8.3	9.0 - 9.5
Mancos	3745	3650	Sh	-		9.0 - 9.5
Mancos Silt	4018	3914	Slt	O/G	6.6	9.0 - 9.5
Gallup A	4555	4410	Slt	O/G	6.6	9.0 - 9.5
Gallup B	4647	4479	Sd	O/G	6.6	8.8 - 9.0
Gallup C	4822	4584	Sd	O/G	6.6	8.8 - 9.0
Target	5162	4669	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	5103	surf	4667	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	4815	10801	4581	4659	4815

Note: all casing will be new

Rev 0



Casing Design Load Cases

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

Note

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

Casing Design Factors

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

Cement Design

9-5/8" Surface Casing

	Lead
Name	Redi-Mix
Type	I-II
Planned top	Surface
Density (ppg)	14.50
Yield (cf/sx)	1.61
Mix water (gal/sx)	7.41
Volume (sx)	114
Volume (bbls)	33
Volume (cu. ft.)	185
Excess %	50

7" Intermediate Casing

	Lead	Tail
	BJ Services	BJ Services
Type	III	Poz/G
Planned top	Surface	3616-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	2.34	1.50
Mix water (gal/sx)	13.26	7.20
Volume (sx)	350	238
Volume (bbls)	146	63
Volume (cu.ft.)	819	356
Excess %	55	55



Rev 0

4-1/2" Production Liner

	BJ Services
Type	Poz/G
Planned top	4815-ft
Density (ppg)	13.3
Yield (cf/sx)	1.56
Mix water (gal/sx)	7.71
Volume (sx)	502
Volume (bbls)	140
Volume (cu.ft)	785
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% 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 – 5103	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5103 – 10801	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

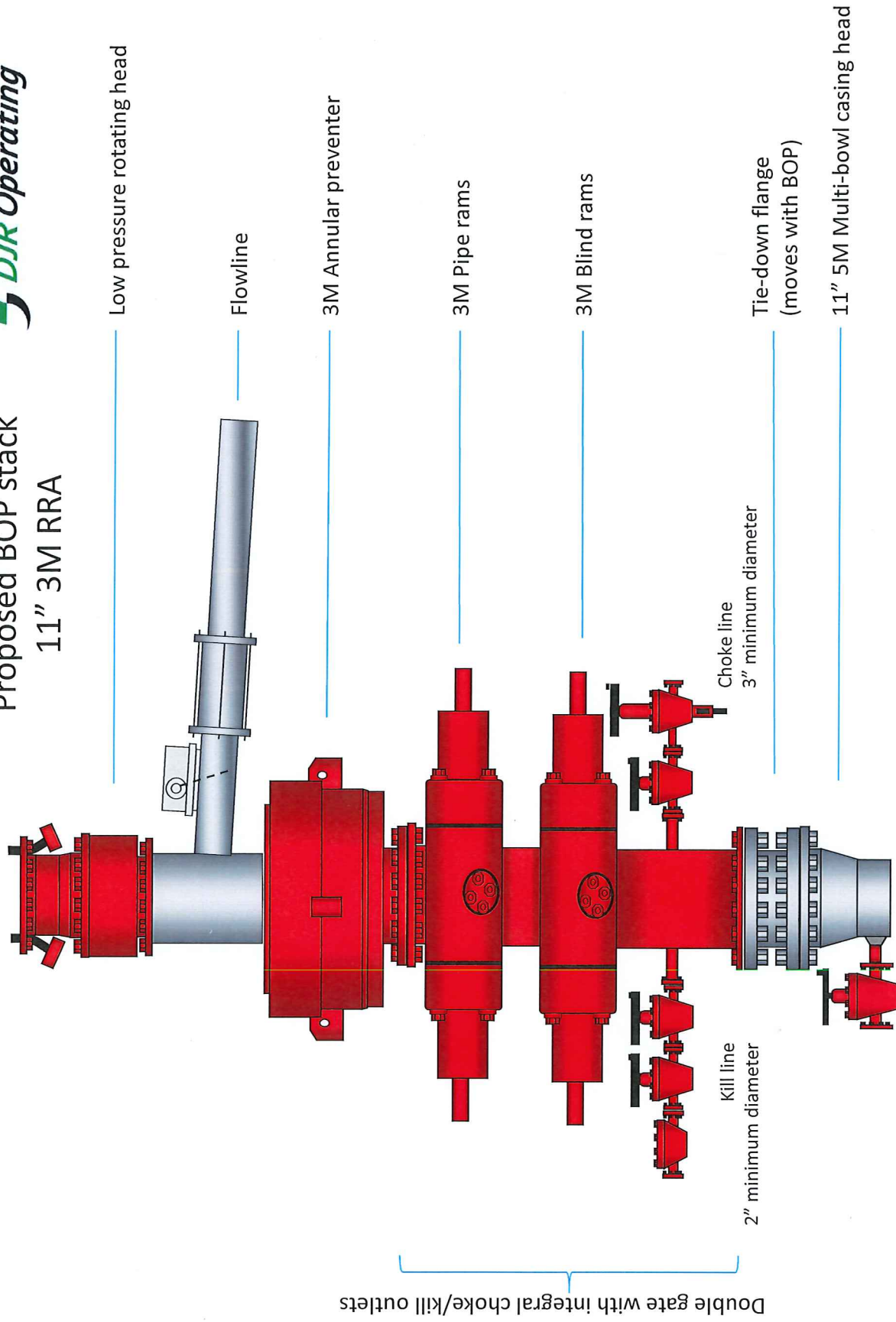
A closed loop, steel tank-based circulating system will be used. In addition to the rig solids control equipment, a dewatering centrifuge and chemical flocculation system will be operational to strip solids from the whole mud. All solids will be collected in 3-sided bins and will then be put into transports 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.



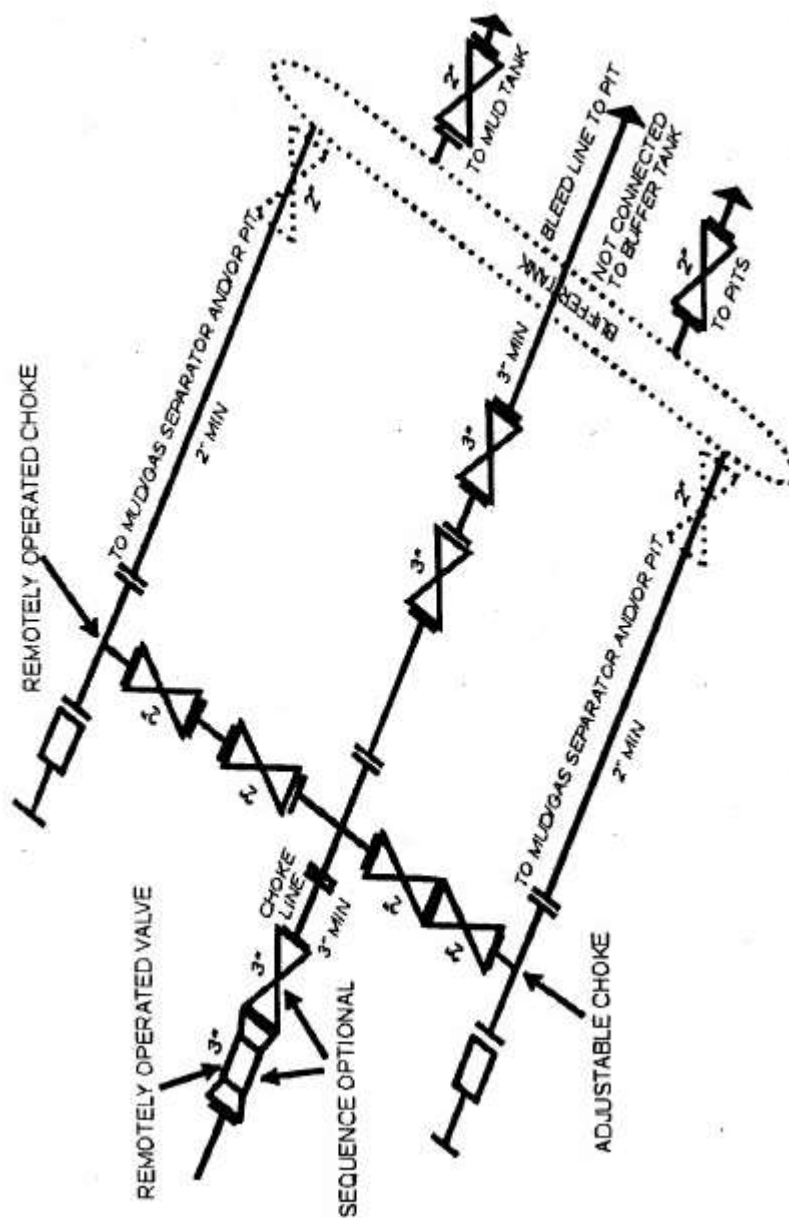
Proposed BOP stack 11" 3M RRA



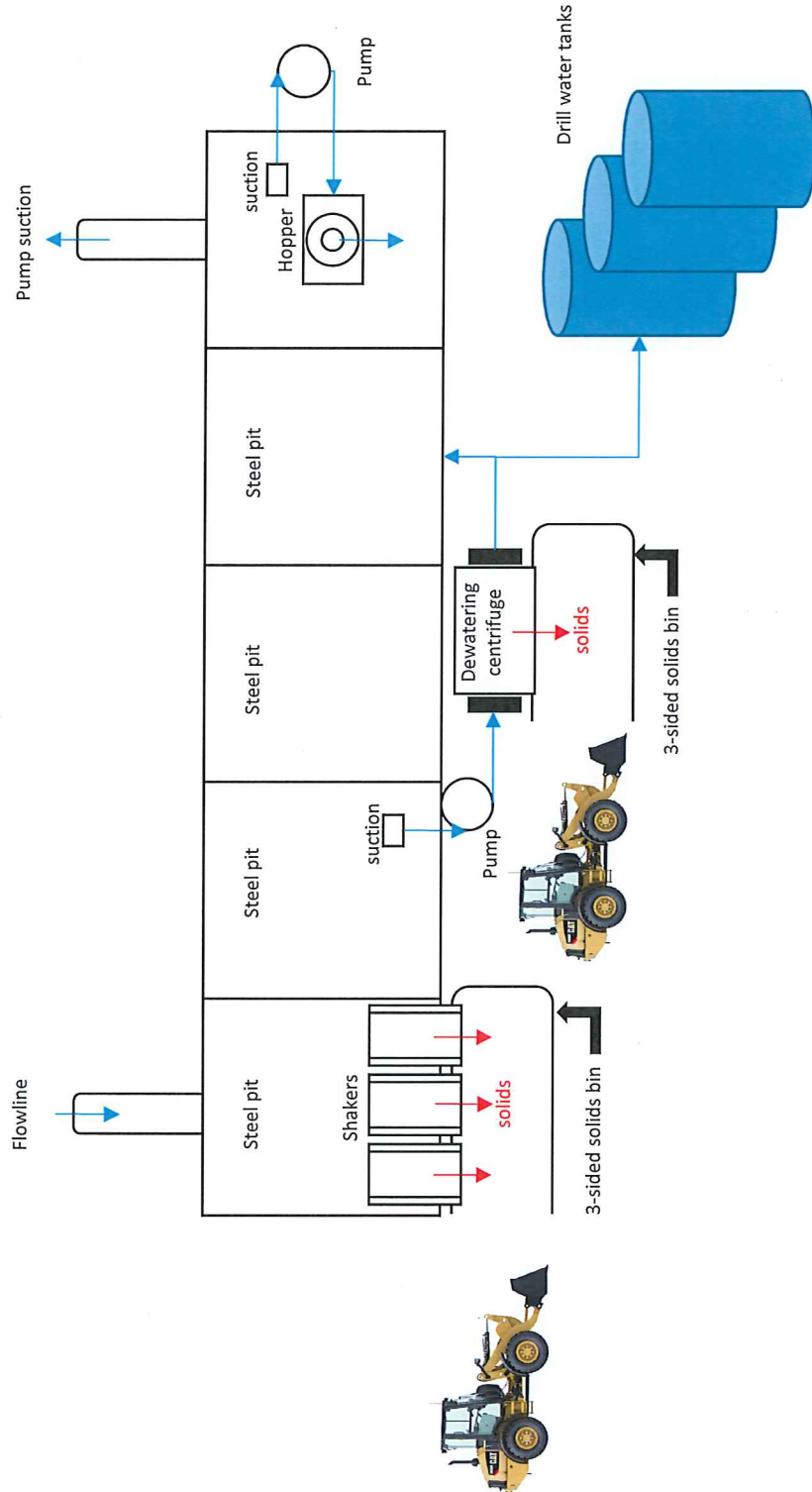


Choke Manifold

Actual system to conform with Onshore Order 2



Closed Loop Mud System





DJR Operating

Lybrook Area

I20 2207 Pad

003H

Original Drilling

APD

Anticollision Report

02 September, 2020





Lonestar Consulting, LLC

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference	APD		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.00 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	9/2/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	10,800.94	APD (Original Drilling)	MWD+HDGM	OWSG MWD + HDGM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
I20 2207 Pad						
# 001H - Original Drilling - APD	400.00	400.00	40.08	37.62	16.297	CC, ES
# 001H - Original Drilling - APD	9,700.00	8,880.32	1,326.76	1,082.30	5.427	SF
# 002H - Original Drilling - APD	400.00	400.00	60.06	57.60	24.422	CC, ES
# 002H - Original Drilling - APD	600.00	595.12	71.51	67.66	18.597	SF
# 004H - Original Drilling - APD	400.00	400.00	20.05	17.59	8.152	CC, ES
# 004H - Original Drilling - APD	4,704.77	4,729.48	131.24	95.33	3.655	SF

Offset Design I20 2207 Pad - # 001H - Original Drilling - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
							+N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	159.39	-37.51	14.11	40.08				
100.00	100.00	100.00	100.00	0.15	0.15	159.39	-37.51	14.11	40.08	39.77	0.31	129.998	
200.00	200.00	200.00	200.00	0.51	0.51	159.39	-37.51	14.11	40.08	39.05	1.03	39.090	
300.00	300.00	300.00	300.00	0.87	0.87	159.39	-37.51	14.11	40.08	38.33	1.74	23.004	
400.00	400.00	400.00	400.00	1.23	1.23	159.39	-37.51	14.11	40.08	37.62	2.46	16.297	CC, ES
500.00	499.98	498.57	498.55	1.59	1.57	131.64	-39.20	14.23	42.87	39.71	3.16	13.582	
600.00	599.84	596.49	596.34	1.95	1.90	137.17	-44.23	14.59	51.59	47.74	3.85	13.403	
700.00	699.45	693.15	692.64	2.31	2.24	143.03	-52.46	15.19	66.78	62.24	4.55	14.688	
800.00	798.70	790.34	789.26	2.68	2.58	147.87	-62.88	15.94	87.52	82.27	5.25	16.670	
900.00	897.47	887.13	885.48	3.06	2.94	151.65	-73.30	16.69	111.71	105.75	5.96	18.748	
1,000.00	995.62	983.01	980.80	3.46	3.30	154.63	-83.63	17.44	139.27	132.60	6.67	20.885	
1,100.00	1,093.06	1,077.86	1,075.10	3.88	3.66	157.02	-93.85	18.17	170.19	162.81	7.38	23.067	
1,140.88	1,132.65	1,116.32	1,113.34	4.06	3.80	157.85	-97.99	18.47	183.78	176.10	7.67	23.950	
1,200.00	1,189.80	1,171.78	1,168.48	4.33	4.01	159.05	-103.97	18.90	203.87	195.78	8.09	25.204	
1,300.00	1,286.48	1,265.61	1,261.76	4.78	4.37	160.61	-114.07	19.63	238.00	229.21	8.79	27.074	
1,400.00	1,383.15	1,359.44	1,355.03	5.25	4.73	161.78	-124.18	20.36	272.24	262.75	9.50	28.668	
1,500.00	1,479.83	1,453.26	1,448.31	5.72	5.09	162.69	-134.29	21.09	306.57	296.36	10.21	30.039	
1,600.00	1,576.50	1,547.09	1,541.59	6.19	5.46	163.42	-144.39	21.82	340.94	330.03	10.92	31.228	
1,700.00	1,673.18	1,640.91	1,634.87	6.67	5.82	164.01	-154.50	22.55	375.36	363.73	11.63	32.269	
1,800.00	1,769.85	1,734.74	1,728.14	7.16	6.18	164.51	-164.61	23.28	409.81	397.46	12.35	33.187	
1,900.00	1,866.52	1,828.57	1,821.42	7.64	6.55	164.92	-174.72	24.01	444.28	431.21	13.07	34.002	



Lonestar Consulting, LLC

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 001H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
2,000.00	1,963.20	1,922.39	1,914.70	8.13	6.91	165.28	-184.82	24.74	478.76	464.98	13.79	34.729		
2,100.00	2,059.87	2,016.22	2,007.97	8.62	7.28	165.59	-194.93	25.47	513.26	498.76	14.51	35.382		
2,200.00	2,156.55	2,110.05	2,101.25	9.11	7.64	165.86	-205.04	26.19	547.78	532.55	15.23	35.972		
2,300.00	2,253.22	2,203.87	2,194.53	9.60	8.01	166.10	-215.14	26.92	582.30	566.35	15.95	36.507		
2,400.00	2,349.90	2,297.70	2,287.81	10.09	8.37	166.31	-225.25	27.65	616.83	600.16	16.67	36.994		
2,500.00	2,446.57	2,391.52	2,381.08	10.59	8.74	166.50	-235.36	28.38	651.37	633.97	17.40	37.440		
2,600.00	2,543.25	2,485.35	2,474.36	11.08	9.10	166.67	-245.46	29.11	685.91	667.79	18.12	37.849		
2,700.00	2,639.92	2,579.18	2,567.64	11.58	9.47	166.82	-255.57	29.84	720.46	701.61	18.85	38.226		
2,800.00	2,736.59	2,673.00	2,660.92	12.07	9.84	166.96	-265.68	30.57	755.01	735.43	19.57	38.573		
2,900.00	2,833.27	2,766.83	2,754.19	12.57	10.20	167.09	-275.79	31.30	789.56	769.26	20.30	38.896		
3,000.00	2,929.94	2,860.65	2,847.47	13.07	10.57	167.21	-285.89	32.03	824.12	803.09	21.03	39.195		
3,100.00	3,026.62	2,954.48	2,940.75	13.56	10.94	167.32	-296.00	32.76	858.68	836.93	21.75	39.474		
3,200.00	3,123.29	3,048.31	3,034.03	14.06	11.30	167.42	-306.11	33.49	893.25	870.76	22.48	39.734		
3,300.00	3,219.97	3,142.13	3,127.30	14.56	11.67	167.51	-316.21	34.21	927.81	904.60	23.21	39.977		
3,400.00	3,316.64	3,235.96	3,220.58	15.06	12.04	167.59	-326.32	34.94	962.38	938.44	23.94	40.205		
3,500.00	3,413.32	3,329.79	3,313.86	15.55	12.40	167.67	-336.43	35.67	996.95	972.28	24.66	40.420		
3,600.00	3,509.99	3,423.61	3,407.13	16.05	12.77	167.75	-346.53	36.40	1,031.52	1,006.12	25.39	40.621		
3,700.00	3,606.66	3,517.44	3,500.41	16.55	13.14	167.81	-356.64	37.13	1,066.09	1,039.97	26.12	40.811		
3,800.00	3,703.34	3,611.26	3,593.69	17.05	13.51	167.88	-366.75	37.86	1,100.66	1,073.81	26.85	40.991		
3,900.00	3,800.01	3,705.09	3,686.97	17.55	13.87	167.94	-376.86	38.59	1,135.24	1,107.66	27.58	41.160		
4,000.00	3,896.69	3,798.92	3,780.24	18.05	14.24	168.00	-386.96	39.32	1,169.81	1,141.50	28.31	41.321		
4,100.00	3,993.36	3,892.74	3,873.52	18.55	14.61	168.05	-397.07	40.05	1,204.39	1,175.35	29.04	41.473		
4,115.89	4,008.72	3,907.65	3,888.34	18.63	14.67	168.06	-398.68	40.16	1,209.89	1,180.73	29.16	41.496		
4,150.00	4,041.75	3,939.78	3,920.28	18.80	14.79	155.48	-402.14	40.41	1,221.28	1,191.88	29.41	41.533		
4,200.00	4,090.18	3,987.17	3,967.39	19.04	14.98	137.03	-407.24	40.78	1,236.50	1,206.73	29.77	41.533		
4,250.00	4,138.37	4,034.65	4,014.60	19.27	15.16	121.16	-412.36	41.15	1,249.92	1,219.78	30.14	41.473		
4,300.00	4,186.04	4,081.94	4,061.61	19.49	15.35	109.08	-417.45	41.52	1,261.51	1,231.01	30.50	41.355		
4,350.00	4,232.88	4,100.00	4,079.55	19.69	15.42	99.95	-419.52	41.78	1,271.70	1,241.05	30.65	41.489		
4,400.00	4,278.60	4,133.61	4,112.78	19.88	15.56	93.47	-424.33	43.19	1,280.77	1,249.85	30.92	41.420		
4,450.00	4,322.93	4,150.00	4,128.89	20.06	15.63	88.46	-427.13	44.32	1,288.92	1,257.87	31.05	41.511		
4,500.00	4,365.58	4,183.95	4,161.99	20.23	15.78	84.98	-433.88	47.58	1,295.93	1,264.59	31.34	41.345		
4,550.00	4,406.31	4,200.00	4,177.51	20.39	15.85	82.10	-437.51	49.55	1,302.02	1,270.53	31.49	41.349		
4,600.00	4,444.84	4,234.59	4,210.56	20.55	16.01	80.25	-446.28	54.73	1,306.97	1,275.13	31.84	41.051		
4,650.00	4,480.96	4,250.00	4,225.10	20.70	16.08	78.56	-450.59	57.45	1,311.02	1,278.99	32.03	40.934		
4,700.00	4,514.43	4,285.67	4,258.27	20.86	16.26	77.72	-461.52	64.68	1,313.94	1,281.47	32.47	40.463		
4,750.00	4,545.06	4,311.40	4,281.72	21.03	16.39	77.04	-470.22	70.71	1,315.96	1,283.09	32.87	40.039		
4,800.00	4,572.64	4,337.28	4,304.87	21.21	16.53	76.67	-479.64	77.45	1,317.03	1,283.71	33.32	39.521		
4,850.00	4,597.01	4,363.34	4,327.68	21.43	16.67	76.58	-489.77	84.91	1,317.21	1,283.36	33.85	38.910		
4,900.00	4,618.02	4,389.58	4,350.12	21.69	16.81	76.72	-500.64	93.10	1,316.53	1,282.07	34.46	38.208		
4,950.00	4,635.54	4,416.02	4,372.15	22.01	16.97	77.09	-512.23	102.01	1,315.05	1,279.91	35.14	37.423		
5,000.00	4,649.47	4,450.00	4,399.54	22.39	17.18	77.86	-528.04	114.42	1,312.87	1,276.88	35.99	36.477		
5,050.00	4,659.71	4,469.63	4,414.86	22.86	17.30	78.41	-537.62	122.07	1,309.95	1,273.21	36.74	35.654		
5,100.00	4,666.21	4,500.00	4,437.81	23.39	17.50	79.44	-553.09	134.58	1,306.47	1,268.78	37.69	34.665		
5,150.00	4,668.92	4,524.36	4,455.52	23.99	17.68	80.46	-566.02	145.18	1,302.47	1,263.85	38.62	33.724		
5,161.78	4,669.00	4,530.89	4,460.16	24.13	17.72	80.74	-569.56	148.10	1,301.46	1,262.60	38.86	33.492		
5,200.00	4,668.93	4,550.00	4,473.47	24.63	17.86	81.33	-580.12	156.87	1,298.49	1,258.88	39.61	32.780		
5,300.00	4,668.75	4,617.74	4,517.19	26.10	18.41	83.27	-619.62	190.23	1,293.56	1,251.60	41.96	30.830		
5,400.00	4,668.58	4,694.57	4,559.84	27.75	19.13	85.17	-667.89	232.02	1,292.00	1,247.40	44.60	28.966		
5,411.98	4,668.56	4,704.63	4,564.84	27.96	19.24	85.40	-674.45	237.77	1,291.99	1,247.04	44.95	28.744		
5,500.00	4,668.40	4,784.05	4,599.42	29.55	20.14	86.94	-727.86	285.22	1,292.63	1,244.98	47.65	27.125		
5,600.00	4,668.22	4,885.19	4,630.18	31.46	21.49	88.31	-799.08	349.95	1,294.17	1,243.02	51.14	25.304		
5,700.00	4,668.05	4,994.50	4,645.90	33.46	23.17	89.02	-878.15	423.56	1,295.50	1,240.46	55.04	23.538		



Lonestar Consulting, LLC

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 001H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,800.00	4,667.87	5,098.69	4,646.80	35.54	24.96	89.07	-953.72	495.26	1,296.20	1,237.18	59.02	21.960		
5,900.00	4,667.69	5,198.68	4,646.49	37.68	26.81	89.06	-1,026.21	564.14	1,296.85	1,233.74	63.11	20.550		
6,000.00	4,667.51	5,298.68	4,646.17	39.87	28.77	89.06	-1,098.70	633.02	1,297.50	1,230.16	67.34	19.268		
6,100.00	4,667.34	5,398.68	4,645.86	42.11	30.82	89.05	-1,171.18	701.91	1,298.15	1,226.45	71.69	18.107		
6,200.00	4,667.16	5,498.68	4,645.55	44.38	32.94	89.05	-1,243.67	770.79	1,298.79	1,222.65	76.15	17.056		
6,300.00	4,666.98	5,598.68	4,645.24	46.68	35.12	89.04	-1,316.16	839.68	1,299.44	1,218.76	80.68	16.105		
6,400.00	4,666.80	5,698.67	4,644.93	49.01	37.35	89.04	-1,388.65	908.56	1,300.09	1,214.80	85.29	15.243		
6,500.00	4,666.63	5,798.67	4,644.61	51.36	39.61	89.03	-1,461.13	977.44	1,300.74	1,210.78	89.96	14.460		
6,600.00	4,666.45	5,898.67	4,644.30	53.73	41.91	89.02	-1,533.62	1,046.33	1,301.39	1,206.72	94.67	13.746		
6,700.00	4,666.27	5,998.67	4,643.99	56.12	44.25	89.02	-1,606.11	1,115.21	1,302.03	1,202.61	99.43	13.095		
6,800.00	4,666.10	6,098.67	4,643.68	58.52	46.60	89.01	-1,678.60	1,184.10	1,302.68	1,198.46	104.22	12.500		
6,900.00	4,665.92	6,198.66	4,643.37	60.94	48.97	89.01	-1,751.08	1,252.98	1,303.33	1,194.29	109.04	11.953		
7,000.00	4,665.74	6,298.66	4,643.05	63.37	51.37	89.00	-1,823.57	1,321.86	1,303.98	1,190.09	113.89	11.449		
7,100.00	4,665.56	6,398.66	4,642.74	65.80	53.77	89.00	-1,896.06	1,390.75	1,304.63	1,185.86	118.76	10.985		
7,200.00	4,665.39	6,498.66	4,642.43	68.25	56.19	88.99	-1,968.55	1,459.63	1,305.27	1,181.62	123.66	10.556		
7,300.00	4,665.21	6,598.65	4,642.12	70.71	58.63	88.99	-2,041.03	1,528.52	1,305.92	1,177.35	128.57	10.157		
7,400.00	4,665.03	6,698.65	4,641.81	73.17	61.07	88.98	-2,113.52	1,597.40	1,306.57	1,173.07	133.50	9.787		
7,500.00	4,664.85	6,798.65	4,641.49	75.64	63.52	88.98	-2,186.01	1,666.29	1,307.22	1,168.78	138.44	9.442		
7,600.00	4,664.68	6,898.65	4,641.18	78.12	65.98	88.97	-2,258.50	1,735.17	1,307.87	1,164.47	143.40	9.121		
7,700.00	4,664.50	6,998.65	4,640.87	80.60	68.45	88.96	-2,330.98	1,804.05	1,308.51	1,160.15	148.36	8.820		
7,800.00	4,664.32	7,098.64	4,640.56	83.09	70.92	88.96	-2,403.47	1,872.94	1,309.16	1,155.82	153.34	8.538		
7,900.00	4,664.14	7,198.64	4,640.25	85.58	73.40	88.95	-2,475.96	1,941.82	1,309.81	1,151.48	158.33	8.273		
8,000.00	4,663.97	7,298.64	4,639.93	88.08	75.89	88.95	-2,548.45	2,010.71	1,310.46	1,147.14	163.32	8.024		
8,100.00	4,663.79	7,398.64	4,639.62	90.58	78.38	88.94	-2,620.93	2,079.59	1,311.11	1,142.78	168.33	7.789		
8,200.00	4,663.61	7,498.63	4,639.31	93.08	80.87	88.94	-2,693.42	2,148.47	1,311.76	1,138.42	173.34	7.568		
8,300.00	4,663.44	7,598.63	4,639.00	95.59	83.37	88.93	-2,765.91	2,217.36	1,312.40	1,134.05	178.35	7.359		
8,400.00	4,663.26	7,698.63	4,638.69	98.10	85.87	88.93	-2,838.40	2,286.24	1,313.05	1,129.68	183.37	7.160		
8,500.00	4,663.08	7,798.63	4,638.37	100.61	88.37	88.92	-2,910.88	2,355.13	1,313.70	1,125.30	188.40	6.973		
8,600.00	4,662.90	7,898.63	4,638.06	103.13	90.88	88.92	-2,983.37	2,424.01	1,314.35	1,120.91	193.44	6.795		
8,700.00	4,662.73	7,998.62	4,637.75	105.65	93.39	88.91	-3,055.86	2,492.90	1,315.00	1,116.52	198.47	6.626		
8,800.00	4,662.55	8,098.62	4,637.44	108.17	95.90	88.91	-3,128.35	2,561.78	1,315.64	1,112.13	203.51	6.465		
8,900.00	4,662.37	8,198.62	4,637.13	110.69	98.42	88.90	-3,200.83	2,630.66	1,316.29	1,107.73	208.56	6.311		
9,000.00	4,662.19	8,298.62	4,636.81	113.22	100.94	88.90	-3,273.32	2,699.55	1,316.94	1,103.33	213.61	6.165		
9,100.00	4,662.02	8,398.62	4,636.50	115.74	103.46	88.89	-3,345.81	2,768.43	1,317.59	1,098.93	218.66	6.026		
9,200.00	4,661.84	8,498.61	4,636.19	118.27	105.98	88.88	-3,418.30	2,837.32	1,318.24	1,094.52	223.72	5.892		
9,300.00	4,661.66	8,598.61	4,635.88	120.80	108.50	88.88	-3,490.78	2,906.20	1,318.89	1,090.11	228.78	5.765		
9,400.00	4,661.48	8,698.61	4,635.57	123.33	111.02	88.87	-3,563.27	2,975.08	1,319.53	1,085.69	233.84	5.643		
9,500.00	4,661.31	8,798.61	4,635.26	125.86	113.55	88.87	-3,635.76	3,043.97	1,320.18	1,081.28	238.90	5.526		
9,600.00	4,661.13	8,898.62	4,635.00	128.40	116.02	88.86	-3,694.99	3,100.26	1,320.95	1,077.57	243.39	5.427		
9,700.00	4,660.95	8,898.62	4,635.00	130.93	116.02	88.86	-3,694.99	3,100.26	1,326.76	1,082.30	244.46	5.427 SF		
9,800.00	4,660.78	8,898.62	4,635.00	133.47	116.02	88.86	-3,694.99	3,100.26	1,340.02	1,095.82	244.20	5.487		
9,900.00	4,660.60	8,898.62	4,635.00	136.01	116.02	88.86	-3,694.99	3,100.26	1,360.52	1,117.85	242.67	5.606		
10,000.00	4,660.42	8,898.62	4,635.00	138.55	116.02	88.86	-3,694.99	3,100.26	1,387.95	1,147.93	240.02	5.783		
10,100.00	4,660.24	8,898.62	4,635.00	141.08	116.02	88.86	-3,694.99	3,100.26	1,421.89	1,185.47	236.41	6.014		
10,200.00	4,660.07	8,898.62	4,635.00	143.63	116.02	88.86	-3,694.99	3,100.26	1,461.89	1,229.86	232.04	6.300		
10,300.00	4,659.89	8,898.62	4,635.00	146.17	116.02	88.86	-3,694.99	3,100.26	1,507.48	1,280.40	227.08	6.639		
10,400.00	4,659.71	8,898.62	4,635.00	148.71	116.02	88.86	-3,694.99	3,100.26	1,558.16	1,336.45	221.71	7.028		
10,500.00	4,659.53	8,898.62	4,635.00	151.25	116.02	88.86	-3,694.99	3,100.26	1,613.46	1,397.37	216.09	7.467		
10,600.00	4,659.36	8,898.62	4,635.00	153.80	116.02	88.86	-3,694.99	3,100.26	1,672.90	1,462.57	210.33	7.954		
10,700.00	4,659.18	8,898.62	4,635.00	156.34	116.02	88.86	-3,694.99	3,100.26	1,736.08	1,531.52	204.56	8.487		
10,800.94	4,659.00	8,898.62	4,635.00	158.91	116.02	88.86	-3,694.99	3,100.26	1,803.23	1,604.44	198.79	9.071		



Lonestar Consulting, LLC

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 002H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	159.41	-56.22	21.12	60.06					
100.00	100.00	100.00	100.00	0.15	0.15	159.41	-56.22	21.12	60.06	59.75	0.31	194.811		
200.00	200.00	200.00	200.00	0.51	0.51	159.41	-56.22	21.12	60.06	59.03	1.03	58.580		
300.00	300.00	300.00	300.00	0.87	0.87	159.41	-56.22	21.12	60.06	58.32	1.74	34.473		
400.00	400.00	400.00	400.00	1.23	1.23	159.41	-56.22	21.12	60.06	57.60	2.46	24.422 CC, ES		
500.00	499.98	497.85	497.83	1.59	1.56	130.55	-57.82	21.59	62.88	59.73	3.15	19.935		
600.00	599.84	595.12	594.97	1.95	1.90	133.73	-62.59	23.01	71.51	67.66	3.85	18.597 SF		
700.00	699.45	691.24	690.73	2.31	2.23	137.55	-70.40	25.34	86.21	81.67	4.54	18.989		
800.00	798.70	785.65	784.49	2.68	2.57	141.06	-81.06	28.51	107.12	101.89	5.23	20.471		
900.00	897.47	877.87	875.66	3.06	2.92	143.88	-94.33	32.46	134.19	128.27	5.92	22.670		
1,000.00	995.62	967.44	963.74	3.46	3.28	146.00	-109.91	37.09	167.22	160.62	6.60	25.352		
1,100.00	1,093.06	1,053.98	1,048.31	3.88	3.64	147.53	-127.46	42.32	205.97	198.71	7.26	28.365		
1,140.88	1,132.65	1,088.40	1,081.79	4.06	3.79	148.02	-135.12	44.59	223.40	215.87	7.53	29.656		
1,200.00	1,189.80	1,139.29	1,131.14	4.33	4.01	148.89	-147.04	48.14	249.62	241.69	7.93	31.481		
1,300.00	1,286.48	1,228.64	1,217.73	4.78	4.42	150.03	-168.18	54.43	294.25	285.63	8.62	34.128		
1,400.00	1,383.15	1,318.00	1,304.32	5.25	4.84	150.87	-189.32	60.72	338.95	329.62	9.33	36.339		
1,500.00	1,479.83	1,407.36	1,390.91	5.72	5.26	151.52	-210.45	67.01	383.69	373.65	10.04	38.219		
1,600.00	1,576.50	1,496.71	1,477.51	6.19	5.69	152.03	-231.59	73.30	428.47	417.71	10.76	39.832		
1,700.00	1,673.18	1,586.07	1,564.10	6.67	6.12	152.45	-252.72	79.59	473.27	461.79	11.48	41.229		
1,800.00	1,769.85	1,675.43	1,650.69	7.16	6.55	152.79	-273.86	85.88	518.09	505.88	12.20	42.449		
1,900.00	1,866.52	1,764.78	1,737.28	7.64	6.99	153.08	-295.00	92.17	562.91	549.98	12.93	43.522		
2,000.00	1,963.20	1,854.14	1,823.88	8.13	7.43	153.33	-316.13	98.46	607.75	594.08	13.67	44.472		
2,100.00	2,059.87	1,943.49	1,910.47	8.62	7.87	153.54	-337.27	104.75	652.60	638.20	14.40	45.319		
2,200.00	2,156.55	2,032.85	1,997.06	9.11	8.31	153.72	-358.40	111.04	697.45	682.31	15.14	46.079		
2,300.00	2,253.22	2,122.21	2,083.65	9.60	8.76	153.89	-379.54	117.33	742.30	726.43	15.87	46.762		
2,400.00	2,349.90	2,211.56	2,170.25	10.09	9.20	154.03	-400.67	123.62	787.17	770.55	16.61	47.382		
2,500.00	2,446.57	2,300.92	2,256.84	10.59	9.65	154.16	-421.81	129.91	832.03	814.68	17.35	47.944		
2,600.00	2,543.25	2,390.27	2,343.43	11.08	10.09	154.28	-442.95	136.19	876.90	858.80	18.10	48.458		
2,700.00	2,639.92	2,479.63	2,430.02	11.58	10.54	154.38	-464.08	142.48	921.77	902.93	18.84	48.928		
2,800.00	2,736.59	2,568.99	2,516.62	12.07	10.99	154.47	-485.22	148.77	966.64	947.06	19.58	49.361		
2,900.00	2,833.27	2,658.34	2,603.21	12.57	11.44	154.56	-506.35	155.06	1,011.52	991.19	20.33	49.760		
3,000.00	2,929.94	2,747.70	2,689.80	13.07	11.89	154.64	-527.49	161.35	1,056.39	1,035.32	21.07	50.128		
3,100.00	3,026.62	2,837.06	2,776.39	13.56	12.34	154.71	-548.63	167.64	1,101.27	1,079.45	21.82	50.470		
3,200.00	3,123.29	2,926.41	2,862.99	14.06	12.79	154.78	-569.76	173.93	1,146.15	1,123.58	22.57	50.788		
3,300.00	3,219.97	3,015.77	2,949.58	14.56	13.24	154.84	-590.90	180.22	1,191.03	1,167.71	23.31	51.084		
3,400.00	3,316.64	3,105.12	3,036.17	15.06	13.69	154.90	-612.03	186.51	1,235.91	1,211.85	24.06	51.361		
3,500.00	3,413.32	3,194.48	3,122.76	15.55	14.14	154.95	-633.17	192.80	1,280.79	1,255.98	24.81	51.620		
3,600.00	3,509.99	3,283.84	3,209.35	16.05	14.59	155.00	-654.31	199.09	1,325.67	1,300.11	25.56	51.863		
3,700.00	3,606.66	3,373.19	3,295.95	16.55	15.04	155.05	-675.44	205.38	1,370.56	1,344.25	26.31	52.090		
3,800.00	3,703.34	3,462.55	3,382.54	17.05	15.49	155.09	-696.58	211.67	1,415.44	1,388.38	27.06	52.305		
3,900.00	3,800.01	3,551.91	3,469.13	17.55	15.94	155.13	-717.71	217.96	1,460.32	1,432.51	27.81	52.507		
4,000.00	3,896.69	5,479.11	4,645.73	18.05	29.02	-165.60	-162.64	-501.13	1,473.10	1,433.68	39.42	37.369		
4,100.00	3,993.36	5,486.42	4,645.74	18.55	29.16	-165.30	-157.35	-506.18	1,448.27	1,407.19	41.07	35.261		
4,115.89	4,008.72	5,487.58	4,645.74	18.63	29.18	-165.25	-156.51	-506.98	1,444.92	1,403.59	41.33	34.963		
4,150.00	4,041.75	5,489.16	4,645.75	18.80	29.21	-176.26	-155.37	-508.07	1,438.28	1,396.43	41.85	34.370		
4,200.00	4,090.18	5,488.18	4,645.74	19.04	29.19	167.05	-156.08	-507.39	1,429.97	1,387.45	42.52	33.634		
4,250.00	4,138.37	5,483.28	4,645.73	19.27	29.10	152.29	-159.62	-504.01	1,423.41	1,380.34	43.07	33.051		
4,300.00	4,186.04	5,474.49	4,645.72	19.49	28.93	140.70	-165.98	-497.93	1,418.62	1,375.12	43.49	32.617		
4,350.00	4,232.88	5,461.86	4,645.69	19.69	28.70	131.92	-175.10	-489.21	1,415.57	1,371.78	43.79	32.326		
4,400.00	4,278.60	5,445.48	4,645.66	19.88	28.39	125.18	-186.95	-477.89	1,414.21	1,370.25	43.96	32.172		
4,418.27	4,294.98	5,438.58	4,645.65	19.95	28.26	123.08	-191.94	-473.12	1,414.10	1,370.12	43.99	32.148		
4,450.00	4,322.93	5,425.45	4,645.62	20.06	28.01	119.79	-201.43	-464.05	1,414.40	1,370.40	44.00	32.145		



Lonestar Consulting, LLC

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 002H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,500.00	4,365.58	5,401.88	4,645.57	20.23	27.57	115.31	-218.47	-447.77	1,416.01	1,372.08	43.93	32.235		
4,550.00	4,406.31	5,374.93	4,645.52	20.39	27.09	111.44	-237.95	-429.15	1,418.83	1,375.06	43.77	32.414		
4,600.00	4,444.84	5,344.76	4,645.46	20.55	26.56	108.01	-259.77	-408.30	1,422.66	1,379.13	43.53	32.680		
4,650.00	4,480.96	5,311.55	4,645.40	20.70	25.98	104.92	-283.77	-385.36	1,427.27	1,384.05	43.23	33.018		
4,700.00	4,514.43	5,275.52	4,645.33	20.86	25.38	102.10	-309.82	-360.47	1,432.43	1,389.52	42.90	33.389		
4,750.00	4,545.06	5,236.88	4,645.25	21.03	24.76	99.55	-337.76	-333.77	1,437.88	1,395.31	42.57	33.780		
4,800.00	4,572.64	5,195.87	4,645.17	21.21	24.11	97.25	-367.41	-305.44	1,443.39	1,401.16	42.23	34.177		
4,850.00	4,597.01	5,152.74	4,645.09	21.43	23.49	95.21	-398.59	-275.64	1,448.74	1,406.77	41.97	34.521		
4,900.00	4,618.02	5,107.16	4,644.99	21.69	22.85	93.43	-431.54	-244.15	1,453.72	1,411.99	41.73	34.838		
4,950.00	4,635.54	5,042.93	4,641.45	22.01	22.05	91.60	-477.61	-199.58	1,457.85	1,416.47	41.38	35.231		
5,000.00	4,649.47	4,981.89	4,632.16	22.39	21.37	89.99	-520.47	-157.15	1,460.82	1,419.62	41.20	35.458		
5,050.00	4,659.71	4,923.84	4,618.04	22.86	20.82	88.59	-560.02	-117.10	1,462.67	1,421.49	41.18	35.523		
5,100.00	4,666.21	4,868.57	4,599.92	23.39	20.39	87.41	-596.28	-79.55	1,463.41	1,422.11	41.30	35.437		
5,150.00	4,668.92	4,815.86	4,578.52	23.99	20.06	86.44	-629.33	-44.55	1,463.07	1,421.53	41.54	35.220		
5,161.78	4,669.00	4,803.80	4,573.07	24.13	20.00	86.24	-636.67	-36.67	1,462.84	1,421.23	41.61	35.156		
5,200.00	4,668.93	4,766.09	4,554.75	24.63	19.83	85.52	-658.97	-12.42	1,462.05	1,420.16	41.89	34.900		
5,296.70	4,668.76	4,681.71	4,506.96	26.05	19.55	83.64	-705.22	39.43	1,461.04	1,418.22	42.82	34.119		
5,300.00	4,668.75	4,679.09	4,505.34	26.10	19.55	83.58	-706.57	40.98	1,461.04	1,418.18	42.86	34.089		
5,400.00	4,668.58	4,607.65	4,457.85	27.75	19.40	81.71	-741.11	81.60	1,462.64	1,418.60	44.04	33.215		
5,500.00	4,668.40	4,550.00	4,415.41	29.55	19.32	80.04	-765.68	111.88	1,467.93	1,422.62	45.31	32.397		
5,600.00	4,668.22	4,500.00	4,375.92	31.46	19.26	78.49	-784.43	136.12	1,477.68	1,431.09	46.60	31.712		
5,700.00	4,668.05	4,462.08	4,344.47	33.46	19.22	77.26	-796.98	153.16	1,492.39	1,444.51	47.88	31.171		
5,800.00	4,667.87	4,429.21	4,316.24	35.54	19.19	76.17	-806.66	166.94	1,512.32	1,463.23	49.09	30.808		
5,900.00	4,667.69	4,400.00	4,290.48	37.68	19.16	75.17	-814.31	178.38	1,537.55	1,487.34	50.21	30.623		
6,000.00	4,667.51	4,377.98	4,270.67	39.87	19.13	74.41	-819.47	186.49	1,568.04	1,516.79	51.25	30.596		
6,100.00	4,667.34	4,350.00	4,245.05	42.11	19.10	73.43	-825.26	196.14	1,603.67	1,551.55	52.12	30.769		
6,200.00	4,667.16	4,350.00	4,245.05	44.38	19.10	73.43	-825.26	196.14	1,644.17	1,591.12	53.05	30.991		
6,300.00	4,666.98	4,324.93	4,221.72	46.68	19.07	72.54	-829.72	204.14	1,689.19	1,635.50	53.69	31.462		
6,400.00	4,666.80	4,300.00	4,198.19	49.01	19.03	71.64	-833.46	211.49	1,738.68	1,684.48	54.20	32.076		
6,500.00	4,666.63	4,300.00	4,198.19	51.36	19.03	71.64	-833.46	211.49	1,791.99	1,737.19	54.80	32.701		
6,600.00	4,666.45	4,300.00	4,198.19	53.73	19.03	71.64	-833.46	211.49	1,849.17	1,793.88	55.29	33.444		
6,700.00	4,666.27	4,279.34	4,178.48	56.12	19.00	70.90	-836.03	217.11	1,909.55	1,854.01	55.55	34.376		
6,800.00	4,666.10	4,270.74	4,170.22	58.52	18.98	70.59	-836.96	219.32	1,973.13	1,917.31	55.82	35.348		
6,900.00	4,665.92	4,250.00	4,150.19	60.94	18.95	69.84	-838.85	224.35	2,039.65	1,983.72	55.93	36.465		
7,000.00	4,665.74	4,250.00	4,150.19	63.37	18.95	69.84	-838.85	224.35	2,108.51	2,052.36	56.15	37.552		
7,100.00	4,665.56	4,250.00	4,150.19	65.80	18.95	69.84	-838.85	224.35	2,179.78	2,123.47	56.31	38.708		
7,200.00	4,665.39	4,250.00	4,150.19	68.25	18.95	69.84	-838.85	224.35	2,253.24	2,196.80	56.44	39.925		
7,300.00	4,665.21	4,250.00	4,150.19	70.71	18.95	69.84	-838.85	224.35	2,328.67	2,272.15	56.52	41.199		
7,400.00	4,665.03	4,250.00	4,150.19	73.17	18.95	69.84	-838.85	224.35	2,405.89	2,349.32	56.58	42.522		
7,500.00	4,664.85	4,228.28	4,129.06	75.64	18.91	69.06	-840.31	229.13	2,484.35	2,427.89	56.46	43.998		
7,600.00	4,664.68	4,223.95	4,124.83	78.12	18.90	68.90	-840.54	230.03	2,564.50	2,508.05	56.45	45.429		
7,700.00	4,664.50	4,219.92	4,120.89	80.60	18.89	68.75	-840.73	230.84	2,645.98	2,589.55	56.42	46.895		
7,800.00	4,664.32	4,200.00	4,101.34	83.09	18.85	68.04	-841.41	234.63	2,728.88	2,672.61	56.27	48.495		
7,900.00	4,664.14	4,200.00	4,101.34	85.58	18.85	68.04	-841.41	234.63	2,812.58	2,756.33	56.25	50.002		
8,000.00	4,663.97	4,200.00	4,101.34	88.08	18.85	68.04	-841.41	234.63	2,897.31	2,841.09	56.22	51.537		
8,100.00	4,663.79	4,200.00	4,101.34	90.58	18.85	68.04	-841.41	234.63	2,982.99	2,926.81	56.18	53.097		
8,200.00	4,663.61	4,200.00	4,101.34	93.08	18.85	68.04	-841.41	234.63	3,069.54	3,013.40	56.13	54.681		
8,300.00	4,663.44	4,200.00	4,101.34	95.59	18.85	68.04	-841.41	234.63	3,156.88	3,100.79	56.09	56.287		
8,400.00	4,663.26	4,200.00	4,101.34	98.10	18.85	68.04	-841.41	234.63	3,244.95	3,188.92	56.03	57.911		
8,500.00	4,663.08	4,200.00	4,101.34	100.61	18.85	68.04	-841.41	234.63	3,333.69	3,277.72	55.98	59.553		
8,600.00	4,662.90	4,200.00	4,101.34	103.13	18.85	68.04	-841.41	234.63	3,423.06	3,367.14	55.92	61.212		
8,700.00	4,662.73	4,200.00	4,101.34	105.65	18.85	68.04	-841.41	234.63	3,513.00	3,457.13	55.86	62.885		



Lonestar Consulting, LLC
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 002H - Original Drilling - APD													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
8,800.00	4,662.55	4,200.00	4,101.34	108.17	18.85	68.04	-841.41	234.63	3,603.47	3,547.66	55.81	64.572		
8,900.00	4,662.37	4,200.00	4,101.34	110.69	18.85	68.04	-841.41	234.63	3,694.43	3,638.68	55.75	66.271		
9,000.00	4,662.19	4,200.00	4,101.34	113.22	18.85	68.04	-841.41	234.63	3,785.84	3,730.15	55.69	67.981		
9,100.00	4,662.02	4,200.00	4,101.34	115.74	18.85	68.04	-841.41	234.63	3,877.68	3,822.05	55.63	69.702		
9,200.00	4,661.84	4,200.00	4,101.34	118.27	18.85	68.04	-841.41	234.63	3,969.92	3,914.34	55.58	71.432		
9,300.00	4,661.66	4,200.00	4,101.34	120.80	18.85	68.04	-841.41	234.63	4,062.52	4,007.00	55.52	73.170		
9,400.00	4,661.48	4,178.39	4,080.04	123.33	18.80	67.26	-841.63	238.26	4,155.07	4,099.73	55.34	75.082		
9,500.00	4,661.31	4,176.89	4,078.56	125.86	18.80	67.20	-841.62	238.49	4,248.27	4,192.99	55.28	76.849		
9,600.00	4,661.13	4,175.45	4,077.14	128.40	18.80	67.15	-841.62	238.71	4,341.78	4,286.56	55.22	78.623		
9,700.00	4,660.95	4,174.08	4,075.78	130.93	18.79	67.10	-841.61	238.92	4,435.57	4,380.40	55.17	80.403		
9,800.00	4,660.78	4,172.75	4,074.47	133.47	18.79	67.05	-841.60	239.12	4,529.62	4,474.50	55.11	82.187		
9,900.00	4,660.60	4,150.00	4,051.94	136.01	18.74	66.24	-841.11	242.27	4,624.31	4,569.37	54.93	84.180		
10,000.00	4,660.42	4,150.00	4,051.94	138.55	18.74	66.24	-841.11	242.27	4,718.79	4,663.90	54.89	85.964		
10,100.00	4,660.24	4,150.00	4,051.94	141.08	18.74	66.24	-841.11	242.27	4,813.50	4,758.65	54.85	87.753		
10,200.00	4,660.07	4,150.00	4,051.94	143.63	18.74	66.24	-841.11	242.27	4,908.42	4,853.60	54.82	89.545		
10,300.00	4,659.89	4,150.00	4,051.94	146.17	18.74	66.24	-841.11	242.27	5,003.53	4,948.75	54.78	91.340		
10,400.00	4,659.71	4,150.00	4,051.94	148.71	18.74	66.24	-841.11	242.27	5,098.84	5,044.09	54.75	93.138		
10,500.00	4,659.53	4,150.00	4,051.94	151.25	18.74	66.24	-841.11	242.27	5,194.32	5,139.60	54.71	94.938		
10,600.00	4,659.36	4,150.00	4,051.94	153.80	18.74	66.24	-841.11	242.27	5,289.96	5,235.28	54.68	96.741		
10,700.00	4,659.18	4,150.00	4,051.94	156.34	18.74	66.24	-841.11	242.27	5,385.77	5,331.11	54.65	98.545		
10,800.94	4,659.00	4,150.00	4,051.94	158.91	18.74	66.24	-841.11	242.27	5,482.62	5,428.00	54.63	100.368		



Lonestar Consulting, LLC

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 004H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	159.30	-18.75	7.08	20.05					
100.00	100.00	100.00	100.00	0.15	0.15	159.30	-18.75	7.08	20.05	19.74	0.31	65.030		
200.00	200.00	200.00	200.00	0.51	0.51	159.30	-18.75	7.08	20.05	19.02	1.03	19.554		
300.00	300.00	300.00	300.00	0.87	0.87	159.30	-18.75	7.08	20.05	18.31	1.74	11.507		
400.00	400.00	400.00	400.00	1.23	1.23	159.30	-18.75	7.08	20.05	17.59	2.46	8.152 CC, ES		
500.00	499.98	500.06	500.04	1.59	1.58	128.10	-17.98	8.65	20.99	17.82	3.17	6.618		
600.00	599.84	600.05	599.89	1.95	1.94	125.41	-15.68	13.35	23.84	19.96	3.88	6.138		
700.00	699.45	699.92	699.38	2.31	2.30	122.11	-11.84	21.16	28.68	24.07	4.61	6.223		
800.00	798.70	799.61	798.32	2.68	2.67	119.00	-6.49	32.06	35.54	30.19	5.35	6.645		
900.00	897.47	899.06	896.54	3.06	3.05	116.39	0.36	46.00	44.43	38.32	6.11	7.271		
1,000.00	995.62	998.21	993.88	3.46	3.46	114.31	8.68	62.94	55.34	48.44	6.91	8.014		
1,100.00	1,093.06	1,097.24	1,090.50	3.88	3.88	113.12	18.24	82.40	68.16	60.42	7.74	8.807		
1,140.88	1,132.65	1,137.73	1,129.98	4.06	4.06	113.34	22.20	90.47	73.81	65.72	8.09	9.123		
1,200.00	1,189.80	1,196.25	1,187.03	4.33	4.31	114.00	27.93	102.13	82.17	73.56	8.60	9.550		
1,300.00	1,286.48	1,295.23	1,283.55	4.78	4.76	114.87	37.62	121.86	96.32	86.83	9.49	10.155		
1,400.00	1,383.15	1,394.22	1,380.06	5.25	5.21	115.51	47.31	141.59	110.48	100.10	10.38	10.645		
1,500.00	1,479.83	1,493.20	1,476.57	5.72	5.66	116.00	57.01	161.33	124.66	113.38	11.28	11.049		
1,600.00	1,576.50	1,592.19	1,573.09	6.19	6.12	116.40	66.70	181.06	138.84	126.65	12.19	11.386		
1,700.00	1,673.18	1,691.17	1,669.60	6.67	6.58	116.72	76.39	200.79	153.03	139.92	13.11	11.672		
1,800.00	1,769.85	1,790.16	1,766.11	7.16	7.04	116.99	86.08	220.52	167.22	153.19	14.03	11.916		
1,900.00	1,866.52	1,889.14	1,862.63	7.64	7.51	117.21	95.77	240.25	181.42	166.46	14.96	12.127		
2,000.00	1,963.20	1,988.13	1,959.14	8.13	7.98	117.40	105.47	259.98	195.61	179.73	15.89	12.312		
2,100.00	2,059.87	2,087.11	2,055.65	8.62	8.44	117.57	115.16	279.72	209.81	192.99	16.82	12.474		
2,200.00	2,156.55	2,186.10	2,152.16	9.11	8.91	117.71	124.85	299.45	224.01	206.26	17.75	12.617		
2,300.00	2,253.22	2,285.08	2,248.68	9.60	9.38	117.84	134.54	319.18	238.22	219.53	18.69	12.745		
2,400.00	2,349.90	2,384.07	2,345.19	10.09	9.85	117.96	144.23	338.91	252.42	232.79	19.63	12.860		
2,500.00	2,446.57	2,483.05	2,441.70	10.59	10.32	118.06	153.93	358.64	266.62	246.06	20.57	12.963		
2,600.00	2,543.25	2,582.04	2,538.22	11.08	10.80	118.15	163.62	378.38	280.83	259.32	21.51	13.057		
2,700.00	2,639.92	2,681.02	2,634.73	11.58	11.27	118.23	173.31	398.11	295.03	272.58	22.45	13.142		
2,800.00	2,736.59	2,780.01	2,731.24	12.07	11.74	118.30	183.00	417.84	309.24	285.85	23.39	13.219		
2,900.00	2,833.27	2,878.99	2,827.76	12.57	12.21	118.37	192.69	437.57	323.45	299.11	24.34	13.291		
3,000.00	2,929.94	2,977.98	2,924.27	13.07	12.69	118.44	202.39	457.30	337.65	312.37	25.28	13.356		
3,100.00	3,026.62	3,076.96	3,020.78	13.56	13.16	118.49	212.08	477.03	351.86	325.63	26.23	13.417		
3,200.00	3,123.29	3,175.95	3,117.30	14.06	13.63	118.55	221.77	496.77	366.07	338.90	27.17	13.473		
3,300.00	3,219.97	3,274.93	3,213.81	14.56	14.11	118.59	231.46	516.50	380.28	352.16	28.12	13.525		
3,400.00	3,316.64	3,373.92	3,310.32	15.06	14.58	118.64	241.15	536.23	394.48	365.42	29.06	13.573		
3,500.00	3,413.32	3,472.90	3,406.83	15.55	15.06	118.68	250.84	555.96	408.69	378.68	30.01	13.618		
3,600.00	3,509.99	3,571.89	3,503.35	16.05	15.53	118.72	260.54	575.69	422.90	391.94	30.96	13.661		
3,700.00	3,606.66	3,670.87	3,599.86	16.55	16.01	118.76	270.23	595.42	437.11	405.20	31.91	13.700		
3,800.00	3,703.34	3,769.86	3,696.37	17.05	16.48	118.79	279.92	615.16	451.32	418.46	32.85	13.737		
3,900.00	3,800.01	3,868.84	3,792.89	17.55	16.96	118.83	289.61	634.89	465.53	431.72	33.80	13.772		
4,000.00	3,896.69	3,967.83	3,889.40	18.05	17.44	118.86	299.30	654.62	479.74	444.98	34.75	13.805		
4,100.00	3,993.36	4,066.81	3,985.91	18.55	17.91	118.89	309.00	674.35	493.94	458.24	35.70	13.836		
4,115.89	4,008.72	4,082.54	4,001.25	18.63	17.99	118.89	310.54	677.49	496.20	460.35	35.85	13.841		
4,150.00	4,041.75	4,186.27	4,102.45	18.80	18.45	107.51	327.02	692.21	496.58	460.14	36.45	13.625		
4,200.00	4,090.18	4,384.42	4,289.09	19.04	19.14	92.80	390.61	688.04	481.37	446.29	35.08	13.724		
4,250.00	4,138.37	4,547.98	4,426.31	19.27	19.56	84.08	471.36	652.88	452.37	420.89	31.47	14.374		
4,300.00	4,186.04	4,637.03	4,490.87	19.49	19.72	81.52	524.34	622.19	414.73	385.65	29.09	14.259		
4,350.00	4,232.88	4,691.97	4,526.41	19.69	19.81	85.49	559.58	599.56	372.71	345.07	27.64	13.483		
4,400.00	4,278.60	4,724.60	4,545.83	19.88	19.85	94.05	581.30	584.87	328.78	301.73	27.05	12.156		
4,450.00	4,322.93	4,742.57	4,555.97	20.06	19.87	103.60	593.48	576.40	284.60	257.44	27.17	10.476		
4,500.00	4,365.58	4,750.66	4,560.40	20.23	19.89	110.90	599.02	572.50	241.62	213.66	27.97	8.640		



Lonestar Consulting, LLC

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 004H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,550.00	4,406.31	4,751.87	4,561.05	20.39	19.89	114.79	599.85	571.91	201.54	172.05	29.49	6.834		
4,600.00	4,444.84	4,748.13	4,559.02	20.55	19.88	115.42	597.28	573.73	166.91	135.14	31.77	5.254		
4,650.00	4,480.96	4,740.74	4,554.95	20.70	19.87	113.20	592.23	577.28	141.77	107.39	34.38	4.124		
4,700.00	4,514.43	4,730.57	4,549.25	20.86	19.86	108.48	585.33	582.08	131.32	95.44	35.88	3.660		
4,704.77	4,517.48	4,729.48	4,548.63	20.88	19.86	107.91	584.59	582.59	131.24	95.33	35.91	3.655 SF		
4,750.00	4,545.06	4,718.27	4,542.17	21.03	19.84	101.57	577.04	587.79	138.32	103.21	35.10	3.940		
4,800.00	4,572.64	4,704.29	4,533.90	21.21	19.83	92.91	567.72	594.12	159.79	126.66	33.13	4.823		
4,850.00	4,597.01	4,688.96	4,524.56	21.43	19.80	83.25	557.60	600.87	190.23	158.77	31.45	6.048		
4,900.00	4,618.02	4,672.53	4,514.24	21.69	19.78	73.53	546.91	607.87	225.37	194.92	30.45	7.401		
4,950.00	4,635.54	4,650.00	4,499.57	22.01	19.74	63.40	532.50	617.09	262.79	233.21	29.59	8.882		
5,000.00	4,649.47	4,637.14	4,490.95	22.39	19.72	56.83	524.41	622.14	300.89	270.97	29.92	10.056		
5,050.00	4,659.71	4,618.45	4,478.09	22.86	19.69	50.45	512.84	629.21	339.05	308.97	30.08	11.272		
5,100.00	4,666.21	4,600.00	4,465.02	23.39	19.66	45.38	501.65	635.87	376.69	346.26	30.43	12.378		
5,150.00	4,668.92	4,579.56	4,450.14	23.99	19.62	41.21	489.51	642.87	413.50	382.71	30.79	13.429		
5,161.78	4,669.00	4,574.87	4,446.66	24.13	19.61	40.38	486.77	644.42	422.02	391.12	30.89	13.661		
5,200.00	4,668.93	4,550.00	4,427.87	24.63	19.56	38.73	472.50	652.27	450.12	419.37	30.75	14.640		
5,300.00	4,668.75	4,524.88	4,408.30	26.10	19.50	37.19	458.56	659.57	526.11	493.99	32.13	16.376		
5,400.00	4,668.58	4,500.00	4,388.34	27.75	19.45	35.79	445.24	666.17	606.10	573.00	33.11	18.308		
5,500.00	4,668.40	4,467.77	4,361.72	29.55	19.37	34.14	428.74	673.77	688.96	655.37	33.60	20.507		
5,600.00	4,668.22	4,450.00	4,346.69	31.46	19.33	33.30	420.04	677.50	774.31	739.99	34.32	22.562		
5,700.00	4,668.05	4,423.84	4,324.13	33.46	19.26	32.15	407.72	682.37	861.51	826.83	34.68	24.844		
5,800.00	4,667.87	4,400.00	4,303.16	35.54	19.19	31.19	397.04	686.17	950.38	915.38	35.00	27.157		
5,900.00	4,667.69	4,400.00	4,303.16	37.68	19.19	31.19	397.04	686.17	1,040.64	1,005.00	35.64	29.197		
6,000.00	4,667.51	4,374.74	4,280.54	39.87	19.12	30.24	386.31	689.53	1,131.75	1,095.98	35.78	31.635		
6,100.00	4,667.34	4,350.00	4,258.03	42.11	19.04	29.39	376.40	692.15	1,224.11	1,188.22	35.89	34.109		
6,200.00	4,667.16	4,350.00	4,258.03	44.38	19.04	29.39	376.40	692.15	1,316.94	1,280.65	36.28	36.294		
6,300.00	4,666.98	4,350.00	4,258.03	46.68	19.04	29.39	376.40	692.15	1,410.75	1,374.13	36.61	38.532		
6,400.00	4,666.80	4,329.15	4,238.80	49.01	18.97	28.72	368.52	693.84	1,504.87	1,468.20	36.67	41.038		
6,500.00	4,666.63	4,320.17	4,230.45	51.36	18.94	28.45	365.26	694.41	1,599.64	1,562.81	36.83	43.430		
6,600.00	4,666.45	4,300.00	4,211.57	53.73	18.88	27.86	358.24	695.39	1,695.02	1,658.15	36.87	45.973		
6,700.00	4,666.27	4,300.00	4,211.57	56.12	18.88	27.86	358.24	695.39	1,790.50	1,753.43	37.07	48.297		
6,800.00	4,666.10	4,300.00	4,211.57	58.52	18.88	27.86	358.24	695.39	1,886.45	1,849.20	37.25	50.642		
6,900.00	4,665.92	4,300.00	4,211.57	60.94	18.88	27.86	358.24	695.39	1,982.80	1,945.39	37.41	53.006		
7,000.00	4,665.74	4,300.00	4,211.57	63.37	18.88	27.86	358.24	695.39	2,079.49	2,041.94	37.55	55.383		
7,100.00	4,665.56	4,279.17	4,191.89	65.80	18.81	27.29	351.44	695.93	2,176.05	2,138.52	37.53	57.984		
7,200.00	4,665.39	4,273.93	4,186.91	68.25	18.79	27.15	349.80	695.98	2,273.06	2,235.44	37.61	60.431		
7,300.00	4,665.21	4,250.00	4,164.07	70.71	18.70	26.54	342.68	695.87	2,370.63	2,333.05	37.57	63.093		
7,400.00	4,665.03	4,250.00	4,164.07	73.17	18.70	26.54	342.68	695.87	2,467.86	2,430.18	37.68	65.492		
7,500.00	4,664.85	4,250.00	4,164.07	75.64	18.70	26.54	342.68	695.87	2,565.31	2,527.53	37.78	67.897		
7,600.00	4,664.68	4,250.00	4,164.07	78.12	18.70	26.54	342.68	695.87	2,662.95	2,625.07	37.88	70.307		
7,700.00	4,664.50	4,250.00	4,164.07	80.60	18.70	26.54	342.68	695.87	2,760.76	2,722.79	37.96	72.721		
7,800.00	4,664.32	4,250.00	4,164.07	83.09	18.70	26.54	342.68	695.87	2,858.71	2,820.67	38.05	75.138		
7,900.00	4,664.14	4,250.00	4,164.07	85.58	18.70	26.54	342.68	695.87	2,956.81	2,918.69	38.12	77.557		
8,000.00	4,663.97	4,250.00	4,164.07	88.08	18.70	26.54	342.68	695.87	3,055.03	3,016.83	38.20	79.977		
8,100.00	4,663.79	4,250.00	4,164.07	90.58	18.70	26.54	342.68	695.87	3,153.36	3,115.09	38.27	82.398		
8,200.00	4,663.61	4,250.00	4,164.07	93.08	18.70	26.54	342.68	695.87	3,251.79	3,213.45	38.34	84.818		
8,300.00	4,663.44	4,250.00	4,164.07	95.59	18.70	26.54	342.68	695.87	3,350.32	3,311.91	38.40	87.237		
8,400.00	4,663.26	4,250.00	4,164.07	98.10	18.70	26.54	342.68	695.87	3,448.93	3,410.46	38.47	89.655		
8,500.00	4,663.08	4,228.13	4,143.04	100.61	18.62	26.03	336.71	695.21	3,547.17	3,508.75	38.43	92.309		
8,600.00	4,662.90	4,225.74	4,140.74	103.13	18.61	25.98	336.09	695.11	3,645.83	3,607.35	38.48	94.749		
8,700.00	4,662.73	4,223.46	4,138.53	105.65	18.60	25.92	335.50	695.00	3,744.55	3,706.02	38.53	97.186		
8,800.00	4,662.55	4,200.00	4,115.82	108.17	18.51	25.41	329.80	693.59	3,843.75	3,805.26	38.49	99.875		



Lonestar Consulting, LLC
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design I20 2207 Pad - # 004H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
8,900.00	4,662.37	4,200.00	4,115.82	110.69	18.51	25.41	329.80	693.59	3,942.50	3,903.95	38.55	102.279		
9,000.00	4,662.19	4,200.00	4,115.82	113.22	18.51	25.41	329.80	693.59	4,041.31	4,002.71	38.61	104.680		
9,100.00	4,662.02	4,200.00	4,115.82	115.74	18.51	25.41	329.80	693.59	4,140.19	4,101.52	38.67	107.077		
9,200.00	4,661.84	4,200.00	4,115.82	118.27	18.51	25.41	329.80	693.59	4,239.11	4,200.39	38.72	109.471		
9,300.00	4,661.66	4,200.00	4,115.82	120.80	18.51	25.41	329.80	693.59	4,338.08	4,299.30	38.78	111.860		
9,400.00	4,661.48	4,200.00	4,115.82	123.33	18.51	25.41	329.80	693.59	4,437.10	4,398.26	38.84	114.244		
9,500.00	4,661.31	4,200.00	4,115.82	125.86	18.51	25.41	329.80	693.59	4,536.17	4,497.27	38.90	116.623		
9,600.00	4,661.13	4,200.00	4,115.82	128.40	18.51	25.41	329.80	693.59	4,635.27	4,596.32	38.95	118.998		
9,700.00	4,660.95	4,200.00	4,115.82	130.93	18.51	25.41	329.80	693.59	4,734.41	4,695.40	39.01	121.367		
9,800.00	4,660.78	4,200.00	4,115.82	133.47	18.51	25.41	329.80	693.59	4,833.59	4,794.52	39.07	123.730		
9,900.00	4,660.60	4,200.00	4,115.82	136.01	18.51	25.41	329.80	693.59	4,932.80	4,893.67	39.12	126.088		
10,000.00	4,660.42	4,200.00	4,115.82	138.55	18.51	25.41	329.80	693.59	5,032.04	4,992.86	39.18	128.440		
10,100.00	4,660.24	4,200.00	4,115.82	141.08	18.51	25.41	329.80	693.59	5,131.31	5,092.07	39.23	130.785		
10,200.00	4,660.07	4,200.00	4,115.82	143.63	18.51	25.41	329.80	693.59	5,230.61	5,191.31	39.29	133.124		
10,300.00	4,659.89	4,200.00	4,115.82	146.17	18.51	25.41	329.80	693.59	5,329.93	5,290.58	39.35	135.457		
10,400.00	4,659.71	4,200.00	4,115.82	148.71	18.51	25.41	329.80	693.59	5,429.28	5,389.87	39.40	137.783		
10,500.00	4,659.53	4,200.00	4,115.82	151.25	18.51	25.41	329.80	693.59	5,528.65	5,489.19	39.46	140.103		
10,600.00	4,659.36	4,200.00	4,115.82	153.80	18.51	25.41	329.80	693.59	5,628.05	5,588.53	39.52	142.415		
10,700.00	4,659.18	4,200.00	4,115.82	156.34	18.51	25.41	329.80	693.59	5,727.46	5,687.89	39.58	144.720		
10,800.94	4,659.00	4,200.00	4,115.82	158.91	18.51	25.41	329.80	693.59	5,827.83	5,788.19	39.63	147.040		



Lonestar Consulting, LLC

Anticollision Report

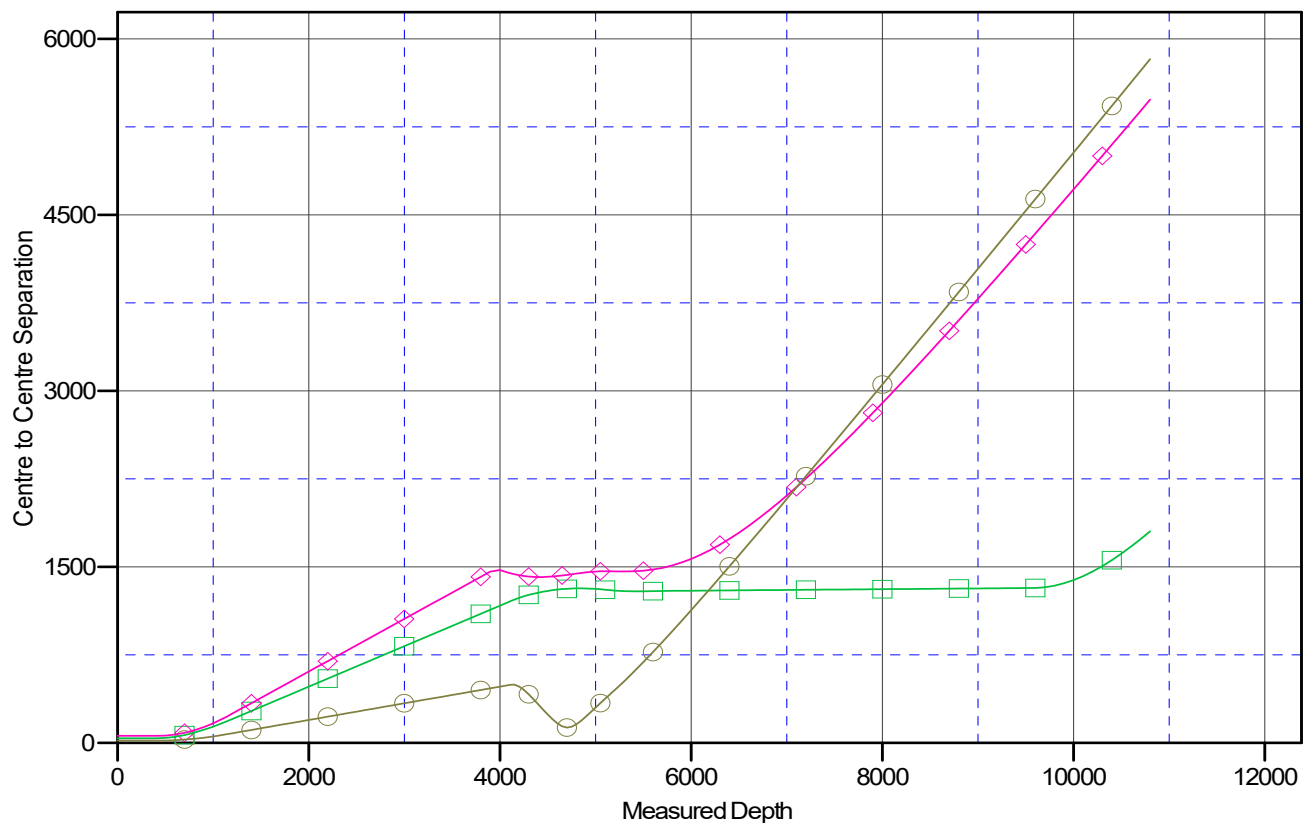


Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6826' & RKB 14' @ 6840.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.8333333

Coordinates are relative to: # 003H - Slot 4
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.14°

Ladder Plot



LEGEND

—■— #001H Original Drilling, APDVO
 —◆— #002H Original Drilling, APDVO
 —●— #004H Original Drilling, APDVO



Lonestar Consulting, LLC
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 003H - Slot 4
Project:	Lybrook Area	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Reference Site:	I20 2207 Pad	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6826' & RKB 14' @ 6840.00usft

Coordinates are relative to: # 003H - Slot 4

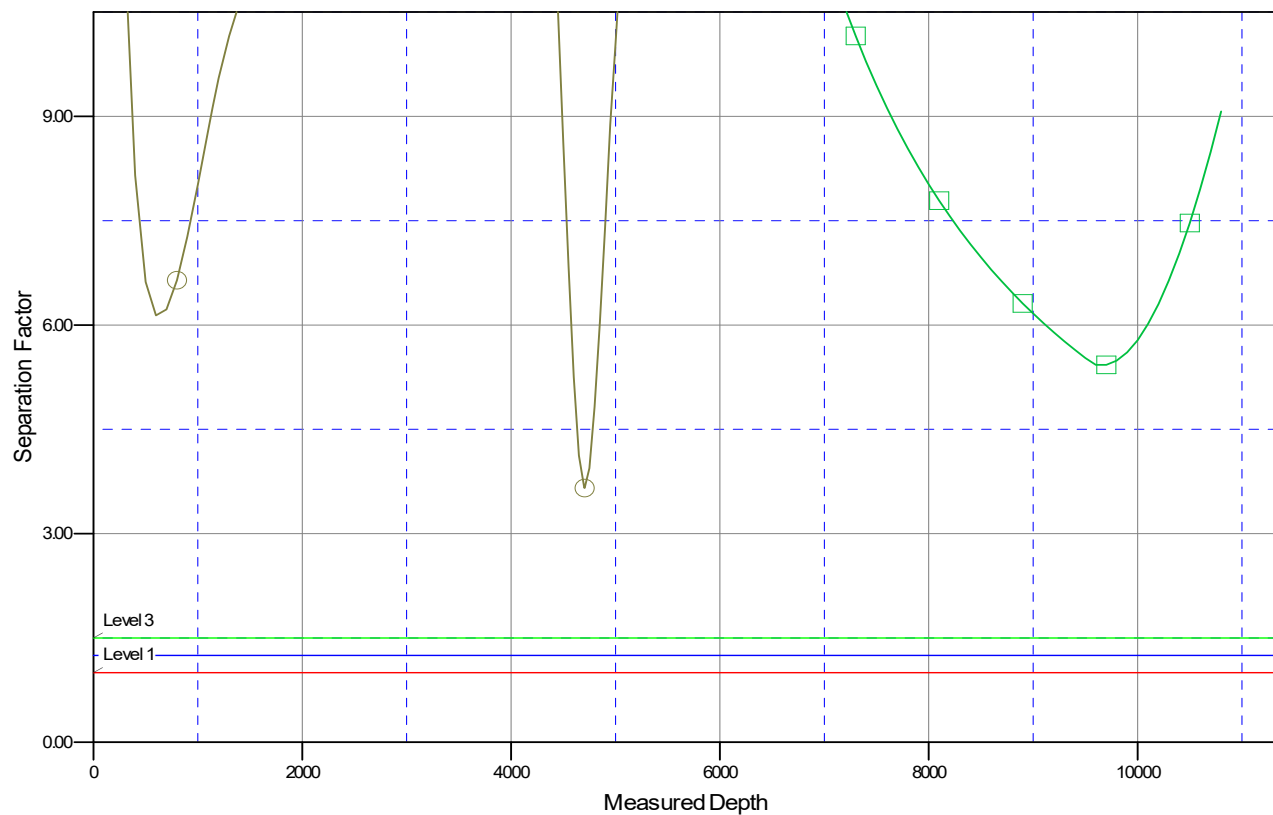
Offset Depths are relative to Offset Datum

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

Central Meridian is -107.8333333

Grid Convergence at Surface is: 0.14°

Separation Factor Plot



LEGEND

—■— # 001H Original Drilling, APDVO
 —◆— # 002H Original Drilling, APDVO
 —●— # 004H Original Drilling, APDVO



Company: DJR Operating
Project: Lybrook Area
Site: I20 2207 Pad
Well: # 003H
Wellbore: Original Drilling
Design: APD

PROJECT DETAILS: Lybrook Area

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: True



WELL DETAILS: # 003H

GL 6826' & RKB 14' @ 6840.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1863584.66	2794698.75	36.12142656	-107.59087159

Plan: APD (# 003H/Original Drilling)

Created By: Janie Collins Date: 16:32, September 02 2020



Azimuths to True North
Magnetic North: 8

Magnetic Field
Strength: 49189
Dip Angle: 62
Date: 8/5/2020
Model: HDGM_FIT

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook I20 3H Heel	4669.00	398.81	992.16	1863985.95	2795689.92	36.12252210	-107.58751210
Lybrook I20 3H Toe	4659.00	-3663.80	4903.07	1859933.10	2799610.94	36.11136050	-107.57427200

SECTION DETAILS

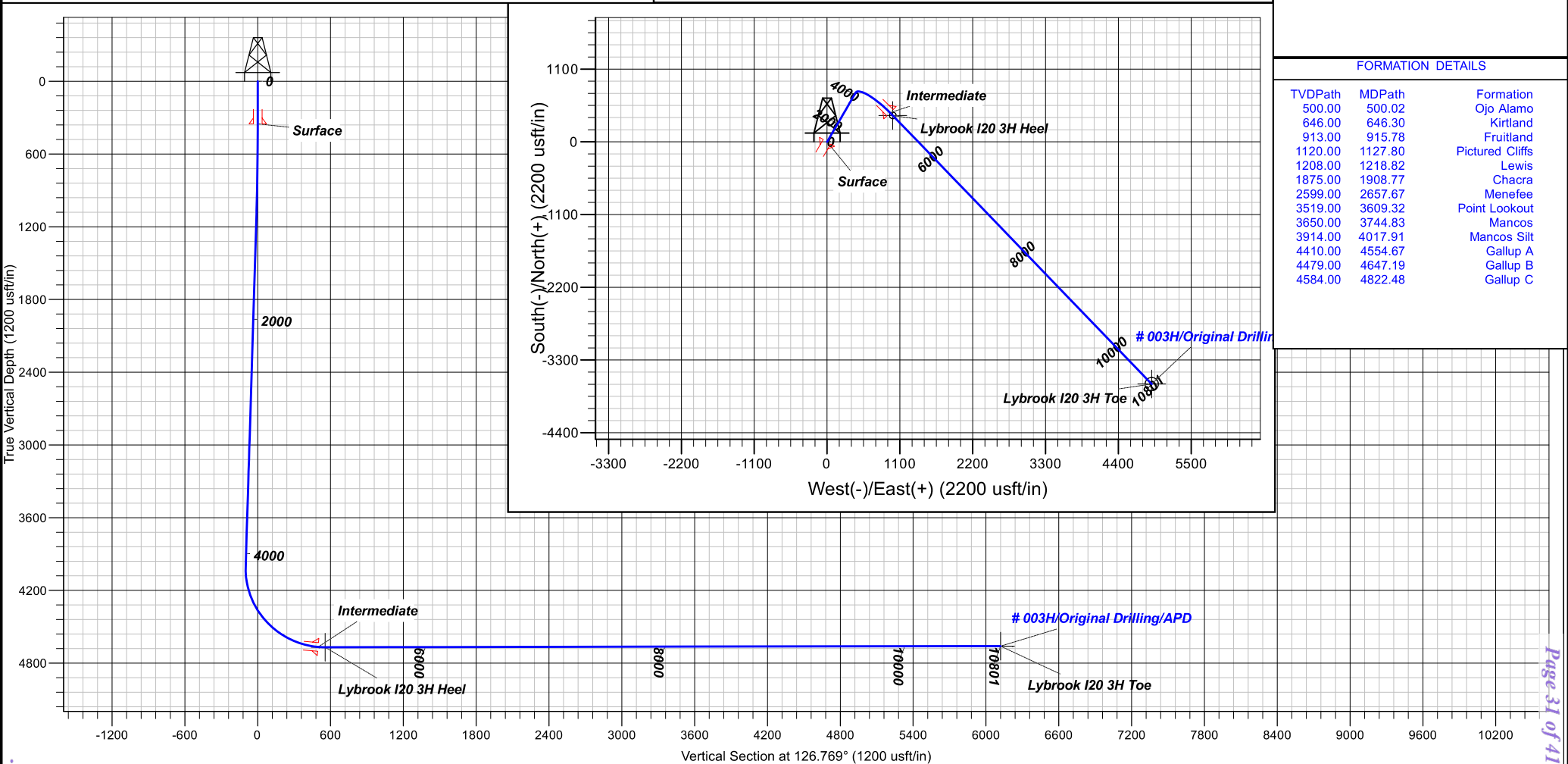
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	
1140.88	14.82	30.133	1132.65	82.40	47.83	2.00	30.13	-11.01	
4115.89	14.82	30.133	4008.72	740.42	429.77	0.00	0.00	-98.93	
5161.78	90.10	136.090	4669.00	398.81	992.16	8.00	105.43	556.06	Lybrook I20 3H Heel
10800.94	90.10	136.090	4659.00	-3663.80	4903.07	0.00	0.00	6120.74	Lybrook I20 3H Toe

CASING DETAILS

TVD	MD	Name
350.00	350.00	Surface
4666.50	5103.28	Intermediate

FORMATION DETAILS

TVDPPath	MDPath	Formation
500.00	500.02	Ojo Alamo
646.00	646.30	Kirtland
913.00	915.78	Fruitland
1120.00	1127.80	Pictured Cliffs
1208.00	1218.82	Lewis
1875.00	1908.77	Chacra
2599.00	2657.67	Menefee
3519.00	3609.32	Point Lookout
3650.00	3744.83	Mancos
3914.00	4017.91	Mancos Silt
4410.00	4554.67	Gallup A
4479.00	4647.19	Gallup B
4584.00	4822.48	Gallup C





DJR Operating

Lybrook Area

I20 2207 Pad

003H - Slot 4

Original Drilling

Plan: APD

Standard Planning Report

02 September, 2020





Lonestar Consulting, LLC
Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 003H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Project:	Lybrook Area	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site:	I20 2207 Pad	North Reference:	True
Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Project	Lybrook Area		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	I20 2207 Pad				
Site Position:		Northing:	1,863,528.49 usft	Latitude:	36.12127211
From:	Lat/Long	Easting:	2,794,720.01 usft	Longitude:	-107.59080009
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.14

Well	# 003H - Slot 4					
Well Position	+N/-S	56.22 usft	Northing:	1,863,584.66 usft	Latitude:	36.12142656
	+E/-W	-21.12 usft	Easting:	2,794,698.75 usft	Longitude:	-107.59087160
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,826.00 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	8/5/2020	8.70	62.72	49,189.10000000

Design	APD			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	126.769

Plan Survey Tool Program			Date	9/2/2020	
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	10,800.94	APD (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	
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,140.88	14.82	30.133	1,132.65	82.40	47.83	2.00	2.00	0.00	30.13	
4,115.89	14.82	30.133	4,008.72	740.42	429.77	0.00	0.00	0.00	0.00	
5,161.78	90.10	136.090	4,669.00	398.81	992.16	9.00	7.20	10.13	105.43	Lybrook I20 3H Heel
10,800.94	90.10	136.090	4,659.00	-3,663.80	4,903.07	0.00	0.00	0.00	0.00	Lybrook I20 3H Toe



Lonestar Consulting, LLC

Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 003H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Project:	Lybrook Area	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site:	I20 2207 Pad	North Reference:	True
Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/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
500.00	2.00	30.133	499.98	1.51	0.88	-0.20	2.00	2.00	0.00
600.00	4.00	30.133	599.84	6.04	3.50	-0.81	2.00	2.00	0.00
700.00	6.00	30.133	699.45	13.57	7.88	-1.81	2.00	2.00	0.00
800.00	8.00	30.133	798.70	24.11	14.00	-3.22	2.00	2.00	0.00
900.00	10.00	30.133	897.47	37.64	21.85	-5.03	2.00	2.00	0.00
1,000.00	12.00	30.133	995.62	54.14	31.43	-7.23	2.00	2.00	0.00
1,100.00	14.00	30.133	1,093.06	73.60	42.72	-9.83	2.00	2.00	0.00
1,140.88	14.82	30.133	1,132.65	82.40	47.83	-11.01	2.00	2.00	0.00
1,200.00	14.82	30.133	1,189.80	95.47	55.42	-12.76	0.00	0.00	0.00
1,300.00	14.82	30.133	1,286.48	117.59	68.25	-15.71	0.00	0.00	0.00
1,400.00	14.82	30.133	1,383.15	139.71	81.09	-18.67	0.00	0.00	0.00
1,500.00	14.82	30.133	1,479.83	161.83	93.93	-21.62	0.00	0.00	0.00
1,600.00	14.82	30.133	1,576.50	183.94	106.77	-24.58	0.00	0.00	0.00
1,700.00	14.82	30.133	1,673.18	206.06	119.61	-27.53	0.00	0.00	0.00
1,800.00	14.82	30.133	1,769.85	228.18	132.45	-30.49	0.00	0.00	0.00
1,900.00	14.82	30.133	1,866.52	250.30	145.29	-33.44	0.00	0.00	0.00
2,000.00	14.82	30.133	1,963.20	272.42	158.12	-36.40	0.00	0.00	0.00
2,100.00	14.82	30.133	2,059.87	294.54	170.96	-39.36	0.00	0.00	0.00
2,200.00	14.82	30.133	2,156.55	316.66	183.80	-42.31	0.00	0.00	0.00
2,300.00	14.82	30.133	2,253.22	338.77	196.64	-45.27	0.00	0.00	0.00
2,400.00	14.82	30.133	2,349.90	360.89	209.48	-48.22	0.00	0.00	0.00
2,500.00	14.82	30.133	2,446.57	383.01	222.32	-51.18	0.00	0.00	0.00
2,600.00	14.82	30.133	2,543.25	405.13	235.16	-54.13	0.00	0.00	0.00
2,700.00	14.82	30.133	2,639.92	427.25	247.99	-57.09	0.00	0.00	0.00
2,800.00	14.82	30.133	2,736.59	449.37	260.83	-60.04	0.00	0.00	0.00
2,900.00	14.82	30.133	2,833.27	471.48	273.67	-63.00	0.00	0.00	0.00
3,000.00	14.82	30.133	2,929.94	493.60	286.51	-65.95	0.00	0.00	0.00
3,100.00	14.82	30.133	3,026.62	515.72	299.35	-68.91	0.00	0.00	0.00
3,200.00	14.82	30.133	3,123.29	537.84	312.19	-71.86	0.00	0.00	0.00
3,300.00	14.82	30.133	3,219.97	559.96	325.02	-74.82	0.00	0.00	0.00
3,400.00	14.82	30.133	3,316.64	582.08	337.86	-77.78	0.00	0.00	0.00
3,500.00	14.82	30.133	3,413.32	604.19	350.70	-80.73	0.00	0.00	0.00
3,600.00	14.82	30.133	3,509.99	626.31	363.54	-83.69	0.00	0.00	0.00
3,700.00	14.82	30.133	3,606.66	648.43	376.38	-86.64	0.00	0.00	0.00
3,800.00	14.82	30.133	3,703.34	670.55	389.22	-89.60	0.00	0.00	0.00
3,900.00	14.82	30.133	3,800.01	692.67	402.06	-92.55	0.00	0.00	0.00
4,000.00	14.82	30.133	3,896.69	714.79	414.89	-95.51	0.00	0.00	0.00
4,100.00	14.82	30.133	3,993.36	736.90	427.73	-98.46	0.00	0.00	0.00
4,115.89	14.82	30.133	4,008.72	740.42	429.77	-98.93	0.00	0.00	0.00
4,200.00	14.70	60.169	4,090.18	755.05	444.45	-95.93	9.00	-0.14	35.71
4,300.00	18.92	88.133	4,186.04	761.90	471.71	-78.20	9.00	4.22	27.96
4,400.00	25.65	104.083	4,278.60	757.15	508.98	-45.50	9.00	6.74	15.95
4,500.00	33.42	113.390	4,365.58	740.92	555.35	1.36	9.00	7.77	9.31
4,600.00	41.64	119.439	4,444.84	713.60	609.67	61.23	9.00	8.22	6.05
4,700.00	50.09	123.779	4,514.43	675.87	670.61	132.63	9.00	8.45	4.34
4,800.00	58.66	127.154	4,572.64	628.66	736.66	213.80	9.00	8.57	3.37
4,900.00	67.31	129.959	4,618.02	573.13	806.20	302.75	9.00	8.65	2.81
5,000.00	76.00	132.428	4,649.47	510.64	877.51	397.28	9.00	8.69	2.47
5,100.00	84.71	134.716	4,666.21	442.74	948.85	495.07	9.00	8.71	2.29



Lonestar Consulting, LLC

Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 003H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Project:	Lybrook Area	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site:	I20 2207 Pad	North Reference:	True
Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,161.78	90.10	136.090	4,669.00	398.81	992.16	556.06	9.00	8.72	2.22
5,200.00	90.10	136.090	4,668.93	371.27	1,018.67	593.77	0.00	0.00	0.00
5,300.00	90.10	136.090	4,668.75	299.23	1,088.02	692.45	0.00	0.00	0.00
5,400.00	90.10	136.090	4,668.58	227.19	1,157.38	791.13	0.00	0.00	0.00
5,500.00	90.10	136.090	4,668.40	155.15	1,226.73	889.81	0.00	0.00	0.00
5,600.00	90.10	136.090	4,668.22	83.10	1,296.08	988.49	0.00	0.00	0.00
5,700.00	90.10	136.090	4,668.05	11.06	1,365.43	1,087.17	0.00	0.00	0.00
5,800.00	90.10	136.090	4,667.87	-60.98	1,434.79	1,185.85	0.00	0.00	0.00
5,900.00	90.10	136.090	4,667.69	-133.03	1,504.14	1,284.53	0.00	0.00	0.00
6,000.00	90.10	136.090	4,667.51	-205.07	1,573.49	1,383.21	0.00	0.00	0.00
6,100.00	90.10	136.090	4,667.34	-277.11	1,642.84	1,481.89	0.00	0.00	0.00
6,200.00	90.10	136.090	4,667.16	-349.16	1,712.20	1,580.57	0.00	0.00	0.00
6,300.00	90.10	136.090	4,666.98	-421.20	1,781.55	1,679.25	0.00	0.00	0.00
6,400.00	90.10	136.090	4,666.80	-493.24	1,850.90	1,777.93	0.00	0.00	0.00
6,500.00	90.10	136.090	4,666.63	-565.28	1,920.25	1,876.61	0.00	0.00	0.00
6,600.00	90.10	136.090	4,666.45	-637.33	1,989.61	1,975.29	0.00	0.00	0.00
6,700.00	90.10	136.090	4,666.27	-709.37	2,058.96	2,073.97	0.00	0.00	0.00
6,800.00	90.10	136.090	4,666.10	-781.41	2,128.31	2,172.64	0.00	0.00	0.00
6,900.00	90.10	136.090	4,665.92	-853.46	2,197.66	2,271.32	0.00	0.00	0.00
7,000.00	90.10	136.090	4,665.74	-925.50	2,267.02	2,370.00	0.00	0.00	0.00
7,100.00	90.10	136.090	4,665.56	-997.54	2,336.37	2,468.68	0.00	0.00	0.00
7,200.00	90.10	136.090	4,665.39	-1,069.59	2,405.72	2,567.36	0.00	0.00	0.00
7,300.00	90.10	136.090	4,665.21	-1,141.63	2,475.08	2,666.04	0.00	0.00	0.00
7,400.00	90.10	136.090	4,665.03	-1,213.67	2,544.43	2,764.72	0.00	0.00	0.00
7,500.00	90.10	136.090	4,664.85	-1,285.71	2,613.78	2,863.40	0.00	0.00	0.00
7,600.00	90.10	136.090	4,664.68	-1,357.76	2,683.13	2,962.08	0.00	0.00	0.00
7,700.00	90.10	136.090	4,664.50	-1,429.80	2,752.49	3,060.76	0.00	0.00	0.00
7,800.00	90.10	136.090	4,664.32	-1,501.84	2,821.84	3,159.44	0.00	0.00	0.00
7,900.00	90.10	136.090	4,664.14	-1,573.89	2,891.19	3,258.12	0.00	0.00	0.00
8,000.00	90.10	136.090	4,663.97	-1,645.93	2,960.54	3,356.80	0.00	0.00	0.00
8,100.00	90.10	136.090	4,663.79	-1,717.97	3,029.90	3,455.48	0.00	0.00	0.00
8,200.00	90.10	136.090	4,663.61	-1,790.02	3,099.25	3,554.16	0.00	0.00	0.00
8,300.00	90.10	136.090	4,663.44	-1,862.06	3,168.60	3,652.84	0.00	0.00	0.00
8,400.00	90.10	136.090	4,663.26	-1,934.10	3,237.95	3,751.52	0.00	0.00	0.00
8,500.00	90.10	136.090	4,663.08	-2,006.14	3,307.31	3,850.19	0.00	0.00	0.00
8,600.00	90.10	136.090	4,662.90	-2,078.19	3,376.66	3,948.87	0.00	0.00	0.00
8,700.00	90.10	136.090	4,662.73	-2,150.23	3,446.01	4,047.55	0.00	0.00	0.00
8,800.00	90.10	136.090	4,662.55	-2,222.27	3,515.36	4,146.23	0.00	0.00	0.00
8,900.00	90.10	136.090	4,662.37	-2,294.32	3,584.72	4,244.91	0.00	0.00	0.00
9,000.00	90.10	136.090	4,662.19	-2,366.36	3,654.07	4,343.59	0.00	0.00	0.00
9,100.00	90.10	136.090	4,662.02	-2,438.40	3,723.42	4,442.27	0.00	0.00	0.00
9,200.00	90.10	136.090	4,661.84	-2,510.45	3,792.77	4,540.95	0.00	0.00	0.00
9,300.00	90.10	136.090	4,661.66	-2,582.49	3,862.13	4,639.63	0.00	0.00	0.00
9,400.00	90.10	136.090	4,661.48	-2,654.53	3,931.48	4,738.31	0.00	0.00	0.00
9,500.00	90.10	136.090	4,661.31	-2,726.57	4,000.83	4,836.99	0.00	0.00	0.00
9,600.00	90.10	136.090	4,661.13	-2,798.62	4,070.18	4,935.67	0.00	0.00	0.00
9,700.00	90.10	136.090	4,660.95	-2,870.66	4,139.54	5,034.35	0.00	0.00	0.00
9,800.00	90.10	136.090	4,660.78	-2,942.70	4,208.89	5,133.03	0.00	0.00	0.00
9,900.00	90.10	136.090	4,660.60	-3,014.75	4,278.24	5,231.71	0.00	0.00	0.00
10,000.00	90.10	136.090	4,660.42	-3,086.79	4,347.59	5,330.39	0.00	0.00	0.00
10,100.00	90.10	136.090	4,660.24	-3,158.83	4,416.95	5,429.07	0.00	0.00	0.00
10,200.00	90.10	136.090	4,660.07	-3,230.88	4,486.30	5,527.74	0.00	0.00	0.00
10,300.00	90.10	136.090	4,659.89	-3,302.92	4,555.65	5,626.42	0.00	0.00	0.00
10,400.00	90.10	136.090	4,659.71	-3,374.96	4,625.00	5,725.10	0.00	0.00	0.00



Lonestar Consulting, LLC
Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 003H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Project:	Lybrook Area	MD Reference:	GL 6826' & RKB 14' @ 6840.00usft
Site:	I20 2207 Pad	North Reference:	True
Well:	# 003H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,500.00	90.10	136.090	4,659.53	-3,447.00	4,694.36	5,823.78	0.00	0.00	0.00	
10,600.00	90.10	136.090	4,659.36	-3,519.05	4,763.71	5,922.46	0.00	0.00	0.00	
10,700.00	90.10	136.090	4,659.18	-3,591.09	4,833.06	6,021.14	0.00	0.00	0.00	
10,800.00	90.10	136.090	4,659.00	-3,663.13	4,902.41	6,119.82	0.00	0.00	0.00	
10,800.94	90.10	136.090	4,659.00	-3,663.80	4,903.07	6,120.75	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Lybrook I20 3H Toe	0.00	0.000	4,659.00	-3,663.80	4,903.07	1,859,933.10	2,799,610.95	36.11136050	-107.57427200	
- plan hits target center										
- Circle (radius 100.00)										
Lybrook I20 3H Heel	0.00	0.000	4,669.00	398.81	992.16	1,863,985.95	2,795,689.92	36.12252210	-107.58751210	
- plan hits target center										
- Circle (radius 50.00)										

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)						
350.00	350.00	Surface	9.62	12.25						
5,103.28	4,666.50	Intermediate	7.00	8.75						

Formations										
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)					
500.02	500.00	Ojo Alamo		0.00	0.000					
646.30	646.00	Kirtland		0.00	0.000					
915.78	913.00	Fruitland		0.00	0.000					
1,127.80	1,120.00	Pictured Cliffs		0.00	0.000					
1,218.82	1,208.00	Lewis		0.00	0.000					
1,908.77	1,875.00	Chacra		0.00	0.000					
2,657.67	2,599.00	Menefee		0.00	0.000					
3,609.32	3,519.00	Point Lookout		0.00	0.000					
3,744.83	3,650.00	Mancos		0.00	0.000					
4,017.91	3,914.00	Mancos Silt		0.00	0.000					
4,554.67	4,410.00	Gallup A		0.00	0.000					
4,647.19	4,479.00	Gallup B		0.00	0.000					
4,822.48	4,584.00	Gallup C		0.00	0.000					



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

#03H LYBROOK I20-2207

Lease: NMNM109393

SH: NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 20, T.22 N., R.7 W.
Sandoval County, New Mexico

BH: SE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 28, T.22 N., R.7 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 **prior** to any sales.
- F. ☒ The use of co-flex hose is authorized contingent upon the following:
 1. 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.
 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 life-threatening 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 I.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 I.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

District I

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

District II

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

District III

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

District IV

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

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

CONDITIONS

Action 101942

CONDITIONS

Operator: DJR OPERATING, LLC 1 Road 3263 Aztec, NM 87410	OGRID: 371838
	Action Number: 101942
	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	4/29/2022
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	4/29/2022
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	4/29/2022
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	4/29/2022
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	4/29/2022