

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

Form C-101
August 1, 2011

Permit 380643

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address EOG RESOURCES INC 5509 Champions Drive Midland, TX 79706		2. OGRID Number 7377
		3. API Number 30-025-54553
4. Property Code 319585	5. Property Name DATE 14 STATE COM	6. Well No. 901H

7. Surface Location

UL - Lot O	Section 14	Township 21S	Range 33E	Lot Idn	Feet From 399	N/S Line S	Feet From 2122	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot B	Section 11	Township 21S	Range 33E	Lot Idn B	Feet From 100	N/S Line N	Feet From 1480	E/W Line E	County Lea
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9. Pool Information

WC-025 G-10 S213328O;WOLFCAMP	98033
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3790
16. Multiple N	17. Proposed Depth 22919	18. Formation Wolfcamp	19. Contractor	20. Spud Date 1/17/2025
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	22	18.625	87.5	1908	1420	0
Int1	16	13.375	54.5	3913	2350	0
Int2	12.25	10.75	40.5	5808	1210	0
Int3	9.875	8.625	32	12233	600	8323
Prod	7.875	6	24.5	22919	1410	11173

Casing/Cement Program: Additional Comments

See permit info attachment for additional information.
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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	3000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable. Signature: Printed Name: Electronically filed by Patricia Donald Title: Regulatory Specialist Email Address: Patricia_Donald@eogresources.com Date: 3/13/2025	OIL CONSERVATION DIVISION Approved By: Matthew Gomez Title: Approved Date: 3/20/2025 Expiration Date: 3/20/2027 Conditions of Approval Attached
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C-102 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024	
		Submittal Type:	☒ Initial Submittal
			☐ Amended Report
		☐ As Drilled	

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-54553	Pool Code 98033	Pool Name WC-025 G-10 S213328O;WOLFCAMP
Property Code 319585	Property Name DATE 14 STATE COM	Well Number 901H
OGRID No. 7377	Operator Name EOG RESOURCES, INC.	Ground Level Elevation 3790'
Surface Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
O	14	21-S	33-E	-	399' S	2122' E	N 32.4726281	W 103.5415899	LEA

Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
B	11	21-S	33-E	-	100' N	1480' E	N 32.5002831	W 103.5395047	LEA

Dedicated Acres 640.00	Infill or Defining Well DEFINING	Defining Well API	Overlapping Spacing Unit (Y/N) Y	Consolidated Code C
Order Numbers N/A			Well Setbacks are under Common Ownership: ☐ Yes ☐ No	

Kick Off Point (KOP)

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
O	14	21-S	33-E	-	50' S	1480' E	N 32.4716610	W 103.5395098	LEA

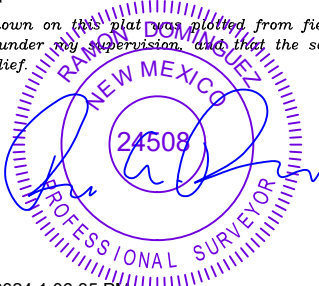
First Take Point (FTP)

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
O	14	21-S	33-E	-	100' S	1480' E	N 32.4717985	W 103.5395098	LEA

Last Take Point (LTP)

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
B	11	21-S	33-E	-	100' N	1480' E	N 32.5002831	W 103.5395047	LEA

Unitized Area or Area of Uniform Intrest COMM AGREEMENT	Spacing Unity Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation 3815'
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OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief; and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i> <i>If this well is a horizontal well, I further certify that this organization has received The consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</i>  01/03/2025		SURVEYORS CERTIFICATION <i>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.</i>  10/21/2024 1:06:35 PM	
Signature KAYLA MCCONNELL		Signature and Seal of Professional Surveyor	
Print Name KAYLA_MCCONNELL@EOGRESOURCES.COM		Certificate Number	Date of Survey 10/12/2024
E-mail Address			

<u>C-102</u> Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024	
		Submittal Type:	☒ Initial Submittal
			☐ Amended Report
Property Name and Well Number		DATE 14 STATE COM 901H	

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Form APD Comments

Permit 380643

PERMIT COMMENTS

Operator Name and Address: EOG RESOURCES INC [7377] 5509 Champions Drive Midland, TX 79706		API Number: 30-025-54553
		Well: DATE 14 STATE COM #901H

Created By	Comment	Comment Date
matthew.gomez	This well is within the Capitan Reef. The first intermediate casing string must be set and cemented back to surface immediately above the Capitan Reef. The second intermediate string must be set and cemented back to surface immediately below the base of the Capitan Reef. Brine water shall not be used in the Capitan Reef. Fresh water must be utilized in the Capitan Reef.	1/15/2025
matthew.gomez	No alterations or modifications are permitted to any of the casing design options mandated within order R-111-Q. Designs must align to one of the six options mandated within R-111-Q.	3/6/2025
matthew.gomez	Designs must align to one of the six options mandated within R-111-Q. No alterations or modifications are permitted to any of the casing design options mandated within order R-111-Q. If you have any questions, please contact Justin.Wrinkle@emnrd.nm.gov.	3/11/2025

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Form APD Conditions

Permit 380643

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: EOG RESOURCES INC [7377] 5509 Champions Drive Midland, TX 79706	API Number: 30-025-54553
	Well: DATE 14 STATE COM #901H

OCD Reviewer	Condition
matthew.gomez	A [C-103] Sub. Drilling (C-103N) is required within (10) days of spud.
matthew.gomez	Notify the OCD 24 hours prior to casing & cement.
matthew.gomez	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.
matthew.gomez	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.
matthew.gomez	Cement is required to circulate on both surface and intermediate1 strings of casing.
matthew.gomez	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.
matthew.gomez	File As Drilled C-102 and a directional Survey with C-104 completion packet.
matthew.gomez	This well is within the Capitan Reef. The first intermediate casing string shall be set and cemented back to surface immediately above the Capitan Reef. The second intermediate string shall be set and cemented back to surface immediately below the base of the Capitan Reef.
matthew.gomez	Only fresh water shall be utilized until the Capitan Reef is cased and cemented providing isolation.
matthew.gomez	Administrative order required for non-standard spacing unit prior to production.
matthew.gomez	Must comply with all R-111-Q requirements.



GB Connection Performance Properties Sheet

Rev. 0 (11/22/2024)

ENGINEERING THE RIGHT CONNECTIONS

Casing: 8.625 OD, 32 ppf
Casing Grade: Borusan HSCY P110 (95% RBW)

Connection: GB CD Slim Hole 9.000
Coupling Grade: API P-110

PIPE BODY GEOMETRY					
Nominal OD (in.)	8 5/8	Wall Thickness (in.)	0.352	Drift Diameter (in.)	7.796
Nominal Weight (ppf)	32.00	Nominal ID (in.)	7.921	API Alternate Drift Dia. (in.)	7.875
Plain End Weight (ppf)	31.13	Plain End Area (in. ²)	9.149	Plain End Area OD Turn (in. ²)	7.936

PIPE BODY PERFORMANCE**					
Material Specification	usan HSCY P110 (95% R	Min. Yield Str. (psi)	125,000	Min. Ultimate Str. (psi)	130,000
Collapse		Tension		Pressure	
API (psi)	3,470	Pl. End Yield Str. (kips)	1,144	Min. Int. Yield Press. **(psi)	9,690
High Collapse** (psi)	4,530	Torque		Bending	
		Yield Torque (ft-lbs)	189,540	Build Rate to Yield (°/100 ft)	66.4

GB CD Slim Hole 9.000 COUPLING GEOMETRY			
Coupling OD (in.)	9.000	Makeup Loss (in.)	5.0000
Coupling Length (in.)	10.000	Critical Cross-Sect. (in. ²)	8.704

GB CD Slim Hole 9.000 CONNECTION PERFORMANCE RATINGS/EFFICIENCIES					
Material Specification	API P-110	Min. Yield Str. (psi)	110,000	Min. Ultimate Str. (psi)	125,000
Tension		Efficiency		Bending	
			Gas	Liquid***	
Tension OD Turn (kips)	992	Internal Pressure (%)	80%	100%	Build Rate to Yield (°/100 ft)
Thread Str. (kips)	948	External Pressure (%)	100%		Yield Torque
Min. Tension Yield (kips)	910	Tension (%)	90%		Yield Torque (ft-lbs)
Min. Tension Ult. (kips)	1,034	Compression (%)	90%		
Joint Str. (kips)	948	Ratio of Areas (Cplg/Pipe)	0.95		
		Ratio of Areas (Cplg/OD Turn)	1.10		

MAKEUP TORQUE					
Min. MU Tq. (ft-lbs)	10,000	Max. MU Tq. (ft-lbs)	20,000	Running Tq. (ft-lbs)	See GBC RP
				Max. Operating Tq. (ft-lbs)*	57,190

Units: US Customary (lbm, in., °F, lbf)

1 kip = 1,000 lbs

* See Running Procedure for description and limitations.

See attached: Notes for GB Connection Performance Properties.

GBC Running Procedure (GBC RP): www.gbconnections.com/resources/running-procedures/Blanking Dimensions: www.gbconnections.com/resources/documentation/#blanking-dimensions

Connection yield torque rating based on physical testing or extrapolation therefrom

** Casing properties applicable to Borusan HSCY P110 (95% RBW) grade with min. yield 125 ksi.

***Liquid Sealability for operational (frac) loading

GB CD Slim Hole US Patent Pending



GB Connections LLC - Notes for Connection Performance Properties

Rev. 3 (Feb. 2024)

ENGINEERING THE RIGHT CONNECTIONS™

- The data provided in GB Connections LLC ("GBC") - Notes for Connection Performance Properties ("Notes"), and in GBC - Running Procedures for Casing ("Running Procedures"), are for general informational purposes only and do not constitute professional advice. The GBC Notes and Running Procedures are intended to be, and should be, supplemented with the professional judgment of qualified personnel selected by the Buyer and/or User ("Customer") for specific applications. These Notes should not be relied upon for any specific application, including those applications in which the Customer requires modifications to GBC's standard product specifications.
- The professional judgment of qualified personnel selected by the Customer should be utilized for all aspects of a specific application, including but not limited to, the well design, selection of suitable materials for site-specific well conditions, field handling, deployment, and all other well operations, including any casing and/or connection related issues that may occur during and after rotating operations.
- GBC Terms and Conditions of Sale are incorporated herein by reference and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. These Notes do not negate or otherwise modify GBC Terms and Conditions of Sale, including those Warranties found in Paragraph 10 ("Warranty; Disclaimer").
- All dimensions shown are nominal. Plain end weight is calculated in accordance with API TR 5C3. Performance properties are empirical, based on nominal dimensions, minimum material yield and ultimate strengths, and calculated in general accordance with industry standard formula(s) assuming uniaxial loading. All properties are calculated with material strengths at room temperature. **NOTE: Material properties change with temperature.**
- Joint strength is the lesser of pipe thread strength and minimum coupling tension as calculated in accordance with API TR 5C3. Tensile efficiency is calculated using coupling strength based on ultimate material strength per API TR 5C3 divided by plain end yield strength of the casing. **Minimum Coupling Tension based on material yield strength is provided for information only.** Performance values presented for tension do not account for failure by pull-out (which can occur unexpectedly under certain circumstances), effects of internal and external pressure, thermally induced axial loads, casing curvature (bending), and/or other static and dynamic loads that may occur singularly or in combination during downhole deployment and with subsequent well operations.
- Drift diameters are based on Standard and Alternate drift sizes per API 5CT. Drift diameters are not specified for API 5L pipe. Drift diameters shown on the Performance Property Sheets for GBC connection products represent the diameter of the drift mandrel used for end-drifting after coupling buck on. When shown, the alternate drift diameter is used for end drifting. Drift testing is performed in accordance with currently applicable API Specifications.
- Minimum Internal Yield Pressure Performance values for Casing (API 5CT), Line Pipe (API 5L), and mill casing proprietary grades are based on API TR 5C3 formulas and assume 87.5% minimum wall thicknesses unless otherwise noted. Minimum Internal Yield Pressure efficiency for GBC is the lesser of the Minimum Internal Yield Pressure of the coupling and Leak Resistance divided by pipe body Minimum Internal Yield Pressure (all based on API TR 5C3 formulas). GBC products typically demonstrate pressure resistance exceeding the mating pipe body with a pressure efficiency > 100%. Certain casing size, weight, grade, and connection combinations may have gas pressure efficiency < 100% and will be so noted. Pressure efficiency can only be achieved when connections are properly assembled in strict accordance with GBC Running Procedures, which may be accessed at: www.gbconnections.com/pdf/RP-GB-DWC-Connections.pdf.
- Compression efficiency of the Casing/Connection combinations does not consider the axial load that causes pipe body buckling. The compressive load that causes buckling is usually less than the pipe body compressive yield strength and is dependent on many factors including, but not limited to, string length (or slenderness ratio; L/D), thermally induced axial loads, and annular clearance that may (or may not) lend side support to the casing string.
- Bending values assume a constant radius of curvature where the casing is in uniformly intimate contact with the wall of the wellbore (i.e. when the upset at the coupling OD is small compared with wellbore wall irregularities). When the radius of curvature is not constant due to large wellbore wall irregularities or where there is not uniformly intimate contact with the wellbore wall, varying trajectory, micro doglegs, wash-outs, rock ledges, and other downhole conditions, unpredictable and unquantifiable excessive bending stresses can occur that may be detrimental to casing and connection performance.
- Fatigue failures are a function of material properties, stress range, and number of stress reversal cycles. API 5CT, API 5L, and mill proprietary casing/coupling materials have a finite fatigue life. Higher stress ranges yield lower fatigue life. So, as a general rule of thumb, casing should never be rotated at higher RPMs than needed for task accomplishment. For the same stress range, casing rotated at 25 RPMs will generally last 4 times longer (more rotating hours) than casing rotated at 100 RPMs. However, with fatigue, there are opportunities for unexpected higher stress reversal levels (cycles) associated with vibration, thermally induced axial loads, and bending (see above) in addition to all other stress reversals imparted during running, rotating, reciprocating, pressure testing, pumping, etc. The extent and quality of the cement job is also a factor. Under aggressive, high-volume, multi-stage hydraulic fracturing operations, the casing string (including the connections) is severely taxed such that local stress range(s) and actual number of applied cycles cannot be precisely determined without full string instrumentation.
- External pressure efficiency (expressed in percent) is the ratio of the lesser of Minimum Internal Yield Pressure and Leak Resistance for coupling (calculated per API TR 5C3) divided by the API collapse rating of the casing. External pressure efficiency has not been verified by testing and does not consider other applied loads. External pressure efficiency does not account for any high collapse rating that may be shown on GBC Performance Property Sheets.
- Maximum Makeup Torque is provided for guidance only.** Customer assumes all risks associated with casing and connection related issues that occur during and after rotating operations and should rely upon the professional judgment of qualified personnel to address casing and connection related issues that occur during and after rotating operations for specific applications. This value is not the same as the Connection Yield Torque shown. Connection Yield Torque is the lowest yield torque rating for the critical cross-section of pipe body, connector body, pin nose, and the threadform load flank bearing area. Connection Yield Torque does not consider radial buckling of the pipe or connection due to excessive jaw pressure during torque application. Torque in connections can increase or decrease over that applied at makeup (connection tightening/loosening) with rotating and stimulation operations due to slip-stick, shock loads, bending, tight spots, vibration(s), temperature, and other downhole factors that may occur individually or in combination.
- Every GBC connection requires the proper amount and distribution of thread compound to all pin and coupling threads and careful field make up in strict accordance with GBC Running Procedures to provide expected levels of performance in service.** GBC Running Procedures may be accessed at: www.gbconnections.com/pdf/RP-GB-DWC-Connections.pdf.
- Reactions among water, drilling muds and other fluids, and chemicals introduced by Customer with downhole formation fluids may result in an environment detrimental to casing and connection performance. Customer should carefully consider all aspects of the string design including material compatibility with respect to possible corrosion, sour conditions, possible reaction(s) among user introduced water and chemicals (liquids and solids) with in situ geochemistry and other factors that may result in unexpected casing and/or connection failure at or below published ratings.
- These Notes and the Performance Properties described herein, as well as the Running Procedures and the information contained therein, are subject to change without notice. The Notes and the Running Procedures are not controlled documents. These Notes are provided on an "as is" basis, no warranty, express or implied, is given, and GBC does not assume any liability or responsibility for the information contained herein. Anyone making use of the information contained in the Notes or Running Procedures does so at their own risk and assumes any and all liability from such use.
- Customer is advised to obtain the current GBC Performance Property Sheet for each GBC connection product purchased, which are available on a product-by-product basis, at GBC's website: www.gbconnections.com.

Limitations:

All sales made by GBC are subject to its Terms and Conditions of Sale, which are incorporated herein by reference, and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. By using the GBC Notes and/or the GBC Running Procedures, or upon the purchase of any GBC product(s), Customer warrants, represents and agrees that it has utilized its own knowledge, skill, and judgment, and determined that the GBC product(s) purchased is fit for its intended service, purpose, and use. Customer warrants, represents and agrees that it has read and understands the GBC Terms and Conditions of Sale and agrees to be bound thereby.

	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

OVERVIEW

This field running procedure applies to makeup of **GB Drilling with Casing** (GB DwC) Connections which include GB CD, GB CDE, GB CD RDB, GB CD RDB WS, GB CD EHTQ and GB CD Slim Hole Connections with GB Butt (Buttress), GB 4P, and GB 3P thread forms. All GBC Connections are suitable for **Running** (standard casing applications), **Rotating** (to aid string advancement), **Drilling** (Drilling with Casing/Drilling with Liners), and with a special mandrel, **Driving**. This procedure also applies to the legacy GB Connections known as GB Butt and GB 3P.

Numerous factors impact the makeup torque of Buttress (GB Butt) and Modified Buttress Threads (such as GB 4P and GB 3P). Some of these factors include but are not limited to: allowable threading tolerances, joint characteristics (OD, straightness, hooked ends, and weight), vertical alignment (derrick, top drive, and elevator alignment relative to rotary table), thread compound (type, amount, and distribution), snub line (location and orientation), distance between tongs and backups, temperature/weather, equipment type, efficiencies (electrical, hydraulic, and mechanical), grips/dies (type, condition, orientation, location, contact area, and grip distribution), measurement equipment, gauge calibration, personnel, etc. The nature of these types of connections makes it impossible to provide makeup torque values that will yield proper power tight makeup on every rig under all circumstances with the wide variety of existing connection makeup equipment.

This procedure has been designed to determine the **Running Torque** required for proper power tight makeup of GB Connections under the circumstances and with the actual equipment, set up conditions, weather, etc. that exist at the time of running. With proper execution of this procedure, GB Connections will be properly and consistently assembled.

LIMITATIONS

GB Connections LLC ("GBC") provides the data and information in this Running Procedure for general informational purposes only in order to provide the User with basic recommended practices. This GBC Running Procedure does not constitute professional advice. This GBC Running Procedure is intended to be, and should be, supplemented with the professional judgment of qualified personnel selected by the Buyer and/or User for specific applications, including the observation of actual makeups throughout the casing run. **Every GBC Connection requires the proper amount and distribution of thread compound to all pin and coupling threads and careful field make up in strict accordance with this Running Procedure to provide expected levels of performance in service**

No structural component can perform satisfactorily if not properly prepared and assembled prior to placing it in service in a downhole environment. In the field, the USER has complete control over proper application of thread compound and field makeup. Therefore, the USER is ultimately responsible for the resulting performance downhole if the User does not follow the professional judgment of qualified personnel, the designer/manufacture procedures, and/or basic industry best-practices on the rig floor.

The GBC Terms and Conditions of Sale are incorporated herein by reference and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. This Running Procedure does not negate or otherwise modify GBC Terms and Conditions of Sale. All sales made by GBC are subject to its Terms and Conditions of Sale, which are incorporated herein by reference, and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. By using this GBC Running Procedure, Buyer and/or User warrants, represents and agrees that it has utilized its own knowledge, skill, and judgment and determined that the GBC product(s) is fit for its intended service, purpose, and use. Buyer and/or User warrants, represents and agrees that it has read and understands the GBC Terms and Conditions of Sale and agrees to be bound thereby.

	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

DEFINITIONS

1. Minimum Makeup (MU) Torque: Connections must have at least this amount of torque applied and clearly exhibit shoulder engagement with a delta torque spike.
2. Shoulder Torque: MU torque required to achieve shoulder engagement.
3. Running Torque: Developed at start of casing run per GBC Running Procedure and once established, used for the rest of the joints in the string, using data established with progression of the casing run. The **Running Torque** may be adjusted during the casing run as needed to stay within parameters defined here. The **Running Torque** will likely vary with each job due to the factors listed in the Overview section.
4. Delta Torque: Difference between **Shoulder Torque** and final makeup (or dump) torque.
5. Maximum Makeup (MU) Torque: **Maximum Makeup Torque provided herein is for guidance only.** Customer should rely upon the professional judgment of its qualified personnel to address casing and connection related issues that occur during and after rotating operations for specific applications. This value is not the same as the Connection Yield Torque shown. Connection Yield Torque is the lower yield torque rating for the critical cross-section of pipe body, connector body, pin nose, and the threadform load flank bearing area. Connection Yield Torque does not consider radial buckling of the pipe or connection due to excessive jaw pressure during torque application. Torque in connections can increase or decrease over that applied at makeup (connection tightening/loosening) with rotating and stimulation operations due to slip-stick, shock loads, bending, tight spots, vibration(s), temperature, and other downhole factors that may occur individually or in combination. Final assembly torque including shoulder engagement shall not exceed the **Maximum MU Torque** shown on size, weight, and grade-specific GB Performance Property Sheets at the beginning of a casing run when establishing the **Running Torque**. In the unlikely event that **Running Torque** determined by the procedure meets or exceeds the **Maximum MU Torque**, call GB Connections for assistance.
6. Yield Torque: Torque that causes yielding in the connection (usually yielding of the pin nose). **Yield Torque** rating does **NOT** consider the torque that may radially buckle the pipe body at the grip points. **Yield Torque** values for the pipe body and connection are based on nominal dimensions and minimum material yield strength.
7. Maximum Operating Torque: The **Maximum Operating Torque** shown on the GB Connections Performance Property Sheets includes a 5% safety factor on **Yield Torque**. As such, it represents the **limiting torque spike** that can be applied to the connection during rotating operations. The **Maximum Operating Torque** is **NOT** the **Maximum MU Torque** and **MAY NOT BE** a sustainable rotating torque. Operating at the **Maximum Operating Torque** for any length of time may damage connections due to likely random, unexpected torque spikes that occur during rotating operations. USER should carefully consider this value to determine if a higher Safety Factor on **Yield Torque** is more suitable for the project-specific application.

As a general rule of thumb, rotating RPMs and Torque should be "walked up" to determine the minimum needed for task accomplishment. Additional information on best practices for rotating casing can be found at <http://www.gbconnections.com/pdf/White-Paper-Rotating-Casing.pdf>.

KEY INFORMATION

Thread Compound: Best-O-Life 2000, Best-O-Life 2000 Arctic Grade (AG), API Modified, API Modified Hi-Pressure, or any industry recognized equivalent to these products. Thread compound may also be referred to as "dope". User should avoid products that include Metal Free (MF) in the product name. Tool joint compounds are **expressly forbidden** for makeup of any GBC Connections. **Thread compound shall be applied to all pin and box threads** as described here.

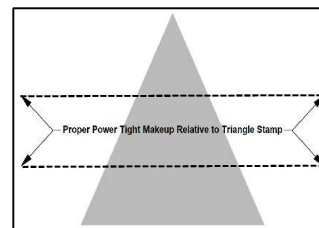
	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

Torque Values: **Minimum and Maximum MU Torque** values are provided on individual GB Connections Performance Property Sheets available at the following link: <http://www.gbconnections.com>

Continuous Makeup: Makeup of GB Connections **SHALL START AND CONTINUE WITHOUT STOPPING** until full power tight makeup is achieved.

Makeup Speed: Use of high gear at **no more than 40 RPMs** is permissible once proper starting thread engagement has occurred. **THE FINAL TWO (2) FULL TURNS, AT A MINIMUM, SHALL BE COMPLETED IN LOW GEAR AT LESS THAN 10 RPMs.**

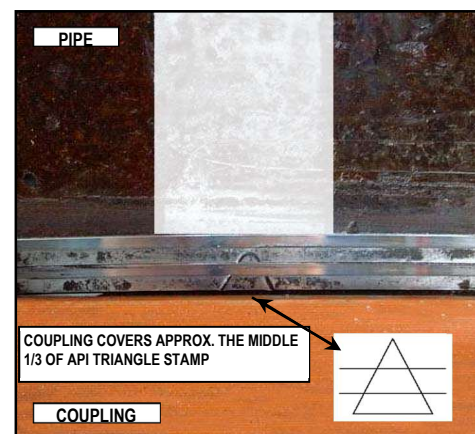
Pin Nose Engagement: Pin nose engagement is indicated by a spike on an analog torque gauge or a sharp vertical spike on a torque vs. turn plot. As a secondary check, proper power tight makeup is achieved when the coupling covers approximately the **middle third of the API Triangle Stamp** on the pin (see graphic). The triangle will be stamped on the pin member and indicated by a white locator stripe.



Acceptance Criteria: All GB Connections must exhibit shoulder engagement (achieve pin-to-pin or pin-to-shoulder engagement) with a: (1) **Delta Torque** ranging between 10% and 50% of majority of the previously recorded **Shoulder Torques** and (2) final torque not exceeding the **Running Torque** as established in this procedure. Outlier joints that require additional attention would be an exception to **Maximum MU Torque** limit as discussed under Comments, Troubleshooting.

It is imperative that the following procedure be executed carefully at the beginning of every casing run to determine the **Running Torque** (torque to be used for the rest of the string). Torque values established on an individual casing run are never transferrable to other runs.

The **Running Torque** is determined while running the first 10 joints after joints assembled with threadlocking compounds are made up. Sometimes more than the first 10 joints will be needed to establish the **Running Torque** due to erratic results and/or other run-specific conditions. The **Running Torque** may have to be re-established or adjusted during the casing run under certain conditions¹ and observations. Use the size-specific GBC Connections Performance Property Sheets (<http://www.gbconnections.com>) for the **Minimum** and **Maximum MU Torque** values.



Connections shall be made up until shoulder engagement with **Delta Torque** between 10% and 50% of the **Shoulder Torque** (not to exceed the **Maximum MU Torque**, see procedure below) using the **Running Torque** value established in this procedure. The **Maximum MU Torque** at the beginning of the casing run for establishing the **Running Torque** shall be limited to the value shown on the applicable GBC Connections Performance Property Sheet. The **Running Torque** shall be used thereafter and throughout the run as the limiting makeup torque value. The **Maximum MU Torque** on the GBC Performance Property Sheet value is given as a practical limit for avoidance of thread galling, connection damage, and possible tube damage due to excessive jaw pressure that can occur with application of extreme makeup torque. Contact GB

¹ Examples include but are not limited to more than an occasional low or high **Delta Torque**, string of mixed mills, equipment change, large temperature change, and wobbling or noticeable vibration when joint is turning.

	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

Connections if more than the **Maximum MU Torque** value is required for shoulder engagement and/or final makeup, or if torque exceeding the **Maximum Operating Torque** value is required for the intended service.

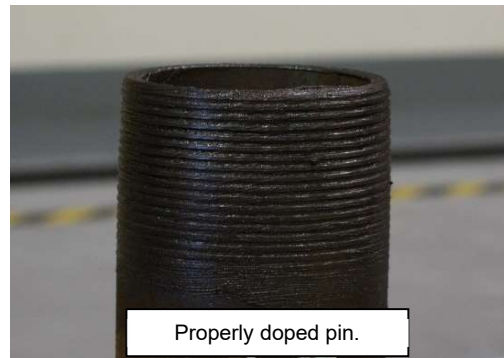
PROCEDURE FOR ESTABLISHING AND USING THE **RUNNING TORQUE**

1. Remove coupling thread protectors only after casing is set in V-Door.
2. **Always apply fresh thread compound to coupling threads and internal shoulder (where applicable).** See Comment No. 1 (below) for discussion on proper amount of thread compound.
3. Remove pin thread protectors only after joint is raised in the derrick. Visually inspect pin threads for sufficient thread compound as described in Comment No. 1; **add fresh compound to pin threads and pin nose.**
4. Fresh thread compound should **NEVER** be added on top of dope contaminated with dust, dirt, and/or debris. Threads observed to have contaminated thread compound shall be thoroughly cleaned and dried before applying fresh thread compound.
5. Stab the pin carefully into the coupling of the joint hanging in the rotary table. A stabbing guide is recommended to protect the pin nose and leading thread from physical damage that may contribute to thread galling. Make up each connection until shoulder engagement plus **Delta Torque**. Record the **Shoulder Torque** observed for the first 10 joints (excluding threadlocked accessory joints). The **Running Torque** is (a) the **Minimum MU Torque** shown on the GB Connections Performance Property Sheets **or** (b) the **Maximum Shoulder Torque** recorded from the first 10 makeups + 20%, **whichever is higher** (rounded to the next highest 500 ft-lbs.) **Delta Torque** should Primarily be between 10% and 50% of the **Shoulder Torque**. **Running Torque** shall not exceed the **Maximum MU Torque**. When making up the initial joints for establishing the **Running Torque** carefully watch the torque gauge for the **Shoulder Torque** and try to manually shut down the tongs before reaching **Maximum MU Torque** shown on the GB Connections Performance Property Sheets. Alternately, the dump valve should be set to 80% of the **Maximum MU Torque** during this initial process.
6. After the first 10 makeups (more if necessary due to conditions at the time of the run), use the **"Running Torque"** established in Step 5 for the remainder of the string. A dump valve is strongly recommended to stop makeup once the established **Running Torque** is achieved.
7. All connections made up with the established **Running Torque** should achieve shoulder engagement with the reasonable amount of **Delta Torque**. Carefully watch for the spike on the torque gauge during each make up to verify shoulder engagement. As a **secondary** verification, randomly check the makeup position relative to the API Triangle Stamp during the run. Proper power tight makeup position is achieved when the coupling covers the middle 1/3 of the API Triangle Stamp on the pin (see accompanying photo).
8. All connections should achieve shoulder engagement with at least 10% **Delta Torque** before the **Maximum MU Torque** is achieved.

	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

COMMENTS, TROUBLESHOOTING

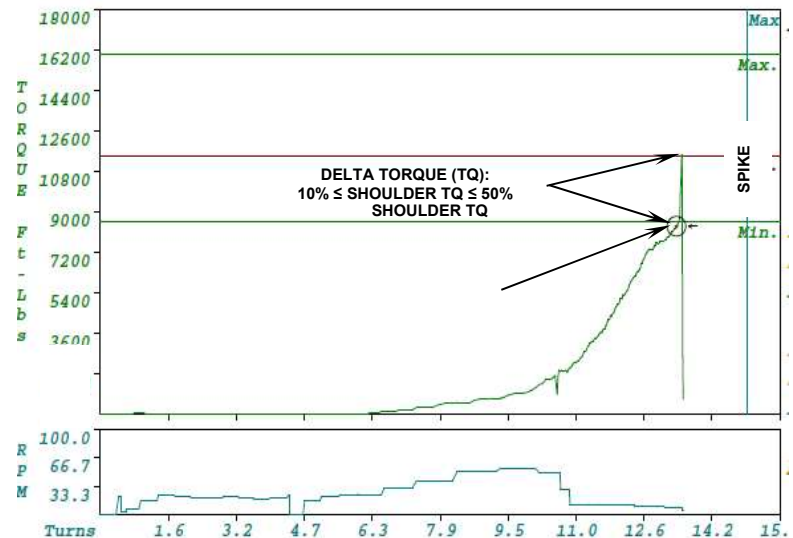
- GB Connections are thread compound friendly. Thread compounds shall be handled, mixed, and applied in strict accordance with the manufacturer's instructions. **THREAD COMPOUND SHALL BE APPLIED TO BOTH PIN AND COUPLING THREADS AND OPPOSING PIN NOSE OR SHOULDER AREA OF EVERY CONNECTION.** Thread compound "transfer" between pin and coupling will not provide proper sealing mechanism for the connection to function properly. Sufficient thread compound has been applied when all threads (pin and coupling), pin nose, and coupling ID surfaces are completely covered **WITH NO GAPS OR BARE SPOTS**. The thread form should be discernible beneath the compound, i.e. when the thread valleys appear half full. Be generous with the thread compound; but avoid over-doping to the point where **excessive** amounts are squeezed out during assembly. Use of a mustache brush is the preferred method for applying and distributing thread compounds to GB Connections.
- If threads are cleaned on racks, new dope shall be applied in a light, even coat to both pin and coupling threads. See Comment No. 1 above for description of sufficient thread compound. Clean thread protectors shall be re-applied to freshly doped pin and coupling threads unless the casing run is imminent (no more than a few hours) to avoid contaminating exposed thread compound.
- All connections should achieve shoulder engagement before reaching the "**Running Torque**" value determined by this procedure. Any connection that does not achieve a clear spike/shoulder engagement at the established "**Running Torque**" value shall be visually inspected for position relative to the API Triangle Stamp.
 - If the coupling is shy of the API Triangle Stamp Base, the connection shall be broken out, cleaned and inspected visually for thread damage, re-doped, and made-up again (or laid down if threads are damaged). Connections **SHALL NEVER** be backed up a couple of turns and remade. They shall be completely broken out, cleaned and inspected as described above.
 - If the coupling is at or covers the API Triangle base but does not land in approximately the middle third of the API Triangle Stamp, add additional torque to achieve shouldering and finish the makeup. It is common to see high torque (possibly exceeding the **Maximum MU Torque**) to initiate connection turning. This is acceptable as long as the torque drops off once movement starts and then spikes with shoulder engagement. If acceptable makeup doesn't occur with one additional torque application, the connection shall be broken out (as described in 3a above).
 - Any connection not properly assembled (i.e. not meeting the acceptance criteria) in two (2) attempts (provided threads pass a visual inspection each time) is reject and shall be laid down.



	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

4. At the established **Running Torque**, the connections will generally shoulder with **Delta Torque** between 10% and 50%. High interference connections will tend to have a higher **Shoulder Torque** and less **Delta Torque** (at least 10% of the **Shoulder Torque** is required). Low interference connections will tend to have lower **Shoulder Torque** and more **Delta Torque**. In general, GB Connections makeup consistently but will vary due to any of the factors enumerated in the second paragraph of the Overview section of this procedure. However, wide variability on more than a few joints should be investigated for a root cause and, if necessary, a new **Running Torque** should be adjusted as described below.

If a connection appears to have shouldered but doesn't have at least 10% **Delta Torque**, the position relative to the API Triangle Stamp should be checked. In just about every instance, the position will have covered the triangle base, so additional torque can be added to complete the makeup as discussed in 3.b) above. Expect an instantaneous spike with showing more than 50% **Delta Torque** with application of additional torque. Under this condition, this makeup is acceptable.



Similarly, random connections here and there with more than 50% **Delta Torque** is generally not cause for concern. However, if overshooting the 50% maximum **Delta Torque** target occurs frequently, then the established **Running Torque** value should be walked down in 500 ft-lbs. to 1,000 ft-lbs. increments until connection makeup routinely falls in line with the stated acceptance criteria.

5. **Torque vs. Turn monitoring systems are recommended for field makeup of GB Connections.** While Torque vs. Turn plots provide good information about makeup, they **SHALL NOT BE SUBSTITUTED FOR DIRECT VISUAL OBSERVATION OF THE CONNECTION DURING ASSEMBLY**. There is no second chance to watch field assembly of a connection. Torque vs. Turn plots can always be viewed for verification purposes once a makeup is finished. When available, torque vs. turn plots shall finish with a clearly defined spike as shown in the graphic above. The general character of torque vs. turn plots for good makeups will become evident after the first ten (10) makeups (again, more may be necessary due to rig and/or equipment-specific conditions). Any makeup that results in a plot that is “out-of-character”² when compared with most plots from previous good makeups should be checked carefully. Torque vs. Time is not recommended unless it supplements the Torque vs. Turn Data.

When using Torque vs. Turn monitoring equipment, GB recommends setting a reference torque value of 500 ft-lbs. or 10% of the minimum makeup torque (whichever is lower) to help normalize the turns-to-power-tight variability in the Tq-Tn graphs. Setting a reference torque normalizes field stab variability resulting in more consistency in the Tq-Tn data. Plot scales should be set so data spans at least 2/3 of the turns scale on each plot (15 turns will usually be sufficient at the start and can be reduced based on data from the first few joints). **UNDER NO CIRCUMSTANCE SHOULD MAKEUP BE STARTED UNTIL THE MONITORING SYSTEM IS READY TO RECORD DATA.**

6. Occasionally the mill side of a GB Connection may turn during field makeup. When observed, the makeup should continue without stopping per this procedure. It may be helpful to scribe a vertical line across the coupling-pipe

² An “out-of-character” plot may initiate with a high torque, show significantly steeper slope from the start of makeup, wide torque undulations as makeup progresses, no clearly defined spike, insufficient/inconsistent turns, etc.

	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

interface to aid estimation of mill side turning if it is observed with some frequency. The amount of mill side turn should be carefully observed and estimated. If the mill side turns less than $\frac{1}{2}$ turn and all other aspects of the makeup are good, the connection is acceptable. If the mill side turns more than $\frac{1}{2}$ turn, troubleshooting should be initiated. Pay particular attention to amount and distribution of thread compound, vertical alignment, weight of joint, hooked end on pipe, and other possible factors that may contribute to possible high torque during field makeup. Counting turns can help to estimate if coupling will need to be stopped to avoid over rotation. It should be noted that mill side turning during field makeup occurs occasionally and should not be concerning. Frequent or persistent mill side turning is a symptom that needs troubleshooting and appropriate corrective action.

7. A double wrap of the pick-up sling should be used when raising casing into the derrick when lifting subs, single joint, side-door, or slip elevators are not being used.
8. Higher torque may be needed to achieve proper connection position when threadlock compounds are applied. User is advised to carefully follow the manufacturer's instructions with respect to mixing, application, temperature, and time. Torque ranges with threadlock compounds cannot be estimated due to many variables including but not limited to temperature, time, connection tolerances, and surface finish. In these cases, carefully monitor makeup to be sure shouldering occurs. The only exception to proper positioning is with float equipment (float shoe and float collar) that will be assembled with a threadlocking compound. In this case, makeup close to the base of API Triangle Stamp is considered satisfactory.
9. Manual and automated dump valves can overshoot the established **Running Torque** due to several factors. Slightly overshooting the **Running Torque** is not cause for concern as long as the final "dump" torque is not excessive, and the equipment used is generally consistent joint-to-joint. Overshooting the **Running Torque** with a final makeup speed greater than 10 RPMs is risky and potentially harmful to the connection as discussed below.
10. Attached is a "Worksheet for determining GB Connections **Running Torque** at the beginning of a Casing Run" for use at the start of any casing run using GB Connections. GB recommends that this worksheet be filled out and maintained with the casing run records.

MAKEUP SPEED

To reiterate: Use of high gear at no more than 40 RPMs is permissible once proper starting thread engagement has occurred. **THE FINAL TWO (2) FULL TURNS, AT A MINIMUM, SHALL BE COMPLETED IN LOW GEAR AT LESS THAN 10 RPMs.** Be sure that the final 2 turns occur after the tong speed has slowed completely to less than 10 RPMs.

Making up connections at RPM exceeding those listed above may result in unsatisfactory connection performance downhole. Risks associated with excessive makeup RPMs are common for any connection with internal pin nose engagement. High speed makeup can:

1. Impart an unnecessary impulse load at nose contact. Certain materials are more susceptible to cracking under sudden or instantaneously applied loads.
2. Inhibit efficient movement of and trap thread compound under high pressure causing additional and unquantifiable high hoop stresses in the connection.
3. Result in significant overshoot of established dump torque value due to equipment latency between signal and equipment shut down resulting in higher but unknown actual final torque value. Excessive overshoot can result in pin nose yielding.

PROCEDURE SUMMARY

1. Remove coupling protectors after casing is set in V-Door and apply fresh thread compound to coupling threads.

	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

2. Raise joint in derrick, remove pin protectors, and apply fresh thread compound to pin threads and pin nose.
3. Carefully stab pin into coupling and makeup to pin nose engagement. Try to stop makeup without exceeding the **Maximum MU Torque** (shown on GB Connections Performance Property Sheets). Carefully watch for and note the **Shoulder Torque**.
4. Record **Shoulder Torque** and Final Torque values, and position relative to API Triangle Stamp for first ten (10) connections, more if necessary due to run/rig-specific conditions.
5. The **Running Torque** is (a) the **Minimum MU Torque** shown on the GB Connections Performance Property Sheet or (b) the maximum torque required for shoulder engagement + 20% **Delta Torque** determined from the first 10 makeups, **whichever is higher**. Use the attached Worksheet to record this data and determine the **Running Torque**.
6. Make up the rest of the string at the **Running Torque** determined in the previous step verifying each connection has shouldered with between 10% and 50% **Delta Torque**. Small incremental adjustments to the established Running Torque (500 to 1,000 ft-lbs) are advised if delta torques routinely fall short of the 10% requirement or routinely exceed the 50% requirement.

NOTES:

- This procedure summary is not a substitute for the comprehensive procedure provided above and does not apply to threadlock connections.

DO's and DONT's

1. **DO** check vertical alignment.
2. **DO** apply thread compound to all pin and coupling threads, pin nose and coupling shoulder area.
3. **DO** establish the **Running Torque** in accordance with GB Procedures.
4. **DO** make adjustments to **Running Torque** if indicated by inconsistent makeups during the casing run.
5. **DO** check every makeup for a clear indication of shouldering with a minimum **Delta Torque** $\geq$ 10% of the **Shoulder Torque**.
6. **DO** reject any coupling that is not properly made up after two (2) attempts.
7. **DO** carefully stab pins into coupling (use a stabbing guide for casing smaller than 9 5/8" OD).
8. **DO** finish the makeup with at least two (2) full turns in low gear at 10 RPMs or less.
9. **DO** make up every connection continuously to pin nose engagement without stopping.
10. **DO** make note of anything that occurs with any connection makeup such as backup grips slipped, connection inspected and remade, etc.
11. **Do** check out every connection that appears out of character relative to the population. An example would be a connection that is completed with significantly fewer turns than most others. Check the triangle stamp and record position and take corrective action if needed.
12. **DO** add torque to any connection that appears to achieve pin nose engagement but not 10% delta torque.

	Running Procedure for Casing with GB Drilling with Casing Connections	February 13, 2024
		Rev. 15

13. **DO** adjust the **Running Torque** up or down in increments to achieve consistent **Delta Torque** between 10% and 50%.
14. **Do** make note of any anomaly during any connection makeup, such as backups slipped, mill side turned, etc.
15. **DO** minimize the weight on the connection, i.e. weight neutral, during break out as much as possible to minimize thread galling.
16. **Do** Reduce RPM's on any join racking around in the derrick during make up. Erratic joint movement while rotating may contribute or cause thread galling during make-up.
17. **DO NOT** over dope.
18. **DO NOT** exceed the **Maximum MU Torque** as shown on the GB Connections Performance Property Sheets during assembly.
19. **DO NOT** make up any misaligned connection.
20. **DO NOT** exceed 40 RPMs in high gear and 10 RPMs in low gear for the final two (2) full turns.
21. **DO NOT** remove pin thread protectors until pipe is hanging in the derrick.
22. **DO NOT** ever back a connection up a couple of turns and remake. Any connection requiring this type of attention **SHALL** be broken out completely, cleaned, visually inspected, and if OK, re-doped and remade.
23. **DO NOT** hesitate to contact GB Connections with questions before and during any casing run.

RECOMMENDED EQUIPMENT

- Stabbing Guide
- Mustache Brush
- Torque vs. Turn Monitoring Equipment or Dump Valve

Worksheet for determining GB Connection Running Torque at the beginning of a Casing Run

Ignore joints that are assembled with threadlock compounds. See "Addendum Procedure for GB Connections Assembled with Threadlocking Compounds" available at www.gbconnections.com.

Pertinent Excerpt from GB Running Procedure

5. Stab the pin carefully into the coupling of the joint hanging in the rotary table. A stabbing guide is recommended to protect the pin nose and leading thread from physical damage that may contribute to thread galling. Make up each connection until shoulder engagement plus Delta Torque. Record the Shoulder Torque observed for the first 10 joints (excluding threadlocked accessory joints). The Running Torque is (a) the Minimum MU Torque shown on the GB Connections Performance Property Sheets or (b) the Maximum Shoulder Torque recorded from the first 10 makeups + 20%, whichever is higher (rounded to the next highest 500 ft-lbs.) Delta Torque should be between 10% and 50% of the Shoulder Torque. Running Torque shall not exceed the Maximum MU Torque. When making up the initial joints for establishing the Running Torque carefully watch the torque gauge for the Shoulder Torque and try to manually shut down the tongs before reaching Maximum MU Torque shown on the GB Connections Performance Property Sheets. Alternately, the dump valve should be set to **80% of the Maximum MU Torque** during this initial process.

6. After the first 10 makeups (more if necessary due to conditions at the time of the run), use the "Running Torque" established in Step 5 for the remainder of the string. A dump valve is strongly recommended to stop makeup once the established Running Torque is achieved.

Casing Data		Comment
OD (in)		See GBC Performance Property Sheet
Weight (ppf)		See GBC Performance Property Sheet
Grade		See GBC Performance Property Sheet
Min MU Torque (ft-lbs)		See GBC Performance Property Sheet
Max MU Torque (ft-lbs)		See GBC Performance Property Sheet
Max Operating Torque (ft-lbs)		The Maximum Operating Torque is NOT the Maximum Makeup Torque and is NOT a sustainable rotating torque. Operating at the Maximum Operating Torque for any length of time will likely damage the connection.

Notes	Joint No.	Shoulder Torque (ft-lbs)	Final Torque (ft-lbs)	Triangle Stamp Position Sketch ($\triangle$)
Required	1			
Required	2			
Required	3			
Required	4			
Required	5			
Required	6			
Required	7			
Required	8			
Required	9			
Required	10			
Optional	11			
Optional	12			
Optional	13			
Optional	14			
Optional	15			
Max. Shoulder Torque				
A Max. Shoulder Torque + 20%				
B Min. Makeup Torque (from GB Conn. Data Sheet)				
Running Torque (ft-lbs)		-	A or B, whichever is greater.	

Optional joints should be added if there is wide variability in shoulder torques recorded during the initial 10 joints. Judgement should be used to determine if more than 10 joints are needed for the purpose of establishing the Running Torque and, if so, how many more should be added.

Wide variations in Shoulder Torque during the first ten (10) joints suggest other issues requiring attention such as poor alignment, improper amount and distribution of thread compound, etc. Refer to 2nd paragraph of GB Running Procedure for possible contributing factors to aid troubleshooting.

GB Connections

950 Threadneedle, Suite 130
Houston TX 77079
Toll Free: 1-888-245-3848
Main: 713-465-3585
Fax: 713-984-1529

For Technical Information, contact:

Gene Mannella

gmannella@gbconnections.com

Qing Lu

qlu@gbconnections.com

Jordan Kies

jkies@gbconnections.com

Cell 713-562-0050



API 5CT Casing Performance Data Sheet
8 5/8" 32.00 lb/ft P110 HSCY

P110 HSCY (High Strength Controlled Yield) is a BPU proprietary ERW casing grade for deep well applications. It is not intended for sour condensate wells. Product properties are based on the requirements of API 5CT 11th edition for ERW P110, with increased minimum yield strength to meet the minimum yield strength requirement of Q125 grade. P110 HSCY is provided with an API monogram for P110 grade.

Grade	P110 HSCY
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Sizes and Weights

OD	8.625 in
Nominal Wall Thickness	0.352 in
Nominal Weight, T&C	32.00 lb/ft
Nominal Weight, PE	31.13 lb/ft
Nominal ID	7.921 in
Standard Drift	7.796 in
Alternate Drift	7.875 in

Pipe Body Mechanical Properties

Minimum Yield Strength	125,000 psi
Maximum Yield Strength	140,000 psi
Minimum Tensile Strength	130,000 psi
Maximum Hardness	N/A

Minimum Performance

Collapse Pressure	4,530 psi
Minimal Internal Pressure Yield	9,693 psi
Pipe body Tension Yield	1,143,577 lbs
Joint Strength STC/LTC Connections	1,092,021 psi
Joint Strength BTC Connections	1,092,021 psi
Joint Strength BTC SCC Connections	856,665 psi

Inspection and Testing

Visual	OD Longitudinal and independent 3rd party SEA
NDT	Independent 3rd party full body EMI and weldline UT after hydrotest. Calibration notch sensitivity (% of specified wall thickness): 5% UTWL, Pipe Body K.9 for SR16

Color code

Pipe ends	One white and two gold bands
Couplings	White



EOG Batch Casing

Pad Name: Date 14 State KPLA

SHL: Section 14, Township 21-S, Range 33-E, LEA County, NM

Well Name	API #	Surface		Intermediate 1		Intermediate 2		Intermediate 3		Production	
		MD	TVD	MD	TVD	MD	TVD	MD	TVD	MD	TVD
Date 14 State Com #204H	30-025-*****	1,908	1,908	3,928	3,849	5,823	5,744	N/A	N/A	20,043	9,760
Date 14 State Com #205H	30-025-*****	1,908	1,908	4,169	3,849	6,064	5,744	N/A	N/A	20,239	9,760
Date 14 State Com #504H	30-025-*****	1,908	1,908	3,917	3,849	5,812	5,744	N/A	N/A	20,873	10,600
Date 14 State Com #505H	30-025-*****	1,908	1,908	4,039	3,849	5,934	5,744	N/A	N/A	20,971	10,600
Date 14 State Com #603H	30-025-*****	1,908	1,908	3,864	3,849	5,759	5,744	N/A	N/A	22,090	11,870
Date 14 State Com #604H	30-025-*****	1,908	1,908	4,059	3,849	5,954	5,744	N/A	N/A	22,257	11,870
Date 14 State Com #605H	30-025-*****	1,908	1,908	3,952	3,849	5,847	5,744	N/A	N/A	22,164	11,870
Date 14 State Com #801H	30-025-*****	1,908	1,908	4,312	3,849	6,207	5,744	12,060	11,698	22,741	12,175
Date 14 State Com #901H	30-025-*****	1,908	1,908	3,913	3,849	5,808	5,744	12,233	12,173	22,919	12,650



EOG Batch Casing

GEOLOGIC NAME OF SURFACE FORMATION:

Permian

ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,883'
Tamarisk Anhydrite	1,990'
Top of Salt	2,320'
Capitan	3,949'
Base of Capitan	5,609'
Bell Canyon	5,750'
Cherry Canyon	5,894'
Brushy Canyon	6,912'
Bone Spring Lime	8,823'
Leonard (Avalon) Shale	9,049'
1st Bone Spring Sand	9,993'
2nd Bone Spring Shale	10,219'
2nd Bone Spring Sand	10,562'
3rd Bone Spring Carb	11,076'
3rd Bone Spring Sand	11,633'
Wolfcamp	11,869'

ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400' Fresh Water
Cherry Canyon	5,894' Oil
Brushy Canyon	6,912' Oil
Bone Spring Lime	8,823' Oil
Leonard (Avalon) Shale	9,049' Oil
1st Bone Spring Sand	9,993' Oil
2nd Bone Spring Shale	10,219' Oil
2nd Bone Spring Sand	10,562' Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting surface casing at 2,020' and circulating cement back to surface.

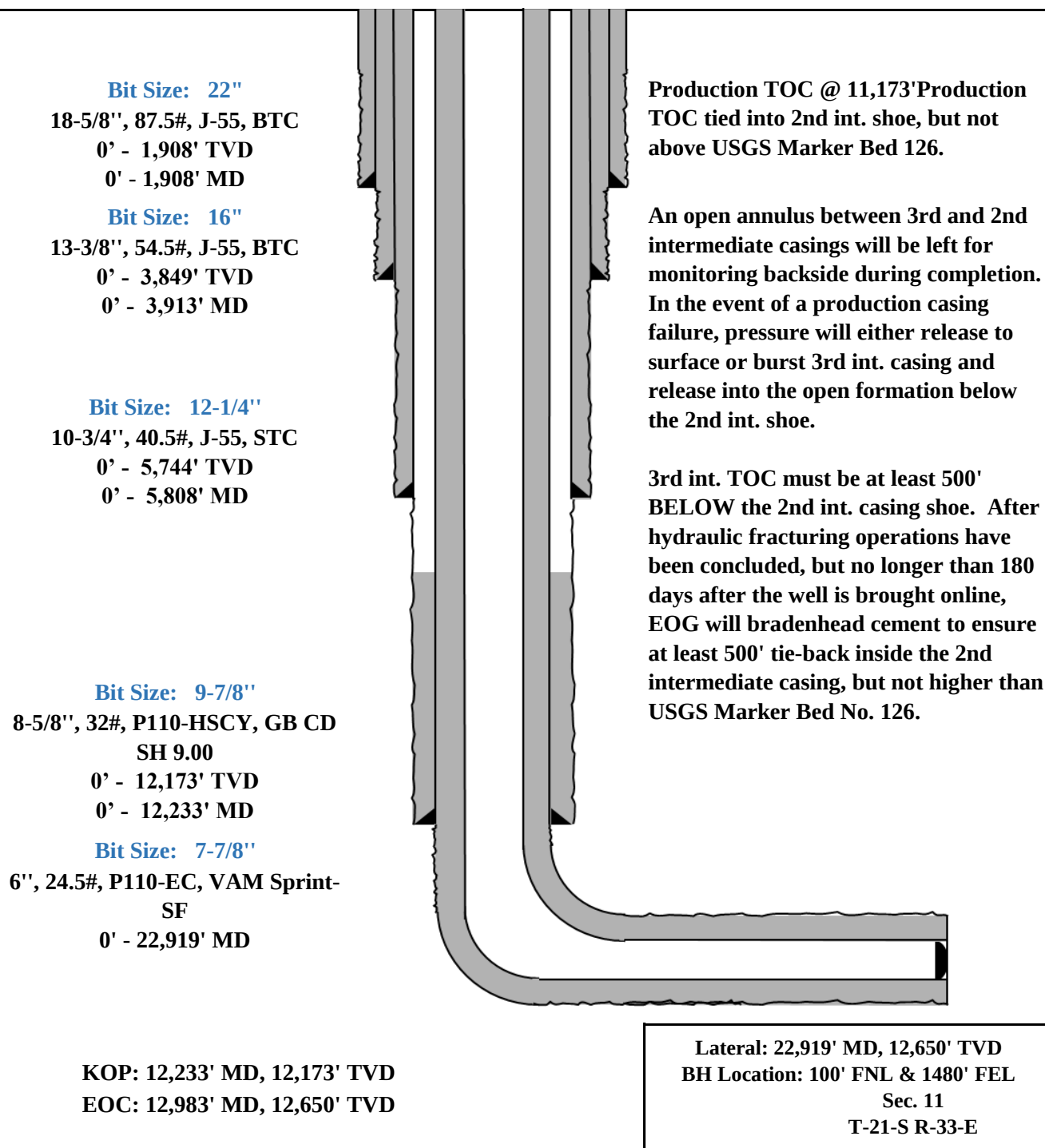


Date 14 State Com #901H
LEA County, New Mexico
Proposed Wellbore
Design B

KB: 3815'
GL: 3790'

399' FSL
2122' FEL
Section 14
T-21-S, R-33-E

API: 30-025-*****





Date 14 State Com #901H

Permit Information:

Well Name: Date 14 State Com #901H

Location:

SHL: 399' FSL & 2122' FEL, Section 14, T-21-S, R-33-E, LEA Co., N.M.

BHL: 100' FNL & 1480' FEL, Section 11, T-21-S, R-33-E, LEA Co., N.M.

Casing Program:

Hole Size	Interval MD From (ft) To (ft)		Interval TVD From (ft) To (ft)		Csg OD	Weight	Grade	Conn
22"	0	1,908	0	1,908	18-5/8"	87.5#	J-55	BTC
16"	0	3,913	0	3,849	13-3/8"	54.5#	J-55	BTC
12-1/4"	0	5,808	0	5,744	10-3/4"	40.5#	J-55	STC
9-7/8"	0	12,233	0	12,173	8-5/8"	32#	P110-HSCY	GB CD SH 9.00
7-7/8"	0	22,919	0	12,650	6"	24.5#	P110-EC	VAM Sprint-SF

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft3/sk	Slurry Description
1,908'	1130	13.5	1.73	Lead: Class C/H + additives (TOC @ Surface)
Surface: 18-5/8"	290	14.8	1.34	Tail: Class C/H + additives
1st Int.: 13-3/8"	1380	12.7	2.22	1st Stage Lead: Class C/H + additives
3,849'	970	14.8	1.33	1st Stage Tail: Class C/H + additives
2nd Int.: 10-3/4"	790	12.7	2.22	2nd Stage Lead: Class C/H + additives
5,744'	420	14.8	1.32	2nd Stage Tail: Class C/H + additives
3rd Int.: 8-5/8"	600	14.8	1.20	Class C/H + additives (TOC @ 8,323') 0% Excess to Brushy
12,173'	Post completions, a bradenhead squeeze will be performed to ensure at least 500' of tie-back inside the 2nd intermediate string, but no higher than USGS Marker Bed No. 126.			
22,919'	1410	13.2	1.71	Class C/H + additives (TOC @ 11,173') 0% Excess to Brushy

Mud Program:

Depth (TVD)	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,908'	Fresh - Gel	8.6-8.8	28-34	N/c
1,908' – 3,849'	Brine	10.0-10.2	28-34	N/c
3,849' – 5,744'	Fresh - Gel	8.7-9.4	58-68	N/c - 6
5,744' – 12,173'	Cut Brine	8.7-9.4	58-68	N/c - 6
12,173' – 22,919' Lateral	Oil Base	10.0-14.0	58-68	4 - 6



Date 14 State Com 901H

TUBING REQUIREMENTS

EOG respectfully requests an exception to the following NMOCD rule:

- 19.15.16.10 Casing AND TUBING REQUIREMENTS:
J (3): “The operator shall set tubing as near the bottom as practical and tubing perforations shall not be more than 250 feet above top of pay zone.”

With horizontal flowing and gas lifted wells an end of tubing depth placed at or slightly above KOP is a conservative way to ensure the tubing stays clean from debris, plugging, and allows for fewer well interventions post offset completion. The deeper the tubulars are run into the curve, the higher the probability is that the tubing will become stuck in sand and or well debris as the well produces over time. An additional consideration for EOT placement during artificial lift installations is avoiding the high dog leg severity and inclinations found in the curve section of the wellbore to help improve reliability and performance. Dog leg severity and inclinations tend not to hamper gas lifted or flowing wells, but they do effect other forms of artificial lift like rod pump or ESP (electric submersible pump). Keeping the EOT above KOP is an industry best practice for those respective forms of artificial lift.

**Date 14 State Com 901H****Potash Area Requirements**

- (A) Since this well is in the Potash Area – R111-Q requires that a monitored open annulus shall incorporated during completion by leaving the annulus between the 1st and 2nd intermediate casing strings un-cemented and monitored inside the 1st intermediate string.
- 1) The top of cement in the annulus between the 2nd and 3rd intermediate casing strings shall stand uncemented at least 500 feet below the 2nd intermediate casing shoe. Zero percent excess shall be pumped on the 3rd intermediate cementing slurry to ensure no tie-back into the intermediate casing shoe.
 - 2) Not less than two (2) weeks prior to commencing hydraulic fracturing operations on wells of this design, EOG will provide notice to operators of offset wells actively producing from the Delaware Mountain Group located within one (1) mile of subject well's surface hole location. During hydraulic fracturing operations, the pump pressure and annulus between the intermediate and production casing strings shall be continuously monitored for signs of production casing failure.
 - 3) After hydraulic fracturing operations have been concluded and no longer than 180 days after the well is brought online, EOG will bradenhead cement to ensure at least 500 ft tie-back has been established inside the 2nd intermediate string but not higher than USGS Marker Bed No. 126.
 - 4) The top of cement may be estimated through pumped displacement volumes or with the use of a fluid shot tool prior to filling backside with fluid.
- (B) **Drilling Fluid for 1st Intermediate Hole Section**
The fluid used while drilling the salt section shall consist of water, to which has been added sufficient salts of a character common to the zone penetrated to completely saturate the mixture or non-aqueous drill fluid. Other additives may be added to the fluid by the operator to address any specific well control problem. This requirement is specifically intended to prevent enlarged bore holes.
- (C) **Notificaiton Requirements to Potash Operator**
EOG shall notify both potash operators as soon as possibly if any of the following conditions are encountered during operations:
- 1) Indication of any well collision event
 - 2) Suspected well fluid flow (oil, gas, produced water) outside of casing
 - 3) Sustained annulus pressure between 1st intermediate and next innermost casing string in excess of 500 psi above the baseline pressure of the well, or above 1500 psi total
 - 4) Increasing pressure buildup rates (psi/day) across multiple successive bleed-off cycles on the annulus between the 1st intermediate and next innermost casing during well production
 - 5) Sustained losses in excess of 50% through the salt formation during drilling.
- (D) See attached 4-string Design.



Date 14 State Com #901H

Hydrogen Sulfide Plan Summary

A. All personnel shall receive proper H₂S training in accordance with Onshore Order III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

■ Well control equipment

- a. Flare line 150' from wellhead to be ignited by flare gun.
- b. Choke manifold with a remotely operated choke.
- c. Mud/gas separator

■ Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escapes packs — 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

■ H₂S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

(Gas sample tubes will be stored in the safety trailer)

■ Visual warning systems.

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
- c. Two wind socks will be placed in strategic locations, visible from all angles.



Date 14 State Com #901H

■ **Mud program:**

The mud program has been designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S bearing zones.

■ **Metallurgy:**

All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.

■ **Communication:**

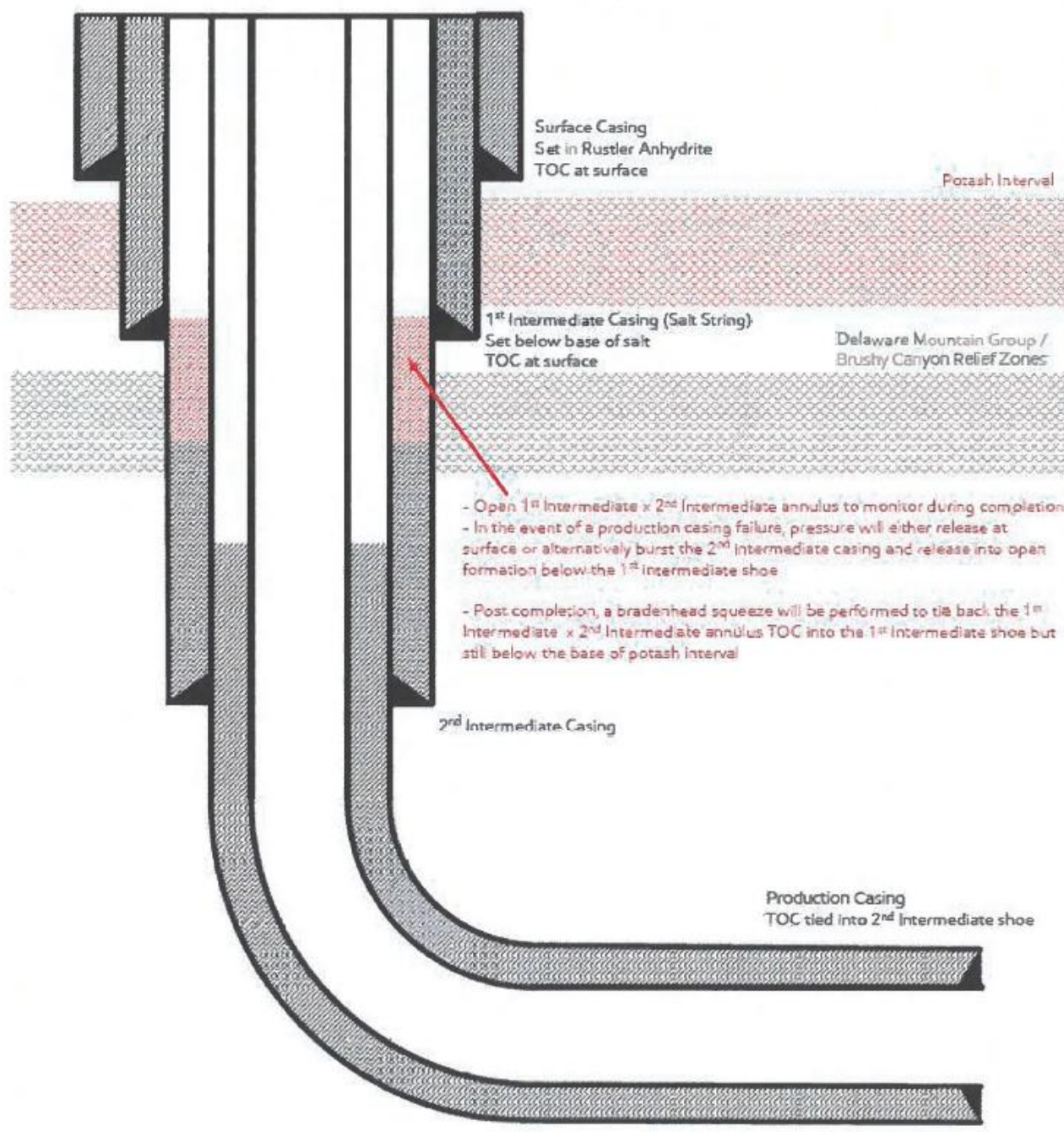
Communication will be via cell phones and land lines where available.



Date 14 State Com #901H

The 4-string design below will be utilized, modified to a 5-string, and leaving the annulus between the 3rd and 2nd intermediate casings open.

4-String Design – Open 1st Int x 2nd Int Annulus (ICP 2 below relief zone)



[Figure D] 4 String – Uncemented annulus between 1st and 2nd Intermediate casing strings



**Date 14 State Com #901H
Emergency Assistance Telephone List**

PUBLIC SAFETY: **911 or**

Lea County Sheriff's Department (575) 396-3611

Rod Coffman

Fire Department:

Carlsbad (575) 885-3125

Artesia (575) 746-5050

Hospitals:

Carlsbad (575) 887-4121

Artesia (575) 748-3333

Hobbs (575) 392-1979

Dept. of Public Safety/Carlsbad (575) 748-9718

Highway Department (575) 885-3281

New Mexico Oil Conservation (575) 476-3440

NMOCD Inspection Group - South (575) 626-0830

U.S. Dept. of Labor (575) 887-1174

EOG Resources, Inc.

EOG / Midland Office (432) 686-3600

Safety:

Brian Chandler (HSE Manager) Office (432) 686-3695

Cell (817) 239-0251



Date 14 State Com 901H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,883'
Tamarisk Anhydrite	1,990'
Top of Salt	2,320'
Capitan	3,949'
Base of Capitan	5,609'
Bell Canyon	5,750'
Cherry Canyon	5,894'
Brushy Canyon	6,912'
Bone Spring Lime	8,823'
Leonard (Avalon) Shale	9,049'
1st Bone Spring Sand	9,993'
2nd Bone Spring Shale	10,219'
2nd Bone Spring Sand	10,562'
3rd Bone Spring Carb	11,076'
3rd Bone Spring Sand	11,633'
Wolfcamp	11,869'
TD	12,650'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400' Fresh Water
Cherry Canyon	5,894' Oil
Brushy Canyon	6,912' Oil
Bone Spring Lime	8,823' Oil
Leonard (Avalon) Shale	9,049' Oil
1st Bone Spring Sand	9,993' Oil
2nd Bone Spring Shale	10,219' Oil
2nd Bone Spring Sand	10,562' Oil

**Date 14 State Com 901H**

EOG is aware of the updates to the KPLA requirements in R-111-Q and plans to comply with the R-111-Q order. Anticollision requirements will be monitored and met.

R-111-Q Casing and Cementing Requirements:

The surface casing string shall have at least the following centralization program:

- One centralizer per joint across the shoe track
- One centralizer per 2 joints from casing shoe to the top of useable fresh water
- Not less than one centralizer every 3 joints for surface casing

A casing pressure test shall be made before drilling below the casing seat or at the time of plug bump. The casing shall be tested to 0.22 psi/ft of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of casing burst. If a drop of 10% or more should occur within 30 minutes, corrective measures shall be applied. Shoe integrity shall be verified via a formation integrity test (FIT).

The well path may be deviated from vertical after completely penetrating USGS Marker Bed No. 126

The 1st intermediate casing string shall be set at least 100 ft below the base of the salt interval and above the highest known oil/gas zone, and have at least the following centralization program:

- One centralizer per joint across the shoe track and not less than 1 centralizer every 3 joints to surface
- EOG will confirm the effectiveness of centralization program with cement placement simulations
- The Division (NMOCD) may require additional centralizers on the salt string, if it deems it necessary

The 1st intermediate cement slurry shall have the following characteristics:

- Cement will be a high sulfate resistance (HSR) slurry
- Include a minimum of 10% BWOW salt
- Include an expansion additive (1-3% BWO Magnesium Oxide or equivalent)

A casing pressure test shall be made before drilling below the casing seat or at the time of plug bump. The casing shall be tested to 0.22 psi/ft of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of casing burst. If a drop of 10% or more should occur within 30 minutes, corrective measures shall be applied.

Shoe integrity shall be verified via a formation integrity test (FIT).

The 2nd intermediate casing string is required in areas of the Capitan Reef (unless exempted by the Division), and shall be set 150 ft above the Base of the Capitan formation.

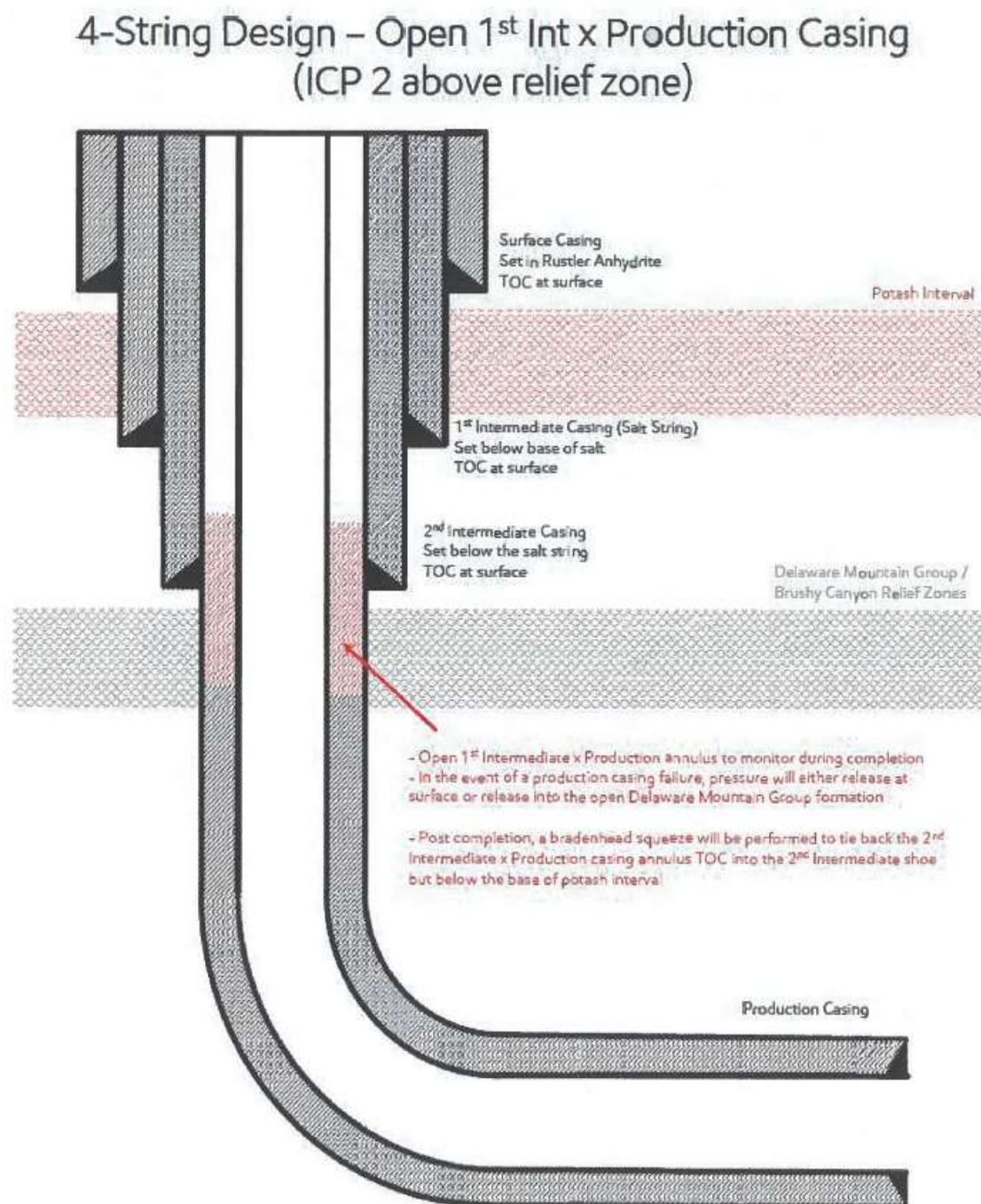
EOG will incorporate method C(5)(c)(iii) for the 4 string designs, leaving the annulus between the 2nd intermediate and the production string open and monitored. The top of production cement will be at least 500 ft below the 2nd intermediate casing point, and ZERO EXCESS will be pumped to ensure no tie-back into the 2nd intermediate.

EOG will incorporate a modified method C(5)(c)(ii) for the 5 string designs, leaving the annulus between the 2nd and 3rd intermediates open and monitored. The top of the 3rd intermediate cement will be at least 500 ft below the 2nd intermediate casing point, and ZERO EXCESS will be pumped to ensure no tie-back into the 2nd



After hydraulic fracturing operations have been concluded/no more than 180 days after the well is brought online, EOG will bradenhead cement to ensure at least 500 ft of tie-back inside the 2nd intermediate casing, but not higher than USGS Marker Bed No. 126.

See Attached Figure E from R-111-Q for 4 String - Uncemented Annulus WBD.

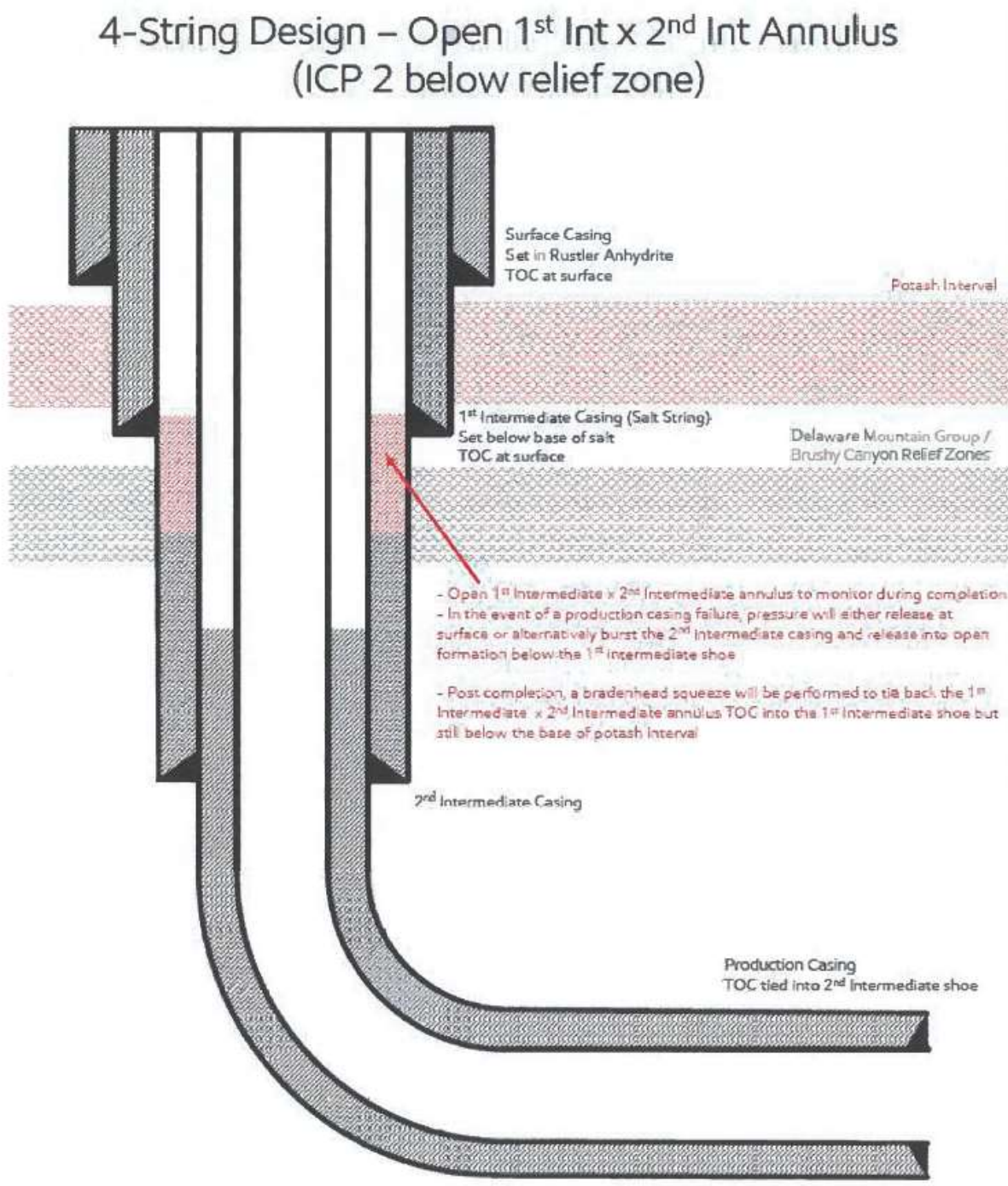


[Figure E] 4 String – Uncemented Annulus between 2nd Intermediate and Production Casing Strings



After hydraulic fracturing operations have been concluded/no more than 180 days after the well is brought online, EOG will bradenhead cement to ensure at least 500 ft of tie-back between the 3rd and the 2nd intermediate casings, but not higher than USGS Marker Bed No. 126.

See Attached Figure D from R-111-Q. This design will be modified for EOG's 5 string designs, where the annulus between the 3rd and 2nd intermediate casings will be left open below the 2nd intermediate casing shoe.



[Figure D] 4 String – Uncemented annulus between 1st and 2nd Intermediate casing strings

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: EOG Resources, Inc. **OGRID:** 7377 **Date:** 1/03/2025

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
DATE 14 STATE COM 901H		O-14-21S-33E	399' FSL & 2122' FEL	+/- 1000	+/- 3500	+/- 3000

IV. Central Delivery Point Name: DATE 14 STATE COM CTB [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
DATE 14 STATE COM 901H		01/15/25	03/26/25	04/1/25	05/1/25	05/15/25

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>Kayla McConnell</i>
Printed Name: KAYLA MCCONNELL
Title: Regulatory Specialist
E-mail Address: KAYLA_MCCONNELL@EOGRESOURCES.COM
Date: 01/03/2025
Phone: (432) 265-6804
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Natural Gas Management Plan**Items VI-VIII****VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.**

- Separation equipment will be sized to provide adequate separation for anticipated rates.
- Adequate separation relates to retention time for Liquid – Liquid separation and velocity for Gas-Liquid separation.
- Collection systems are appropriately sized to handle facility production rates on all (3) phases.
- Ancillary equipment and metering is selected to be serviced without flow interruptions or the need to release gas from the well.

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

- All flare stacks will be properly sized. The flare stacks will be located at a minimum 100' from the nearest surface hole location on the pad.
- All natural gas produced during drilling operations will be flared, unless there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety and the environment, at which point the gas will be vented.

Completions/Recompletions Operations

- New wells will not be flowed back until they are connected to a properly sized gathering system.
- The facility will be built/sized for maximum anticipated flowrates and pressures to minimize waste.
- For flowback operations, multiple stages of separation will be used as well as excess VRU and blowers to make sure waste is minimized off the storage tanks and facility.
- During initial flowback, the well stream will be routed to separation equipment.
- At an existing facility, when necessary, post separation natural gas will be flared until it meets pipeline specifications, at which point it will be turned into a collection system.
- At a new facility, post separation natural gas will be vented until storage tanks can safely function, at which point it will be flared until it meets pipeline spec.

Production Operations

- Weekly AVOs will be performed on all facilities.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All plunger lift systems will be optimized to limit the amount of waste.
- All tanks will have automatic gauging equipment installed.
- Leaking thief hatches found during AVOs will be cleaned and properly re-sealed.

Performance Standards

- Production equipment will be designed to handle maximum anticipated rates and pressure.
- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Weekly AVOs will be performed on all wells and facilities that produce more than 60 Mcfd.

Measurement & Estimation

- All volume that is flared and vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- No meter bypasses will be installed.

- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

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

- During downhole well maintenance, EOG will use best management practices to vent as minimally as possible.
- Prior to the commencement of any maintenance, the tank or vessel will be isolated from the rest of the facilities.
- All valves upstream of the equipment will be closed and isolated.
- After equipment has been isolated, the equipment will be blown down to as low a pressure as possible into the collection system.
- If the equipment being maintained cannot be relieved into the collection system, it shall be released to a tank where the vapor can either be captured or combusted if possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.



Midland

Lea County, NM (NAD 83 NME)

Date 14 State Com

#901H

OH

Plan: Plan #0.1 RT

Standard Planning Report

23 October, 2024



Planning Report

Database:	PEDMB	Local Co-ordinate Reference:	Well #901H
Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	kb = 26' @ 3841.0usft
Site:	Date 14 State Com	North Reference:	Grid
Well:	#901H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Date 14 State Com				
Site Position:		Northing:	536,428.00 usft	Latitude:	32° 28' 19.914 N
From:	Map	Easting:	786,265.00 usft	Longitude:	103° 32' 20.860 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	#901H					
Well Position	+N/-S	0.0 usft	Northing:	536,579.00 usft	Latitude:	32° 28' 21.464 N
	+E/-W	0.0 usft	Easting:	785,505.00 usft	Longitude:	103° 32' 29.718 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,815.0 usft
Grid Convergence:		0.43 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	10/23/2024	6.16	60.02	47,290.73052414

Design	Plan #0.1 RT				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	3.23	

Plan Survey Tool Program	Date	10/23/2024			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	22,918.8	Plan #0.1 RT (OH)	EOG MWD+IFR1	
			MWD + IFR1		



Planning Report

Database:	PEDMB	Local Co-ordinate Reference:	Well #901H
Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	kb = 26' @ 3841.0usft
Site:	Date 14 State Com	North Reference:	Grid
Well:	#901H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,691.8	9.84	118.32	2,689.4	-20.0	37.1	2.00	2.00	0.00	118.32	
6,480.7	9.84	118.32	6,422.6	-327.0	606.9	0.00	0.00	0.00	0.00	
6,972.5	0.00	0.00	6,912.0	-347.0	644.0	2.00	-2.00	0.00	180.00	
12,233.0	0.00	0.00	12,172.5	-347.0	644.0	0.00	0.00	0.00	0.00	KOP(Date 14 State #
12,453.5	26.46	358.85	12,385.2	-297.0	643.0	12.00	12.00	-0.52	358.85	FTP(Date 14 State #9
12,983.0	90.00	359.59	12,649.9	130.4	638.3	12.00	12.00	0.14	0.83	
22,918.8	90.00	359.59	12,650.0	10,066.0	568.0	0.00	0.00	0.00	0.00	PBHL(Date 14 State #



Planning Report

Database:	PEDMB	Local Co-ordinate Reference:	Well #901H
Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	kb = 26' @ 3841.0usft
Site:	Date 14 State Com	North Reference:	Grid
Well:	#901H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	2.00	118.32	2,300.0	-0.8	1.5	-0.7	2.00	2.00	0.00
2,400.0	4.00	118.32	2,399.8	-3.3	6.1	-3.0	2.00	2.00	0.00
2,500.0	6.00	118.32	2,499.5	-7.4	13.8	-6.7	2.00	2.00	0.00
2,600.0	8.00	118.32	2,598.7	-13.2	24.5	-11.8	2.00	2.00	0.00
2,691.8	9.84	118.32	2,689.4	-20.0	37.1	-17.9	2.00	2.00	0.00
2,700.0	9.84	118.32	2,697.5	-20.6	38.3	-18.4	0.00	0.00	0.00
2,800.0	9.84	118.32	2,796.0	-28.7	53.3	-25.7	0.00	0.00	0.00
2,900.0	9.84	118.32	2,894.5	-36.8	68.4	-32.9	0.00	0.00	0.00
3,000.0	9.84	118.32	2,993.1	-45.0	83.4	-40.2	0.00	0.00	0.00
3,100.0	9.84	118.32	3,091.6	-53.1	98.5	-47.4	0.00	0.00	0.00
3,200.0	9.84	118.32	3,190.1	-61.2	113.5	-54.7	0.00	0.00	0.00
3,300.0	9.84	118.32	3,288.6	-69.3	128.5	-61.9	0.00	0.00	0.00
3,400.0	9.84	118.32	3,387.2	-77.4	143.6	-69.2	0.00	0.00	0.00
3,500.0	9.84	118.32	3,485.7	-85.5	158.6	-76.4	0.00	0.00	0.00
3,600.0	9.84	118.32	3,584.2	-93.6	173.7	-83.6	0.00	0.00	0.00
3,700.0	9.84	118.32	3,682.8	-101.7	188.7	-90.9	0.00	0.00	0.00
3,800.0	9.84	118.32	3,781.3	-109.8	203.7	-98.1	0.00	0.00	0.00
3,900.0	9.84	118.32	3,879.8	-117.9	218.8	-105.4	0.00	0.00	0.00
4,000.0	9.84	118.32	3,978.4	-126.0	233.8	-112.6	0.00	0.00	0.00
4,100.0	9.84	118.32	4,076.9	-134.1	248.9	-119.9	0.00	0.00	0.00
4,200.0	9.84	118.32	4,175.4	-142.2	263.9	-127.1	0.00	0.00	0.00
4,300.0	9.84	118.32	4,273.9	-150.3	278.9	-134.3	0.00	0.00	0.00
4,400.0	9.84	118.32	4,372.5	-158.4	294.0	-141.6	0.00	0.00	0.00
4,500.0	9.84	118.32	4,471.0	-166.5	309.0	-148.8	0.00	0.00	0.00
4,600.0	9.84	118.32	4,569.5	-174.6	324.1	-156.1	0.00	0.00	0.00
4,700.0	9.84	118.32	4,668.1	-182.7	339.1	-163.3	0.00	0.00	0.00
4,800.0	9.84	118.32	4,766.6	-190.8	354.1	-170.6	0.00	0.00	0.00
4,900.0	9.84	118.32	4,865.1	-198.9	369.2	-177.8	0.00	0.00	0.00
5,000.0	9.84	118.32	4,963.7	-207.0	384.2	-185.1	0.00	0.00	0.00
5,100.0	9.84	118.32	5,062.2	-215.1	399.3	-192.3	0.00	0.00	0.00
5,200.0	9.84	118.32	5,160.7	-223.2	414.3	-199.5	0.00	0.00	0.00



Planning Report

Database:	PEDMB	Local Co-ordinate Reference:	Well #901H
Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	kb = 26' @ 3841.0usft
Site:	Date 14 State Com	North Reference:	Grid
Well:	#901H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	9.84	118.32	5,259.2	-231.3	429.3	-206.8	0.00	0.00	0.00
5,400.0	9.84	118.32	5,357.8	-239.4	444.4	-214.0	0.00	0.00	0.00
5,500.0	9.84	118.32	5,456.3	-247.5	459.4	-221.3	0.00	0.00	0.00
5,600.0	9.84	118.32	5,554.8	-255.7	474.5	-228.5	0.00	0.00	0.00
5,700.0	9.84	118.32	5,653.4	-263.8	489.5	-235.8	0.00	0.00	0.00
5,800.0	9.84	118.32	5,751.9	-271.9	504.5	-243.0	0.00	0.00	0.00
5,900.0	9.84	118.32	5,850.4	-280.0	519.6	-250.2	0.00	0.00	0.00
6,000.0	9.84	118.32	5,949.0	-288.1	534.6	-257.5	0.00	0.00	0.00
6,100.0	9.84	118.32	6,047.5	-296.2	549.7	-264.7	0.00	0.00	0.00
6,200.0	9.84	118.32	6,146.0	-304.3	564.7	-272.0	0.00	0.00	0.00
6,300.0	9.84	118.32	6,244.5	-312.4	579.7	-279.2	0.00	0.00	0.00
6,400.0	9.84	118.32	6,343.1	-320.5	594.8	-286.5	0.00	0.00	0.00
6,480.7	9.84	118.32	6,422.6	-327.0	606.9	-292.3	0.00	0.00	0.00
6,500.0	9.45	118.32	6,441.6	-328.6	609.8	-293.7	2.00	-2.00	0.00
6,600.0	7.45	118.32	6,540.5	-335.5	622.7	-299.9	2.00	-2.00	0.00
6,700.0	5.45	118.32	6,639.9	-340.9	632.6	-304.7	2.00	-2.00	0.00
6,800.0	3.45	118.32	6,739.6	-344.5	639.4	-308.0	2.00	-2.00	0.00
6,900.0	1.45	118.32	6,839.5	-346.6	643.2	-309.8	2.00	-2.00	0.00
6,972.5	0.00	0.00	6,912.0	-347.0	644.0	-310.2	2.00	-2.00	0.00
7,000.0	0.00	0.00	6,939.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,100.0	0.00	0.00	7,039.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,200.0	0.00	0.00	7,139.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,300.0	0.00	0.00	7,239.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,400.0	0.00	0.00	7,339.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,500.0	0.00	0.00	7,439.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,600.0	0.00	0.00	7,539.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,700.0	0.00	0.00	7,639.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,800.0	0.00	0.00	7,739.5	-347.0	644.0	-310.2	0.00	0.00	0.00
7,900.0	0.00	0.00	7,839.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,000.0	0.00	0.00	7,939.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,100.0	0.00	0.00	8,039.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,200.0	0.00	0.00	8,139.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,300.0	0.00	0.00	8,239.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,400.0	0.00	0.00	8,339.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,500.0	0.00	0.00	8,439.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,600.0	0.00	0.00	8,539.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,700.0	0.00	0.00	8,639.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,800.0	0.00	0.00	8,739.5	-347.0	644.0	-310.2	0.00	0.00	0.00
8,900.0	0.00	0.00	8,839.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,000.0	0.00	0.00	8,939.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,100.0	0.00	0.00	9,039.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,200.0	0.00	0.00	9,139.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,300.0	0.00	0.00	9,239.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,400.0	0.00	0.00	9,339.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,500.0	0.00	0.00	9,439.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,600.0	0.00	0.00	9,539.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,700.0	0.00	0.00	9,639.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,800.0	0.00	0.00	9,739.5	-347.0	644.0	-310.2	0.00	0.00	0.00
9,900.0	0.00	0.00	9,839.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,000.0	0.00	0.00	9,939.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,100.0	0.00	0.00	10,039.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,200.0	0.00	0.00	10,139.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,300.0	0.00	0.00	10,239.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,400.0	0.00	0.00	10,339.5	-347.0	644.0	-310.2	0.00	0.00	0.00



Planning Report

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Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
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Wellbore:	OH		
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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,500.0	0.00	0.00	10,439.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,600.0	0.00	0.00	10,539.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,700.0	0.00	0.00	10,639.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,800.0	0.00	0.00	10,739.5	-347.0	644.0	-310.2	0.00	0.00	0.00
10,900.0	0.00	0.00	10,839.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,000.0	0.00	0.00	10,939.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,100.0	0.00	0.00	11,039.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,200.0	0.00	0.00	11,139.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,300.0	0.00	0.00	11,239.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,400.0	0.00	0.00	11,339.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,500.0	0.00	0.00	11,439.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,600.0	0.00	0.00	11,539.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,700.0	0.00	0.00	11,639.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,800.0	0.00	0.00	11,739.5	-347.0	644.0	-310.2	0.00	0.00	0.00
11,900.0	0.00	0.00	11,839.5	-347.0	644.0	-310.2	0.00	0.00	0.00
12,000.0	0.00	0.00	11,939.5	-347.0	644.0	-310.2	0.00	0.00	0.00
12,100.0	0.00	0.00	12,039.5	-347.0	644.0	-310.2	0.00	0.00	0.00
12,200.0	0.00	0.00	12,139.5	-347.0	644.0	-310.2	0.00	0.00	0.00
12,233.0	0.00	0.00	12,172.5	-347.0	644.0	-310.2	0.00	0.00	0.00
12,250.0	2.04	358.85	12,189.5	-346.7	644.0	-309.9	12.00	12.00	0.00
12,275.0	5.04	358.85	12,214.4	-345.2	644.0	-308.3	12.00	12.00	0.00
12,300.0	8.04	358.85	12,239.3	-342.3	643.9	-305.5	12.00	12.00	0.00
12,325.0	11.04	358.85	12,263.9	-338.2	643.8	-301.4	12.00	12.00	0.00
12,350.0	14.04	358.85	12,288.3	-332.7	643.7	-295.9	12.00	12.00	0.00
12,375.0	17.04	358.85	12,312.4	-326.0	643.6	-289.3	12.00	12.00	0.00
12,400.0	20.04	358.85	12,336.1	-318.1	643.4	-281.3	12.00	12.00	0.00
12,425.0	23.04	358.85	12,359.3	-308.9	643.2	-272.2	12.00	12.00	0.00
12,450.0	26.04	358.85	12,382.1	-298.5	643.0	-261.8	12.00	12.00	0.00
12,453.5	26.46	358.85	12,385.2	-297.0	643.0	-260.3	12.00	12.00	0.00
12,475.0	29.04	358.93	12,404.2	-287.0	642.8	-250.3	12.00	12.00	0.36
12,500.0	32.04	359.01	12,425.8	-274.3	642.6	-237.6	12.00	12.00	0.30
12,525.0	35.04	359.07	12,446.6	-260.5	642.3	-223.9	12.00	12.00	0.25
12,550.0	38.04	359.12	12,466.7	-245.6	642.1	-209.0	12.00	12.00	0.22
12,575.0	41.04	359.17	12,486.0	-229.7	641.9	-193.1	12.00	12.00	0.19
12,600.0	44.04	359.21	12,504.4	-212.8	641.6	-176.3	12.00	12.00	0.17
12,625.0	47.04	359.25	12,521.9	-194.9	641.4	-158.5	12.00	12.00	0.15
12,650.0	50.04	359.29	12,538.4	-176.2	641.2	-139.8	12.00	12.00	0.14
12,675.0	53.04	359.32	12,554.0	-156.6	640.9	-120.3	12.00	12.00	0.13
12,700.0	56.04	359.35	12,568.5	-136.3	640.7	-100.0	12.00	12.00	0.12
12,725.0	59.04	359.37	12,581.9	-115.2	640.4	-78.9	12.00	12.00	0.11
12,750.0	62.04	359.40	12,594.2	-93.4	640.2	-57.2	12.00	12.00	0.10
12,775.0	65.04	359.42	12,605.3	-71.0	640.0	-34.9	12.00	12.00	0.10
12,800.0	68.04	359.45	12,615.3	-48.1	639.8	-12.0	12.00	12.00	0.09
12,825.0	71.04	359.47	12,624.0	-24.7	639.5	11.4	12.00	12.00	0.09
12,850.0	74.04	359.49	12,631.5	-0.8	639.3	35.2	12.00	12.00	0.08
12,875.0	77.04	359.51	12,637.8	23.4	639.1	59.3	12.00	12.00	0.08
12,900.0	80.04	359.53	12,642.7	47.9	638.9	83.8	12.00	12.00	0.08
12,925.0	83.04	359.55	12,646.4	72.6	638.7	108.5	12.00	12.00	0.08
12,950.0	86.04	359.57	12,648.8	97.5	638.5	133.3	12.00	12.00	0.08
12,975.0	89.04	359.59	12,649.8	122.4	638.3	158.2	12.00	12.00	0.08
12,983.0	90.00	359.59	12,649.9	130.4	638.3	166.2	12.00	12.00	0.08
13,000.0	90.00	359.59	12,649.9	147.4	638.2	183.2	0.00	0.00	0.00
13,100.0	90.00	359.59	12,649.9	247.4	637.4	283.0	0.00	0.00	0.00
13,200.0	90.00	359.59	12,649.9	347.4	636.7	382.8	0.00	0.00	0.00



Planning Report

Database:	PEDMB	Local Co-ordinate Reference:	Well #901H
Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	kb = 26' @ 3841.0usft
Site:	Date 14 State Com	North Reference:	Grid
Well:	#901H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,300.0	90.00	359.59	12,649.9	447.4	636.0	482.6	0.00	0.00	0.00
13,400.0	90.00	359.59	12,649.9	547.4	635.3	582.4	0.00	0.00	0.00
13,500.0	90.00	359.59	12,649.9	647.4	634.6	682.2	0.00	0.00	0.00
13,600.0	90.00	359.59	12,649.9	747.4	633.9	782.0	0.00	0.00	0.00
13,700.0	90.00	359.59	12,649.9	847.4	633.2	881.8	0.00	0.00	0.00
13,800.0	90.00	359.59	12,649.9	947.4	632.5	981.5	0.00	0.00	0.00
13,900.0	90.00	359.59	12,649.9	1,047.4	631.8	1,081.3	0.00	0.00	0.00
14,000.0	90.00	359.59	12,649.9	1,147.4	631.1	1,181.1	0.00	0.00	0.00
14,100.0	90.00	359.59	12,649.9	1,247.4	630.4	1,280.9	0.00	0.00	0.00
14,200.0	90.00	359.59	12,649.9	1,347.4	629.7	1,380.7	0.00	0.00	0.00
14,300.0	90.00	359.59	12,649.9	1,447.4	629.0	1,480.5	0.00	0.00	0.00
14,400.0	90.00	359.59	12,649.9	1,547.4	628.3	1,580.3	0.00	0.00	0.00
14,500.0	90.00	359.59	12,649.9	1,647.4	627.5	1,680.1	0.00	0.00	0.00
14,600.0	90.00	359.59	12,649.9	1,747.4	626.8	1,779.9	0.00	0.00	0.00
14,700.0	90.00	359.59	12,649.9	1,847.4	626.1	1,879.7	0.00	0.00	0.00
14,800.0	90.00	359.59	12,649.9	1,947.4	625.4	1,979.5	0.00	0.00	0.00
14,900.0	90.00	359.59	12,649.9	2,047.4	624.7	2,079.3	0.00	0.00	0.00
15,000.0	90.00	359.59	12,649.9	2,147.4	624.0	2,179.1	0.00	0.00	0.00
15,100.0	90.00	359.59	12,649.9	2,247.4	623.3	2,278.9	0.00	0.00	0.00
15,200.0	90.00	359.59	12,649.9	2,347.4	622.6	2,378.7	0.00	0.00	0.00
15,300.0	90.00	359.59	12,649.9	2,447.4	621.9	2,478.5	0.00	0.00	0.00
15,400.0	90.00	359.59	12,649.9	2,547.4	621.2	2,578.3	0.00	0.00	0.00
15,500.0	90.00	359.59	12,649.9	2,647.4	620.5	2,678.1	0.00	0.00	0.00
15,600.0	90.00	359.59	12,649.9	2,747.4	619.8	2,777.9	0.00	0.00	0.00
15,700.0	90.00	359.59	12,649.9	2,847.4	619.1	2,877.7	0.00	0.00	0.00
15,800.0	90.00	359.59	12,649.9	2,947.4	618.3	2,977.5	0.00	0.00	0.00
15,900.0	90.00	359.59	12,649.9	3,047.4	617.6	3,077.3	0.00	0.00	0.00
16,000.0	90.00	359.59	12,649.9	3,147.4	616.9	3,177.1	0.00	0.00	0.00
16,100.0	90.00	359.59	12,649.9	3,247.4	616.2	3,276.9	0.00	0.00	0.00
16,200.0	90.00	359.59	12,649.9	3,347.4	615.5	3,376.7	0.00	0.00	0.00
16,300.0	90.00	359.59	12,649.9	3,447.4	614.8	3,476.5	0.00	0.00	0.00
16,400.0	90.00	359.59	12,649.9	3,547.4	614.1	3,576.3	0.00	0.00	0.00
16,500.0	90.00	359.59	12,649.9	3,647.4	613.4	3,676.1	0.00	0.00	0.00
16,600.0	90.00	359.59	12,649.9	3,747.4	612.7	3,775.9	0.00	0.00	0.00
16,700.0	90.00	359.59	12,649.9	3,847.3	612.0	3,875.7	0.00	0.00	0.00
16,800.0	90.00	359.59	12,649.9	3,947.3	611.3	3,975.5	0.00	0.00	0.00
16,900.0	90.00	359.59	12,649.9	4,047.3	610.6	4,075.3	0.00	0.00	0.00
17,000.0	90.00	359.59	12,649.9	4,147.3	609.9	4,175.1	0.00	0.00	0.00
17,100.0	90.00	359.59	12,650.0	4,247.3	609.2	4,274.9	0.00	0.00	0.00
17,200.0	90.00	359.59	12,650.0	4,347.3	608.4	4,374.7	0.00	0.00	0.00
17,300.0	90.00	359.59	12,650.0	4,447.3	607.7	4,474.5	0.00	0.00	0.00
17,400.0	90.00	359.59	12,650.0	4,547.3	607.0	4,574.3	0.00	0.00	0.00
17,500.0	90.00	359.59	12,650.0	4,647.3	606.3	4,674.1	0.00	0.00	0.00
17,600.0	90.00	359.59	12,650.0	4,747.3	605.6	4,773.9	0.00	0.00	0.00
17,700.0	90.00	359.59	12,650.0	4,847.3	604.9	4,873.7	0.00	0.00	0.00
17,800.0	90.00	359.59	12,650.0	4,947.3	604.2	4,973.5	0.00	0.00	0.00
17,900.0	90.00	359.59	12,650.0	5,047.3	603.5	5,073.3	0.00	0.00	0.00
18,000.0	90.00	359.59	12,650.0	5,147.3	602.8	5,173.1	0.00	0.00	0.00
18,100.0	90.00	359.59	12,650.0	5,247.3	602.1	5,272.9	0.00	0.00	0.00
18,200.0	90.00	359.59	12,650.0	5,347.3	601.4	5,372.7	0.00	0.00	0.00
18,300.0	90.00	359.59	12,650.0	5,447.3	600.7	5,472.5	0.00	0.00	0.00
18,400.0	90.00	359.59	12,650.0	5,547.3	600.0	5,572.3	0.00	0.00	0.00
18,500.0	90.00	359.59	12,650.0	5,647.3	599.3	5,672.1	0.00	0.00	0.00
18,600.0	90.00	359.59	12,650.0	5,747.3	598.5	5,771.9	0.00	0.00	0.00



Planning Report

Database:	PEDMB	Local Co-ordinate Reference:	Well #901H
Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	kb = 26' @ 3841.0usft
Site:	Date 14 State Com	North Reference:	Grid
Well:	#901H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

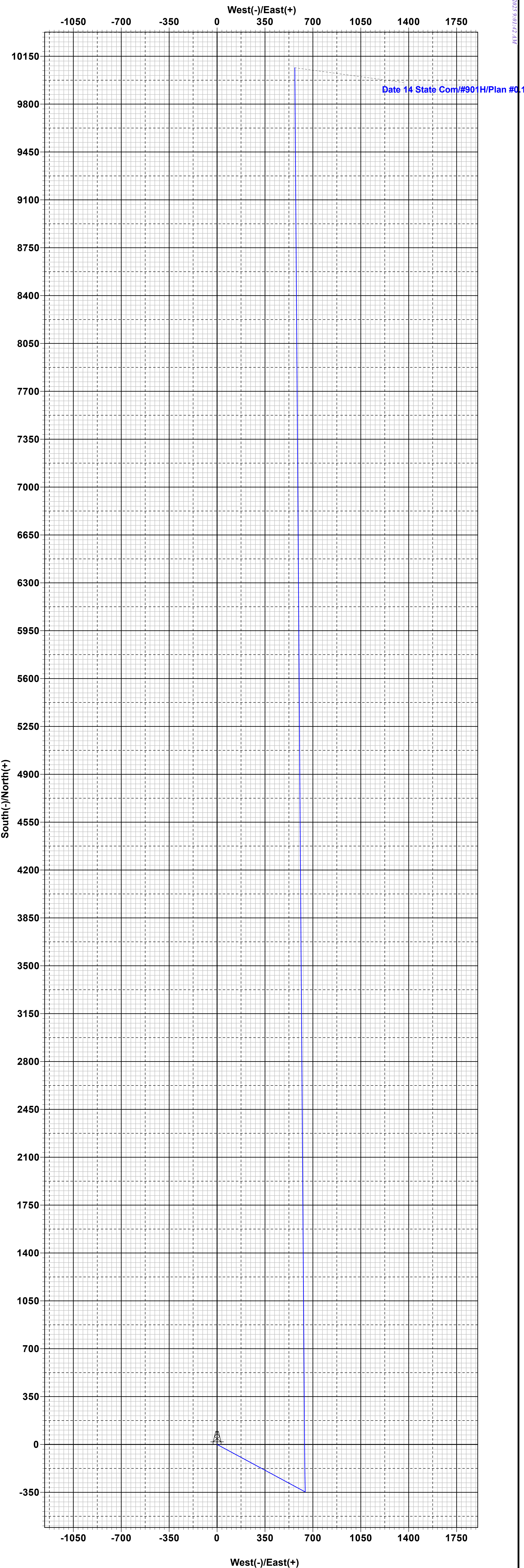
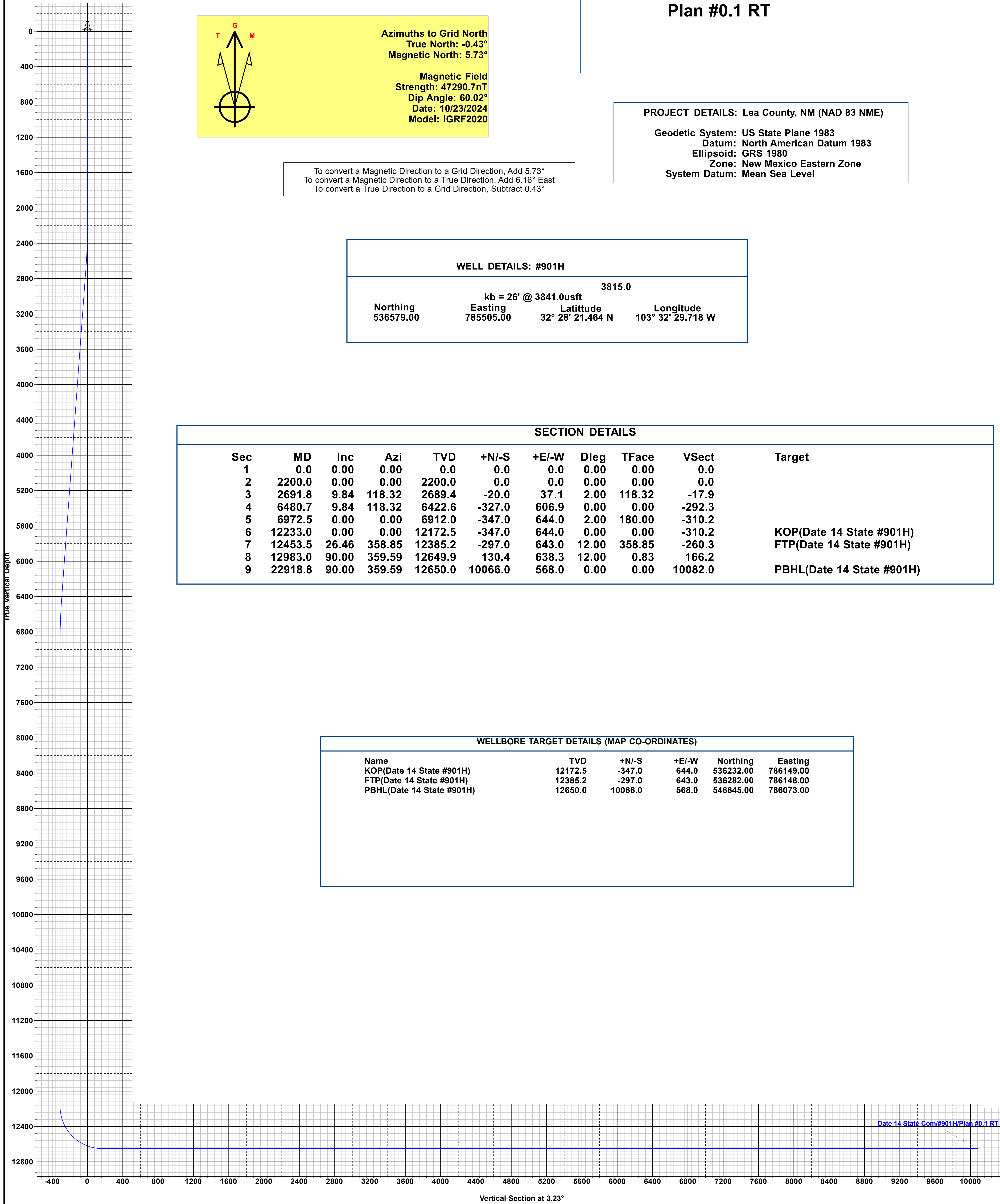
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,700.0	90.00	359.59	12,650.0	5,847.3	597.8	5,871.7	0.00	0.00	0.00
18,800.0	90.00	359.59	12,650.0	5,947.3	597.1	5,971.5	0.00	0.00	0.00
18,900.0	90.00	359.59	12,650.0	6,047.3	596.4	6,071.3	0.00	0.00	0.00
19,000.0	90.00	359.59	12,650.0	6,147.3	595.7	6,171.1	0.00	0.00	0.00
19,100.0	90.00	359.59	12,650.0	6,247.3	595.0	6,270.9	0.00	0.00	0.00
19,200.0	90.00	359.59	12,650.0	6,347.3	594.3	6,370.7	0.00	0.00	0.00
19,300.0	90.00	359.59	12,650.0	6,447.3	593.6	6,470.5	0.00	0.00	0.00
19,400.0	90.00	359.59	12,650.0	6,547.3	592.9	6,570.3	0.00	0.00	0.00
19,500.0	90.00	359.59	12,650.0	6,647.3	592.2	6,670.1	0.00	0.00	0.00
19,600.0	90.00	359.59	12,650.0	6,747.3	591.5	6,769.9	0.00	0.00	0.00
19,700.0	90.00	359.59	12,650.0	6,847.3	590.8	6,869.7	0.00	0.00	0.00
19,800.0	90.00	359.59	12,650.0	6,947.3	590.1	6,969.5	0.00	0.00	0.00
19,900.0	90.00	359.59	12,650.0	7,047.3	589.4	7,069.3	0.00	0.00	0.00
20,000.0	90.00	359.59	12,650.0	7,147.3	588.6	7,169.1	0.00	0.00	0.00
20,100.0	90.00	359.59	12,650.0	7,247.3	587.9	7,268.9	0.00	0.00	0.00
20,200.0	90.00	359.59	12,650.0	7,347.3	587.2	7,368.7	0.00	0.00	0.00
20,300.0	90.00	359.59	12,650.0	7,447.3	586.5	7,468.5	0.00	0.00	0.00
20,400.0	90.00	359.59	12,650.0	7,547.3	585.8	7,568.3	0.00	0.00	0.00
20,500.0	90.00	359.59	12,650.0	7,647.3	585.1	7,668.1	0.00	0.00	0.00
20,600.0	90.00	359.59	12,650.0	7,747.3	584.4	7,767.9	0.00	0.00	0.00
20,700.0	90.00	359.59	12,650.0	7,847.2	583.7	7,867.7	0.00	0.00	0.00
20,800.0	90.00	359.59	12,650.0	7,947.2	583.0	7,967.5	0.00	0.00	0.00
20,900.0	90.00	359.59	12,650.0	8,047.2	582.3	8,067.3	0.00	0.00	0.00
21,000.0	90.00	359.59	12,650.0	8,147.2	581.6	8,167.1	0.00	0.00	0.00
21,100.0	90.00	359.59	12,650.0	8,247.2	580.9	8,266.9	0.00	0.00	0.00
21,200.0	90.00	359.59	12,650.0	8,347.2	580.2	8,366.7	0.00	0.00	0.00
21,300.0	90.00	359.59	12,650.0	8,447.2	579.4	8,466.5	0.00	0.00	0.00
21,400.0	90.00	359.59	12,650.0	8,547.2	578.7	8,566.3	0.00	0.00	0.00
21,500.0	90.00	359.59	12,650.0	8,647.2	578.0	8,666.1	0.00	0.00	0.00
21,600.0	90.00	359.59	12,650.0	8,747.2	577.3	8,765.9	0.00	0.00	0.00
21,700.0	90.00	359.59	12,650.0	8,847.2	576.6	8,865.7	0.00	0.00	0.00
21,800.0	90.00	359.59	12,650.0	8,947.2	575.9	8,965.5	0.00	0.00	0.00
21,900.0	90.00	359.59	12,650.0	9,047.2	575.2	9,065.3	0.00	0.00	0.00
22,000.0	90.00	359.59	12,650.0	9,147.2	574.5	9,165.1	0.00	0.00	0.00
22,100.0	90.00	359.59	12,650.0	9,247.2	573.8	9,264.9	0.00	0.00	0.00
22,200.0	90.00	359.59	12,650.0	9,347.2	573.1	9,364.7	0.00	0.00	0.00
22,300.0	90.00	359.59	12,650.0	9,447.2	572.4	9,464.5	0.00	0.00	0.00
22,400.0	90.00	359.59	12,650.0	9,547.2	571.7	9,564.2	0.00	0.00	0.00
22,500.0	90.00	359.59	12,650.0	9,647.2	571.0	9,664.0	0.00	0.00	0.00
22,600.0	90.00	359.59	12,650.0	9,747.2	570.3	9,763.8	0.00	0.00	0.00
22,700.0	90.00	359.59	12,650.0	9,847.2	569.5	9,863.6	0.00	0.00	0.00
22,800.0	90.00	359.59	12,650.0	9,947.2	568.8	9,963.4	0.00	0.00	0.00
22,900.0	90.00	359.59	12,650.0	10,047.2	568.1	10,063.2	0.00	0.00	0.00
22,918.8	90.00	359.59	12,650.0	10,066.0	568.0	10,082.0	0.00	0.00	0.00



Planning Report

Database:	PEDMB	Local Co-ordinate Reference:	Well #901H
Company:	Midland	TVD Reference:	kb = 26' @ 3841.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	kb = 26' @ 3841.0usft
Site:	Date 14 State Com	North Reference:	Grid
Well:	#901H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
KOP(Date 14 State #901 - plan hits target center - Point	0.00	0.00	12,172.5	-347.0	644.0	536,232.00	786,149.00	32° 28' 17.983 N	103° 32' 22.231 W
FTP(Date 14 State #901 - plan hits target center - Point	0.00	0.00	12,385.2	-297.0	643.0	536,282.00	786,148.00	32° 28' 18.478 N	103° 32' 22.238 W
PBHL(Date 14 State #901 - plan hits target center - Point	0.00	0.00	12,650.0	10,066.0	568.0	546,645.00	786,073.00	32° 30' 1.022 N	103° 32' 22.214 W

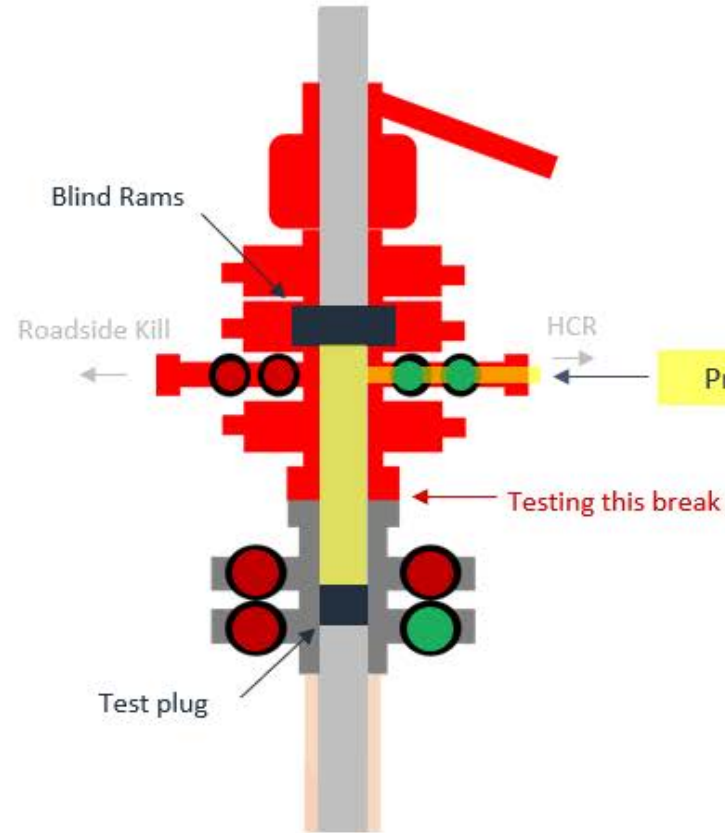
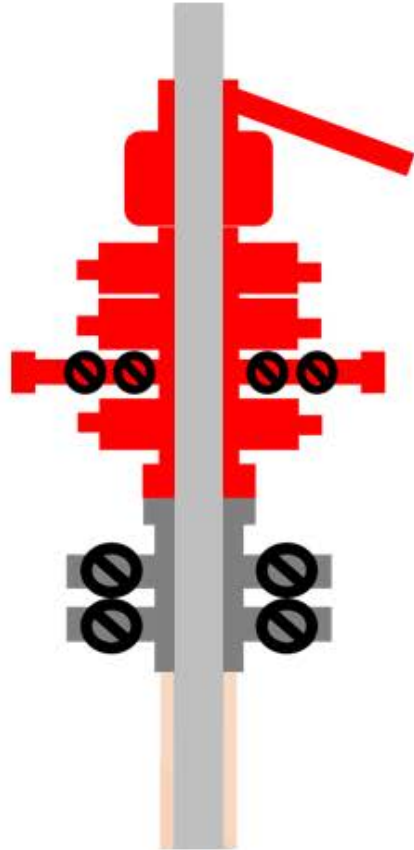
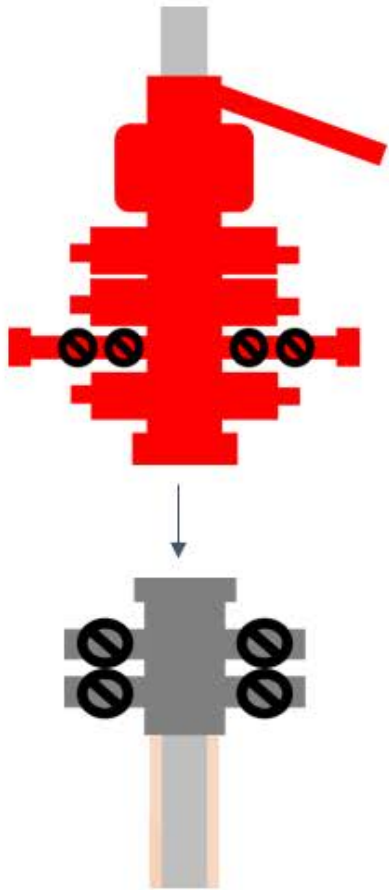


**Break-test BOP & Offline Cementing:**

EOG Resources Inc. (EOG) respectfully requests a variance from the minimum standards for well control equipment testing of ECFR Title 43 Part 3172.6(b)(9)(iv) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with Batch Drilling & Offline cement operations to include the following:

- Full BOPE test at first installation on the pad.
- Full BOPE test every 30 days.
- This test will be conducted for 5M rated hole intervals only.
- Each rig requesting the break-test variance is capable of picking up the BOP without damaging components using winches, following API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth edition, December 2018, Annex C. Table C.4) which recognizes break testing as an acceptable practice.
- Function tests will be performed on the following BOP elements:
 - Annular → during each full BOPE test
 - Upper Pipe Rams → On trip ins where FIT required
 - Blind Rams → Every trip
 - Lower Pipe Rams → during each full BOPE test
- Break testing BOP and BOPE coupled with batch drilling operations and option to offline cement and/or remediate (if needed) any surface or intermediate sections, according to attached offline cementing support documentation.
- After the well section is secured, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad.
- TA cap will also be installed per Wellhead vendor procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

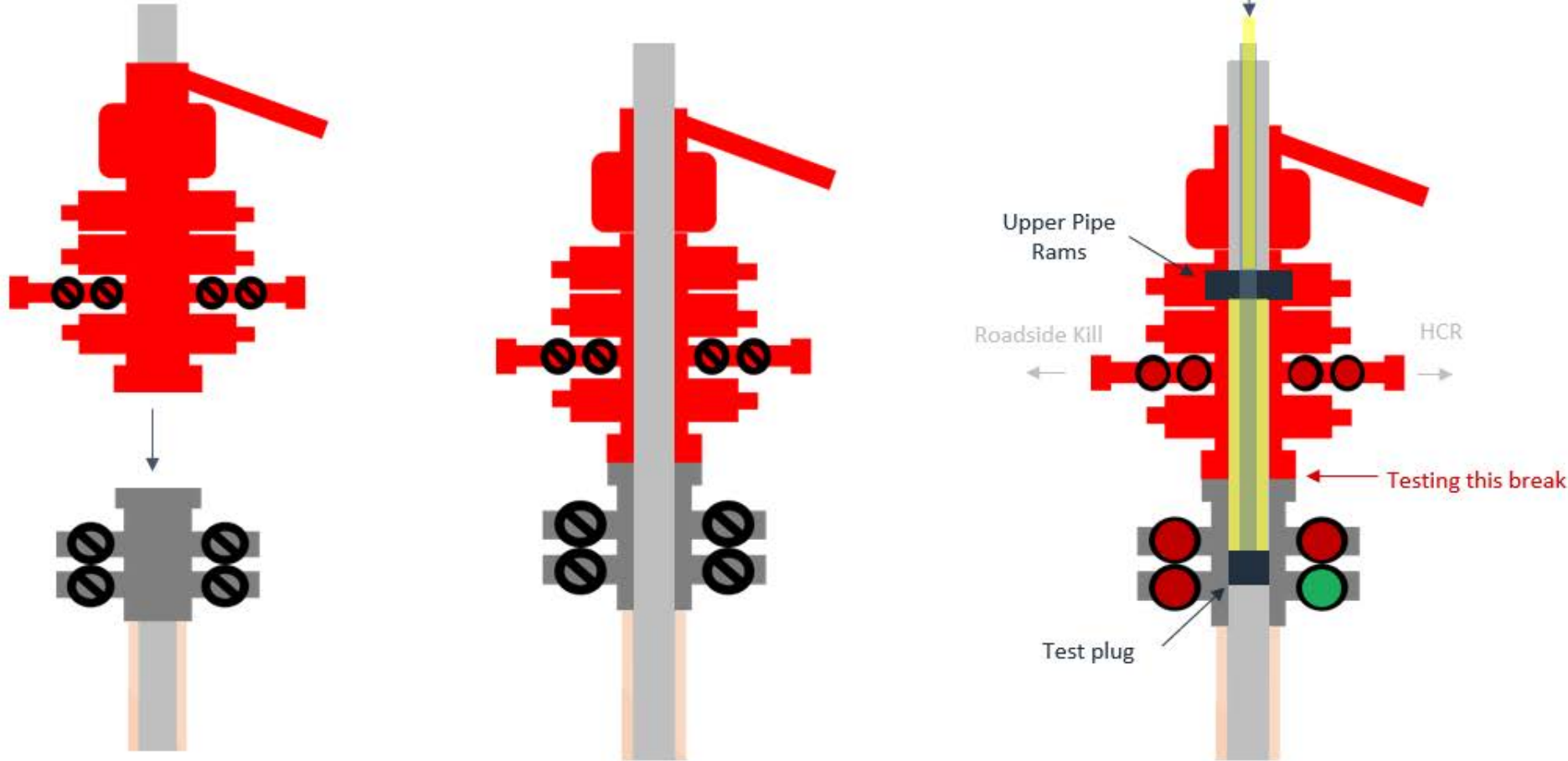
Break Test Diagram (HCR valve)



Steps

1. Set plug in wellhead (lower barrier)
2. Close Blind Rams (upper barrier)
3. Close roadside kill
4. Open HCR (pressure application)
5. Open wellhead valves below test plug to ensure if leak past test plug, pressure won't be applied to wellbore
6. Tie BOP testers high pressure line to main choke manifold crown valve
7. Pressure up to test break
8. Bleed test pressure from BOP testing unit

Break Test Diagram (Test Joint)



Steps

1. Set plug in with test joint wellhead (lower barrier)
2. Close Upper Pipe Rams (upper barrier)
3. Close roadside kill
4. Close HCR
5. Open wellhead valves below test plug to ensure if leak past test plug, pressure won't be applied to wellbore
6. Tie BOP testers high pressure line to top of test joint
7. Pressure up to test break
8. Bleed test pressure from BOP testing unit



5509 Champions Drive, Midland, Texas 79706
Phone: (432) 686-3661 Fax: (432) 686-6961

February 18, 2025

SENT VIA EMAIL & FEDEX

New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division – Hobbs District
Attn: Paul Kautz
1625 N. French Drive
Hobbs, NM 88240

RE: R-111-P Potash Area – Statement from Operator
Date 14 State Com #204H, #205H, #504H, #505H, #603H, #604H, #605H, #801H,
#901H
Sections 11 & 14, 21S-33E, Lea County, NM

Dear Mr. Kautz,

EOG has reviewed the area surrounding the subject sections for the purpose of identifying Potash Leases within a one (1) mile radius of the pending subject well APDs.

The records maintained by the Lea County Clerk's Office, Lea County, NM online records, the map in the Mineral & Land Records System of the Bureau of Land Management, the New Mexico Oil Conservation Division Map, the New Mexico State Land Office Lease Portal, and the New Mexico State Land Office Land Status Map were used to make this determination.

As of the date of this letter, EOG finds no active Potash Leases within a one (1) mile radius of the subject sections. If you have any questions or concerns, please give me a call or send me an email.

Sincerely,

EOG Resources, Inc.

Bella Sikes

Bella Sikes | Landman
432.236.1283
Bella_Sikes@eogresources.com