District I
1625 N. French Dr., Hobbs, NM 88240
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District II
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Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
August 1, 2011

Permit 351930

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

1. Operator Name and Address	2. OGRID Number
Permian Resources Operating, LLC 1001 17th Street, Suite 1800 Denver, CO 80202	372165
	3. API Number 30-015-54320

4. Property Code	5. Property Name	6. Well No.
334791	MADERA 9 STATE COM	121H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
H	9	19S	28E		1567	N	220	E	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
D	8	19S	28E	D	660	N	10	W	Eddy

9. Pool Information

WINCHESTER; BONE SPRING, WEST	97569

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	OIL		State	3538
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	17445	2nd Bone Spring Sand		11/1/2023
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	17.5	13.375	54.5	160	130	0
Int1	12.25	9.625	36	2750	700	0
Prod	7.875	5.5	17	17445	1390	6850
Prod	8.75	5.5	17	7750	660	2250

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Pipe	10000	5000	CAMERON

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:		**OIL CONSERVATION DIVISION**	
Printed Name:	Electronically filed by Kanicia Schlichting	Approved By:	Ward Rikala
Title:	Regulatory Specialist	Title:	
Email Address:	Kanicia.Schlichting@permianres.com	Approved Date: 10/12/2023	Expiration Date: 10/12/2025
Date: 10/10/2023	Phone: 432-232-2875	Conditions of Approval Attached	

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-54320	[97569]	WINCHESTER; BONE SPRING, WEST
[4] Property Code	**[5] Property Name**	**[6] Well Number**
334791	MADERA 9 STATE COM	121H
[7] OGRID No.	**[8] Operator Name**	**[9] Elevation**
372165	PERMIAN RESOURCES OPERATING, LLC	3537.5'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	9	19S	28E		1567	NORTH	220	EAST	EDDY

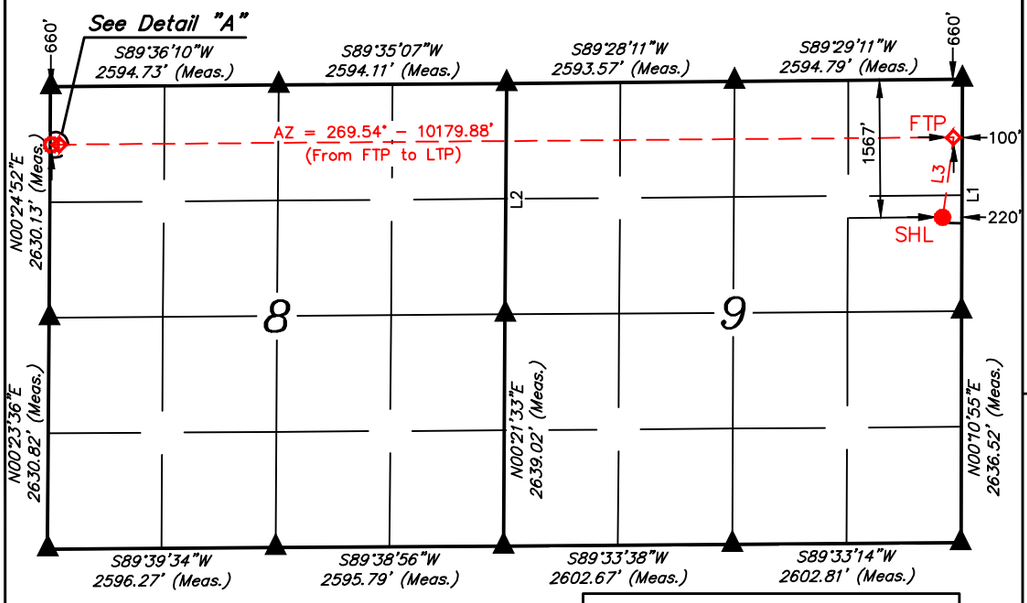
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	8	19S	28E		660	NORTH	10	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320.00			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N00°10'48"E	2636.80'
L2	N00°22'37"E	2627.33'

WELL BORE LINE TABLE		
LINE	DIRECTION	LENGTH
L3	AZ = 7.70°	916.63'

NOTE:
- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

[17] OPERATOR CERTIFICATION

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

Signature 9/29/2023 Date

Ashley Brown
Printed Name

ashley.brown@permianres.com
E-mail Address

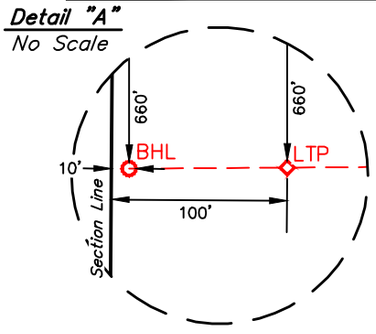
[18] SURVEYOR CERTIFICATION

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

July 10, 2023
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number:



NAD 83 (SURFACE HOLE LOCATION)	NAD 83 (FIRST TAKE POINT)
LATITUDE = 32°40'41.14" (32.678096°)	LATITUDE = 32°40'50.13" (32.680593°)
LONGITUDE = -104°10'23.82" (-104.173283°)	LONGITUDE = -104°10'22.41" (-104.172892°)
NAD 27 (SURFACE HOLE LOCATION)	**NAD 27 (FIRST TAKE POINT)**
LATITUDE = 32°40'40.73" (32.677979°)	LATITUDE = 32°40'49.71" (32.680476°)
LONGITUDE = -104°10'21.99" (-104.172774°)	LONGITUDE = -104°10'20.58" (-104.172382°)
STATE PLANE NAD 83 (N.M. EAST)	**STATE PLANE NAD 83 (N.M. EAST)**
N: 610459.50' E: 590582.57'	N: 611368.17' E: 590701.57'
STATE PLANE NAD 27 (N.M. EAST)	**STATE PLANE NAD 27 (N.M. EAST)**
N: 610397.28' E: 549402.94'	N: 611305.92' E: 549521.95'
NAD 83 (LAST TAKE POINT)	**NAD 83 (BOTTOM HOLE LOCATION)**
LATITUDE = 32°40'49.03" (32.680286°)	LATITUDE = 32°40'49.02" (32.680283°)
LONGITUDE = -104°12'21.49" (-104.205968°)	LONGITUDE = -104°12'22.54" (-104.206261°)
NAD 27 (LAST TAKE POINT)	**NAD 27 (BOTTOM HOLE LOCATION)**
LATITUDE = 32°40'48.61" (32.680169°)	LATITUDE = 32°40'48.60" (32.680167°)
LONGITUDE = -104°12'19.65" (-104.205458°)	LONGITUDE = -104°12'20.70" (-104.205751°)
STATE PLANE NAD 83 (N.M. EAST)	**STATE PLANE NAD 83 (N.M. EAST)**
N: 611242.58' E: 580524.82'	N: 611241.57' E: 580434.84'
STATE PLANE NAD 27 (N.M. EAST)	**STATE PLANE NAD 27 (N.M. EAST)**
N: 611180.41' E: 539345.19'	N: 611179.40' E: 539255.21'

● = SURFACE HOLE LOCATION.
◇ = TAKE POINT.
○ = BOTTOM HOLE LOCATION.
▲ = SECTION CORNER LOCATED.

2000' 1000' 0' 2000'

DRAWN BY: N.D.T. 07-20-23
REV: 1 08-27-23 C.D.L.
(UPDATE WELLBORE PATH)

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

Form APD Conditions

Permit 351930

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
Permian Resources Operating, LLC [372165] 1001 17th Street, Suite 1800 Denver, CO 80202	30-015-54320
	Well: MADERA 9 STATE COM #121H

OCD Reviewer	Condition
ward.rikala	Notify OCD 24 hours prior to casing & cement
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ward.rikala	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
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing
ward.rikala	If cement does not circulate on any string , a CBL is required for that string of casing.
ward.rikala	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
ward.rikala	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
ward.rikala	Surface casing shall be sat and cemented a minimum of 25' below the Rustler but above any salt.

State of New Mexico
Energy, Minerals and Natural Resources Department

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: Permian Resources Operating, LLC **OGRID:** 372165 **Date:** 8/30/2023

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	Anticipated Gas	Anticipated Prod Water
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						

IV. Central Delivery Point Name: Blackhawk/Black Cat 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 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
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						

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

VII. Operations 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 Name	API	Anticipated Average Natural Gas Rate	Anticipated Volume of Natural Gas for the First Year
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]
[redacted]		[redacted]	[redacted]

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Volume of Natural Gas for the First Year
LM Energy	LM Touchdown Gathering System	I-9-19S-28E	8/16/2024	28 MMcfd

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 system(s) to which the well(s) will be connected.

XII. Line Capacity. 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 attached 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, not 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 and update for each Natural Gas Management Plan until the Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.
   - **(c)** OCD may deny or conditionally approve and 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, 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:	Tinlee Via
Printed Name:	Tinlee Via
Title:	Contract Drilling Engineer
E-mail Address:	tinlee.via@permianres.com
Date:	9/29/2023
Phone:	512-755-6018

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

Permian Resources Operating, LLC (372165)

Natural Gas Management Plan Descriptions

VI. Separation Equipment:

Permian Resources Operating, LLC (Permian) utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations. Our goal is to maintain 5 minutes of retention time in the test vessel and 20 minutes in the heater treater at peak production rates. The gas produced is routed from the separator to the gas sales line.

VII. Operational Practices:

Drilling

During Permian's drilling operations it is uncommon for venting or flaring to occur. If flaring is needed due to safety concerns, gas will be routed to a flare and volumes will be estimated.

Flowback

During completion/recompletion flowback operations, after separation flowback begins and as soon as it is technically feasible, Permian routes gas though a permanent separator and the controlled facility where the gas is either sold or flared through a high-pressure flare if needed.

Production

Per 19.15.27.8.D, Permian's facilities are designed to minimize waste. Our produced gas will only be vented or flared in an emergency or malfunction situation, except as allowed for normal operations noted in 19.15.27.8.D(2) & (4). All gas that is flared is metered. All gas that may be vented will be estimated.

Performance Standards

Permian utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations.

All of Permian's permanent storage tanks associated with production operations which are routed to a flare or control device are equipped with an automatic gauging system.

All of Permian's flare stacks, both currently installed and for future installation, are:

1) Appropriately sized and designed to ensure proper combustion effciency.

2)Equipped with an automatic ignitor or continuous pilot.

3) Anchored and located at least 100 feet from the well and storage tanks.

Permian's field operations and HSE teams have implemented an AVO inspection schedule that adheres to the requirements of 19.15.27.8.E(5).

All of our operations and facilities are designed to minimize waste. We routinely employ the following methods and practices:

- Closed-loop systems
- Enclosed and properly sized tanks

- Vapor recovery units to maximize recovery of low-pressure gas streams and potential unauthorized emissions
- Low-emitting or electric engines whenever practical
- Combustors and flare stacks in the event of a malfunction or emergency
- Routine facility inspections to identify leaking components, functioning control devices, such as flares and combustors, and repair / replacement of malfunctioning components where applicable

Measurement or estimation

Permian measures or estimates the volumes of natural gas vented, flared and/or beneficially used for all of our drilling, completing and producing wells. We utilize accepted industry standards and methodology which can be independently verified. Annual GOR testing is completed on our wells and will be submitted as required by the OCD. None of our equipment is designed to allow diversion around metering elements except during inspection, maintenance and repair operations.

VIII. Best Management Practices:

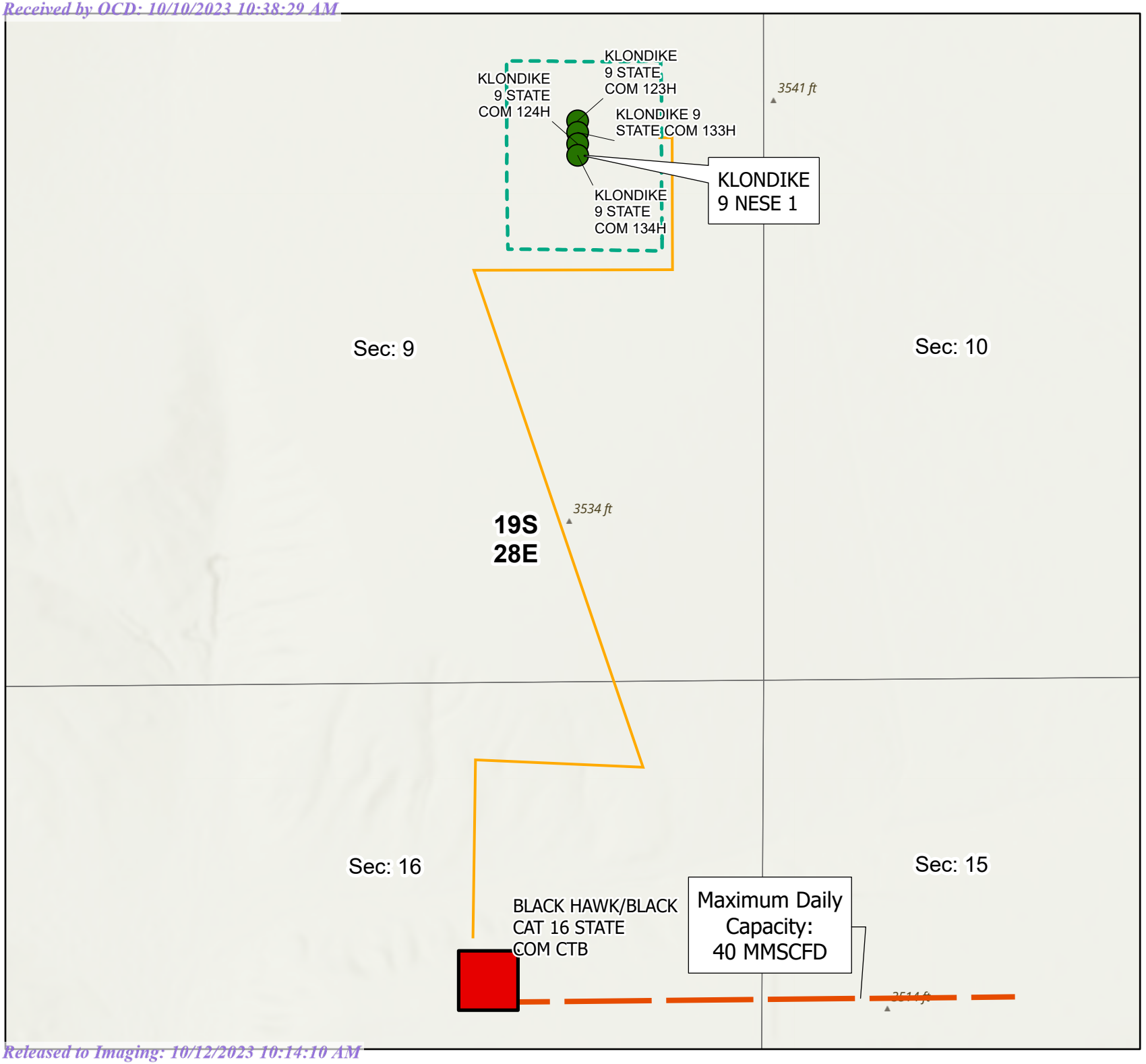
Permian Resources utilizes the following BMPs to minimize venting during active and planned maintenance activities:

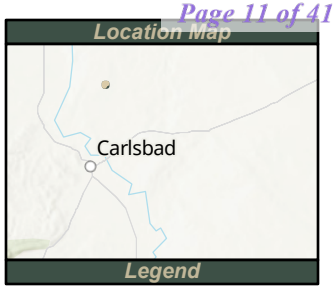
- Use a closed-loop process wherever possible during planned maintenance activities, such as blowdowns, liquid removal, and work over operations.
- Employ low-emitting or electric engines for equipment, such as compressors
- Adhere to a strict preventative maintenance program which includes routine facility inspections, identification of component malfunctions, and repairing or replacing components such as hatches, seals, valves, etc. where applicable
- Utilize vapor recovery units (VRU's) to maximize recovery of volumes of low-pressure gas streams and potential unauthorized emissions
- Route low pressure gas and emissions streams to a combustion device to prevent venting where necessary

Enhanced Natural Gas Management Plan

Operator's Plan to Manage Production in Response to Increased Line Pressure

Permian Resources Operating, LLC (Permian) anticipates that its existing wells connected to the same portion of the natural gas gathering system will continue to meet anticipated increases in line pressure caused by the new wells. Permian will actively monitor line pressure throughout the field and will make necessary adjustments to existing production separators' pressures to send gas to sales. Permian also plans to implement automated alarms on all flare meters to alert of flaring events as they occur. The alarms will send notifications to field operations and engineering staff via text message and email at every occurrence of flaring. In addition, Permian plans to implement automated alarms on all flare meters to alert of any continuous flaring event that has continued for at least 4 hours. The alarms will send notifications to field operations and engineering management. Permian personnel will promptly respond to these alarms, communicate with midstream partners, and take the appropriate action to reduce flaring caused by high line pressure from new well production.





Legend

- SHL
- Well Pad
- CTB Facility
- Est. Gas Takeaway
- Flowlines

N
W E
S

0 75 150 300 Feet

Spatial Reference
Name: GCS North American 1983
GCS: GCS North American 1983
Datum: North American 1983
Map Units: Degree

This map and its contents are not a legal surveyed document. It is meant for the use of Permian Resources and its employees and cannot be shared without expressed written authorization.

PERMIAN RESOURCES

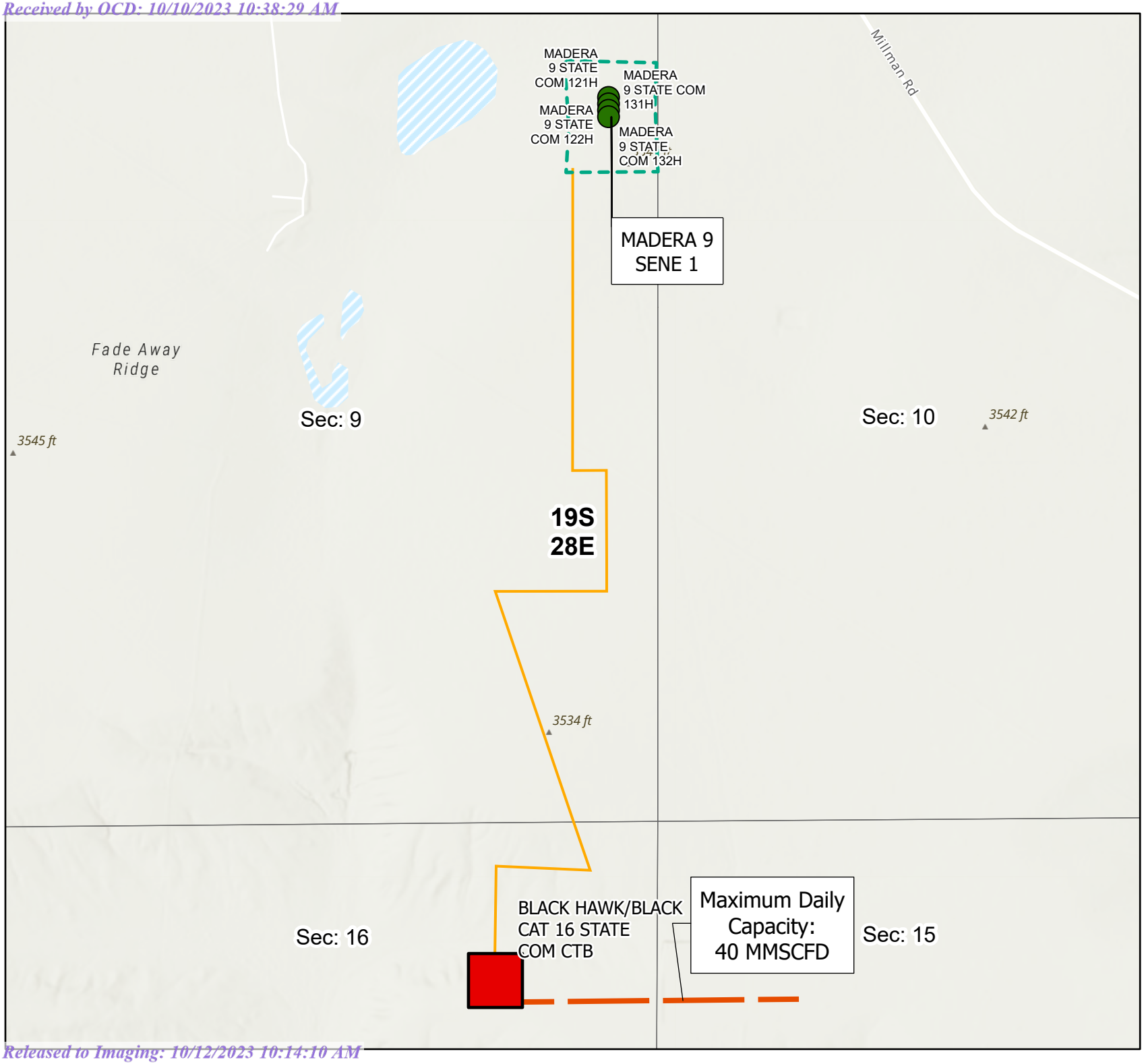
NM APD NGMP
Klondike 9 State Com 123H/124H/ 133H/134H

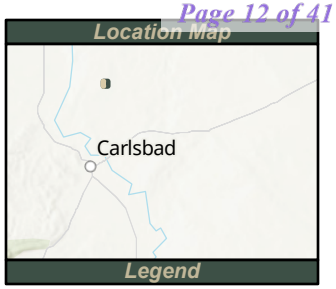
Eddy County, New Mexico

Created Date: 08/01/23 Revised Date: 9/7/2023

Author: A. Brown Drafter: T. Douglass

Path: X:\GIS\CorpProjects\Regulatory\NM_APD\Projects\NGMP_APD.aprx





Legend

- SHL
- Well Pad
- Est. Gas Takeaway
- Flowlines
- CTB Facility

N
W E
S

0 75 150 300
Feet

Spatial Reference
Name: GCS North American 1983
GCS: GCS North American 1983
Datum: North American 1983
Map Units: Degree

PERMIAN RESOURCES

NM APD NGMP
Madera 9 State Com 121H/122H/ 131H/132H

Eddy County, New Mexico

Created Date: 08/01/23 Revised Date: 9/7/2023

Author: A. Brown Drafter: T. Douglass

Path: X:\GIS\CorpProjects\Regulatory\NM_APD\Projects\NGMP_APD.aprx

Permian Resources - Madera 9 State Com 121H

1. Geologic Formations

Formation	Lithology	Elevation	TVD	Target
Rustler	Sandstone	3430	138	No
Top of Salt	Salt	3190	378	No
Capitan	Limestone	NP	NP	No
Tansill	Anhydrite/Shale	2958	610	No
Yates	Anhydrite/Shale	2800	768	No
Seven Rivers	Limestone	2430	1138	No
Queen	Limestone	NP	NP	No
Grayburg	Limestone	NP	NP	No
Delaware Sands	Sandstone	720	2848	No
BYCN	Sandstone	600	2968	No
Bone Spring Lime	Limestone/Shale	200	3368	No
1st Bone Spring Sand	Sandstone/Limestone/Shale	-2500	6068	No
2nd Bone Spring Sand	Sandstone/Limestone/Shale	-3540	7108	Yes
3rd Bone Spring Sand	Sandstone/Limestone/Shale	-4700	8268	No
Wolfcamp	Shale	-5060	8628	No

2. Blowout Prevention

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12.25	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
8.75	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		

Equipment: BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing;

Requesting Variance? YES
Variance request: Flex hose and offline cement variances, see attachments in section 8.
Testing Procedure: The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Choke Diagram Attachemnt: 5 M Choe Manifold
BOP Diagram Attachment: BOP Schematic

3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	160	0	160	160	J55	54.5	BTC	14.30	3.93	Dry	8.36	Dry	7.85
Intermediate	12.25	9.625	0	2750	0	2750	2750	J55	36	BTC	3.12	1.71	Dry	3.21	Dry	2.83
Production	8.75	5.5	0	7750	0	7328	7750	P110RY	17	GeoConn	1.96	2.05	Dry	2.43	Dry	2.43
Production	7.875	5.5	7750	17445	7328	7328	9695	P110RY	17	GeoConn	1.96	2.05	Dry	2.43	Dry	2.43
								BLM Min Safety Factor			1.125	1		1.6		1.6

Non API casing spec sheets and casing design assumptions attached.

4. Cement

String	Lead/Tail	Top MD	Bottom MD	Quanity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	160	130	1.34	14.8	170	50%	Class C	Accelerator
Intermediate	Lead	0	2200	500	2.08	12.7	1020	50%	Class C	Salt, Extender, and LCM
Intermediate	Tail	2200	2750	200	1.34	14.8	260	50%	Class C	Accelerator
Production	Lead	2250	6850	660	2.41	11.5	1590	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	6850	17445	1390	1.73	12.5	2390	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

5. Circulating Medium

Mud System Type: Closed
Will an air or gas system be used: No
Describe what will be on location to control well or mitigate oter conditions: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

Cuttings Volume: 7760 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	160	Water Based Mud	8.6	9.5
160	2750	Salt Saturated	10	10
2750	7750	Brine	9	10
7750	17445	OBM	9	10

6. Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:
Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.
List of open and cased hole logs run in the well:
DIRECTIONAL SURVEY,GAMMA RAY LOG,
Coring operation description for the well:
N/A

7. Pressure

Anticipated Bottom Hole Pressure	3820	psi
Anticipated Surface Pressure	2198.4	psi
Anticipated Bottom Hole Temperature	131	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

8. Waste Management

Waste Type:	**Drilling**
Waste content description:	Fresh water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Weekly (after drilling all surfaces)
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	**Grey Water & Human Waste**
Waste content description:	Grey Water/Human Waste
Amount of waste:	5000 gallons
Waste disposal frequency:	Weekly
Safe containment description:	Approved waste storage tanks with containment
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	**Garbage**
Waste content description:	General trash/garbage
Amount of waste:	5000 lbs
Waste disposal frequency:	Weekly
Safe containment description:	Enclosed trash trailer
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	**Drilling**
Waste content description:	Drill Cuttings
Amount of waste:	7760 Cu Ft
Waste disposal frequency:	Per well
Safe containment description:	Steel tanks
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	**Drilling**
Waste content description:	Brine water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Monthly
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial

9. Other Information

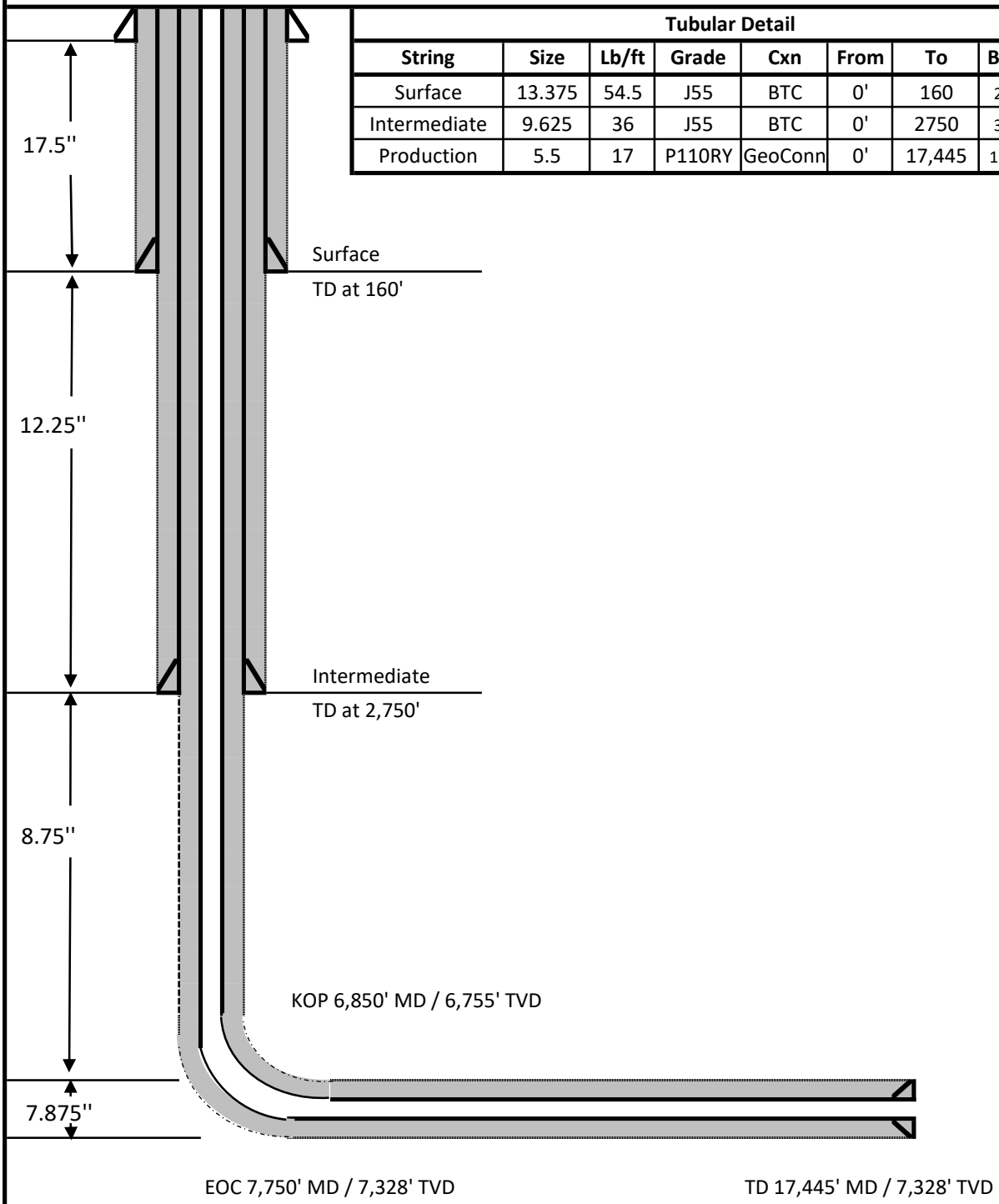
Well Plan and AC Report: attached
Batching Drilling Procedure: attached
WBD: attached
Flex Hose Specs: attached
Offline Cementing Procedure Attached:

Permian Resources

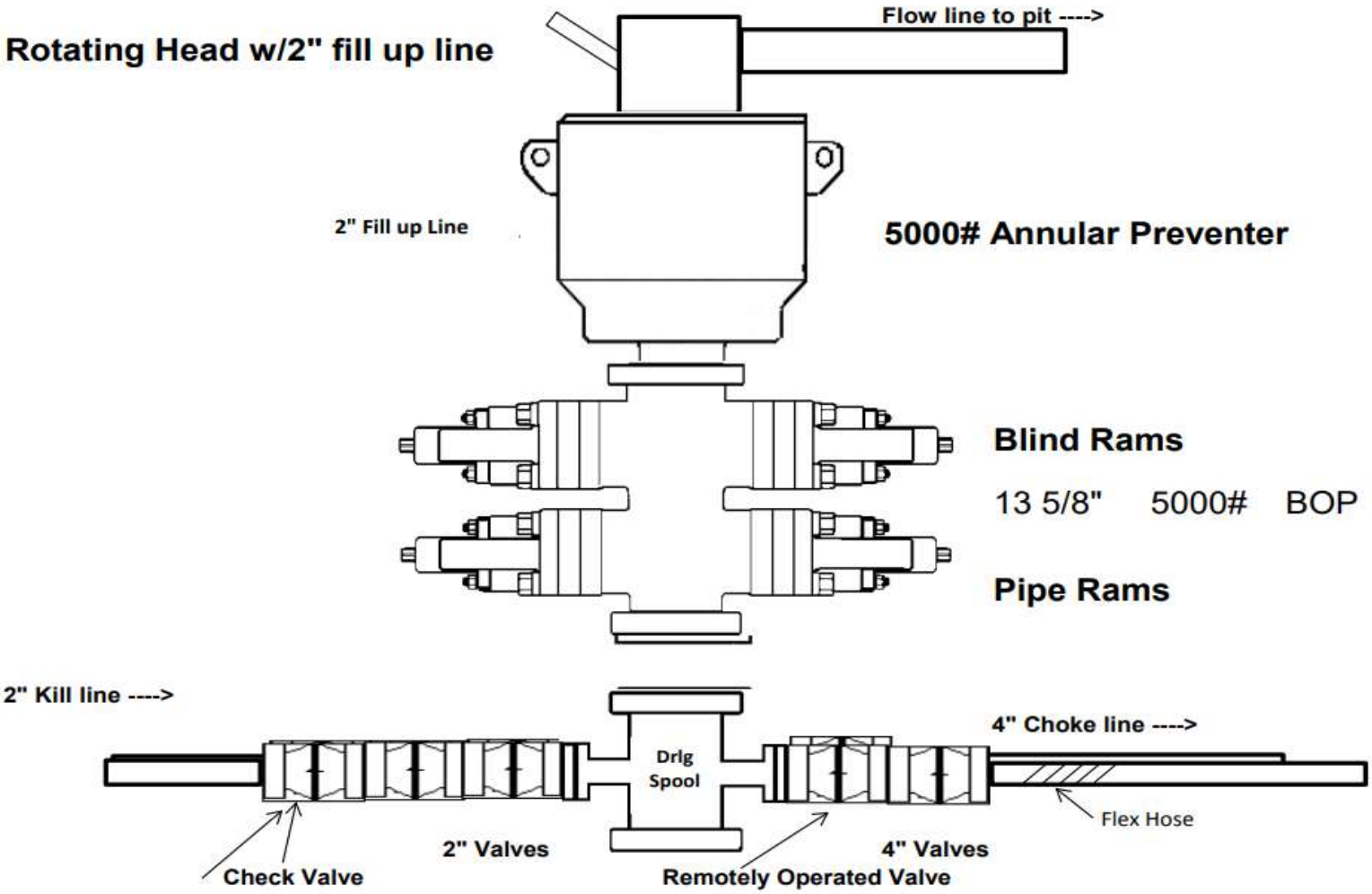
Well: Madera 9 State Com 121H
State New Mexico **County:** Eddy
FM Target: 2nd Bone Spring Sand
Location: Lot H, Section 9, T19S, R28E, 1567' FNL, 220' FEL
BHL: Lot D, Section 8, T19S, R28E, 330' FNL, 10' FWL
KB Elev: 3568 **KB:** 30 **GL Elev:** 3538

Tubular Detail

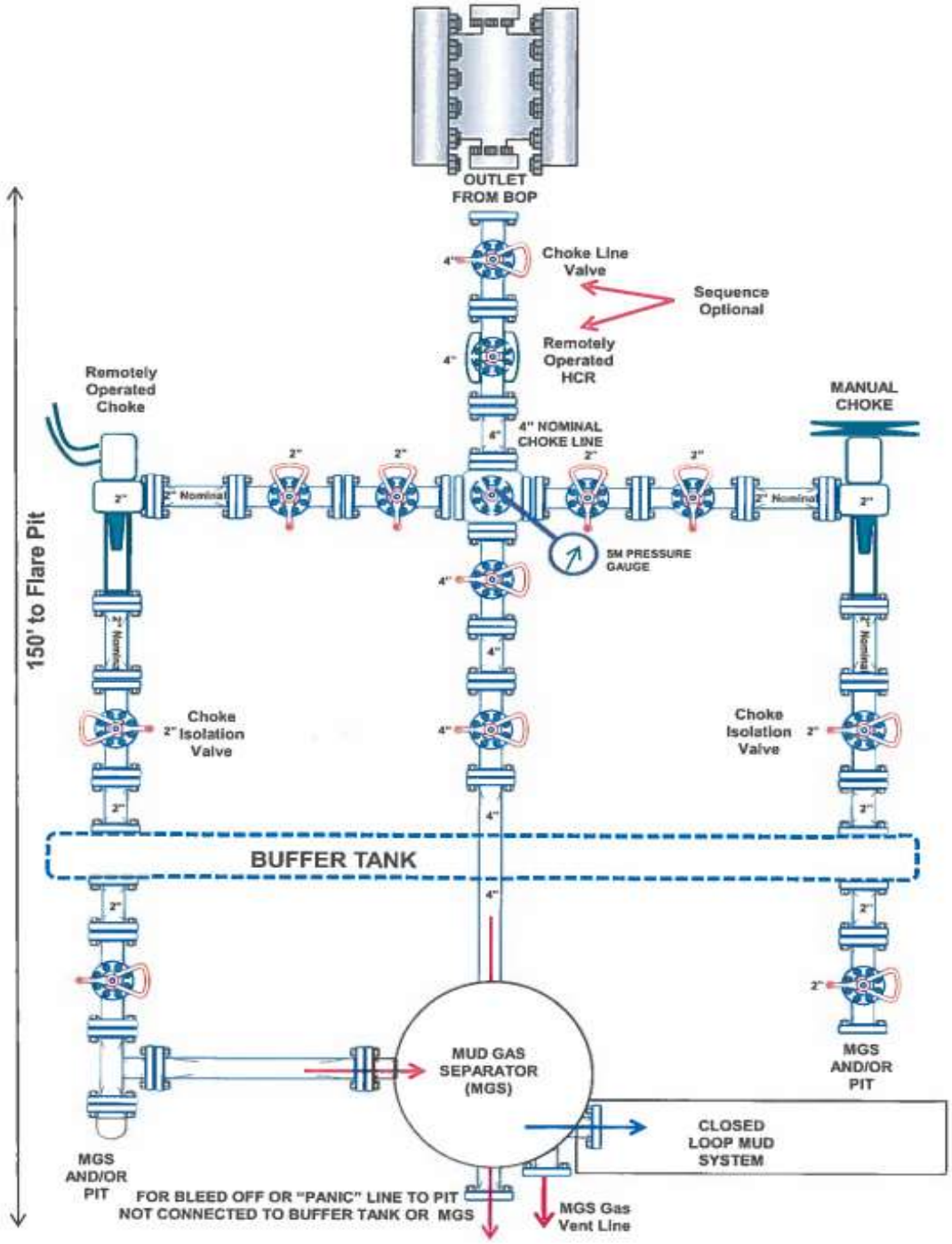
String	Size	Lb/ft	Grade	Cxn	From	To	Burst	Cllps
Surface	13.375	54.5	J55	BTC	0'	160	2740	1,130
Intermediate	9.625	36	J55	BTC	0'	2750	3520	2,020
Production	5.5	17	P110RY	GeoConn	0'	17,445	11550	7,480



5,000 psi BOP Schematic



5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



Continental
ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 9 / 113

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE					CERT. N°:	504	
PURCHASER:	ContiTech Oil & Marine Corp.				P.O. N°:	4500409659	
CONTITECH RUBBER order N°:	538236	HOSE TYPE:	3"	ID	Choke and Kill Hose		
HOSE SERIAL N°:	67255	NOMINAL / ACTUAL LENGTH:			10,67 m / 10,77 m		
W.P. 68,9 MPa	10000 psi	T.P. 103,4 MPa	15000 psi		Duration:	60	min.

Pressure test with water at
ambient tempecature

See attachment. (1 page)

↑ 10 mm = 10 Min.
→ 10 mm = 20 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	9251	9254	AISI 4130	A0579N
4 1/16" 10K API b.w. Flange end			AISI 4130	035608

Not Designed For Well Testing

API Spec 16 C

Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

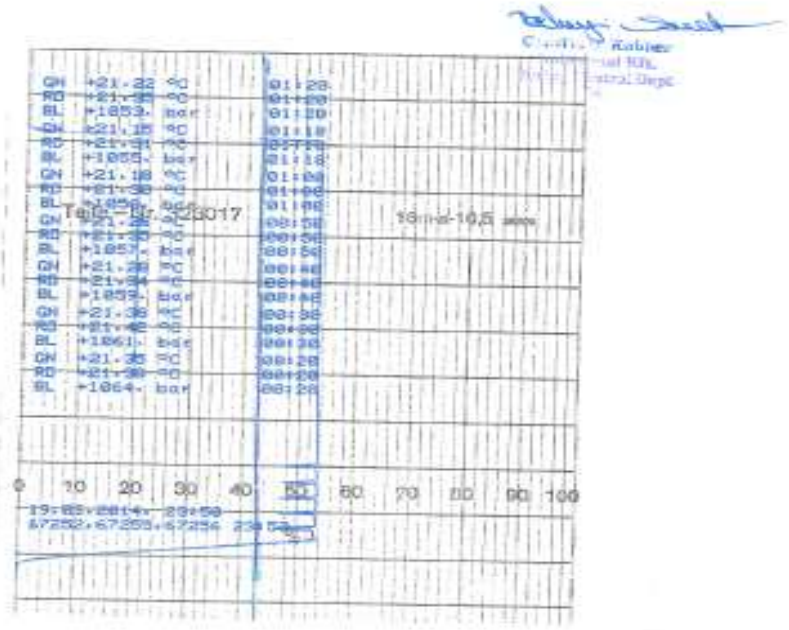
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Date:	Inspector	Quality Control
20. March 2014.		

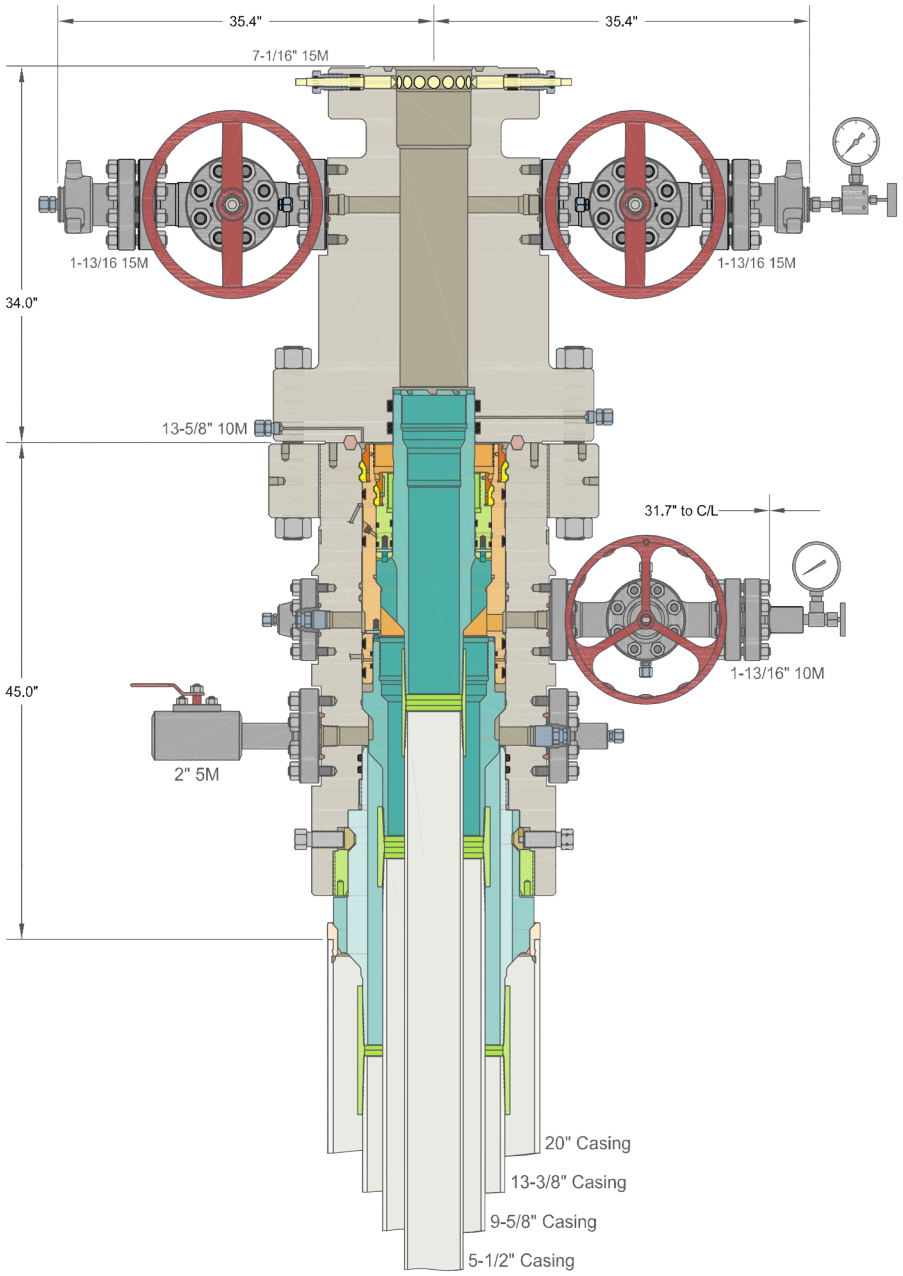
ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 501, 504, 505

Page: 1 / 1



Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	CENTENNIAL RESOURCE DEVELOPMENT LEE CO, NM		
20" x 13-3/8" x 9-5/8" x 5-1/2" 10M MBU-3T-CFL-R-DBLO System With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head, 20" Landing Ring & Pin Down Mandrel Casing Hangers	DRAWN	DLE	10JUN20
	APPRV		
	DRAWING NO.	HBE0000338	

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources
Multi-Well Pad Batch Drilling Procedure

Surface Casing - PR intends to Batch set all 13-3/8" casing to a depth approved in the APD. 17-1/2" Surface Holes will be batch drilled by a rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill 17-1/2" Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land 13-3/8" 54.5# J55 BTC casing see Illustration 1-1 Below to depth approved in APD.
3. Set packoff and test to 5k psi
4. Offline Cement
5. Install wellhead with pressure gauge and nightcap. Nightcap is shown on final wellhead Stack up Illustration #2-2.
6. Skid Rig to adjacent well to drill Surface hole.
7. Surface casing test will be performed by the rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is

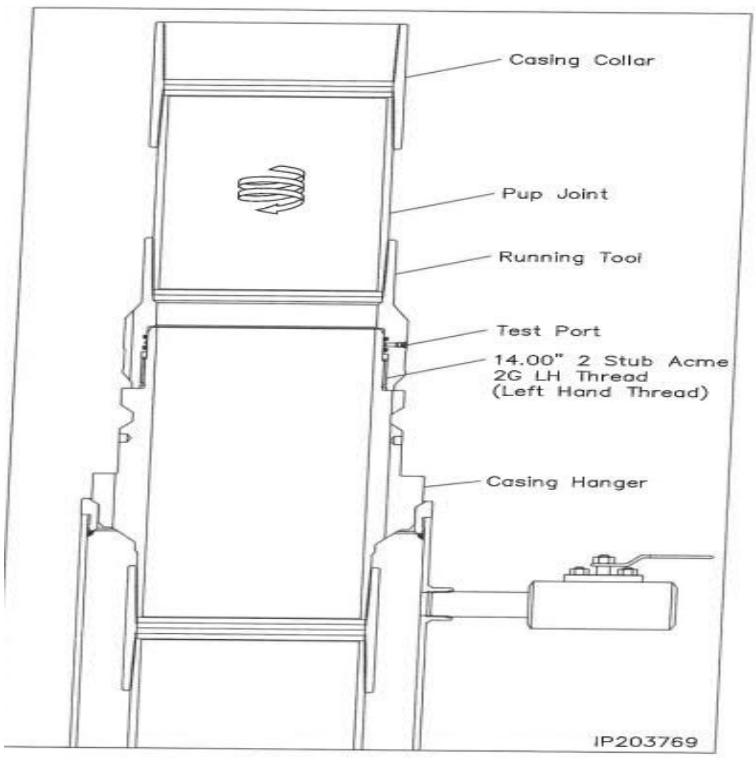


Illustration 1-1

Intermediate Casing – PR intends to Batch set all intermediate casing strings to a depth approved in the APD, typically set into Lamar. 12-1/4" Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out 13-3/8" shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 5,000 psi for 15 minutes. Nightcap shown on final wellhead stack up illustration 2-2 on page 3.
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

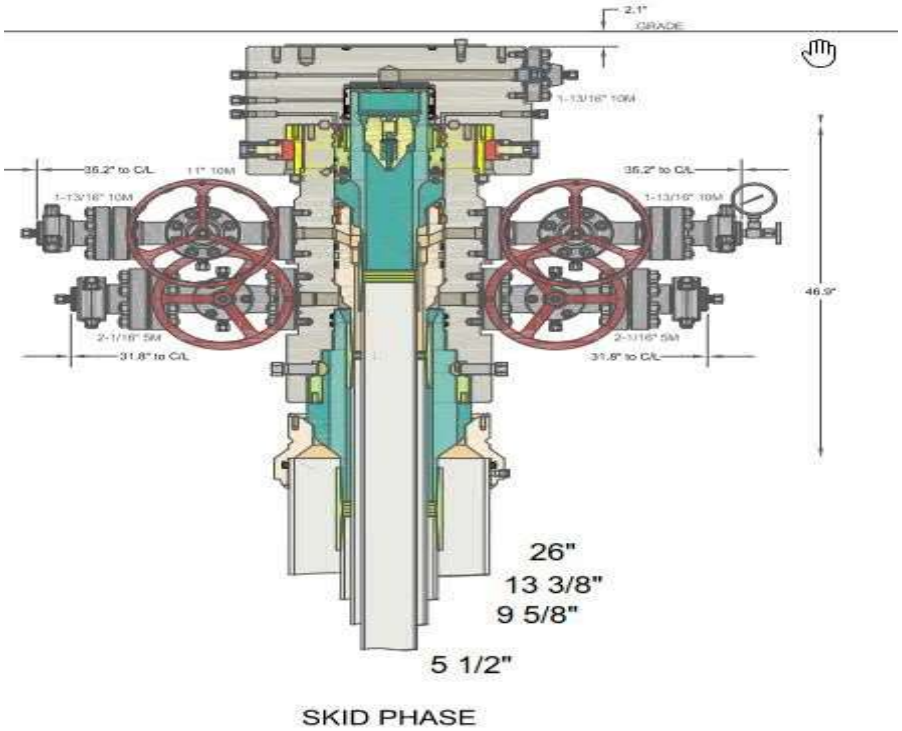


Illustration 2-2

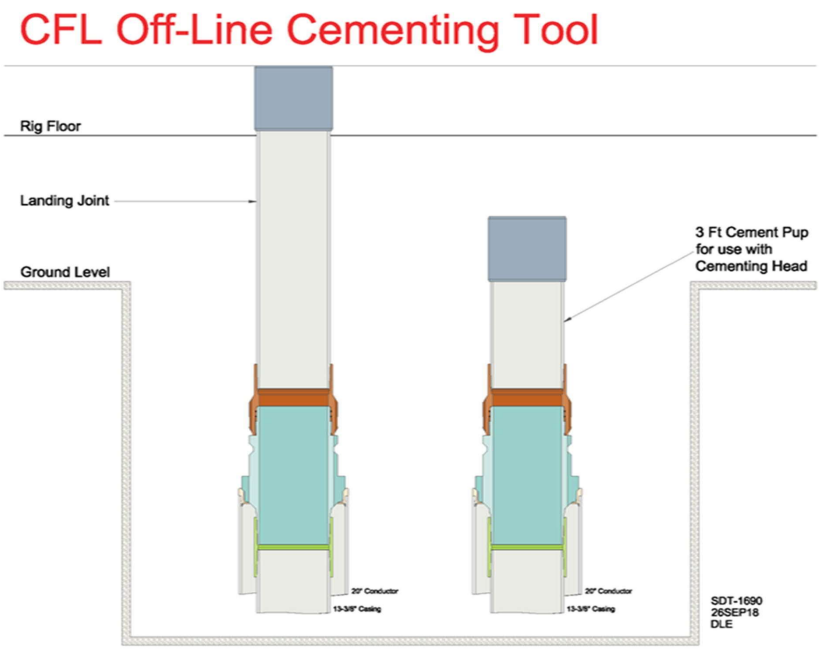
Production Casing – PR intends to Batch set all Production casings with Rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Big Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run 51/2" Production Casing.
6. Remove wear bushing then run 5-1/2" production casing to TD landing casing mandrel in wellhead.
7. Cement 5-1/2" Production string with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 5,000psi for 15 minutes.
9. Install BPV in 5-1/2" mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.

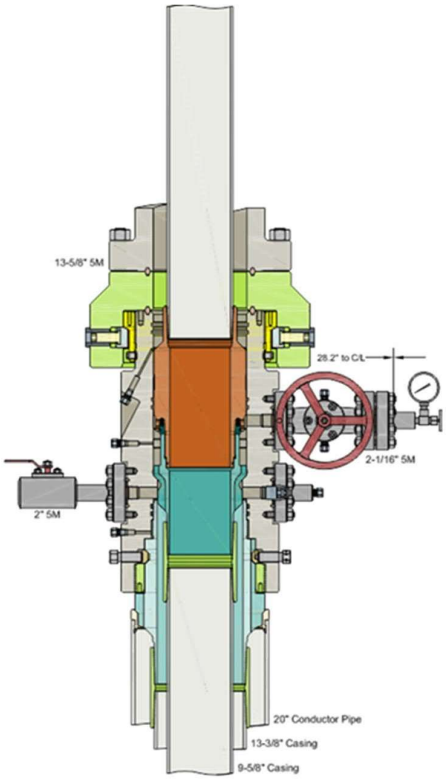
Permian Resources Offline Cementing Procedure
13-3/8" & 9-5/8" Casing

1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
    a) If well is not static use the casing outlet valves to kill well
    b) Drillers method will be used in well control event
    c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    d) Kill mud will be circulated once influx is circulated out of hole
    e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.

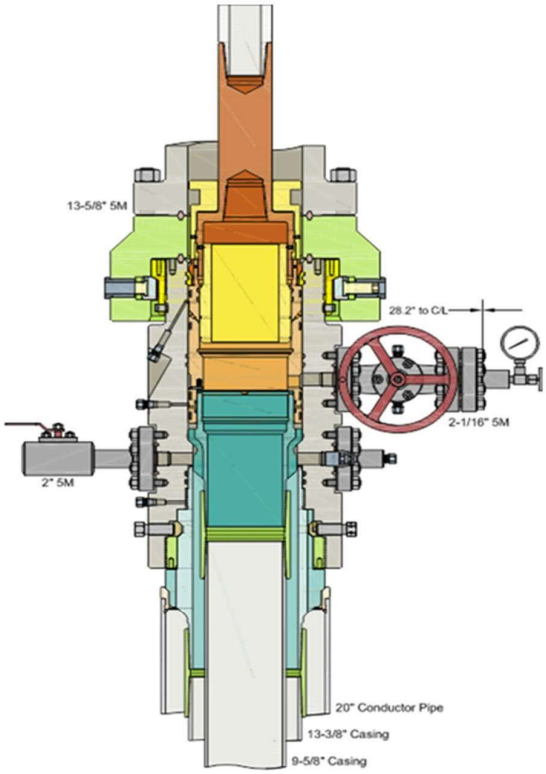
13 3/8" Surface



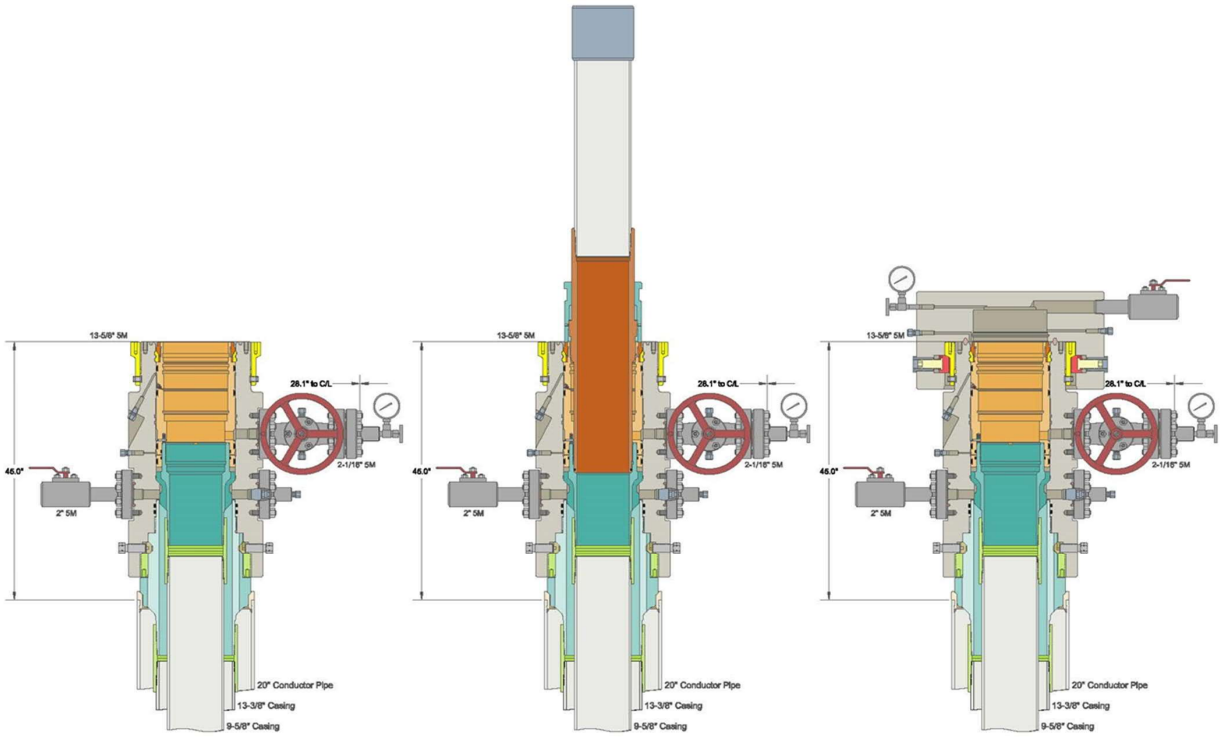
9 5/8" Intermediate



Run 9-5/8" Casing
Land Casing on 9-5/8" Mandrel Hanger
Cement 9-5/8" Casing
Retrieve Running Tool



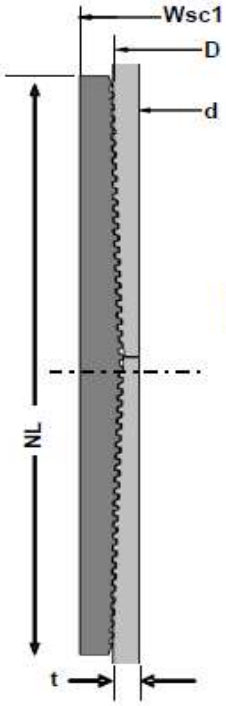
Run 13-5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



Metal One Corp.	GEOCONN-SC Pipe: SeAH P110RY 95%PBW (SMYS110ksi) *1 Coupling: P110RY (SMYS110ksi) Connection Data Sheet	Page	MAI GC 5.5 17 SeAH P110RY 95%RBW+SC-Cplg6.050 P110RY
Metal One		Date	3-Feb-21
		Rev.	0

Geometry

GEOCONN-SC



Pipe Body

		Imperial		S.I.	
Grade *1	P110RY	-	P110RY	-
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	17.00	lb/ft	25.33	kg/m
Wall Thickness (t)	0.304	in	7.72	mm
Pipe ID (d)	4.892	in	124.26	mm
Drift Dia.	4.767	in	121.08	mm

Connection

Coupling SMYS	110	ksi	110	ksi
SC-Coupling OD (Wsc1)	6.050	in	153.67	mm
Coupling Length (NL)	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	4.96	in^2	3,202	mm^2
Box Critical Area	6.10	in^2	3,937	mm^2
Thread Taper	1 / 16 (3/4" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

		Imperial		S.I.	
S.M.Y.S. *1	546	kips	2,428	kN
M.I.Y.P. *1	11,550	psi	79.66	MPa
Collapse Strength *1	7,480	psi	51.59	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1: SeAH P110RY 95%RBW: SMYS110ksi, MIYP11,550psi

Performance Properties for Connection

Min. Connection Joint Strength	100% of S.M.Y.S.
Min. Compression Yield	100% of S.M.Y.S.
Internal Pressure	100% of M.I.Y.P.
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	>90

Recommended Torque

Min.	10,800	ft-lb	14,600	N-m
Opti.	12,000	ft-lb	16,200	N-m
Max.	13,200	ft-lb	17,800	N-m
Operational Max.	15,600	ft-lb	21,100	N-m

Note : Operational Max. torque can be applied for high torque application

PERMIAN RESOURCES

Permian Resources Operating, LLC

Eddy County, NM (NAD 83 NME)
Madera 9 State Com Pad
Madera 9 State Com 121H

OWB

Plan: Plan #2

Standard Planning Report

30 August, 2023

INTREPID

PERMIAN RESOURCES

Planning Report

INTREPID

Database:	EDM 5000.15 Single User Db	**Local Co-ordinate Reference:**	Well Madera 9 State Com 121H
Company:	Permian Resources Operating, LLC	**TVD Reference:**	KB @ 3568.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	KB @ 3568.0usft
Site:	Madera 9 State Com Pad	**North Reference:**	Grid
Well:	Madera 9 State Com 121H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

Project Eddy 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 Madera 9 State Com Pad

Site Position:		**Northing:**	610,459.50 usft	**Latitude:**	32° 40' 41.145 N
From:	Map	**Easting:**	590,582.57 usft	**Longitude:**	104° 10' 23.819 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.09 °

Well Madera 9 State Com 121H

Well Position	**+N/-S**	0.0 usft	**Northing:**	610,459.50 usft	**Latitude:**	32° 40' 41.145 N
	+E/-W	0.0 usft	**Easting:**	590,582.57 usft	**Longitude:**	104° 10' 23.819 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,538.0 usft

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/9/2023	6.90	60.30	47,542.48594617

Design Plan #2

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	269.29

Plan Survey Tool Program **Date** 8/30/2023

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	17,444.8	Plan #2 (OWB)	MWD+IFR1+MS	
				OWSG MWD + IFR1 + Multi-St	

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	5.00	140.00	1,499.4	-16.7	14.0	1.00	1.00	0.00	140.00	
2,296.6	12.00	4.95	2,290.9	39.6	43.7	2.00	0.88	-16.95	-147.64	
6,190.1	12.00	4.95	6,099.2	846.3	113.6	0.00	0.00	0.00	0.00	
6,790.3	0.00	0.00	6,695.0	908.7	119.0	2.00	-2.00	0.00	180.00	
6,850.3	0.00	0.00	6,755.0	908.7	119.0	0.00	0.00	0.00	0.00	
7,750.3	90.00	269.29	7,328.0	901.6	-453.9	10.00	10.00	-10.08	269.29	
17,444.8	90.00	269.29	7,328.0	782.1	-10,147.7	0.00	0.00	0.00	0.00	PBHL M9 SC 121H (F

PERMIAN RESOURCES

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Well:	Madera 9 State Com 121H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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
Nudge 1°/100 at 1000.00 MD									
1,100.0	1.00	140.00	1,100.0	-0.7	0.6	-0.6	1.00	1.00	0.00
1,200.0	2.00	140.00	1,200.0	-2.7	2.2	-2.2	1.00	1.00	0.00
1,300.0	3.00	140.00	1,299.9	-6.0	5.0	-5.0	1.00	1.00	0.00
1,400.0	4.00	140.00	1,399.7	-10.7	9.0	-8.8	1.00	1.00	0.00
1,500.0	5.00	140.00	1,499.4	-16.7	14.0	-13.8	1.00	1.00	0.00
Build/Turn 2°/100 at 1500.00 MD									
1,600.0	3.48	122.07	1,599.1	-21.7	19.4	-19.1	2.00	-1.52	-17.93
1,700.0	2.68	87.11	1,699.0	-23.1	24.3	-24.0	2.00	-0.80	-34.96
1,800.0	3.21	48.69	1,798.8	-21.2	28.7	-28.5	2.00	0.52	-38.42
1,900.0	4.62	27.54	1,898.6	-15.8	32.7	-32.5	2.00	1.42	-21.15
2,000.0	6.36	17.03	1,998.1	-6.9	36.2	-36.1	2.00	1.74	-10.50
2,100.0	8.22	11.13	2,097.3	5.4	39.2	-39.3	2.00	1.86	-5.90
2,200.0	10.13	7.42	2,196.0	21.2	41.7	-42.0	2.00	1.91	-3.71
2,296.6	12.00	4.95	2,290.9	39.6	43.7	-44.2	2.00	1.94	-2.55
Hold 12° inc at 2296.60 MD									
2,300.0	12.00	4.95	2,294.2	40.3	43.7	-44.2	0.00	0.00	0.00
2,400.0	12.00	4.95	2,392.0	61.0	45.5	-46.3	0.00	0.00	0.00
2,500.0	12.00	4.95	2,489.8	81.7	47.3	-48.3	0.00	0.00	0.00
2,600.0	12.00	4.95	2,587.6	102.5	49.1	-50.4	0.00	0.00	0.00
2,700.0	12.00	4.95	2,685.4	123.2	50.9	-52.4	0.00	0.00	0.00
2,800.0	12.00	4.95	2,783.2	143.9	52.7	-54.5	0.00	0.00	0.00
2,900.0	12.00	4.95	2,881.1	164.6	54.5	-56.5	0.00	0.00	0.00
3,000.0	12.00	4.95	2,978.9	185.3	56.3	-58.6	0.00	0.00	0.00
3,100.0	12.00	4.95	3,076.7	206.0	58.1	-60.6	0.00	0.00	0.00
3,200.0	12.00	4.95	3,174.5	226.8	59.9	-62.7	0.00	0.00	0.00
3,300.0	12.00	4.95	3,272.3	247.5	61.7	-64.8	0.00	0.00	0.00
3,400.0	12.00	4.95	3,370.1	268.2	63.5	-66.8	0.00	0.00	0.00
3,500.0	12.00	4.95	3,467.9	288.9	65.3	-68.9	0.00	0.00	0.00
3,600.0	12.00	4.95	3,565.8	309.6	67.1	-70.9	0.00	0.00	0.00
3,700.0	12.00	4.95	3,663.6	330.4	68.9	-73.0	0.00	0.00	0.00
3,800.0	12.00	4.95	3,761.4	351.1	70.7	-75.0	0.00	0.00	0.00
3,900.0	12.00	4.95	3,859.2	371.8	72.5	-77.1	0.00	0.00	0.00
4,000.0	12.00	4.95	3,957.0	392.5	74.3	-79.1	0.00	0.00	0.00
4,100.0	12.00	4.95	4,054.8	413.2	76.1	-81.2	0.00	0.00	0.00
4,200.0	12.00	4.95	4,152.6	433.9	77.9	-83.2	0.00	0.00	0.00
4,300.0	12.00	4.95	4,250.4	454.7	79.6	-85.3	0.00	0.00	0.00
4,400.0	12.00	4.95	4,348.3	475.4	81.4	-87.3	0.00	0.00	0.00
4,500.0	12.00	4.95	4,446.1	496.1	83.2	-89.4	0.00	0.00	0.00
4,600.0	12.00	4.95	4,543.9	516.8	85.0	-91.4	0.00	0.00	0.00
4,700.0	12.00	4.95	4,641.7	537.5	86.8	-93.5	0.00	0.00	0.00
4,800.0	12.00	4.95	4,739.5	558.3	88.6	-95.5	0.00	0.00	0.00

PERMIAN RESOURCES

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Well:	Madera 9 State Com 121H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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)
4,900.0	12.00	4.95	4,837.3	579.0	90.4	-97.6	0.00	0.00	0.00
5,000.0	12.00	4.95	4,935.1	599.7	92.2	-99.6	0.00	0.00	0.00
5,100.0	12.00	4.95	5,033.0	620.4	94.0	-101.7	0.00	0.00	0.00
5,200.0	12.00	4.95	5,130.8	641.1	95.8	-103.7	0.00	0.00	0.00
5,300.0	12.00	4.95	5,228.6	661.9	97.6	-105.8	0.00	0.00	0.00
5,400.0	12.00	4.95	5,326.4	682.6	99.4	-107.9	0.00	0.00	0.00
5,500.0	12.00	4.95	5,424.2	703.3	101.2	-109.9	0.00	0.00	0.00
5,600.0	12.00	4.95	5,522.0	724.0	103.0	-112.0	0.00	0.00	0.00
5,700.0	12.00	4.95	5,619.8	744.7	104.8	-114.0	0.00	0.00	0.00
5,800.0	12.00	4.95	5,717.7	765.4	106.6	-116.1	0.00	0.00	0.00
5,900.0	12.00	4.95	5,815.5	786.2	108.4	-118.1	0.00	0.00	0.00
6,000.0	12.00	4.95	5,913.3	806.9	110.2	-120.2	0.00	0.00	0.00
6,100.0	12.00	4.95	6,011.1	827.6	112.0	-122.2	0.00	0.00	0.00
6,190.1	12.00	4.95	6,099.2	846.3	113.6	-124.1	0.00	0.00	0.00
Drop 2°/100 at 6190.10 MD									
6,200.0	11.81	4.95	6,108.9	848.3	113.8	-124.3	2.00	-2.00	0.00
6,300.0	9.81	4.95	6,207.1	867.0	115.4	-126.1	2.00	-2.00	0.00
6,400.0	7.81	4.95	6,305.9	882.2	116.7	-127.6	2.00	-2.00	0.00
6,500.0	5.81	4.95	6,405.2	894.0	117.7	-128.8	2.00	-2.00	0.00
6,600.0	3.81	4.95	6,504.9	902.4	118.5	-129.6	2.00	-2.00	0.00
6,700.0	1.81	4.95	6,604.8	907.3	118.9	-130.1	2.00	-2.00	0.00
6,790.3	0.00	0.00	6,695.0	908.7	119.0	-130.3	2.00	-2.00	0.00
Vertical at 6790.30 MD									
6,800.0	0.00	0.00	6,704.7	908.7	119.0	-130.3	0.00	0.00	0.00
6,850.3	0.00	0.00	6,755.0	908.7	119.0	-130.3	0.00	0.00	0.00
KOP 10°/100 at 6850.30 MD									
6,900.0	4.97	269.29	6,804.7	908.6	116.8	-128.1	10.00	10.00	0.00
6,950.0	9.97	269.29	6,854.2	908.6	110.3	-121.6	10.00	10.00	0.00
7,000.0	14.97	269.29	6,903.0	908.4	99.5	-110.8	10.00	10.00	0.00
7,050.0	19.97	269.29	6,950.7	908.2	84.5	-95.8	10.00	10.00	0.00
7,100.0	24.97	269.29	6,996.9	908.0	65.4	-76.7	10.00	10.00	0.00
7,150.0	29.97	269.29	7,041.3	907.7	42.4	-53.6	10.00	10.00	0.00
7,200.0	34.97	269.29	7,083.4	907.4	15.5	-26.8	10.00	10.00	0.00
7,250.0	39.97	269.29	7,123.1	907.0	-14.9	3.6	10.00	10.00	0.00
7,300.0	44.97	269.29	7,160.0	906.6	-48.6	37.4	10.00	10.00	0.00
FTP M9 SC 121H (Plan 2)									
7,350.0	49.97	269.29	7,193.7	906.1	-85.5	74.2	10.00	10.00	0.00
7,400.0	54.97	269.29	7,224.2	905.7	-125.1	113.9	10.00	10.00	0.00
7,450.0	59.97	269.29	7,251.1	905.1	-167.2	156.0	10.00	10.00	0.00
7,500.0	64.97	269.29	7,274.2	904.6	-211.6	200.3	10.00	10.00	0.00
7,550.0	69.97	269.29	7,293.3	904.0	-257.7	246.5	10.00	10.00	0.00
7,600.0	74.97	269.29	7,308.4	903.4	-305.4	294.2	10.00	10.00	0.00
7,650.0	79.97	269.29	7,319.2	902.8	-354.2	343.0	10.00	10.00	0.00
7,700.0	84.97	269.29	7,325.8	902.2	-403.7	392.5	10.00	10.00	0.00
7,750.3	90.00	269.29	7,328.0	901.6	-453.9	442.7	10.00	10.00	0.00
LP at 7750.30 MD									
7,800.0	90.00	269.29	7,328.0	901.0	-503.7	492.5	0.00	0.00	0.00
7,900.0	90.00	269.29	7,328.0	899.8	-603.6	592.5	0.00	0.00	0.00
8,000.0	90.00	269.29	7,328.0	898.5	-703.6	692.5	0.00	0.00	0.00
8,100.0	90.00	269.29	7,328.0	897.3	-803.6	792.5	0.00	0.00	0.00
8,200.0	90.00	269.29	7,328.0	896.1	-903.6	892.5	0.00	0.00	0.00
8,300.0	90.00	269.29	7,328.0	894.8	-1,003.6	992.5	0.00	0.00	0.00
8,400.0	90.00	269.29	7,328.0	893.6	-1,103.6	1,092.5	0.00	0.00	0.00
8,500.0	90.00	269.29	7,328.0	892.4	-1,203.6	1,192.5	0.00	0.00	0.00

PERMIAN RESOURCES

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Site:	Madera 9 State Com Pad	**North Reference:**	Grid
Well:	Madera 9 State Com 121H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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)
8,600.0	90.00	269.29	7,328.0	891.1	-1,303.6	1,292.5	0.00	0.00	0.00
8,700.0	90.00	269.29	7,328.0	889.9	-1,403.6	1,392.5	0.00	0.00	0.00
8,800.0	90.00	269.29	7,328.0	888.7	-1,503.6	1,492.5	0.00	0.00	0.00
8,900.0	90.00	269.29	7,328.0	887.4	-1,603.6	1,592.5	0.00	0.00	0.00
9,000.0	90.00	269.29	7,328.0	886.2	-1,703.6	1,692.5	0.00	0.00	0.00
9,100.0	90.00	269.29	7,328.0	885.0	-1,803.6	1,792.5	0.00	0.00	0.00
9,200.0	90.00	269.29	7,328.0	883.7	-1,903.5	1,892.5	0.00	0.00	0.00
9,300.0	90.00	269.29	7,328.0	882.5	-2,003.5	1,992.5	0.00	0.00	0.00
9,400.0	90.00	269.29	7,328.0	881.3	-2,103.5	2,092.5	0.00	0.00	0.00
9,500.0	90.00	269.29	7,328.0	880.0	-2,203.5	2,192.5	0.00	0.00	0.00
9,600.0	90.00	269.29	7,328.0	878.8	-2,303.5	2,292.5	0.00	0.00	0.00
9,700.0	90.00	269.29	7,328.0	877.6	-2,403.5	2,392.5	0.00	0.00	0.00
9,800.0	90.00	269.29	7,328.0	876.3	-2,503.5	2,492.5	0.00	0.00	0.00
9,900.0	90.00	269.29	7,328.0	875.1	-2,603.5	2,592.5	0.00	0.00	0.00
10,000.0	90.00	269.29	7,328.0	873.9	-2,703.5	2,692.5	0.00	0.00	0.00
10,100.0	90.00	269.29	7,328.0	872.6	-2,803.5	2,792.5	0.00	0.00	0.00
10,200.0	90.00	269.29	7,328.0	871.4	-2,903.5	2,892.5	0.00	0.00	0.00
10,300.0	90.00	269.29	7,328.0	870.2	-3,003.5	2,992.5	0.00	0.00	0.00
10,400.0	90.00	269.29	7,328.0	868.9	-3,103.5	3,092.5	0.00	0.00	0.00
10,500.0	90.00	269.29	7,328.0	867.7	-3,203.4	3,192.5	0.00	0.00	0.00
10,600.0	90.00	269.29	7,328.0	866.5	-3,303.4	3,292.5	0.00	0.00	0.00
10,700.0	90.00	269.29	7,328.0	865.2	-3,403.4	3,392.5	0.00	0.00	0.00
10,800.0	90.00	269.29	7,328.0	864.0	-3,503.4	3,492.5	0.00	0.00	0.00
10,900.0	90.00	269.29	7,328.0	862.8	-3,603.4	3,592.5	0.00	0.00	0.00
11,000.0	90.00	269.29	7,328.0	861.5	-3,703.4	3,692.5	0.00	0.00	0.00
11,100.0	90.00	269.29	7,328.0	860.3	-3,803.4	3,792.5	0.00	0.00	0.00
11,200.0	90.00	269.29	7,328.0	859.1	-3,903.4	3,892.5	0.00	0.00	0.00
11,300.0	90.00	269.29	7,328.0	857.8	-4,003.4	3,992.5	0.00	0.00	0.00
11,400.0	90.00	269.29	7,328.0	856.6	-4,103.4	4,092.5	0.00	0.00	0.00
11,500.0	90.00	269.29	7,328.0	855.4	-4,203.4	4,192.5	0.00	0.00	0.00
11,600.0	90.00	269.29	7,328.0	854.1	-4,303.4	4,292.5	0.00	0.00	0.00
11,700.0	90.00	269.29	7,328.0	852.9	-4,403.4	4,392.5	0.00	0.00	0.00
11,800.0	90.00	269.29	7,328.0	851.7	-4,503.3	4,492.5	0.00	0.00	0.00
11,900.0	90.00	269.29	7,328.0	850.4	-4,603.3	4,592.5	0.00	0.00	0.00
12,000.0	90.00	269.29	7,328.0	849.2	-4,703.3	4,692.5	0.00	0.00	0.00
12,100.0	90.00	269.29	7,328.0	848.0	-4,803.3	4,792.5	0.00	0.00	0.00
12,200.0	90.00	269.29	7,328.0	846.7	-4,903.3	4,892.5	0.00	0.00	0.00
12,300.0	90.00	269.29	7,328.0	845.5	-5,003.3	4,992.5	0.00	0.00	0.00
12,400.0	90.00	269.29	7,328.0	844.3	-5,103.3	5,092.5	0.00	0.00	0.00
12,500.0	90.00	269.29	7,328.0	843.0	-5,203.3	5,192.5	0.00	0.00	0.00
12,600.0	90.00	269.29	7,328.0	841.8	-5,303.3	5,292.5	0.00	0.00	0.00
12,700.0	90.00	269.29	7,328.0	840.6	-5,403.3	5,392.5	0.00	0.00	0.00
12,800.0	90.00	269.29	7,328.0	839.3	-5,503.3	5,492.5	0.00	0.00	0.00
12,900.0	90.00	269.29	7,328.0	838.1	-5,603.3	5,592.5	0.00	0.00	0.00
13,000.0	90.00	269.29	7,328.0	836.9	-5,703.3	5,692.5	0.00	0.00	0.00
13,100.0	90.00	269.29	7,328.0	835.6	-5,803.3	5,792.5	0.00	0.00	0.00
13,200.0	90.00	269.29	7,328.0	834.4	-5,903.2	5,892.5	0.00	0.00	0.00
13,300.0	90.00	269.29	7,328.0	833.2	-6,003.2	5,992.5	0.00	0.00	0.00
13,400.0	90.00	269.29	7,328.0	831.9	-6,103.2	6,092.5	0.00	0.00	0.00
13,500.0	90.00	269.29	7,328.0	830.7	-6,203.2	6,192.5	0.00	0.00	0.00
13,600.0	90.00	269.29	7,328.0	829.5	-6,303.2	6,292.5	0.00	0.00	0.00
13,700.0	90.00	269.29	7,328.0	828.2	-6,403.2	6,392.5	0.00	0.00	0.00
13,800.0	90.00	269.29	7,328.0	827.0	-6,503.2	6,492.5	0.00	0.00	0.00
13,900.0	90.00	269.29	7,328.0	825.8	-6,603.2	6,592.5	0.00	0.00	0.00

PERMIAN RESOURCES

Planning Report

INTREPID

Database:	EDM 5000.15 Single User Db	**Local Co-ordinate Reference:**	Well Madera 9 State Com 121H
Company:	Permian Resources Operating, LLC	**TVD Reference:**	KB @ 3568.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	KB @ 3568.0usft
Site:	Madera 9 State Com Pad	**North Reference:**	Grid
Well:	Madera 9 State Com 121H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

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)
14,000.0	90.00	269.29	7,328.0	824.5	-6,703.2	6,692.5	0.00	0.00	0.00
14,100.0	90.00	269.29	7,328.0	823.3	-6,803.2	6,792.5	0.00	0.00	0.00
14,200.0	90.00	269.29	7,328.0	822.1	-6,903.2	6,892.5	0.00	0.00	0.00
14,300.0	90.00	269.29	7,328.0	820.8	-7,003.2	6,992.5	0.00	0.00	0.00
14,400.0	90.00	269.29	7,328.0	819.6	-7,103.2	7,092.5	0.00	0.00	0.00
14,500.0	90.00	269.29	7,328.0	818.4	-7,203.1	7,192.5	0.00	0.00	0.00
14,600.0	90.00	269.29	7,328.0	817.1	-7,303.1	7,292.5	0.00	0.00	0.00
14,700.0	90.00	269.29	7,328.0	815.9	-7,403.1	7,392.5	0.00	0.00	0.00
14,800.0	90.00	269.29	7,328.0	814.7	-7,503.1	7,492.5	0.00	0.00	0.00
14,900.0	90.00	269.29	7,328.0	813.4	-7,603.1	7,592.5	0.00	0.00	0.00
15,000.0	90.00	269.29	7,328.0	812.2	-7,703.1	7,692.5	0.00	0.00	0.00
15,100.0	90.00	269.29	7,328.0	811.0	-7,803.1	7,792.5	0.00	0.00	0.00
15,200.0	90.00	269.29	7,328.0	809.7	-7,903.1	7,892.5	0.00	0.00	0.00
15,300.0	90.00	269.29	7,328.0	808.5	-8,003.1	7,992.5	0.00	0.00	0.00
15,400.0	90.00	269.29	7,328.0	807.3	-8,103.1	8,092.5	0.00	0.00	0.00
15,500.0	90.00	269.29	7,328.0	806.0	-8,203.1	8,192.5	0.00	0.00	0.00
15,600.0	90.00	269.29	7,328.0	804.8	-8,303.1	8,292.5	0.00	0.00	0.00
15,700.0	90.00	269.29	7,328.0	803.6	-8,403.1	8,392.5	0.00	0.00	0.00
15,800.0	90.00	269.29	7,328.0	802.4	-8,503.0	8,492.5	0.00	0.00	0.00
15,900.0	90.00	269.29	7,328.0	801.1	-8,603.0	8,592.5	0.00	0.00	0.00
16,000.0	90.00	269.29	7,328.0	799.9	-8,703.0	8,692.5	0.00	0.00	0.00
16,100.0	90.00	269.29	7,328.0	798.7	-8,803.0	8,792.5	0.00	0.00	0.00
16,200.0	90.00	269.29	7,328.0	797.4	-8,903.0	8,892.5	0.00	0.00	0.00
16,300.0	90.00	269.29	7,328.0	796.2	-9,003.0	8,992.5	0.00	0.00	0.00
16,400.0	90.00	269.29	7,328.0	795.0	-9,103.0	9,092.5	0.00	0.00	0.00
16,500.0	90.00	269.29	7,328.0	793.7	-9,203.0	9,192.5	0.00	0.00	0.00
16,600.0	90.00	269.29	7,328.0	792.5	-9,303.0	9,292.5	0.00	0.00	0.00
16,700.0	90.00	269.29	7,328.0	791.3	-9,403.0	9,392.5	0.00	0.00	0.00
16,800.0	90.00	269.29	7,328.0	790.0	-9,503.0	9,492.5	0.00	0.00	0.00
16,900.0	90.00	269.29	7,328.0	788.8	-9,603.0	9,592.5	0.00	0.00	0.00
17,000.0	90.00	269.29	7,328.0	787.6	-9,703.0	9,692.5	0.00	0.00	0.00
17,100.0	90.00	269.29	7,328.0	786.3	-9,802.9	9,792.5	0.00	0.00	0.00
17,200.0	90.00	269.29	7,328.0	785.1	-9,902.9	9,892.5	0.00	0.00	0.00
17,300.0	90.00	269.29	7,328.0	783.9	-10,002.9	9,992.5	0.00	0.00	0.00
17,354.8	90.00	269.29	7,328.0	783.2	-10,057.8	10,047.3	0.00	0.00	0.00
LTP M9 SC 121H (Plan 2)									
17,400.0	90.00	269.29	7,328.0	782.6	-10,102.9	10,092.5	0.00	0.00	0.00
17,444.8	90.00	269.29	7,328.0	782.1	-10,147.7	10,137.3	0.00	0.00	0.00
TD at 17444.80 MD - PBHL M9 SC 121H (Plan 2)									

PERMIAN RESOURCES

Planning Report

INTREPID

Database:	EDM 5000.15 Single User Db	**Local Co-ordinate Reference:**	Well Madera 9 State Com 121H
Company:	Permian Resources Operating, LLC	**TVD Reference:**	KB @ 3568.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	KB @ 3568.0usft
Site:	Madera 9 State Com Pad	**North Reference:**	Grid
Well:	Madera 9 State Com 121H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #2		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL M9 SC 121H (Plan - plan hits target center - Point	0.00	0.00	7,328.0	782.1	-10,147.7	611,241.57	580,434.84	32° 40' 49.019 N	104° 12' 22.539 W
LTP M9 SC 121H (Plan - plan misses target center by 0.1usft at 17354.8usft MD (7328.0 TVD, 783.2 N, -10057.8 E) - Point	0.00	0.00	7,328.0	783.1	-10,057.7	611,242.58	580,524.82	32° 40' 49.028 N	104° 12' 21.486 W
FTP M9 SC 121H (Plan - plan misses target center by 237.4usft at 7300.0usft MD (7160.0 TVD, 906.6 N, -48.6 E) - Point	0.00	0.01	7,328.0	908.7	119.0	611,368.17	590,701.57	32° 40' 50.135 N	104° 10' 22.411 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,000.0	1,000.0	0.0	0.0	Nudge 1°/100 at 1000.00 MD
1,500.0	1,499.4	-16.7	14.0	Build/Turn 2°/100 at 1500.00 MD
2,296.6	2,290.9	39.6	43.7	Hold 12° inc at 2296.60 MD
6,190.1	6,099.2	846.3	113.6	Drop 2°/100 at 6190.10 MD
6,790.3	6,695.0	908.7	119.0	Vertical at 6790.30 MD
6,850.3	6,755.0	908.7	119.0	KOP 10°/100 at 6850.30 MD
7,750.3	7,328.0	901.6	-453.9	LP at 7750.30 MD
17,444.8	7,328.0	782.1	-10,147.7	TD at 17444.80 MD

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018