

Form 3160-3  
(June 2015)FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.  9. API Well No. <div style="text-align: right; color: red; font-weight: bold;">30-015-57053</div>
2. Name of Operator  3a. Address  3b. Phone No. (include area code)		10. Field and Pool, or Exploratory  11. Sec., T. R. M. or Blk. and Survey or Area  12. County or Parish  13. State
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		14. Distance in miles and direction from nearest town or post office*  15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)  16. No of acres in lease  17. Spacing Unit dedicated to this well  18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.  19. Proposed Depth  20. BLM/BIA Bond No. in file  21. Elevations (Show whether DF, KDB, RT, GL, etc.)  22. Approximate date work will start*  23. Estimated duration
24. Attachments  The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)		

- |   |   |
|---|---|
| 1. Well plat certified by a registered surveyor.<br>2. A Drilling Plan.<br>3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature  Title	Name (Printed/Typed)  Office	Date  Date
Approved by (Signature)  Title	Name (Printed/Typed)  Office	Date  Date

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
 Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

\*(Instructions on page 2)



Approval Date: 05/08/2025

## INSTRUCTIONS

**GENERAL:** This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

**ITEM I:** If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

**ITEM 4:** Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

**ITEM 14:** Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

**ITEMS 15 AND 18:** If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

**ITEM 22:** Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

**ITEM 24:** If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

**PRINCIPAL PURPOSES:** The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

**ROUTINE USE:** Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

**EFFECT OF NOT PROVIDING INFORMATION:** Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## Additional Operator Remarks

### Location of Well

0. SHL: TR M / 354 FSL / 845 FWL / TWSP: 18S / RANGE: 27E / SECTION: 3 / LAT: 32.770482 / LONG: -104.272119 ( TVD: 0 feet, MD: 0 feet )

PPP: LOT 18 / 330 FSL / 2627 FEL / TWSP: 18S / RANGE: 27E / SECTION: 4 / LAT: 32.770456 / LONG: -104.283417 ( TVD: 3150 feet, MD: 6150 feet )

PPP: LOT 20 / 330 FSL / 100 FEL / TWSP: 18S / RANGE: 27E / SECTION: 4 / LAT: 32.770473 / LONG: -104.275194 ( TVD: 3150 feet, MD: 3608 feet )

PPP: LOT 17 / 330 FSL / 1316 FWL / TWSP: 18S / RANGE: 27E / SECTION: 4 / LAT: 32.770447 / LONG: -104.2877 ( TVD: 3150 feet, MD: 7450 feet )

BHL: LOT 17 / 330 FSL / 10 FWL / TWSP: 18S / RANGE: 27E / SECTION: 4 / LAT: 32.770438 / LONG: -104.29195 ( TVD: 3150 feet, MD: 8759 feet )

### BLM Point of Contact

Name: JANET D ESTES

Title: ADJUDICATOR

Phone: (575) 234-6233

Email: JESTES@BLM.GOV

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### **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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Operator Name: RILEY PERMIAN OPERATING COMPANY LLC

Well Name: BUNNY 3-4 FED COMWell Number: 24H

Casing Attachments

Casing ID: 2StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Bunny\_3\_4\_Fed\_Com\_24H\_Casing\_Assumptions\_RevB\_29Oct24\_20241113161820.pdf

Casing ID: 3StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

7.0\_32.00\_HCL\_80\_BTC\_20240614131340.pdf

Casing Design Assumptions and Worksheet(s):

Bunny\_3\_4\_Fed\_Com\_24H\_Casing\_Assumptions\_RevB\_29Oct24\_20241113161957.pdf

Casing ID: 4StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Data\_Sheet\_5.500\_Inch\_20.00\_L80HC\_BTC\_CENTRIC\_Revised\_May\_2020\_20240611111515.pdf

Casing Design Assumptions and Worksheet(s):

Bunny\_3\_4\_Fed\_Com\_24H\_Casing\_Assumptions\_RevB\_29Oct24\_20241113162042.pdf

Section 4 - Cement

**Operator Name:** RILEY PERMIAN OPERATING COMPANY LLC**Well Name:** BUNNY 3-4 FED COM**Well Number:** 24H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	945	242	1.65	12.8	399.5 3	35	Class C HSR	Cement Extender - Fly Ash (OTX 1) Accelerators - A-2 & A-5 Extender Viscosifier - Bentonite Foam Preventer - FP-28L Retarder - R-7C
INTERMEDIATE	Tail		945	2275	129	1.33	14.8	171.2 4	35	Class C HSR	Accelerator - A-2 Fluid Loss - FL-66 Foam Preventer - FP-28L
SURFACE	Lead		0	945	418	1.33	14.8	555.7 2	100	Class C HSR	Accelerator - A-2 Foam Preventer - FP-28L Anti Static Additive - Static Free

PRODUCTION	Lead		0	2275	192	2.49	11.5	478.8 1	40	Class C HSR	Cement Extender - Fly Ash (OTX 1) Accelerator - A-30 Thixotropic - ATHX-1102 Extender Viscosifier - Bentonite Fluid Loss - FL-66 Foam Preventer - FP-28L Retarder - R-7C Anti-Static - Static Free
PRODUCTION	Tail		2275	8759	1663	1.29	13.7	2145. 11	40	Class C HSR	Cement Extenders - Fly Ash (OTX-1) & AEXT-1012 Viscosifier - ASA-301 Bond Enhancers - BA-90 & EC-1 Dispersant - CD-32A Fluid Loss - FL-66 Foam Preventer - FP-28L Retarder - R-7C

**Operator Name:** RILEY PERMIAN OPERATING COMPANY LLC**Well Name:** BUNNY 3-4 FED COM**Well Number:** 24H

## Section 5 - Circulating Medium

**Mud System Type:** Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with 43 CFR 3172:****Diagram of the equipment for the circulating system in accordance with 43 CFR 3172:****Describe what will be on location to control well or mitigate other conditions:** The well will be drilled to TD with a combination of fresh and cut brine mud system.**Describe the mud monitoring system utilized:** Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

## Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	400	WATER-BASED MUD	8.4	9.2							
400	1350	SALT SATURATED	10	10.2							
1350	8759	OIL-BASED MUD	8.8	9.2							

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

- A. The logging program will consist of GR log from intermediate shoe to TD
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined at TD.
- E. Mud log will be taken from surface casing shoe to TD.

**List of open and cased hole logs run in the well:**

GAMMA RAY LOG, MUD LOG/GEOLOGICAL LITHOLOGY LOG,

**Coring operation description for the well:**

No conventional coring is anticipated. - See drilling prog

**Operator Name:** RILEY PERMIAN OPERATING COMPANY LLC**Well Name:** BUNNY 3-4 FED COM**Well Number:** 24H

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 1507**Anticipated Surface Pressure:** 813**Anticipated Bottom Hole Temperature(F):** 120**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO**Describe:****Contingency Plans geohazards description:****Contingency Plans geohazards****Hydrogen Sulfide drilling operations plan required?** YES**Hydrogen sulfide drilling operations**

H2S\_Plan\_20240523160212.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Bunny\_3\_4\_Fed\_Com\_24H\_\_Well\_Plan\_v1\_20240614132158.pdf

**Other proposed operations facets description:**

BLM Drilling Plan as attachment

**Other proposed operations facets attachment:**

Bunny\_WasteMinimizationPlan\_07092024\_20240709134636.pdf

Bunny\_3\_4\_Fed\_Com\_24H\_\_Drilling\_Program\_\_Ascent\_\_RevB\_\_13Nov24\_20241113162649.pdf

**Other Variance request(s)?:** N**Other Variance attachment:**



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

DRILLING PROGRAM



Riley Exploration-Permian, LLC

Bunny North, Mid, and South Pads

Bunny North Pad Well Names: Bunny 3-4 Fed Com 11H, Bunny 3-4 Fed Com 22H

Lot L Section 3, Township 18 South, Range 27 East, 6<sup>th</sup> P.M.

Bunny Mid Pad Well Names: Bunny 3-4 Fed Com 12H, Bunny 3-4 Fed Com 15H, Bunny 3-4 Fed Com 26H

Lot M Section 3, Township 18 South, Range 27 East, 6<sup>th</sup> P.M.

Bunny South Pad Well Names: Bunny 3-4 Fed Com 17H, **Bunny 3-4 Fed Com 24H**

Lot M Section 3, Township 18 South, Range 27 East, 6<sup>th</sup> P.M.

Eddy County, New Mexico

Lease Number: NMLC 0061783B, NMLC 0061783A, NMNM 007717

Parcel 4-160-103-263-254

Owner: Bureau of Land Management

Land code: Exempt Agricultural Land

1. Geologic Name of Surface Formation

Quaternary

Estimated Tops of Important Geologic Markers

Formation	Elevation	TVD	TMD	Lithology	Mineral Resources	Producing Formation?
Water Sand		150			Fresh Water	No
Queen		694			Oil/Gas	No
Grayburg		1029			Oil/Gas	No
San Andreas		1294			Oil/Gas	No
Glorieta		2675			Oil/Gas	No
Yeso/Paddock		2840			Oil/Gas	

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8” casing to 400’ and circulating cement back to surface will protect the surface fresh water sand. Salt section and shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 ½” production casing, sufficient cement will be pumped to circulate back to surface.

2. Blowout Prevention

Pressure Rating (PSI): 2M      Rating Depth: 4200

Equipment

The blowout preventer equipment (BOP) shown in Exhibit 10 will consist of a double ram-type (3000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with

blind rams on top of 5” drill pipe rams on bottom. The 13-5/8” BOP will be nipped up on the 13-3/8” surface casing and tested by a 3<sup>rd</sup> party to 2000 psi used continuously until TD is reached.

**Variance Requested?** Yes.  
A variance is requested to use a Multi Bowl Wellhead System and Flex Hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer’s certification and pressure test will be kept on the rig.

**Testing**  
All BOP’s and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit 10) will include a Kelly cock and floor safety valve and choke lines and choke manifold with a minimum 2000 psi WP rating.

3. Casing Program:

Casing	Hole Size	Depth		Casing						Safety Factors					
		MD	TVD	OD	Wt.	Grade	Connection	Cond.	Tapered	Collapse	Type	Burst	Type	Tension	Type
Surface	17 1/2	400'	400'	13.375	48#	J55	STC	New	No	3.8671	Dry	12.3850	Dry	3.7166	BW + 100k
Intermediate	12 1/4	1,350'	1,345'	9.625	36#	J55	LTC	New	No	2.8211	Dry	4.9159	Dry	3.2120	BW + 100k
Production	8 3/4	3,308'	3,073'	7.000	32#	HCL-80	BTC	New	Yes	7.0742	Dry	5.7546	Dry	2.6168	BW + 100k
Production	8 3/4	8,759'	3,150'	5.500	20#	HCL-80	BTC	New		7.0539	Dry	5.9657	Dry	1.6368	BW + 100k

4. Cement Program:

Surface Cement		
Tail		
Cement	Class C HSR	100%
Accelerator	A-2	0.250% BWOB
Foam Preventer	FP-28L	0.003 gal/sk
Anti Static Additive	Static Free	0.005 lb/sk
Weight (ppg)		14.8
Yield (ft3/sk)		1.33
Sacks		418
Cement Volume (ft3)		555.72
Water Required (gal/sk)		6.30
Excess		100%
Slurry Top (ft)		Surface

Intermediate Cement					
Lead			Tail		
Cement	Class C HSR	65%	Cement	Class C HSR	100%
Cement - Extender	Fly Ash (OTX 1)	35%	Accelerator	A-2	0.250% BWOB
Accelerator	A-2	1.000 %BWOB	Fluid Loss	FL-66	0.200% BWOB
Accelerator	A-5	3.000 % BWOW	Foam Preventer	FP-28L	0.005 gal/sk
Extender - Viscosifier	Bentonite	3.000% BWOB			
Foam Preventer	FP-28L	0.005 gal/sk			
Retarder	R-7C	0.100% BWOB			
Weight (ppg)		12.8	Weight (ppg)		14.8
Yield (ft3/sk)		1.65	Yield (ft3/sk)		1.33
Sacks		242	Sacks		129
Cement Volume (ft3)		399.53	Cement Volume (ft3)		171.24
Water Required (gal/sk)		8.40	Water Required (gal/sk)		6.30
Excess		35%	Excess		35%
Slurry Top (ft)		Surface	Slurry Top (ft)		945

Production Cement					
Lead			Tail		
Cement	Class C HSR	65%	Cement	Class C HSR	60%
Cement - Extender	Fly Ash (OTX 1)	35%	Cement - Extender	Fly Ash (OTX-1)	35%
Accelerator	A-30	2.000% BWOB	Cement - Extender	AEXT-1012	5%
Thixotropic	ATHX-1102	0.900% BWOB	Viscosifier	ASA-301	0.100 % BWOB
Extender - Viscosifier	Bentonite	3.000% BWOB	Bond Enhancer	BA-90	0.500% BWOB
Fluid Loss	FL-66	0.200% BWOB	Bond Enhancer	EC-1	1.000% BWOB
Foam Preventer	FP-28L	0.005 gal/sk	Dispersant	CD-32A	0.100% BWOB
Retarder	R-7C	0.150% BWOB	Fluid Loss	FL-66	0.600% BWOB
Anti-Static	Static Free	0.005% BWOB	Foam Preventer	FP-28L	0.005 gal/sk
			Retarder	R-7C	0.400% BWOB
Weight (ppg)		11.5	Weight (ppg)		13.7
Yield (ft3/sk)		2.49	Yield (ft3/sk)		1.29
Sacks		192	Sacks		1663
Cement Volume (ft3)		478.81	Cement Volume (ft3)		2145.11
Water Required (gal/sk)		14.60	Water Required (gal/sk)		5.80
Excess		40%	Excess		40%
Slurry Top (ft)		Surface	Slurry Top (ft)		2275

5. Types and Characteristics of the Proposed Mud System:

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

Describe what will be on location to control well or mitigate other conditions:

The well will be drilled to TD with a combination of fresh and cut brine mud system. The applicable depths and properties of this system are as follows:

Surface									
Depth (MD)	Type	MW (lb/ft3)			Gel Strength (#/100ft3)	PV (cP)	Salinity (ppm)	pH	Filtrate
0' - 400'	Freshwater	62.8	-	68.8	8-15	8-10	<2000	8.0-9.0	NC
Intermediate									
Depth (MD)	Type	MW (lb/ft3)			Gel Strength (#/100ft3)	PV (cP)	Salinity (ppm)	pH	Filtrate
400' - 1,350'	Brine	74.8	-	76.3	NA	NA	120,000-170,000	9.0-10.5	NC
Production									
Depth (MD)	Type	MW (lb/ft3)			Gel Strength (#/100ft3)	PV (cP)	Salinity (ppm)	pH	Filtrate
1,350' - TD	Cut Brine	65.8	-	68.8	NA	NA	30,000-60,000	9.0-10.5	NC

Describe the mud monitoring system utilized:

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

6. Logging, Testing and Coring Program:

- A.

The logging program will consist of GR log from intermediate shoe to TD
- B.

Drill Stem test is not anticipated.
- C.

No conventional coring is anticipated.
- D.

Further testing procedures will be determined at TD.
- E.

Mud log will be taken from surface casing shoe to TD.

7. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. **The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 1507 psig (0.052\*3150'TVD\*9.2ppg) less than 2900 Bottom Hole Pressure.**  
Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well; a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

8. Anticipated Starting Date and Duration of Operations:

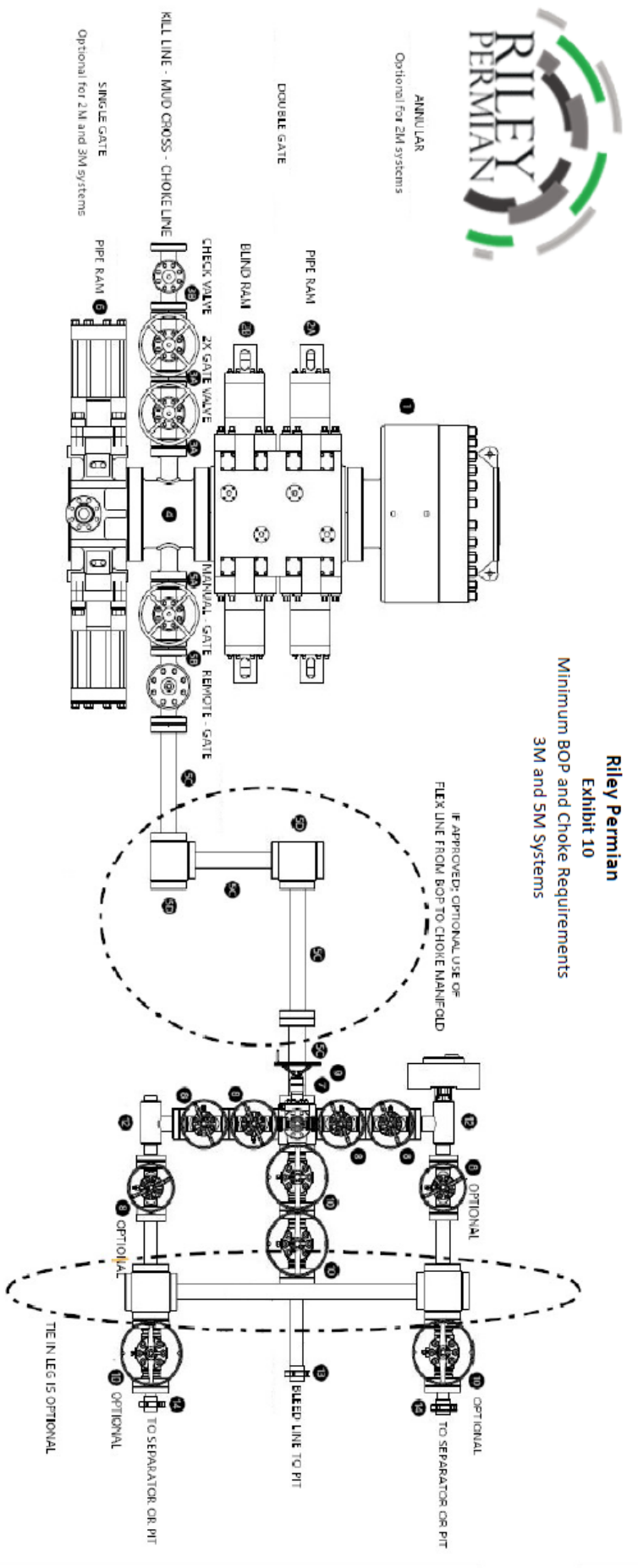
Road and location work will not begin until approval has been received from the BLM. The anticipated spud date **is May 1, 2024.** Once commenced, the drilling operation should be finished in approximately 20 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

## NOTES REGARDING THE BLOWOUT PREVENTERS

**Bunny 3-4 Fed Com 24H**

**Eddy County, New Mexico**

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.



**Riley Permian**  
**Exhibit 10**  
Minimum BOP and Choke Requirements  
3M and 5M Systems

BOP - Minimum Requirements					Choke Manifold - Minimum Requirements							
Description	ID (in.)	Nom. OD (in.)	Optional	Note	3000 MWPP			5000 MWPP		10000 MWPP		
					Description	ID (in.)	Nominal OD (in. unless otherwise noted)	Rating (psi)	ID (in.)	Nominal OD (in. unless otherwise noted)	Rating (psi)	
1	Annular		Yes - 2M									
		2A	Pipe Ram					3,000				10,000
		2B	Blind Ram	3 1/8	No							
		3A	Gate					3,000	2 1/16		5,000	3 1/8
		3A	Gate	2				3,000			5,000	
		3A	Check Valve		No			3,000	3 1/8		5,000	3 1/8
		3B	Line									
				2								
4	Mud Cross	2 1/16	No	Kill Line - 2" min. Choke Line - 3" min.								
5A	Gate - Manual (2)	3 1/8	No									
5B	Gate - Remote (2)		No									
5C	Choke Line	3	No									
5D	Targeted Tee		No									
6	Single Gate - Pipe Ram		Yes - 2M and 3M									

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**Riley Permian Operating Company, LLC**  
**Onshore Order #6**  
**Hydrogen Sulfide Drilling Operation Plan**

## **I. HYDROGEN SULFIDE TRAINING**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H<sub>2</sub>S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

## **II. H<sub>2</sub>S SAFETY EQUIPMENT AND SYSTEMS**

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S.

### **1. Well Control Equipment:**

- A. Flare line.
- B. Choke manifold.
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

### **2. Protective equipment for essential personnel:**



- A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

**3. H2S detection and monitoring equipment:**

- A. 3x portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

**4. Visual warning systems:**

- A. Wind direction indicators as shown on well site diagram (Exhibit #8).
- B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

**5. Mud program:**

- A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

**6. Metallurgy:**

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- B. All elastomers used for packing and seals shall be H2S trim.

**7. Communication:**

- A. Radio communications in company vehicles including cellular telephone and 2-way radio.
- B. Land line (telephone) communication at Office.

**8. Well testing:**

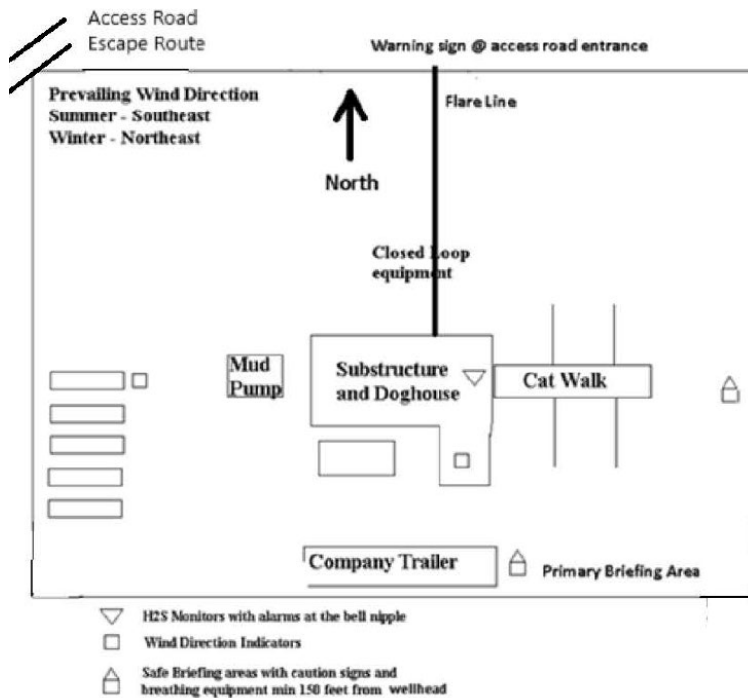
- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

# WARNING

**YOU ARE ENTERING AN H2S AREA  
AUTHORIZED PERSONNEL ONLY**

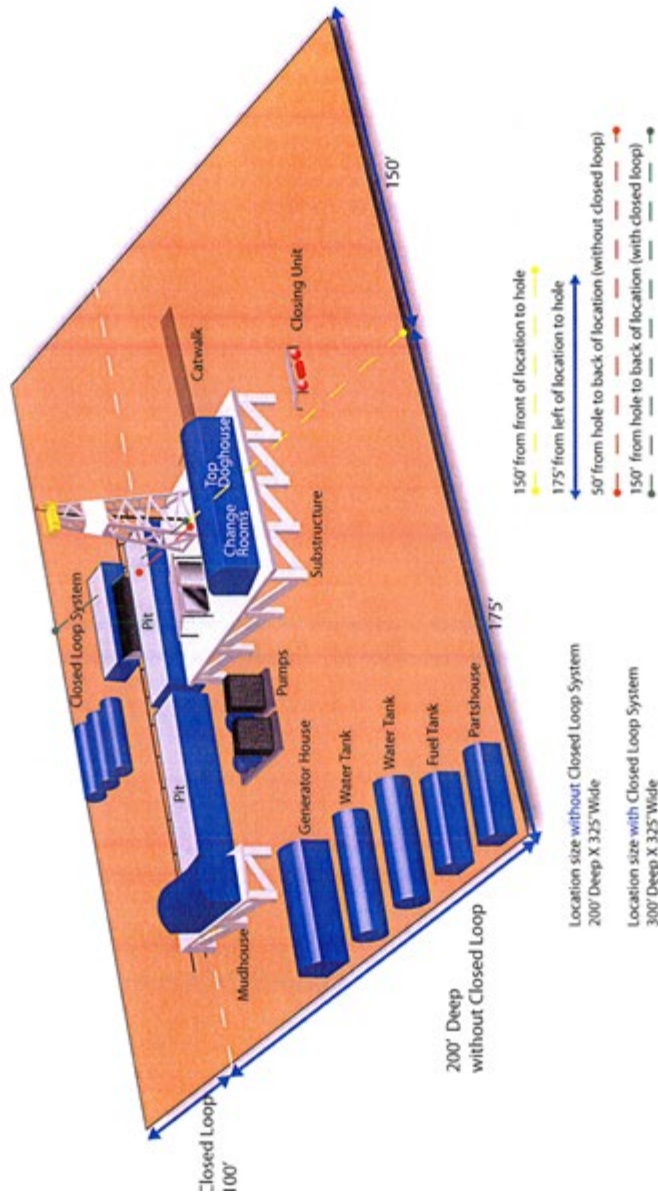
1. BEARDS OR CONTACT LENSES NOT ALLOWED
2. HARD HATS REQUIRED
3. SMOKING IN DESIGNATED AREAS ONLY
4. BE WIND CONSCIOUS AT ALL TIMES
5. CHECK WITH RILEY PERMIAN OPERATING COMPANY MAN AT OFFICE

RILEY PERMIAN OPERATING COMPANY, LLC  
1-405-415-8699



DRILLING LOCATION H2S SAFTY EQUIPMENT  
Exhibit # 8

Location Layout



**EMERGENCY CONTACT LIST – EDDY COUNTY**

<b>Artesia</b>	<b>Cellular</b>	<b>Office</b>
Spence Laird.....	575-703-7382.....	405-420-8415
Steve Forister.....	505-400-4571.....	405-666-0113
Vince Salvo.....	281-386-8417	
Richard McKay.....	432-934-7586	
Justin Sappington.....	361-550-0494	

**Agency Call List (575)****Artesia**

State Police.....	746-2703
City Police.....	746-2703
Sheriff's Office.....	746-9888
Ambulance.....	911
Fire Department.....	746-2701
LEPC (Local Emergency Planning Committee.....	746-2122
NMOCD.....	748-1283

**Carlsbad**

State Police.....	885-3137
City Police.....	885-2111
Sheriff's Office.....	887-7551
Ambulance.....	911
Fire Department.....	885-2111
LEPC (Local Emergency Planning Committee.....	887-3798
Bureau of Land Management.....	887-6544
New Mexico Emergency Response Commission.....	(505)476-9690

24 Hour.....(505)827-9126

Natonal Emergency Response Center (Washington).....(800)424-8802

### Emergency Services

Boots & Coots IWC.....1-800-256-9688 or (281)931-8884

Cudd pressure Control.....(915)699-0139 or (915)563-3356

Halliburton.....746-2757

Par Five.....748-9539

Flight For Life-Lubbock, TX.....(806)743-9911

Aerocare-Lubbock, TX.....(806)747-8923

Med Flight Air Amb-Albuquerque, NM.....(505)842-4433

Lifeguard Air Med Svc. Albuquerque, NM.....(505)272-3115

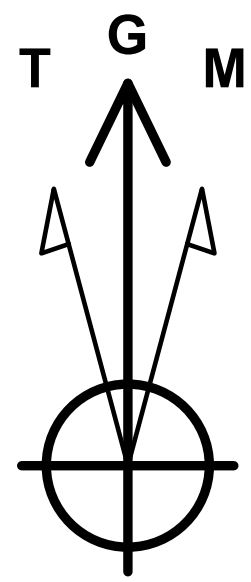




Company: Riley Permian Operating Co., LLC  
Well: Bunny 3-4 Fed Com 24H  
County: Eddy County, New Mexico (NAD 83)  
Rig: Akita 523  
Wellbore: Wellbore #1  
Design: Design #1  
Date: 10:27, April 09 2024

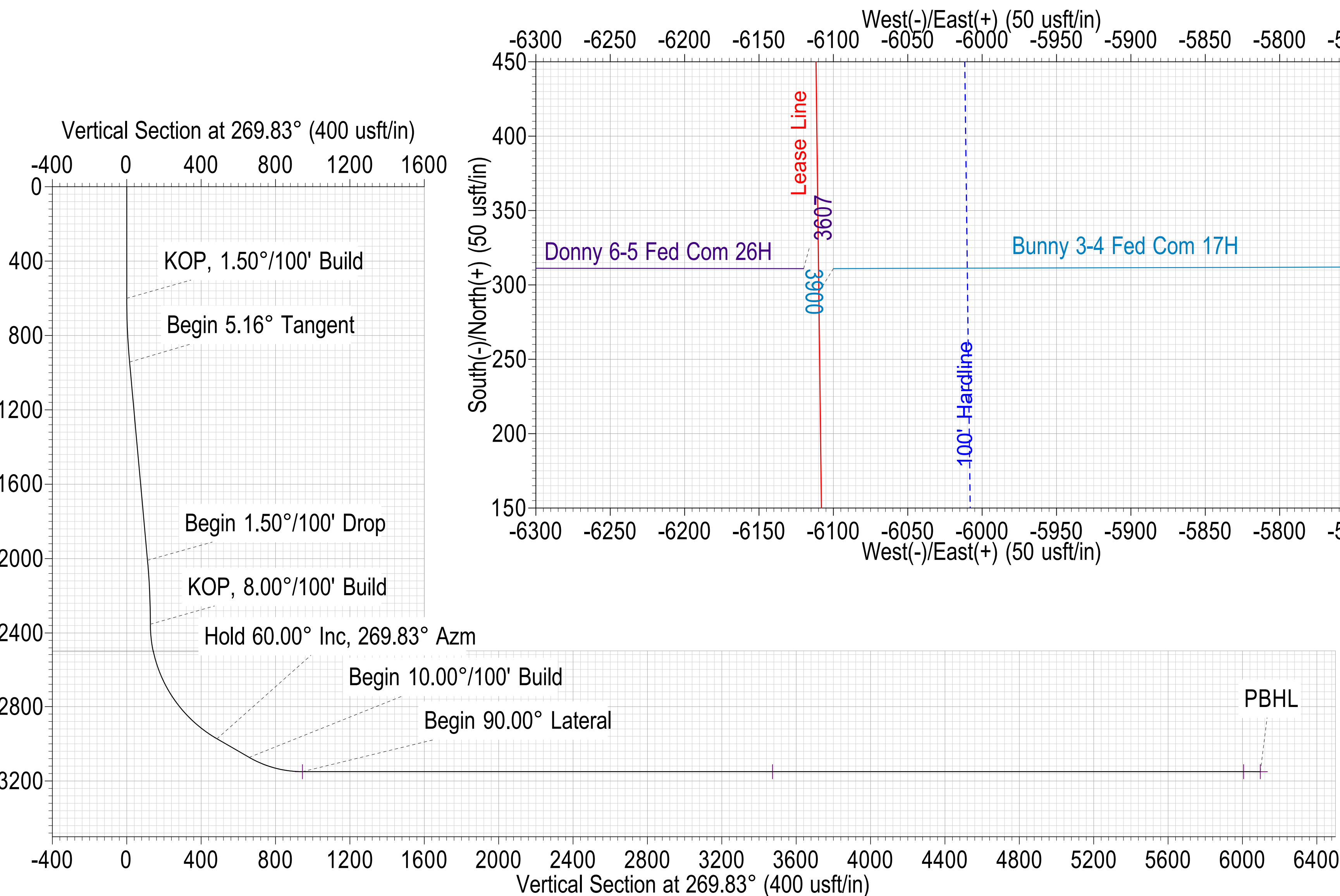
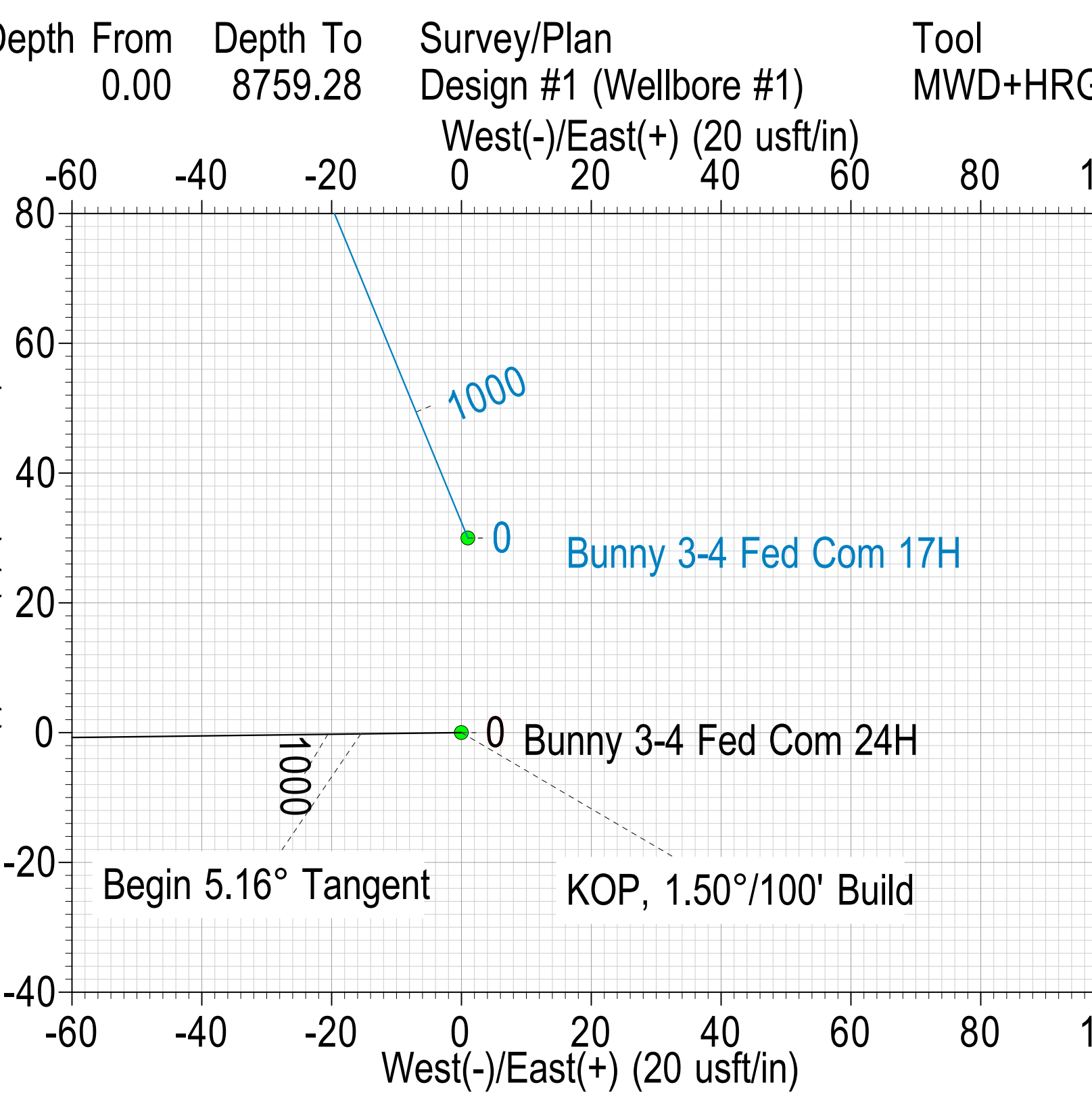
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level

To convert a Magnetic Direction to a Grid Direction, Add 6.717°  
To convert a Magnetic Direction to a True Direction, Add 6.750° East  
To convert a True Direction to a Grid Direction, Subtract 0.033°



Azimuths to Grid North  
True North: -0.03°  
Magnetic North: 6.72°  
  
Magnetic Field  
Strength: 47424.5nT  
Dip Angle: 60.33°  
Date: 5/1/2024  
Model: HDGM2024

SURVEY PROGRAM



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Directional are at the sole risk and responsibility of the customer. MS Directional is not responsible for the accuracy of this schematic or the information contained herein.

SECTION DETAILS

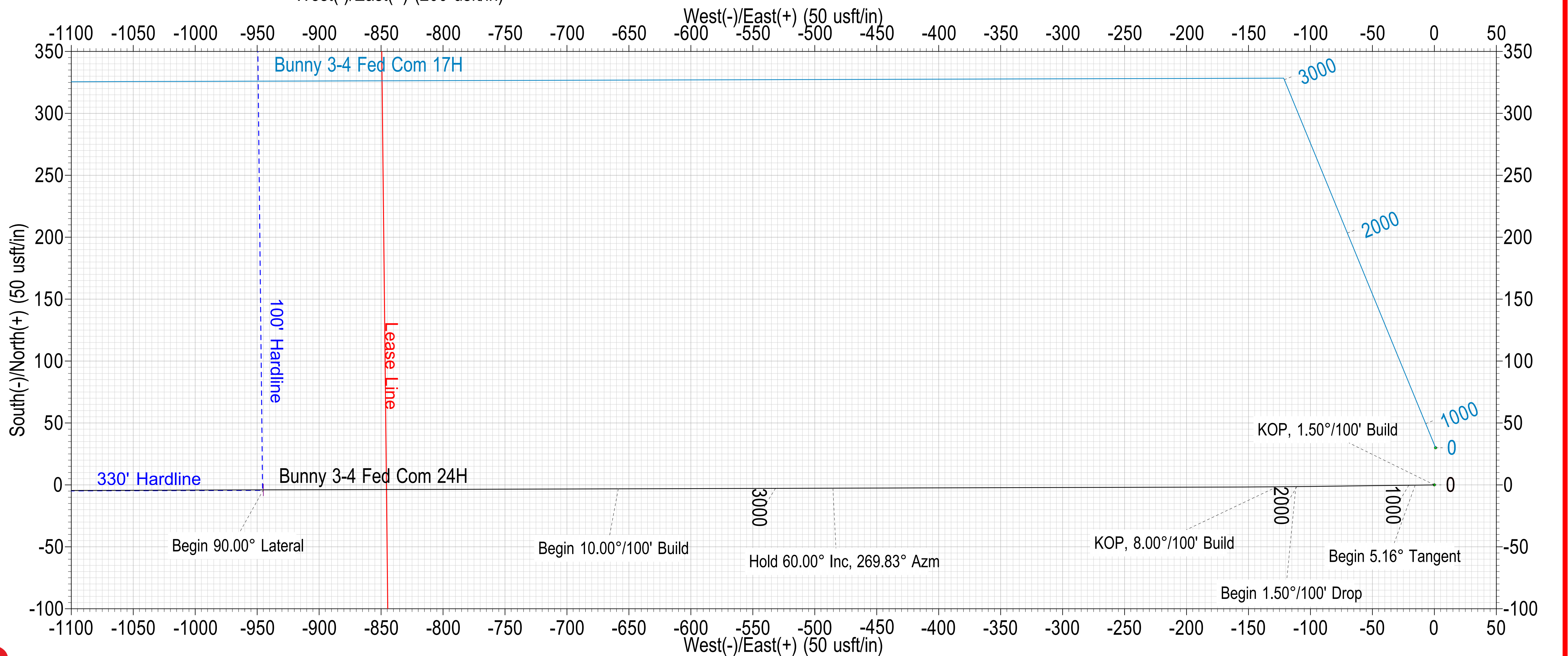
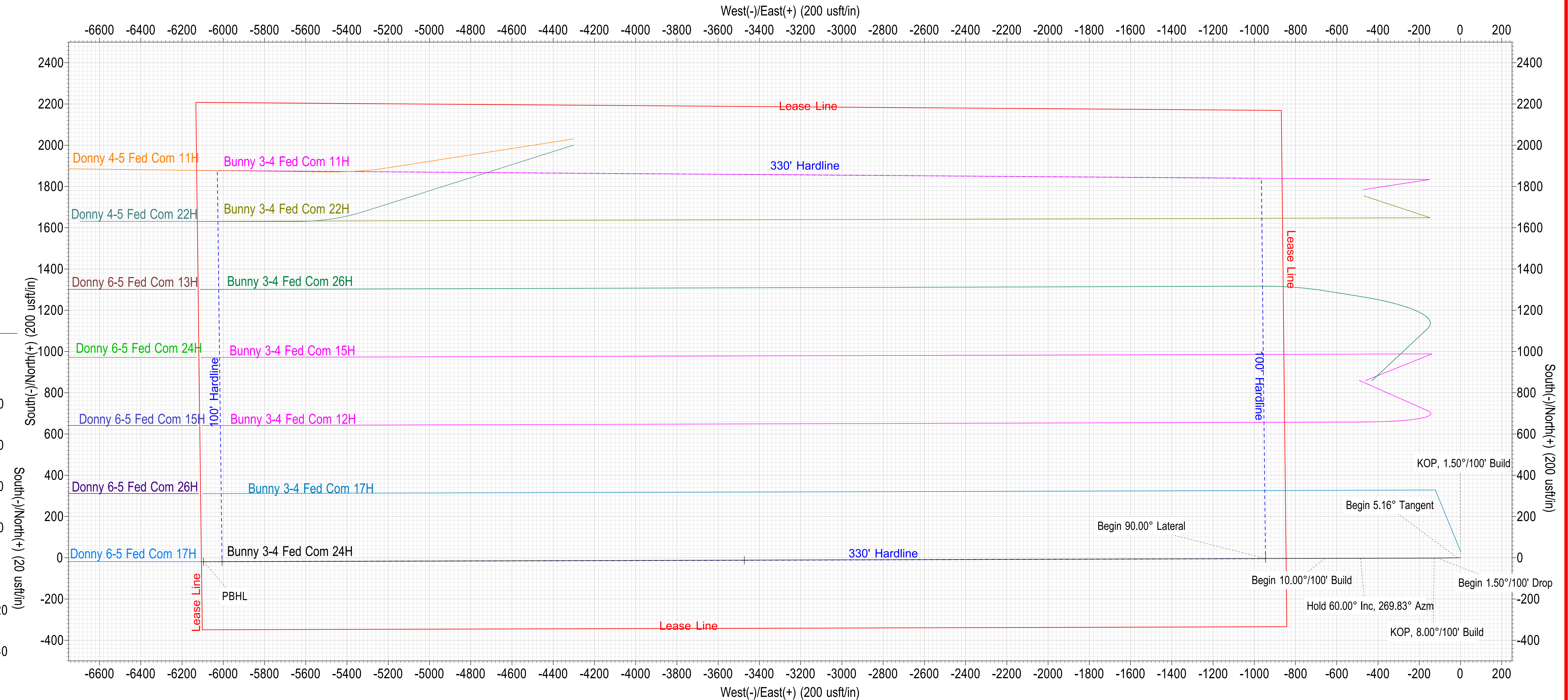
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.000	0.00	KOP, 1.50°/100' Build
944.05	5.16	269.29	943.59	-0.19	-15.48	1.50	269.288	15.48	Begin 5.16° Tangent
2014.21	5.16	269.29	2009.40	-1.39	-111.74	0.00	0.000	111.74	Begin 1.50°/100' Drop
2358.26	0.00	0.00	2352.99	-1.58	-127.22	1.50	180.000	127.22	KOP, 8.00°/100' Build
3108.26	60.00	269.83	2973.24	-2.64	-485.32	8.00	269.830	485.32	Hold 60.00° Inc, 269.83° Azm
3308.26	60.00	269.83	3073.24	-3.16	-658.52	0.00	0.000	658.53	Begin 10.00°/100' Build
3608.26	90.00	269.83	3150.00	-4.00	-945.00	10.00	0.006	945.01	Begin 90.00° Lateral
8759.28	90.00	269.83	3150.00	-19.00	-6096.00	0.00	0.000	6096.03	PBHL

WELL DETAILS: Bunny 3-4 Fed Com 24H

+N/-S	+E/-W	GL @ 3541.00 Northing	WELL @ 3561.00usft (Akita 523) Easting	Latitude	Longitude
0.00	0.00	644039.00	560153.00	32° 46' 13.737 N	104° 16' 19.626 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Fed Perf. Point_Bunny 24H	3150.00	-12.00	-3473.00	644027.00	556680.00	32° 46' 13.636 N	104° 17' 0.303 W
FTP_Bunny 24H	3150.00	-4.00	-945.00	644035.00	559208.00	32° 46' 13.703 N	104° 16' 30.694 W
Lower most Perf_Bunny 24H	3150.00	-19.00	-6006.00	644020.00	554147.00	32° 46' 13.578 N	104° 17' 29.971 W
PBHL_Bunny 24H	3150.00	-19.00	-6096.00	644020.00	554057.00	32° 46' 13.578 N	104° 17' 31.025 W







# **Riley Permian Operating Co., LLC**

**Eddy County, New Mexico (NAD 83)**

**Bunny (11, 12, 15, 17, 22, 24, 26)**

**Bunny 3-4 Fed Com 24H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**09 April, 2024**





# MS Directional Planning Report



<b>Database:</b>	EDM 5000.15 Conroe DB	<b>Local Co-ordinate Reference:</b>	Well Bunny 3-4 Fed Com 24H
<b>Company:</b>	Riley Permian Operating Co., LLC	<b>TVD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Project:</b>	Eddy County, New Mexico (NAD 83)	<b>MD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Site:</b>	Bunny (11, 12, 15, 17, 22, 24, 26)	<b>North Reference:</b>	Grid
<b>Well:</b>	Bunny 3-4 Fed Com 24H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Eddy County, New Mexico (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Bunny (11, 12, 15, 17, 22, 24, 26)		
<b>Site Position:</b>		<b>Northing:</b>	645,794.00 usft
<b>From:</b>	Map	<b>Easting:</b>	559,684.00 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	32° 46' 31.106 N
		<b>Longitude:</b>	104° 16' 25.108 W

<b>Well</b>	Bunny 3-4 Fed Com 24H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft
<b>Grid Convergence:</b>	0.033 °	<b>Latitude:</b>	32° 46' 13.737 N
		<b>Longitude:</b>	104° 16' 19.626 W
		<b>Ground Level:</b>	3,541.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM2024	5/1/2024	6.750	60.333	47,424.50

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	269.83	

<b>Plan Survey Tool Program</b>	<b>Date</b>	4/9/2024			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	8,759.28	Design #1 (Wellbore #1)	MWD+HRGM	
			OWSG MWD + HRGM		





# MS Directional Planning Report



<b>Database:</b>	EDM 5000.15 Conroe DB	<b>Local Co-ordinate Reference:</b>	Well Bunny 3-4 Fed Com 24H
<b>Company:</b>	Riley Permian Operating Co., LLC	<b>TVD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Project:</b>	Eddy County, New Mexico (NAD 83)	<b>MD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Site:</b>	Bunny (11, 12, 15, 17, 22, 24, 26)	<b>North Reference:</b>	Grid
<b>Well:</b>	Bunny 3-4 Fed Com 24H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.000	
944.05	5.16	269.29	943.59	-0.19	-15.48	1.50	1.50	0.00	269.288	
2,014.21	5.16	269.29	2,009.40	-1.39	-111.74	0.00	0.00	0.00	0.000	
2,358.26	0.00	0.00	2,352.99	-1.58	-127.22	1.50	-1.50	0.00	180.000	
3,108.26	60.00	269.83	2,973.24	-2.64	-485.32	8.00	8.00	0.00	269.830	
3,308.26	60.00	269.83	3,073.24	-3.16	-658.52	0.00	0.00	0.00	0.000	
3,608.26	90.00	269.83	3,150.00	-4.00	-945.00	10.00	10.00	0.00	0.006	
8,759.28	90.00	269.83	3,150.00	-19.00	-6,096.00	0.00	0.00	0.00	0.000	PBHL_Bunny 24H



# MS Directional Planning Report



<b>Database:</b>	EDM 5000.15 Conroe DB	<b>Local Co-ordinate Reference:</b>	Well Bunny 3-4 Fed Com 24H
<b>Company:</b>	Riley Permian Operating Co., LLC	<b>TVD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Project:</b>	Eddy County, New Mexico (NAD 83)	<b>MD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Site:</b>	Bunny (11, 12, 15, 17, 22, 24, 26)	<b>North Reference:</b>	Grid
<b>Well:</b>	Bunny 3-4 Fed Com 24H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>KOP, 1.50°/100' Build</b>									
700.00	1.50	269.29	699.99	-0.02	-1.31	1.31	1.50	1.50	0.00
800.00	3.00	269.29	799.91	-0.07	-5.23	5.23	1.50	1.50	0.00
900.00	4.50	269.29	899.69	-0.15	-11.77	11.77	1.50	1.50	0.00
944.05	5.16	269.29	943.59	-0.19	-15.48	15.48	1.50	1.50	0.00
<b>Begin 5.16° Tangent</b>									
1,000.00	5.16	269.29	999.31	-0.25	-20.52	20.52	0.00	0.00	0.00
1,100.00	5.16	269.29	1,098.90	-0.37	-29.51	29.51	0.00	0.00	0.00
1,200.00	5.16	269.29	1,198.50	-0.48	-38.50	38.51	0.00	0.00	0.00
1,300.00	5.16	269.29	1,298.09	-0.59	-47.50	47.50	0.00	0.00	0.00
1,400.00	5.16	269.29	1,397.69	-0.70	-56.49	56.49	0.00	0.00	0.00
1,500.00	5.16	269.29	1,497.28	-0.81	-65.49	65.49	0.00	0.00	0.00
1,600.00	5.16	269.29	1,596.88	-0.93	-74.48	74.48	0.00	0.00	0.00
1,700.00	5.16	269.29	1,696.47	-1.04	-83.48	83.48	0.00	0.00	0.00
1,800.00	5.16	269.29	1,796.07	-1.15	-92.47	92.47	0.00	0.00	0.00
1,900.00	5.16	269.29	1,895.66	-1.26	-101.46	101.47	0.00	0.00	0.00
2,000.00	5.16	269.29	1,995.25	-1.37	-110.46	110.46	0.00	0.00	0.00
2,014.21	5.16	269.29	2,009.40	-1.39	-111.74	111.74	0.00	0.00	0.00
<b>Begin 1.50°/100' Drop</b>									
2,100.00	3.87	269.29	2,094.93	-1.47	-118.49	118.50	1.50	-1.50	0.00
2,200.00	2.37	269.29	2,194.78	-1.54	-123.94	123.95	1.50	-1.50	0.00
2,300.00	0.87	269.29	2,294.73	-1.57	-126.78	126.78	1.50	-1.50	0.00
2,358.26	0.00	0.00	2,352.99	-1.58	-127.22	127.22	1.50	-1.50	155.71
<b>KOP, 8.00°/100' Build</b>									
2,400.00	3.34	269.83	2,394.71	-1.58	-128.44	128.44	8.00	8.00	-216.02
2,450.00	7.34	269.83	2,444.48	-1.60	-133.09	133.09	8.00	8.00	0.00
2,500.00	11.34	269.83	2,493.81	-1.62	-141.20	141.20	8.00	8.00	0.00
2,550.00	15.34	269.83	2,542.45	-1.66	-152.73	152.74	8.00	8.00	0.00
2,600.00	19.34	269.83	2,590.17	-1.70	-167.63	167.64	8.00	8.00	0.00
2,650.00	23.34	269.83	2,636.73	-1.75	-185.82	185.83	8.00	8.00	0.00
2,700.00	27.34	269.83	2,681.91	-1.82	-207.22	207.22	8.00	8.00	0.00
2,750.00	31.34	269.83	2,725.49	-1.89	-231.71	231.72	8.00	8.00	0.00
2,800.00	35.34	269.83	2,767.25	-1.97	-259.19	259.19	8.00	8.00	0.00
2,850.00	39.34	269.83	2,807.00	-2.06	-289.51	289.51	8.00	8.00	0.00
2,900.00	43.34	269.83	2,844.53	-2.16	-322.52	322.53	8.00	8.00	0.00
2,950.00	47.34	269.83	2,879.67	-2.26	-358.08	358.09	8.00	8.00	0.00
3,000.00	51.34	269.83	2,912.24	-2.38	-396.00	396.01	8.00	8.00	0.00
3,050.00	55.34	269.83	2,942.09	-2.50	-436.10	436.11	8.00	8.00	0.00
3,100.00	59.34	269.83	2,969.06	-2.62	-478.19	478.19	8.00	8.00	0.00
3,108.26	60.00	269.83	2,973.24	-2.64	-485.32	485.32	8.00	8.00	0.00
<b>Hold 60.00° Inc, 269.83° Azm</b>									
3,200.00	60.00	269.83	3,019.11	-2.88	-564.77	564.77	0.00	0.00	0.00
3,308.26	60.00	269.83	3,073.24	-3.16	-658.52	658.53	0.00	0.00	0.00
<b>Begin 10.00°/100' Build</b>									
3,350.00	64.17	269.83	3,092.77	-3.27	-695.40	695.41	10.00	10.00	0.00
3,400.00	69.17	269.83	3,112.56	-3.40	-741.30	741.30	10.00	10.00	0.00



# MS Directional Planning Report



<b>Database:</b>	EDM 5000.15 Conroe DB	<b>Local Co-ordinate Reference:</b>	Well Bunny 3-4 Fed Com 24H
<b>Company:</b>	Riley Permian Operating Co., LLC	<b>TVD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Project:</b>	Eddy County, New Mexico (NAD 83)	<b>MD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Site:</b>	Bunny (11, 12, 15, 17, 22, 24, 26)	<b>North Reference:</b>	Grid
<b>Well:</b>	Bunny 3-4 Fed Com 24H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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)
3,450.00	74.17	269.83	3,128.28	-3.54	-788.75	788.75	10.00	10.00	0.00
3,500.00	79.17	269.83	3,139.80	-3.68	-837.38	837.39	10.00	10.00	0.00
3,550.00	84.17	269.83	3,147.04	-3.83	-886.84	886.85	10.00	10.00	0.00
3,600.00	89.17	269.83	3,149.94	-3.97	-936.74	936.75	10.00	10.00	0.00
3,608.26	90.00	269.83	3,150.00	-4.00	-945.00	945.01	10.00	10.00	0.00
Begin 90.00° Lateral									
3,700.00	90.00	269.83	3,150.00	-4.27	-1,036.74	1,036.75	0.00	0.00	0.00
3,800.00	90.00	269.83	3,150.00	-4.56	-1,136.74	1,136.75	0.00	0.00	0.00
3,900.00	90.00	269.83	3,150.00	-4.85	-1,236.74	1,236.75	0.00	0.00	0.00
4,000.00	90.00	269.83	3,150.00	-5.14	-1,336.74	1,336.75	0.00	0.00	0.00
4,100.00	90.00	269.83	3,150.00	-5.43	-1,436.74	1,436.75	0.00	0.00	0.00
4,200.00	90.00	269.83	3,150.00	-5.72	-1,536.74	1,536.75	0.00	0.00	0.00
4,300.00	90.00	269.83	3,150.00	-6.01	-1,636.74	1,636.75	0.00	0.00	0.00
4,400.00	90.00	269.83	3,150.00	-6.30	-1,736.74	1,736.75	0.00	0.00	0.00
4,500.00	90.00	269.83	3,150.00	-6.60	-1,836.74	1,836.75	0.00	0.00	0.00
4,600.00	90.00	269.83	3,150.00	-6.89	-1,936.74	1,936.75	0.00	0.00	0.00
4,700.00	90.00	269.83	3,150.00	-7.18	-2,036.74	2,036.75	0.00	0.00	0.00
4,800.00	90.00	269.83	3,150.00	-7.47	-2,136.74	2,136.75	0.00	0.00	0.00
4,900.00	90.00	269.83	3,150.00	-7.76	-2,236.74	2,236.75	0.00	0.00	0.00
5,000.00	90.00	269.83	3,150.00	-8.05	-2,336.73	2,336.75	0.00	0.00	0.00
5,100.00	90.00	269.83	3,150.00	-8.34	-2,436.73	2,436.75	0.00	0.00	0.00
5,200.00	90.00	269.83	3,150.00	-8.63	-2,536.73	2,536.75	0.00	0.00	0.00
5,300.00	90.00	269.83	3,150.00	-8.93	-2,636.73	2,636.75	0.00	0.00	0.00
5,400.00	90.00	269.83	3,150.00	-9.22	-2,736.73	2,736.75	0.00	0.00	0.00
5,500.00	90.00	269.83	3,150.00	-9.51	-2,836.73	2,836.75	0.00	0.00	0.00
5,600.00	90.00	269.83	3,150.00	-9.80	-2,936.73	2,936.75	0.00	0.00	0.00
5,700.00	90.00	269.83	3,150.00	-10.09	-3,036.73	3,036.75	0.00	0.00	0.00
5,800.00	90.00	269.83	3,150.00	-10.38	-3,136.73	3,136.75	0.00	0.00	0.00
5,900.00	90.00	269.83	3,150.00	-10.67	-3,236.73	3,236.75	0.00	0.00	0.00
6,000.00	90.00	269.83	3,150.00	-10.96	-3,336.73	3,336.75	0.00	0.00	0.00
6,100.00	90.00	269.83	3,150.00	-11.26	-3,436.73	3,436.75	0.00	0.00	0.00
6,200.00	90.00	269.83	3,150.00	-11.55	-3,536.73	3,536.75	0.00	0.00	0.00
6,300.00	90.00	269.83	3,150.00	-11.84	-3,636.73	3,636.75	0.00	0.00	0.00
6,400.00	90.00	269.83	3,150.00	-12.13	-3,736.73	3,736.75	0.00	0.00	0.00
6,500.00	90.00	269.83	3,150.00	-12.42	-3,836.73	3,836.75	0.00	0.00	0.00
6,600.00	90.00	269.83	3,150.00	-12.71	-3,936.73	3,936.75	0.00	0.00	0.00
6,700.00	90.00	269.83	3,150.00	-13.00	-4,036.73	4,036.75	0.00	0.00	0.00
6,800.00	90.00	269.83	3,150.00	-13.29	-4,136.73	4,136.75	0.00	0.00	0.00
6,900.00	90.00	269.83	3,150.00	-13.58	-4,236.73	4,236.75	0.00	0.00	0.00
7,000.00	90.00	269.83	3,150.00	-13.88	-4,336.73	4,336.75	0.00	0.00	0.00
7,100.00	90.00	269.83	3,150.00	-14.17	-4,436.73	4,436.75	0.00	0.00	0.00
7,200.00	90.00	269.83	3,150.00	-14.46	-4,536.73	4,536.75	0.00	0.00	0.00
7,300.00	90.00	269.83	3,150.00	-14.75	-4,636.73	4,636.75	0.00	0.00	0.00
7,400.00	90.00	269.83	3,150.00	-15.04	-4,736.72	4,736.75	0.00	0.00	0.00
7,500.00	90.00	269.83	3,150.00	-15.33	-4,836.72	4,836.75	0.00	0.00	0.00
7,600.00	90.00	269.83	3,150.00	-15.62	-4,936.72	4,936.75	0.00	0.00	0.00
7,700.00	90.00	269.83	3,150.00	-15.91	-5,036.72	5,036.75	0.00	0.00	0.00
7,800.00	90.00	269.83	3,150.00	-16.21	-5,136.72	5,136.75	0.00	0.00	0.00
7,900.00	90.00	269.83	3,150.00	-16.50	-5,236.72	5,236.75	0.00	0.00	0.00
8,000.00	90.00	269.83	3,150.00	-16.79	-5,336.72	5,336.75	0.00	0.00	0.00
8,100.00	90.00	269.83	3,150.00	-17.08	-5,436.72	5,436.75	0.00	0.00	0.00
8,200.00	90.00	269.83	3,150.00	-17.37	-5,536.72	5,536.75	0.00	0.00	0.00
8,300.00	90.00	269.83	3,150.00	-17.66	-5,636.72	5,636.75	0.00	0.00	0.00
8,400.00	90.00	269.83	3,150.00	-17.95	-5,736.72	5,736.75	0.00	0.00	0.00



# MS Directional Planning Report



<b>Database:</b>	EDM 5000.15 Conroe DB	<b>Local Co-ordinate Reference:</b>	Well Bunny 3-4 Fed Com 24H
<b>Company:</b>	Riley Permian Operating Co., LLC	<b>TVD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Project:</b>	Eddy County, New Mexico (NAD 83)	<b>MD Reference:</b>	WELL @ 3561.00usft (Akita 523)
<b>Site:</b>	Bunny (11, 12, 15, 17, 22, 24, 26)	<b>North Reference:</b>	Grid
<b>Well:</b>	Bunny 3-4 Fed Com 24H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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)
8,500.00	90.00	269.83	3,150.00	-18.24	-5,836.72	5,836.75	0.00	0.00	0.00
8,600.00	90.00	269.83	3,150.00	-18.54	-5,936.72	5,936.75	0.00	0.00	0.00
8,700.00	90.00	269.83	3,150.00	-18.83	-6,036.72	6,036.75	0.00	0.00	0.00
8,759.28	90.00	269.83	3,150.00	-19.00	-6,096.00	6,096.03	0.00	0.00	0.00
PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Fed Perf. Point_Bunny - hit/miss target - Shape	0.00	0.00	3,150.00	-12.00	-3,473.00	644,027.00	556,680.00	32° 46' 13.636 N	104° 17' 0.303 W
- plan misses target center by 0.64usft at 6136.27usft MD (3150.00 TVD, -11.36 N, -3473.00 E)									
- Point									
PBHL_Bunny 24H - plan hits target center - Point	0.00	0.00	3,150.00	-19.00	-6,096.00	644,020.00	554,057.00	32° 46' 13.578 N	104° 17' 31.025 W
Lower most Perf_Bun - plan misses target center by 0.26usft at 8669.28usft MD (3150.00 TVD, -18.74 N, -6006.00 E)	0.00	0.00	3,150.00	-19.00	-6,006.00	644,020.00	554,147.00	32° 46' 13.578 N	104° 17' 29.971 W
- Point									
FTP Bunny 24H - plan hits target center - Point	0.00	0.00	3,150.00	-4.00	-945.00	644,035.00	559,208.00	32° 46' 13.703 N	104° 16' 30.694 W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
600.00	600.00	0.00	0.00	KOP, 1.50°/100' Build
944.05	943.59	-0.19	-15.48	Begin 5.16° Tangent
2,014.21	2,009.40	-1.39	-111.74	Begin 1.50°/100' Drop
2,358.26	2,352.99	-1.58	-127.22	KOP, 8.00°/100' Build
3,108.26	2,973.24	-2.64	-485.32	Hold 60.00° Inc, 269.83° Azm
3,308.26	3,073.24	-3.16	-658.52	Begin 10.00°/100' Build
3,608.26	3,150.00	-4.00	-945.00	Begin 90.00° Lateral
8,759.28	3,150.00	-19.00	-6,096.00	PBHL

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Riley Exploration Permian Incorporated
LEASE NO.:	NMLC 0061783B, NMNM 007717, NMLC 0070937, NMLC 0049648B, NMNM 007711, NMLC 0026874A
COUNTY:	Eddy County, New Mexico

Wells:

The legal lands descriptions are located in Eddy County, New Mexico (Table 1). The following surface hole locations are located in Township 18S, Range 27E, Sections 3, 4, and 6; bottom hole locations are located in Township 18S, Range 27E, Sections 3, 4, 5, and 6.

**Table 1: Legal Lands Descriptions**

Well Name	Surface Hole Legal Location*	Bottom Hole Legal Location*	Surface Section	Bottom Section
<b>Bunny North Pad – Center of Pad: 2,113' FSL and 433' FWL</b>				
Bunny 3-4 Fed Com #11H	2,127' FSL and 395' FWL	2,228' FSL and 10' FWL	3	4
Bunny 3-4 Fed Com #22H	2,097' FSL and 395' FWL	1,980' FSL and 10' FWL	3	4
<b>Bunny Mid Pad – Center of Pad: 1,189' FSL and 365' FWL</b>				
Bunny 3-4 Fed Com #12H	1,202' FSL and 364' FWL	990' FSL and 10' FWL	3	4
Bunny 3-4 Fed Com #15H	1,202' FSL and 394' FWL	1,320' FSL and 10' FWL	3	4
Bunny 3-4 Fed Com #26H	1,202' FSL and 424' FWL	1,650' FSL and 10' FWL	3	4
<b>Bunny South Pad – Center of Pad: 439' FSL and 855' FWL</b>				
Bunny 3-4 Fed Com #17H	384' FSL and 847' FWL	660' FSL and 10' FWL	3	4
Bunny 3-4 Fed Com #24H	354' FSL and 845' FWL	330' FSL and 10' FWL	3	4
<b>Donny North Pad – Center of Pad: 2,350' FSL and 1,868' FWL</b>				
Donny 4-5 Fed Com #11H	2,375' FSL and 1,830' FWL	2,288' FSL and 10' FWL	4	5
Donny 4-5 Fed Com #22H	2,345' FSL and 1,830' FWL	1,980' FSL and 10' FWL	4	5
<b>Donny Mid Pad – Center of Pad: 1,483' FSL and 690' FEL</b>				
Donny 6-5 Fed Com #13H	1,504' FSL and 700' FEL	1,650' FSL and 10' FEL	6	5
Donny 6-5 Fed Com #24H	1,465' FSL and 700' FEL	1,320' FSL and 10' FEL	6	5
<b>Donny South Pad – Center of Pad: 697' FSL and 1,167' FEL</b>				
Donny 6-5 Fed Com #15H	687' FSL and 1,180' FEL	990' FSL and 10' FEL	6	5
Donny 6-5 Fed Com #26H	647' FSL and 1,180' FEL	660' FSL and 10' FEL	6	5
Donny 6-5 Fed Com #17H	607' FSL and 1,180' FEL	330' FSL and 10' FEL	6	5

\*FSL = from south line; FWL = from west line; FEL = from east line

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## 1. GENERAL PROVISIONS

The failure of the operator to comply with these requirements may result in the assessment of liquidated damages or penalties pursuant to 43 CFR 3163.1 or 3163.2. A copy of these conditions of approval shall be present on the location during construction, drilling and reclamation activity. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

### 1.1. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working on the operator's behalf, on the public or federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area (within 100ft) of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer, in conjunction with a BLM Cultural Resource Specialist, to determine appropriate actions to prevent the loss of significant scientific values. The operator shall be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the operator.

Traditional Cultural Properties (TCPs) are protected by NHPA as codified in 36 CFR 800 for possessing traditional, religious, and cultural significance tied to a certain group of individuals. Though there are currently no designated TCPs within the project area or within a mile of the project area, but it is possible for a TCP to be designated after the approval of this project. **If a TCP is designated in the project area after the project's approval, the BLM Authorized Officer will notify the operator of the following conditions and the duration for which these conditions are required.**

1. Temporary halting of all construction, drilling, and production activities to lower noise.
2. Temporary shut-off of all artificial lights at night.

The operator is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA), specifically NAGPRA Subpart B regarding discoveries, to protect human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered during project work. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and a BLM-CFO Authorized Officer will be notified immediately. The BLM will then be required to be notified, in writing, within 24 hours of the discovery. The written notification should include the geographic location by county and state, the contents of the discovery, and the steps taken to protect said discovery. You must also include any potential threats to the discovery and a conformation that all activity within 100ft of the discovery has ceased and work will not resume until written certification is issued. All work on the entire project must halt for a minimum of 3 days and work cannot resume until an Authorized Officer grants permission to do so.

Any paleontological resource discovered by the operator, or any person working on the operator's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. The operator will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the operator.

### 1.2. RANGELAND RESOURCES

#### 1.2.1. Cattleguards

Where a permanent cattleguard is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

### 1.2.2. Fence Requirement

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

### 1.2.3. Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

## NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA, New Mexico Department of Agriculture, and BLM requirements and policies.

### 1.3.1 African Rue (*Peganum harmala*)

**Spraying:** The spraying of African Rue must be completed by a licensed or certified applicator. In order to attempt to kill or remove African Rue the proper mix of chemical is needed. The mix consists of 2% Arsenal (Imazapyr) and 2% Roundup (Glyphosate) along with a nonionic surfactant. Any other chemicals or combinations shall be approved by the BLM Noxious Weeds Coordinator prior to treatment. African Rue shall be sprayed in connection to any dirt working activities or disturbances to the site being sprayed. Spraying of African Rue shall be done on immature plants at initial growth through flowering and mature plants between budding and flowering stages. Spraying shall not be conducted after flowering when plant is fruiting. This will ensure optimal intake of chemical and decrease chances of developing herbicide resistance. After spraying, the operator or necessary parties must contact the Carlsbad Field Office to inspect the effectiveness of the application treatment to the plant species. No ground disturbing activities can take place until the inspection by the authorized officer is complete. The operator may contact the Environmental Protection Department or the BLM Noxious Weed Coordinator at (575) 234-5972 or [BLM\\_NM\\_CFO\\_NoxiousWeeds@blm.gov](mailto:BLM_NM_CFO_NoxiousWeeds@blm.gov).

**Management Practices:** In addition to spraying for African Rue, good management practices should be followed. All equipment should be washed off using a power washer in a designated containment area. The containment area shall be bermed to allow for containment of the seed to prevent it from entering any open areas of the nearby landscape. The containment area shall be excavated near or adjacent to the well pad at a depth of three feet and just large enough to get equipment inside it to be washed off. This will allow all seeds to be in a centrally located area that can be treated at a later date if the need arises.

## 1.3. LIGHT POLLUTION

### 1.3.1. Downfacing

All permanent lighting will be pointed straight down at the ground in order to prevent light spill beyond the edge of approved surface disturbance.

### 1.3.2. Shielding

All permanent lighting will use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the lowest part of the light source).

### 1.3.3. Lighting Color

Lighting shall be 3,500 Kelvin or less (Warm White) except during drilling, completion, and workover operations. No bluish-white lighting shall be used in permanent outdoor lighting.

## 2. SPECIAL REQUIREMENTS

### WATERSHED

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No waterflow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be immediately corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The topsoil shall be stockpiled in an appropriate location with waddles (minimum 9" height) surrounding the stockpiled soil to prevent soil loss due to water/wind erosion. The waddles are to be maintained throughout the life of the project. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Any water erosion that may occur due to the construction of the well pad and during the life of the well pad will be immediately corrected and proper measures will be taken to prevent future erosion.

### 2.1.1. Tank Battery

Tank battery locations will be lined and bermed. A 20-mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Secondary containment holding capacity must be large enough to contain 1 ½ times the content of the largest tank or 24-hour production, whichever is greater (displaced volume from all tanks within the berms MUST be subtracted from total volume of containment in calculating holding capacity). Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

### 2.1.2. Buried/Surface Line(s)

When crossing ephemeral drainages (marked and unmarked), the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. In ephemeral drainages, rivers, and streams excess soil is to be compacted and level to ground surface, allowing water to flow in its natural state. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (plastic and weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation. Any water erosion that may occur due to construction or during the life of the pipeline system will be immediately corrected and proper measures will be taken to prevent erosion. Any spills or leaks from the proposed pipeline must be reported to BLM immediately.

Prior to pipeline installation and construction, a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, siting valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event. Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.

The pipeline is to not obstruct ephemeral drainages, draws, or streams allowing water to flow in its natural state unobstructed. Any water erosion that may occur due to the construction within the ROW would be corrected by the

operator within two weeks and proper measures would be taken to prevent future erosion events. Any spills or leaks from the proposed produced water pipeline must be reported to BLM immediately.

### 2.1.3. Temporary Use Fresh Water Frac Line(s)

Once the temporary use exceeds the timeline of 180 days and/or with a 90 day extension status; further analysis will be required if the applicant pursues to turn the temporary pipeline into a permanent pipeline.

## 2.2. CAVE/KARST

### 2.2.1. General Construction

- No blasting
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no additional construction shall occur until clearance has been issued by the Authorized Officer.
- All linear surface disturbance activities will avoid sinkholes and other karst features to lessen the possibility of encountering near surface voids during construction, minimize changes to runoff, and prevent untimely leaks and spills from entering the karst drainage system.
- This is a sensitive area and all spills or leaks will be reported to the BLM immediately for their immediate and proper treatment, as defined in NTL 3A for Major Undesirable Events.

### 2.2.2. Pad Construction

- The pad will be constructed and leveled by adding the necessary fill and caliche. No blasting will be used for any construction or leveling activities.
- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised (i.e. an access road crossing the berm cannot be lower than the berm height).
- Following a rain event, all fluids will be vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

### 2.2.3. Road Construction

- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to alter the natural flow of water into or out of cave or karst features.

- Special restoration stipulations or realignment may be required if subsurface features are discovered during construction.

#### **2.2.4. Buried Pipeline/Cable Construction**

- Rerouting of the buried line(s) may be required if a subsurface void is encountered during construction to minimize the potential subsidence/collapse of the feature(s) as well as the possibility of leaks/spills entering the karst drainage system.

#### **2.2.5. Powerline Construction**

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- Special restoration stipulations or realignment may be required if subsurface voids are encountered.

#### **2.2.6. Surface Flowlines Installation**

- Flowlines will be routed around sinkholes and other karst features to minimize the possibility of leaks/spills from entering the karst drainage system.

#### **2.2.7. Production Mitigation**

- Tank battery locations and facilities will be bermed and lined with a 20-mil thick permanent liner that has a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Secondary containment holding capacity must be large enough to contain 1 ½ times the content of the largest tank or 24-hour production, whichever is greater (displaced volume from all tanks within the berms MUST be subtracted from total volume of containment in calculating holding capacity).
- Implementation of a leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

#### **2.2.8. Residual and Cumulative Mitigation**

The operator will perform annual pressure monitoring on all casing annuli. If the test results indicate a casing failure has occurred, contact a BLM Engineer immediately, and take remedial action to correct the problem.

#### **2.2.9. Plugging and Abandonment Mitigation**

Upon well abandonment in high cave karst areas, additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

### **2.3 WILDLIFE**

### **2.4 SPECIAL STATUS PLANT SPECIES**

## **2.5 VISUAL RESOURCE MANAGEMENT**

### **2.5.1 VRM IV**

Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### 2.5.2 VRM III Facility Requirement

Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## 3. CONSTRUCTION REQUIREMENTS

### 3.1 CONSTRUCTION NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at [BLM\\_NM\\_CFO\\_Construction\\_Reclamation@blm.gov](mailto:BLM_NM_CFO_Construction_Reclamation@blm.gov) at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and COAs on the well site and they shall be made available upon request by the Authorized Officer.

### 3.2 TOPSOIL

The operator shall strip the topsoil (the A horizon) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. No more than the top 6 inches of topsoil shall be removed. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (the B horizon and below) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### 3.3 CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No reserve pits will be used for drill cuttings. The operator shall properly dispose of drilling contents at an authorized disposal site.

### 3.4 FEDERAL MINERAL PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### 3.5 WELL PAD & SURFACING

Any surfacing material used to surface the well pad will be removed at the time of interim and final reclamation.

### 3.6 EXCLOSURE FENCING (CELLARS & PITS)

The operator will install and maintain enclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the well cellar is free of fluids and the operator initiates backfilling. (For examples of enclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

The operator will also install and maintain mesh netting for all open well cellars to prevent access to smaller wildlife before and after drilling operations until the well cellar is free of fluids and the operator. Use a maximum netting mesh size of 1 ½ inches. The netting must not have holes or gaps.

### 3.7 ON LEASE ACCESS ROAD

#### 3.7.1 Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed twenty (20) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

#### 3.7.2 Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements will be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

#### 3.7.3 Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

#### 3.7.4 Ditching

Ditching shall be required on both sides of the road.

#### 3.7.5 Turnouts

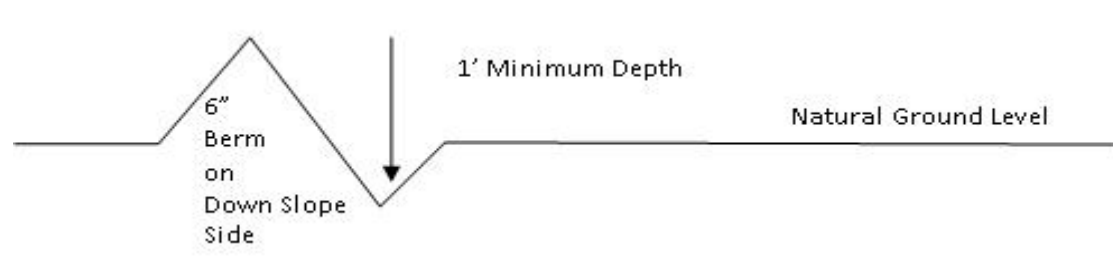
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

#### 3.7.6 Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, leadoff ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**





All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4} + 100' = 200' \text{ lead-off ditch interval}$$

#### 3.7.7 Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.



**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

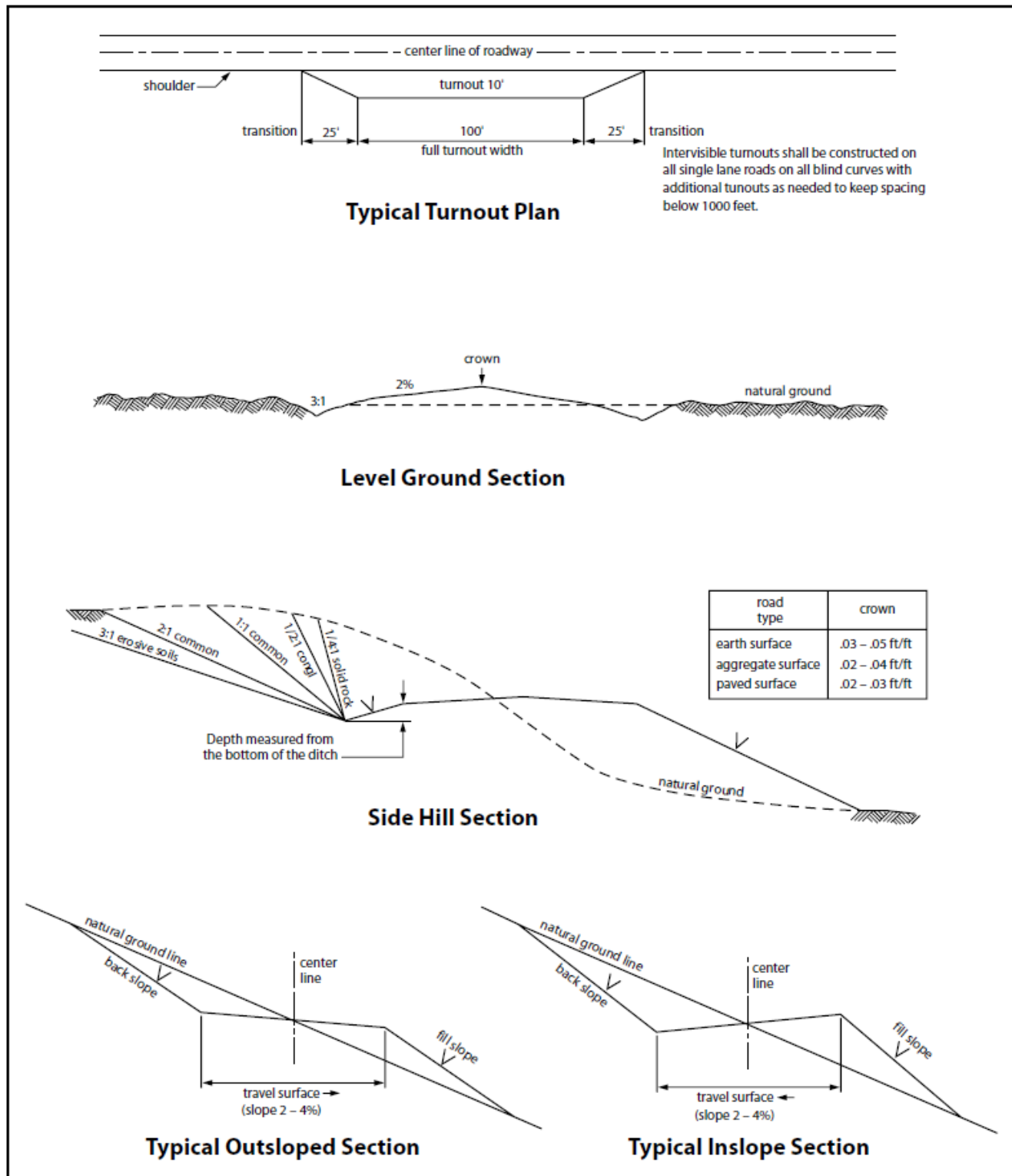


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## 4. PIPELINES

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

### 4.1 BURIED PIPELINES

A copy of the application (APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request a copy of your permit during construction to ensure compliance with all stipulations.

Operator agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Operator shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this APD.
2. The Operator shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the operator shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the pipeline corridor or on facilities authorized under this APD. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The operator agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Pipeline corridor (unless the release or threatened release is wholly unrelated to the operator's activity on the pipeline corridor), or resulting from the activity of the Operator on the pipeline corridor. This agreement applies without regard to whether a release is caused by the operator, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant is discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of operator, regardless of fault. Upon failure of operator to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and

fish and wildlife habitats, at the full expense of the operator. Such action by the Authorized Officer shall not relieve operator of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized pipeline corridor.
6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.
7. The maximum allowable disturbance for construction in this pipeline corridor will be 30 feet:
  - Blading of vegetation within the pipeline corridor will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
  - Clearing of brush species within the pipeline corridor will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
  - The remaining area of the pipeline corridor (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The operator shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this pipeline corridor and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire pipeline corridor shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted, and a 6-inch berm will be left over the ditch line to allow for settling back to grade.
10. The pipeline will be identified by signs at the point of origin and completion of the pipeline corridor and at all road crossings. At a minimum, signs will state the operator's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.
11. The operator shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the operator before maintenance begins. The operator will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the operator to construct temporary deterrence structures.
12. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.
13. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them alive at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30-degree slope and spaced no more than 500 feet apart) shall be placed in the trench. Before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them alive at least 100 yards from the trench.

14. Special Stipulations:

**Karst:**

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered, alignments may be rerouted to avoid the karst feature and lessen the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

## RANGELAND MITIGATION FOR PIPELINES

### 4.5.1 Fence Requirement

Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment operator prior to crossing any fence(s).

### 4.5.2 Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at road-fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

### 4.5.3 Livestock Watering Requirement

Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action.

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment operator if any damage occurs to structures that provide water to livestock.

- Livestock operators will be contacted, and adequate crossing facilities will be provided as needed to ensure livestock are not prevented from reaching water sources because of the open trench.

- Wildlife and livestock trails will remain open and passable by adding soft plugs (areas where the trench is excavated and replaced with minimal compaction) during the construction phase. Soft plugs with ramps on either side will be left at all well-defined livestock and wildlife trails along the open trench to allow passage across the trench and provide a means of escape for livestock and wildlife that may enter the trench.
- Trenches will be backfilled as soon as feasible to minimize the amount of open trench. The Operator will avoid leaving trenches open overnight to the extent possible and open trenches that cannot be backfilled immediately will have escape ramps (wooden) placed at no more than 2,500 feet intervals and sloped no more than 45 degrees.

## 5. PRODUCTION (POST DRILLING)

### 5.1 WELL STRUCTURES & FACILITIES

#### 5.1.1 Placement of Production Facilities

Production facilities must be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### 5.1.2 Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### 5.1.3. Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### 5.1.4. Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

### 5.1.5. Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

## 6. RECLAMATION

Stipulations required by the Authorized Officer on specific actions may differ from the following general guidelines

### 6.1 ROAD AND SITE RECLAMATION

Any roads constructed during the life of the well will have the caliche removed or linear burial. If contaminants are indicated then testing will be required for chlorides and applicable contaminate anomalies for final disposal determination (disposed of in a manner approved by the Authorized Officer within Federal, State and Local statutes, regulations, and ordinances) and seeded to the specifications in sections 6.5 and 6.6.

### 6.2 EROSION CONTROL

Install erosion control berms, windrows, and hummocks. Windrows must be level and constructed perpendicular to down-slope drainage; steeper slopes will require greater windrow density. Topsoil between windrows must be ripped to a depth of at least 12", unless bedrock is encountered. Any large boulders pulled up during ripping must be deep-buried on location. Ripping must be perpendicular to down-slope. The surface must be left rough in order to catch and contain rainfall on-site. Any trenches resulting from erosion cause by run-off shall be addressed immediately.

### 6.3 INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations must undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators must work with BLM surface protection specialists (BLM\_NM\_CFO\_Construction\_Reclamation@blm.gov) to devise the best strategies to reduce the size of the location. Interim reclamation must allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche and any other surface material is required. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided in section 6.6.

Upon completion of interim reclamation, the operator shall submit a Sundry Notice, Subsequent Report of Reclamation (Form 3160-5).

## 6.4 FINAL ABANDONMENT & RECLAMATION

Prior to surface abandonment, the operator shall submit a Notice of Intent Sundry Notice and reclamation plan.

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding will be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM. After earthwork and seeding is completed, the operator is required to submit a Sundry Notice, Subsequent Report of Reclamation.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (BLM\_NM\_CFO\_Construction\_Reclamation@blm.gov).

## 6.5 SEEDING TECHNIQUES

Seeds shall be hydro-seeded, mechanically drilled, or broadcast, with the broadcast-seeded area raked, ripped or dragged to aid in covering the seed. The seed mixture shall be evenly and uniformly planted over the disturbed area.

## 6.6 SOIL SPECIFIC SEED MIXTURE

The lessee/permittee shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed land application will be accomplished by mechanical planting using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area. Smaller/heavier seeds tend to drop the bottom of the drill and are planted first; the operator shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory BLM or Soil Conservation

District stand is established as determined by the Authorized Officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding or until several months of precipitation have occurred, enabling a full four months of growth, with one or more seed generations being established.



**Seed Mixture 1 for Loamy Sites**

Species to be planted in pounds of pure live seed\* per acre:

**Species****lb/acre**

Plains lovegrass (*Eragrostis intermedia*)

0.5

Sand dropseed (*Sporobolus cryptandrus*)

1.0

Sideoats grama (*Bouteloua curtipendula*)

5.0

Plains bristlegrass (*Setaria macrostachya*)

2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

**Mixture 4, for Gypsum Sites**

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Alkali Sacaton ( <i>Sporobolus airoides</i> )	1.5
DWS~ Four-wing saltbush ( <i>Atriplex canescens</i> )	8.0
~DWS: DeWinged Seed	

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RILEY PERMIAN OPERATING COMPANY LLC
WELL NAME & NO.:	BUNNY 3-4 FED COM 24H
LOCATION:	Section 3, T.18 S., R.27 E., NMP
COUNTY:	Eddy County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Wellhead Variance	<input type="radio"/> Diverter		
Other	<input type="checkbox"/> 4 String	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Open Annulus
Cementing	<input type="checkbox"/> Contingency Cement Squeeze	<input type="checkbox"/> EchoMeter	<input type="checkbox"/> Primary Cement Squeeze
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

### A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet 43 CFR part 3170 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

### B. CASING

#### Primary Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **375 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall

be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8 inch** intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
- ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **7 X 5.5 inch** production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

### C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8 inch** surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi**.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR part 3170 must be followed.

#### **D. SPECIAL REQUIREMENT (S)**

##### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR part 3170.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

## **GENERAL REQUIREMENTS**

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

**EMAIL** or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

**[BLM\\_NM\\_CFO\\_DrillingNotifications@BLM.GOV](mailto:BLM_NM_CFO_DrillingNotifications@BLM.GOV)**  
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,

(575) 689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - i. Notify the BLM when moving in and removing the Spudder Rig.
    - ii. Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2<sup>nd</sup> Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

#### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends

of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-Q potash area, the NMOCD requirements shall be followed.

## **B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose



can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - iii. Manufacturer representative shall install the test plug for the initial BOP test.
  - iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
  - v. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - i. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - ii. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off

and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

- iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- iv. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- v. The results of the test shall be reported to the appropriate BLM office.
- vi. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- vii. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- viii. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 3172**.

### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

**D. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JS 5/8/2025



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Drilling Plan Data Report

06/11/2025

APD ID: 10400099047

Submission Date: 06/17/2024

Highlighted data  
reflects the most  
recent changes

Operator Name: RILEY PERMIAN OPERATING COMPANY LLC

Well Name: BUNNY 3-4 FED COM

Well Number: 24H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
15593656	QUATERNARY	0	150	150	DOLOMITE, SANDSTONE	USEABLE WATER	N
15593657	QUEEN	-694	694	694	ANHYDRITE, DOLOMITE, SANDSTONE	NATURAL GAS, OIL	N
15593658	GRAYBURG	-1029	1029	1033	ANHYDRITE, DOLOMITE, SANDSTONE	NATURAL GAS, OIL	N
15593659	SAN ANDRES	-1294	1294	1306	DOLOMITE, SANDSTONE	NATURAL GAS, OIL	N
15593660	GLORIETA	-2675	2675	2725	SANDSTONE, SILTSTONE	NATURAL GAS, OIL	N
15593661	YESO	-2840	2840	2918	ANHYDRITE, DOLOMITE, SILTSTONE	NATURAL GAS, OIL	Y
15593653		0					
15593654		0					

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 4200

**Equipment:** The blowout preventer equipment (BOP) shown in Exhibit 10 will consist of a double ram-type (3000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 5" drill pipe rams on bottom. The 13-5/8" BOP will be nipped up on the 13-3/8" surface casing and tested by a 3rd party to 2000 psi used continuously until TD is reached.

**Requesting Variance?** YES

**Variance request:** A variance is requested to use a Multi Bowl Wellhead System and Flex Hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test will be kept on the rig.

**Testing Procedure:** All BOPs and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit 10) will include a Kelly cock and floor safety valve and choke lines and choke manifold with a minimum 2000 psi WP rating.

**Choke Diagram Attachment:**

BOP\_Choke\_Diagram\_20240523160317.pdf

Operator Name: RILEY PERMIAN OPERATING COMPANY LLC

Well Name: BUNNY 3-4 FED COMWell Number: 24H

H3\_051622\_1\_Choke\_Hose\_5Yr\_Cert\_\_May\_16\_22\_\_202206281108\_20241113161118.pdf

BOP Diagram Attachment:

BOP\_Choke\_Diagram\_20240523160723.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	400	0	400	3541	3141	400	J-55	48	ST&C	3.867	12.385	DRY	3.717	DRY	3.717
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	1350	0	1350	3541	2191	1350	J-55	36	LT&C	2.821	4.916	DRY	3.212	DRY	3.212
3	PRODUCTION	8.75	7.0	NEW	API	Y	0	3308	0	3073	3541	468	3308	HCL-80	32	BUTT	7.074	5.755	DRY	2.617	DRY	2.617
4	PRODUCTION	8.75	5.5	NEW	API	Y	3308	8759	3073	3150	501	391	5451	HCL-80	20	BUTT	7.054	5.966	DRY	1.637	DRY	1.637

Casing Attachments

Casing ID: 1StringSURFACE

Inspection Document:

Spec Document:

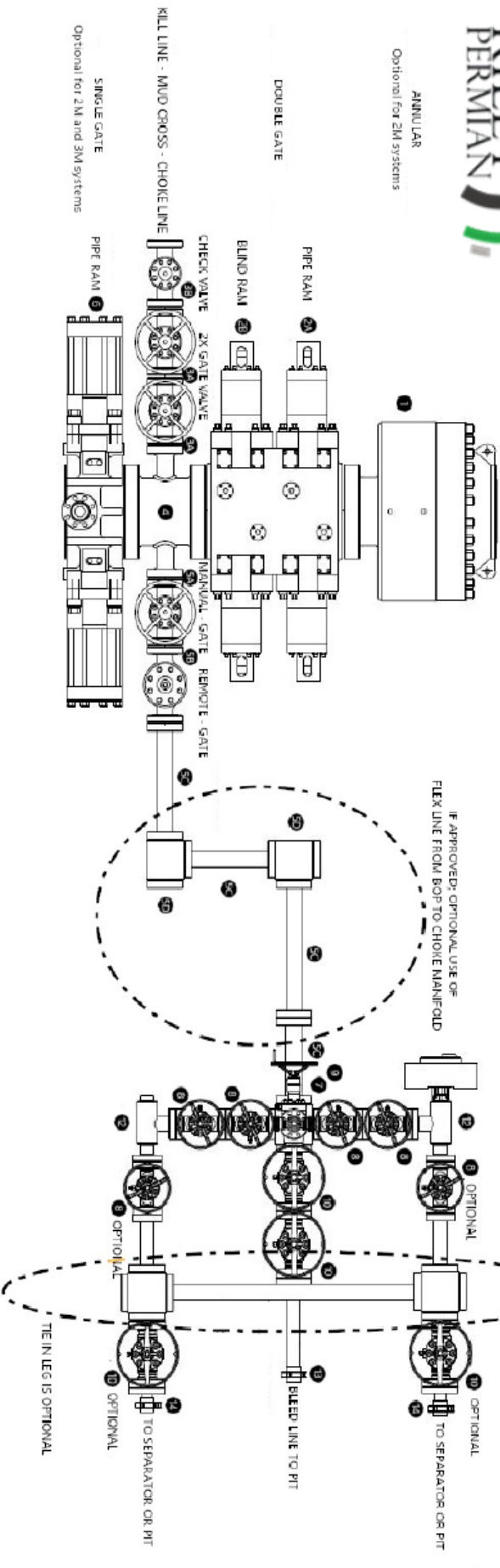
Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Bunny\_3\_4\_Fed\_Com\_24H\_\_Casing\_Assumptions\_\_RevB\_\_29Oct24\_20241113161627.pdf



Riley Permian  
Exhibit 10  
Minimum BOP and Choke Requirements  
3M and 5M Systems



BOP - Minimum Requirements						
	Description	ID (in.)	Nom. OD (in.)	Optional	Note	
1	Annular			Yes - 2M		
2A		Pipe Ram				
2B		Double Gate Blind Ram	3 1/8	No		
3A		Gate				
3A		Gate	2			
3B		Kill Line Check Valve		No		
		Line		2		
4		Mud Cross	2 1/16		No	Kill Line - 2" min. Choke Line - 3" min.
5A		Choke Line	Gate - Manual (2)	3 1/8	No	
5B			Gate - Remote (2)		No	
5C	Line			No		
5D	Targeted Tee		3	No		
				No		
6	Single Gate - Pipe Ram			Yes - 2M and 3M		

Choke Manifold - Minimum Requirements							
		3000 MWHP		5000 MWHP		10000 MWHP	
	Description	ID (in.)	Nominal OD (in. unless otherwise noted)	Rating (psi)	ID (in.)	Nominal OD (in. unless otherwise noted)	Rating (psi)
7	Cross - 3" x 3" x 3" x 2"			3,000			10,000
8	Valve Gate (2) Plug	2 1/16		3,000	2 1/16		10,000
9	Pressure Gauge Gate (2)			3,000			10,000
10	Valve Plug	3 1/8		3,000	3 1/8		10,000
11	Remote Operated Adjustable Choke (2)	2 1/16		3,000			10,000
12	Manual Adjustable Choke	2 1/16		3,000			10,000
13	Line	3		3,000	3		10,000
14	Line	2		3,000	2		10,000
15	Gas Separator (4)	2' x 5'			2' x 5'		

(1) Only one required in 2M system  
(2) Choke line valve order is interchangeable  
(3) Remote operated hydraulic choke required on 5M and 10M systems

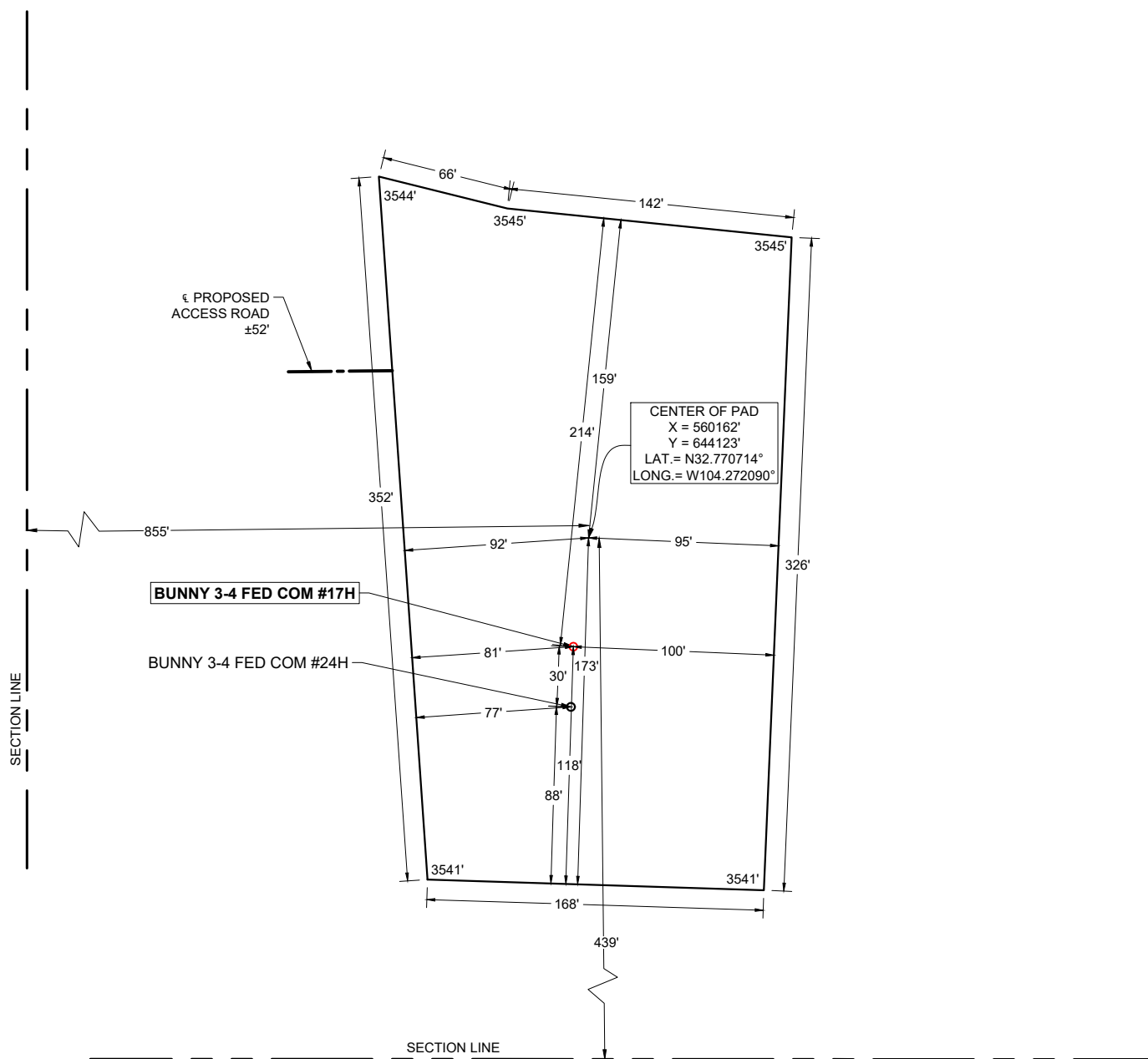
(1) Only one required in 2M system  
(2) Gate valves only to be used for 10M system  
(3) Remote chokes are required for 5M and 10M systems  
(4) Gas separator is optional for 2M and 3M systems



**PETROLEUM FIELD SERVICES, LLC**  
**DBA: ASCENT GEOMATICS**  
**SOLUTIONS**  
 8620 WOLFF CT.  
 WESTMINSTER, CO 80031  
 OFFICE: (303) 928-7128



# EXHIBIT 5 PAD LAYOUT



## LEGEND

- = PROPOSED WELL
- = PROPOSED ACCESS ROAD
- = SECTION LINE

SHEET 2 OF 2

LATITUDE: N 32.770565°  
 LONGITUDE: W 104.272115°  
 SURFACE HOLE: 847' FWL & 384' FSL  
 SURFACE HOLE ELEVATION: 3541'  
 CENTER OF PAD: 855' FWL & 439' FSL



8620 Wolff Court  
 Westminster, CO 80031  
 (303) 928-7128  
 www.ascentgeomatics.com

FIELD DATE:

03-11-2024

PROJECT NO.:

REPX\_240002

SITE NAME:

BUNNY 3-4 FED COM #17H

REV. 0

PREPARED FOR:

DRAWING DATE:

03-21-2024

BY:

CHECKED:

JB

CW

DISCLAIMER:  
 THIS PLOT DOES NOT REPRESENT A MONUMENTED LAND SURVEY AND  
 SHOULD NOT BE RELIED UPON TO DETERMINE BOUNDARY LINES,  
 PROPERTY OWNERSHIP OR OTHER PROPERTY INTERESTS.  
 ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED  
 HEREIN ARE GRID BASED UPON THE FOLLOWING COORDINATE SYSTEM:  
 NAD83 NEW MEXICO STATE PLANE, EAST ZONE, U.S. SURVEY FEET.

SURFACE LOCATION:

SEC. 3, T18S, R27E, N.M.P.M.  
 EDDY COUNTY, NEW MEXICO



C-102  Submit Electronically Via OCD Permitting	State of New Mexico  Energy, Minerals & Natural Resources Department <b>OIL CONSERVATION DIVISION</b>	Revised July 9, 2024	
		Submittal Type:	<input checked="" type="checkbox"/> Initial Submittal
			<input type="checkbox"/> Amended Report
		<input type="checkbox"/> As Drilled	
Property Name and Well Number  <b>BUNNY 3-4 FED COM 24H</b>			

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015- 57053</b>	Pool Code <b>51120</b>	Pool Name <b>RED LAKE; GLORIETA-YESO</b>
Property Code <b>337398</b>	Property Name <b>BUNNY 3-4 FED COM 24H</b>	Well Number <b>24H</b>
OGRID No. <b>372290</b>	Operator Name <b>RILEY PERMIAN OPERATING COMPANY LLC</b>	Ground Level Elevation <b>3541'</b>
Surface Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal		Mineral Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal

Surface Location

UL or Lot No.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
M	3	18S	27E		354 FSL	845 FWL	N 32.770482°	W 104.272119°	EDDY

Bottom Hole Location If Different From Surface

UL or Lot No.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
17	4	18S	27E		330 FSL	10 FWL	N 32.770438°	W 104.291950°	EDDY

Dedicated Acres <b>305.80</b>	Infill or Defining Well <b>DEFINING</b>	Defining Well API <b>N/A</b>	Overlapping Spacing Unit (Y/N) <b>N</b>	Consolidated Code <b>PENDING</b>
Order Numbers <b>PENDING</b>			Well Setbacks are under Common Ownership: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Kick Off Point (KOP)

UL or lot no.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
M	3	18S	27E		350 FSL	718 FWL	N 32.770478°	W 104.272532°	EDDY


First Take Point (FTP)

UL or lot no.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
20	4	18S	27E		330 FSL	100 FEL	N 32.770473°	W 104.275194°	EDDY

Last Take Point (LTP)

UL or lot no.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
17	4	18S	27E		330 FSL	100 FWL	N 32.770438°	W 104.291657°	EDDY

Unitized Area or Area of Uniform Interest	Spacing Unity Type <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Floor Elevation <b>3566'</b>
---	--	--

<b>OPERATOR CERTIFICATION</b>  <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>  Signature <u>Spence Laird</u> Date <u>7/24/2025</u>  Print Name <u>Spence Laird</u>  E-mail Address <u>spencelaird@rileypermian.com</u>	<b>SURVEYORS CERTIFICATION</b>    Signature and Seal of Professional Surveyor _____ Date _____ <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>  MITCHELL L. MCDONALD, N.M. P.L.S.  Certificate Number <u>29821</u> Date of Survey <u>MARCH 11, 2024</u>
--	--

Note: 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.

<b>C-102</b>  Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department <b>OIL CONSERVATION DIVISION</b>	Revised July 9, 2024  Submittal Type: <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <input checked="" type="checkbox"/> Initial Submittal  <input type="checkbox"/> Amended Report  <input type="checkbox"/> As Drilled         </div>
Property Name and Well Number <b>BUNNY 3-4 FED COM 24H</b>		
<p><b>SURFACE LOCATION</b>          NEW MEXICO EAST          NAD 1983          X=560153' Y=644039'          LAT=N32.770482°          LONG=W104.272119°  <b>NAD 1927</b>          X=518974' Y=643976'          LAT=N32.770367°          LONG=W104.271606°          354' FSL 845' FWL</p> <p><b>KOP LOCATION</b>          NEW MEXICO EAST          NAD 1983          X=560026' Y=644037'          LAT=N32.770478°          LONG=W104.272532°  <b>NAD 1927</b>          X=518847' Y=643975'          LAT=N32.770364°          LONG=W104.272019°          350' FSL 718' FWL</p> <p><b>FIRST TAKE POINT</b>          NEW MEXICO EAST          NAD 1983          X=559208' Y=644035'          LAT=N32.770473°          LONG=W104.275194°  <b>NAD 1927</b>          X=518029' Y=643972'          LAT=N32.770358°          LONG=W104.274680°          330' FSL 100' FEL</p> <p><b>PROPOSED PENETRATION POINT 1</b>          NEW MEXICO EAST          NAD 1983          X=556680' Y=644028'          LAT=N32.770456°          LONG=W104.283417°  <b>NAD 1927</b>          X=515501' Y=643965'          LAT=N32.770341°          LONG=W104.282903°          330' FSL 2627' FEL</p>		<p><b>PROPOSED PENETRATION POINT 2</b>          NEW MEXICO EAST          NAD 1983          X=555364' Y=644024'          LAT=N32.770447°          LONG=W104.287700°  <b>NAD 1927</b>          X=514185' Y=643961'          LAT=N32.770332°          LONG=W104.287185°          330' FSL 1316' FWL</p> <p><b>LAST TAKE POINT</b>          NEW MEXICO EAST          NAD 1983          X=554147' Y=644020'          LAT=N32.770438°          LONG=W104.291657°  <b>NAD 1927</b>          X=512968' Y=643957'          LAT=N32.770324°          LONG=W104.291142°          330' FSL 100' FWL</p> <p><b>BOTTOM HOLE LOCATION</b>          NEW MEXICO EAST          NAD 1983          X=554057' Y=644020'          LAT=N32.770438°          LONG=W104.291950°  <b>NAD 1927</b>          X=512878' Y=643957'          LAT=N32.770323°          LONG=W104.291435°          330' FSL 10' FWL</p>

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:** Riley Permian Operating Company LLC **OGRID:** 372290 **Date:** 04 / 04 / 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
Bunny 3-4 Fed Com 24H	30-015-PENDING	M – 3 – 18S – 27E	354' FSL 845' FWL	450	700	4,000
Bunny 3-4 Fed Com 17H	30-015-PENDING	M – 3 – 18S – 27E	384' FSL 847' FWL	450	700	4,000
Bunny 3-4 Fed Com 12H	30-015-PENDING	L – 3 – 18S – 27E	1202' FSL 364' FWL	450	700	4,000
Bunny 3-4 Fed Com 15H	30-015-PENDING	M – 3 – 18S – 27E	1202' FSL 394' FWL	450	700	4,000
Bunny 3-4 Fed Com 26H	30-015-PENDING	M – 3 – 18S – 27E	1202' FSL 424' FWL	450	700	4,000
Bunny 3-4 Fed Com 11H	30-015-PENDING	L – 3 – 18S – 27E	2127' FSL 395' FWL	450	700	4,000
Bunny 3-4 Fed Com 22H	30-015-PENDING	L – 3 – 18S – 27E	2097' FSL 395' FWL	450	700	4,000

**IV. Central Delivery Point Name:** Bunny 3 Fed Com North 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
Bunny 3-4 Fed Com 24H	30-015-PENDING	1/1/2026	1/8/2026	3/1/2026	4/1/2025	4/1/2025
Bunny 3-4 Fed Com 17H	30-015-PENDING	1/1/2026	1/8/2026	3/1/2026	4/1/2025	4/1/2025
Bunny 3-4 Fed Com 12H	30-015-PENDING	1/1/2026	1/8/2026	3/1/2026	4/1/2025	4/1/2025
Bunny 3-4 Fed Com 15H	30-015-PENDING	1/1/2026	1/8/2026	3/1/2026	4/1/2025	4/1/2025
Bunny 3-4 Fed Com 26H	30-015-PENDING	1/1/2026	1/8/2026	3/1/2026	4/1/2025	4/1/2025
Bunny 3-4 Fed Com 11H	30-015-PENDING	1/1/2026	1/8/2026	3/1/2026	4/1/2025	4/1/2025
Bunny 3-4 Fed Com 22H	30-015-PENDING	1/1/2026	1/8/2026	3/1/2026	4/1/2025	4/1/2025

**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: 
Printed Name: Spence Laird
Title: Manager of EHSR
E-mail Address: spencelaird@rileypermian.com
Date: 5/27/2025
Phone: 405-543-1411

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

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





## Natural Gas Management Plan – Attachment

VI. Separation equipment will be sized by construction engineering staff based on anticipated daily production to ensure adequate capacity.

VII. Riley Permian Operating Company LLC (“Riley”) will take the following actions to comply with the regulations listed in 19.15.27.8:

- A. Riley will maximize the recovery of natural gas by minimizing waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. Spur will ensure that our wells will be connected to a natural gas gathering system with sufficient capacity to transport natural gas.
- B. All drilling operations will be equipped with a rig flare at least 100 feet from the nearest surface hole location. Rig flare will be utilized to combust any natural gas that is brought to surface during normal operations. In the case of emergency, flaring volumes will be reported appropriately.
- C. During completion operations any natural gas brought to surface will be flared. Immediately following completion operations, wells will flow to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. If natural gas does not meet gathering pipeline specifications, Riley will flare for 60 days or until natural gas meets the pipeline specifications. Riley will ensure flare is properly sized and is equipped with an automatic igniter or continuous pilot. Gas samples will be taken twice per week and natural gas will be routed into a gathering system as soon as the pipeline specifications are met.
- D. Natural gas will not be flared with the exception of 19.15.27.8(D)(1-4). If there is no adequate takeaway for the separator gas, wells will be shut-in until that natural gas gathering system is available with exception of emergency or malfunction situations. Volumes will be reported appropriately.
- E. Riley will comply with performance standards pursuant to 19.15.27.8(E)(1-8). All equipment will be designed and sized to handle maximum pressures to minimize waste. Storage tanks constructed after May 25, 2021 will be equipped with an automatic gauging system that reduces venting of natural gas. Flare stacks installed or replaced after May 25, 2021 will be equipped with an automatic ignitor or continuous pilot. Riley will conduct AVO inspections as described in 19.15.27.8(E)(5)(a) with frequencies specified in 19.15.27.8(E)(5)(b) and (c). All emergencies or malfunctions will be resolved as quickly and safely as possible to minimize waste.
- F. The volume of natural gas that is vented or flared as the result of an emergency or malfunction during drilling and/or completion operations will be estimated and reported accordingly. The volume of natural gas that is vented, flared, or beneficially used during production operations will be measured and reported accordingly. Riley will install equipment to measure the volume of natural gas flared from existing piping or a flowline piped from equipment such as high-pressure separators, heater treaters, or VRUs associated with a well of facility associated with a well authorized by an APD after May 25, 2021 that has an average daily production of less than 60,000 cubic feet of natural gas.



If metering is not practicable due to circumstances such as low flow rate or low pressure venting or flaring, Riley will estimate the volume of flared or vented natural gas. Measuring equipment will conform to industry standards and will not be equipped with a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing equipment.

VIII. For maintenance activities involving production equipment and compression, venting be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production equipment, the associated producing wells will be shut-in to eliminate venting. For maintenance of VRUs, all natural gas normally routed to the VRU will be routed to flare.

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**

CONDITIONS

Action 473323

**CONDITIONS**

Operator: RILEY PERMIAN OPERATING COMPANY, LLC 29 E Reno Avenue, Suite 500 Oklahoma City, OK 73104	OGRID: 372290
	Action Number: 473323
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**CONDITIONS**

Created By	Condition	Condition Date
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	7/25/2025
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	7/25/2025
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.	7/25/2025
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing.	7/25/2025
ward.rikala	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	7/25/2025
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.	7/25/2025