

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: ☒ DRILL ☐ REENTER 1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other 1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		5. Lease Serial No. NMNM77055 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. PAKSE 3 SOUTH FED COM 112H [335023]
2. Name of Operator EARTHSTONE OPERATING LLC [331165]		9. API Well No. 30-025-52262
3a. Address 1400 WOODLOCH FOREST DRIVE SUITE 300, THE WC	3b. Phone No. (include area code) (281) 298-4240	10. Field and Pool, or Exploratory SALT LAKE/BONE SPRING [53560]
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENW / 264 FNL / 1918 FWL / LAT 32.5652003 / LONG -103.7221177 At proposed prod. zone SENW / 2631 FNL / 1650 FWL / LAT 32.529652 / LONG -103.7229632		11. Sec., T. R. M. or Blk. and Survey or Area SEC 24/T20S/R32E/NMP
14. Distance in miles and direction from nearest town or post office* 5 miles		12. County or Parish LEA
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 100 feet		16. No of acres in lease 17. Spacing Unit dedicated to this well 400.0
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet		20. BLM/BIA Bond No. in file FED: NMB002110
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3540 feet	22. Approximate date work will start* 01/31/2024	23. Estimated duration 30 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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

25. Signature (Electronic Submission)	Name (Printed/Typed) JENNIFER ELROD / Ph: (281) 298-4240	Date 03/28/2023
Title Senior Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) CODY LAYTON / Ph: (575) 234-5959	Date 11/17/2023
Title Assistant Field Manager Lands & Minerals		
Office Carlsbad Field Office		

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

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

NGMP Rec 11/28/2023

SL

(Continued on page 2)



Approval Date: 11/17/2023

KZ
12/04/2023

*(Instructions on page 2)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-025-52262	2 Pool Code 53560	3 Pool Name SALT LAKE; BONE SPRING
4 Property Code 335023	5 Property Name PAKSE 3 SOUTH FED COM	
6 Well Number 112H		
7 OGRID No. 331165	8 Operator Name EARTHSTONE OPERATING LLC	9 Elevation 3540.30'

¹⁰ Surface Location

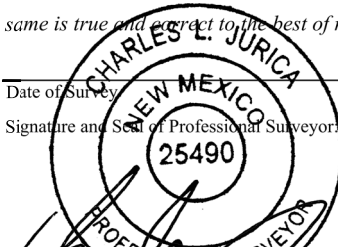
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	24	20-S	32-E		264'	NORTH	1918'	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	36	20-S	32-E		2631'	NORTH	1650'	WEST	LEA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
400			

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

17 OPERATOR CERTIFICATION	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.	2/10/2023 Signature _____ Date Roger Lowery Printed Name Rlowery@earthstoneenergy.com E-mail Address
18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.	
02/08/2023 Date of Survey _____ Signature and Seal of Professional Surveyor _____	
 Certificate Number _____	

Intent ☒ As Drilled ☐

API #		
Operator Name: EARTHSTONE OPERATING, LLC	Property Name: PAKSE 3 SOUTH FED COM	Well Number 112H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	24	20S	32E		264	NORTH	1918	WEST	LEA
Latitude 32.56520030					Longitude -103.72211772				NAD 83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	24	20-S	32-E		100	N	1650	W	LEA
Latitude 32.56565098° N					Longitude 103.72298850° W				NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
F	36	20-S	32-E		2541	N	1650	W	LEA
Latitude 32.52989944° N					Longitude 103.72296340° W				NAD 83

Is this well the defining well for the Horizontal Spacing Unit? ☒Is this well an infill well? ☐

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

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

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: EARTHSTONE OPERATING, LLC__ **OGRID:** 331165_____ **Date:** _03/28/2022

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

If Other, please describe: _____

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

	API		Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
SEE ATTACHED LIST						

IV. Central Delivery Point Name: PAKSE SOUTH 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
SEE ATTACHED LIST						

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.

WELL NAME	API	UL/SECT/T/R	FOOTAGES	ANTICIPATED OIL BBL/D	ANTICIPATED GAS MCF/D	ANTICIPATED WATER BBL/D
PAKSE SOUTH 3 FED COM 112H		C-24-20S-32E	264 FNL, 1918 FWL	1400 BBL/D	3000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 322H		C-24-20S-32E	264 FNL, 1948 FWL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 212H		C-24-20S-32E	264 FNL, 2008 FWL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 302H		C-24-20S-32E	264 FNL, 1978 FWL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 432H		C-24-20S-32E	264 FNL, 2038 FWL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 113H		B-24-20S-32E	263 FNL, 1999 FEL	1400 BBL/D	3000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 323H		B-24-20S-32E	263 FNL, 1969 FWL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 223H		B-24-20S-32E	263 FNL, 1909 FEL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 303H		B-24-20S-32E	263 FNL, 1939 FWL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 433H		B-24-20S-32E	263 FNL, 1879 FEL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 114H		A-24-20S-32E	351 FNL, 1279' FEL	1400 BBL/D	3000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 324H		A-24-20S-32E	321 FNL, 1279 FEL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 224H		A-24-20S-32E	261 FNL, 1279 FEL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 304H		A-24-20S-32E	291 FNL, 1279 FEL	1400 BBL/D	2000 MCF/D	4000 BBL/D
PAKSE SOUTH 3 FED COM 434H		A-24-20S-32E	231 FNL, 1279 FEL	1400 BBL/D	2000 MCF/D	4000 BBL/D

WELL NAME	API	SPUD	TD	COMPLETION DATE	FLOW BACK DATE	FIRST PRODUCTION
PAKSE SOUTH 3 FED COM 112H		2-Mar-24	30-Mar-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 322H		31-Mar-24	28-Apr-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 212H		29-Apr-24	27-May-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 302H		28-May-24	25-Jun-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 432H		27-Jun-24	24-Jul-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 113H		7-Apr-24	30-Apr-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 323H		1-May-24	24-May-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 223H		25-May-24	17-Jun-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 303H		18-Jun-24	11-Jul-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 433H		10-Jul-24	1-Aug-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 114H		10-Mar-24	2-Apr-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 324H		3-Apr-24	26-Apr-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 224H		27-Apr-24	20-May-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 304H		21-May-24	13-Jun-24	20-Jul-24	22-Nov-24	23-Nov-24
PAKSE SOUTH 3 FED COM 434H		16-Jun-24	7-Jul-24	20-Jul-24	22-Nov-24	23-Nov-24

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:

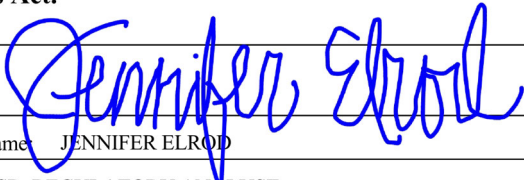
(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit 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.

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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:	JENNIFER ELROD
Title:	SR. REGULATORY ANALYST
E-mail Address:	JELROD@EARTHSTONEENERGY.COM
Date:	02/28/2023
Phone:	(940)452-6214

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

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

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

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

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

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

Completions/Recompletions Operations

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

Production Operations

- Weekly AVOs will be performed on all facilities.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All tanks will have sight glasses installed, but no electronic gauging equipment.
- Leaking thief hatches found during AVOs will be cleaned and properly re-sealed.
- There will be no gas re-injection for underground storage, temporary storage, or for enhanced oil recovery; however, gas injection will be used for gas lift applications in which the gas would be circulated through a closed loop system.
- If H₂S is encountered, gas will be treated to pipeline spec to avoid shut-in's and/or flaring.

Performance Standards

- Production equipment will be designed to handle maximum anticipated rates and pressure.

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- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Weekly AVOs will be performed on all wells and facilities that produce more than 50MCFPD.

Measurement & Estimation

- All volume that is flared or vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- No meter bypasses will be installed.
- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

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

- During downhole well maintenance, ESTE will use best management practices to vent as minimally as possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.

Operator Name: EARTHSTONE OPERATING LLC**Well Name:** PAKSE 3 SOUTH FED COM**Well Number:** 112H

5M_Choke_Manifold_Diagram_20230327082555.pdf

BOP Diagram Attachment:

5M__BOP_Diagram_2__20230327082614.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	1130	0	1130	3540	2410	1130	J-55	54.5	BUTT	2.18	5.96	DRY	27.36	DRY	25.92
2	INTERMEDIATE	12.25	10.75	NEW	API	N	0	3205	0	3205	3728	335	3205	J-55	45.5	OTHER - BTC SPL CC	2.38	4.68	DRY	7.29	DRY	7.13
3	INTERMEDIATE	9.875	8.625	NEW	API	N	0	5290	0	5290	3540	-1750	5290	L-80	32	OTHER - EHC MO-FXL	2.57	1.86	DRY	3.08	DRY	4.45
4	PRODUCTION	7.875	5.5	NEW	API	N	0	21925	0	9137	3728	-5597	21925	OTHER	20	OTHER - VARN AC	2.95	2.8	DRY	3.51	DRY	3.51

Casing Attachments**Casing ID:** 1 **String** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Pakse_3_South_Fed_Com_112H_APD_20230327083536.pdf

Operator Name: EARTHSTONE OPERATING LLC

Well Name: PAKSE 3 SOUTH FED COM

Well Number: 112H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	630	370	1.83	12.5	677	50	Class C	Sodium Metasilicate, Defoamer, KCL, Kol-Seal, Cellophane Flakes, ROF, Seal Check
SURFACE	Tail		630	1130	300	1.34	14.8	402	50	Class C	Fluid loss, Dispercent, Retarder
INTERMEDIATE	Lead		0	2705	370	2	12.7	740	50	Class C	Sodium Metasilicate, Defoamer, KCL, Kol-Seal, Cellophane Flakes, ROF SealCheck
INTERMEDIATE	Tail		2705	3205	110	1.34	14.8	147	50	Class C	Fluid Loss, Dispercent, Retarder
INTERMEDIATE	Lead	3580	0	3080	120	1.98	12.7	237	50	CLASS C	Sodium Metasilicate, Defoamer, KCL, Kol-Seal, Cellophane Flakes, ROF SealCheck
INTERMEDIATE	Tail		3080	3580	80	1.34	14.8	107	50	CLASS C	FLUID LOSS, DISPERCENT, RETARDER
INTERMEDIATE	Lead	3580	3580	4790	210	2	12.7	420	50	CLASS C	Sodium Metasilicate, Defoamer, KCL, Kol-Seal, Cellophane Flakes, ROF SealCheck
INTERMEDIATE	Tail		4790	5290	80	1.35	14.8	108	50	CLASS C	FLUID LOSS, DISPERCENT, RETARDER
PRODUCTION	Lead		3192	9000	620	2.5	11.9	1550	40	Class H	Bentonite, Compressive Strength Enhancer, Silica Fume Alternative, Fluid Loss, Defoamer, Sodium Metasilicate, Retarder
PRODUCTION	Tail		9000	21925	2440	1.24	14.4	3025	35	Class H	Fluid Loss, Suspension Agent, Retarder, Defoamer, Dispersant

Operator Name: EARTHSTONE OPERATING LLC

Well Name: PAKSE 3 SOUTH FED COM

Well Number: 112H

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 Onshore Order #2:

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

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: Pason PVT system will be in place throughout the well as well as visual checks

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	1130	SPUD MUD	8.6	8.8							VIS: 28-34
1130	3205	SALT SATURATED	9.8	10.2							VIS: 28-34
3205	5290	OTHER : FRESHWATER	8.4	8.6							VIS: 28-34
5290	2192 5	OIL-BASED MUD	9	9.5							VIS: 45-65

Section 6 - Test, Logging, Coring

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

None

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

CEMENT BOND LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,MEASUREMENT WHILE DRILLING,

Coring operation description for the well:

None

Operator Name: EARTHSTONE OPERATING LLC**Well Name:** PAKSE 3 SOUTH FED COM**Well Number:** 112H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4515**Anticipated Surface Pressure:** 2504**Anticipated Bottom Hole Temperature(F):** 150**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**

ESTE_Lea_County_H2S_plan_20221221073849.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Pakse_3_South_Fed_Com_112H__Plan_1_03_07_23_AC_Report_20230327131318.pdf

Pakse_3_South_Fed_Com_112H__Plan_1_03_07_23_20230327131320.pdf

Other proposed operations facets description:**Other proposed operations facets attachment:**

5.50_20__VAHC_P110_RY_VARN_AC__6.300_Cplg__20221013140145.pdf

CDS_FXL_8_625_32_BMP_L80EHC_Feb04_2022_20221013140144.pdf

cid2907AACC_F198_48B7_9704_F3D6BE2363B6_20230327131448.pdf

Pakse_3_South_Fed_Com_112H_APD_20230912083641.pdf

Other Variance attachment:

Choke_Hose_M55_1_07102017_145204_66_1225_04_14_2014__20210709100912.pdf

Choke_Hose_M55_2_07102017_145421_66_1042_05_03_2013__20210709100912.pdf

CACTUS_4_STRING_ESTE_CONV__MBU_3T_CFL_HBE_DWG_20230327131608.PDF

ESTE_CACTUS_4_STRING_Running_Procedure_20230327131801.pdf

Earthstone Operating LLC - Pakse 3 South Fed Com 112H

1. Geologic Formations

TVD of target	9,137' EOL	Pilot hole depth	NA
MD at TD:	21,925'	Deepest expected fresh water:	33'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1101	Water	
Salado	1351	Salt	
Base of Salt	2701	Salt	
Capitan Reef	3691	Salt Water	
Bell Canyon	5261	Water	
Cherry Canyon	5701	Oil/Gas	
Brush Canyon	6268	Oil/Gas	
Top BSPG Lime	7881	Oil/Gas	
1st BSPG Ss	8916	Target Oil/Gas	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body Tension	SF Joint Tension
	From	To								
17.5"	0	1130	13.375"	54.5	J55	BTC	2.18	5.96	27.36	25.92
12.25"	0	3205	10.75"	45.5	J55	BTC Spl CC	2.38	4.68	7.13	7.29
9.875"	0	5290	8.625"	32	L80 EHC	MO-FXL	2.57	1.86	4.45	3.08
7.875"	0	21,925'	5.5"	20	P110 RY	VARN	2.78	3.54	3.54	3.54
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Earthstone Operating LLC - Pakse 3 South Fed Com 112H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary?	Y
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2 nd string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Earthstone Operating LLC - Pakse 3 South Fed Com 112H

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	370	12.5	1.83	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	300	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Inter. 1	370	12.7	2.0	9.6	16	Lead: 35:65:6 C Blend
	110	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
Inter. 2, Stage 1	120	12.7	1.98	10.6	16	Lead: 35:65:6 C Blend
	80	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
DV/ECP @ 3580						
Inter. 2, Stage 2	210	12.7	2.0	10.6	16	Lead: Class C + 4% Gel + 1% CaCl ₂
	80	14.8	1.35	6.34	8	Tail: Class C + 2% CaCl
5.5 Prod	620	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	2440	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results

Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1 st Intermediate	0'	50%
2nd Intermediate	0'	50%
Production	3,192'	35% OH in Lateral (KOP to EOL) – 40% OH in Vertical

Earthstone Operating LLC - Pakse 3 South Fed Com 112H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
---	---

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12.25	13-5/8"	3M	Annular	x	2000 psi
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		
9.875	13-5/8"	3M	Annular	x	2500 psi
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		
7-7/8"	13-5/8"	3M	Annular	x	2500 psi
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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 will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Earthstone Operating LLC - Pakse 3 South Fed Com 112H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf. Shoe	10-3/4" Shoe	Saturated Brine	9.8 - 10.2	28-34	N/C
10-3/4" Shoe	8-5/8" Int shoe	Saturated Brine	8.4 - 8.6	28-34	N/C
8-5/8" Int shoe	Lateral TD	OBM	9 - 9.5	45 - 65	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

Earthstone Operating LLC - Pakse 3 South Fed Com 112H**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	4515 psi at 9137' TVD
Abnormal Temperature	NO 150 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N H₂S is present

Y H₂S Plan attached

8. Other Facets of Operation

Y	Is it a walking operation?
Y	Is casing pre-set?

x	H ₂ S Plan.
x	BOP & Choke Schematics.
x	Directional Plan



Earthstone Operating, LLC

Lea County, NM (Nad 83 NME)

Pakse 3 South Fed Com

Pakse 3 South Fed Com 112H

OH

Plan: Plan 1 03-07-23

Standard Planning Report

07 March, 2023





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Pakse 3 South Fed Com 112H
Company:	Earthstone Operating, LLC	TVD Reference:	RKB @ 3567.80usft
Project:	Lea County, NM (Nad 83 NME)	MD Reference:	RKB @ 3567.80usft
Site:	Pakse 3 South Fed Com	North Reference:	Grid
Well:	Pakse 3 South Fed Com 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 03-07-23		

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

Site						Pakse 3 South Fed Com											
Site Position:			Northing:			569,891.17 usft			Latitude:			32° 33' 54.721058 N					
From:			Map			Easting:			729,637.08 usft			Longitude:			103° 43' 19.623773 W		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.329		

Well	Pakse 3 South Fed Com 112H					
Well Position	+N/-S	0.00 usft	Northing:	569,891.17 usft	Latitude:	32° 33' 54.721058 N
	+E/-W	0.00 usft	Easting:	729,637.08 usft	Longitude:	103° 43' 19.623773 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,540.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	6/3/2023	6.471	60.326	47,769.10957583

Design	Plan 1 03-07-23			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.64

Plan Survey Tool Program	Date	3/6/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,925.20	Plan 1 03-07-23 (OH)	MWD+HRGM
				OWSG MWD + HRGM

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	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,900.08	6.00	311.95	1,899.53	10.50	-11.68	2.00	2.00	0.00	311.949	
4,918.03	6.00	311.95	4,900.94	221.43	-246.36	0.00	0.00	0.00	0.000	
5,518.19	0.00	0.00	5,500.00	242.42	-269.72	1.00	-1.00	0.00	180.000	
8,420.19	0.00	0.00	8,402.00	242.42	-269.72	0.00	0.00	0.00	0.000	
9,312.79	89.26	179.64	8,974.91	-323.13	-266.14	10.00	10.00	0.00	179.637	
21,925.20	89.26	179.64	9,137.80	-12,934.24	-186.35	0.00	0.00	0.00	0.000	BHL Pakse 3 South



Planning Report



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Project:	Lea County, NM (Nad 83 NME)	MD Reference:	RKB @ 3567.80usft
Site:	Pakse 3 South Fed Com	North Reference:	Grid
Well:	Pakse 3 South Fed Com 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 03-07-23		

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
1,102.80	0.00	0.00	1,102.80	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,352.80	0.00	0.00	1,352.80	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
1,700.00	2.00	311.95	1,699.98	1.17	-1.30	-1.17	2.00	2.00	0.00
1,800.00	4.00	311.95	1,799.84	4.66	-5.19	-4.70	2.00	2.00	0.00
1,900.00	6.00	311.95	1,899.45	10.49	-11.67	-10.56	2.00	2.00	0.00
1,900.08	6.00	311.95	1,899.53	10.50	-11.68	-10.57	2.00	2.00	0.00
Hold 6.00° Inc at 311.95° Azm									
2,000.00	6.00	311.95	1,998.90	17.48	-19.45	-17.60	0.00	0.00	0.00
2,100.00	6.00	311.95	2,098.36	24.47	-27.22	-24.64	0.00	0.00	0.00
2,200.00	6.00	311.95	2,197.81	31.46	-35.00	-31.68	0.00	0.00	0.00
2,300.00	6.00	311.95	2,297.26	38.45	-42.78	-38.72	0.00	0.00	0.00
2,400.00	6.00	311.95	2,396.71	45.44	-50.55	-45.75	0.00	0.00	0.00
2,500.00	6.00	311.95	2,496.16	52.43	-58.33	-52.79	0.00	0.00	0.00
2,600.00	6.00	311.95	2,595.62	59.41	-66.11	-59.83	0.00	0.00	0.00
2,700.00	6.00	311.95	2,695.07	66.40	-73.88	-66.87	0.00	0.00	0.00
2,706.90	6.00	311.95	2,701.93	66.89	-74.42	-67.35	0.00	0.00	0.00
Base Salt									
2,800.00	6.00	311.95	2,794.52	73.39	-81.66	-73.90	0.00	0.00	0.00
2,900.00	6.00	311.95	2,893.97	80.38	-89.43	-80.94	0.00	0.00	0.00
3,000.00	6.00	311.95	2,993.42	87.37	-97.21	-87.98	0.00	0.00	0.00
3,100.00	6.00	311.95	3,092.87	94.36	-104.99	-95.02	0.00	0.00	0.00
3,200.00	6.00	311.95	3,192.33	101.35	-112.76	-102.06	0.00	0.00	0.00
3,300.00	6.00	311.95	3,291.78	108.34	-120.54	-109.09	0.00	0.00	0.00
3,400.00	6.00	311.95	3,391.23	115.33	-128.31	-116.13	0.00	0.00	0.00
3,500.00	6.00	311.95	3,490.68	122.32	-136.09	-123.17	0.00	0.00	0.00
3,600.00	6.00	311.95	3,590.13	129.31	-143.87	-130.21	0.00	0.00	0.00
3,700.00	6.00	311.95	3,689.59	136.30	-151.64	-137.25	0.00	0.00	0.00
3,701.45	6.00	311.95	3,691.03	136.40	-151.76	-137.35	0.00	0.00	0.00
Capitan Reef									
3,800.00	6.00	311.95	3,789.04	143.29	-159.42	-144.28	0.00	0.00	0.00
3,900.00	6.00	311.95	3,888.49	150.27	-167.20	-151.32	0.00	0.00	0.00
4,000.00	6.00	311.95	3,987.94	157.26	-174.97	-158.36	0.00	0.00	0.00
4,100.00	6.00	311.95	4,087.39	164.25	-182.75	-165.40	0.00	0.00	0.00
4,200.00	6.00	311.95	4,186.85	171.24	-190.52	-172.44	0.00	0.00	0.00
4,300.00	6.00	311.95	4,286.30	178.23	-198.30	-179.47	0.00	0.00	0.00
4,400.00	6.00	311.95	4,385.75	185.22	-206.08	-186.51	0.00	0.00	0.00
4,500.00	6.00	311.95	4,485.20	192.21	-213.85	-193.55	0.00	0.00	0.00
4,600.00	6.00	311.95	4,584.65	199.20	-221.63	-200.59	0.00	0.00	0.00
4,700.00	6.00	311.95	4,684.11	206.19	-229.41	-207.62	0.00	0.00	0.00
4,800.00	6.00	311.95	4,783.56	213.18	-237.18	-214.66	0.00	0.00	0.00
4,900.00	6.00	311.95	4,883.01	220.17	-244.96	-221.70	0.00	0.00	0.00
4,918.03	6.00	311.95	4,900.94	221.43	-246.36	-222.97	0.00	0.00	0.00
Begin 1.00°/100' Drop									
5,000.00	5.18	311.95	4,982.52	226.77	-252.30	-228.35	1.00	-1.00	0.00
5,100.00	4.18	311.95	5,082.18	232.22	-258.37	-233.84	1.00	-1.00	0.00
5,200.00	3.18	311.95	5,181.98	236.51	-263.15	-238.16	1.00	-1.00	0.00
5,277.81	2.40	311.95	5,259.69	239.05	-265.97	-240.71	1.00	-1.00	0.00
Bell Canyon									



Planning Report



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Project:	Lea County, NM (Nad 83 NME)	MD Reference:	RKB @ 3567.80usft
Site:	Pakse 3 South Fed Com	North Reference:	Grid
Well:	Pakse 3 South Fed Com 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 03-07-23		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	2.18	311.95	5,281.87	239.64	-266.63	-241.31	1.00	-1.00	0.00
5,400.00	1.18	311.95	5,381.82	241.60	-268.81	-243.29	1.00	-1.00	0.00
5,500.00	0.18	311.95	5,481.81	242.40	-269.69	-244.09	1.00	-1.00	0.00
5,518.19	0.00	0.00	5,500.00	242.42	-269.72	-244.11	1.00	-1.00	0.00
Begin Vertical Hold									
5,717.83	0.00	0.00	5,699.65	242.42	-269.72	-244.11	0.00	0.00	0.00
Cherry Canyon									
6,284.83	0.00	0.00	6,266.65	242.42	-269.72	-244.11	0.00	0.00	0.00
Brushy Canyon									
7,897.83	0.00	0.00	7,879.65	242.42	-269.72	-244.11	0.00	0.00	0.00
Top BSPG Lime									
8,420.19	0.00	0.00	8,402.00	242.42	-269.72	-244.11	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
8,500.00	7.98	179.64	8,481.56	236.87	-269.68	-238.56	10.00	10.00	0.00
8,600.00	17.98	179.64	8,578.88	214.43	-269.54	-216.12	10.00	10.00	0.00
8,700.00	27.98	179.64	8,670.82	175.44	-269.29	-177.13	10.00	10.00	0.00
8,800.00	37.98	179.64	8,754.60	121.07	-268.95	-122.76	10.00	10.00	0.00
8,900.00	47.98	179.64	8,827.67	52.99	-268.52	-54.67	10.00	10.00	0.00
9,000.00	57.98	179.64	8,887.80	-26.75	-268.01	25.07	10.00	10.00	0.00
9,064.52	64.43	179.64	8,918.85	-83.26	-267.66	81.58	10.00	10.00	0.00
1st BSPG Ss									
9,100.00	67.98	179.64	8,933.17	-115.73	-267.45	114.04	10.00	10.00	0.00
9,200.00	77.98	179.64	8,962.40	-211.22	-266.85	209.54	10.00	10.00	0.00
9,300.00	87.98	179.64	8,974.60	-310.35	-266.22	308.67	10.00	10.00	0.00
9,312.79	89.26	179.64	8,974.91	-323.13	-266.14	321.45	10.00	10.00	0.00
LP, Hold 89.26° Inc at 179.64° Azm									
9,400.00	89.26	179.64	8,976.04	-410.33	-265.59	408.66	0.00	0.00	0.00
9,500.00	89.26	179.64	8,977.33	-510.32	-264.95	508.65	0.00	0.00	0.00
9,600.00	89.26	179.64	8,978.62	-610.31	-264.32	608.64	0.00	0.00	0.00
9,700.00	89.26	179.64	8,979.91	-710.30	-263.69	708.63	0.00	0.00	0.00
9,800.00	89.26	179.64	8,981.20	-810.29	-263.06	808.62	0.00	0.00	0.00
9,900.00	89.26	179.64	8,982.49	-910.28	-262.42	908.61	0.00	0.00	0.00
10,000.00	89.26	179.64	8,983.79	-1,010.27	-261.79	1,008.61	0.00	0.00	0.00
10,100.00	89.26	179.64	8,985.08	-1,110.26	-261.16	1,108.60	0.00	0.00	0.00
10,200.00	89.26	179.64	8,986.37	-1,210.25	-260.53	1,208.59	0.00	0.00	0.00
10,300.00	89.26	179.64	8,987.66	-1,310.24	-259.89	1,308.58	0.00	0.00	0.00
10,400.00	89.26	179.64	8,988.95	-1,410.23	-259.26	1,408.57	0.00	0.00	0.00
10,500.00	89.26	179.64	8,990.24	-1,510.22	-258.63	1,508.56	0.00	0.00	0.00
10,600.00	89.26	179.64	8,991.53	-1,610.21	-257.99	1,608.56	0.00	0.00	0.00
10,700.00	89.26	179.64	8,992.83	-1,710.20	-257.36	1,708.55	0.00	0.00	0.00
10,800.00	89.26	179.64	8,994.12	-1,810.19	-256.73	1,808.54	0.00	0.00	0.00
10,900.00	89.26	179.64	8,995.41	-1,910.18	-256.10	1,908.53	0.00	0.00	0.00
11,000.00	89.26	179.64	8,996.70	-2,010.17	-255.46	2,008.52	0.00	0.00	0.00
11,100.00	89.26	179.64	8,997.99	-2,110.16	-254.83	2,108.51	0.00	0.00	0.00
11,200.00	89.26	179.64	8,999.28	-2,210.15	-254.20	2,208.51	0.00	0.00	0.00
11,300.00	89.26	179.64	9,000.57	-2,310.14	-253.57	2,308.50	0.00	0.00	0.00
11,400.00	89.26	179.64	9,001.87	-2,410.13	-252.93	2,408.49	0.00	0.00	0.00
11,500.00	89.26	179.64	9,003.16	-2,510.12	-252.30	2,508.48	0.00	0.00	0.00
11,600.00	89.26	179.64	9,004.45	-2,610.11	-251.67	2,608.47	0.00	0.00	0.00
11,700.00	89.26	179.64	9,005.74	-2,710.10	-251.04	2,708.46	0.00	0.00	0.00
11,800.00	89.26	179.64	9,007.03	-2,810.08	-250.40	2,808.46	0.00	0.00	0.00
11,900.00	89.26	179.64	9,008.32	-2,910.07	-249.77	2,908.45	0.00	0.00	0.00
12,000.00	89.26	179.64	9,009.62	-3,010.06	-249.14	3,008.44	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Pakse 3 South Fed Com 112H
Company:	Earthstone Operating, LLC	TVD Reference:	RKB @ 3567.80usft
Project:	Lea County, NM (Nad 83 NME)	MD Reference:	RKB @ 3567.80usft
Site:	Pakse 3 South Fed Com	North Reference:	Grid
Well:	Pakse 3 South Fed Com 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 03-07-23		

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)
12,100.00	89.26	179.64	9,010.91	-3,110.05	-248.51	3,108.43	0.00	0.00	0.00
12,200.00	89.26	179.64	9,012.20	-3,210.04	-247.87	3,208.42	0.00	0.00	0.00
12,300.00	89.26	179.64	9,013.49	-3,310.03	-247.24	3,308.41	0.00	0.00	0.00
12,400.00	89.26	179.64	9,014.78	-3,410.02	-246.61	3,408.41	0.00	0.00	0.00
12,500.00	89.26	179.64	9,016.07	-3,510.01	-245.98	3,508.40	0.00	0.00	0.00
12,600.00	89.26	179.64	9,017.36	-3,610.00	-245.34	3,608.39	0.00	0.00	0.00
12,700.00	89.26	179.64	9,018.66	-3,709.99	-244.71	3,708.38	0.00	0.00	0.00
12,800.00	89.26	179.64	9,019.95	-3,809.98	-244.08	3,808.37	0.00	0.00	0.00
12,900.00	89.26	179.64	9,021.24	-3,909.97	-243.44	3,908.36	0.00	0.00	0.00
13,000.00	89.26	179.64	9,022.53	-4,009.96	-242.81	4,008.36	0.00	0.00	0.00
13,100.00	89.26	179.64	9,023.82	-4,109.95	-242.18	4,108.35	0.00	0.00	0.00
13,200.00	89.26	179.64	9,025.11	-4,209.94	-241.55	4,208.34	0.00	0.00	0.00
13,300.00	89.26	179.64	9,026.41	-4,309.93	-240.91	4,308.33	0.00	0.00	0.00
13,400.00	89.26	179.64	9,027.70	-4,409.92	-240.28	4,408.32	0.00	0.00	0.00
13,500.00	89.26	179.64	9,028.99	-4,509.91	-239.65	4,508.31	0.00	0.00	0.00
13,600.00	89.26	179.64	9,030.28	-4,609.90	-239.02	4,608.31	0.00	0.00	0.00
13,700.00	89.26	179.64	9,031.57	-4,709.89	-238.38	4,708.30	0.00	0.00	0.00
13,800.00	89.26	179.64	9,032.86	-4,809.88	-237.75	4,808.29	0.00	0.00	0.00
13,900.00	89.26	179.64	9,034.15	-4,909.87	-237.12	4,908.28	0.00	0.00	0.00
14,000.00	89.26	179.64	9,035.45	-5,009.86	-236.49	5,008.27	0.00	0.00	0.00
14,100.00	89.26	179.64	9,036.74	-5,109.85	-235.85	5,108.26	0.00	0.00	0.00
14,200.00	89.26	179.64	9,038.03	-5,209.84	-235.22	5,208.26	0.00	0.00	0.00
14,300.00	89.26	179.64	9,039.32	-5,309.83	-234.59	5,308.25	0.00	0.00	0.00
14,400.00	89.26	179.64	9,040.61	-5,409.82	-233.96	5,408.24	0.00	0.00	0.00
14,500.00	89.26	179.64	9,041.90	-5,509.81	-233.32	5,508.23	0.00	0.00	0.00
14,600.00	89.26	179.64	9,043.19	-5,609.80	-232.69	5,608.22	0.00	0.00	0.00
14,700.00	89.26	179.64	9,044.49	-5,709.79	-232.06	5,708.21	0.00	0.00	0.00
14,800.00	89.26	179.64	9,045.78	-5,809.77	-231.43	5,808.21	0.00	0.00	0.00
14,900.00	89.26	179.64	9,047.07	-5,909.76	-230.79	5,908.20	0.00	0.00	0.00
15,000.00	89.26	179.64	9,048.36	-6,009.75	-230.16	6,008.19	0.00	0.00	0.00
15,100.00	89.26	179.64	9,049.65	-6,109.74	-229.53	6,108.18	0.00	0.00	0.00
15,200.00	89.26	179.64	9,050.94	-6,209.73	-228.89	6,208.17	0.00	0.00	0.00
15,300.00	89.26	179.64	9,052.24	-6,309.72	-228.26	6,308.16	0.00	0.00	0.00
15,400.00	89.26	179.64	9,053.53	-6,409.71	-227.63	6,408.16	0.00	0.00	0.00
15,500.00	89.26	179.64	9,054.82	-6,509.70	-227.00	6,508.15	0.00	0.00	0.00
15,600.00	89.26	179.64	9,056.11	-6,609.69	-226.36	6,608.14	0.00	0.00	0.00
15,700.00	89.26	179.64	9,057.40	-6,709.68	-225.73	6,708.13	0.00	0.00	0.00
15,800.00	89.26	179.64	9,058.69	-6,809.67	-225.10	6,808.12	0.00	0.00	0.00
15,900.00	89.26	179.64	9,059.98	-6,909.66	-224.47	6,908.11	0.00	0.00	0.00
16,000.00	89.26	179.64	9,061.28	-7,009.65	-223.83	7,008.11	0.00	0.00	0.00
16,100.00	89.26	179.64	9,062.57	-7,109.64	-223.20	7,108.10	0.00	0.00	0.00
16,200.00	89.26	179.64	9,063.86	-7,209.63	-222.57	7,208.09	0.00	0.00	0.00
16,300.00	89.26	179.64	9,065.15	-7,309.62	-221.94	7,308.08	0.00	0.00	0.00
16,400.00	89.26	179.64	9,066.44	-7,409.61	-221.30	7,408.07	0.00	0.00	0.00
16,500.00	89.26	179.64	9,067.73	-7,509.60	-220.67	7,508.06	0.00	0.00	0.00
16,600.00	89.26	179.64	9,069.02	-7,609.59	-220.04	7,608.06	0.00	0.00	0.00
16,700.00	89.26	179.64	9,070.32	-7,709.58	-219.41	7,708.05	0.00	0.00	0.00
16,800.00	89.26	179.64	9,071.61	-7,809.57	-218.77	7,808.04	0.00	0.00	0.00
16,900.00	89.26	179.64	9,072.90	-7,909.56	-218.14	7,908.03	0.00	0.00	0.00
17,000.00	89.26	179.64	9,074.19	-8,009.55	-217.51	8,008.02	0.00	0.00	0.00
17,100.00	89.26	179.64	9,075.48	-8,109.54	-216.87	8,108.01	0.00	0.00	0.00
17,200.00	89.26	179.64	9,076.77	-8,209.53	-216.24	8,208.01	0.00	0.00	0.00
17,300.00	89.26	179.64	9,078.07	-8,309.52	-215.61	8,308.00	0.00	0.00	0.00
17,400.00	89.26	179.64	9,079.36	-8,409.51	-214.98	8,407.99	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Pakse 3 South Fed Com 112H
Company:	Earthstone Operating, LLC	TVD Reference:	RKB @ 3567.80usft
Project:	Lea County, NM (Nad 83 NME)	MD Reference:	RKB @ 3567.80usft
Site:	Pakse 3 South Fed Com	North Reference:	Grid
Well:	Pakse 3 South Fed Com 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 03-07-23		

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)
17,500.00	89.26	179.64	9,080.65	-8,509.50	-214.34	8,507.98	0.00	0.00	0.00
17,600.00	89.26	179.64	9,081.94	-8,609.49	-213.71	8,607.97	0.00	0.00	0.00
17,700.00	89.26	179.64	9,083.23	-8,709.47	-213.08	8,707.96	0.00	0.00	0.00
17,800.00	89.26	179.64	9,084.52	-8,809.46	-212.45	8,807.96	0.00	0.00	0.00
17,900.00	89.26	179.64	9,085.81	-8,909.45	-211.81	8,907.95	0.00	0.00	0.00
18,000.00	89.26	179.64	9,087.11	-9,009.44	-211.18	9,007.94	0.00	0.00	0.00
18,100.00	89.26	179.64	9,088.40	-9,109.43	-210.55	9,107.93	0.00	0.00	0.00
18,200.00	89.26	179.64	9,089.69	-9,209.42	-209.92	9,207.92	0.00	0.00	0.00
18,300.00	89.26	179.64	9,090.98	-9,309.41	-209.28	9,307.91	0.00	0.00	0.00
18,400.00	89.26	179.64	9,092.27	-9,409.40	-208.65	9,407.91	0.00	0.00	0.00
18,500.00	89.26	179.64	9,093.56	-9,509.39	-208.02	9,507.90	0.00	0.00	0.00
18,600.00	89.26	179.64	9,094.85	-9,609.38	-207.39	9,607.89	0.00	0.00	0.00
18,700.00	89.26	179.64	9,096.15	-9,709.37	-206.75	9,707.88	0.00	0.00	0.00
18,800.00	89.26	179.64	9,097.44	-9,809.36	-206.12	9,807.87	0.00	0.00	0.00
18,900.00	89.26	179.64	9,098.73	-9,909.35	-205.49	9,907.86	0.00	0.00	0.00
19,000.00	89.26	179.64	9,100.02	-10,009.34	-204.86	10,007.86	0.00	0.00	0.00
19,100.00	89.26	179.64	9,101.31	-10,109.33	-204.22	10,107.85	0.00	0.00	0.00
19,200.00	89.26	179.64	9,102.60	-10,209.32	-203.59	10,207.84	0.00	0.00	0.00
19,300.00	89.26	179.64	9,103.90	-10,309.31	-202.96	10,307.83	0.00	0.00	0.00
19,400.00	89.26	179.64	9,105.19	-10,409.30	-202.32	10,407.82	0.00	0.00	0.00
19,500.00	89.26	179.64	9,106.48	-10,509.29	-201.69	10,507.81	0.00	0.00	0.00
19,600.00	89.26	179.64	9,107.77	-10,609.28	-201.06	10,607.81	0.00	0.00	0.00
19,700.00	89.26	179.64	9,109.06	-10,709.27	-200.43	10,707.80	0.00	0.00	0.00
19,800.00	89.26	179.64	9,110.35	-10,809.26	-199.79	10,807.79	0.00	0.00	0.00
19,900.00	89.26	179.64	9,111.64	-10,909.25	-199.16	10,907.78	0.00	0.00	0.00
20,000.00	89.26	179.64	9,112.94	-11,009.24	-198.53	11,007.77	0.00	0.00	0.00
20,100.00	89.26	179.64	9,114.23	-11,109.23	-197.90	11,107.76	0.00	0.00	0.00
20,200.00	89.26	179.64	9,115.52	-11,209.22	-197.26	11,207.76	0.00	0.00	0.00
20,300.00	89.26	179.64	9,116.81	-11,309.21	-196.63	11,307.75	0.00	0.00	0.00
20,400.00	89.26	179.64	9,118.10	-11,409.20	-196.00	11,407.74	0.00	0.00	0.00
20,500.00	89.26	179.64	9,119.39	-11,509.19	-195.37	11,507.73	0.00	0.00	0.00
20,600.00	89.26	179.64	9,120.69	-11,609.18	-194.73	11,607.72	0.00	0.00	0.00
20,700.00	89.26	179.64	9,121.98	-11,709.16	-194.10	11,707.71	0.00	0.00	0.00
20,800.00	89.26	179.64	9,123.27	-11,809.15	-193.47	11,807.71	0.00	0.00	0.00
20,900.00	89.26	179.64	9,124.56	-11,909.14	-192.84	11,907.70	0.00	0.00	0.00
21,000.00	89.26	179.64	9,125.85	-12,009.13	-192.20	12,007.69	0.00	0.00	0.00
21,100.00	89.26	179.64	9,127.14	-12,109.12	-191.57	12,107.68	0.00	0.00	0.00
21,200.00	89.26	179.64	9,128.43	-12,209.11	-190.94	12,207.67	0.00	0.00	0.00
21,300.00	89.26	179.64	9,129.73	-12,309.10	-190.31	12,307.66	0.00	0.00	0.00
21,400.00	89.26	179.64	9,131.02	-12,409.09	-189.67	12,407.66	0.00	0.00	0.00
21,500.00	89.26	179.64	9,132.31	-12,509.08	-189.04	12,507.65	0.00	0.00	0.00
21,600.00	89.26	179.64	9,133.60	-12,609.07	-188.41	12,607.64	0.00	0.00	0.00
21,700.00	89.26	179.64	9,134.89	-12,709.06	-187.77	12,707.63	0.00	0.00	0.00
21,800.00	89.26	179.64	9,136.18	-12,809.05	-187.14	12,807.62	0.00	0.00	0.00
21,900.00	89.26	179.64	9,137.47	-12,909.04	-186.51	12,907.61	0.00	0.00	0.00
21,925.20	89.26	179.64	9,137.80	-12,934.24	-186.35	12,932.81	0.00	0.00	0.00
TD at 21925.20									



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well Pakse 3 South Fed Com 112H
Company:	Earthstone Operating, LLC	TVD Reference:	RKB @ 3567.80usft
Project:	Lea County, NM (Nad 83 NME)	MD Reference:	RKB @ 3567.80usft
Site:	Pakse 3 South Fed Com	North Reference:	Grid
Well:	Pakse 3 South Fed Com 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 03-07-23		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
FTP Pakse 3 South F	0.00	0.00	8,968.00	162.42	-269.21	570,053.59	729,367.87	32° 33' 56.34	3483 N 3° 43' 22.75
- plan misses target center by 177.96usft at 8900.00usft MD (8827.67 TVD, 52.99 N, -268.52 E)									
- Point									
LTP Pakse 3 South F	0.00	0.00	9,136.63	-12,844.24	-186.93	557,046.93	729,450.15	32° 31' 47.63	8010 N 3° 43' 22.66
- plan misses target center by 0.01usft at 21835.19usft MD (9136.64 TVD, -12844.24 N, -186.92 E)									
- Point									
BHL Pakse 3 South F	0.00	0.00	9,137.80	-12,934.24	-186.35	556,956.93	729,450.73	32° 31' 46.74	7425 N 3° 43' 22.66
- plan hits target center									
- Point									

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,102.80	1,102.80	Rustler		0.740	179.64
1,352.80	1,352.80	Salado		0.740	179.64
2,706.90	2,701.93	Base Salt		0.740	179.64
3,701.45	3,691.03	Capitan Reef		0.740	179.64
5,277.81	5,259.69	Bell Canyon		0.740	179.64
5,717.83	5,699.65	Cherry Canyon		0.740	179.64
6,284.83	6,266.65	Brushy Canyon		0.740	179.64
7,897.83	7,879.65	Top BSPG Lime		0.740	179.64
9,064.52	8,918.85	1st BSPG Ss		0.740	179.64

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,600.00	1,600.00	0.00	0.00	KOP, Begin 2.00°/100' Build
1,900.08	1,899.53	10.50	-11.68	Hold 6.00° Inc at 311.95° Azm
4,918.03	4,900.94	221.43	-246.36	Begin 1.00°/100' Drop
5,518.19	5,500.00	242.42	-269.72	Begin Vertical Hold
8,420.19	8,402.00	242.42	-269.72	KOP2, Begin 10.00°/100' Build
9,312.79	8,974.91	-323.13	-266.14	LP, Hold 89.26° Inc at 179.64° Azm
21,925.20	9,137.80	-12,934.24	-186.35	TD at 21925.20

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Earthstone
LEASE NO.:	NMNM77055
LOCATION:	Section 24, T.20 S, R.32 E., NMPM
COUNTY:	Lea County, New Mexico
WELL NAME & NO.:	Paske 3 South Fed Com 112H
SURFACE HOLE FOOTAGE:	264'/N & 1918'/W
BOTTOM HOLE FOOTAGE:	2631'/N & 1650'/W

COA

H₂S	☒ Yes	☐ No		
Potash / WIPP	☐ None	☐ Secretary	☒ R-111-P	☐ WIPP
Cave / Karst	☒ Low	☐ Medium	☐ High	☐ Critical
Wellhead	☐ Conventional	☒ Multibowl	☐ Both	☐ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Break Testing	☐ Water Disposal	☒ COM	☐ Unit
Variance	☒ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☒ Capitan Reef
Variance	☒ Four-String	☐ Offline Cementing	☐ Fluid-Filled	☐ Open Annulus
☐ Batch APD / Sundry				

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware, Bone Spring, and Atoka** formations. As a result, the Hydrogen Sulfide area must meet all requirements from **43 CFR 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1230** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.
 - 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 **24 hours in the Potash Area** 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 **10-3/4** inch 1st intermediate casing shall be set at **3500ft: The casing for this section shall be HCL-80.**
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 23%. Additional cement maybe required.**

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, and potash.

 - ❖ In R111 Potash Areas if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing salt string must come to surface.
 - ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the Capitan interval)
 - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
- 3. The minimum required fill of cement behind the **8-5/8** inch 2nd intermediate casing is:
 - Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
 - a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

- b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 10%. Additional cement maybe required.**
- Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, and potash.**
- 4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **50 feet (3590 ft)** on top of Capitan Reef top. If cement does not circulate see B.1.a, c-d above. Operator shall provide method of verification.

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).
- 1. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** 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 3172 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 3171 and 3172.
- 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
(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
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd 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. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

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, 2) until cement has been in place at least 24 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-P 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 part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
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:
 - 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. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.

- e. 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.
- a. 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).
 - b. 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.)
 - c. 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 part 3170 Subpart 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 water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. 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.
 - e. The results of the test shall be reported to the appropriate BLM office.
 - f. 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.

- g. 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.
- h. 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 part 3170 Subpart 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.

ZS 11/8/2023

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Earthstone Operating LLC
LEASE NO.:	NMNM 077055 and 016640B
COUNTY:	Lea

Wells:

Pakse South Fed Com Well Pad 3

Pakse 3 South Fed Com 112H

Surface Hole Location: 264' FNL & 1918' FWL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2631' FNL & 1650' FWL, Section 36, T. 20 S, R 32 E.

Pakse 3 South Fed Com 212H

Surface Hole Location: 264' FNL & 2008' FWL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2630' FNL & 2310' FWL, Section 36, T. 20 S, R 32 E.

Pakse 3 South Fed Com 302H

Surface Hole Location: 264' FNL & 1978' FWL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2630' FNL & 1980' FWL, Section 36, T. 20 S, R 32 E.

Pakse 3 South Fed Com 322H

Surface Hole Location: 264' FNL & 1948' FWL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2631' FNL & 1560' FWL, Section 36, T. 20 S, R 32 E.

Pakse 3 South Fed Com 432H

Surface Hole Location: 264' FNL & 2038' FWL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2630' FNL & 2310' FWL, Section 36, T. 20 S, R 32 E.

Pakse South Fed Com Well Pad 4

Pakse 4 South Fed Com 113H

Surface Hole Location: 263' FNL & 1999' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2628' FNL & 2510' FEL, Section 25, T. 20 S, R 32 E.

Pakse 4 South Fed Com 303H

Surface Hole Location: 263' FNL & 1939' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2629' FNL & 1980' FEL, Section 25, T. 20 S, R 32 E.

Pakse 4 South Fed Com 323H

Surface Hole Location: 263' FNL & 1969' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2628' FNL & 2310' FEL, Section 25, T. 20 S, R 32 E.

Pakse 4 South Fed Com 433H

Surface Hole Location: 263' FNL & 1879' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2629' FNL & 1650' FEL, Section 25, T. 20 S, R 32 E.

Pakse South Fed Com Well Pad 5

Pakse 5 South Fed Com 114H

Surface Hole Location: 351' FNL & 1279' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2630' FNL & 990' FEL, Section 25, T. 20 S, R 32 E.

Pakse 5 South Fed Com 304H

Surface Hole Location: 291' FNL & 1279' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2631' FNL & 660' FEL, Section 25, T. 20 S, R 32 E.

Pakse 5 South Fed Com 324H

Surface Hole Location: 321' FNL & 1279' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2630' FNL & 990' FEL, Section 25, T. 20 S, R 32 E.

Pakse 5 South Fed Com 434H

Surface Hole Location: 231' FNL & 1279' FEL, Section 24, T. 20 S., R. 32 E.

Bottom Hole Location: 2632' FNL & 330' FEL, Section 25, T. 20 S, R 32 E.

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Watershed
 - Range
 - Lesser Prairie Chicken
 - VRM IV
 - Potash
- ☐ **Construction**
 - Notification
 - Topsoil
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 - Well Pads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder 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 holder.

OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. 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 the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See information below discussing NAGPRA.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area

of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder 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 holder.

IV. 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 and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

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 water flow 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 quickly 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 to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. 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.

Range:

Cattleguards

Where a permanent cattlegaurd 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.

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).

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.

Lesser Prairie Chicken:

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that

period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Ground-level Abandoned Well Marker to avoid raptor perching:

Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

VRM IV:

Short-term mitigation measures include painting all above-ground structures that are not subject to safety requirements (including meter housing) Shale Green, which is a flat non-reflective paint color listed in the BLM Standard Environmental Color Chart (CC-001: June 2013). Long-term mitigation measures include the removal of wells and associated infrastructure following abandonment (end of cost-effective production). Previously impacted areas will be reclaimed by removing structures and caliche pads, returning disturbed areas to natural grade, and revegetating with an approved BLM seed mixture; thereby eliminating visual impacts.

Potash Resources:

Lessees must comply with the 2012 Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Belcos Tetris Drill Island.

VI. CONSTRUCTION**A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 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 Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. 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 (below six inches) 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.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS 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 .

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)**Exclosure Fencing**

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

VII. PRODUCTION (POST DRILLING)**A. WELL STRUCTURES & FACILITIES****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.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should 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 should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. 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 below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

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 should 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.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder 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 will be planted 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 have a tendency to drop the bottom of the drill and are planted first). The holder 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 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.

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

Species

	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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

Earthstone Operating, LLC

1400 Woodloch Forest Drive, Suite 300
The Woodlands, TX 77380
Phone: (281) 298-4246
Fax: (832) 823-0478

H2S Contingency Plan

Lea County, NM

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crew should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are NO homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'
100 ppm H₂S concentration shall trigger activation of this plan

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H₂S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the response.
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training
 - in the: Detection of
 - H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂,

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Earthstone Operating, LLC personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Earthstone Operating, LLC response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMERP).

Hydrogen Sulfide Drilling Operations Plan

1. All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
 - A. Characteristics of H2S
 - B. Physical effects and hazards
 - C. Principal and operation of H2S detectors, warning system and briefing areas.
 - D. Evacuation procedure, routes and first aid.
 - E. Proper use of safety equipment & life support systems
 - F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs.
2. H2S Detection and Alarm Systems:
 - a. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary.
 - b. An audio alarm system will be installed on the derrick floor and in the top doghouse.
3. Windsock and/or wind streamers:
 - a. Windsock at mudpit area should be high enough to be visible.
 - b. Windsock on the rig floor and/ or top doghouse should be high enough to be visible.
4. Condition Flags and Signs
 - a. Warning sign on access road to location.
 - b. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential

pressure and danger. Red flag indicates danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5. Well control equipment:

- a. See exhibit BOP and Choke Diagrams

6. Communication:

- a. While working under masks chalkboards will be used for communication.
- b. Hand signals will be used where chalk board is inappropriate.
- c. Two-way radio will be used to communicate off location in case of emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

7. Drill stem Testing:

No DSTs are planned at this time.

- 8. Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.
- 9. If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

Emergency Assistance Telephone List

Earthstone Operating, LLC

The Woodlands Office (Headquarters): 281-298-4246

Midland Office: 432-686-1100

Vice President of Drilling-Nick Goree

Office: 281-771-3201

Cell: 405-488-7164

Sr. Drilling Engineer/Superintendent- Ben Taylor

Cell: 432-978-3029

Production Superintendent-Paul Martinez

Cell: 325-206-1722

Public Safety:		911 or
Lea County Sheriff's Department	Number:	(575)396-3611
Lea County Emergency Management-Lorenzo Velasquez	Number:	(575)391-2983
Lea County Fire Marshal		
Lorenzo Velasquez, Director	Number:	(575)391-2983
Jeff Broom, Deputy Fire Marshal	Number:	(575)391-2988
Fire Department:		
Knowles Fire Department	Number:	(505)392-2810
City of Hobbs Fire Department	Number:	(505)397-9308
Jal Volunteer Fire Department	Number:	(505)395-2221
Lovington Fire Department	Number:	(575)396-2359
Maljamar Fire Department	Number:	(505)676-4100
Tatum Volunteer Fire Department	Number:	(505)398-3473
Eunice Fire Department	Number:	(575)394-3258
Hospital: Lea Regional Medical Center	Number:	(575)492-5000
AirMed: Medevac	Number:	(888)303-9112
Dept. of Public Safety	Number:	(505)827-9000
New Mexico OCD-Dist. 1-Hobbs-	Office	Number: (575)393-6161
	Emergency	Number: (575)370-3186
Lea County Road Department	Number:	(575)391-2940
NMDOT	Number:	(505)827-5100
Bureau of Land Management		
Pecos District Office	Number:	(575)627-0272
Carlsbad Field Office	Number:	(575)234-5972
Hobbs Field Station	Number:	(575)393-3612

Earthstone Operating, LLC plans to operate a Closed Loop System.

Operator Name: EARTHSTONE OPERATING LLC**Well Name:** PAKSE 3 SOUTH FED COM**Well Number:** 112H**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL**Is the proposed well in a Helium production area?** N**Use Existing Well Pad?** N**New surface disturbance?****Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:**
PAKSE 3 PAD**Number:**
112H,212H,302H,322H,432H**Well Class:** HORIZONTAL**Number of Legs:** 1**Well Work Type:** Drill**Well Type:** OIL WELL**Describe Well Type:****Well sub-Type:** INFILL**Describe sub-type:****Distance to town:** 5 Miles**Distance to nearest well:** 30 FT**Distance to lease line:** 100 FT**Reservoir well spacing assigned acres Measurement:** 400 Acres**Well plat:** Pakse_3_South_Fed_Com_112H_APD_C102_20230327073218.pdf**Well work start Date:** 01/31/2024**Duration:** 30 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:** 25490**Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	264	FNL	1918	FW L	20S	32E	24	Aliquot NENW	32.5652003	- 103.7221177	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 77055	3540	0	0	Y
KOP Leg #1	264	FNL	1918	FW L	20S	32E	24	Aliquot NENW	32.5652003	- 103.7221177	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 77055	- 4862	8420	8402	Y
PPP Leg #1-1	100	FNL	1650	FW L	20S	32E	24	Aliquot NENW	32.5656509	- 103.7229885	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 77055	- 5434	9312	8974	Y

Operator Name: EARTHSTONE OPERATING LLC**Well Name:** PAKSE 3 SOUTH FED COM**Well Number:** 112H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-2	132 3	FNL	164 9	FW L	20S	32E	24	Aliquot SENW	32.56228 96	- 103.7229 861	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 16640B	- 545 1	105 35	899 1	Y
PPP Leg #1-3	264 6	FNL	164 7	FW L	20S	32E	24	Aliquot NESW	32.55865 34	- 103.7229 836	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 16640A	- 546 8	118 58	900 8	Y
PPP Leg #1-4	0	FNL	164 5	FW L	20S	32E	25	Aliquot NENW	32.55137 98	- 103.7229 785	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 15907	- 550 2	144 98	904 2	Y
EXIT Leg #1	254 1	FNL	165 0	FW L	20S	32E	36	Aliquot SENW	32.52989 94	- 103.7229 634	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	- 559 7	218 25	913 7	Y
BHL Leg #1	263 1	FNL	165 0	FW L	20S	32E	36	Aliquot SENW	32.52965 2	- 103.7229 632	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	- 559 7	219 25	913 7	Y



Drilling Plan Data Report

11/20/2023

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

APD ID: 10400091295

Submission Date: 03/28/2023

Highlighted data
reflects the most
recent changes

Operator Name: EARTHSTONE OPERATING LLC

Well Name: PAKSE 3 SOUTH FED COM

Well Number: 112H

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
12486894	RUSTLER	3540	1102	1102	ANHYDRITE	USEABLE WATER	N
12486895	SALADO	2188	1352	1352	SALT	NONE	N
12486897	BASE OF SALT	838	2702	2702	ANHYDRITE, DOLOMITE	NATURAL GAS, OIL	N
12486898	CAPITAN REEF	-152	3692	3692	DOLOMITE	NONE	N
12486899	BELL CANYON	-1722	5262	5262	DOLOMITE, LIMESTONE, SANDSTONE	NATURAL GAS, OIL	N
12486900	CHERRY CANYON	-2162	5702	5702	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
12486909	BRUSHY CANYON	-2729	6269	6269	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
12486912	BONE SPRING LIME	-4342	7882	7882	LIMESTONE, SHALE	NATURAL GAS, OIL	N
12486913	BONE SPRING 1ST	-5377	8917	8917	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 12000

Equipment: Rotating Head, remote kill line, mud-gas separator

Requesting Variance? YES

Variance request: We propose utilizing a cactus speed head for this well. Please see attached diagram and pressure testing statement. Also we request to use a co flex hose. Please find attached information regarding co flex hose. Earthstone Operating LLC respectfully proposes that if cement is not returned to surface during the primary cement job on the 8-5/8" Intermediate casing, a planned Bradenhead job will be conducted immediately after the primary cement job.

Testing Procedure: BOP will be tested by an independent service company to 250 psi low and 5000 psi high, per onshore order 2. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked each trip out of the hole.

Choke Diagram Attachment:

5M_Choke_Manifold_Diagram_20230327082555.pdf

BOP SHEET

Annular Preventer

13-3/8 2,500 PSI WP

Ram Preventers

13-3/8" 5,000 PSI WP Double Ram

13-3/8" 5,000 PSI WP Single Ram

Test the pipe rams, blind rams, floor valves (IBOP and/or upper Kelly valve), choke lines and manifold to 250 psi/5,000 psi with a test plug and a test pump.

Test the annular to 250 psi/2,500 psi with same as above.

District I

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

District II

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

District III

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

District IV

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

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

CONDITIONS

Action 288590

CONDITIONS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 288590
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/4/2023
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	12/4/2023
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	12/4/2023
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	12/4/2023
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	12/4/2023