

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.	NMNM629320
6. If Indian, Allottee or Tribe Name	

SUBMIT IN TRIPLICATE - Other instructions on page 2		7. If Unit of CA/Agreement, Name and/or No.
1. Type of Well		8. Well Name and No.
☒ Oil Well ☐ Gas Well ☐ Other		LOS VAQUEROS FED/202H
2. Name of Operator	EARTHSTONE OPERATING LLC	9. API Well No.
3a. Address	1400 WOODLOCH FOREST DRIVE SUITE 300,	10. Field and Pool or Exploratory Area
	3b. Phone No. (include area code)	WC-025 G-08 S263412K/BONE SPRING
	(281) 298-4240	
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)	11. Country or Parish, State	
SEC 30/T26S/R35E/NMP	LEA/NM	

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

****APD WOULD NOT DOWNLOAD CORRECTLY; ISSUE WAS CORRECTED AND SUBMITTED TO NMOCD FOR API****

API NUMBER : 30-025-51444
Well Name Change
From: Los Vaqueros Fed 202H
To: Los Vaqueros Fed 302H
First Take Point
From: C-30-26S-35E; 100 FNL, 2178 FWL
To: C-30-26S-35E; 100 FNL, 2350 FWL
BHL Change
From: Lot 3-31-26S-35E; 10' FSL & 2178' FWL, Lea County, NM
To: 50'FSL, 368' FWL; Sect. 25, Loving County, TX
Depth Changes
Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)	Senior Regulatory Technician
JENNIFER ELROD / Ph: (817) 953-3728	Title
Signature	Date
	05/17/2023

THE SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice 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.	Office	

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

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

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

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

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Information

Additional Remarks

From: 18,988'MD/11,026'TVD

To: 23,449'MD/11,971' TVD

Drilling Plan revised to support Depth Changes

Location of Well

0. SHL: NENW / 211 FNL / 2036 FWL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.0209803 / LONG: -103.4085504 (TVD: 0 feet, MD: 0 feet)

PPP: SESW / 0 FSL / 2132 FWL / TWSP: 26S / RANGE: 35E / SECTION: 19 / LAT: 32.02156 / LONG: -103.408239 (TVD: 8779 feet, MD: 8800 feet)

PPP: NENW / 0 FNL / 2178 FWL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.02154 / LONG: -103.408091 (TVD: 10994 feet, MD: 11100 feet)

BHL: LOT 3 / 10 FSL / 2178 FWL / TWSP: 26S / RANGE: 35E / SECTION: 31 / LAT: 32.000317 / LONG: -103.4080917 (TVD: 11026 feet, MD: 18989 feet)

CONFIDENTIAL

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 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 Number, FTP, SLC

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-025-51444	2 Pool Code 96672	3 Pool Name WC-025; G-08 S263412K; Bone Spring
4 Property Code 333369	5 Property Name LOS VAQUEROS FED	6 Well Number 302H
7 OGRID No. 331165	8 Operator Name EARTHSTONE OPERATING LLC	9 Elevation 3183.18'

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	30	26-S	35-E		211'	NORTH	2036'	WEST	LEA

¹¹ State Line Crossing 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
3	31	26-S	35-E		0	SOUTH	2350'	WEST	LEA

12 Dedicated Acres 240	13 Joint or Infill 234.28 Y	14 Consolidation Code	15 Order No.
---------------------------	---------------------------------------	-----------------------	--------------

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

***BHL & LTP WILL BE IN TEXAS**

	SURFACE HOLE LOCATION (SHL) KICK OFF POINT (KOP) NEW MEXICO EAST - NAD 83 X=827949.37 LAT.= 32.02098036° N Y=372598.03 LONG.= 103.40855040° W NEW MEXICO EAST - NAD 27 X=786761.05 LAT.= 32.02085403° N Y=372540.92 LONG.= 103.40809008° W 211' FNL, 2036' FWL - SECTION 30 211' FNL, 645' FEL - LEASE	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature Date Jennifer Elrod 04/18/2023 Printed Name E-mail Address jelrod@earthstoneenergy.com
	FIRST TAKE POINT (FTP) NEW MEXICO EAST - NAD 83 X=828262.52 LAT.= 32.02128432° N Y=372711.30 LONG.= 103.40753696° W NEW MEXICO EAST - NAD 27 X=787074.21 LAT.= 32.02115798° N Y=372654.18 LONG.= 103.40707665° W 100' FNL, 2350' FWL - SECTION 30 100' FNL, 331' FEL - LEASE	
	STATE LINE CROSSING (SLC) NEW MEXICO EAST - NAD 83 X=828327.96 LAT.= 32.00028960° N Y=365073.64 LONG.= 103.40753690° W NEW MEXICO EAST - NAD 27 X=787139.30 LAT.= 32.00016316° N Y=365016.72 LONG.= 103.40707780° W 0' FSL, 2350' FWL - SECTION 31 0' FSL, 318' FEL - LEASE	
	LAST TAKE POINT (LTP) TEXAS CENTRAL - NAD 83 X=1343512.94 LAT.= 31.98940216° N Y=10700491.23 LONG.= 103.40753770° W TEXAS CENTRAL - NAD 27 X=1047050.23 LAT.= 31.98927562° N Y=857912.35 LONG.= 103.40707888° W 100' FSL, 384' FWL - SECTION 25 100' FSL, 283' FEL - LEASE	
	BOTTOM HOLE LOCATION (BHL) TEXAS CENTRAL - NAD 83 X=1343511.49 LAT.= 31.98925780° N Y=10700438.73 LONG.= 103.40753771° W TEXAS CENTRAL - NAD 27 X=1047048.77 LAT.= 31.98913127° N Y=857859.85 LONG.= 103.40707890° W 50' FSL, 368' FWL - SECTION 25 50' FSL, 368' FWL - LEASE	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. Date of Survey Signature and Seal of Professional Surveyor CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR Certificate Number

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea County, NM (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Los Vaqueros Fed Pad			
Site Position:		Northing:	372,540.36 usft	Latitude: 32° 1' 15.08 N
From:	Map	Easting:	786,686.05 usft	Longitude: 103° 24' 30.00 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.49 °

Well	Los Vaqueros Fed 302H			
Well Position	+N/-S	0.56 usft	Northing:	372,540.92 usft
	+E/-W	75.00 usft	Easting:	786,761.05 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	
			Ground Level:	3,183.18 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	5/13/2023	6.20	59.55	47,224.50000000

Design	Plan #1			
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	179.51

Plan Survey Tool Program		Date	4/13/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	23,448.64 Plan #1 (OH)	OWSG_Rev2_MWD+HRGM	OWSG MWD + HRGM	

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,750.00	3.00	130.00	2,749.93	-2.52	3.01	2.00	2.00	0.00	130.00	
3,050.00	3.00	130.00	3,049.52	-12.62	15.04	0.00	0.00	0.00	0.00	
3,431.62	8.00	57.84	3,429.58	-4.89	45.21	2.00	1.31	-18.91	-93.99	
5,501.43	8.00	57.84	5,479.25	148.44	289.12	0.00	0.00	0.00	0.00	
5,901.48	0.00	0.00	5,878.00	163.28	312.73	2.00	-2.00	0.00	180.00	
11,421.52	0.00	0.00	11,398.04	163.28	312.73	0.00	0.00	0.00	0.00	
12,321.52	90.00	179.51	11,971.00	-409.65	317.61	10.00	10.00	19.95	179.51	
23,449.57	90.00	179.51	11,971.00	-11,537.30	412.25	0.00	0.00	0.00	0.00	PBHL (LV Fed 302H)

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (LV Fed 302H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,045.68	0.00	0.00	1,045.68	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,480.68	0.00	0.00	1,480.68	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	2.00	130.00	2,699.98	-1.12	1.34	1.13	2.00	2.00	0.00
2,750.00	3.00	130.00	2,749.93	-2.52	3.01	2.55	2.00	2.00	0.00
2,800.00	3.00	130.00	2,799.86	-4.21	5.01	4.25	0.00	0.00	0.00
2,900.00	3.00	130.00	2,899.73	-7.57	9.02	7.65	0.00	0.00	0.00
3,000.00	3.00	130.00	2,999.59	-10.93	13.03	11.04	0.00	0.00	0.00
3,050.00	3.00	130.00	3,049.52	-12.62	15.04	12.74	0.00	0.00	0.00
3,100.00	3.10	111.19	3,099.45	-13.94	17.30	14.09	2.00	0.19	-37.62
3,200.00	4.09	82.97	3,199.26	-14.48	23.35	14.68	2.00	1.00	-28.22
3,300.00	5.65	67.93	3,298.90	-12.20	31.46	12.47	2.00	1.56	-15.04
3,400.00	7.42	59.68	3,398.25	-7.09	41.59	7.45	2.00	1.77	-8.24
3,431.62	8.00	57.84	3,429.58	-4.89	45.21	5.27	2.00	1.84	-5.81
3,500.00	8.00	57.84	3,497.30	0.18	53.27	0.28	0.00	0.00	0.00
3,600.00	8.00	57.84	3,596.32	7.59	65.06	-7.03	0.00	0.00	0.00
3,700.00	8.00	57.84	3,695.35	14.99	76.84	-14.34	0.00	0.00	0.00
3,800.00	8.00	57.84	3,794.38	22.40	88.63	-21.64	0.00	0.00	0.00
3,900.00	8.00	57.84	3,893.40	29.81	100.41	-28.95	0.00	0.00	0.00
4,000.00	8.00	57.84	3,992.43	37.22	112.19	-36.26	0.00	0.00	0.00
4,100.00	8.00	57.84	4,091.46	44.63	123.98	-43.56	0.00	0.00	0.00
4,200.00	8.00	57.84	4,190.48	52.03	135.76	-50.87	0.00	0.00	0.00
4,300.00	8.00	57.84	4,289.51	59.44	147.55	-58.18	0.00	0.00	0.00
4,400.00	8.00	57.84	4,388.54	66.85	159.33	-65.48	0.00	0.00	0.00

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.00	8.00	57.84	4,487.56	74.26	171.11	-72.79	0.00	0.00	0.00
4,600.00	8.00	57.84	4,586.59	81.66	182.90	-80.10	0.00	0.00	0.00
4,700.00	8.00	57.84	4,685.62	89.07	194.68	-87.40	0.00	0.00	0.00
4,800.00	8.00	57.84	4,784.64	96.48	206.47	-94.71	0.00	0.00	0.00
4,900.00	8.00	57.84	4,883.67	103.89	218.25	-102.02	0.00	0.00	0.00
5,000.00	8.00	57.84	4,982.70	111.30	230.03	-109.33	0.00	0.00	0.00
5,068.65	8.00	57.84	5,050.68	116.38	238.12	-114.34	0.00	0.00	0.00
Base Salt									
5,100.00	8.00	57.84	5,081.72	118.70	241.82	-116.63	0.00	0.00	0.00
5,200.00	8.00	57.84	5,180.75	126.11	253.60	-123.94	0.00	0.00	0.00
5,300.00	8.00	57.84	5,279.78	133.52	265.39	-131.25	0.00	0.00	0.00
5,381.70	8.00	57.84	5,360.68	139.57	275.01	-137.22	0.00	0.00	0.00
Lamar									
5,396.85	8.00	57.84	5,375.68	140.69	276.80	-138.32	0.00	0.00	0.00
Bell Canyon									
5,400.00	8.00	57.84	5,378.80	140.93	277.17	-138.55	0.00	0.00	0.00
5,501.43	8.00	57.84	5,479.25	148.44	289.12	-145.96	0.00	0.00	0.00
5,600.00	6.03	57.84	5,577.07	154.85	299.32	-152.28	2.00	-2.00	0.00
5,700.00	4.03	57.84	5,676.68	159.52	306.74	-156.89	2.00	-2.00	0.00
5,800.00	2.03	57.84	5,776.54	162.33	311.21	-159.66	2.00	-2.00	0.00
5,901.48	0.00	0.00	5,878.00	163.28	312.73	-160.60	2.00	-2.00	0.00
6,000.00	0.00	0.00	5,976.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,100.00	0.00	0.00	6,076.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,200.00	0.00	0.00	6,176.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,300.00	0.00	0.00	6,276.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,400.00	0.00	0.00	6,376.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,409.16	0.00	0.00	6,385.68	163.28	312.73	-160.60	0.00	0.00	0.00
Cherry Canyon									
6,500.00	0.00	0.00	6,476.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,600.00	0.00	0.00	6,576.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,700.00	0.00	0.00	6,676.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,800.00	0.00	0.00	6,776.52	163.28	312.73	-160.60	0.00	0.00	0.00
6,900.00	0.00	0.00	6,876.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,000.00	0.00	0.00	6,976.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,100.00	0.00	0.00	7,076.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,200.00	0.00	0.00	7,176.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,300.00	0.00	0.00	7,276.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,400.00	0.00	0.00	7,376.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,500.00	0.00	0.00	7,476.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,600.00	0.00	0.00	7,576.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,700.00	0.00	0.00	7,676.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,800.00	0.00	0.00	7,776.52	163.28	312.73	-160.60	0.00	0.00	0.00
7,894.16	0.00	0.00	7,870.68	163.28	312.73	-160.60	0.00	0.00	0.00
Brushy Canyon									
7,900.00	0.00	0.00	7,876.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,000.00	0.00	0.00	7,976.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,100.00	0.00	0.00	8,076.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,200.00	0.00	0.00	8,176.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,300.00	0.00	0.00	8,276.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,400.00	0.00	0.00	8,376.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,500.00	0.00	0.00	8,476.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,600.00	0.00	0.00	8,576.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,700.00	0.00	0.00	8,676.52	163.28	312.73	-160.60	0.00	0.00	0.00

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,800.00	0.00	0.00	8,776.52	163.28	312.73	-160.60	0.00	0.00	0.00
8,900.00	0.00	0.00	8,876.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,000.00	0.00	0.00	8,976.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,100.00	0.00	0.00	9,076.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,200.00	0.00	0.00	9,176.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,300.00	0.00	0.00	9,276.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,309.16	0.00	0.00	9,285.68	163.28	312.73	-160.60	0.00	0.00	0.00
Top BSPG Lime									
9,400.00	0.00	0.00	9,376.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,500.00	0.00	0.00	9,476.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,600.00	0.00	0.00	9,576.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,700.00	0.00	0.00	9,676.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,800.00	0.00	0.00	9,776.52	163.28	312.73	-160.60	0.00	0.00	0.00
9,900.00	0.00	0.00	9,876.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,000.00	0.00	0.00	9,976.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,100.00	0.00	0.00	10,076.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,200.00	0.00	0.00	10,176.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,300.00	0.00	0.00	10,276.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,400.00	0.00	0.00	10,376.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,500.00	0.00	0.00	10,476.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,584.16	0.00	0.00	10,560.68	163.28	312.73	-160.60	0.00	0.00	0.00
1st BSPG Ss									
10,600.00	0.00	0.00	10,576.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,700.00	0.00	0.00	10,676.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,800.00	0.00	0.00	10,776.52	163.28	312.73	-160.60	0.00	0.00	0.00
10,804.16	0.00	0.00	10,780.68	163.28	312.73	-160.60	0.00	0.00	0.00
2nd BSPG Carb									
10,900.00	0.00	0.00	10,876.52	163.28	312.73	-160.60	0.00	0.00	0.00
11,000.00	0.00	0.00	10,976.52	163.28	312.73	-160.60	0.00	0.00	0.00
11,100.00	0.00	0.00	11,076.52	163.28	312.73	-160.60	0.00	0.00	0.00
11,129.16	0.00	0.00	11,105.68	163.28	312.73	-160.60	0.00	0.00	0.00
2nd BSPG Ss									
11,200.00	0.00	0.00	11,176.52	163.28	312.73	-160.60	0.00	0.00	0.00
11,300.00	0.00	0.00	11,276.52	163.28	312.73	-160.60	0.00	0.00	0.00
11,400.00	0.00	0.00	11,376.52	163.28	312.73	-160.60	0.00	0.00	0.00
11,421.52	0.00	0.00	11,398.04	163.28	312.73	-160.60	0.00	0.00	0.00
11,450.00	2.85	179.51	11,426.50	162.58	312.74	-159.90	10.00	10.00	0.00
11,500.00	7.85	179.51	11,476.27	157.92	312.78	-155.24	10.00	10.00	0.00
11,550.00	12.85	179.51	11,525.44	148.94	312.86	-146.26	10.00	10.00	0.00
11,576.03	15.45	179.51	11,550.68	142.58	312.91	-139.90	10.00	10.00	0.00
3rd BSPG Carb									
11,600.00	17.85	179.51	11,573.64	135.71	312.97	-133.03	10.00	10.00	0.00
11,650.00	22.85	179.51	11,620.51	118.33	313.12	-115.65	10.00	10.00	0.00
11,700.00	27.85	179.51	11,665.68	96.93	313.30	-94.25	10.00	10.00	0.00
11,750.00	32.85	179.51	11,708.82	71.68	313.51	-69.00	10.00	10.00	0.00
11,800.00	37.85	179.51	11,749.59	42.76	313.76	-40.08	10.00	10.00	0.00
11,850.00	42.85	179.51	11,787.68	10.41	314.03	-7.72	10.00	10.00	0.00
11,900.00	47.85	179.51	11,822.81	-25.15	314.34	27.84	10.00	10.00	0.00
FTP (LV Fed 302H)									
11,950.00	52.85	179.51	11,854.71	-63.63	314.66	66.32	10.00	10.00	0.00
12,000.00	57.85	179.51	11,883.13	-104.75	315.01	107.44	10.00	10.00	0.00
12,050.00	62.85	179.51	11,907.86	-148.19	315.38	150.88	10.00	10.00	0.00
12,100.00	67.85	179.51	11,928.70	-193.61	315.77	196.31	10.00	10.00	0.00

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,150.00	72.85	179.51	11,945.51	-240.69	316.17	243.38	10.00	10.00	0.00
12,200.00	77.85	179.51	11,958.16	-289.04	316.58	291.74	10.00	10.00	0.00
12,250.00	82.85	179.51	11,966.54	-338.32	317.00	341.02	10.00	10.00	0.00
12,300.00	87.85	179.51	11,970.59	-388.13	317.42	390.83	10.00	10.00	0.00
12,302.44	88.09	179.51	11,970.68	-390.57	317.44	393.27	10.00	10.00	0.00
Target LP									
12,321.52	90.00	179.51	11,971.00	-409.65	317.61	412.35	10.00	10.00	0.00
12,400.00	90.00	179.51	11,971.00	-488.13	318.27	490.83	0.00	0.00	0.00
12,500.00	90.00	179.51	11,971.00	-588.12	319.12	590.83	0.00	0.00	0.00
12,600.00	90.00	179.51	11,971.00	-688.12	319.98	690.83	0.00	0.00	0.00
12,700.00	90.00	179.51	11,971.00	-788.11	320.83	790.83	0.00	0.00	0.00
12,800.00	90.00	179.51	11,971.00	-888.11	321.68	890.83	0.00	0.00	0.00
12,900.00	90.00	179.51	11,971.00	-988.11	322.53	990.83	0.00	0.00	0.00
13,000.00	90.00	179.51	11,971.00	-1,088.10	323.38	1,090.83	0.00	0.00	0.00
13,100.00	90.00	179.51	11,971.00	-1,188.10	324.23	1,190.83	0.00	0.00	0.00
13,200.00	90.00	179.51	11,971.00	-1,288.10	325.08	1,290.83	0.00	0.00	0.00
13,300.00	90.00	179.51	11,971.00	-1,388.09	325.93	1,390.83	0.00	0.00	0.00
13,400.00	90.00	179.51	11,971.00	-1,488.09	326.78	1,490.83	0.00	0.00	0.00
13,500.00	90.00	179.51	11,971.00	-1,588.09	327.63	1,590.83	0.00	0.00	0.00
13,600.00	90.00	179.51	11,971.00	-1,688.08	328.48	1,690.83	0.00	0.00	0.00
13,700.00	90.00	179.51	11,971.00	-1,788.08	329.33	1,790.83	0.00	0.00	0.00
13,800.00	90.00	179.51	11,971.00	-1,888.07	330.18	1,890.83	0.00	0.00	0.00
13,900.00	90.00	179.51	11,971.00	-1,988.07	331.03	1,990.83	0.00	0.00	0.00
14,000.00	90.00	179.51	11,971.00	-2,088.07	331.88	2,090.83	0.00	0.00	0.00
14,100.00	90.00	179.51	11,971.00	-2,188.06	332.73	2,190.83	0.00	0.00	0.00
14,200.00	90.00	179.51	11,971.00	-2,288.06	333.58	2,290.83	0.00	0.00	0.00
14,300.00	90.00	179.51	11,971.00	-2,388.06	334.43	2,390.83	0.00	0.00	0.00
14,400.00	90.00	179.51	11,971.00	-2,488.05	335.28	2,490.83	0.00	0.00	0.00
14,500.00	90.00	179.51	11,971.00	-2,588.05	336.14	2,590.83	0.00	0.00	0.00
14,600.00	90.00	179.51	11,971.00	-2,688.05	336.99	2,690.83	0.00	0.00	0.00
14,700.00	90.00	179.51	11,971.00	-2,788.04	337.84	2,790.83	0.00	0.00	0.00
14,800.00	90.00	179.51	11,971.00	-2,888.04	338.69	2,890.83	0.00	0.00	0.00
14,900.00	90.00	179.51	11,971.00	-2,988.04	339.54	2,990.83	0.00	0.00	0.00
15,000.00	90.00	179.51	11,971.00	-3,088.03	340.39	3,090.83	0.00	0.00	0.00
15,100.00	90.00	179.51	11,971.00	-3,188.03	341.24	3,190.83	0.00	0.00	0.00
15,200.00	90.00	179.51	11,971.00	-3,288.02	342.09	3,290.83	0.00	0.00	0.00
15,300.00	90.00	179.51	11,971.00	-3,388.02	342.94	3,390.83	0.00	0.00	0.00
15,400.00	90.00	179.51	11,971.00	-3,488.02	343.79	3,490.83	0.00	0.00	0.00
15,500.00	90.00	179.51	11,971.00	-3,588.01	344.64	3,590.83	0.00	0.00	0.00
15,600.00	90.00	179.51	11,971.00	-3,688.01	345.49	3,690.83	0.00	0.00	0.00
15,700.00	90.00	179.51	11,971.00	-3,788.01	346.34	3,790.83	0.00	0.00	0.00
15,800.00	90.00	179.51	11,971.00	-3,888.00	347.19	3,890.83	0.00	0.00	0.00
15,900.00	90.00	179.51	11,971.00	-3,988.00	348.04	3,990.83	0.00	0.00	0.00
16,000.00	90.00	179.51	11,971.00	-4,088.00	348.89	4,090.83	0.00	0.00	0.00
16,100.00	90.00	179.51	11,971.00	-4,187.99	349.74	4,190.83	0.00	0.00	0.00
16,200.00	90.00	179.51	11,971.00	-4,287.99	350.59	4,290.83	0.00	0.00	0.00
16,300.00	90.00	179.51	11,971.00	-4,387.98	351.44	4,390.83	0.00	0.00	0.00
16,400.00	90.00	179.51	11,971.00	-4,487.98	352.30	4,490.83	0.00	0.00	0.00
16,500.00	90.00	179.51	11,971.00	-4,587.98	353.15	4,590.83	0.00	0.00	0.00
16,600.00	90.00	179.51	11,971.00	-4,687.97	354.00	4,690.83	0.00	0.00	0.00
16,700.00	90.00	179.51	11,971.00	-4,787.97	354.85	4,790.83	0.00	0.00	0.00
16,800.00	90.00	179.51	11,971.00	-4,887.97	355.70	4,890.83	0.00	0.00	0.00
16,900.00	90.00	179.51	11,971.00	-4,987.96	356.55	4,990.83	0.00	0.00	0.00
17,000.00	90.00	179.51	11,971.00	-5,087.96	357.40	5,090.83	0.00	0.00	0.00

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
17,100.00	90.00	179.51	11,971.00	-5,187.96	358.25	5,190.83	0.00	0.00	0.00	
17,200.00	90.00	179.51	11,971.00	-5,287.95	359.10	5,290.83	0.00	0.00	0.00	
17,300.00	90.00	179.51	11,971.00	-5,387.95	359.95	5,390.83	0.00	0.00	0.00	
17,400.00	90.00	179.51	11,971.00	-5,487.94	360.80	5,490.83	0.00	0.00	0.00	
17,500.00	90.00	179.51	11,971.00	-5,587.94	361.65	5,590.83	0.00	0.00	0.00	
17,600.00	90.00	179.51	11,971.00	-5,687.94	362.50	5,690.83	0.00	0.00	0.00	
17,700.00	90.00	179.51	11,971.00	-5,787.93	363.35	5,790.83	0.00	0.00	0.00	
17,800.00	90.00	179.51	11,971.00	-5,887.93	364.20	5,890.83	0.00	0.00	0.00	
17,900.00	90.00	179.51	11,971.00	-5,987.93	365.05	5,990.83	0.00	0.00	0.00	
18,000.00	90.00	179.51	11,971.00	-6,087.92	365.90	6,090.83	0.00	0.00	0.00	
18,100.00	90.00	179.51	11,971.00	-6,187.92	366.75	6,190.83	0.00	0.00	0.00	
18,200.00	90.00	179.51	11,971.00	-6,287.92	367.60	6,290.83	0.00	0.00	0.00	
18,300.00	90.00	179.51	11,971.00	-6,387.91	368.46	6,390.83	0.00	0.00	0.00	
18,400.00	90.00	179.51	11,971.00	-6,487.91	369.31	6,490.83	0.00	0.00	0.00	
18,500.00	90.00	179.51	11,971.00	-6,587.91	370.16	6,590.83	0.00	0.00	0.00	
18,600.00	90.00	179.51	11,971.00	-6,687.90	371.01	6,690.83	0.00	0.00	0.00	
18,700.00	90.00	179.51	11,971.00	-6,787.90	371.86	6,790.83	0.00	0.00	0.00	
18,800.00	90.00	179.51	11,971.00	-6,887.89	372.71	6,890.83	0.00	0.00	0.00	
18,900.00	90.00	179.51	11,971.00	-6,987.89	373.56	6,990.83	0.00	0.00	0.00	
19,000.00	90.00	179.51	11,971.00	-7,087.89	374.41	7,090.83	0.00	0.00	0.00	
19,100.00	90.00	179.51	11,971.00	-7,187.88	375.26	7,190.83	0.00	0.00	0.00	
19,200.00	90.00	179.51	11,971.00	-7,287.88	376.11	7,290.83	0.00	0.00	0.00	
19,300.00	90.00	179.51	11,971.00	-7,387.88	376.96	7,390.83	0.00	0.00	0.00	
19,400.00	90.00	179.51	11,971.00	-7,487.87	377.81	7,490.83	0.00	0.00	0.00	
19,436.33	90.00	179.51	11,971.00	-7,524.20	378.12	7,527.16	0.00	0.00	0.00	
SLC (LV Fed 302H)										
19,500.00	90.00	179.51	11,971.00	-7,587.87	378.66	7,590.83	0.00	0.00	0.00	
19,600.00	90.00	179.51	11,971.00	-7,687.87	379.51	7,690.83	0.00	0.00	0.00	
19,700.00	90.00	179.51	11,971.00	-7,787.86	380.36	7,790.83	0.00	0.00	0.00	
19,800.00	90.00	179.51	11,971.00	-7,887.86	381.21	7,890.83	0.00	0.00	0.00	
19,900.00	90.00	179.51	11,971.00	-7,987.85	382.06	7,990.83	0.00	0.00	0.00	
20,000.00	90.00	179.51	11,971.00	-8,087.85	382.91	8,090.83	0.00	0.00	0.00	
20,100.00	90.00	179.51	11,971.00	-8,187.85	383.76	8,190.83	0.00	0.00	0.00	
20,200.00	90.00	179.51	11,971.00	-8,287.84	384.62	8,290.83	0.00	0.00	0.00	
20,300.00	90.00	179.51	11,971.00	-8,387.84	385.47	8,390.83	0.00	0.00	0.00	
20,400.00	90.00	179.51	11,971.00	-8,487.84	386.32	8,490.83	0.00	0.00	0.00	
20,500.00	90.00	179.51	11,971.00	-8,587.83	387.17	8,590.83	0.00	0.00	0.00	
20,600.00	90.00	179.51	11,971.00	-8,687.83	388.02	8,690.83	0.00	0.00	0.00	
20,700.00	90.00	179.51	11,971.00	-8,787.83	388.87	8,790.83	0.00	0.00	0.00	
20,800.00	90.00	179.51	11,971.00	-8,887.82	389.72	8,890.83	0.00	0.00	0.00	
20,900.00	90.00	179.51	11,971.00	-8,987.82	390.57	8,990.83	0.00	0.00	0.00	
21,000.00	90.00	179.51	11,971.00	-9,087.81	391.42	9,090.83	0.00	0.00	0.00	
21,100.00	90.00	179.51	11,971.00	-9,187.81	392.27	9,190.83	0.00	0.00	0.00	
21,200.00	90.00	179.51	11,971.00	-9,287.81	393.12	9,290.83	0.00	0.00	0.00	
21,300.00	90.00	179.51	11,971.00	-9,387.80	393.97	9,390.83	0.00	0.00	0.00	
21,400.00	90.00	179.51	11,971.00	-9,487.80	394.82	9,490.83	0.00	0.00	0.00	
21,500.00	90.00	179.51	11,971.00	-9,587.80	395.67	9,590.83	0.00	0.00	0.00	
21,600.00	90.00	179.51	11,971.00	-9,687.79	396.52	9,690.83	0.00	0.00	0.00	
21,700.00	90.00	179.51	11,971.00	-9,787.79	397.37	9,790.83	0.00	0.00	0.00	
21,800.00	90.00	179.51	11,971.00	-9,887.79	398.22	9,890.83	0.00	0.00	0.00	
21,900.00	90.00	179.51	11,971.00	-9,987.78	399.07	9,990.83	0.00	0.00	0.00	
22,000.00	90.00	179.51	11,971.00	-10,087.78	399.92	10,090.83	0.00	0.00	0.00	
22,100.00	90.00	179.51	11,971.00	-10,187.77	400.78	10,190.83	0.00	0.00	0.00	

Planning Report

Database:	LEAM Multi_User Db	Local Co-ordinate Reference:	Well Los Vaqueros Fed 302H
Company:	Earthstone Operating, LLC	TVD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Project:	Lea County, NM (NAD 27)	MD Reference:	GE 3183.18' + KB 27.5' @ 3210.68usft
Site:	Los Vaqueros Fed Pad	North Reference:	Grid
Well:	Los Vaqueros Fed 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
22,200.00	90.00	179.51	11,971.00	-10,287.77	401.63	10,290.83	0.00	0.00	0.00
22,300.00	90.00	179.51	11,971.00	-10,387.77	402.48	10,390.83	0.00	0.00	0.00
22,400.00	90.00	179.51	11,971.00	-10,487.76	403.33	10,490.83	0.00	0.00	0.00
22,500.00	90.00	179.51	11,971.00	-10,587.76	404.18	10,590.83	0.00	0.00	0.00
22,600.00	90.00	179.51	11,971.00	-10,687.76	405.03	10,690.83	0.00	0.00	0.00
22,700.00	90.00	179.51	11,971.00	-10,787.75	405.88	10,790.83	0.00	0.00	0.00
22,800.00	90.00	179.51	11,971.00	-10,887.75	406.73	10,890.83	0.00	0.00	0.00
22,900.00	90.00	179.51	11,971.00	-10,987.75	407.58	10,990.83	0.00	0.00	0.00
23,000.00	90.00	179.51	11,971.00	-11,087.74	408.43	11,090.83	0.00	0.00	0.00
23,100.00	90.00	179.51	11,971.00	-11,187.74	409.28	11,190.83	0.00	0.00	0.00
23,200.00	90.00	179.51	11,971.00	-11,287.74	410.13	11,290.83	0.00	0.00	0.00
23,300.00	90.00	179.51	11,971.00	-11,387.73	410.98	11,390.83	0.00	0.00	0.00
23,397.05	90.00	179.51	11,971.00	-11,484.78	411.81	11,487.88	0.00	0.00	0.00
LTP (LV Fed 302H)									
23,400.00	90.00	179.51	11,971.00	-11,487.73	411.83	11,490.83	0.00	0.00	0.00
23,449.57	90.00	179.51	11,971.00	-11,537.30	412.25	11,540.40	0.00	0.00	0.00
PBHL (LV Fed 302H)									

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,045.68	1,045.68	Rustler			
1,480.68	1,480.68	Salado			
5,068.65	5,050.68	Base Salt			
5,381.70	5,360.68	Lamar			
5,396.85	5,375.68	Bell Canyon			
6,409.16	6,385.68	Cherry Canyon			
7,894.16	7,870.68	Brushy Canyon			
9,309.16	9,285.68	Top BSPG Lime			
10,584.16	10,560.68	1st BSPG Ss			
10,804.16	10,780.68	2nd BSPG Carb			
11,129.16	11,105.68	2nd BSPG Ss			
11,576.03	11,550.68	3rd BSPG Carb			
12,302.44	11,970.68	Target LP			

Earthstone Operating LLC - Los Vaqueros Fed 302H

1. Geologic Formations

TVD of target	11,971' EOL	Kick Off Point	11,421'
MD at TD:	23,449'	Deepest expected fresh water:	400'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1040	Water	
Top of Salt	1500	Salt	
Base of Salt	5009	Salt	
Lamar	5334	Salt Water	
Delaware	5378	Water	
Bone Spring Lime	9274	Oil/Gas	
1st BSPG Ss	10600	Oil/Gas	
2nd BSPG Ss	11062	Oil/Gas	
3rd BSPG Ss	12142	Target Oil/Gas	
Wolfcamp	12520	Not Penetrated	
Wolfcamp X Sand	12554	Not Penetrated	
Wolfcamp Y Sand	12627	Not Penetrated	
Wolfcamp A	12659	Not Penetrated	
Wolfcamp B	12976	Not Penetrated	

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								
14.5"	0	1090	10.75"	45.5	J55	BTC	6.15	9.18	14.42	16.05
9.875"	0	11,331'	7.625"	29.7	L80 HC	BTC	1.58	1.75	2.03	2.03
7.875"	0	10831	5.5"	23	P110 HC	GBCD	2.53	2.11	2.93	3.05
6.75"	10831	23,449	5."	18	P110 EC	DWC/C-IS Plus	1.84	2.30	2.64	3.06
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

The 5-1/2" casing will be run back 500' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for cement bond tie in.

Earthstone Operating LLC - Los Vaqueros Fed 302H

	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?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
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?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
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 - Los Vaqueros Fed 302H

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	Yld ft ³ / sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	290	12.5	1.83	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	290	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Intermediate	930	10.3	3.65	9.6	16	Lead: 35:65:6 C Blend
	130	16.4	1.27	6.34	8	Tail: Class H
Production	290	12.7	2.13	19	72	Lead: 50:50:10 H Blend
	2740	14.5	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.

If losses are encountered in the intermediate section a DV/ECP tool will be run ~50' above the Lamar Lime Top, cement will be adjusted accordingly if this contingency is necessary.

Casing String	TOC Tail	TOC Lead	% Excess
Surface	590	0	50%
1 st Intermediate	10831	0'	50%
Production	11,331'	4,834'	35% OH in Lateral (KOP to EOL) – 40% OH in Vertical

Earthstone Operating LLC - Los Vaqueros Fed 302H

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:
9.875	11"	3M	Annular	x	2000 psi
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		
6-3/4"	11"	10M	Annular	x	5000 psi
			Blind Ram	x	10M
			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 - Los Vaqueros Fed 302H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
Surface	10-3/4" Shoe	FW Gel	8.6 - 8.8	28-34	N/C
10-3/4" Shoe	7-5/8" Int shoe	Saturated Brine	8.8 - 9.5	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	12.5 - 13	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 - Los Vaqueros Fed 302H**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	8095 psi at 11971' TVD
Abnormal Temperature	NO 175 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

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 249163

CONDITIONS

Operator: Earthstone Operating, LLC 1400 Woodloch Forest; Ste 300 The Woodlands, TX 77380	OGRID: 331165
	Action Number: 249163
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Must comply with the MEMORANDUM OF AGREEMENT ("MOA") between the OIL CONSERVATION DIVISION of the STATE OF NEW MEXICO, ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT and the OIL AND GAS DIVISION of the RAILROAD COMMISSION OF TEXAS.	10/2/2023
pkautz	REQUIRES NSL	10/2/2023