



RAILROAD COMMISSION OF TEXAS OIL AND GAS DIVISION

MINOR PERMIT TO TREAT DOMESTIC WASTEWATER

Permit No. MPGW-0056
Permit Effective February 28, 2020

LIME ROCK RESOURCES IV-A LP
1111 BAGBY STREET SUITE 4600
HOUSTON TX 77002

Based on information contained in the original application received February 25, 2020, and additional information received to date, you are hereby authorized to treat, recycle, and reuse domestic wastewater as described herein:

Field Name: Emma (Devonian)
u L A Well Number: 2H
Drilling Permit Number: 860733
Latitude/Longitude: 32.181404 ° , -102.600149 °
Andrews County, Texas
RRC District 08, Midland

This minor permit grants authority to store, handle, treat, recycle, and reuse certain non-hazardous domestic wastewater in accordance with 16 Texas Administrative Code (TAC) §3.8 (Statewide Rule 8) and the following conditions:

1. The effective date of this permit is **February 28, 2020**, and the authority granted by this permit expires on **April 27, 2020**.
2. Technical Permitting in Austin and the appropriate District Office must be notified via email when the wastewater treatment is initiated and once the treatment is completed.
3. This permit authorizes the on-site treatment and management of domestic wastewater generated at oil and gas drill sites and waste streams generated from mobile drinking water treatment systems located at and resulting from use exclusively at well sites for use down-hole and/or for dust suppression and controlled irrigation purposes as specified in the "Sampling Criteria for Waste Streams" document which is attached to this permit as **Permit Appendix A**. Treatment and reuse of the waste streams is granted for use at the above referenced location(s).
4. This permit does not authorize the discharge of any domestic wastewater or waste streams generated from mobile drinking water treatment systems into any watercourses or drainage ways, including any drainage ditch, dry creek, flowing creek, river, or any other body of surface water.
5. Residual solids accumulated during the treatment process must be removed and transported by a Texas Commission on Environmental Quality (TCEQ) registered sludge transporter to a TCEQ permitted disposal facility approved to receive and manage domestic sewage **prior to treatment system relocation**.

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6. Unless otherwise required by conditions of this permit, operation of the treatment system(s) and reuse of the treated waste streams must be in accordance with the information represented in the permit application and information contained in the "*Application For Beneficial Recycling Of Treated Domestic Wastewater And Mobile Drinking Water Treatment System Wastewater At Drill Sites*" (Domestic Wastewater Application Worksheet), which is attached to this permit as **Permit Appendix B**.
7. A waiver from the surface owner or proof that notice has been provided to the surface owner at least ten (10) days prior to reuse is required for any recycling of domestic wastewater other than for down-hole purposes. The surface owner waiver must be submitted to Technical Permitting in Austin.
8. If treated domestic wastewater and mobile drinking water treatment system wastewater are commingled, the more stringent requirements will apply, unless otherwise indicated.
9. If treated domestic wastewater or wastewater from mobile drinking water treatment systems is stored for greater than seven days, a chlorine residual between 2 and 3 parts per million (ppm) must be maintained.
10. For treated domestic wastewater, no more than 5,000 gallons per day of pre-treated domestic wastewater may be received and processed. The domestic wastewater and mobile drinking water treatment system wastewater flow volume must be metered separately and recorded daily.
11. The treated domestic wastewater and drinking water treatment system wastewater must be analyzed as indicated for the Parameters listed in the "*Sampling Criteria for Waste Streams*" document which is attached as **Permit Appendix A**. All samples shall be representative of the respective waste streams. All sample acquisition, preservation, and analysis must be performed according to procedures specified in Title 40 of the Code of Federal Regulations (40 CFR) Part 136. The procedures used to preserve the samples and analytical methods used shall be reported.
12. All chemical laboratory analyses required to be performed in accordance with this permit must be performed using appropriate Environmental Protection Agency (EPA) methods or Standard Methods by an independent National Environmental Laboratory Accreditation Program (NELAP) certified laboratory neither owned nor operated by the permittee. Any sample collected for laboratory analysis must be collected and preserved in a manner appropriate for that analytical method as specified by 40 CFR, Part 136. All geotechnical testing is to be performed utilizing tests standardized by the American Society for Testing and Materials (ASTM) and certified by a Texas registered Professional Engineer.
13. Safety Data Sheets (SDS) must be submitted to Technical Permitting in Austin for any chemical or accelerator proposed to be used in the treatment of waste at the facility that was not identified in the initial application. Storage of the chemicals must be in accordance with the manufacturers' specifications and must be maintained in a leak free condition.
14. Prior to recycling and reuse, the treated domestic wastewater must be stored in a 500-bbl steel tank. The storage tank must be surrounded by containment berms that meet the requirements specified in Permit Condition 15.
15. All containment berms that surround the storage tanks and/or the pit must be compacted and/or constructed of material that meets 95% Standard Proctor (ASTM D698) or 90-92% Modified Proctor (ASTM D1557) density. Each berm must maintain a slope no steeper than a one to three (vertical to horizontal) ratio. These structures must be used to divert non-contact storm water and contain and isolate treated wastewater.

16. Upon completion of the project, or expiration of the minor permit, a report detailing all activities for the duration of the permit or project must be submitted and include the following:
 - a. The total number of days domestic wastewater and/or mobile drinking water treatment system wastewater is reused or applied after treatment.
 - b. The total volume of each type of waste received for treatment.
 - c. The total volume of treated effluent for each type of reuse method (down-hole, controlled irrigation, dust suppression).
 - d. A table of the water treatment analytical results, sampling dates, corresponding analytical reports, and chain of custody for the parameters required to be analyzed in the "*Sample Criteria for Waste Streams*" document which is attached as **Permit Appendix A**.
17. All reports must be certified as follows: "I declare under penalties prescribed in Section 91.143, Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my direct supervision and direction, and that data and facts stated therein are true and complete to the best of my knowledge."
18. Water treatment vessels and equipment must be maintained in good operating condition for the duration of the permit.
19. Any changes affecting this permit must be reported to Technical Permitting in Austin to determine whether a permit amendment is necessary.
20. Failure to comply with any condition of this minor permit shall be cause for modification, suspension, termination, or cancellation of this minor permit if Technical Permitting determines that the permittee is in violation RRC rules.

This authorization is granted subject to review and cancellation should investigation show that such authorization is being abused.

APPROVED AND ISSUED ON February 28, 2020.


Tiffany Humberson, Manager
Environmental Permits & Support
Technical Permitting

Attachments: Permit Appendices A and B

CC: RRC – District 08/ Midland

PERMIT APPENDIX A

Sampling Criteria for Waste Streams

Permit No. MPGW-0056

SAMPLING CRITERIA FOR WASTE STREAMS

The RRC has jurisdiction over the on-site treatment and management of domestic wastewater generated at oil and gas drill sites and waste streams generated from mobile drinking water treatment systems located at and resulting from use exclusively at well sites. The term “domestic wastewater” means wastewater that originates primarily from kitchen, bathroom, and laundry sources, including wastes from food preparation, dishwashing, garbage grinding, toilets, baths, showers, and sinks of a residential dwelling. The term “mobile drinking water treatment system wastewater” means wastewater generated from the treatment of groundwater for drinking water purposes, including reverse osmosis reject water. The following analyses are required for each specific end use of the treated wastewater:

TOTAL ESTIMATED VOLUME

The estimated daily volume of the treated and recycled waste stream from all sources is presented below. The total volume of the influent source of domestic wastewater must be less than 5,000 gallons per day.

Waste Stream	Reuse Method	Estimated Volume (GPD)
Treated Domestic Wastewater (< 5,000 GPD)	Down-hole	2,500
	Dust Suppression	0
	Controlled Irrigation	0
Mobile Drinking Water Treatment System Wastewater	Down-hole	2,000
	Dust Suppression	0
	Controlled Irrigation	

MOBILE DRINKING WATER TREATMENT SYSTEM WASTEWATER

Mobile drinking water treatment system wastewater can be recycled and reused for either down-hole purposes or dust suppression and/or controlled irrigation purposes. No permit or testing criteria is required for reuse of mobile drinking water treatment system wastewater for down-hole recycling purposes.

- **Dust suppression and/or controlled irrigation purposes:** Quality assurance sampling and analyses of the treated effluent utilized for dust suppression and/or controlled irrigation purposes must be conducted once per site location for the parameters below:

PARAMETER	LIMITATION
Total Dissolved Solids (TDS) <i>Standard Method 2540 or equivalent</i>	Report mg/l
pH <i>EPA Method 9045 or equivalent</i>	Report SU
Electrical Conductivity (EC)	Report mmhos/cm

Dust suppression and controlled irrigation must cease if vegetation shows signs of stress or damage

TREATED DOMESTIC WASTEWATER

Treated domestic wastewater can be recycled and reused for either down-hole purposes or dust suppression and/or controlled irrigation purposes; however, a waiver from the surface owner or proof that notice has been provided to the surface owner at least ten (10) days prior to reuse is required for any recycling of domestic wastewater other than for down-hole purposes. Each specific end use requires different testing requirements as described below.

- **Down-hole purposes:** Quality assurance sampling and analyses of the treated effluent utilized for down-hole purposes must be conducted every fourteen (14) days for the parameters below.

<u>PARAMETER</u>	<u>LIMITATION</u>
Biological Oxygen Demand (BOD ₅) / (CBOD ₅) *	≤ 80 milligrams per liter (mg/l)
Escherichia coli (E-Coli)	≤ 800 CFU/100 milliliters (ml)
Chlorine Residual (> 7-day storage) <i>EPA Method 334.0 or equivalent</i>	2 - 3 mg/l
pH <i>EPA Method 9045C or equivalent field method</i>	6.0 - 9.0 Standard Units (SU)

- **Dust suppression and/or controlled irrigation purposes:** Quality assurance sampling and analyses of the treated effluent utilized for dust suppression and/or controlled irrigation purposes must be conducted every seven (7) days for the parameters below.

<u>PARAMETER</u>	<u>LIMITATION</u>
Biological Oxygen Demand (BOD ₅) / (CBOD ₅) *	≤ 65 mg/l
E-Coli for "Dust Suppression"	≤ 200 CFU/100 ml
E-Coli for "Controlled Irrigation"	≤ 75 CFU/100 ml
Oil and Grease <i>EPA Method 1664</i>	≤ 30 mg/l
Total Chlorides <i>or site-specific background for surficial aquifer</i>	≤ 1,500 mg/l
Chlorine Residual (> 7-day storage) <i>EPA Method 334.0 or equivalent</i>	2 - 3 mg/l
pH <i>EPA Method 9045C or equivalent field method</i>	6.0 - 9.0 SU

* Carbonaceous Biological/Biochemical Oxygen Demand (CBOD₅) may be substituted for BOD₅

PERMIT APPENDIX B

Domestic Wastewater Application Worksheet

DOMESTIC WASTEWATER APPLICATION WORKSHEET

MPGW-0056

OPERATOR NAME (as shown on P-5, Organization Report) LIME ROCK RESOURCES IV-A, L.P.			OPERATOR P-5 NUMBER 500794	
OPERATOR ADDRESS (including city, state, and zip code) 1111 BAGBY STREET SUITE 4600 HOUSTON, TX 77002			TYPE OF FACILITY NEW DRILL	
RRC DISTRICT NO. 08	COUNTY ANDREWS	FIELD NAME EMMA (DEVONIAN)	LEASE NAME AND NUMBER UL A	
WELL NUMBER AND DRILLING PERMIT NUMBER 2H (860733)		LATITUDE/LONGITUDE (Decimal Degrees) 32.181404/-102.600149		
NAME OF CONTRACTOR PROVIDING THE TREATMENT SERVICES WATERFLEET LLC				
DESCRIPTION OF THE WASTE STREAM AND ESTIMATED VOLUME OF WASTE RECEIVED (gallons per day, GPD)				
<input checked="" type="checkbox"/> Domestic Wastewater (DW) Volume of DW (GPD): 2500 <input checked="" type="checkbox"/> Mobile Drinking Water Treatment System Wastewater (MDW) Volume of MDW (GPD): 2000				
STORAGE METHOD OF WASTEWATER BEFORE RECYCLING <input type="checkbox"/> Lined Pit <input checked="" type="checkbox"/> Above-Ground Tank Provide details for pits (liner material, liner thickness, manufacturers' specifications, pit capacity, berms, etc.) and/or tanks (tank material, tank volume, tank pad, berms, etc.). Liner permeability must be less than or equal to 1×10^{-7} cm/s. DW and MDW are both contained in a 500 bbl steel tank.				
RE-USE METHOD OF WASTEWATER AFTER TREATMENT <input checked="" type="checkbox"/> Down-hole Application <input type="checkbox"/> Controlled Irrigation <input type="checkbox"/> Dust Suppressant			ESTIMATED TREATED EFFLUENT VOLUME (GPD) Down-hole: 4500 Surface Application: n/a	
PRECAUTIONS TAKEN TO MINIMIZE EXPOSURE TO THE WASTE DW/MDW is piped directly to the end user for down-hole use in a manner to prevent contact with personnel.				
ADDITIONAL OR COMPLIMENTARY TECHNICAL INFORMATION (include estimated time frame and dates necessary for use of the permit) We anticipate the work to continue through May 24, 2020 Rig Name/Number: Orion Aries 18 WaterFleet Mobile Unit Number: RR16059				
PROOF OF LANDOWNER NOTICE (required for wastewater re-use as controlled irrigation or dust suppressant) <input type="checkbox"/> Attached <input checked="" type="checkbox"/> Not Attached				
"I certify that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the data and facts stated herein are true, correct, and complete to the best of my knowledge." Signature: <u>David Montz</u> Date: <u>02/24/2020</u> Name (print or type): <u>David Montz</u> Email: <u>orionrig18@outlook.com</u>				

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* Attachments may be used to explain or clarify any additional information

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMplete, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection. Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office MUST also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number MUST be given with such notifications.

During Drilling

Permit at Drilling Site : A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing :** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry :** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents *(other than diesel fuels)* pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well : Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within thirty (30) days after completion of the well or within ninety (90) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s (if required) must be submitted with no double assignment of acreage.

Dry or Noncommercial Hole : Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug : The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole :** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Texas Commission on Environmental Quality letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

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**RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION**

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER 860733	DATE PERMIT ISSUED OR AMENDED 01/15/2020	DISTRICT 08
API NUMBER 42-003-48220	FORM W-1 RECEIVED 01/09/2020	COUNTY ANDREWS
TYPE OF OPERATION New Drill	WELLBORE PROFILE(S) Horizontal	ACRES 242.59
OPERATOR LIME ROCK RESOURCES IV-A, L.P. 1111 BAGBY STREET SUITE 4600 HOUSTON, TX 77002-0000		NOTICE This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored. District Office Telephone No: (432) 684-5581
LEASE NAME UL A		WELL NUMBER 2H
LOCATION 11.4 miles SW direction from ANDREWS		TOTAL DEPTH 11000
Section, Block and/or Survey SECTION 28 BLOCK 9 ABSTRACT U264 SURVEY UL		
DISTANCE TO SURVEY LINES 1326.0 ft W 2728.0 ft N		DISTANCE TO NEAREST LEASE LINE 165.0
DISTANCE TO LEASE LINES 1326.0 ft W 2728.0 ft N		DISTANCE TO NEAREST WELL ON LEASE See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME LEASE NAME	ACRES NEAREST LEASE	DEPTH	WELL# NEAREST WELL	DIST
EMMA (DEVONIAN)	242.59	10500	2H	08
UL A	165.0		0.0	

WELLBORE PROFILE(s) FOR FIELD: Horizontal

Terminus Point: TH1 Section: 21 Block: 9 Abstract: Survey: UL / A-U257 BH County: ANDREWS

Lease Lines: 660.0 ft W 2504.0 ft S

Survey Lines: 660.0 ft W 165.0 ft N

Penetration Lines: 660.0 ft E 128.0 ft S

This is a hydrogen sulfide field. This well shall be drilled in accordance with SWR 36.

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THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

**Railroad Commission of Texas
Oil and Gas Division
SWR #13 Formation Data
ANDREWS (003) COUNTY**

Formation	Remarks	Geological Order	Effective Date
YATES		1	01/01/2014
SEVEN RIVERS		2	01/01/2014
QUEEN		3	01/01/2014
GRAYBURG		4	01/01/2014
SAN ANDRES	CO2 flood, high flows, H2S, corrosive	5	01/01/2014
HOLT		6	01/01/2014
GLORIETA		7	01/01/2014
TUBB		8	01/01/2014
CLEARFORK		9	01/01/2014
PERMIAN DETRITAL		10	01/01/2014
LEON		11	01/01/2014
WICHITA ALBANY		12	01/01/2014
SPRABERRY		13	01/01/2014
DEAN		14	01/01/2014
WOLFCAMP		15	01/01/2014
CANYON		16	01/01/2014
PENNSYLVANIAN		17	01/01/2014
MCKEE		18	01/01/2014
STRAWN		19	01/01/2014
FUSSELMAN		20	01/01/2014
DEVONIAN		21	01/01/2014
SILURIAN		22	01/01/2014
ELLENBURGER		23	01/01/2014

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information. <http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info>

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