

**BEFORE THE STATE CORPORATION COMMISSION  
OF THE STATE OF KANSAS**

In the matter of the application of Mid-	)	Docket No.: 21-CONS-3126-CUIC
Continent Energy Corp. for a permit to	)	
authorize the injection of saltwater into the	)	CONSERVATION DIVISION
Pawnee and Fort Scott formations at the	)	
Seamster #1A well in Section 9, Township 34	)	License No.: 5205
<u>South, Range 8 East, Cowley County, Kansas.</u>	)	

**PRE-FILED DIRECT TESTIMONY**

**OF**

**RENE STUCKY**

**MAY 3, 2021**

1   **Q. What is your name and business address?**

2   A. Rene Stucky, 266 N. Main Street, Suite 220, Wichita, Kansas 67202.

3   **Q. By whom are you employed and in what capacity?**

4   A. I am employed by the Conservation Division of the Kansas Corporation Commission (KCC  
5       or Commission), as Supervisor of the Underground Injection Control (UIC) Department and  
6       the Production Department.

7   **Q. Would you please briefly describe your educational background and work experience?**

8   A. I earned a Bachelor's degree in Geology from Wichita State University in Wichita, Kansas.  
9       After that I worked as a Petroleum Geologist in the oil and gas industry for over 30 years. In  
10       2006, I began my employment with the KCC as an Environmental Scientist in the UIC  
11       Department, where I reviewed and processed injection applications. In 2014, I was  
12       promoted to Supervisor of the Production Department. I have also supervised the UIC  
13       Department since 2015 when it merged with the Production Department.

14   **Q. Have you previously testified before this Commission?**

15   A. Yes, I have presented both pre-filed and live testimony in numerous Conservation Division  
16       dockets at the Commission.

17   **Q. What is the purpose of your testimony in this matter?**

18   A. The purpose of my testimony is to inform the Commission about my review of the  
19       Application for injection filed by Mid-Continent Energy Corp. (Operator), and to support  
20       my recommendation that the Commission approve the Application if Operator successfully  
21       re-plugs an identified well, the Seamster #1, API #15-035-21897, within the Area of  
22       Review. Additionally, Operator will need to conduct a successful mechanical integrity test

1 at Operator's Seamster #1A well (Subject Well), API #15-035-23502, prior to an injection  
2 permit being issued.<sup>1</sup>

3 **Q. What is the Operator requesting in this Application?**

4 A. The Operator has applied for authorization to inject produced saltwater from oil and gas  
5 wells located on the Seamster A and Jarboe Leases into the Pawnee and Fort Scott  
6 formations beneath the lease at a maximum rate of 250 barrels of water per day and a  
7 maximum surface pressure of 150 pounds per square inch using the Subject Well.

8 **Q. Does the Operator's Application comply with all KCC regulations?**

9 A. There were two issues with Operator's application which needed to be addressed. First, the  
10 newspaper publication was initially incorrect. However, notice has since been republished  
11 and now complies with Commission regulations. Second, is an improperly plugged well  
12 found within the Area of Review, which is discussed below in more detail.

13 **Q. Did you have any other concerns with the Application?**

14 A. No.

15 **Q. How did you determine that the Application complies with KCC regulations?**

16 A. After Operator republished notice of its application, I began looking at whether the Subject  
17 Well met all KCC well construction requirements.<sup>2</sup> Once I determined the Subject Well met  
18 all of the KCC well construction requirements, I reviewed the rest of the Application to  
19 make sure approving permit E-34,030 would be appropriate.

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<sup>1</sup> See K.A.R. 82-3-407(g).

<sup>2</sup> K.A.R. 82-3-405; K.A.R. 82-3-406; K.A.R. 82-3-407.

1 **Q. Please explain the steps you took to determine whether Operator's Application should**  
2 **be approved.**

3 A. I reviewed the surface and production casing depth for the Subject Well to ensure that the  
4 proposed casing depths are in compliance with KCC regulations for this area. Second, I  
5 reviewed the valid completion documentation for the Subject Well to ensure the well is  
6 completed in accordance with KCC regulations. Third, I reviewed the proposed zone of  
7 injection for the Subject Well to ensure that it is compatible with the proposed injection  
8 operation for the area. Fourth, I conducted an Area of Review (AOR) to check for possible  
9 environmental concerns due to nearby wells. An AOR is a review of known wells within a  
10 quarter mile of a proposed injection well to see if any threat to fresh and usable water is  
11 present once an operator's proposed injection of fluids is introduced. Fifth, I reviewed the  
12 Application to determine whether proper notice of the Application was given.

13 **Q. Please describe your review of the surface and production casing depths in the subject**  
14 **wells.**

15 A. The surface casing requirement for wells drilled in this part of Cowley County is 450 feet.  
16 The Subject Well has 50 feet of 8 5/8 inch surface casing that was cemented to the surface  
17 with 50 sacks of cement. The 4 1/2 inch production string was set at 2,153 feet and  
18 cemented using 250 sacks of cement up to 600 feet. It was then perforated at 500 feet to 501  
19 feet and cemented to surface using 111 sacks of cement. This is sufficient coverage for the  
20 top perforations, which are at 2,051 feet to 2,059 feet. This level of cement will also  
21 sufficiently protect the fresh and usable waters around the wellbore to the required 450 feet.

1 **Q. Please describe the proposed zone of injection for the Subject Well.**

2 A. The Operator is proposing injection into the Pawnee and Fort Scott formations which are at  
3 a depth of 2,051 feet and 2,102 feet, respectively. These are the producing zones in the  
4 surrounding area that the Operator is attempting to repressure for additional oil recovery.  
5 Further, the Subject Well is a replacement well for an injection well that has been recently  
6 plugged. The plugged well was permitted for a maximum rate of 240 barrels per day at a  
7 maximum pressure of 200 psi. The current application for the Subject Well requests a  
8 maximum rate of 250 barrels per day at a maximum pressure of 150 psi. The rate, pressure  
9 and zone of injection at the Subject Well will be almost identical to the previous well. Thus,  
10 there will not be significant change in the current formation pressures.

11 **Q. What additional information did you review in your review of the Application?**

12 A. I conducted an AOR around the proposed injection well.

13 **Q. Please walk us through the Area of Review you conducted. .**

14 A. As required by KCC regulation, I conducted a one-quarter mile radius AOR around the  
15 Subject Well to check for possible environmental concerns from nearby wells. I discovered  
16 and reviewed four producing wells and two plugged wells within that area. All but one  
17 plugged well appears to be constructed properly. The well that is a concern is the Seamster  
18 #1, which is located approximately 975 feet to the southwest of the Subject Well. The  
19 plugging report associated with this well does not show that fresh and usable water would be  
20 protected from the injection zone. As I stated above, this part of Cowley County requires  
21 surface casing in wells down to 450 feet to protect fresh and usable water. The Seamster #1  
22 set 160 feet of surface casing and was completed as a dry hole. It was plugged with 80 sacks  
23 of cement but the report did not give the depth of the plug. The well was later re-entered and

1 then plugged with 40 sacks of cement at 180 feet for the bottom plug. This will not cover  
2 what is required to protect fresh and usable water and also leaves the injection formations  
3 open in the bore hole.

4 **Q. Have you notified Operator with your concerns about this well?**

5 A. Yes.

6 **Q. How did Operator respond?**

7 A. The Operator has agreed to re-enter the Seamster #1 well to a sufficient depth in order to  
8 place a cement plug on top of the Pawnee and Ft. Scott formations and place cement from  
9 500 feet to the surface. This will allow the Seamster #1 to be properly plugged by isolating  
10 the injection zones and protecting any fresh and usable water up to the surface.

11 **Q. Did Operator provide proper notice of the Application?**

12 A. The second notice provided by Operator seems to be proper. The original publication  
13 provided by Operator, dated December 2, 2020, describe the wrong well and location for the  
14 Subject Well. However, notice was republished on April 1, 2021, which did contain the  
15 correct well and location required for approval of the Application.

16 **Q. Based on your review of the Application, do you believe granting the Application will**  
17 **cause waste?**

18 A. No. Arguably, granting the Application will prevent waste from occurring by repressurizing  
19 the productive zones to increase recovery of oil.

20 **Q. Based on your review of the Application, do you believe granting the Application will**  
21 **violate correlative rights?**

22 A. No. The purpose of this well is to replace a similar injection well that was recently plugged  
23 because of mechanical failure. Therefore, no significant change will be made to the

1 producing reservoirs from their previous status, and as such, correlative rights should be no  
2 more affected than when the previous well was operational.

3 **Q. Based on your review of the Application, do you believe granting the Application will**  
4 **pollute the usable water resources of the State of Kansas?**

5 A. Once the Seamster #1 is successfully re-plugged, I do not believe the granting of this  
6 Application will pollute usable water resources in the area. The Pawnee and Ft. Scott  
7 formations can handle the requested rate and pressure proposed in Operator's completion  
8 method and each have numerous impermeable shales lying above that will contain the  
9 injected fluids.

10 **Q. Based on your review of the Application, will the approval of this Application and the**  
11 **resulting injection cause a risk for seismic activity?**

12 A. No, not in my opinion.

13 **Q. Could you explain?**

14 A. Yes. My search of the KGS Network Earthquake Map on the Kansas Geological Survey site  
15 shows no seismic activity within a 30 mile radius in Kansas in the last 20 years, indicating  
16 the area is stable. Additionally, the Pawnee and Ft. Scott formations are approximately  
17 1,400 feet above the top of the Arbuckle formation and approximately 2,200 feet above the  
18 basement rocks and any possible faults. An injection rate of 250 barrels of water per day that  
19 far above a possible fault would not cause sufficient pressure change to cause the fault to  
20 move even if a fault was present in the area. Industry data in Kansas strongly suggests that  
21 induced seismicity results from wells injecting rather large volumes of saltwater (5,000+  
22 barrels per day) into the Arbuckle formation. This is because the Arbuckle lies directly on  
23 top of the basement granite where the deep seated faults are located.

1   **Q. Based on your professional review of the Application, what is your recommendation?**

2   A. The Operator will need to re-plug the Seamster #1 as stated previously. Once that is  
3       successfully completed and documented with the KCC, I would recommend Operator's  
4       Application be approved and permitted upon receipt of a satisfactory mechanical integrity  
5       test at the Subject Well.

6   **Q. Does this conclude your testimony?**

7   A. Yes.



## **CERTIFICATE OF SERVICE**

21-CONS-3126-CUIC

I, the undersigned, certify that a true copy of the attached Prefiled Testimony of Rene Stucky has been served to the following by means of electronic service on May 3, 2021.

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