CLASS V
UNDERGROUND INJECTION CONTROL
PERMIT APPLICATION FOR THE PURPOSE OF
AQUIFER RECHARGE AND/OR STORAGE

Submit to:          Date of Application:  ________________________
Kansas Department of Health
and Environment         KDHE UIC Permit #:  _______________________
Bureau of Water, Geology Section
1000 SW Jackson St., Suite 420       Well(s) #:  ________________________________
Topeka, KS 66612-1367

Owner’s Name, Telephone Number,
Mailing and E-mail Addresses:       G.P.S. Coordinates:
__________________________________      Latitude:  _________________________________
__________________________________      Longitude:  _______________________________
__________________________________      County:  _________________________________
__________________________________      Located on Indian Lands:

Operator’s Name, Telephone Number,
Mailing and E-mail Addresses:
__________________________________      Facility Names, Telephone Number,
__________________________________      Mailing and E-mail Addresses:
__________________________________      ________________________________________
__________________________________      ________________________________________
__________________________________      ________________________________________

Contact Person’s Name and Mailing
Address:
__________________________________      Contact Person’s Information:
__________________________________      Phone:  __________________________________
__________________________________      Fax: ____________________________________
__________________________________      E-mail: __________________________________

In conformity with the provisions of K.S.A. 65-164, 65-165 and 65-171d, the undersigned, representing

(Name of company, corporation, partnership, or person, or government
or other public agency applying)

hereby makes application to KDHE for a permit to inject fluid into the subsurface for the purpose of
aquifer recharge and/or storage.
1. Describe the purpose and scope of the project.

2. Describe in detail the function of the well(s) in this project.

3. Describe the fluids to be injected. Include predicted concentrations of the parameters of concern in the injection fluid. Provide analytical results of a representative sample of the injection fluid. Provide information for any additives including Material Safety Data Sheets. Additional testing of the fluid to be injected may be required after review of the application and pertinent information. All analyses shall be conducted by a laboratory certified by the State of Kansas.

4. Describe the formation fluids receiving the injection fluid. Provide analytical results of a representative sample of the formation fluid. All analyses shall be conducted by a laboratory certified by the State of Kansas.

5. Conduct a study of the compatibility of the injection fluid with the formation fluids. Special consideration of any adverse impacts to the formation fluids due to injection should be discussed.

6. Provide a description of the injection zone including lithology, hydrology, porosity, permeability, groundwater flow velocity, transmissivity, and coefficient of storage. Include geologic maps, diagrams, geologic cross-sections, a piezometric surface map, and results of aquifer pump test. Provide references for the sources of the information submitted.

7. **Injection Zone:**

<table>
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<tr>
<th>Formation(s) Name</th>
<th>Estimated Depth of Top*</th>
<th>Estimated Depth of Base*</th>
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   *Measured from ground surface

8. **Well Design:**

   Borehole, casing and cement or grout information.

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<tr>
<th>Borehole Size</th>
<th>Casing/Tubing Size</th>
<th>Material</th>
<th>Weight Lbs/Ft Depth</th>
<th>Casing Seat</th>
<th>Joint Lengths</th>
<th>Type Cement</th>
<th>Amount Cement (sacks)</th>
<th>Cemented From</th>
<th>Interval To</th>
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   Screen or perforation material: ___________________________________________________________

   Type of screen or perforation openings: ________________________________________________
Screen or perforations intervals:

from ________ to ________  from ________ to ________
from ________ to ________  from ________ to ________

Gravel pack intervals:

from ________ to ________  from ________ to ________
from ________ to ________  from ________ to ________

To facilitate grouting, the ground intervals of the well bore shall be drilled to a minimum diameter at least three inches greater than the maximum outside diameter of the well casing. Provide information describing the seal to be used on the top of the well casing. This seal shall be air and water tight. If a pitless well adapter is to be used provide information describing the design of the pitless adapter. The pitless well adapter shall be so designed and fabricated to prevent soil, subsurface or surface waters from entering the well.

9. Provide a detailed schematic drawing indicating the proposed well(s) completion at the surface and subsurface.

10. Fluid Injection Rate:

   Fluids are to be injected at a minimum rate of ________ gallons/day to a maximum rate of ________ gallons/day. Demonstrate by appropriate calculations the well(s) is capable of receiving the proposed maximum fluid injection rate. Provide references for sources of all values used in the calculations.

11. Injection Pressure:

   Maximum wellhead injection pressure will be ____________.

   Minimum wellhead injection pressure will be ____________.

   Demonstrate by appropriate calculation’s the proposed maximum injection pressure will not fracture the injection zone or damage the well components.

12. Discuss the stimulation program for the well(s), including chemical treatments and mechanical means.

13. Discuss the proposed injection procedure for the well(s) and provide a diagram. Submit a design for the injection system including any pumps, filters, lines and tanks used in the injection system.
14. Describe the meters or gauges that will be used to measure injection volume, injection rate and injection pressure. Include the frequency of calibration.

15. Provide a Sampling and Analysis Plan for the injection fluid.

16. Provide a plugging and abandonment plan for the well(s). The plugging plan must include the type of grout, estimated volume of grout, and a description of the grout emplacement procedure. Include a diagram of how the well will be plugged. Procedure #UICV-8, Procedure for the Plugging and Abandonment of a Class V Injection Well can be found at: https://www.kdheks.gov/uic/download/UICV-8.pdf

17. Provide a map showing the well(s) to be permitted, surface water bodies, springs, mines, quarries, water wells, monitoring wells, withdrawal wells, any other penetrations of the aquifer and other pertinent surface features within the ¼ mile radius area of review. The map must be clear and readable with the ¼ mile radius area of review drawn on the map. A tabulation of data on all the wells within the area of review must be provided including the status, type, construction, date of drilling, locations, depth, and plugging or completion data. Key the tabulated wells to their location on the map.

18. Provide modeling results for the proposed injection – withdrawal scenario. Provide a plan for monitoring the effects of injection on the groundwater system in the vicinity of the recharge project. Describe the monitoring wells to be used for this purpose. Include the data to be collected from the monitoring wells, frequency of data collection, data presentation format, and frequency of reporting the data to KDHE.

19. The well(s) shall be constructed by a water well contractor licensed by KDHE. Provide the contractor’s name, business address and KDHE license number.

20. The following must be submitted to and approved by KDHE upon completion of the well(s).

a. At a minimum, a detailed drillers log with lithologic descriptions is required. Any additional log(s) for the well(s) also need to be submitted for review.

b. KDHE water well record from WWC-5.

c. Complete casing, cementing or grouting, and screening information. Include work reports, work tickets or other documentation.

d. A schematic drawing showing the actual completion of the well(s) at the surface and subsurface, if different from then proposed completion.
AUTHORITY

To whom should future correspondence be addressed:

Name: ___________________________________________________________________________

Address: __________________________________________________________________________

City: ___________________________  State: _______________  Zip: _____________

(signed) ___________________________________

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information. K.A.R. 28-46-22 requires this certification and that this application be signed by an executive officer of a level of at least Vice-President or other authorized signatory as described at the Code of Federal Regulations 40 CFR 144.32 in effect on April 1, 1993.

_________________________________________________________________________________
Printed Name of Authorized Signatory

_________________________________________________________________________________
Signature of Authorized Signatory                            Company                                       Title

Signatory Requirements for permit application are established in Procedure UICV-13, Procedure for Signatories to Permit Application and Monitoring Reports for Class V Disposal Well and can be found at: