WAT034

FOR AGENCY USE ONLY	APPLICATION NUMBER		
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	DATE RECEIVED		
	YEAR	MO.	DAY

NEBRASKA

DEPT. OF ENVIRONMENT AND ENERGY

APPLICATION FOR A CLASS V INJECTION WELL PERMIT

This application covers ONLY Class V (five) injection wells that meet the requirements of Title 122, Chapter 6. Please answer **EVERY** item on this application to the best of your knowledge. **An incomplete application may be returned.** If you have questions while filling out this application please refer to Title 7122, Chapter 10 or call (402) 471-4290 and someone will assist you.

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1. Did you include the $500.00 non-refundable permit fee made payable to the State of Nebraska?:

2. List up to 4 North American Industry Classification System (NAICS) codes that best reflect the facility or process:

3. Facility Information

Name of Facility:			
Operator's Name:			
Street Address:		City/Zip:	
Telephone Number:		County:	
Entity Status (i.e. Federal, State, Private, Other):			

4. Owner's Information

Owner's Name:			
Mailing Address:		City/Zip:	
Telephone Number:		County:	
Ownership Status (i.e. President, Partner, Stockholder):			
Entity Status (i.e. Federal, State, Private, Other):			
Owner's Signature:			

5. What type of Class V Well will be utilized? (Refer to list at the end of the application or Title 122, Chapter 2, Section 005.17)

6. Legal Location of the Injection Well including county and GPS Coordinates of Injection Well: County:

LEGAL LOCATION:

GPS (Decimal Lat/Long):

7. Is the facility located on Indian lands, historic and/or archaeological sites? If yes, please list below (attach if necessary):

8. List all environmental permits, construction approval, or any other relevant permit received or applied for from the Department or any other federal, state, or local regulatory agency for this site (attach if necessary):

9. Proposed operating data:

Average and maximum daily volume of fluid to be injected:

Average: Maximum:

Average and maximum injection pressure:

Average: Maximum:

10. Complete <u>one</u> of the following tables for setback distances of the proposed injection well. Please read the description at the beginning of each table to ensure the proper table in being completed.

a. A Domestic Wastewater Disposal Well (5W11, 5W31, 5W32, 5W12) for a septic system or wastewater treatment plant effluent. These wells must meet the 4-foot separation from groundwater. Distances are in feet.

Receptor	Minimum Setback		Actual Distance	
Surface Water	50			
Domestic Water Well	100			
Community Water Well	1000			
All Other Water Wells	100			
Water Line (Pressure-Main)	25			
Water Line Pressure-Service Connection	25			
Water Line (Suction)	100			
Property Lines	5			
Foundations used for living quarters	Yours	Neighbors	Yours	Neighbors
Full basements or foundations below septic system	30	40		
Non-basement foundations higher than septic system	20	30		
Slab on grade **not** used as living quarters	10	20		

b. An injection well constructed above the groundwater table but not listed in the Domestic Wastewater Disposal category. These wells must meet the 4-foot separation from groundwater and cannot be greater than 20 feet deep.

Receptor	Minimum Setback	Actual Distance
Domestic Water Well	100	
Community Water Well	1000	
Non-Community Water Well	500	
All Other Water Wells	100	
Sewer Lines	25	
Pressure Water Lines	25	
Suction Water Lines	100	
Property Lines	5	
Basements/Footings	30	
Domestic Wastewater Disposal Wells	100	
Other injection wells of this type	25	
Other injection wells that fall into the next table	25	
Septic Tanks	50	
Surface Water	50	

c. An injection well constructed into or through a groundwater aquifer.

Receptor	Minimum Setback	Actual Distance
Domestic Water Well	100	
Community Water Well	1000	
Non-Community Water Well	500	
All Other Water Wells	25	
Sewer Lines	25	
Pressure Water Lines	25	
Suction Water Lines	50	
Property Lines	5	
Basements/Footings	10	
Domestic Wastewater Disposal Wells	100	
Other injection wells of this type	25	
Other injection wells that fall into the next table	25	
Septic Tanks	50	
Surface Water	50	

11. The radius of the zone of endangering influence: (Refer to Title 122, Chapter 14)

12. Name and signature of the person completing this form.

Name of the person completing this form:	
Telephone Number:	
Email Address:	
Signature:	

IMPORTANT! In addition to the information provided above, provide the following information in letter or report form and attach it to this application:

A. If the zone of endangering influence was calculated, provide the calculations and assumptions.

B. A detailed description of the operator's technological expertise to construct and operate the facility and to conduct necessary well closure, plugging, or abandonment, reclamation, and aquifer restoration.

C. A description of all related underground injection projects, other than that for which a permit is being applied for, in which the operator is or has been involved as an operator. The description shall include but not be limited to the following items:

C1. The name of each project.

C2. The location of each project by count, state, and county.

C3. Nature of the project.

C4. All regulatory aspects of the project including permits, compliance issues, and permitting agency. (Refer to Title 122, Chapter 11, Section 006.06)

D. A scaled map of the entire property on which the injection is proposed. The map should include but not be limited to the following items: (Refer to Title 122, Chapter 11, Section 006.09)

D1. The area of review around the injection well (a minimum of ½ mile).

D2. All other injection wells (i.e. septic systems, heat pump returns).

D3. All water wells (i.e. irrigation, drinking, monitoring, abandoned).

D4. All surface features (i.e. water bodies, quarries, springs).

D5. All major structures (i.e. buildings, streets, property lines).

D6. All underground features (i.e. utilities, mines, faults).

All the information should be verified by an inspection conducted by the applicant.

E. A tabulation of all available data on all wells within the ½ mile area of review which penetrate the injection zone. Data should include but not be limited to each well's type, construction, date drilled, location, depth, water level, and plugging or completion records.

F. Maps and cross sections indicating the general vertical and lateral limits of all water resources within the ½ mile area of review. Data should include but not be limited to:

F1. Available or substantiating background water quality for any Underground Source of Drinking Water (USDW).

F2. The available amounts and potential uses of the USDW's.

F3. The position of the USDW in relation to the injection zone.

F4. The direction of ground water movement.

G. Maps and cross sections detailing the geologic structure of the local area including faults.

H. Generalized maps and cross sections illustrating the regional geologic setting.

I. A narrative evaluating the geologic and hydrologic conditions of the area that may be effected by the injection activities.

J. A narrative describing local topography, industry, agriculture, population densities, culture, wildlife, and fish and other aquatic life within the area of review and existing economic activities of the region including, but not limited to, agriculture, recreation, tourism and industry with a projection as to the probable effects of the system.

K. The chemical, physical, radiological and biological characteristics of the injection fluids.

L. A formation testing program to obtain an analysis of the chemical, physical, and radiological characteristics of and other information on the receiving formation and formation fluids.

M. If necessary, a narrative describing the proposed aquifer/formation stimulation program (i.e. acid).

N. A narrative describing the proposed injection procedure.

O. Engineering drawings of the surface and subsurface construction details of the system.

P. A contingency plan to cope with well shut-ins or failures so as to prevent migration of injection fluids into any underground source of drinking water.

Q. Proposal (including maps) for meeting the following monitoring requirements:

Q1. Analysis of the physical and chemical characteristics of the injected fluid with sufficient frequency to yield representative data on its characteristics.

Q2. Devices to monitor the injection pressure, flow rate and volume of injection fluids.

Q3. Mechanical integrity testing of injection well (if possible) according to Title 122, Chapter 18.

Q4. Monitoring fluid level and water quality in the injection zone.

Q5. Placement of monitoring wells or the use of existing wells to detect any migration from the injection zone.

R. A narrative detailing the following:

R1. Expected changes in formation pressures.

R2. Expected formation fluid displacement (if any).

R3. Direction of injection fluid movement.

S. A corrective action plan for improperly completed wells found within the area of review that are constructed into or through the proposed injection zone.

T. Design or construction details of the proposed injection well as outlined in Title 122, Chapter 17, Section 005 including a cementing and casing program, logging procedures, deviation checks, and a drilling testing and coring program. All well designs should be submitted by a Professional Engineer licensed in the State of Nebraska.

U. A plugging and abandonment plan demonstrating resources necessary to close, plug, and abandon the injection well and to conduct restoration of the affected aquifer (if necessary) and the affected surface resources. (Refer to Title 122, Chapter 35)

NOTE: The Department may request additional information after the review of the provided information.

Important Class V Well Construction Facts

- All Domestic Wastewater Disposal Wells (Title 122, Chapter 2, Section 005.17C), including septic systems must be constructed in accordance with Title 124 – Rules and Regulations for the Design, Operation, and Maintenance of On-Site Wastewater Treatment Systems.
- All Class V wells constructed above the groundwater table must maintain a separation distance from the deepest point of the well to the surface of the groundwater of 4 feet. This includes septic systems.
- No Class V well constructed above the ground water table shall exceed 20 feet in depth.
- Well casing used for all Class V wells, except Domestic Wastewater Disposal Wells, shall be pressure rated a minimum of 160 psi. The formula for calculating the minimum pressure rating is located in Title 122, Chapter 17, Section 005.04C1.
- Injection wells cannot inject into more than one aquifer.
- If ground water is removed from an aquifer, it must be injected back into that same aquifer (i.e. open loop heat pump wells, cooling water wells, remediation wells).
- Cement/bentonite grout is the only allowed media to fill the annulus of an injection well.
- There are 3 separate Tables in Title 122 listing the different setback distances for each type of injection well. All of the Tables can be found in Chapter 17, Section 005.

Questions about this application: (402) 471-4290

Return Completed Application to:

Nebraska Department of Environment and Energy
Ground Water Unit/UIC Program
P.O. Box 98922
Lincoln, NE 68509

Class V Category	Class V Subcategory	Class V Code Number
Drainage	Storm Water Drainage	5D2
	Improved Sinkholes	5D3
	Industrial Drainage	5D4
	Special Drainage	5G30
Geothermal Reinjection	Electric Power Reinjection	5A5
	Direct Heat Reinjection	5A6
	Heat Pump/AC Return Flow (open loop)	5A7
	Ground Water Aquaculture Return Flow	5A8
Domestic Wastewater Disposal	Septic System (undifferentiated disposal)	5W11
	Septic System (well disposal)	5W31
	Septic System (drainfield disposal)	5W32
	Wastewater Treatment Plant Effluent Disposal	5W12
Mineral and Fossil Fuel Recovery Related	Mining, sand & other backfill	5X13
	Solution Mining	5X14
	In-situ Fossil Fuel Recovery	5X15
	Spent-Brine Return Flow, after halogen extr.	5X16
Oil Field Production Waste Disposal	Air Scrubbed Waste Disposal	5X17
	Water Softener Regeneration Brine Disposal	5X18
Industrial/Commercial/Utility Disposal	Cooling Water Return Flow	5A19
	Industrial Process Water & Waste Disposal	5W20
Recharge	Aquifer Recharge	5R21
	Saline Water Intrusion Barrier	5B22
	Subsidence Control	5S23
Miscellaneous	Experimental Technology	5X25
	Aquifer Remediation Related	5X26
	Other (specify purpose & injection fluid)	5X27
Prohibited Injection Wells	Agricultural Drainage Wells	5F1
	Untreated Sewage Waste Disposal Wells	5W9
	Cesspools	5W10
	Radioactive Waste Disposal Wells	5N24
	Motor Vehicle Waste Disposal Wells	5X28
	Abandoned Drinking Water Wells used for Disposal of Waste	5X29