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## Class I Wastewater Minimization Plan Guidance Document

UICI-G1  
(1/19)

### Narrative:

KDHE is working with the Class I disposal well facilities to establish a waste minimization plan to reduce the amount of wastewater and waste injected into their facility Class I disposal wells. Several facilities currently have this as a requirement in their Class I Underground Injection Control (UIC) permits.

KDHE Policy Memorandum #91-1, February 1991, Revised June 19, 2018, Determination of the Types of Wastes Eligible for Disposal into Class I Underground Injection Control (UIC) Wells states in part:

*The use of Class I UIC wells will be considered only for those wastes that cannot be feasibly treated, stored or disposed by other methods. Therefore, each new application for the disposal of wastes shall be accompanied by a report detailing the results of studies of alternate methods of waste treatment, storage or disposal technologies including an economic analysis based on a 30 year time period, justifying why subsurface disposal is considered the most feasible method of disposal. **In the event the applicant receives a Class I UIC Permit, the permittee will be expected to develop, periodically update and implement an ongoing waste minimization program which addresses the wastes being directed to the Class I UIC disposal well(s).***

This policy can be found in its entirety at:

[http://www.kdheks.gov/uic/download/Policy\\_91-1\\_\(UIC\).pdf](http://www.kdheks.gov/uic/download/Policy_91-1_(UIC).pdf) .

The injection wastewater volume minimization plan achieves the goals of the KDHE Policy Memorandum #91-1.

KDHE is formalizing the wastewater and waste minimization efforts by adding the following language to reissued and new Class I UIC Permits:

### **II. WASTE MINIMIZATION PLAN**

- A. *The permittee must record and maintain in the facility operating record, at least annually, a waste minimization program which addresses the wastes and wastewater being directed*

*to the permitted well. The permit holder will submit to KDHE an annual report detailing the on-going waste and wastewater minimization efforts.*

- B. The report will identify the programs and practices in place to reduce the volume of wastewater injection, a description of the administrative process and structure in place to develop and implement such a program; a description of past, current and future projects, including the results of projects. Appropriate diagrams, graphs, tables, etc. should be included in the report to describe projects and their effectiveness.*

Injection wastewater volume reduction can include reducing the concentration of pollutants in the wastewater, reuse of the water, and reducing water and energy usage. Methods for accomplishing this can include changes in infrastructure design, processes, activities and operational procedures. Some of these may involve some increased upfront costs but some may also reduce costs of long term operation.

Examples of projects completed by Kansas Class 1 Operators are as follows:

- Install more efficient cooling towers and cooling technology reducing the number of cooling tower water blow downs.
- Using wastewaters for facility processes such as using cooling tower blowdown to solution new storage caverns.
- Installing more efficient reverse osmosis technology, reducing the volume of reject wastewater.
- Reconfiguration of seals to prevent water loss

Long term benefits include:

- Water resources stay in the hydrogeologic cycle. Wastewater that is disposed into the deep subsurface, is lost for all future use.
- Preserves pore space for those wastewaters and wastes that cannot be feasibly handled by other methods.
- Preserves pore space for other potential uses.
- Assists with the efforts of the Governor's 50 Year Vision for the Future of Water in Kansas to provide Kansans with a secure and reliable, long term statewide water supply while balancing conservation with economic growth.
- Reduces the potential for seismicity. Injection volumes have been found to be a factor for causing induced seismic events in areas where stressed faults exist.
- Reduces pressure buildup and static fluid level increases which can reduce the useful life of a disposal well.
- Assists with ensuring containment of injected wastewater.

Administrative benefits include:

- Reduction of compliance violations
- Increased efficiency

- Increased profitability
- Reduction of environmental liability
- Establish a good neighbor image
- Continue to be a good steward of resources
- Enhance environmental performance

One report is required for each facility regardless of the number of injection wells. The permit holder will submit to KDHE annually due on or before the effective date of their permit(s) (for example if the effective date of a permit is March 20, 2012, report would be due on or before by March 20<sup>th</sup> of each year), a report detailing the wastewater and waste minimization efforts. Such a report will include:

- Identification of the programs and practices in place to minimize the volume injected.
- A description of the administrative process and structure in place to develop and implement the plan;
- A description of past, current and future projects, including the results of projects;
- Appropriate diagrams, graphs, tables, etc. should be included in the report to describe projects and their effectiveness.

Possible strategies for implementing the new Permit requirements are as follows.

Elements of a Wastewater Minimization plan should include:

- A written policy of management and corporate support for planning efforts and a commitment to implementation.
- Employee training and involvement.
- Establishment of teams to determine how to best implement the plan.
- Developing wastewater generation and injection flow process diagrams.
- Written scope and objectives of the plan and establishment of quantitative, performance goals. (can include a description of any injection volume reduction accomplished prior to developing this plan)
- Options to be evaluated and a schedule for implementation based on reduction assessment.
- System for tracking results.
- Documentation of results and efforts.

Details of the report, to be submitted, should include:

- A detailed list of all wastewater streams and pollutants in the wastewater and the source/process.
- An assessment of whether one needs to set performance goals. If goal-setting isn't practical at this point, list actions which will lead to establishing them in the future.
- An evaluation of the processes, operations and activities that generate the wastewater.
- An evaluation of reduction options for each wastewater streams that are targeted in the plan's performance goals.

- A system for tracking and managing wastewater and waste disposal costs. This is a tool for better understanding the true costs of generating, handling and disposing of your wastewater and waste.
- Establish and encourage employee awareness, involvement and training programs for wastewater and waste reduction efforts.
- A description of procedures to make waste reduction an ongoing effort.
- An annual update of injection volume reduction efforts, hurdles and accomplishments.

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