



MEMO

TO: Railroad Commission of Texas, Attn: Leslie Savage, Chief Geologist

FROM: WSP USA, Graciela Moore P.G.

SUBJECT: Regulatory Engineering and Geological Services Group's Comments on RRC Memorandum for Class VI Primacy

DATE: June 30, 2022

COAUTHORS: Graciela Moore P.G., McKenzie Morrison, Ray Steppe P.E., Morgan Canezaro, Trevor Hutton P.G., Kaycee Garrett P.G.

Dear Ms. Savage,

WSP USA (WSP) has reviewed in depth both the Environmental Protection Agency's (EPA) 40 CFR and the Railroad Commission of Texas' (RRC) application for primacy of Class VI Underground Injection Control from the Federal Government's regulatory body, EPA. This document includes our comments on the memorandum's verbiage and permitting criteria.

WSP is an internationally recognized professional services firm with nearly 14,000 of our approximately 54,000 professionals dedicated to accelerating the world's green transition. WSP is a leader in the permitting, design, drilling and maintenance of deep injection wells for the safe disposal of waste byproducts. WSP's Energy Division has 150 employees in offices in Houston, Texas and Baton Rouge, Louisiana.

Our team, Regulatory Engineering and Geological Services, has been involved with the preparation and review of permit applications and petitions for all classes of underground injection control (UIC) wells in multiple EPA regions. WSP has prepared or made the technical assessment of over 250 UIC related permit applications and participated in the development of one-third of all Class I hazardous well petition applications. Our team is well read with respect to the technical aspects of the UIC program and the staff's expertise is well known in the field of injection wells and related systems.

With regard to carbon capture usage and sequestration (CCUS), WSP has been involved in a full range of services including geologic feasibility studies, UIC Class VI and CARB permitting, surface facility design, and general contractor services for well drilling, completion, maintenance and monitoring. Currently, WSP has submitted one Class VI permit to EPA Region 5 for review and are in the process of finalizing two additional Class VI permits for EPA Regions 6 and 9.

The following paragraphs are our finding of the changes presented in the memorandum.

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Written Notice

In response to proposed language regarding Injection well construction (page 49, lines 16-24):

5.206(c)(3) Injection Well Construction. Except in the case of an emergency repair, the operator of a geologic storage facility must notify the director in writing at least 30 days [~~48 hours, and obtain the director's approval,~~] prior to conducting any well workover that involves running tubing and setting packers [~~packer(s)~~], beginning any workover or remedial operation, or conducting any required pressure tests or surveys. In the case of an emergency repair, the operator must notify the director of such emergency repair as soon as reasonably practical. No such work may commence until approved by the director.

and Commission witnessing of testing and logging (page 52, lines 34-36 & page 53, lines 1-3):

5.206(h)(4)(i) Commission witnessing of testing and logging. The operator must provide the division with the opportunity to witness all planned well workovers, stimulation activities, other than stimulation for formation testing, and testing and logging. The operator must submit a proposed schedule of such activities to the Commission at least 30 days prior to conducting the first such activity [~~test~~] and submit notice at least 48 hours in advance of any actual activity [~~testing or logging~~]. Such activities [~~Testing and logging~~] shall [~~may~~] not commence before the end of the 30 days [~~48-hour period~~] unless authorized by the director.

Comment:

Sections 5.206(c)(3) and 5.206(h)(4)(i) both reference notifying the RRC prior to performing working an injection well; however, there are discrepancies in the language used in the two sections regarding the form of notification and when work shall commence. WSP recommends the following changes:

- 5.206(c)(3) ...or surveys. Such activities shall not commence before the end of the 30 days unless authorized by the director. In the case of an emergency repair, the operator must notify the director of such emergency repair in writing as soon as reasonably practical and shall not commence unless authorized by the director. ~~No such work may commence until approved by the director.~~
- 5.206(h)(4)(i) ...submit a proposed schedule of such activities in writing to the Commission...

Definitions

In response to proposed definitions (page 16, lines 2-3):

Confining zone--A geologic formation, group of formations, or part of a formation that is capable of limiting fluid movement from an injection zone.

Comment:

WSP recommends adoption of the EPA's definition for the zone of confinement from 40 CFR 146.81(d) as the current language is incomplete:

Confining zone means a geologic formation, group of formations, or part of a formation stratigraphically overlying the injection zone(s) that acts as barrier to fluid movement. For Class VI wells operating under an injection depth waiver, confining zone means a geologic formation, group of formations, or part of a formation stratigraphically overlying and underlying the injection zone(s).

Special Equipment

In response to proposed language regarding special equipment (page 32, lines 27-29):

Tubing and packer. All injection wells must inject fluids through tubing set on a mechanical packer. Packers must be set no higher than 100 feet above the top of the permitted injection interval or at a location approved by the director.



Comment:

It is WSP's recommendation that the language be revised to not be limited to specifically a "mechanical packer". Modification of the language gives the Operator the ability to utilize the correct packer for the situation, be it a hydraulic or mechanical packer. For situational flexibility, WSP recommends the language be reworded as "...injection wells must inject fluids through tubing set on a packer...".

Fee Structure

In response to the fee structure proposed in the memorandum (Page 45, lines 19-26):

The applicant must pay to the Commission an application fee of \$50,000 for each permit application for a geologic storage facility.

The applicant must pay to the Commission an application fee of \$25,000 for each application to amend a permit for a geologic storage facility.

Injection fee. The operator must pay to the Commission an annual fee of \$0.025 per metric ton of CO₂ injected into the geologic storage facility.

Post-injection care fee. The operator must pay to the Commission an annual fee of \$50,000 each year the operator does not inject into the geologic storage facility until the director has authorized storage facility closure.

Comment:

It is WSP's view that these application fees are excessive, being 100 times greater than any other RRC injection permit and five to 50 times greater than the Texas Commission on Environmental Quality (TCEQ) fees imposed on similarly complex UIC permits. Having a fee structure so costly is contrary to efforts that incentivize emitters of carbon dioxide to find solutions to remove CO₂ from the atmosphere.

WSP recommends establishing an application fee that is comparable with TCEQ's Class I hazardous waste injection well application fee. In addition, RRC could establish an optional expediting fee that would capture the additional program cost necessary to review, issue, and monitor a Class VI permit.

Additionally, the post-injection care fee seems excessive if operators are already required to provide financial security for post-closure care. Again, this requirement is not consistent with the post-closure care fee requirements for Class I hazardous waste injection wells. WSP is concerned that imposing a hefty fee schedule for Class VI wells will initiate unintended fee increases on similar UIC permits.

WSP recognizes the RRC's active approach and interest in gaining Class VI primacy for the state of Texas. Additionally, we appreciate the strength of the regulations it will enact in order to help facilitate a safe, yet effective approach at sequestering and storing anthropogenic carbon dioxide.

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