Clean Energy Systems Mendota Class VI Project

UIC Class VI Regulations Background

- In December 2010, EPA published federal requirements under the Underground Injection Control (UIC) Program for Class VI wells (final Class VI Rule). Class VI wells are used to inject carbon dioxide (CO_2) into deep rock formations. This long-term underground storage is called geologic sequestration (GS).
- Class VI well requirements are designed to protect underground sources of drinking water (USDWs) and address GS well siting, construction, operation, testing, monitoring, and closure. EPA developed specific criteria for Class VI wells including:
    - Extensive site characterization requirements
    - Injection well construction requirements for materials that are compatible with and can withstand contact with CO_2 over the life of a GS project
    - Injection well operation requirements
    - Comprehensive monitoring requirements that address all aspects of well integrity, CO_2 injection and storage, and ground water quality during the injection operation and the post-injection site care period
    - Financial responsibility requirements assuring the availability of funds for the life of a GS project (including post-injection site care and emergency response)
    - Reporting and recordkeeping requirements that provide project-specific information to continually evaluate Class VI operations and confirm USDW protection
- The regulations address the unique nature of CO_2 injection for GS, including the relative buoyancy of CO_2, subsurface mobility, corrosivity in the presence of water, and the large injection volumes anticipated at GS projects.

CES Mendota Project Overview

- Clean Energy Systems (CES) proposes to convert a former biomass power plant located in Mendota, California into a carbon negative energy (CNE) plant. The Mendota CNE plant gasifies local biomass wastes to produce syngas, which is then used to produce renewable hydrogen and electricity. The CO_2 produced during the electricity generation will be captured and injected underground via a Class VI well for geologic sequestration.
- The anticipated CO_2 mass to be captured and injected at the project is 350,000 tons/year over a period of twelve years (4.2 million tons total) to 20 years (7 million tons total).

Current EPA Review Status

- On February 18, 2020, CES submitted an UIC Class VI application for one injection well. This is R9's first UIC Class VI application but not the first in the nation. There is a high level of interest

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by CA state agencies; R9 is coordinating closely with the State Board and CalGem on the technical review.

- On March 20, 2020, R9 determined the permit application to be administratively complete and began the technical evaluation of the proposed GS injection project.
- On August 19, 2020, R9 provided CES with the first set of technical evaluation comments, which pertain to the site characterization information submitted as part of the permit application.
- R9 is preparing three more sets of technical evaluation comments on various sections of the application:
    - Comments on Financial Responsibility, and Emergency & Remedial Response Plan (expected early October)
    - Comments on Area of Review Modeling, and Operating Procedure (expected early October)
    - Comments on Testing & Monitoring Plan, and Construction & Plugging Plan (expected mid-October)
- R9 plans to make a preliminary decision on the permit and seek public comment in Spring 2021. We are not aware of public concerns about the project.
- R9 expects to make a final permit decision by the end of 2021.