SPOTLIGHT: Asking Important Sequestration Questions with SCS Engineers

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By Monte Markley | October 27, 2022

SCS Engineers is engaged in providing Class VI underground injection control (UIC) permitting, design, construction, and operations & maintenance services for clients to support geologic carbon sequestration projects. Leading these services is an interdisciplinary team of scientists from our existing deep well injection practice. It includes scientists with expertise ranging from oil and gas production to basin stratigraphy to subsurface modeling. At SCS, we aim to ensure the Class VI permitting process is completed as effectively as possible, with short- and long-term project risk, cost, and resources in mind.

How will SCS Engineers help mitigate future potential Class VI UIC project risk during the permitting phase?
There is inherent enhanced risk associated with Class VI UIC permitting projects resulting from geologic uncertainty, rigorous regulatory requirements, and general public perception. Fortunately, careful planning can mitigate risk during the initial permitting phase.
To minimize geologic uncertainty and ensure meeting regulatory requirements, SCS gathers the most robust and representative data possible. Often this means collecting additional data for site characterization purposes, such as drilling a stratigraphic test well, purchasing seismic data, and conducting laboratory analyses on new or existing cores. This level of site characterization, conducted early on in the process, can appear costly; however, collecting the data necessary to minimize geologic uncertainty in your area of review will 1) allow the development of a more refined testing and monitoring program, thus reducing associated costs over the lifetime of the project; 2) reduce the likelihood of having to make significant adjustments to the area of review or monitoring program during the operational phase; and 3) greatly increase the likelihood of overall success with the regulatory agency and likelihood of receiving a permit.

When initiating the permitting process, it is vital to engage with the regulatory agency, stakeholders, and the public and develop relationships early in the process. SCS will help initiate and develop these relationships throughout the permitting process, ensuring that the permitting process completion is expeditious and to the satisfaction of the regulatory agency, stakeholders, and the public.

How will SCS Engineers help clients avoid unintentional project consequences during the permitting process?
There are many factors to consider during the permitting process that will help avoid unintentional consequences once the project is permitted. In particular, SCS will ensure that CO2 injection is highly optimized based on client needs and detailed, site-specific modeling results. We tailor injection locations, intervals, and rates to meet client needs and honor the modeling results. Additionally, SCS will compile a testing and monitoring plan that is highly optimized, as this plan relies heavily on the site characterization and modeling efforts. To be as robust and cost-effective as possible, the team designs the testing and monitoring plan based on site characterization data and modeling results.

How will SCS Engineers help reduce long-term project costs?
SCS can also help clients strategically reduce costs early in the project for the post-injection site care (PISC) period and potentially shorten the default fifty-year PISC period. Minimizing geologic uncertainty and synthesizing site-specific data into the model process during the initial permitting phase will reduce long-term project costs. A well-planned and phased testing and monitoring approach is essential to save costs throughout the injection phase and allow greatly reduced monitoring frequencies during the PISC period once injection ceases. In addition, it is possible to propose a shortened PISC period in some cases, which will greatly reduce post-closure costs.

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