

Southwest Regional Partnership on Carbon Sequestration

Quarterly Progress Report

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Executive Summary

Task 2–Public Outreach and Education: SWP continued to maintain the SWP website and continued maintenance of SWP-Velo, as well as improvements to the MVA data website to allow for more secure access.

Task 6–Operational Monitoring and Modeling: the MVA Database was maintained and updated with new data. In *6.1 Surface and Near-Surface*, the usual site measurements were performed but the eddy flux tower was not installed as expected, although it was shipped to the field. In *6.2 Subsurface:* CO₂ storage summaries showed a total of 654,905 tons stored since the inception of FWU CO₂ accounting. Researchers continued sampling and analysis of tracers injected in 2015 and 2016; a new aqueous-phase tracer injection was performed into the #13-3 pattern. NMR data from a CMR log completed in well #13-10A prior to CO₂ injection were used to directly link to hydrologic properties including porosity and intrinsic permeability. In *6.3 Seismic*, VSP repeat and 3D surface seismic depth processing was completed and delivered. Analysis of core data was performed on directional mechanical properties for wells 13-10A and 13-14. Geophone array removal was accomplished safely in July. In *6.4, Reservoir Modelling*, preliminary simulation work and summary of analyses were conducted on water and vapor phase tracers injected into FWU wells. The tracer injection concentration was included in the current SWP history-matched model to analyze the tracer responses. Fluid composition updating for the history-matching model was also performed. The Fluid Substitution model was updated twice, with the integration of HFU data. Work on multiphase flow characterization continued with flow-through core experiments. A number of manuscripts were prepared, including a MS-defense. Researchers focused on performing sensitivity analysis for the TOUGHREACT reactive transport simulations and understanding the causes limiting the duration of the numerical simulations. Analysis of noble gas data continued and a variety of 3D surface seismic data were incorporated into models. In *6.5 Risk Assessment*, researchers continued to explore the use of ROMGEN for risk analysis. Additional simulations were conducted to evaluate the impact of boundary conditions on simulation. Journal articles were prepared and literature reviews conducted. A caprock study progressed integrating all of the SWP team’s caprock integrity analyses. The caprock report is a milestone in Risk Assessment for Phase III.

Task 8–Project Management and Oversight: SWP researchers attended DOE/NETL’s meeting August 1–3 and presented a number of posters. At the beginning of the quarter, PIs met in Pittsburgh to discuss the end of the project. As a result of the meeting, project personnel began the process of evaluating budgets and priorities assuming a December 2018 project end date. Working Group leaders began to evaluate milestones to be accomplished and planned fact sheets. The sale of the FWU was imminent by the end of the quarter although few details were known. The SWP annual meeting was set for December 12–13, 2017 in Socorro, New Mexico.