

**Monthly Letter Progress Report #04 – April 2011
Assessment of Groundwater Modeling Approaches to
Brackish Aquifers**

TWDB Contract No. 1100011196

Submitted to:

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1.0 Progress on Tasks

This report summarizes activities on project tasks for the month of April, 2011 and represents the fourth progress report on this contract.

Task 1 Project Management

We met with TWDB technical and contracting staff to discuss a short extension of the project. A tentative agreement has been reached regarding the extension.

Task 2 Technical Tasks

Technical tasks in April continued the March work on the literature review. We continued to focus to the hydrogeologic scenarios that might be encountered in Texas which could be affected by variable density forces.

We finished the review of the Brackish Groundwater Manual for Texas Regional Water Planning Groups. The continuing purpose of the review was to identify the various hydrogeologic conditions for the aquifers in Texas that contain brackish water. A matrix was constructed indicating the difference structural settings, sediment types, hydrogeologic units, media type, significant structure features, and density characteristics for the different aquifers. This review and resultant matrix will be used in identifying the variable-density codes appropriate for use with each aquifer.

April activities also included continued work on a summary matrix of variable-density codes and their features. The matrix includes information such as code name, dimensionality, coordinate systems, numerical formulation, solvers, notable capabilities/disadvantages, media type, boundary conditions, whether there is a GUI for the code, and whether this is a user manual for the code.

Task 3 Project Report

There was no work under this task in April.

2.0 Planned Activities for the Next Month

Task 1 Project Management

We plan to meet with TWDB staff in mid to late May to discuss project progress to date.

Task 2 Technical Tasks

Technical tasks in May will continue to be focused the code-application matrix, and beginning the development of a decision matrix for model selection.

Task 3 Project Report

We do not anticipate doing work under this task in May.

3.0 Problems/Issues and Actions Required/Taken

Nothing significant. A short extension for the project was requested and tentatively granted by TWDB staff.