

EXPERT TESTIMONY

Computer Modeling

Englewood Not-Nontributary Areas - Model Modifications

The City of Englewood challenged the default location of the State Engineer's Office ("SEO") administrative line separating nontributary ground water in the Denver Aquifer from not-nontributary ground water.

Martin and Wood revisited the SEO modeling, originally carried out in 1985 in support of the important legislative act, Senate Bill 5, and found that the one-mile model cell size was influencing the line position. Martin and Wood wrote a FORTRAN program that allowed for positioning a simulated pumping well within 1/4-mile sub-cells. This program auto-

matically re-allocated the aquifer parameters for the corresponding sub-divided cells as proportionate to the new cell configuration. In addition, Martin and Wood also reviewed more recent aquifer water level data to prove that the hydraulic connection at certain cells had been broken and these cells should thus be excluded from the model.

Martin and Wood presented expert testimony to the Division 1 Water Court on these significant modifications to the model that allowed the City to gain a determination that a larger area of its property should be classified nontributary than would have been the case otherwise.

South Park Conjunctive Use Project - Model Analyses

A consortium called Park County Sportsmen's Ranch sought to develop a very large and complex water project in the South Park area of Colorado involving pumping of up to 20,000 acre-feet per year of water from the deep aquifers, recharge of in-priority surface water into those deep aquifers, and underground storage. The project, known as the South Park Conjunctive Use Project, or SPCUP, attracted the attention of numerous objectors, as it appeared that the project, if operated as proposed, could result in significant impacts to both the local hydrology and the South Platte River.

The Cities of Englewood and Thornton, together with Denver Water and Centennial Water and Sanitation District, engaged Martin and Wood to provide technical review and consulting in opposing SPCUP. Martin and Wood carried out significant analyses on the applicant's multi-million dollar numerical ground water flow model that was to be the centerpiece of the applicant's Water Court case for this project. Martin and Wood presented deposition testimony that raised significant doubts about the modeling effort and the ability of

the model to accurately predict exactly how the system would respond to the significant stresses that the SPCUP would impose. Ultimately this work, along with that of other objectors, succeeded in obtaining a rare Rule 41(b) dismissal of the case based on a finding that the applicant had failed to show that the project was viable. Martin and Wood provided testimony in the subsequent hearing that ultimately led to awarding \$2,600,000 of fees and costs to the objectors.



Test well at Park County Sportsmen's Ranch

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