

Aquifer Committee meeting held Friday, 29 October 2004.

The minutes described herein reflect the commentary of the members who participated in the Friday, 29 October meeting and reflect a true, fair, and agreed upon summation.

Meeting commenced at 12:15 p.m. in the Bryan Room of the Savannah Civic Center. Meeting room was arranged through the courtesy of the City of Savannah. Chris Schuberth, Aquifer Committee Chair, opened the meeting welcoming the 19 people in attendance. See roster.

Update provided by Card Smith ACOE. See Appendix A. Provided update on new core holes and core samples taken. Provided update on core pore water chloride profiles on the permeability studies. A very thorough seismic study of the harbor area was undertaken along the existing channel and extending seaward along the path of the projected channel extension, paying particular attention to the presence of paleochannels. Where paleochannels were identified, additional seismic profiles were conducted to better characterize how the paleochannels intersect with the dredged harbor channel. These paleochannels represent ancient stream channels cut into the exposed terrain at a time of lowered sea level, then filled in naturally with newer sediments of differing characteristics as sea level rose.

Questions raised regarding the stratigraphic characteristics of sedimentary strata associated with the confining unit overlying the Upper Floridan Aquifer:

(1) Did you find any area where sediments of the Miocene are absent?

No area studied was missing the Miocene layer of the confining unit. In some areas it was between 20' and 25' thick.

(2) Was there any identification of fractures present in the confining unit as previously thought?

No fractures were identified within any of the of core samples extracted or through the seismic surveys.

(3) Did you find a homogeneous pattern of material throughout the different layers specifically the Miocene layer?

From core hole to core hole, the Miocene confining layer exhibits a similar sequence and type of material. Although these materials occur at somewhat different elevations and thickness as shown on the cross section, the sediments are relatively easy to identify and lend themselves to ease of correlation across the borings.

(4) Is the work plan being done as far as what the AC had determined?

Yes.

Mark Maimone of CDM presented an overview of the 3-D Solute Transport Model. See Appendix B.

The models were jump started with USGS and ACOE and the model honed in on the Savannah River. USGS has been studying the ground water in the Savannah River vicinity as part of a much larger area for the Sound Science Initiative. The areas USGS targeted in their studies and their models did not specifically address harbor dredging nor did it specifically address the Savannah River with the specificity necessary regarding harbor deepening. Data collected by the GGS, USGS and ACOE will be used along with additional data to hone in on developing a model specific to the Savannah River.

Questions raised regarding the 3-D Solute Transport Model:

- (1) Will the data collected and modeling being done, will it provide answers or more information to the Sound Science Initiative?

What the Sound Science Initiative goals are and what these model goals are differ significantly. This 3-D Solute Transport Model will address harbor deepening specifically. The information or data collected are good and will be helpful to both institutions but the Savannah Harbor model will not take the place of the USGS Sound Science model.

- (2) Will the model and data collected be transferable to other areas?

The data and model simulation will be site specific for the navigation channel. Model results will be restricted to assessing the impact of harbor dredging on the water quality of the Upper Floridan Aquifer, and will not attempt to assess the overall impact of pumping in the Savannah area.

- (3) Does the model or will the model include varying thickness of the Miocene layer with time that resulted in historic dredging of the channel?

The ACOE has pre-Civil War data regarding the Savannah River and has significant data to apply to the model to show how dredging of the harbor has affected the confining unit and thus solute transport to the aquifer. Most of the significant deepening has occurred from around 1930 to present. The model will characterize the past 80 years of pumping into several periods of pumping, and include channel elevation changes due to major dredging where data allow, as part of the calibration procedure.

- (4) What well pumping data will be used as permitted pumping is much higher than is the actual pumping?

The 2000 pumping data will be used for the model. Worst case permitted pumping data can be used to create a worst case scenario of solute transport if requested.

(5) One of the recommendations of the AC was to have an aquitard test. Will this model accomplish this?

The model can be used to simulate an aquitard test, with the results used to assess the feasibility of performing the test in the field

(6) A comment was made that simulated predevelopment Upper Floridan heads were substantially under-computed.

Respectfully submitted,

Christopher J. Schuberth, Chair
Aquifer Committee of the Stakeholders Evaluation Group