

REPUBLICAN RIVER BASIN MODELING PROJECT

November 19, 1997

Ground-Water Quality

We are currently inventorying the wells sampled in the Republican Basin last summer and adding them to our permanent data base. Documentation of basic well information for these sites includes well depth, screened interval, date drilled, owner name, location, aquifer code, and hydrologic unit code. When the inventories are complete (1.5 weeks) water-quality data will be transferred to this data base. When the transfer is completed, letters containing the results of the chemical analyses will be mailed to the Natural Resources Districts and to individual land owners. Additionally arrangements are being made to compile and integrate water-quality data collected in the eastern part of the Republican Basin during 1997 by the Nebraska Department of Environmental Quality (NDEQ).

A base map has been prepared for plotting locations and concentrations of water-quality data. Locations for next summer's water-quality sampling work are being identified. We will begin obtaining sampling permissions for these wells in February.

SW-GW Interaction

The ground-/surface-water interaction phase of the Republican River model is proceeding slower than had originally been anticipated. However, all three sites have been selected and all landowners have consented to participate with the project. The three sites are as follows:

- 1) Harlan County, Sappa Creek, 2N 20W 23 (eastern half of section)
Lower Republican NRD
- 2) Hayes County, Frenchman Creek, 5N 34W 35
Middle Republican NRD
- 3) Chase County, Frenchman Creek, 5N 39W 35
Upper Republican NRD

The Southwest Nebraska RC&D has notified Burton Well Drilling, Bartley, Nebraska, (correspondence dated November 6, 1997) that their bid for the drilling has been accepted. Depending upon weather conditions, the starting date for the drilling is set at February 9, 1998. Although the work may commence prior to this date if scheduling arrangements can be made and dates are agreeable with the Contracting Officer's Representative (Greg Steele, hydrologist, U.S. Geological Survey).

Additional information—data loggers to record water levels in the monitoring wells have been ordered, but have not been received.

Model Preparation and Data Acquisition

The project is still in the intensive data collection and compilation phase. GIS hydrologic coverages for the Kansas part of the Basin have been transferred to our system in addition to land-use, land-cover, and irrigation-well coverages for Nebraska. Water-level data for the High Plains Aquifer project, which includes the Republican River Basin, are being used to supplement current, spring and fall 1996, potentiometric surfaces. Updated versions of the bedrock surface are being produced using more recent bedrock elevations where available have been produced. Selected maps are being digitized and stored in ARC/INFO files.

General

A liaison meeting to coordinate Republican Basin activities among the members of the USGS project team, the Conservation and Survey Division (CSD) investigators, and Marty Link (NDEQ) was not held on November 10th as originally scheduled because CSD people were performing aquifer tests in the Basin. A meeting will be rescheduled in December.

The project chief, Matt Landon, will be physically posted in Nebraska on December 8th.

QUARTERLY PROGRESS REPORT

REPUBLICAN RIVER BASIN MODELING PROJECT

JUNE 26, 1997

The Republican River Basin Modeling Project officially began April 28, 1997, when the Nebraska Environmental Trust Fund approved funding for the project. During the last two months the following activities have ,

- A four-year work plan has been produced which includes timelines for the initiation and completion of all major project activities.
- Discussions were conducted with the Central Regional Ground-Water Specialist to lay the groundwork for a conceptual ground-water model of the project area. The MODFLOW model was tentatively selected with the intent of running the model on a personal computer platform.
- A literature search has begun in which all pertinent reports and available data are being identified and reviewed and a temporary library of these documents is being established.
- The process of well selection for the purpose of ground-water sample collection has begun. Wells are being selected from the current list of registered wells for the State using a stratified random approach. Selected wells are then checked against well registration data to ensure that they meet basic USGS criteria before final selection is made.
- A Republican River Basin project coordination meeting was held on June 20 at the Nebraska Department of Water Resources office in Lincoln, Nebraska, in which Ann Bleed, Mike Thompson, Ed Harvey, and Doug Druliner attended. The purpose of the meeting was to compare work plans for the USGS project that is being funded by the Environmental Trust Fund and the C&SD project that is being funded by the Department of Water Resources. A number of complementary issues were identified for coordinated activities. It was decided that quarterly meetings will be held with the USGS and C&SD investigators throughout the life of the projects.