

SUMMARY OF DATA COLLECTION FOR GROUND WATER AND PROCESS STUDIES--RED RIVER NAWQA STUDY UNIT, 1993-95

Study component	Objectives	Brief description and water-quality measures	Number of sites or studies	Frequency during 1993-95	Historical data available ?
<b>Ground water</b>					
Basinwide survey - surficial aquifers	Describe overall water quality in surficial sand and gravel aquifers which are susceptible to contamination.	Sample 20-30 wells in three of the major physiographic areas for major ions, nutrients, pesticides, organic carbon, and radionuclides.	69	1	some
Basinwide survey - buried aquifers	Describe the overall water quality and natural chemical patterns in buried aquifers.	Sample wells within a west-east subregion across the central part of the Red River Basin for major ions and trace metals; nutrients and radionuclides collected from 27 wells.	42	1	yes
Land-use effects	Determine the effects of specific land use on the quality of shallow ground water.	For two surficial aquifers lying mostly beneath irrigated cropland, sample wells completed near water table for major ions, nutrients, and pesticides; from one aquifer, sample for volatile-organic compounds and radionuclides.	58	1	limited
Seasonal variation	Determine seasonal variation of concentrations of water-quality indicators in aquifers studied for land-use effects.	Resample selected wells in each aquifer studied for land-use effects for nutrients, major ions, and organic carbon.	16	4-5 per year, 2 years	limited
Variation along flow	Describe land-use effects on surficial aquifers along ground-water flow from areas of recharge beneath the land use to discharge to a stream.	Sample clusters of wells installed along an approximate line of ground-water flow and at various depths within aquifers studied for land-use effects; analyze for major ions, nutrients, pesticides, and age-dating constituents.	19	1	no
<b>Process studies</b>					
Stream-aquifer interaction	Describe processes controlling fate of nitrate-contaminated ground water near areas of discharge to a stream.	Collect detailed chemical, biologic, geologic, and hydrologic data in the interaction zone of the Otter Tail River and the adjacent aquifer.	1	3	no
Stream-sediment nutrients	Describe the role of suspended sediment in transporting nutrients in streams.	Map stream-channel geometry and collect sediment samples during spring runoff and storm flows at selected sites along the Pembina River.	1	12	some