

WSF 2021 Final Annual Report # 5193

PROJECT: Characterize the Western Sarpy County Aquifer Using GeoScene 3D –WSF Application #5193 (awarded January 2018)

DATE: MAY 17, 2021
(FIRST ANNUAL REPORT DUE ON OR BEFORE APRIL 1, 2019)

[See Application 5193 For Project Scope Summary and Timeline](#)

PROJECT PROGRESS APRIL 2018 TO APRIL 2019:

The US Geological Survey (USGS) in cooperation with the Papio-Missouri River Natural Resources District (NRD), has compiled geologic and chemical data for the aquifer systems in Western Sarpy County. Geologic data has been collected from the Nebraska Department of Natural Resources, the University of Nebraska Conservation and Survey Division, and individual well-drillers that operate in the area. Categorizing well logs into uniform characteristics is ongoing. Once well-log characterization is complete, and the logs have been imported into a GeoScene project to develop the 3D geologic framework.

Historic nutrient data has been collected for the study area. This data will be utilized in the GeoScene project to visualize nutrient concentrations within the aquifer. The GeoScene project is nearly complete and the USGS is preparing a final technical paper that will be reviewed and available to the public around this time next year.

ANTICIPATED ACTIVITIES FROM NOW UNTIL NEXT ANNUAL REPORT DUE APRIL 1, 2022

Final activities are underway to finalize the digital GeoScene 3D project and prepare a final technical paper.

ANTICIPATED CASH FLOW FOR REMAINDER OF THE PROJECT:

All NRD and WSF Grant funds have been expended and paid to UGS. Reimbursement Claims #1 (60% of USGS invoices) was submitted in June of 2019 for \$44,220.00. Reimbursement Claim #2 was submitted in June of 2020 for the amount of \$57,780.00. Claim #3 was submitted in March of 2021 for the amount of \$18,000. The NRD paid the remaining non-federal match of \$80,000.

LIKELIHOOD THAT BENEFITS PROJECTED IN APPLICATION 5193 WILL BE REALIZED:

The digital GeoScene 3D Aquifer Characterization of Western Sarpy County will provide the NRD with the benefits described in the WSF application aimed at better understanding the very local aquifers between Gretna and Springfield, NE and their groundwater quality issues. The 3D project allows groundwater managers to quickly relate the location and depth of wells to the local aquifer geology and extent. It also shows all known water quality monitoring data within the 3D environment, so that areas with elevated nitrate or other WQ contaminants can be quickly identified and used to make informed decisions for new wells or wells that need to be properly abandoned.