

WSF 2017 Final Report # 4141

PROJECT: Lower Elkhorn NRD Aquifer Framework Mapping –WSF Application #4141 (awarded April 2016)

DATE: AUGUST 2, 2017
(FINAL REPORT)

See Application 4141 Section D #2 For Project Scope Summary and Timeline

PROJECT PROGRESS APRIL 2017 TO APRIL 2018:

The final LENRD AEM Report from Aqua-geo Frameworks LLC (AGF) was delivered May 15, 2017, approximately one week ahead of schedule. The final report summarizes the survey results (approximately 659 linear miles of flight transects) and incorporates the AEM results with existing cross section and Conservation and Survey Division (CSD) test-hole data, GIS spatial data, and NDNR registered well data (select logs of registered wells will be used for general reference and comparisons). The report results are publically available from <http://enwra.org/aem2016.html> as:

- Full Report text as a pdf document
- Appendix 1 - pdfs of two-dimensional (2-D) Resistivity Profiles and Aquifer Interpretation
- Appendix 2 - pdfs of 3-D Fence Diagrams
- Interactive Google Earth datasets and 128 associated interpreted profile images

Additionally, the full set of electronic deliverables (borehole data, raw and interpreted AEM datasets, GIS files etc.) are available from the LENRD upon request.

ANTICIPATED ACTIVITIES FROM NOW UNTIL NEXT ANNUAL REPORT DUE APRIL 1, 2018:

N/A, this report will serve as the FINAL report for the Lower Elkhorn NRD Aquifer Framework Mapping –WSF Application #4141 (awarded April 2016) previously anticipated for submittal April 1, 2018.

ANTICIPATED CASH FLOW FOR REMAINDER OF THE PROJECT:

\$0 - The LENRD (40%) and WSF (60%) have completed funding obligations (\$416,666 total project costs) under grant award #4141.

LIKELIHOOD THAT BENEFITS PROJECTED IN APPLICATION 4141 WILL BE REALIZED:

From the 4141 WSF Application: "With the hydrogeologic framework updated through this Project, the LENRD will be better equipped to assess the overall susceptibility of the Project area groundwater resources to impacts from potential contamination sources and increasing use and development. The updated hydrogeologic framework will directly inform the delineation of the groundwater resources to be included in the update of the LENRD GMP, anticipated to begin in 2017. CSD may use the AEM data to update bedrock maps, transmissivity and specific yield maps, and maps of secondary aquifers."

Based on the report presentation by AGF, initial evaluation of the report by the LENRD, and other anticipated planned analyses and evaluations, the project achieved the benefits to the LENRD as described in the application and is anticipated to continue to do so. The data will be incorporated into the Nebraska GeoCloud (WSF award #4164) by the Conservation and Survey and U.S. Geological Survey (CSD and USGS). Hydrogeological Frameworks were provided for the Project area including existing boreholes, digitized interpreted geological contacts, resistivity/lithology relationships, and identified potential recharge zones and areas with the potential for managed aquifer recharge. The report (<http://enwra.org/aem2016.html>) also provided recommendations for future work to enhance groundwater management activities.