WSF 2020 FINAL Annual Report # 5189

PROJECT: Eastern Nebraska Aquifer Framework Mapping –WSF Application #5189 (awarded November 2017)

DATE: MARCH 20, 2020 (ANNUAL REPORT DUE ON OR BEFORE APRIL 1, 2020)

See Application 5189 Section D #2 For Project Scope Summary and Timeline

PROJECT PROGRESS APRIL 2019 TO APRIL 2020:

The following four remaining Airborne Electromagnetic Survey (AEM) chapter report deliverables for the above-referenced eastern Nebraska Aquifer Framework mapping project (WSF #5189) were provided by Aqua-geo Frameworks LLC (AGF) since the last WSF project status report: the Papio-Missouri River NRD on May 24, 2019, the Lower Platte North NRD on August 6, 2019, the Lewis and Clark NRD on September 27, 2019, and the Lower Platte South NRD on December 4, 2019. An over-arching, regional Eastern Nebraska Water Resources Assessment (ENWRA) report deliverable was also delivered December 13, 2019 summarizing the six ENWRA (Lewis and Clark, Lower Elkhorn, Lower Platte North, Lower Platte South, Nemaha, and Papio-Missouri River) NRD AEM chapter reports. Several of the NRDs held AEM-related presentation and meeting sessions throughout 2019 and into early 2020 including an ENWRA sponsored booth and presentation at the January 2020 NRD Legislative Conference at the Embassy Suites in Lincoln, NE. The Final AEM Chapter Reports for each NRD and overarching ENWRA regional report for the over 7,000 line miles of AEM flown in 2018 are also publicly available at http://enwra.org/aem2018.html (see Attachment 1):

- Full Report text deliverables (large pdf documents with figures and tables)
- Appendix 1 - pdfs of two-dimensional (2-D) Resistivity Profiles and Interpretation Profiles
- Appendix 2 - pdfs of 3-D Fence Diagrams and Voxel Images
- Interactive Google Earth datasets and associated interpreted, simplified profile images

ANTICIPATED ACTIVITIES FROM NOW UNTIL NEXT ANNUAL REPORT DUE APRIL 1, 2021:

This 2020 status report is the final closeout report for WSF #5189. Continued presentations, meetings and use of the data through the Nebraska GeoCloud (WSF #4164 reported under separate cover) are anticipated.

ANTICIPATED CASH FLOW FOR REMAINDER OF THE PROJECT:

$0.00. All anticipated reimbursement claims, Claim 1 through 8 totaling $1,968,000, (60% of the $3,280,000.00 total project indicated in the #5189 WSF grant application/NeDNR contract) have been submitted and received. The Lewis and Clark and Lower Elkhorn NRDs have also fully paid out their associated separate side contracts for additional flight lines included in the final chapter reports beyond the WSF covered amounts.

LIKELIHOOD THAT BENEFITS PROJECTED IN APPLICATION 5189 WILL BE REALIZED:

Based on the project results provided by AGF and datasets uploaded onto the Nebraska GeoCloud (WSF #4164 reported under separate cover), the project achieved the benefits as described in the application and the benefits are anticipated to continue. The Project provided over 7,000 line miles of subsurface data for eastern Nebraska (over 3,000 bonus line miles beyond the 4,000 proposed in the grant application). Additional NRD specific benefits: district wide completion for Lower Elkhorn and Lewis and Clark NRD's 3-mile hydrogeologic framework plus tighter coverage of select focus areas and wellhead protection areas (WHPAs), grid coverage for the central portion of the Nemaha NRD and many high priority public WHPAs, grid and reconnaissance coverage for Papio-Missouri River NRD's framework north and west of the Omaha metro area plus 3-D block data for the Tekamah, NE area, focus area and grid coverage for most of the restricted development areas in Lower Platte North NRD (plus redelivery of 2016 data), and 1-mile to 1.5-mile grid framework coverage and tighter block and focus area coverage for Community Water Supply Protection Areas (CWSPA) in the western part of the Lower Platte South NRD (plus indications where the presence of salt water was interpreted in the data).

ATTACHMENT #1

ENWRA

Eastern Nebraska Water Resources Assessment

http://enwra.org/

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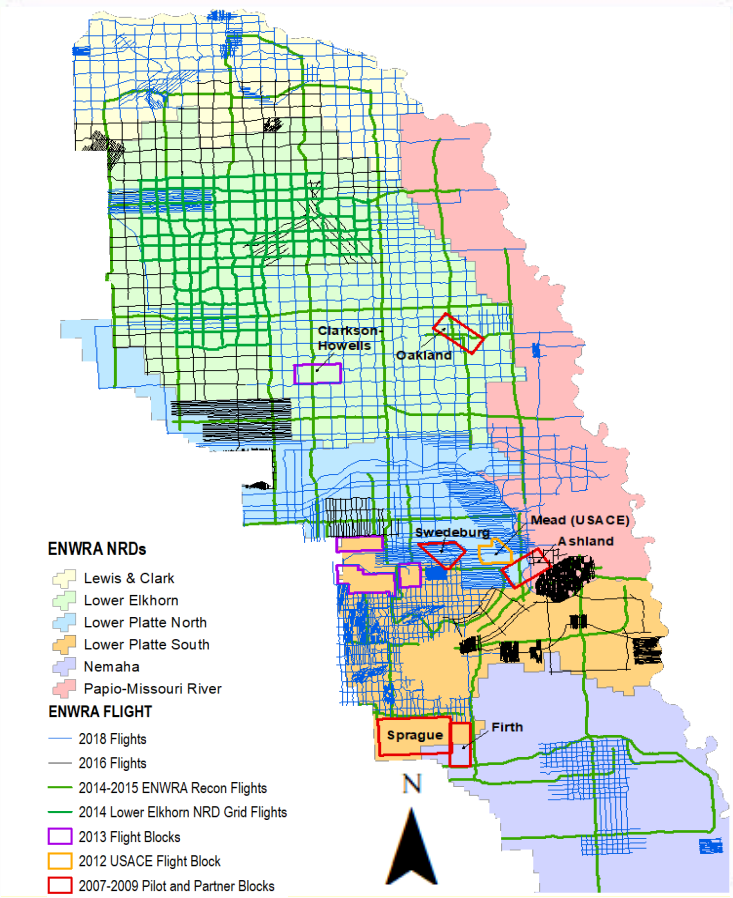
2018 Airborne Electromagnetic (AEM) Surveys



The summer 2018 AEM flights are now complete! The six eastern Nebraska Natural Resources Districts (NRDs) conducted AEM flights this June through late July 2018 using Water Sustainability Fund (WSF) grant dollars awarded in November 2017 ("https://nrc.nebraska.gov/water-sustainability-fund-0").

The Lower Platte North, Lower Platte South, Papio-Missouri River, Lewis and Clark, Lower Elkhorn, and Nemaha NRDs each had a mix of the following types of surveys in eastern Nebraska:

- block flights (tightly spaced flight lines for determining aquifer boundaries and/or potential groundwater volumes)
- transect/tie line flights (longer reconnaissance type flight lines)
- grid flights (hybrid of reconnaissance and detailed type suveys, aquifer boundary mapping)

News

The 2018 Airborne Electromagnetic Survey (AEM) Flights and associated reports are complete! The Lower Elkhorn, Nemaha, Papio-Missouri River, Lower Platte South, and Lower Platte North NRD chapter reports are now available. You can also click here for an updated location map of the 2018 flights. Be sure to visit our other AEM tabs for additional AEM results and project descriptions. WARNING! A Google Earth Pro update in early 2019 rendered the image links in the older .kmz files inoperable (impacts 2014-2015 AEM flight deliverables only). Please replace any .kmz files you may have downloaded prior to April 2019 from our 2015 AEM and 2014 LENRD AEM website tabs with the current posted versions.

Groundwater elevation, weather station data and sampling results for ENWRA's 3 pilot study sites are now available under the Media/Downloads Tab. Click here for a link to download the 2008 to 2018 compiled datasets and graphs (168 MB).

Calendar

ENWRA's spring technical