

# Release of data from exploration on terminated state metallic minerals leases (Celina) by AngloGold Ashanti Minnesota Inc.

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Exploration Data Set #001, Celina Area

DNR Contact: Stacy Saari, Mineral Potential Geologist ([stacy.saari@state.mn.us](mailto:stacy.saari@state.mn.us))

## Background

The Celina area represents AngloGold Ashanti Minnesota Inc.'s (AGAM) initial on-the-ground gold exploration campaign in Minnesota. Exploration at Celina focused on the 33 state minerals leases in Southeastern Koochiching County. All of the leases were in Township 63 North, Range 22 West. AGAM received these leases in June 2016 and held them through December 2018. Airborne geophysics were flown over a large swath of northern Minnesota in late 2016. All of the data and results submitted to DNR is digital. This data set, as it was submitted by AGAM, is released to the public in Open File #001. [See the disclaimer at the end of this document.]

## Geographic coverage

The information included in this release covers lands in southeastern Koochiching County.

## Scope of information

Information submitted includes data and results from field mapping, airborne electromagnetic and radiometric surveys, passive seismic, surface sampling of bedrock and soils, 29 rotasonic borings, and thin sections with reports. Laboratory results include gold grain counts, rock geochemistry, kimberlite indicators, and geochemistry of heavy mineral concentrates. The AGAM data submission includes digital photographs of the drill core material (core) that was submitted to the DNR.

The airborne geophysics covers all lands (including non-state lands) within T. 63N, R. 22W.

Samples delivered to DNR include drill core, thin sections, coarse rejects, pulps, heavy mineral concentrates, and pebbles and splits from samples sent to Overburden Drilling Management (ODM).

By Minnesota law, mineral explorers are required to submit to the state at least a one-quarter portion of the full length of every exploratory boring drilled anywhere in Minnesota. This sample, which can include both solid bedrock and overlying unconsolidated sediments, is boxed by the explorer and delivered at the end of their exploration program to the DNR's Drill Core Library in Hibbing. AGAM completed 29 exploratory borings using large-diameter rotasonic drilling methods that generated a large volume of sediment core. DNR determined that it was in the best interests of the State to direct AGAM to submit only the intervals with greatest exploration value for archival storage. Core intervals required to be submitted were the deepest intervals from every boring (typically Rainy lobe glacial sediments and bedrock), and entire core profiles from a smaller number of geographically representative locations. AGAM only used rotasonic drilling methods for exploration drilling.

This release of exploration data supersedes the "Celina" data that was previously released in Open-File Project 403, Consolidated Minerals Project. New data added in Open-File Exploration Data 001 are new files in the "Reports" link and every file in the "Drill Core Photos" link. To avoid confusion, DNR has removed the Celina data from Project 403.

## **Summary of information in this release (available for download)**

1. Reports (.pdf format).
  - a. Internal communications including topics on airborne geophysics, passive seismic, and geochemistry of glacial sediments.
  - b. Reports by consultants or contractors: final report for airborne geophysics by Sander Geophysics, Gold Grain results by ODM.
2. Geophysics
  - a. Airborne
    - i. Map and shape file that shows the area where data were collected (.pdf and .shp) plus readme files (.txt) for aeromagnetic and radiometric surveys.
    - ii. Images (georeferenced .tif files):
      1. Magnetics: total magnetic intensity, first vertical derivative reduced to pole image
      2. Processed radiometrics data
    - iii. Raw data (.csv and .gdb files)
      1. Aeromagnetic
      2. Radiometric
  - b. Ground
    - i. Tromino passive seismic survey. Locations and interpreted cross sections of depth to bedrock (.csv, .pdf, .png) and raw data (.png & various)
3. Geochemistry
  - a. Compiled data (.accdb file). Access database consisting of 9 tables including abbreviation codes, lab data of samples from boring (bedrock and overburden), geologic descriptions (log) of borings, and assays of surface samples (rock chips and soils).

- b. Certificate of Analysis from ALS (.csv and .pdf, 16 files)
  - c. Lab Data Report from ODM (.xlsx and .pdf, 7 files)
  - d. Certificate of Analysis from ActLabs (.xlsx and .pdf, 4 files)
  - e. Certificate of Analysis from ALS (.csv and .pdf, 16 files)
4. General Geology and Mineralogy
- a. Petrography results of bedrock boring sample/thin section by Jim Shannon (.pdf, .xlsx, 13 files)
  - b. Interpretive maps of geology and structure (.lyr, .shp, 4 files)
5. Borings
- a. Table with collar information for each boring (.xlsx, 1 file)
  - b. Map that summarizes gold grain results from drilling (.pdf, 1 file)
  - c. Strip logs for each boring with geology, gold grains, and geochemistry (.pdf, 2 files)
  - d. Photos of core from all borings except #CR0001 (.jpg, 179 files)

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