

**Information Required Upon Termination of a State Minerals Lease**

All State of Minnesota minerals leases require the Lessee to submit to the Minnesota Department of Natural Resources (DNR) all information, including, but not limited to, reports, statements and exploration data.

Below are excerpts from paragraph 16 of a metallic minerals lease.

*16. Additional monthly and annual reports to be furnished by lessee; exploration; mine samples required. Except as otherwise permitted by the commissioner, in addition to other reports or statements required in this lease, the lessee shall furnish the following:*

1. *Copies of all exploration data, including, but not limited to, all logs and drill hole records; all maps and coordinates showing drill holes, geophysical grids, geochemical and geologic sampling, trenching, and survey data; all mineral analyses and assays; all chemical and analytical data and information; all laboratory test data; all geophysical, geochemical, and geologic records; all results of mine and metallurgical testings; and all periodic mine maps, analyses maps, cross-sections, and development plans.*
2. *At least a quarter-portion of all exploration samples, and when requested by the commissioner in writing, a quarter-portion of mine or mill samples.*

This and similar provisions in the state minerals leases are authorized by Minnesota Statutes 93.20, 93.25, and Minnesota Rules 6125.0700.

The section below entitled “Submitting Information” describes how to furnish this information. Information applicable to a lease becomes public the day after the lease is terminated by DNR.

If you have any questions about this document, please contact Glenn Melchert with the Lands and Minerals Division of the DNR:

## Glenn Melchert

Exploration Compliance Administrator | Lands and Minerals Minnesota Department of Natural Resources

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**Submitting Information**

All information pertaining to a state minerals lease and not previously submitted to DNR is due upon termination of the lease but no later than 180 days after termination of the lease. Information shall be digital where feasible. Digital information may be sent via email to the DNR contact listed above, shared through an FTP site (or similar service), or delivered in a digital storage device (USB thumb drive is preferred) to the address above. Consult with Glenn Melchert before sending non-digital information. Include a comment about the information that was previously submitted to DNR or it may be resubmitted as a complete package.

The two lists below are strongly encouraged but not mandatory. These lists make it more efficient to manage the data and verify that all the data is submitted.

* A list of terminated lease numbers applicable to your data submission.
* A list of the file names in your submission.

Please provide descriptive, narrative or graphical information as a PDF. To the best of your abilities, submitted PDF documents should meet universally accessible guidelines (the State of Minnesota currently requires all public documents to follow [WCAG 2.0](https://www.w3.org/TR/WCAG20/)). Please provide all other data in a CSV file or any other file format that can be opened with Microsoft Excel, Microsoft Word, or ArcGIS. Inclusion of existing CAD, database, or other technical data in other file formats are encouraged provided the data elements are also provided in a CSV format.

**Examples of information that must be submitted, with indicated file formats, are listed below.** The lease states that all information is required, so this list is not comprehensive.

* A key to abbreviations, codes, and units of measurement present in the information submitted.
* The coordinate system for all the data sets that pertain to a geographical location. The DNR uses the UTM NAD 83 Zone 15 UTM coordinate system.

# Reports

* Monthly, quarterly, and yearly exploration reports generated for internal use by your company.
  + Submit reports as PDFs
* Summary and interpretation reports of geophysical, geochemical, and geological survey(s); metallurgical testing and minerals processing; and other analytical and engineering products
  + Submit reports as PDFs
* NI 43-101 reports (or similar) and press releases submitted to SEDAR (or similar government entity)
  + Submit reports and press releases as PDFs

# Geophysics

* An overview map of where airborne geophysical survey data was collected.
  + Submit your map as a PDF
  + You may also submit this data in the form of an ESRI Layer Package or Shapefile.
* Results of the airborne geophysical survey(s).
  + Submit raw/compiled data geophysical data in a CSV file.
  + Submit an image of the interpreted results in a PDF file (you may also submit this data in the form of an ESRI Layer Package or Shapefile).
* A grid map of where ground geophysical survey data was collected.
  + Submit your map as a PDF.
  + You may also submit this data in the form of an ESRI Layer Package or Shapefile.
* Results of the ground geophysical survey(s).
  + Submit raw/compiled data geophysical data in a CSV file.
  + Submit an image of the interpreted results in a PDF file (you may also submit this data in the form of an ESRI Layer Package or Shapefile).

# Geochemistry

* A map of sampling points from geochemical survey(s)
  + Submit your map as a PDF.
  + You may also submit this data in the form of an ESRI Layer Package or Shapefile.
* Results of the geochemical survey(s).
  + Submit raw data exactly as it was submitted to your company from your analytical laboratory.
  + Submit an image of the interpreted results in a PDF file (You may also submit this data in the form of an ESRI Layer Package or Shapefile).

# General Geology and Mineralogy

* Geological maps and outcrop maps made or modified in the process of your exploring your lease area(s)
  + Submit your map as a PDF.
  + You may also submit this data in the form of an ESRI Layer Package or Shapefile.
* A map of hand sample locations.
  + Submit your map as a PDF.
  + You may also submit this data in the form of an ESRI Layer Package or Shapefile.
* Field notes and photographs collected in the course of exploring your lease area(s).
  + Photographs must be captioned with the geographic location of where the image was acquired and which field note(s) they pertain to.
  + Submit your notes and photographs as a PDF.
* Any other descriptions and photographs of soils, plants, tills, rocks, and minerals collected in the course of exploring your lease area(s).
  + Photographs must be captioned with the geographic location of where sample was acquired and what the sample is.
  + Submit your notes and photographs as a PDF.

# Borings

* A short project statement that includes the reason for boring these holes, *i.e.*, were the holes bored for exploration (with targeted commodity), scientific, or engineering purposes.
* An overview map of the borehole locations.
  + Submit your map as a PDF
  + You may also submit this data in the form of an ESRI Layer Package or Shapefile.
* Collar information for each of the holes. Collar information includes X, Y, and Z coordinates; azimuth; and inclination of borehole. In addition, please include:
  + The coordinate system used to collect the data. You may also submit this data using the UTM NAD 83 Zone 15 UTM coordinate system.
  + When the collar coordinates were collected.
  + Who collected the collar coordinates.
  + Method and instrument precision for collected collar coordinates.
  + Submit collar information as a PDF **and** as a CSV.
* Down-the-Hole survey results, *e.g.*, borehole deviations, geophysical surveys, etc.
  + Submit borehole deviation data as a CSV.
  + Submit raw/compiled data geophysical data in a CSV, as well as an image of the results (such as a profile curve) in a PDF.
  + Submit other Down-the-Hole survey results as a PDF **and/or** as a CSV, as best suits both the display of the data and access to the original raw/compiled data.
* Geological logs that include the logger(s)’ name and date the log was created.
  + Submit geological logs as a PDF **and** as a CSV. Include the original logs as a PDF.
  + Optionally, you may also submit a PDF of the driller’s log.
* Sample intervals, if not included already as part of your geological log.
  + Submit sample interval information as a PDF **and** as a CSV.
* Assay and other geochemical results.
  + Submit original assay and other geochemical results, as well as QA/QC documentation, in the same form you received it from your laboratory.
  + Optionally, this data may also be included as part of your geological log.
* Results of any other measurements, tests, and analytical results related to the borehole, *e.g.*, magnetic susceptibility, sediment point counts, etc.
  + Submit measurements, tests, and analyses conducted by a laboratory or consulting firm in the same form you received it from the laboratory or consulting firm.
  + Submit all other measurements, tests, and analyses as a PDF **and/or** as a CSV, as best suits both the display of the data and access to the original raw/compiled data.
* A key to abbreviations and codes present in your data.
  + Submit the key as a PDF.

# Metallurgy, Minerals Processing, and Engineering Considerations

* Submit reports and visual interpretations as PDF
* Submit raw/compiled data as CSV

# Cross Sections, Block Models, and Deposit Economic Feasibility Considerations

* Submit three-dimensional models as a 3D PDF.
* Submit a summary of economic feasibility calculations, parameters, and interpretive results as a PDF.
* Submit raw/compiled as a CSV

# Samples from Borings and other Exploration Work

A minimum ¼ portion of core, cuttings and other samples from exploration must be submitted to the Hibbing Drill Core Library. DNR has discretion to decline deliveries of certain samples, such as samples other than rock core, and does so on occasion. Contact Glenn Melchert before making preparations for delivery of samples other than rock core. Make arrangements for deliveries of core and other samples with Nicholas Niemi:

## Nicholas Niemi

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