



Online databases at the British Columbia Geological Survey



Ministry of
Energy, Mines and
Low Carbon Innovation

Information Circular 2024-04



Data: from the field to your computer

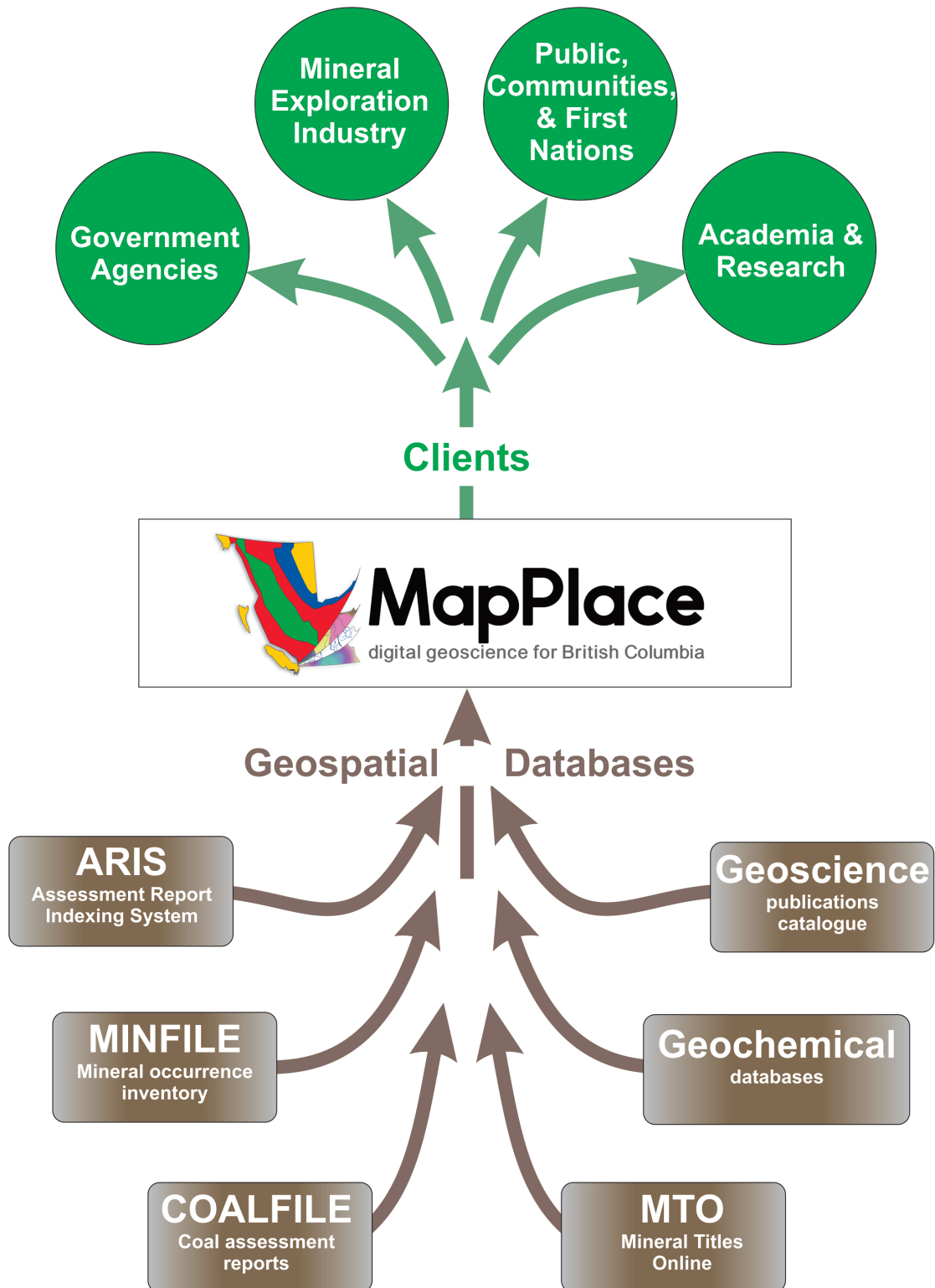
Founded in 1895, the British Columbia Geological Survey integrates historical data with active research programs and, drawing on continuously advancing geoscience concepts and technologies, creates new knowledge.

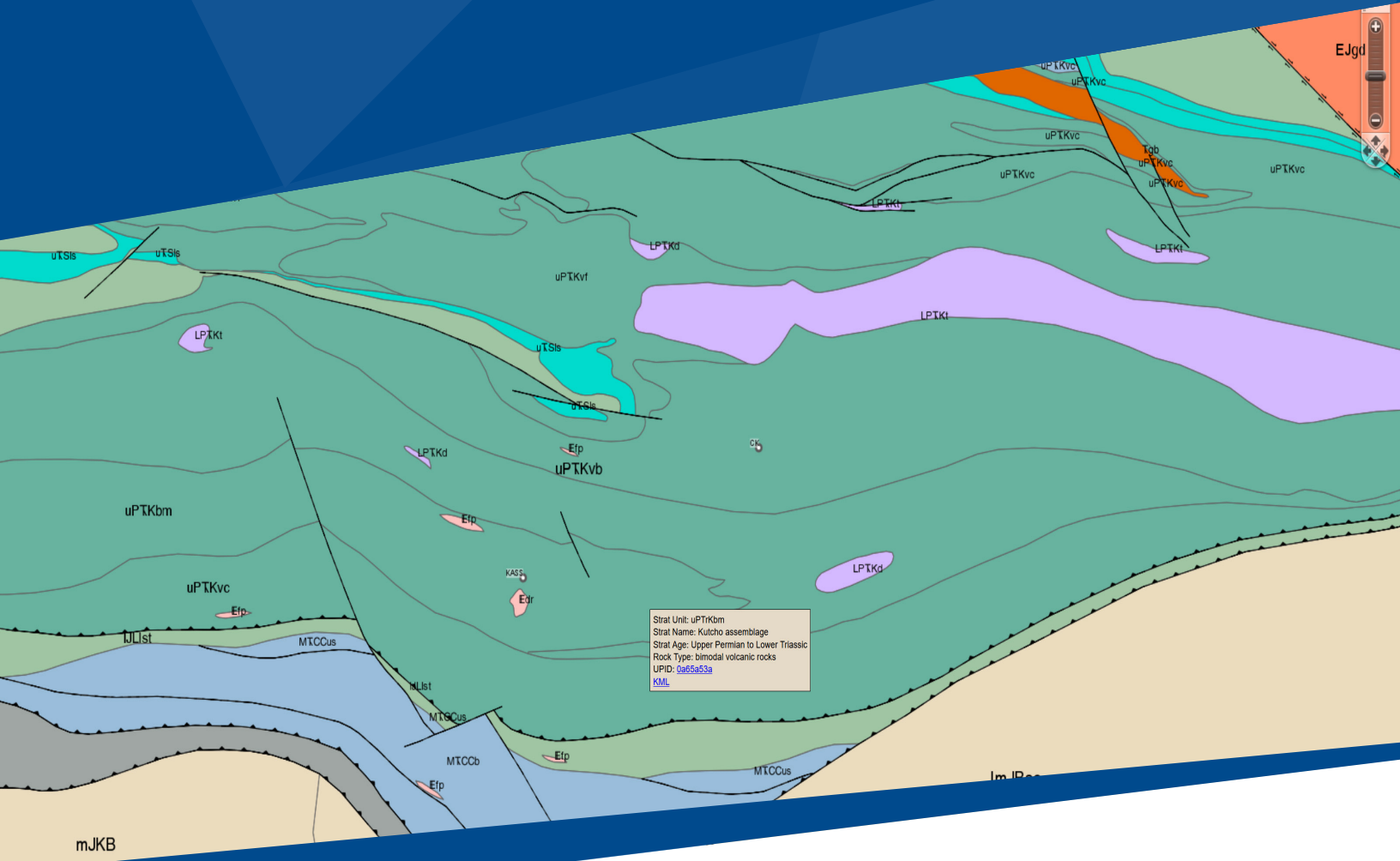
Since its inception, the Survey has provided information to help government, the mineral exploration industry, public safety agencies, environmental scientists, communities, First Nations, research organizations, and the general public make decisions related to the Earth sciences.

The Survey is modernizing information systems to improve the operation of databases, applications, and geospatial web services. The modernization entails improving digital capabilities by completing a geoscience Spatial Data Infrastructure (SDI).

Visit the [Digital Geoscience Data](#) download page for current versions of regularly updated datasets.

MapPlace 2 allows anyone with an Internet connection to mine multiple geoscience databases that are updated regularly. With a simple interface, MapPlace 2 is easy to use, fast, handles large datasets, and provides access to third-party base maps.





MapPlace 2

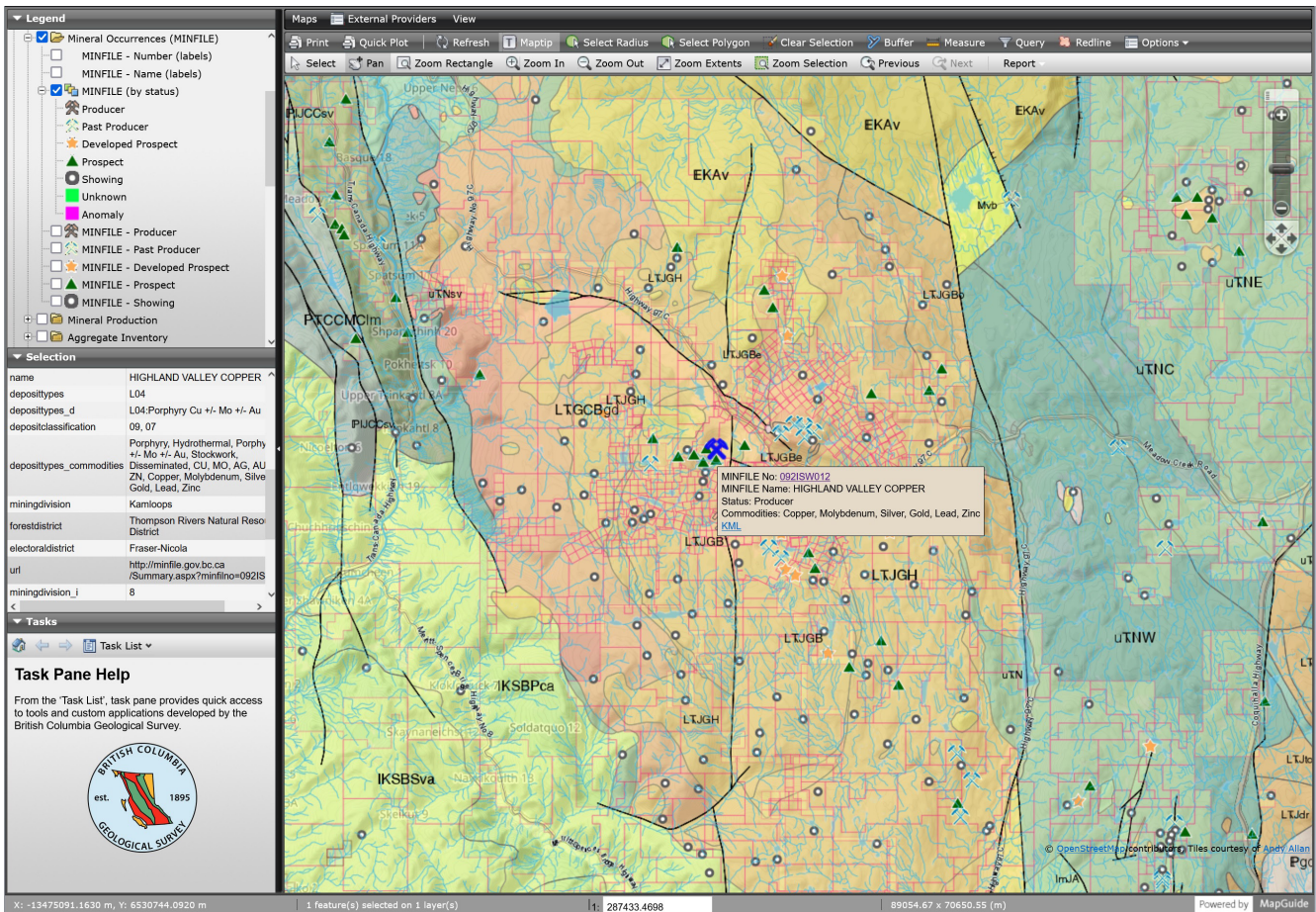
Since 1995, MapPlace, our database-driven geospatial web service, has provided public geoscience data and custom map-making tools to help decision makers from diverse disciplines reduce the costs of accessing and analyzing information about the British Columbia land base.

MapPlace 2 goes beyond simply displaying information. Databases are updated regularly and talk to each other, enabling users to conduct queries and generate custom results by connecting to current data from many sources.

Contact: Steven Zhao, steven.zhao@gov.bc.ca

Through MapPlace 2, Survey databases talk to each other.

Geological maps, ARIS, MINFILE, COALFILE, Property File, geochemical surveys, mineral titles, topographic maps, and the British Columbia Geological Survey publication catalogue can be queried simultaneously, and the output projected onto base imagery of choice.



The MapPlace Map Window is bounded by several components. At the top is the Toolbar, which contains tools to navigate the map, zoom, create buffers, add points, lines, and polygons, query data, and select features. At the bottom is an Information Bar, showing scale, cursor location, and selection. On the left are three panes: Legend with selectable layers, Selection displaying data, and Tasks to access custom applications.



British Columbia bedrock geology

The British Columbia Geological Survey maintains and delivers province-wide digital coverage of bedrock geology. In contrast to traditional compilations, the digital coverage is neither static nor at a single scale.

Digital data can be accessed, queried, downloaded in shapefile format, or as a GeoPackage, and used to create customized products.

As Survey geologists carry out new field mapping, their new data are integrated.

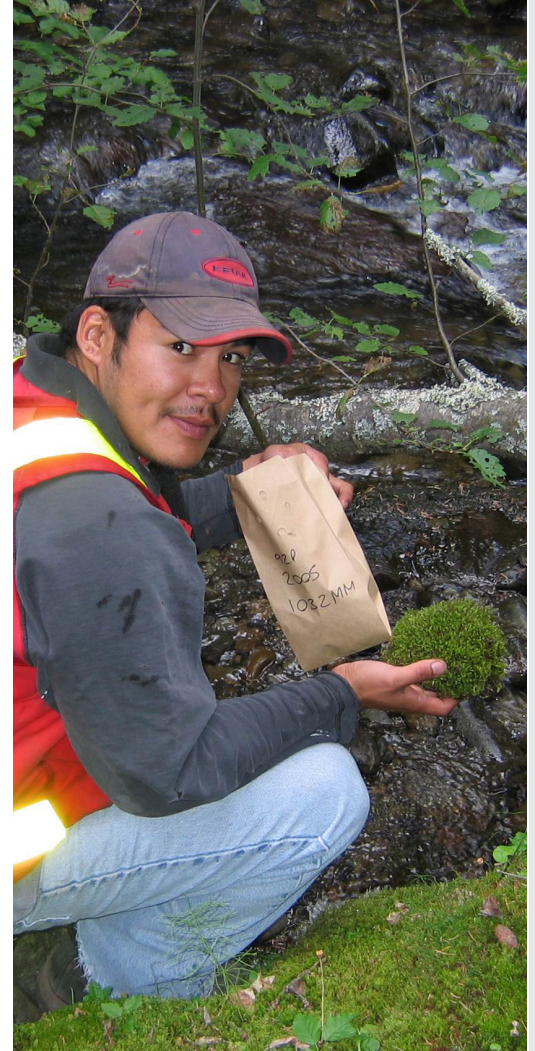
Contact: George Nyi, george.nyi@gov.bc.ca

Geochemical databases

The British Columbia Geological Survey maintains geochemical databases that contain multi-element analyses from rock, till, moss mat, stream- and lake-sediment, water, and coal ash samples. These databases include about 5 million determinations from more than 86,000 samples.

Regularly updated, the databases are integrated with, and can be accessed through, MapPlace 2.

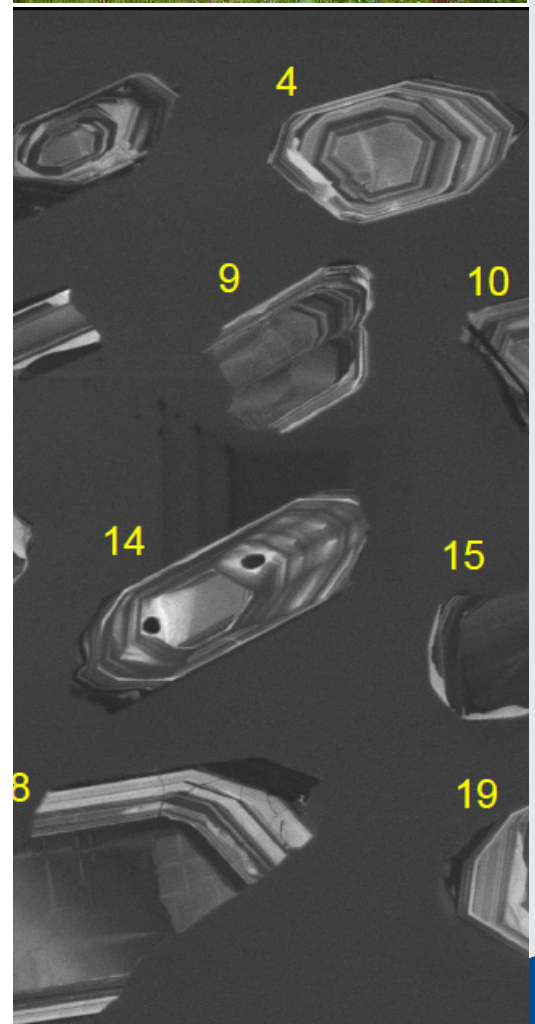
Contact: Alexei Rukhlov, alexei.rukhlov@gov.bc.ca



Geochronologic database

The British Columbia Geological Survey has a geochronologic database containing almost 8,300 age determinations published between 1960 and 2020.

Contact: Tian Han, tian.han@gov.bc.ca





MINFILE

MINFILE is an inventory documenting more than 16,100 metallic mineral, industrial mineral, and coal occurrences in British Columbia.

MINFILE can be queried by

- location
- identification number
- mineralogy
- commodity
- host rock
- deposit type
- geological setting
- age
- production
- references

Contact: Kerri Shaw, kerri.shaw@gov.bc.ca



COALFILE

COALFILE is a collection of assessment reports, maps, and data from boreholes, trenching, and sampling of coal occurrences. These data are available for download and viewing through MapPlace 2.

- 1048 reports
- 5470 maps
- 16,400 boreholes
- 3660 trenches
- 560 bulk samples
- 480 coal ash analyses

Contact: Kerri Shaw, kerri.shaw@gov.bc.ca



Assessment Report Indexing System (ARIS)

ARIS is the database of 40,200 assessment reports submitted to the Ministry. These reports summarize results from exploration programs. After a one-year confidentiality period, the reports become an open resource for mineral exploration, investment, research, land use, and resource management.

ARIS archives previous exploration results so that explorationists can advance projects without duplicating previous work.

The Survey is extracting data from assessment reports to generate secondary products such as the the Assessment Report-Sourced Surface Sediment Geochemical Database ([ARSSG](#)).

Contact: Ryan Grundy, ryan.grundy@gov.bc.ca, Don Harrison, donald.harrison@gov.bc.ca

Digital data submission

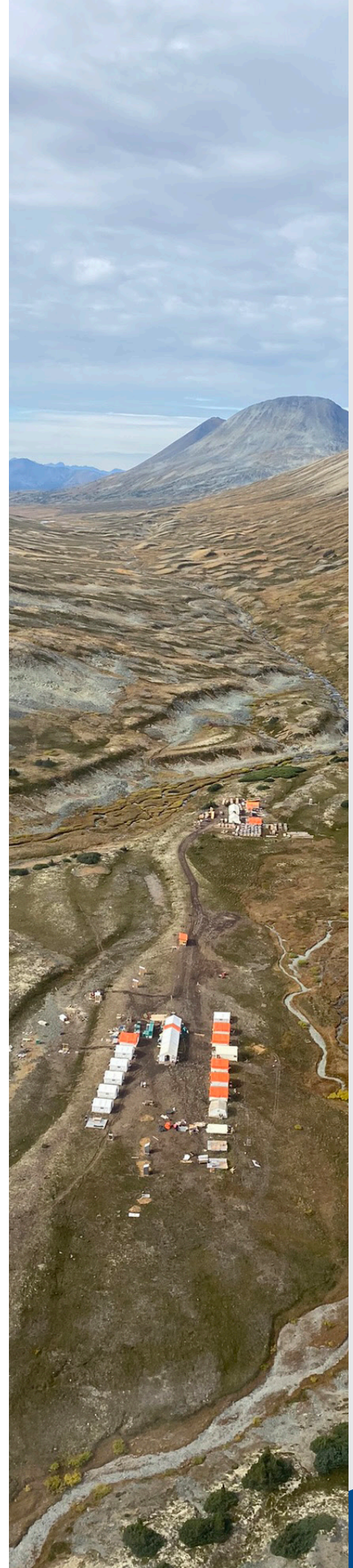
Access to raw data is critical for successful exploration. Traditionally however, data in assessment reports have been embedded in paper or non-digital electronic files, such as .PDF, making them difficult to extract and use. To resolve this problem, the British Columbia Geological Survey has embarked on a program to encourage digital data submission.

Explorationists will benefit because digital data can be easily retrieved, integrated, processed, recalculated, and recast for specific needs. Digital submission will also enable the Survey to better maintain province-wide databases and create derivative products that use past results to guide future exploration.

Example digital data types and file formats

Airborne geophysics	Magnetic, electromagnetic, versatile time domain, radiometric.	.dat .grd .gi .map .gdb .kml .kmz .xyz .jpg .pdf .png .dxf .msh .sus .ers .bdx .bin
Ground geophysics	Induced polarization, magnetic, very low frequency electromagnetic.	.txt .gdb .csv .arw .srf .xyz .tif .tfw .vtx .pvs .con .res .chg .pre .out .inp .inv .egh .ehf .gdd .gi .png .xml .shapefiles
Geochemistry	Assay certificates, geochemical compilations, metallurgical results.	.xls .xlsx .csv .accdb
Drilling	Core logs, geotechnical and RQD logs, analytical results, collar locations, drill hole parameters, downhole surveys.	.xls .xlsx .accdb
Imagery	Orthophotos, lidar, digital elevation models, ASTER	.tif .tfw .jpg .ecw .dwg .dbf .pdf .shapefiles
Maps	Map units, contacts, structures, sample or drill locations; in GIS	.xls .xlsx MapInfo Files (.dat .id .map .tab .ind), shapefiles (.shp .shx .prj .sbn .sbx .dbf)
GIS	Map files, sample and drillhole locations and parameters	MapInfo files (.dat .id .map .tab .ind), shapefiles (.shp .shx .prj .sbn .sbx .dbf)

Data can be submitted by CD, DVD, or USB when a report is filed, e-mailed to aris.digital@gov.bc.ca, or uploaded through the ARIS data submission page at ardata.bcgeologicalsurvey.ca





Property File

Property File is a collection of more than 98,600 reports, maps, photos, and technical notes donated to the British Columbia Geological Survey since the late 1880s by government, university, industry, and individuals.

Previously available only in hard copy, these documents now can be searched for, and downloaded from, the Property File database.

The British Columbia Geological Survey accepts donations to Property File.

Contact: Jessica Norris, jessica.norris@gov.bc.ca



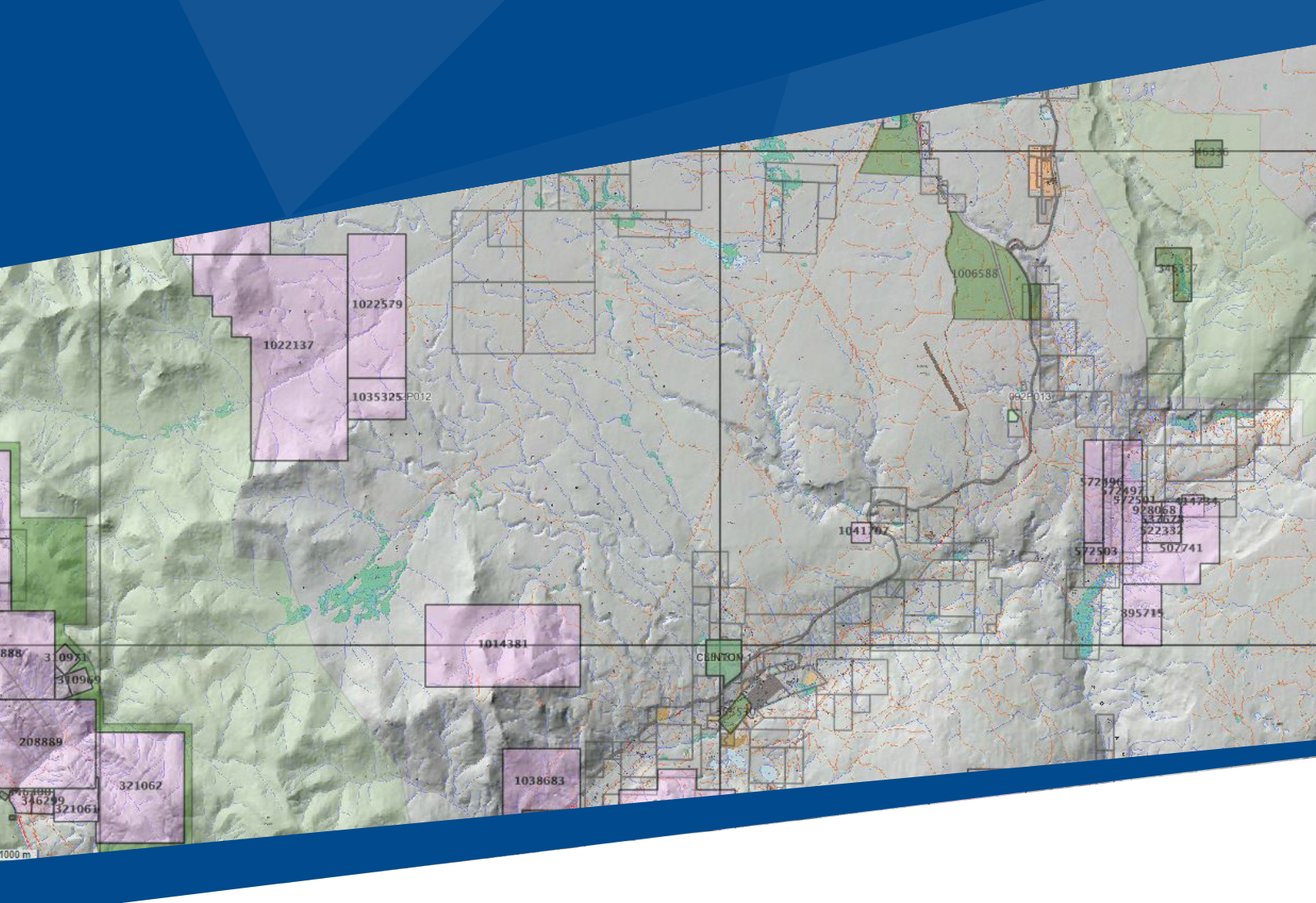
Geological Fieldwork 2023

A Summary of Field Activities and Current Research

Publications catalogue

Reports, maps, and databases produced by the British Columbia Geological Survey since 1895 can be searched for, and downloaded from, our publications catalogue at no cost. The Survey publishes geological Papers, Geoscience Maps, Open Files, GeoFiles, Information Circulars, and Digital Geoscience Data.

Geological Fieldwork, published each January, includes papers highlighting current field activities and research. The Provincial Overview of Exploration and Mining in British Columbia, also published each January, summarizes industry activities in the previous year.



Mineral Titles Online

Mineral Titles Online (MTO) is a GIS-based system that enables the exploration industry to electronically acquire and maintain mineral, placer, and coal rights.

Mineral titles data are managed at MTO and can be viewed and queried on MapPlace.





Contacts

Chief Geologist and Executive Director

Adrian Hickin

250-953-3801; Adrian.Hickin@gov.bc.ca

Director, Cordilleran Geoscience Section

Vacant

250-953-3801; Adrian.Hickin@gov.bc.ca

Director, Resource Information Section

Yao Cui

250-952-0440; Yao.Cui@gov.bc.ca

Director, Mineral Development Office

Gordon Clarke

604-660-2094; Gordon.Clarke@gov.bc.ca

email

Geological.Survey@gov.bc.ca

Mail

British Columbia Geological Survey

PO Box 9333 Stn Prov Gov't

Victoria BC, V8W 9N3

Main Office

6th floor

1810 Blanshard Street

Victoria BC, V8T 4J1

Mineral Development Office

300-865 Hornby Street

Vancouver BC, V6Z 2G3



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