Mineral Exploration Roundup 2010
MapPlace / MTO Workshop

Presented by

BRITISH COLUMBIA
Canada's Pacific Gateway

Ministry of Energy, Mines and Petroleum Resources

AMEBC
Association for Mineral Exploration British Columbia

Sponsored by

Pan American SILVER CORP.

Part 1: MapPlace Notes

Round Up 2010

Short Course

MapPlace and Mineral Titles Online

Agenda

8:30 - 8:35	Introduction of Presenters
	Kirk Hancock, P.Geo. – MapPlace Geoscientist, BCGS
	Sarah Meredith-Jones, G.I.T. – MINFILE Geologist, BCGS
	Pat Desjardins, P.Geo. – Geomatics Geoscientist, BCGS
	Karen Samuelson – MTO Data & Information, Manager
	Nampreet Kohli – MTO GIS Analyst
8:35 – 9:00	Review of MapPlace Layout and Functions [Kirk Hancock]
9:00 – 10:00	MapPlace: Selected map functions [Sarah Meredith-Jones]
	ARIS MapBuilder
	Buffers
	Mapper Wrapper
10:00 – 10:20	Coffee Break - catered
10:20 – 12:00	Selected MapPlace Functions [Pat Desjardins]
	MapPlace2Go
	Image Analysis Tool (IAT)
12:00 - 1:15	Lunch – self serve offsite
1:15 – 3:15	MTO – Mineral Titles Online [Karen Samuelson & Nampreet Kohli]
	Mineral tenure acquisition
	Statement of Work
	Landowner Notification
3:15 – 3:35	Coffee – Catered
3:35 – 4:30	Integrated MapPlace Exercise [Kirk Hancock]
	Exploration Assistant
	MINFILE
	ARIS
	Property File
	and a host of supporting datasets

These Short Course notes have been prepared exclusively for Round Up 2010
and are Copyright of the Province of British Columbia, January 17, 2010.

Introduction

MapPlace is an Internet-based GIS system providing access to an extensive array of information related to British Columbia geology, mineral exploration and energy resources since 1995. The site has been used for purposes from simple map viewing to field entry of map data. MapPlace provides clients with efficiencies in research time, data costs and analysis. Data themes and applications available on MapPlace include mineral potential, bedrock and surficial geology, publications, mineral and petroleum tenure, MINFILE, assessment reports, geochemistry and geophysical surveys.

MapPlace provides a variety of tools to perform sophisticated spatial searches, excellent hardcopy production, and limited GIS functions. Over 7500 users visited the site 4 times or more in 2006. All geospatial data is available for free download in Shape or MS Access formats. View the MapPlace website at http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/Pages/default.aspx OR http://www.mapplace.ca/ *(Tip: Either URL will get you to the MapPlace website however, some maps will not load properly unless you use the first full address above from the start and bookmark for future reference).*

Architecture of the MapPlace Website

MapPlace utilizes a broad range of spatial data in vector and attribute form, including bedrock geology, geochemical surveys, mineral occurrences, exploration assessment reports; and mineral, coal and petroleum tenure locations. Site navigation is based on the following map categories:

Main Maps

The Main Maps page links to a Table of Maps which lists numerous maps. The top four most popular maps are:

BCGS Map has all the available provincial datasets including 1:20K TRIM, visible at 1:50K.

Exploration Assistant map features eight analysis tools, including the Image Analysis Tool, to display information based on query selections.

Mineral Titles Map has additional title layers and a split screen to view reports.

MapperWrapper is an online application which allows users to build in existing MapPlace maps by adding new layers and map objects of their own to make custom maps.

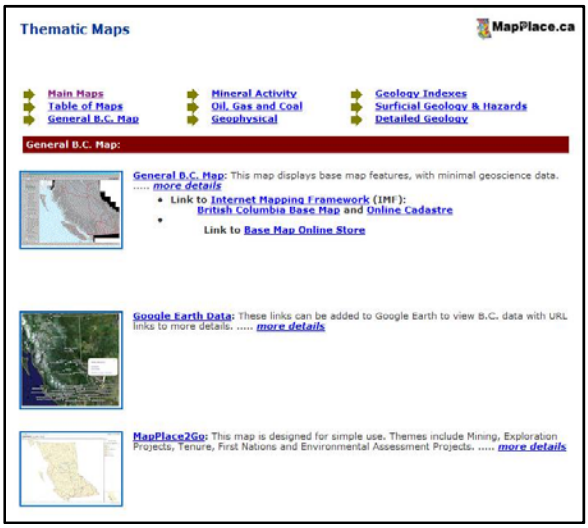
Mineral Titles Map provides a map designed to review mineral tenures of all kinds quickly and easily. Other basic layer information is included to provide context for the tenures.

Thematic Maps

There are over 30 maps in this category:

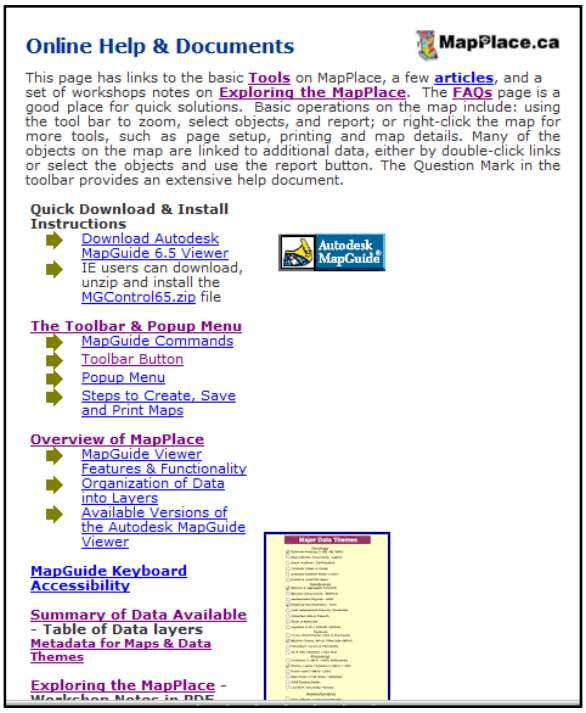
The following seven groups are highlighted here.

1. General BC Map is a base map with minimal geosciences data. Other maps under this section are Google Earth Data and MapPlace2Go which is a module of MapPlace designed for simple use and to quickly produce high-quality page size prints for reports and meetings.
2. Mineral Activity & Mineral Potential Maps include mineral economy, mineral potential and Historic Mines Atlas maps.
3. Oil, Gas & Coal Maps refers to petroleum tenure, offshore, and coal maps.
4. Geophysical Maps for numerous areas including the QUEST survey maps.
5. Geology Map Indexes for BCGS, GSC and surficial maps.
6. Surficial Geology & Hazard Maps include aggregate potential, hazards and terrain & soils maps.
7. Detailed Geology Maps for locations throughout BC.



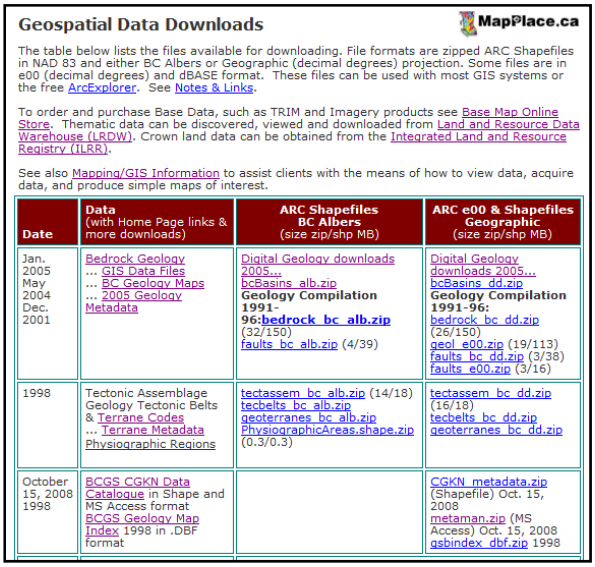
Online Help

Documents and tips to assist with site navigation, downloading, workshop notes, abstracts, articles, presentations, user guides, help functions and FAQs.



Geospatial Data Downloads

A table listing of files available for downloading in various formats plus links to related datasets available from other agencies. File formats are zipped ARC Shapefiles in NAD 83 and either BC Albers or Geographic (decimal degrees) projection. Some files are in e00 (decimal degrees) and dbase format. These files can be used with most GIS systems or the free ArcExplorer (http://www.esri.com/software/arcexplorer/). Data downloads include: Bedrock Geology, Tectonic Assemblage, Geology Tectonic Belts & Terranes, BCGS Geology Map Index, Mineral Potential polygons, Mineral Occurrences - MINFILE, Assessment Report Index - ARIS, Regional Geochemistry, Coal Report Index - COALFILE, and Aggregate Potential Data.



Geospatial Data Downloads MapPlace.ca

The table below lists the files available for downloading. File formats are zipped ARC Shapefiles in NAD 83 and either BC Albers or Geographic (decimal degrees) projection. Some files are in e00 (decimal degrees) and dBASE format. These files can be used with most GIS systems or the free ArcExplorer. See Notes & Links.

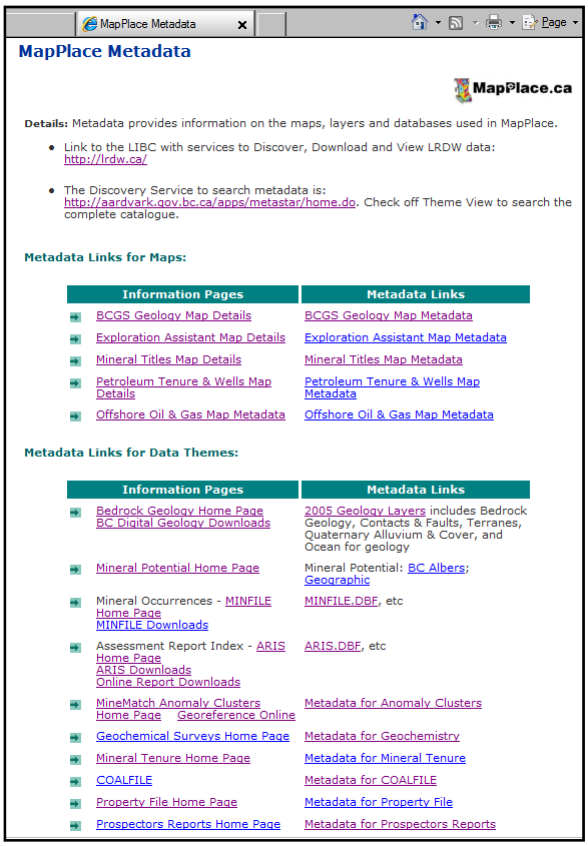
To order and purchase Base Data, such as TRIM and Imagery products see Base Map Online Store. Thematic data can be discovered, viewed and downloaded from Land and Resource Data Warehouse (LRDW). Crown land data can be obtained from the Integrated Land and Resource Registry (ILRR).

See also Mapping/GIS Information to assist clients with the means of how to view data, acquire data, and produce simple maps of interest.

Date	Data (with Home Page links & more downloads)	ARC Shapefiles BC Albers (size zip/shp MB)	ARC e00 & Shapefiles Geographic (size zip/shp MB)
Jan. 2005 May 2004 Dec. 2001	Bedrock Geology ... GIS Data Files ... BC Geology Maps ... 2005 Geology Metadata	Digital Geology downloads 2005... bcBasins_alb.zip **Geology Compilation 1991-96:bedrock_bc_alb.zip** (32/150) faults_bc_alb.zip (4/39)	Digital Geology downloads 2005... bcBasins_dd.zip **Geology Compilation 1991-96:** bedrock_bc_dd.zip (26/150) geol_e00.zip (19/113) faults_bc_dd.zip (3/38) faults_e00.zip (3/16)
1998	Tectonic Assemblage Geology Tectonic Belts & Terrane Codes ... Terrane Metadata Physiographic Regions	tectassem_bc_alb.zip (14/18) tecbelts_bc_alb.zip geoterranes_bc_alb.zip PhysiographicAreas.shape.zip (0.3/0.3)	tectassem_bc_dd.zip (16/18) tecbelts_bc_dd.zip geoterranes_bc_dd.zip
October 15, 2008 1998	BCGS CGKN Data Catalogue in Shape and MS Access format BCGS Geology Map Index 1998 in .DBF format		CGKN_metadata.zip (Shapefile) Oct. 15, 2008 metaman.zip (MS Access) Oct. 15, 2008 qsbindex_dbf.zip 1998

MapPlace Metadata

Metadata provides information on the maps, layers and databases used in MapPlace.



MapPlace Metadata

MapPlace Metadata

MapPlace.ca

Details: Metadata provides information on the maps, layers and databases used in MapPlace.

- Link to the LIBC with services to Discover, Download and View LRDW data: http://lrdw.ca/
- The Discovery Service to search metadata is: http://aardvark.gov.bc.ca/apps/metastar/home.do. Check off Theme View to search the complete catalogue.

Metadata Links for Maps:

Information Pages	Metadata Links
BCGS Geology Map Details	BCGS Geology Map Metadata
Exploration Assistant Map Details	Exploration Assistant Map Metadata
Mineral Titles Map Details	Mineral Titles Map Metadata
Petroleum Tenure & Wells Map Details	Petroleum Tenure & Wells Map Metadata
Offshore Oil & Gas Map Metadata	Offshore Oil & Gas Map Metadata

Metadata Links for Data Themes:

Information Pages	Metadata Links
Bedrock Geology Home Page BC Digital Geology Downloads	2005 Geology Layers includes Bedrock Geology, Contacts & Faults, Terranes, Quaternary Alluvium & Cover, and Ocean for geology
Mineral Potential Home Page	Mineral Potential: BC Albers; Geographic
Mineral Occurrences - MINFILE Home Page MINFILE Downloads	MINFILE.DBF, etc
Assessment Report Index - ARIS Home Page ARIS Downloads Online Report Downloads	ARIS.DBF, etc
MineMatch Anomaly Clusters Home Page Georeference Online	Metadata for Anomaly Clusters
Geochemical Surveys Home Page	Metadata for Geochemistry
Mineral Tenure Home Page	Metadata for Mineral Tenure
COALFILE	Metadata for COALFILE
Property File Home Page	Metadata for Property File
Prospectors Reports Home Page	Metadata for Prospectors Reports

Environment

Over time the MapPlace site has expanded both in content and functionality. The quality and quantity of data has continually increased. The MapPlace is part of the Ministry of Energy, Mines & Petroleum Resources website. Clients should note that the MapPlace data, supporting database tables and downloads may be stored on a separate server from the MapPlace interface to accommodate the complexity of the specialized map products, to increase the ease of use, speed of delivery and digital storage capabilities. For example:

Clicking on an object links to a separate Internet site such as MINFILE, ARIS or Mineral Titles allowing further search and retrieval capabilities. Other options include buffering, selecting objects within polygons, and digitizing of polygons, points and lines on screen.

http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/MainMaps/Pages/geology.aspx is the URL address of sites that are coming from the Ministry of Energy, Mines & Petroleum Resources website.

http://webmap.em.gov.bc.ca/mapplace/minpot/bcgs.cfm OR http://webmap.em.gov.bc.ca/mapplace/minpot/ex_assist.cfm are the URL addresses of the sites that are coming from our Citrine server.

Basic Interface

The MapPlace uses Autodesk MapGuide Viewer 6.5 to provide free access to an extensive array of information related to British Columbia geology, mineral exploration and energy resources. Most major datasets that are of value in the promotion and investigation of BC's mineral wealth may be accessed through the site. Available data in the MapGuide Viewer is presented in the form of layers which are listed in the legend on the left hand margin. Each layer represents one entity, such as rivers, coal boreholes, or roads and performs a function similar to a transparency. As each layer group is selected, different layers become available and can be selected and deselected with the user's needs. Zooming in on a map area also produces more layer choices and the detail of the map increases.

The site provides a variety of tools to perform sophisticated spatial searches, excellent hardcopy production, and limited GIS functions.

These datasets can be combined with other base data, including administrative boundaries, topographic features and raster images, such as LandSat images and aeromagnetics. User-defined map views can then be printed or pasted into common graphics packages.

Layout

Any map that you open on the MapPlace site will have the same standard layout. The MapGuide Viewer uses either toolbar buttons or the popup menu to carry out various commands.

The toolbar buttons are situated across the top left side of the Viewer window. They allow the user to COPY the current map view to the clipboard; SELECT features; PAN or slide the map around to display areas that are outside of the current view; ZOOM to an area that is user defined either with a center point or a rectangle; ZOOM OUT from the area defined by a center point; ZOOM PREVIOUS view that was displayed; ZOOM GOTO a specified location; UNZOOM to display the full extents of the map; VIEW REPORTS associated with the selected map objects; STOP or interrupt the updating of the map display; and HELP to link to the Autodesk MapGuide Viewer Help Website.

The popup menu is a menu that appears by clicking the right-hand button on the mouse (referred to as 'right clicking') anywhere in the map window. Right clicking displays the popup menu, and a command can be selected by clicking one of the items in the menu. Those commands that have a right arrow next to them (such as ZOOM) display a secondary popup menu when selected (Figure). This menu provides additional features to the toolbar buttons, such as the PAGE SETUP dialogue box; PRINT; RELOAD; ZOOM WIDTH; ZOOM SCALE; ZOOM SELECTED; BOOKMARKS; SELECT criteria such as OBJECTS, RADIUS, POLYGON, and WITHIN specified map objects; VIEW DISTANCE between

two points; VIEW BUFFER to create buffers around selected areas; and ABOUT which links you to Autodesk MapGuide Viewer Help website and allows you to change PROPERTIES such as viewing scale and map coordinates.

A bottom bar which displays details about the map such as coordinates and width and height of the area covered in the screen window.

A legend in the left hand margin which lists the layers available for overlay on your selected map.

Tool Table Summary:

When the buttons are selected they stick; you can use the ESC key to get back to the Select button.

2.Toolbar Buttons
Click on the Command for more details. When the buttons are selected they stick; you can use the ESC key to get back to the Select button.

Button	Command	Description
	Copy	Copy the current map view to the clipboard.
	Select	Select a feature in the map
	Pan	Move the map around to display areas that are outside of the current view
	Zoom	Zoom in by a magnification factor of two on the point that you click, or zoom in to the rectangular area you draw with the mouse (click, drag and release the left mouse button).
	Zoom Out	Zoom out by a magnification factor of two from the point you click to display a larger area of the map.
	Zoom Previous	Return to the previous zoom magnification and location.
	Zoom GoTo	Zoom to a specified location. Select a Category, fill in the Location and Zoom to width.
	UnZoom	Zoom out to display the entire map
	View Reports	Generate reports associated with the selected map objects.
	Stop	Stop or interrupt the map display from updating and dynamic map layers from downloading.
	Help Contents	Opens the online Help to get information about viewing maps. If you do not have the Help installed on your computer, it will be opened from the Autodesk MapGuide Web site
Collapse Layers Expand Layers		These are custom buttons to Collapse or Expand all layers. You can also double click the layer or group label to expand and collapse individual layers or groups.
MapPlace Home BCGS Home		These buttons will leave the Map and return to either the MapPlace or the Geological Survey Branch home page.

Pop Up Menu Summary:

The following table describes the commands that might appear in the map window PopUp Menu when you right-click in the map window.

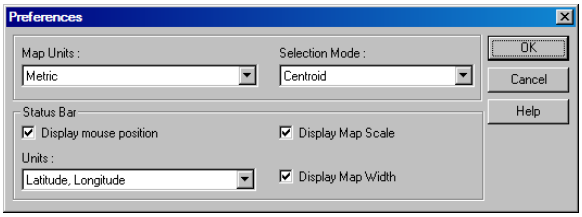
3. PopUp Menu Summary
The following table describes the commands that might appear in the map window PopUp Menu when you right-click in the map window.

Command	Sub-Menu	Description
Pan		Move the map around to display areas that are outside of the current view
Reload		Reload the current map at the current zoom scale.
Print	Page Setup	Display the Page Setup dialog box, where you can specify settings for printing the map.
	Print	Print the map.
Copy	Copy	Copy the current map view to the clipboard.
	Copy as Bookmark or URL	Copy the current map location to the clipboard as a URL.
Zoom	Zoom	Zoom in by a magnification factor of two on the point that you click, or zoom in to the rectangular area you draw with the mouse
	Zoom Goto	Display the Zoom Goto dialog box, where you specify the location to zoom to. The types of locations you can specify in this dialog box vary depending on the way the map was authored. Use % as a wildcard.
	Zoom Width	Display the Zoom Width dialog box, where you specify the width, in current units, of the area that you want to display in the map window.
	Zoom Scale	Display the Zoom Scale dialog box, where you specify the scale at which you want to view the map.
	Zoom Selected	Zoom to display all of the selected objects.
	Zoom Previous	Zoom to the area that was last displayed.
	Zoom Out	Zoom out by a magnification factor of two from the point you click to display a larger area of the map
	UnZoom	Zoom out to display the entire map
Bookmarks	Add Bookmarks	Display the Add Bookmark dialog box, where you specify a bookmark name under which you want to save the current view.
	Delete Bookmarks	Display the Delete Bookmark dialog box, where you can choose a bookmark to delete.
	(Bookmark Name)	Adjust the map view to display the area that was saved under this bookmark name.
Select	Select Map Objects	Display the Select Map Objects dialog box, where you select from a list of the map objects that are within the current map view.
	Select Radius	Select the map features that fall within a circle with the radius you specify from a specific point
	Select Polygon	Select the map objects that fall within a polygon you draw.
	Select Within	Select the map objects that fall within the specified map objects.
	Select Clear	Clear the currently selected map objects. You can also press ESC to clear the selection.
View	View Buffer	Create buffers around the selected map objects to view the objects that fall within a certain distance from the selected objects .
	View Distance	Display the distance between two points, as well as the cumulative distance of all measurements made.

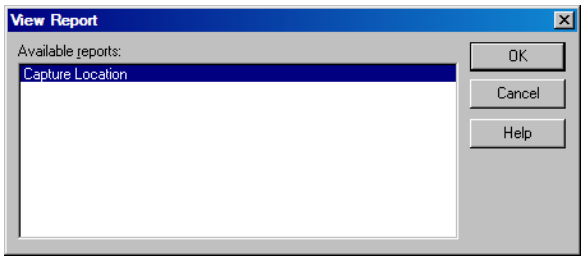
Capture Location Tool

The coordinate position is displayed on the lower left-hand corner of Autodesk MapGuide Viewer. The coordinates displayed will change as you move your mouse over the map. If the coordinate position is NOT visible, right-click on the map with your mouse to display the Popup Menu and choose ABOUT > PREFERENCES command, and from the Status Bar select Display mouse position

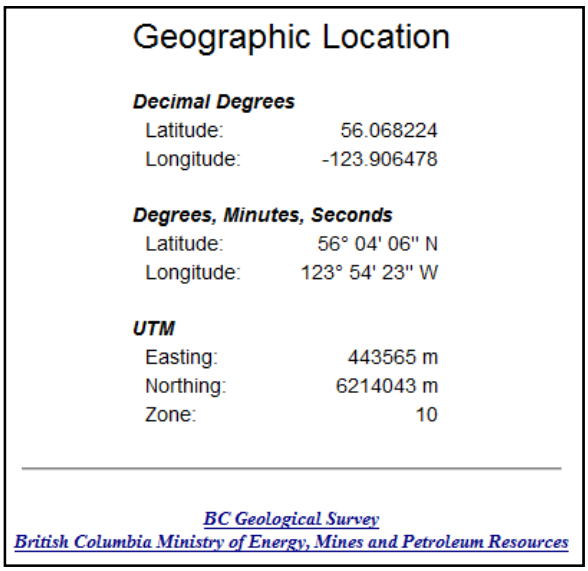
In PREFERENCES you can also choose the type of coordinate system, either Latitude, Longitude or Mapping Coordinate System. The latter is the UTM location provided you are using the UTM projected maps.



A report to display the Geographic Location of a point on the map is available: Open the map, click the Report icon. In the View Report dialog box, select the Capture Location report, and then pick a point that lies within the Map window.



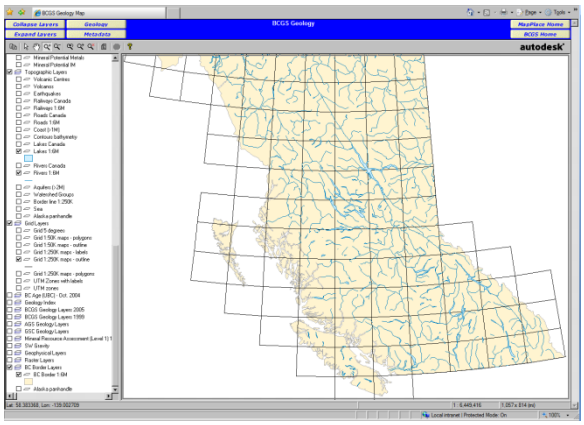
The report displays the latitude and longitude (in decimal and degrees, minutes, seconds) and UTM coordinates of the point you just selected.

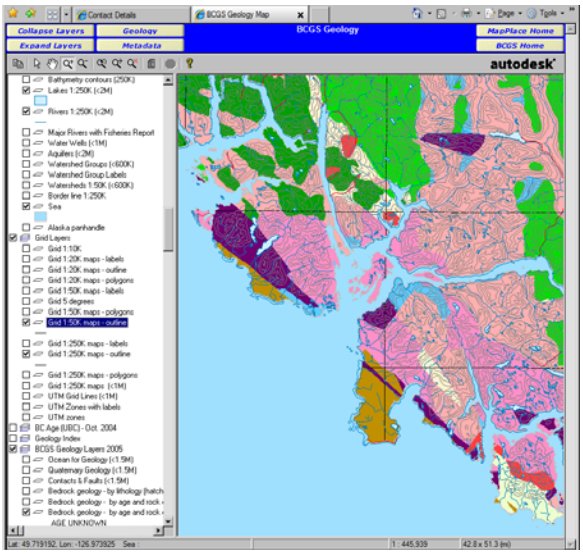


UTM vs. Lat/Long

As you ZOOM IN to an area more themes and layers become available or unavailable depending on the scale you are viewing the map. Watch the legend on the lower left-hand side to see which layers can be viewed at any given scale. Some maps have metadata, displaying all available layers and scales available.

See two different examples below.





What's New

MapPlace continues to improve with the addition of new data layers and improved interface tools. New data and updates on MapPlace in 2009 include:

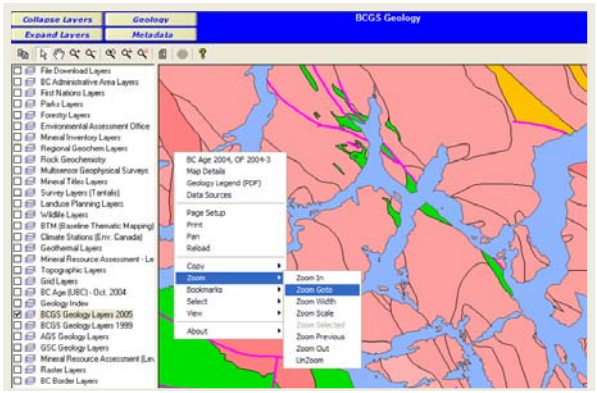
- re-analysis of 3479 archived stream and lake sediment samples that cover parts of NTS map sheets 093E, F, L, and M, Geoscience BC Report 2009-5;
- in-fill stream sediment and water geochemical data for 1007 samples from NTS map sheets 093F and K, Geoscience BC Report 2009-11;
- regional geochemistry catchment basins and RGS locations snapped to 1:20,000-scale rivers;
- mineral tenure archives for January 2007 and January 2008;
- physiographic subdivisions and volcanic centres;
- wildlife habitat areas, ungulate winter range, fish sensitive watersheds and guide outfitters;
- MapPlace2Go has been updated with current mines and exploration properties.

A Few Tips

Consult the Frequently Asked Questions (FAQs) on the MapPlace. You will probably find your question answered here.

Reduce Downloading Time

There are a couple of ways to decrease downloading time. Downloading time is decreased if you ZOOM IN on a map area before choosing appropriate layers. The same goes when you want to ZOOM OUT of a map area, except you deselect layers before you ZOOM OUT. The ZOOM GOTO can be used to quickly move to a location with the Gazetteer.



Selecting multiple layers can also reduce downloading time. Highlight individual layer titles while holding down the 'Ctrl' key or by using the 'Shift' key to highlight layer titles in sequence. Once you have highlighted all the layers you want, select any one of the adjacent highlighted layer boxes. The result will be the selection of all the layers at once. The same process can be used when deselecting more than one layer.

Layers are Displayed According to their Position

Layers are displayed on the map according to their position in the legend. Some layers especially polygon layers will hide information from other layers drawn below and consideration must be given when you create your maps.

Steps to Create a Map

1. From MapPlace open the appropriate map for your needs; for example use the BCGS Geology Map. This will cause the Viewer to open and display the available data.
2. Use the ZOOM IN feature; choose either the ZOOM IN toolbar button or right-click and choose the ZOOM IN command from the PopUp menu, to select a particular area of interest using the mouse on the map. Left click and hold, then drag and release to zoom.
3. Select or deselect the appropriate layers.
4. Use the PAN function, choose either the PAN toolbar button or right-click and choose the PAN command from the PopUp menu, to move the map around and get to the area you want to view, bookmark, copy, save or print.

Bookmarking Maps

Bookmarks are used to save and return to a view of a defined map area. Once you are satisfied with your map, right-click on the map and choose BOOKMARK\ADD BOOKMARK. A dialogue box will appear to type in an appropriate title for you map. To access this map in the future, choose BOOMARKS from the PopUp menu and your previously bookmarked map should be listed near the bottom of the PopUp menu and can be displayed by selecting it with your mouse.

New MTO link

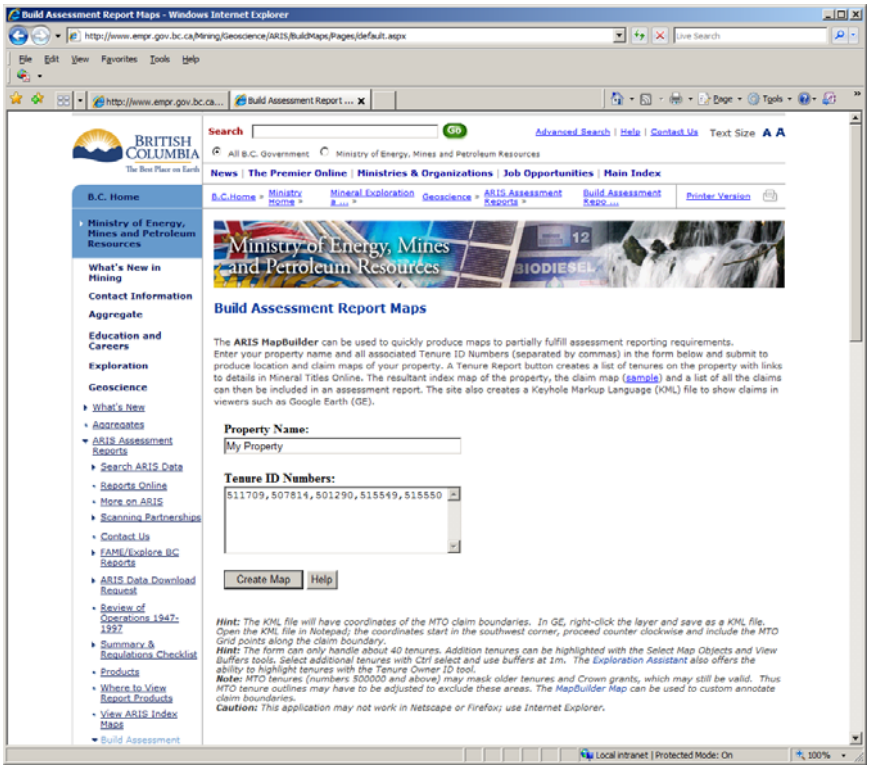
Please bookmark the new address to Mineral Titles Online

https://www.mtonline.gov.bc.ca/mtov/home.do

ARIS MapBuilder

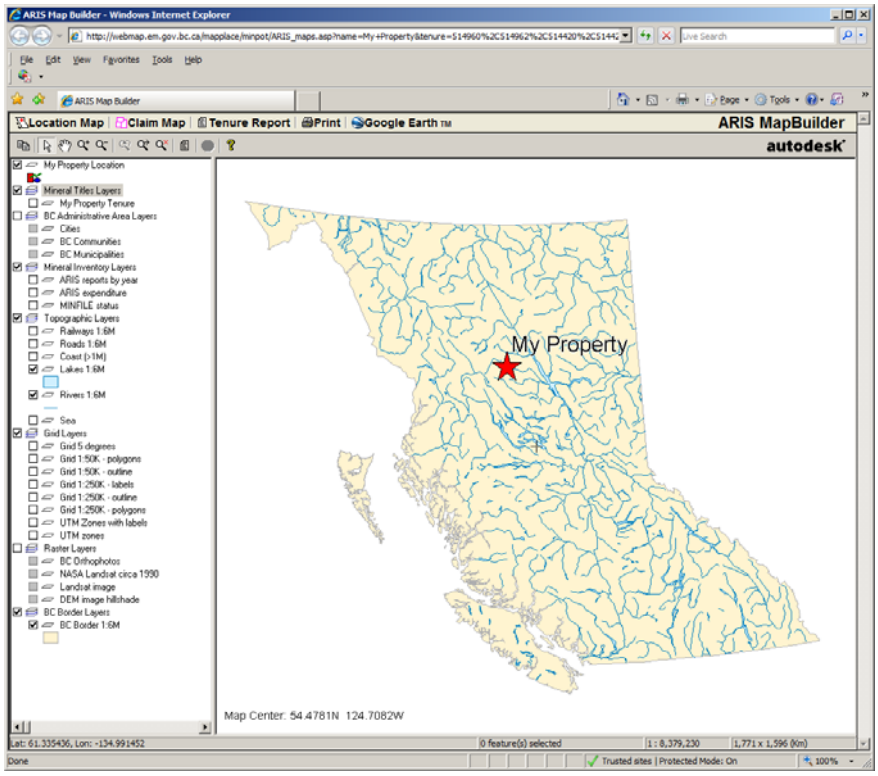
Exercise

The ARIS MapBuilder can be used to quickly produce maps to partially fulfill assessment reporting requirements.

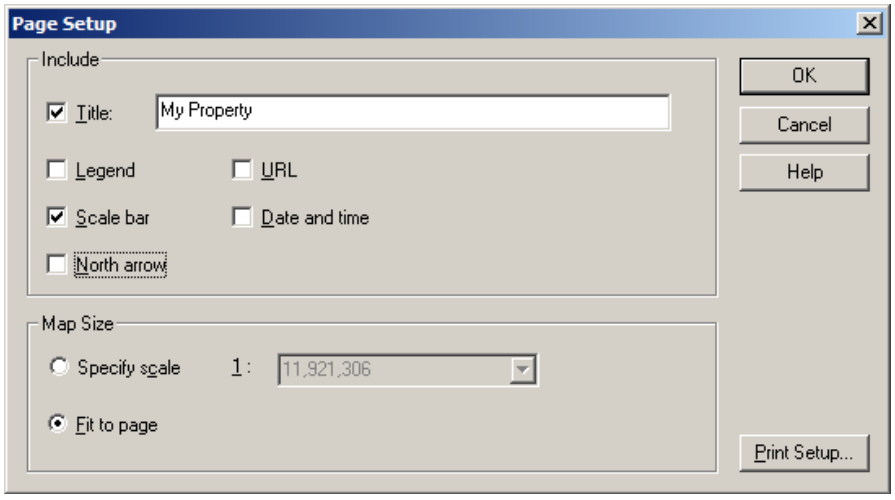


- Enter your property name and all associated Tenure ID Numbers (separated by commas) in the appropriate fields.
- Click “Create Map”

Your Property Location map should now display as shown below:



- Right click on the map and chose “Page Setup” from the menu. This is where you can specify the scale of the map and choose map components.

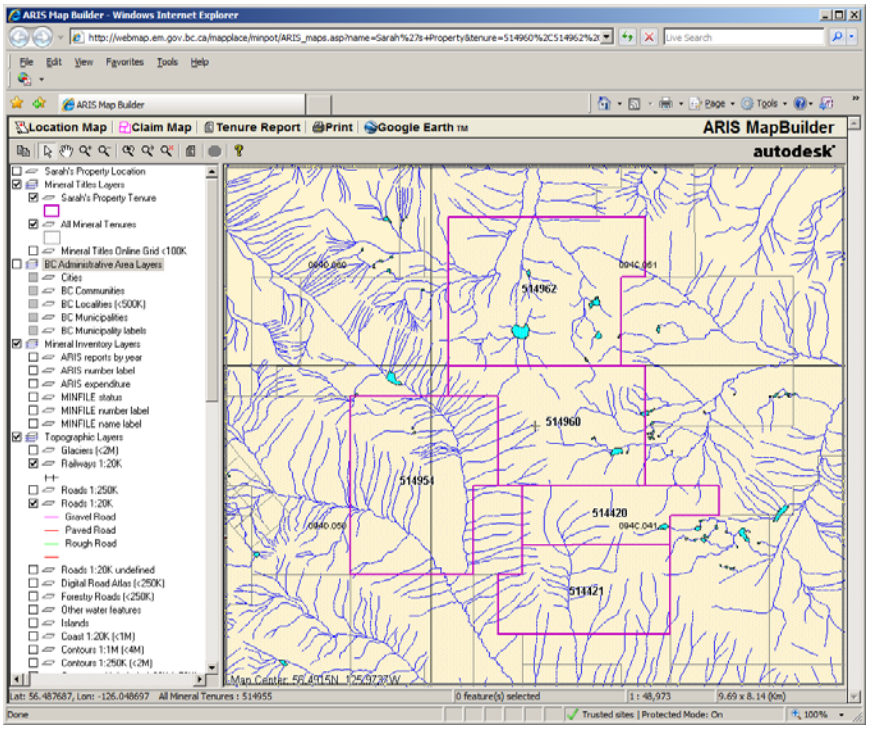


- Click OK when you are done.

- Click the “Print” button at the top of the window. A prompt will display, enter a title for your map and click OK.

Now a printer prompt will display, you can choose PDF if you have the capability, and produce a digital version of your map. The Ministry is encouraging clients to submit assessment reports digitally (PDF) to save printing and mailing costs, speed up approval times, as well as to save government costs on storage, scanning, and processing. There are many free PDF writers available to download on the internet.

- Display and print a map of your claim boundaries by clicking the “Claim Map” button at the top of the screen:



- Click “Tenure Report” to display a report of all tenures in your property. This report provides links to MTO.

MapPlace.ca

Mineral Titles Online Report

Click on Tenure Numbers for more information.

Click column headings to sort results.

Download to Excel

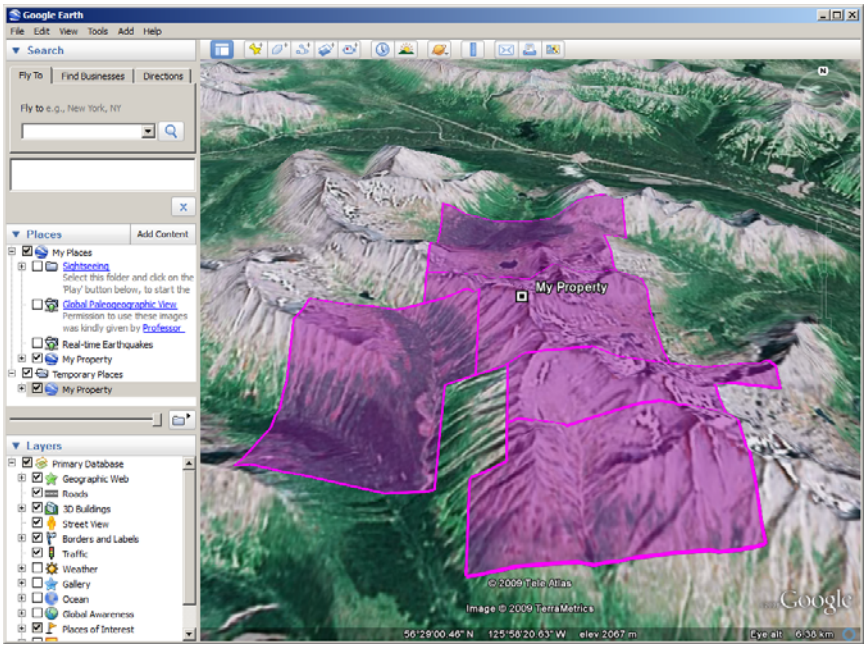
Tenure Number	Type	Claim Name	Good Until	Area (ha)
514420	Mineral		20191014	250.111
514421	Mineral		20190420	357.403
514954	Mineral		20190323	589.464
514960	Mineral		20190323	464.334
514962	Mineral		20190323	660.52

Total Area: 2321.832 ha

LIBC Metadata

Mineral Title Online
BC Geological Survey
British Columbia Ministry of Energy, Mines and Petroleum Resources
Last updated in April 2007

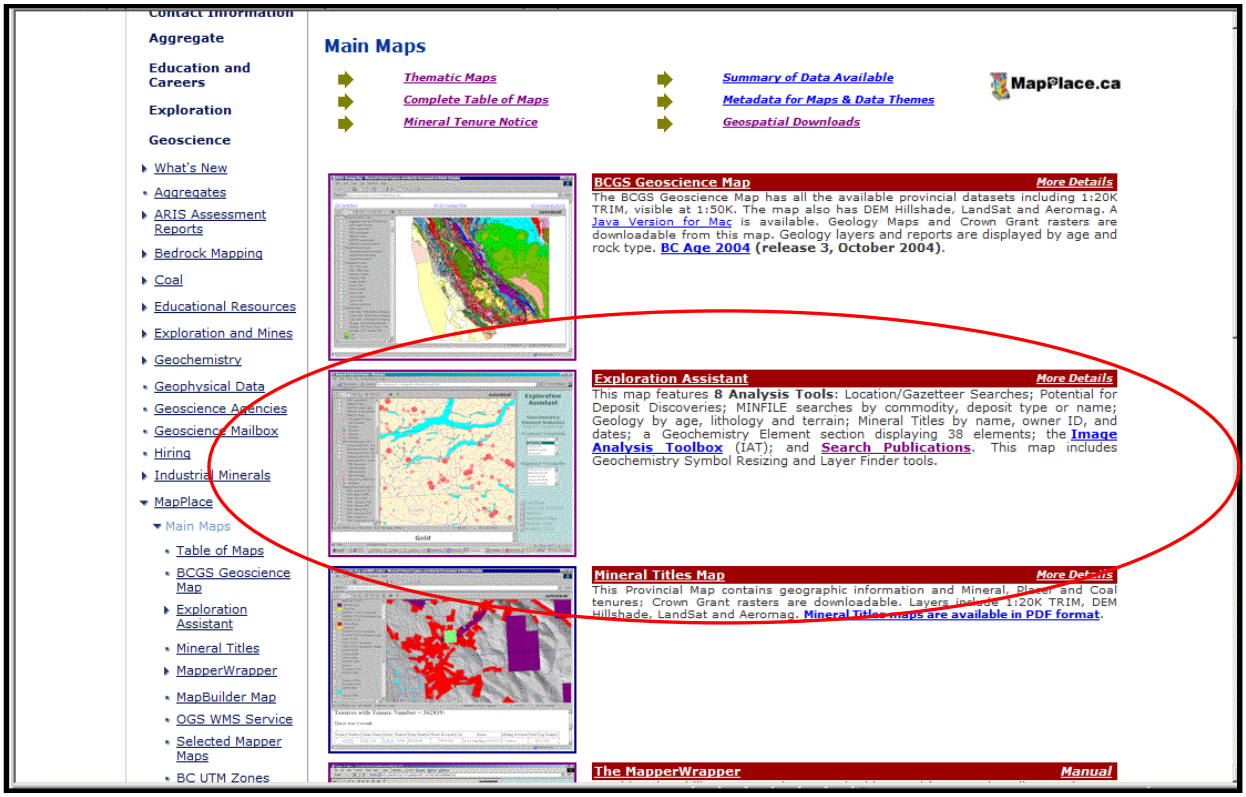
- Display your claim boundaries in Google Earth by clicking the Google Earth button. This will download a Google Earth KML file. *Note: you will need to have Google Earth installed on your computer to view the file.*



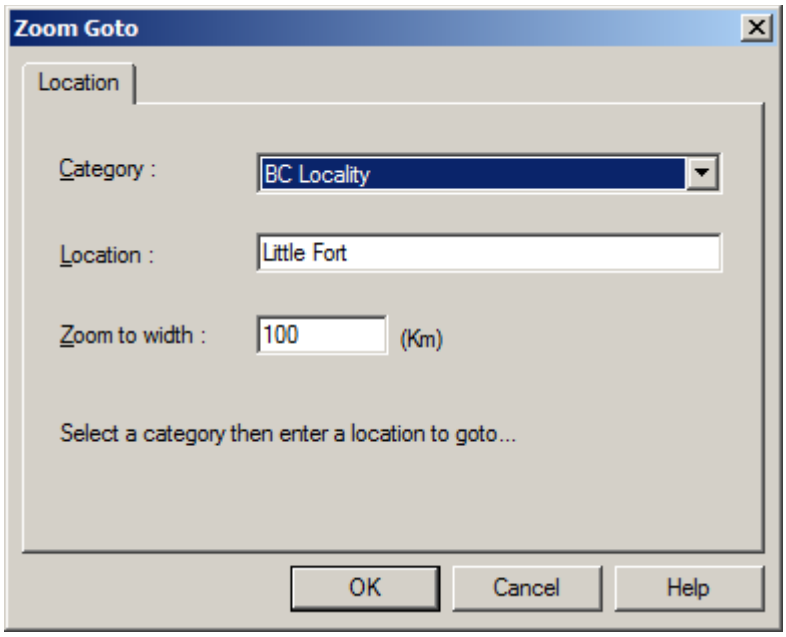
Buffer Tool

By creating a buffer around selected map features, you can view all features that fall within that buffer. This example uses the buffer tool to select an area of interest (Baldy Batholith near Little Fort) and apply some analysis tools to the area.

- Open Exploration Assistant from the Main Maps page



- Right click on the map and from the menu choose **Zoom → Zoom GoTo** to navigate to the Little Fort.
- Choose the Category “BC Locality”
- Type “Little Fort” in the Location box
- Type “100” in the Zoom to width
- Click **OK**

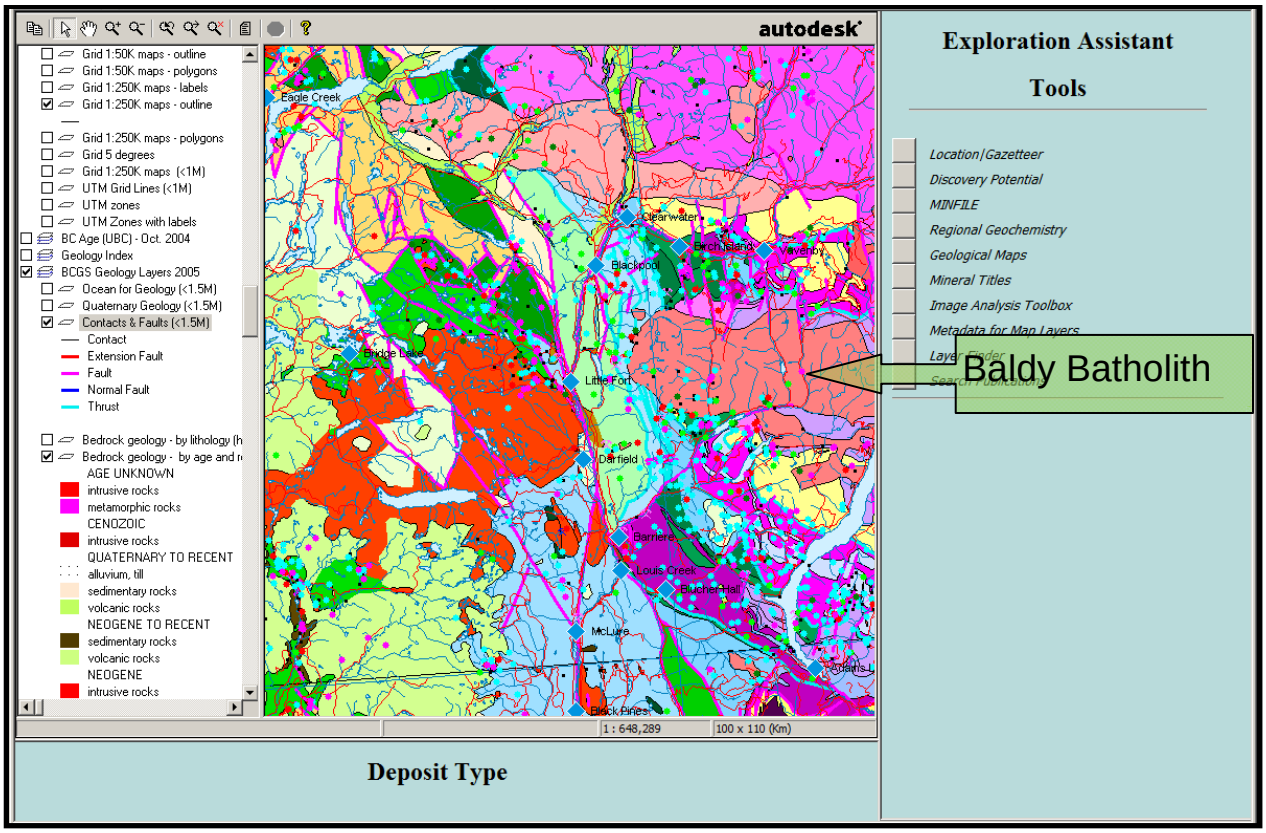


This will zoom into the Little Fort area with a window width of 100 kilometres.

- Turn on layers:

  BC Communities
  ARIS Reports by year
  MINFILE Status
  Roads 1:250K
  Rivers 1:250K
  Lakes 1:250K
  Contacts & Faults
  Bedrock geology – by age and rock class

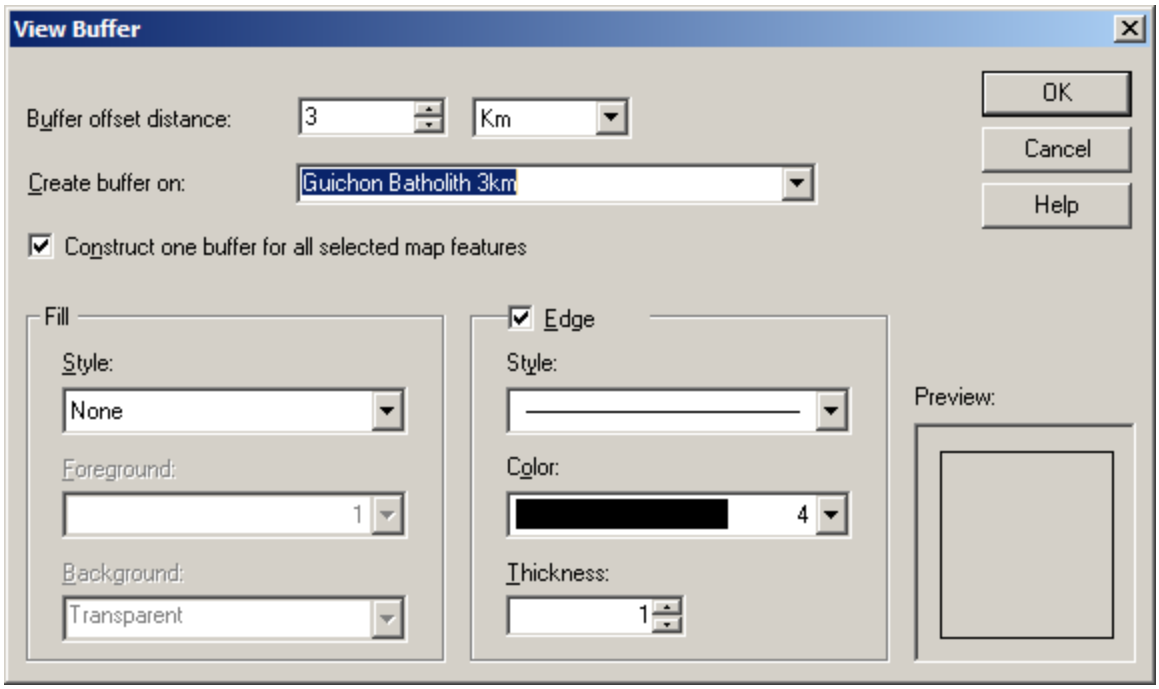
*Tip: Reduce downloading time by turning on the desired layers after **ZOOMING** into an area. The same idea applies when you **ZOOM OUT** of an area except turn off layers before you **ZOOM OUT**.*



- Using the pan tool bring the batholith into the centre of the map window.

Create a 3 kilometre buffer around the Baldy Batholith by first selecting it.

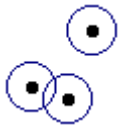
- Choose the select tool and click on the batholith
- Right click on the map and choose **View → Buffers**



- Change the Buffer offset distance to 1 to 3 kilometres and name your buffer layer in the Create buffer on field
- Make sure that 'Construct one buffer for all selected map features' is selected
- Click **OK**

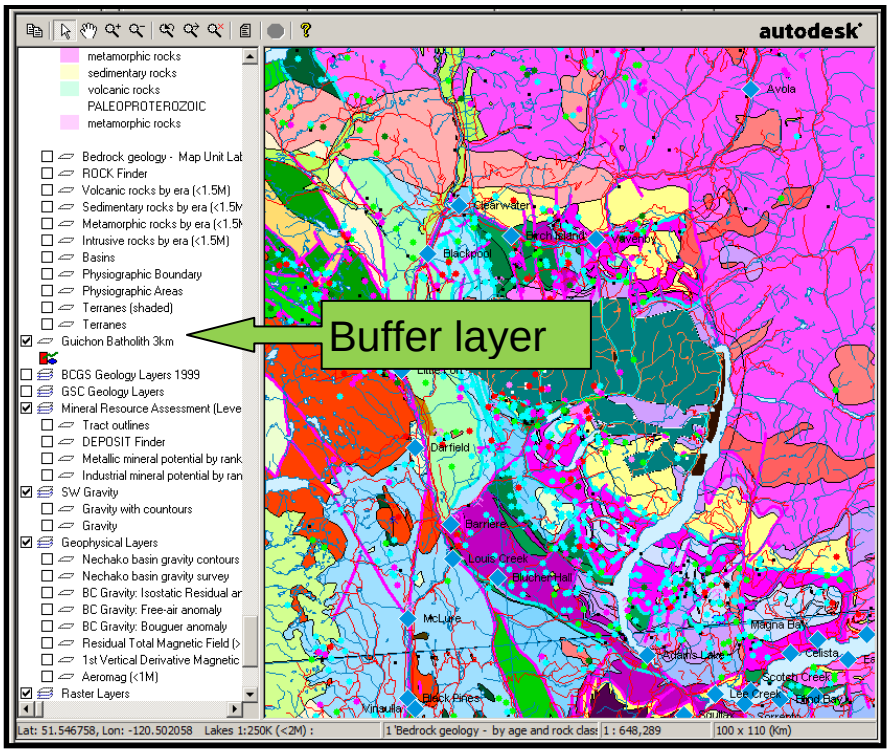
Selecting the 'Construct One Buffer For All Selected Map Features' check box treats all of the buffer areas as a single feature, instead of treating each buffer area as a separate feature.

This is particularly useful if any of your buffers overlap and you do not want the overlapping area counted twice. For example, if you want to determine the total area around your features, and two features are close enough that their buffers overlap, you would not want to count the overlapping area twice. Overlapping buffers will also appear differently on the screen. For example, if you did not select this check box, overlapping buffers might display like this:



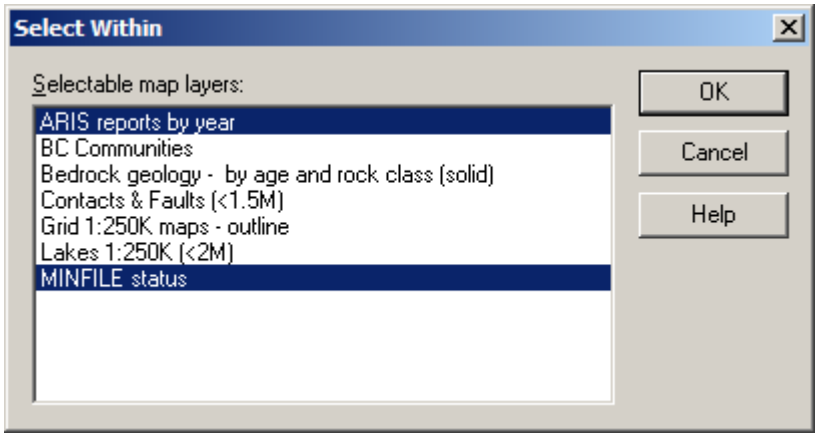
If you did select this check box, however, the same buffers would display like this:

Your buffer layer is now created and will display in the list of layers on the left hand side between the BCGS Geology Layers 2005 group and the GSC Geology Layers group



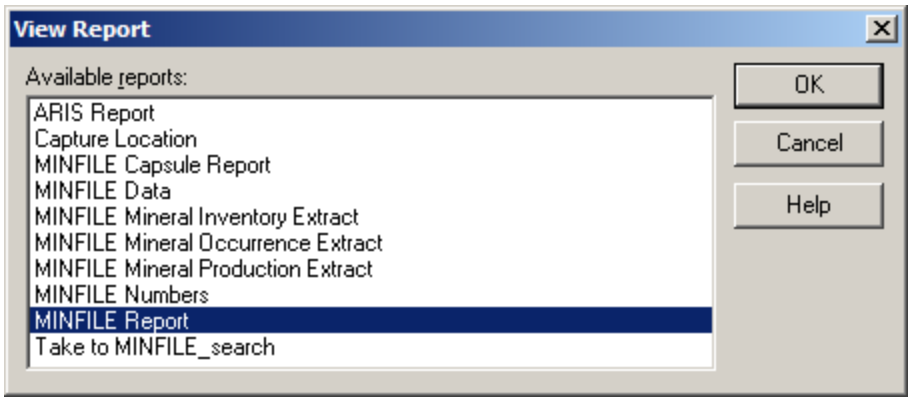
You can now use the buffer you created to select MINFILE and ARIS data.

- Select the buffer area by placing the cursor within the buffer and left click the mouse.
- Right click on the map and choose **Select → Select within existing Polygon** from the menu
- Choose '**ARIS reports by year**' and '**MINFILE status**' from the box
- Click **OK**

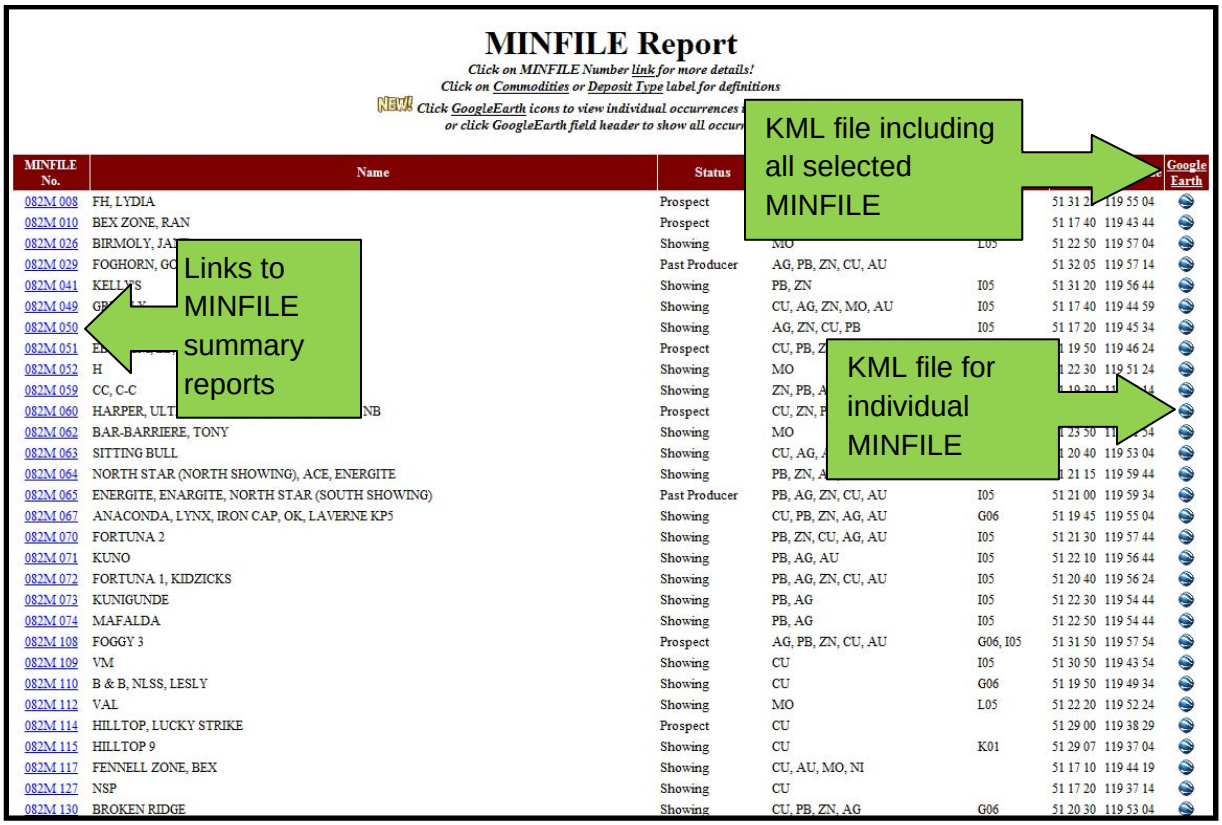


All the ARIS and MINFILE points within the buffer, which includes the batholith, are now selected.

- Click the report icon and choose **MINFILE Report**

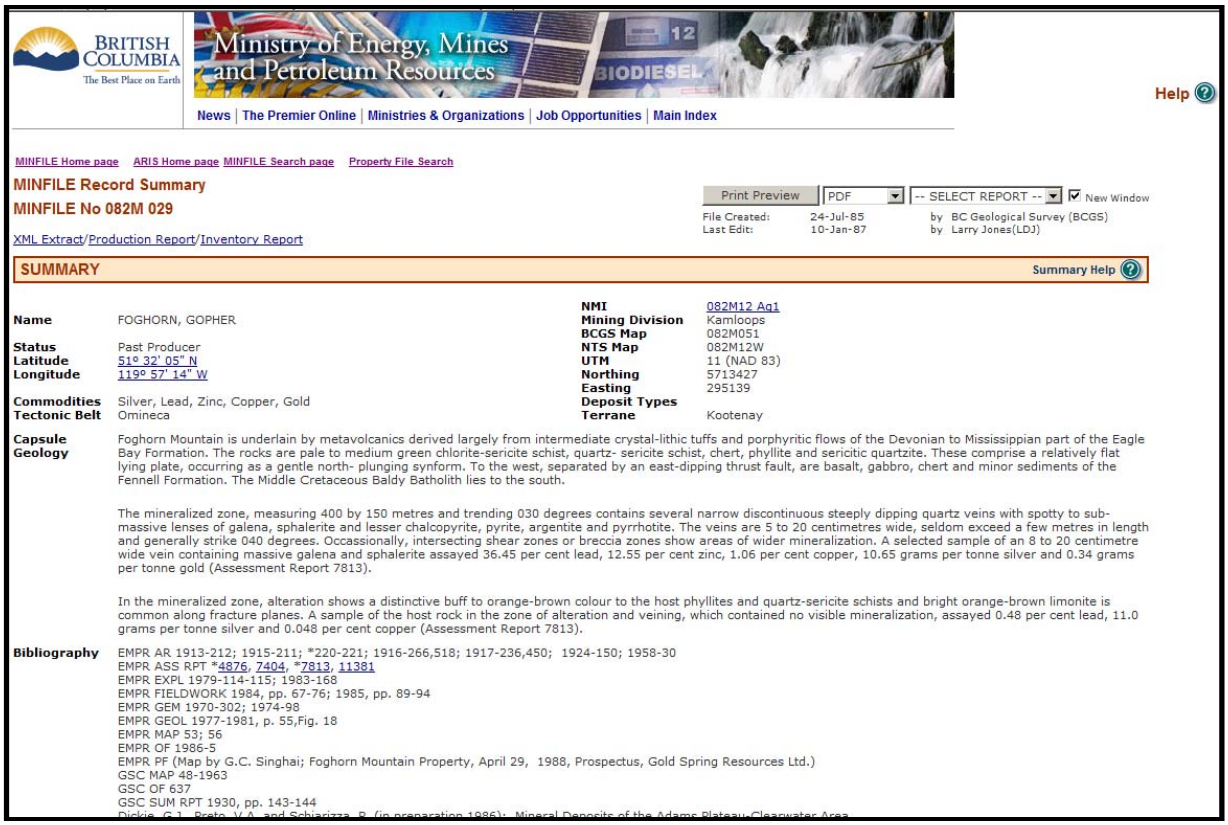


A new window will open and display a report of all the MINFILE occurrences with links to the MINFILE summary reports and links to KML files to display MINFILE occurrence(s) on Google Earth.



MINFILE No.	Name	Status				Google Earth
082M 008	FH, LYDIA	Prospect			51 31 2 119 55 04	
082M 010	BEX ZONE, RAN	Prospect			51 17 40 119 43 44	
082M 026	BIRMOLY, JA	Showing	MO	L05	51 22 50 119 57 04	
082M 029	FOGHORN, GC	Past Producer	AG, PB, ZN, CU, AU		51 32 05 119 57 14	
082M 041	KELLYS	Showing	PB, ZN	I05	51 31 20 119 56 44	
082M 049	GR Y	Showing	CU, AG, ZN, MO, AU	I05	51 17 40 119 44 59	
082M 050		Showing	AG, ZN, CU, PB	I05	51 17 20 119 45 34	
082M 051	EL	Prospect	CU, PB, Z		1 19 50 119 46 24	
082M 052	H	Showing	MO		1 22 30 119 51 24	
082M 059	CC, C-C	Showing	ZN, PB, A			
082M 060	HARPER, ULT NB	Prospect	CU, ZN, P			
082M 062	BAR-BARRIERE, TONY	Showing	MO		1 23 50 11 34	
082M 063	SITTING BULL	Showing	CU, AG, A		1 20 40 119 53 04	
082M 064	NORTH STAR (NORTH SHOWING), ACE, ENERGITE	Showing	PB, ZN, A		1 21 15 119 59 44	
082M 065	ENERGITE, ENARGITE, NORTH STAR (SOUTH SHOWING)	Past Producer	PB, AG, ZN, CU, AU	I05	51 21 00 119 59 34	
082M 067	ANACONDA, LYNX, IRON CAP, OK, LAVERNE KP5	Showing	CU, PB, ZN, AG, AU	G06	51 19 45 119 55 04	
082M 070	FORTUNA 2	Showing	PB, ZN, CU, AG, AU	I05	51 21 30 119 57 44	
082M 071	KUNO	Showing	PB, AG, AU	I05	51 22 10 119 56 44	
082M 072	FORTUNA 1, KIDZICKS	Showing	PB, AG, ZN, CU, AU	I05	51 20 40 119 56 24	
082M 073	KUNIGUNDE	Showing	PB, AG	I05	51 22 30 119 54 44	
082M 074	MAFALDA	Showing	PB, AG	I05	51 22 50 119 54 44	
082M 108	FOGGY 3	Prospect	AG, PB, ZN, CU, AU	G06, I05	51 31 50 119 57 54	
082M 109	VM	Showing	CU	I05	51 30 50 119 43 54	
082M 110	B & B, NLSS, LESLY	Showing	CU	G06	51 19 50 119 49 34	
082M 112	VAL	Showing	MO	L05	51 22 20 119 52 24	
082M 114	HILLTOP, LUCKY STRIKE	Prospect	CU		51 29 00 119 38 29	
082M 115	HILLTOP 9	Showing	CU	K01	51 29 07 119 37 04	
082M 117	FENNELL ZONE, BEX	Showing	CU, AU, MO, NI		51 17 10 119 44 19	
082M 127	NSP	Showing	CU		51 17 20 119 37 14	
082M 130	BROKEN RIDGE	Showing	CU, PB, ZN, AG	G06	51 20 30 119 53 04	

MINFILE Summary report:



BRITISH COLUMBIA
The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

News | The Premier Online | Ministries & Organizations | Job Opportunities | Main Index

Help

MINFILE Home page ARIS Home page MINFILE Search page Property File Search

MINFILE Record Summary

MINFILE No 082M 029

Print Preview | PDF | -- SELECT REPORT -- | New Window

File Created: 24-Jul-85 by BC Geological Survey (BCGS)
Last Edit: 10-Jan-87 by Larry Jones(LDJ)

XML Extract/Production Report/Inventory Report

SUMMARY Summary Help

Name	FOGHORN, GOPHER	**NMI**	082M12 Ag1
		Mining Division	Kamloops
		BCGS Map	082M051
Status	Past Producer	**NTS Map**	082M12W
Latitude	51° 32' 05" N	**UTM**	11 (NAD 83)
Longitude	119° 57' 14" W	**Northing**	5713427
		Easting	295139
Commodities	Silver, Lead, Zinc, Copper, Gold	**Deposit Types**	
Tectonic Belt	Omineca	**Terrane**	Kootenay

Capsule Geology

Foghorn Mountain is underlain by metavolcanics derived largely from intermediate crystal-lithic tuffs and porphyritic flows of the Devonian to Mississippian part of the Eagle Bay Formation. The rocks are pale to medium green chlorite-sericite schist, quartz- sericite schist, chert, phyllite and sericitic quartzite. These comprise a relatively flat lying plate, occurring as a gentle north- plunging synform. To the west, separated by an east-dipping thrust fault, are basalt, gabbro, chert and minor sediments of the Fennell Formation. The Middle Cretaceous Baldy Batholith lies to the south.

The mineralized zone, measuring 400 by 150 metres and trending 030 degrees contains several narrow discontinuous steeply dipping quartz veins with spotty to sub-massive lenses of galena, sphalerite and lesser chalcopyrite, pyrite, argentite and pyrrhotite. The veins are 5 to 20 centimetres wide, seldom exceed a few metres in length and generally strike 040 degrees. Occassionally, intersecting shear zones or breccia zones show areas of wider mineralization. A selected sample of an 8 to 20 centimetre wide vein containing massive galena and sphalerite assayed 36.45 per cent lead, 12.55 per cent zinc, 1.06 per cent copper, 10.65 grams per tonne silver and 0.34 grams per tonne gold (Assessment Report 7813).

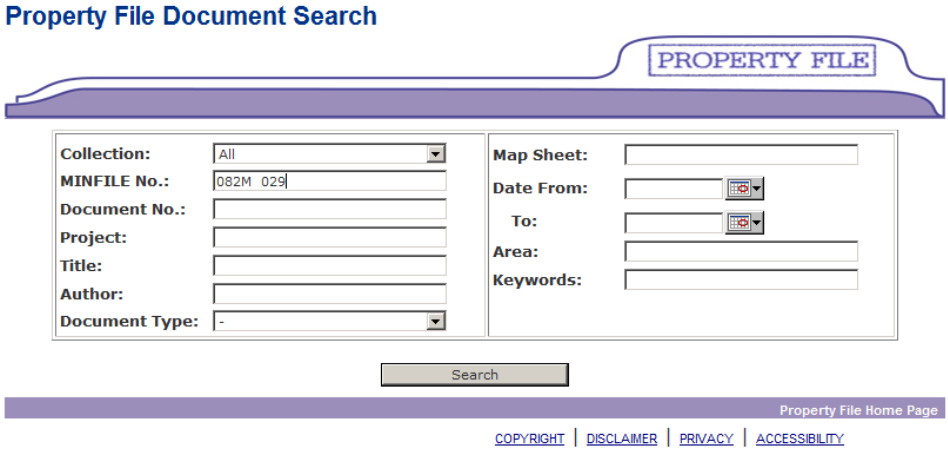
In the mineralized zone, alteration shows a distinctive buff to orange-brown colour to the host phyllites and quartz-sericite schists and bright orange-brown limonite is common along fracture planes. A sample of the host rock in the zone of alteration and veining, which contained no visible mineralization, assayed 0.48 per cent lead, 11.0 grams per tonne silver and 0.048 per cent copper (Assessment Report 7813).

Bibliography

EMPR AR 1913-212; 1915-211; *220-221; 1916-266,518; 1917-236,450; 1924-150; 1958-30
EMPR ASS RPT *4876, 7404, *7813, 11381
EMPR EXPL 1979-114-115; 1983-168
EMPR FIELDWORK 1984, pp. 67-76; 1985, pp. 89-94
EMPR GEM 1970-302; 1974-98
EMPR GEOL 1977-1981, p. 55,Fig. 18
EMPR MAP 53; 56
EMPR OF 1986-5
EMPR PF (Map by G.C. Singhai; Foghorn Mountain Property, April 29, 1988, Prospectus, Gold Spring Resources Ltd.)
GSC MAP 48-1963
GSC OF 637
GSC SUM RPT 1930, pp. 143-144
Dickie, G.J., Preto, V.A. and Schiarizza, P. (in preparation 1986): Mineral Deposits of the Adams Plateau-Clearwater Area

One component of the MINFILE report is the Bibliography. The majority of Ministry information is scanned and available online. Note the direct hyperlinks to Assessment Reports. Other data can be found in the by viewing the Publications Catalogue webpage. Publications are listed by type.

Most recently the BC Geological Survey has been scanning Property File documents and making them available online as PDFs. They are listed in the bibliography as **EMPR PF.** Property File is a large collection of generally unique documents and maps acquired by Ministry staff or supplied by donation from individuals and corporations over the last 110 years. A search application is available:



Property File Document Search

PROPERTY FILE

Collection:	All	**Map Sheet:**	
MINFILE No.:	082M 029	**Date From:**	
Document No.:		**To:**	
Project:		**Area:**	
Title:		**Keywords:**	
Author:			
Document Type:	-		

Search

Property File Home Page

COPYRIGHT | DISCLAIMER | PRIVACY | ACCESSIBILITY

Searching by MINFILE (082M 029) returns three documents related to this mineral occurrence. A metadata page is available and a link to the scanned PDF.

Property File Document Search Result

Total Records: 3

MINFILE No	Title	Collection	Document
082M 029	Gold Spring Resources Ltd. Prospectus Report	Library File	File 755KB
082M 029	Gold Spring Resources Ltd. Prospectus Report	Library File	File 670KB
082M 029	Preliminary Geology Showing Old Workings and Location of Samples - Map	Library File	File 1,333KB

1

Link to PDF

- Return to the map and click the report icon and select **ARIS Report**
- Click **OK**

The Assessment Report Expenditures includes links to the ARIS/www Detailed Summary Report. You can also download the data into an Excel file. This feature is also available on the MINFILE report along with many other reports.

MapPlace.ca

Assessment Report Expenditures

download in Excel format

Metadata

Download an Excel file containing the ARIS data

Click Linked Headings to Sort Table. Click on Assessment Report Number link for more detail.

Report Number	Year	Latitude	Longitude	Work Cost	1986 Dollars	1992 D	
00069	1951	51.33	-119.93	$2,567.50	$12,168.25	$15,560.61	$18,339.29
00070	1951	51.33	-119.93	$3,102.18	$14,702.27	$18,801.09	$22,158.43
00329	1960	51.44	-120.09	n/a	n/a	n/a	n/a
00807	1966	51.36	-119.74	$7,700.00	$28,947.37	$37,019.23	$43,750.00
01047	1966	51.48	-120.03	$1,200.00	$4,511.28	$5,769.23	$6,818.18
01062	1967	51.37	-119.86	$2,200.00	$7,913.67	$10,232.56	$12,087.91
01597	1968	51.53	-119.97	$500.00	$1,742.16	$2,232.14	$2,631.58
01624	1968	51.53	-119.97	$2,108.83	$7,347.84	$9,414.42	$11,099.11
01634				$3,083.20	$10,742.86	$13,764.29	$16,227.37
01669				$1,054.70	$3,674.91	$4,708.48	$5,551.05
01870				$400.00	$1,333.33	$1,709.40	$2,020.20
01924				$2,400.00	$8,362.37	$10,714.29	$12,631.58
01938				$2,186.63	$7,288.77	$9,344.57	$11,043.59
02230	1969	51.28	-119.75	$2,500.00	$8,333.33	$10,683.76	$12,626.26
02231	1968	51.29	-119.75	$1,400.00	$4,878.05	$6,250.00	$7,368.42
02232	1968	51.28	-119.75	$1,400.00	$4,878.05	$6,250.00	$7,368.42
02263	1969	51.37	-119.87	$3,000.00	$10,000.00	$12,820.51	$15,151.52
02369	1969	51.32	-119.8	$6,300.00	$21,000.00	$26,923.08	$31,818.18
02620	1970	51.29	-119.75	$6,600.00	$21,290.32	$27,272.73	$32,195.12
02627	1970	51.33	-119.82	$3,100.00	$10,000.00	$12,809.92	$15,121.95
02654	1970	51.26	-119.68	$19,500.00	$62,903.23	$80,578.51	$95,121.95
02679	1970	51.33	-119.82	$3,400.00	$10,967.74	$14,049.59	$16,585.37
02680	1970	51.32	-119.8	$12,700.00	$40,967.74	$52,479.34	$61,951.22
02989	1970	51.32	-119.8	$12,343.00	$39,816.13	$51,004.13	$60,209.76
03141	1971	51.48	-119.86	$4,000.00	$12,539.18	$16,064.26	$18,957.35

Links to the ARIS Report

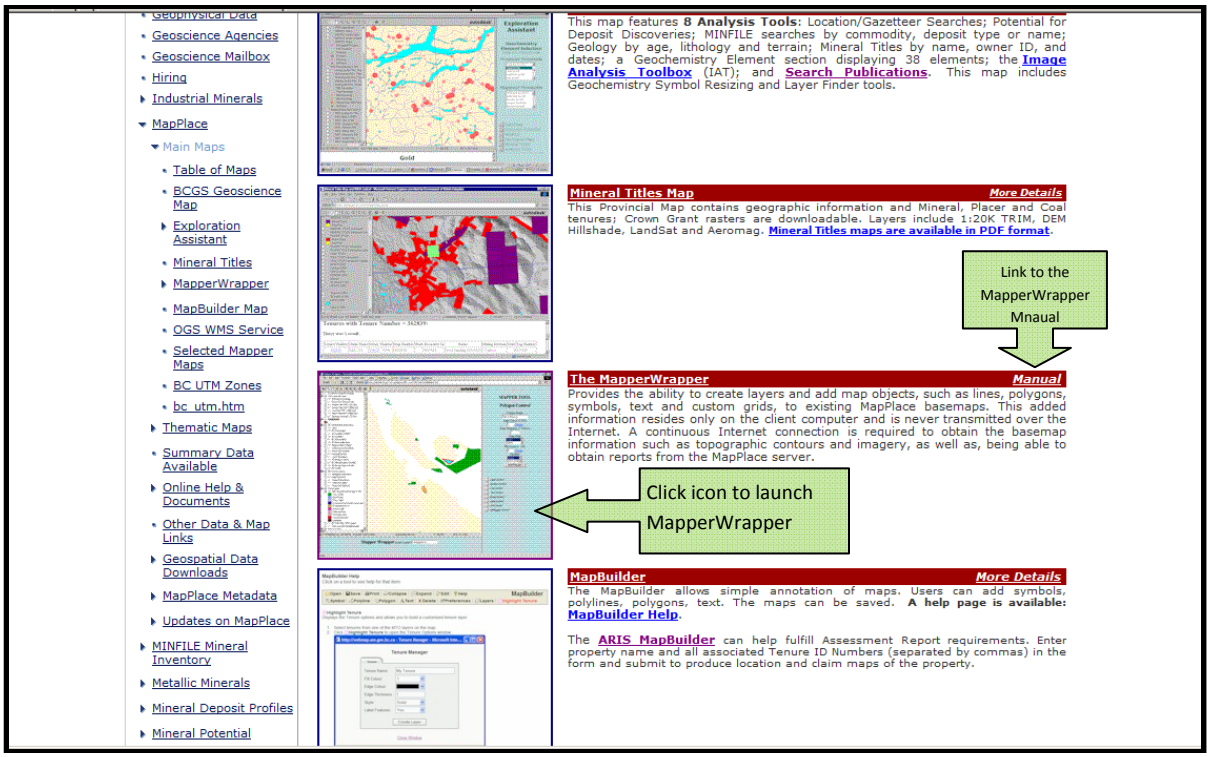
The MapperWrapper

The MapperWrapper is a set of client-side tools to draw on MapPlace maps. The tools allow you to draw lines, polygons, symbols and text on any number of 'redline' layers. You will also be able to select the display attributes for these objects and delete objects. The map file (*.MWF) that contains the new 'redline' layers can be saved on your computer for later use and distribution. Using the redline functions in this new version of the MapperWrapper, map additions remain on the client's computer with no interaction with the MapGuide server. The client's markups remain confidential and place no additional load on the server.

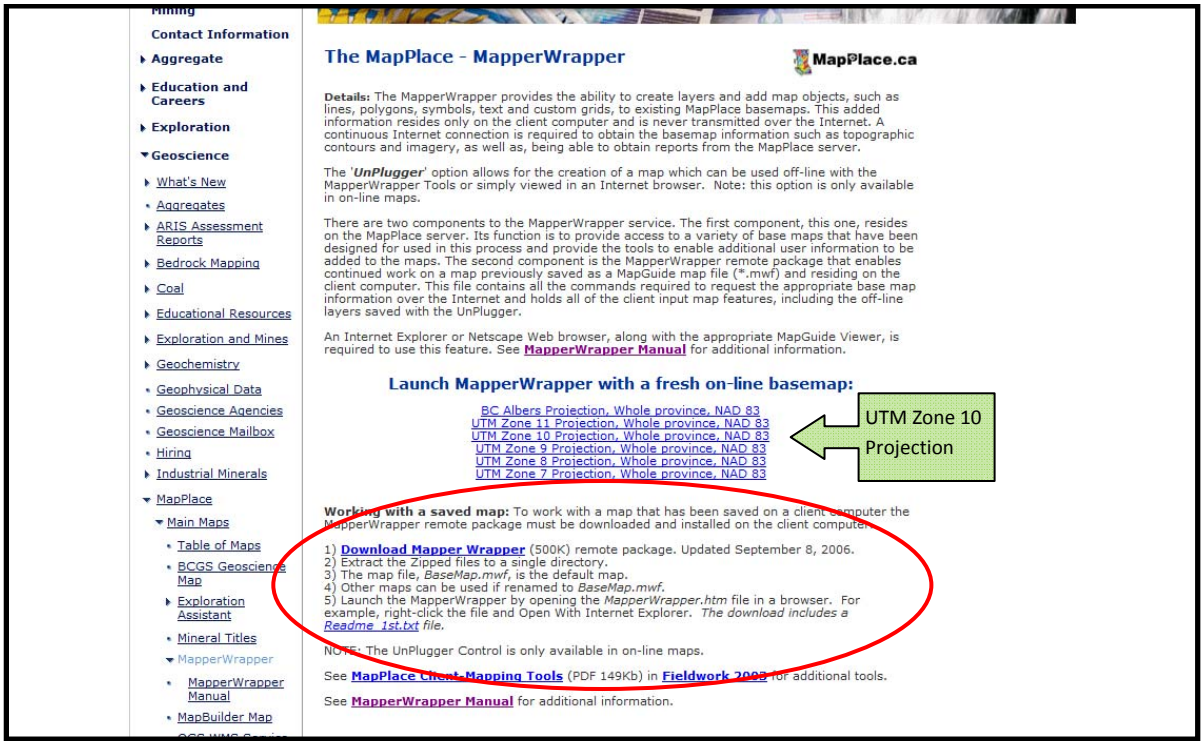
The MapperWrapper feature 'wraps' a simple set of controls in JavaScript that reside in the right side panel of the MapPlace map. The Mapper Tools give the end-user the ability to:

- add new layers to the map;
- add symbols and adjust size and rotation;
- add linework of any color, width and pattern;
- add polygons of any color, fill pattern and edge characteristics;
- add text of any size, color, font and rotation;
- include descriptive text as labels and/or cursor-over displays;
- delete any selected 'client added' object, or delete layers;
- save the final map file on the client's machine;
- add a grid overlay in UTM or latitude/longitude, with labels;
- view maps off-line using the UnPlugger Tool.

The link to the MapperWrapper can be found on the "Main Maps" page of MapPlace.



❖ Click the map image to open the MapperWrapper page

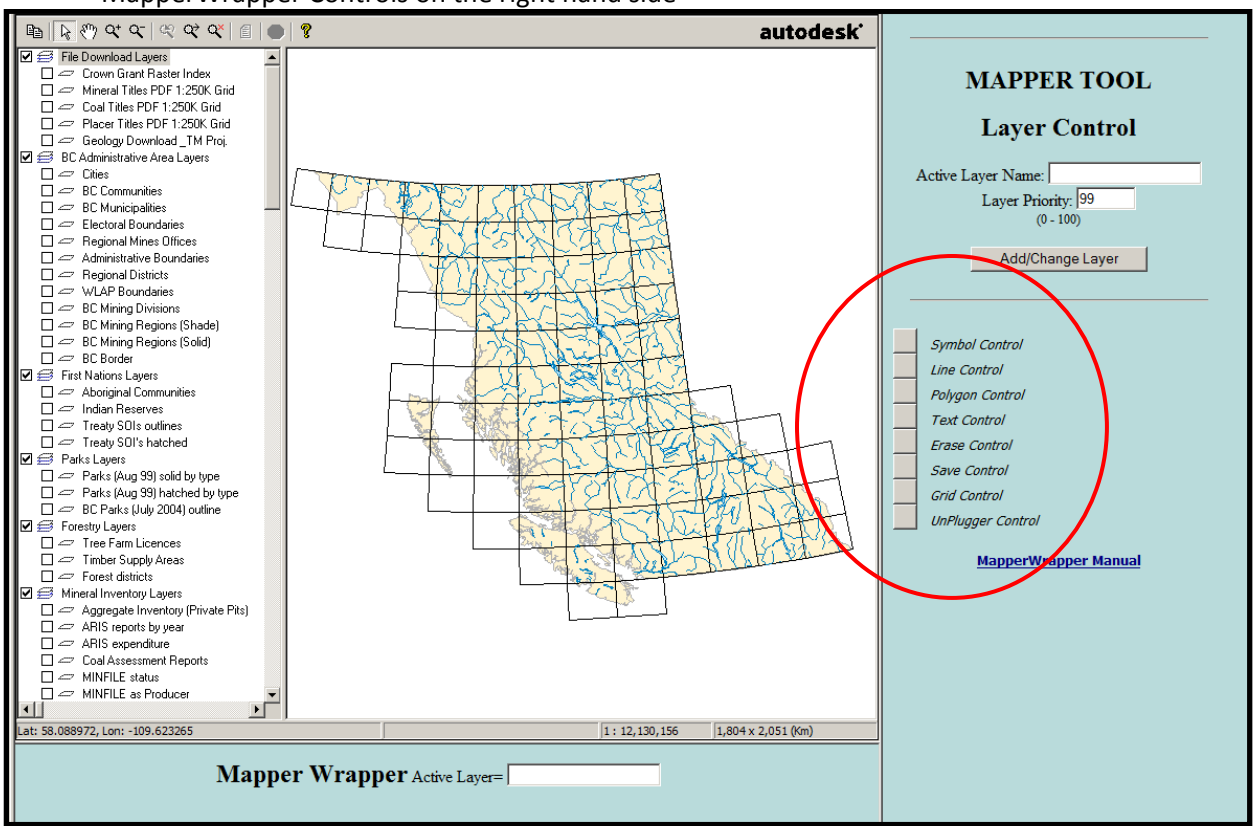


❖ Create a new directory on your computer for the MapperWrapper file.

- Click the link to download the Mapper Wrapper ZIP file to your new directory
- Extract the zipped files to this directory
- Make sure the MapGuide Map File (*.mwf) is named “BaseMap.mwf” and is present in the new directory

  Note: When you save your work it can have any desired name and be placed in any directory, but to reuse an earlier map you must rename it to BaseMap.mwf and place it in a directory where all the MapperWrapper Files are present.

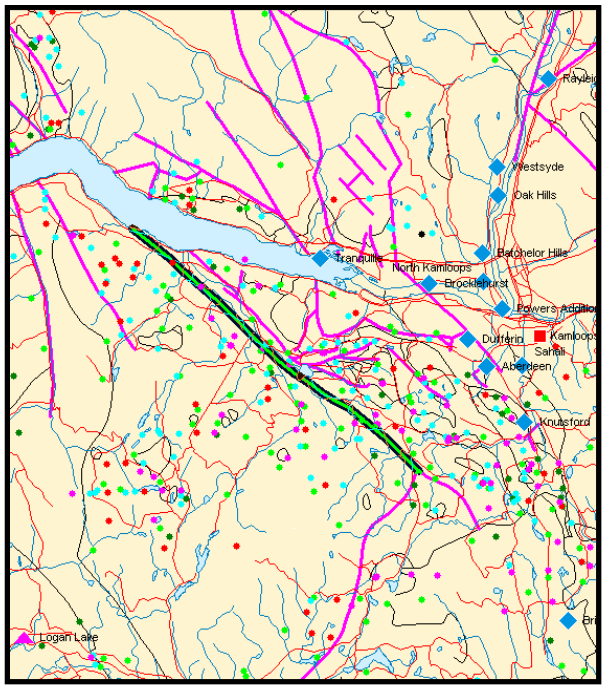
- Open the MapperWrapper.htm file in your browser; you will see a map window with the MapperWrapper Controls on the right hand side



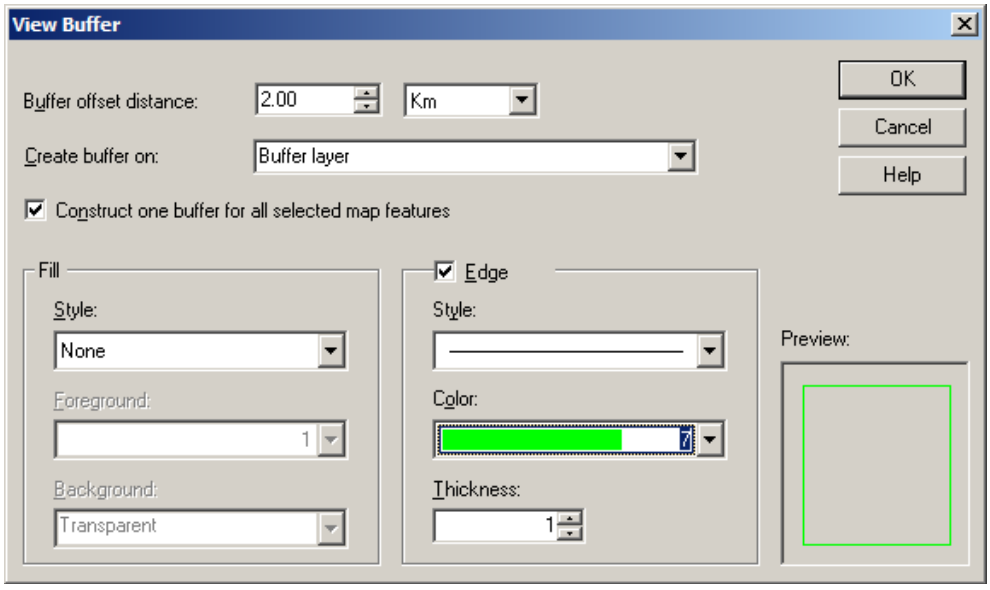
- Zoom into the Kamloops area at a width of 40 kilometres and turn on the following layers:

  BC Communities
  Roads 1:250K
  Lakes 1:250K
  Rivers 1:250K
  Contacts & Faults

- Pan to the west of Kamloops to bring the highlighted fault into the map window:

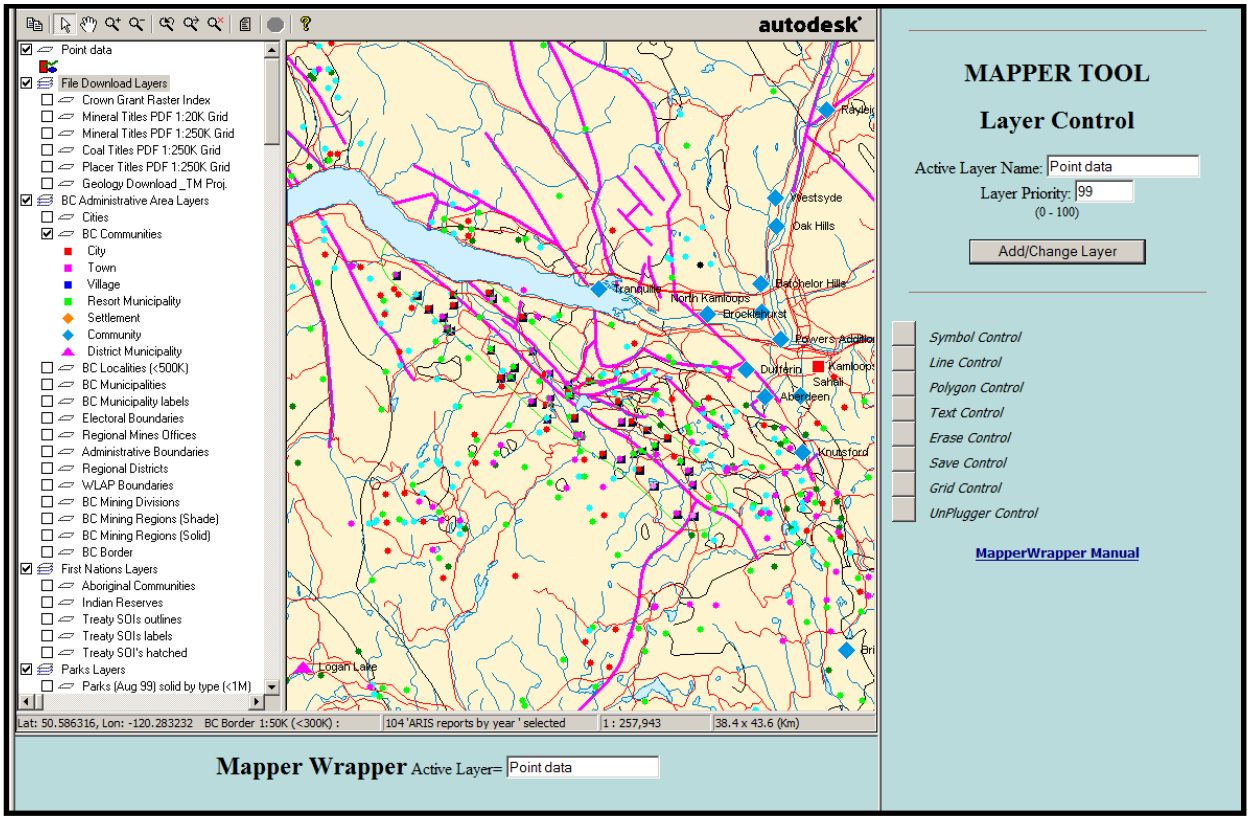


- Now select all ARIS reports within 2 kilometre of the fault by creating a buffer. Select the fault as in the image above.
- Right-click and select View→ Buffers
- Change the offset distance to 2.00 kilometres and change the colour to green (7)
- Click OK

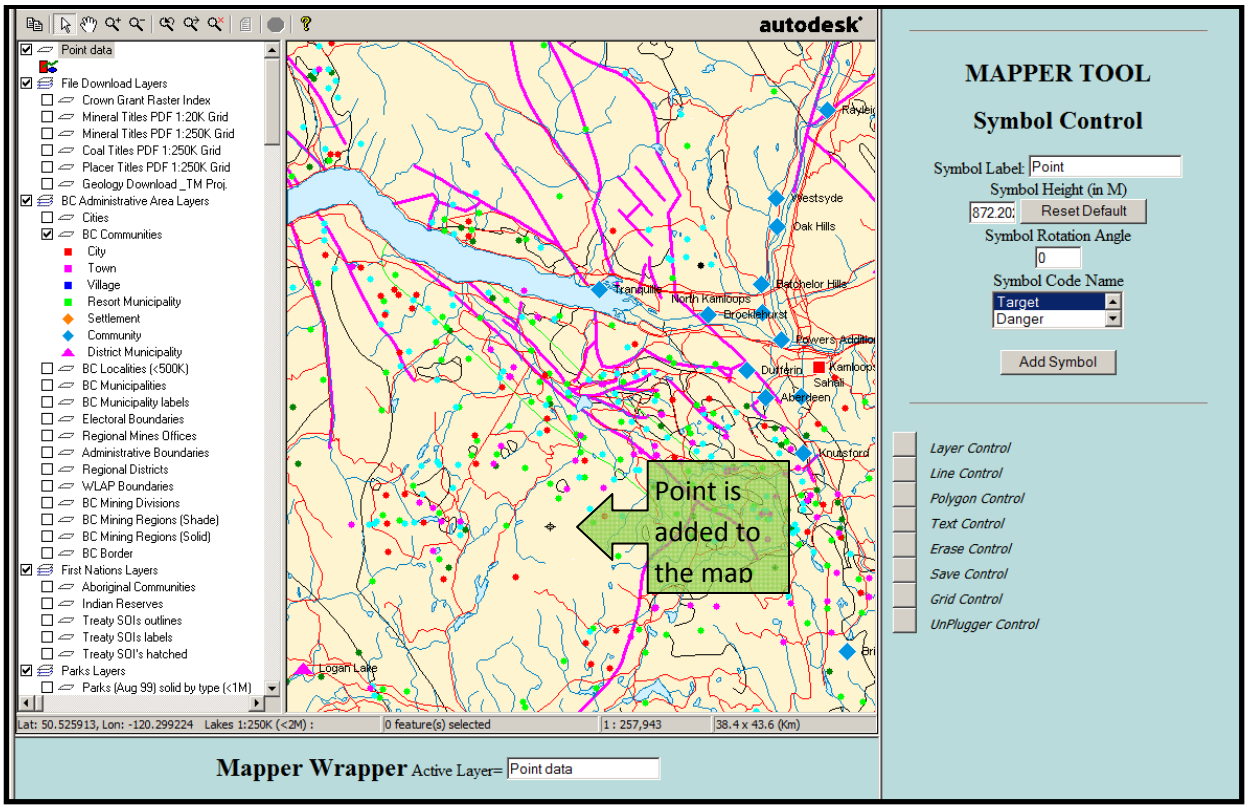


- Select the buffer and then right click Select → Select within existing polygon
- View the ARIS report by clicking the report button

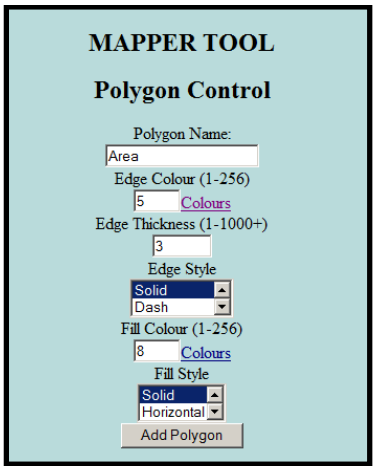
- Add a point to your map by clicking the Layer Control button, type “Point data” in the name field and click **Add/Change Layer**



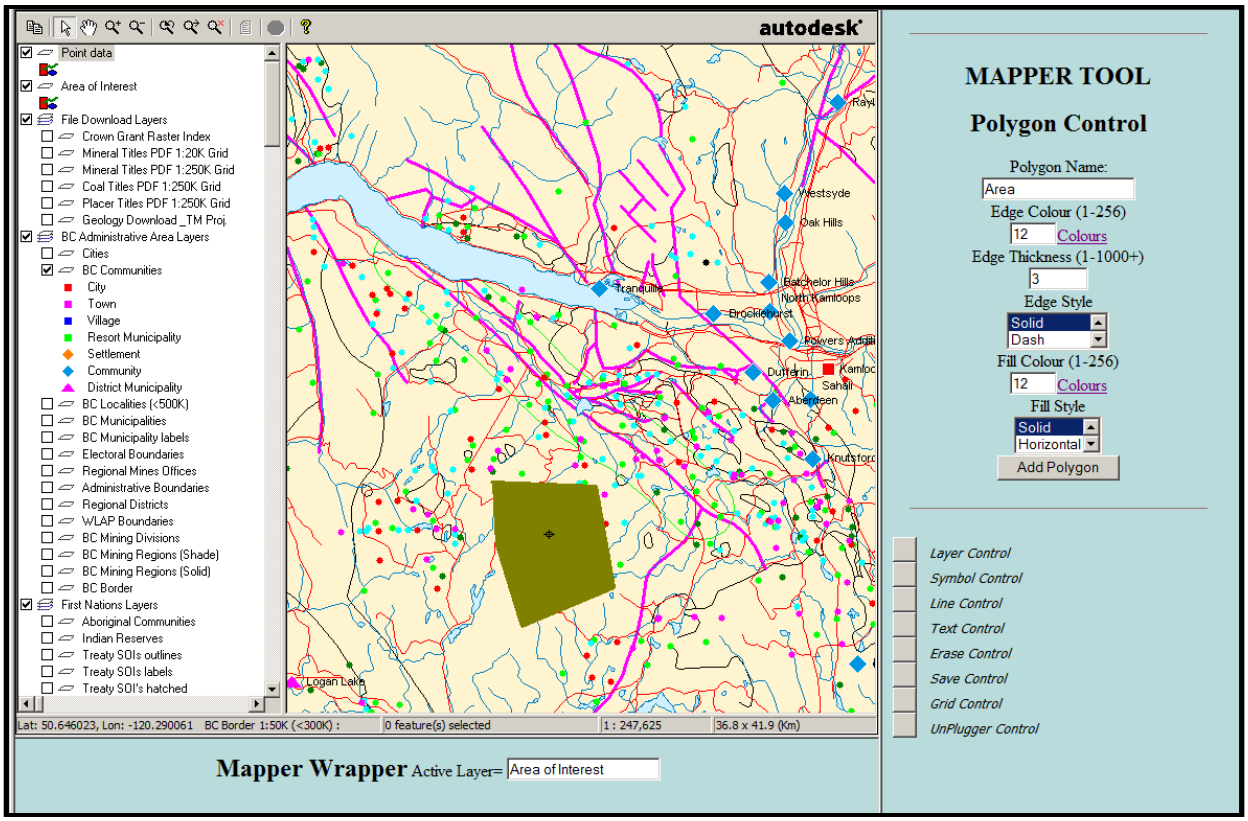
- Click the **Symbol Control** button and type in “Point” in the Symbol Label field
- Change the **Symbol Code Name** to “Target”
- Click **Add Symbol** and click on your map where you want to add the point



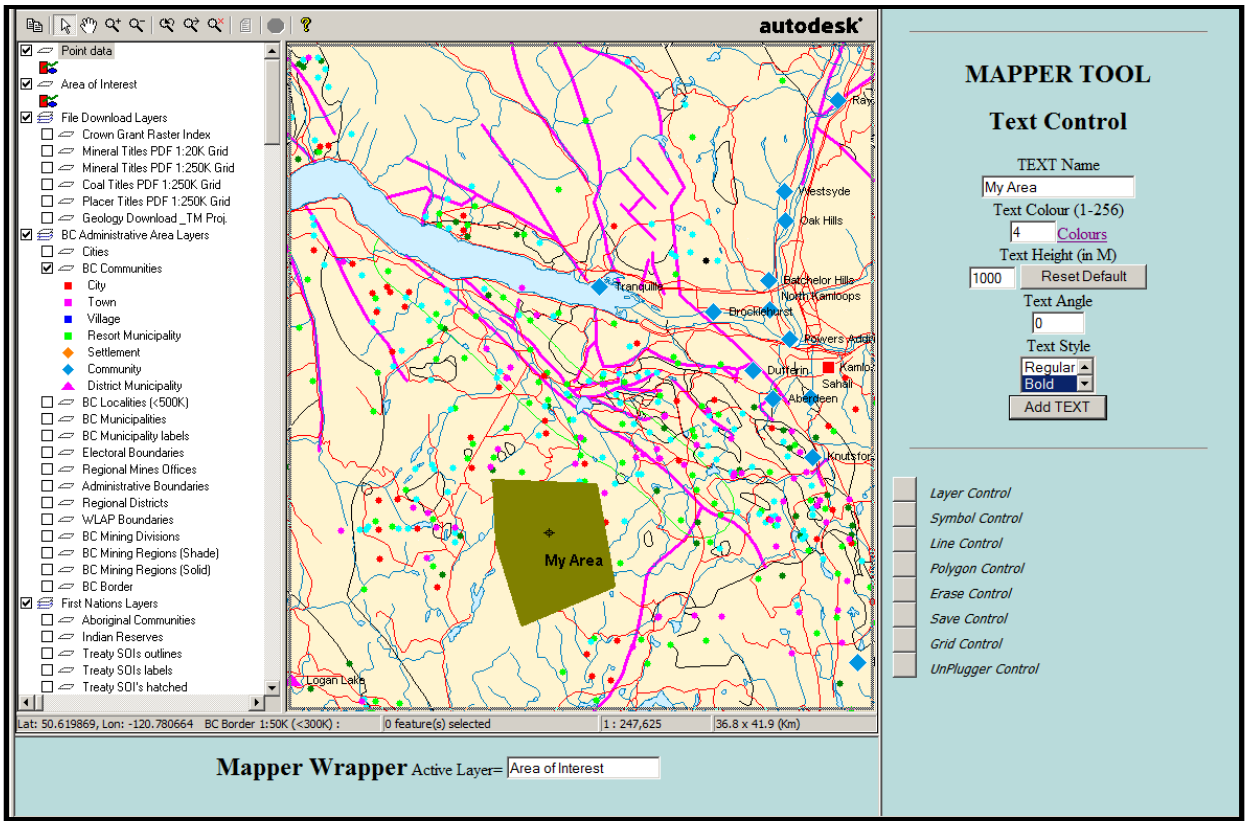
- Click the **Layer Control** button and in the Active Layer Name type “Area of Interest”
- Click **Add/Change Layer**
- Click the **Polygon Control** button and type “Area” in the **Polygon Name** field
- Choose the colour for your polygon’s edge and fill by entering in the code. Click the Colours link to view a list of codes and their corresponding colours. Leave the rest of the fields as their default



- Click **Add Polygon** and draw your polygon on the map. Double click to complete the polygon



- Click the **Text Control** button and type “My Area” in the TEXT Name field
- Change the Text Height to 1000
- Change the Text Style to bold
- Click **Add TEXT**
- Click on the map where you want to add the text



To save your map to use offline you can save it.

- Click the **UnPlugger Control** button
- Click the **Lock Down Map** button
- Click **Create Map** button
- In the File Name and Location type the directory you want to save to and the name of the map and click **Save it**!

Now you can view the map you made on your computer without an internet connection, just remember to copy it into your MapperWrapper directory that you made earlier and rename the file as *BaseMap.mwf.*

MapPlace2Go

This map is designed for simple use. There are basic tools to navigate, zoom and print the map. The Index map can also be use to navigate using the draw box method (left-click mouse, drag, release). Themes include Mining, Exploration Projects, Tenure, First Nations and Environmental Assessment Projects. Some layers have a Zoom Goto feature (Search Tool), which is activated by left-clicking the and selecting from a list; the object appears if the layer is turned on. A Legend tab displays a view-dependent legend. Right-click the map for additional functionality.

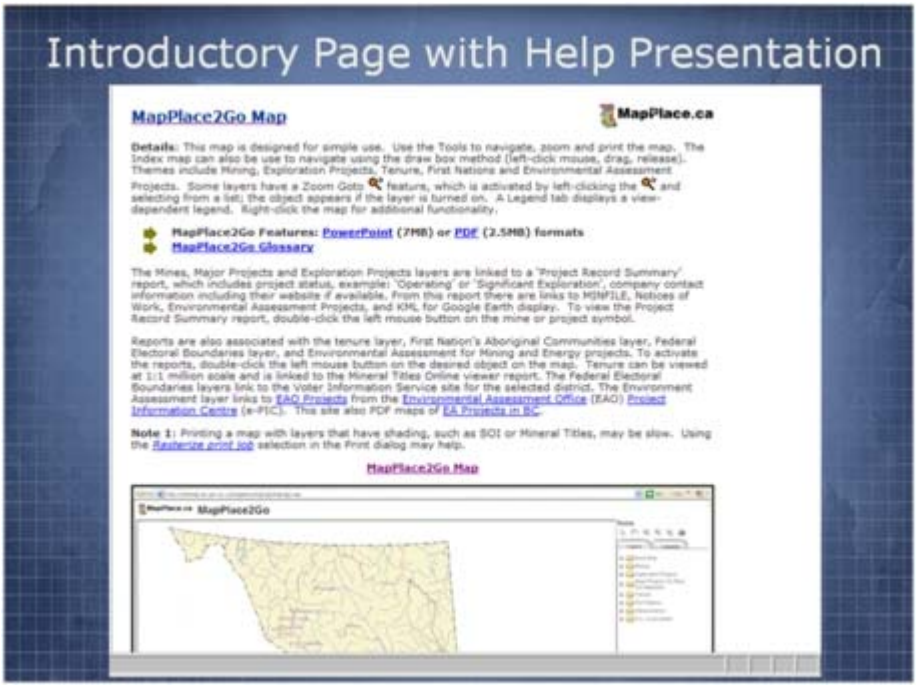
The Mines, Major Projects and Exploration Projects layers are linked to a 'Project Record Summary' report, which includes project status, example: 'Operating' or 'Significant Exploration', company contact information including their website if available. From this report there are links to MINFILE, Notices of Work, Environmental Assessment Projects, and KML for Google Earth display. To view the Project Record Summary report, double-click the left mouse button on the mine or project symbol.

Reports are also associated with the tenure layer, First Nation's Aboriginal Communities layer, Federal Electoral Boundaries layer, and Environmental Assessment for Mining and Energy projects. To activate the reports, double-click the left mouse button on the desired object on the map. Tenure can be viewed at 1:1 million scale and is linked to the Mineral Titles Online viewer report. The Federal Electoral Boundaries layers link to the Voter Information Service site for the selected district. The Environment Assessment layer links to EAO Projects from the Environmental Assessment Office (EAO) Project Information Centre (e-PIC). This site also PDF maps of EA Projects in BC.

MapPlace2Go!

This is the **Introductory page** access through the **MapPlace home page**.

- Detail information here about the map
- It describes some of the functionality and data in the MapPlace2Go map
- Links to a PowerPoint or PDF file of screen captures to help the new user with navigating the map
- Link to Glossary - some users may be unfamiliar with the terminology, this Glossary is for them.

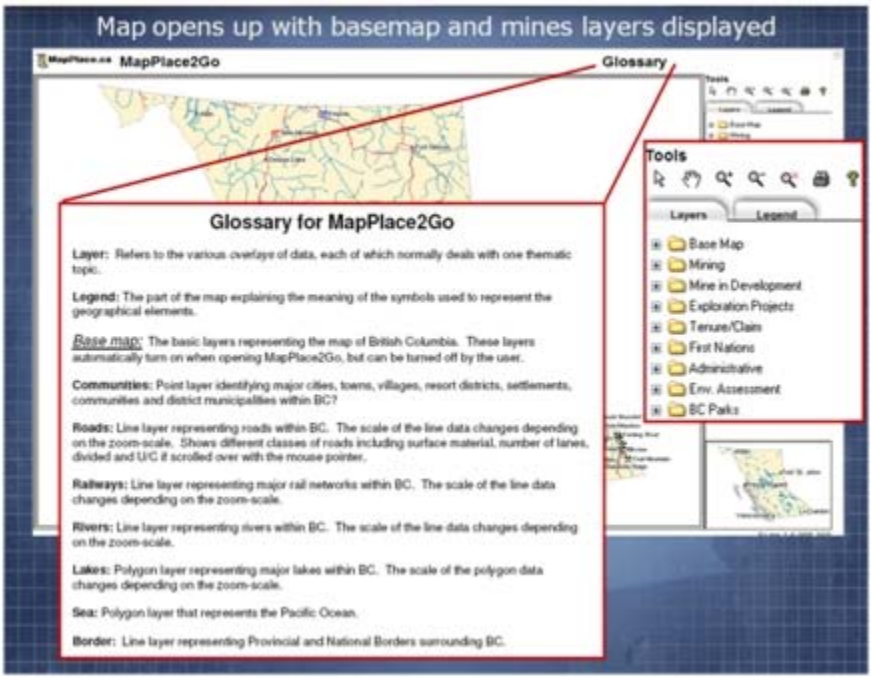


MapPlace2Go has a variety of datasets .such as **basemap** and **Mining**, **First nations** and **administrative** datasets.

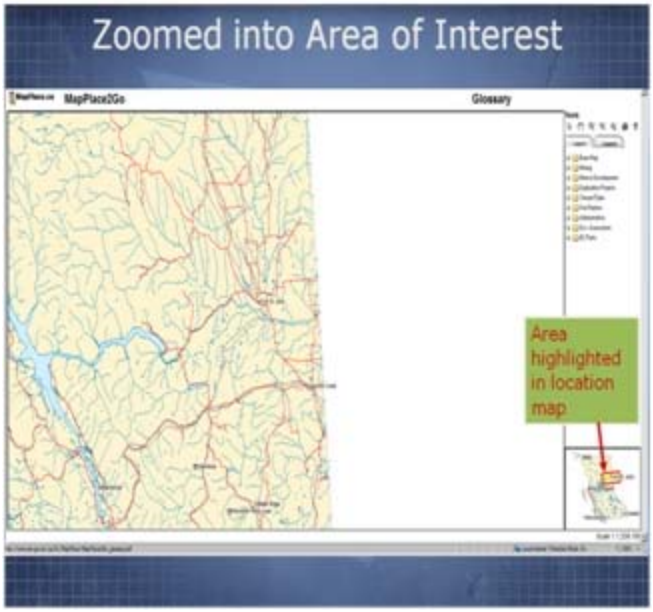
- Base map data
- Mining related datasets
- First nations data
- Administrative
- Other datasets

There are **report**s and **links** to most of the datasets and also there is a **custom search tool**.

We included a document that names and describes the features within the MapPlace2Go map. On the right of the image below is a list of layer groups such as Basemap (layers of road, river, and lakes etc.) and Mining (Mines, exploration projects, etc..) which are available in the map.



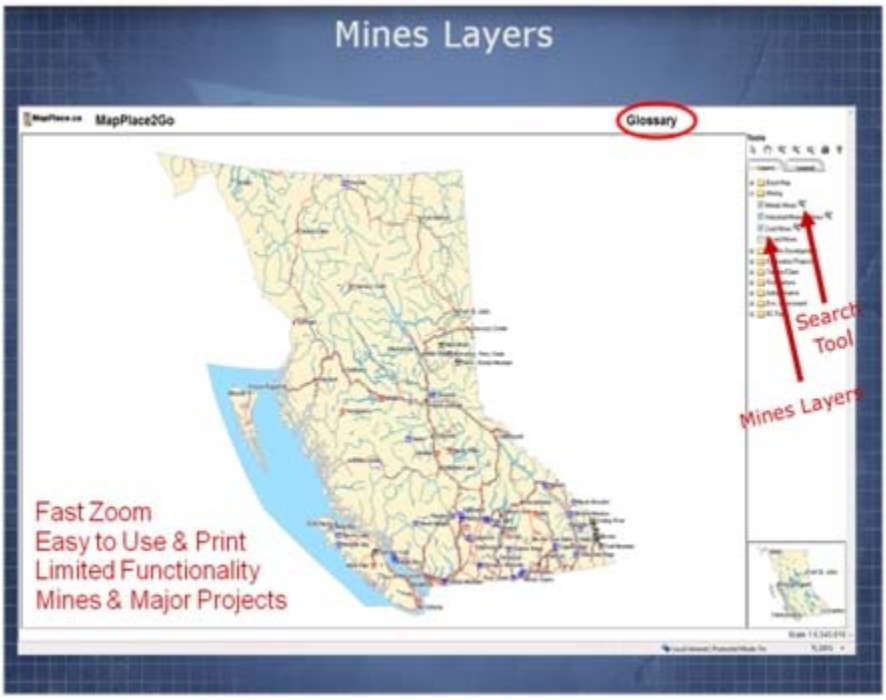
There is a location map in the lower right of the display. It highlights the area covered in the main window when zoomed in.



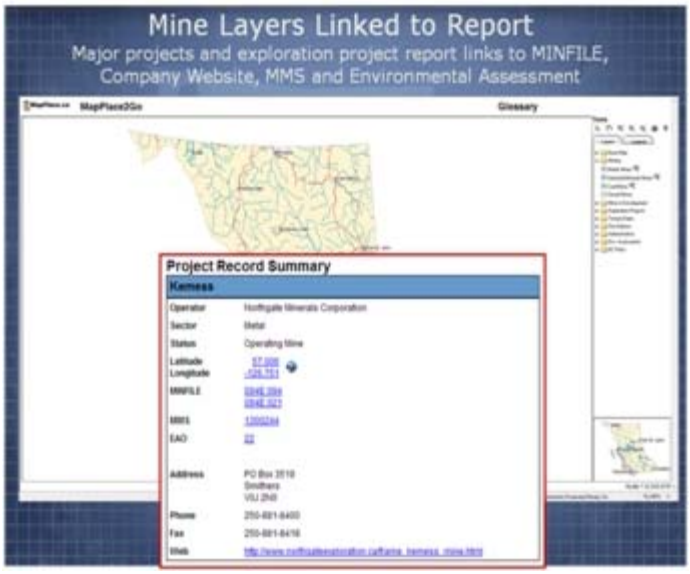
The main attributes to this map are:

- Quick to navigate.
- Easy to use.
- Easy to print from
- But limited functionality

It displays the current mines and exploration projects.

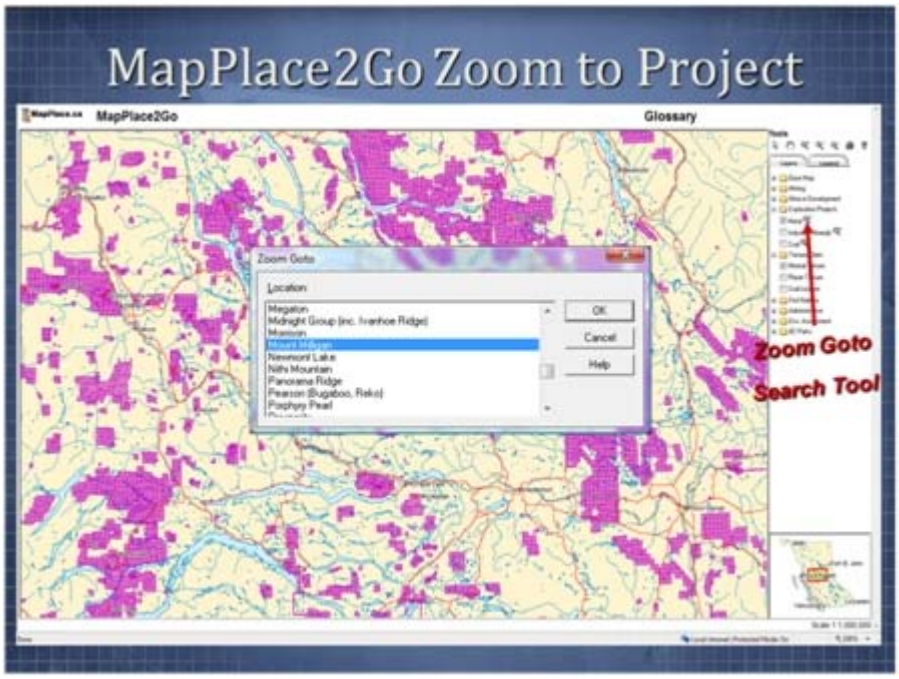


Here is an example of a **Project Record Summary**. This summary is accessed by double clicking on the object representing the mine or exploration project you are interested in.

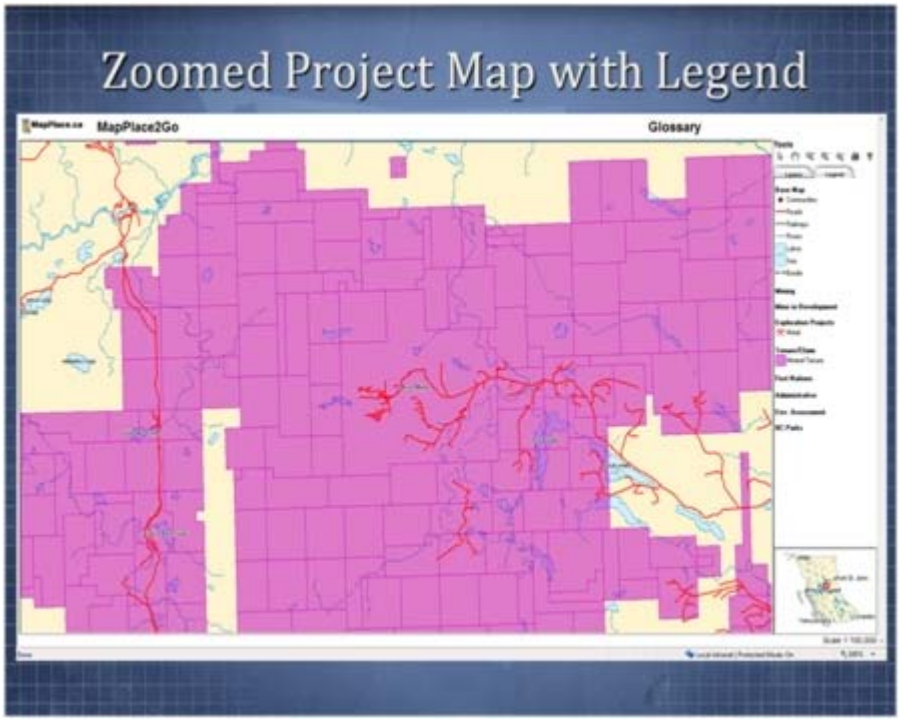


Here the major exploration projects are displayed. Metal and coal exploration projects expenditure cutoff is $1 million dollars. Less than $1 million spent by an exploration projects in the metals and coal sector is not displayed on this map. For industrial minerals the cut off is $50,000.

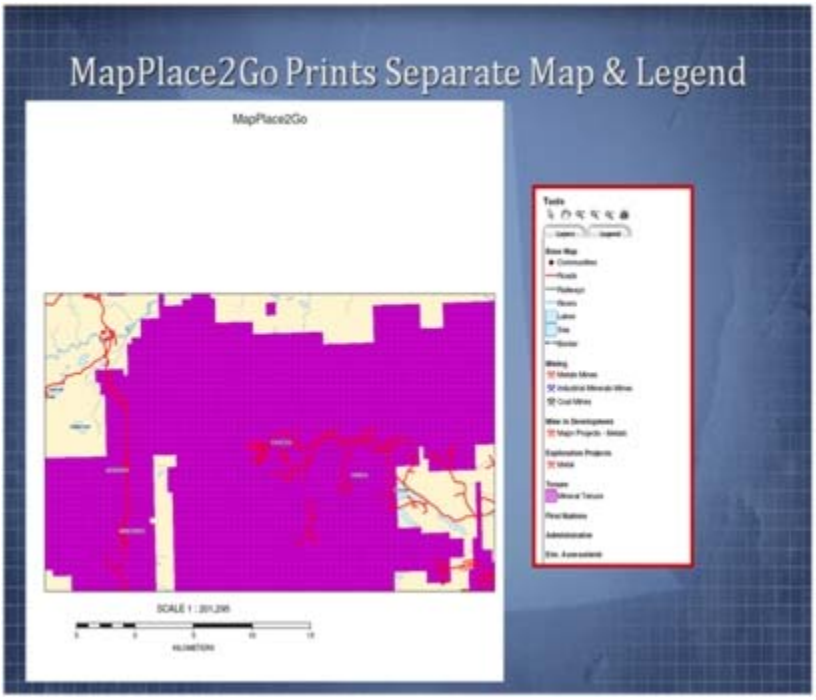
One feature is the search tool. This tool allows for selection of an exploration project and will zoom in to it at 1:100,000 scale.



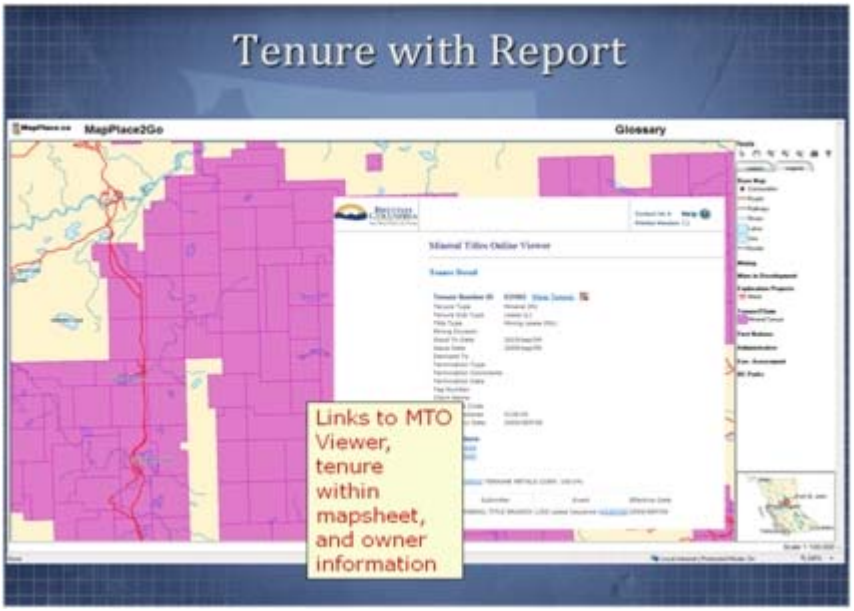
Here is the **Zoom Goto** result from zooming into Mount Milligan with **tenure** displayed.



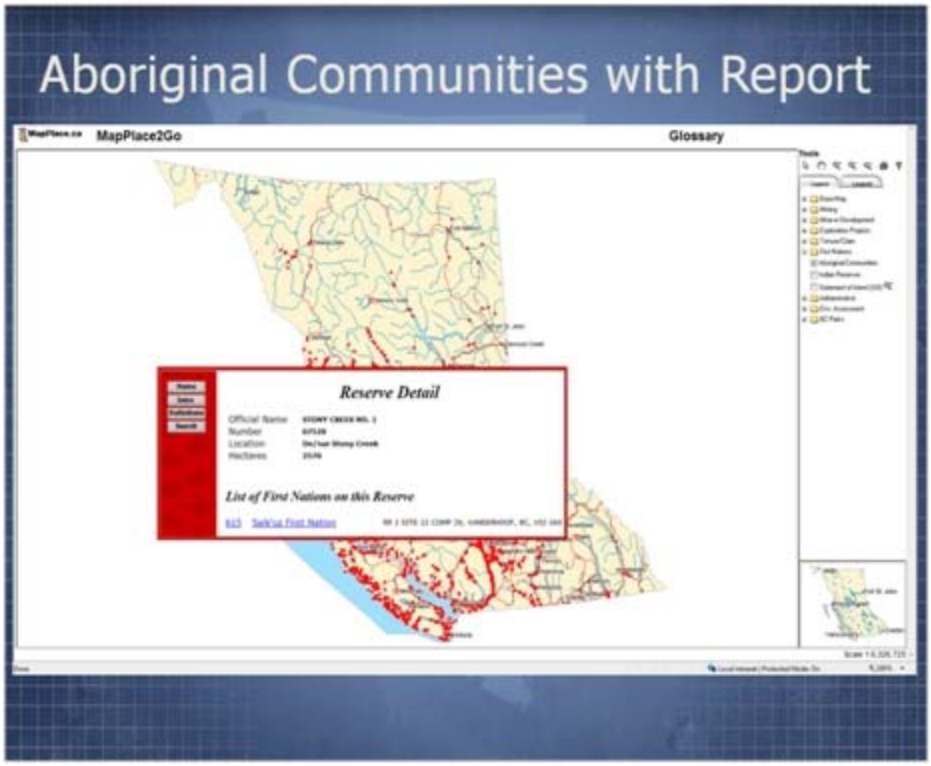
Here is an example of a print including the legend. It should be noted that the map and the legend are two separate prints. Here they have been imported into one slide in Power Point.



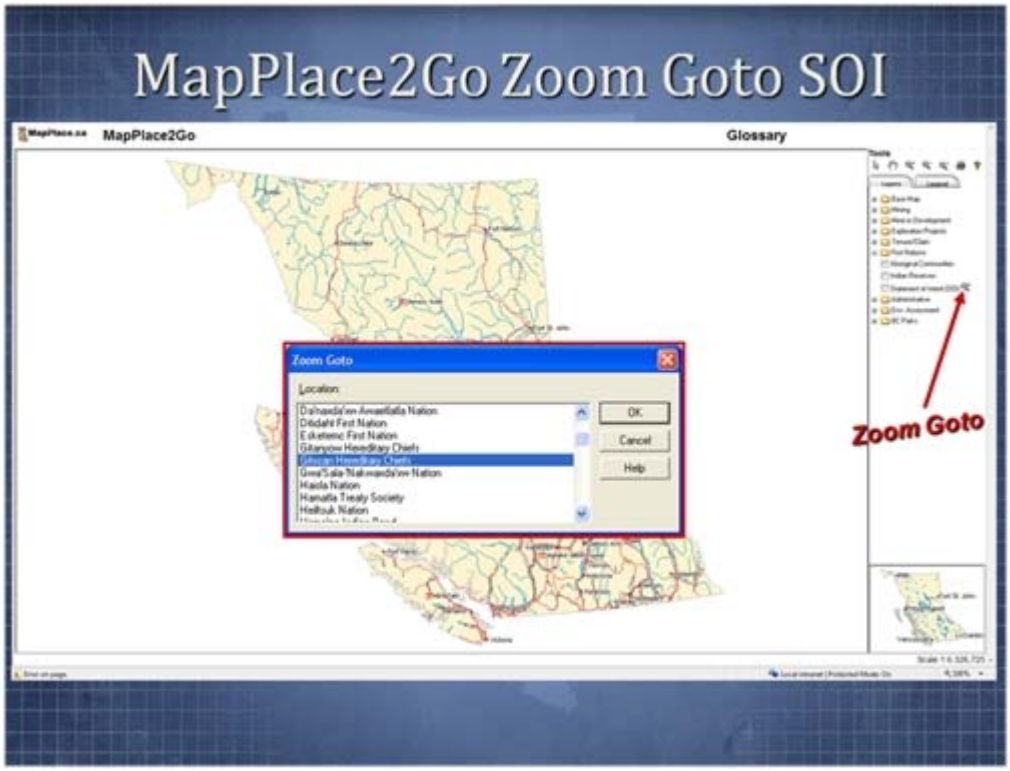
The tenure is linked to the **Mineral Titles Online Viewer** to display tenure details.



The Aboriginal Communities layer links to the Indian and Northern Affairs site to display Reserve detail from their database



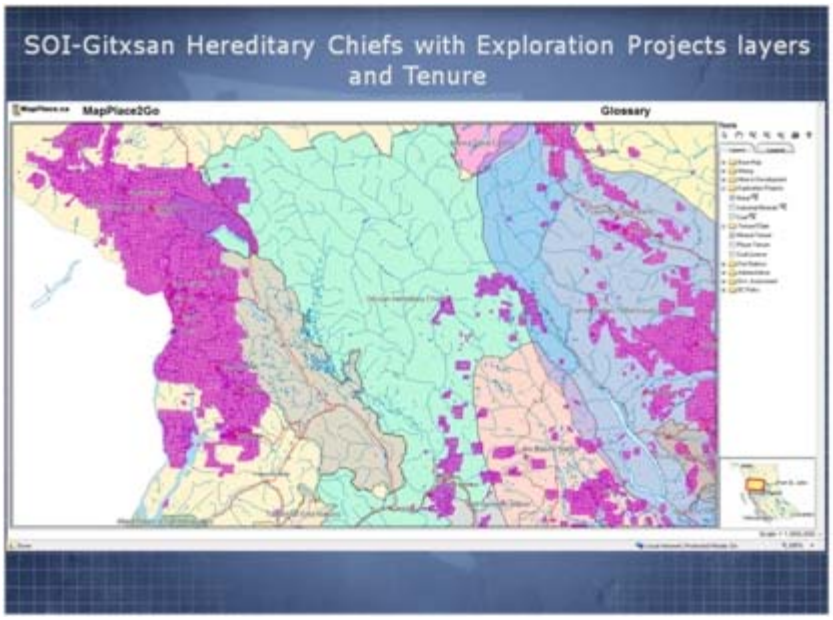
This slide demonstrates how to select a SOI as part of the Zoom Goto tool.



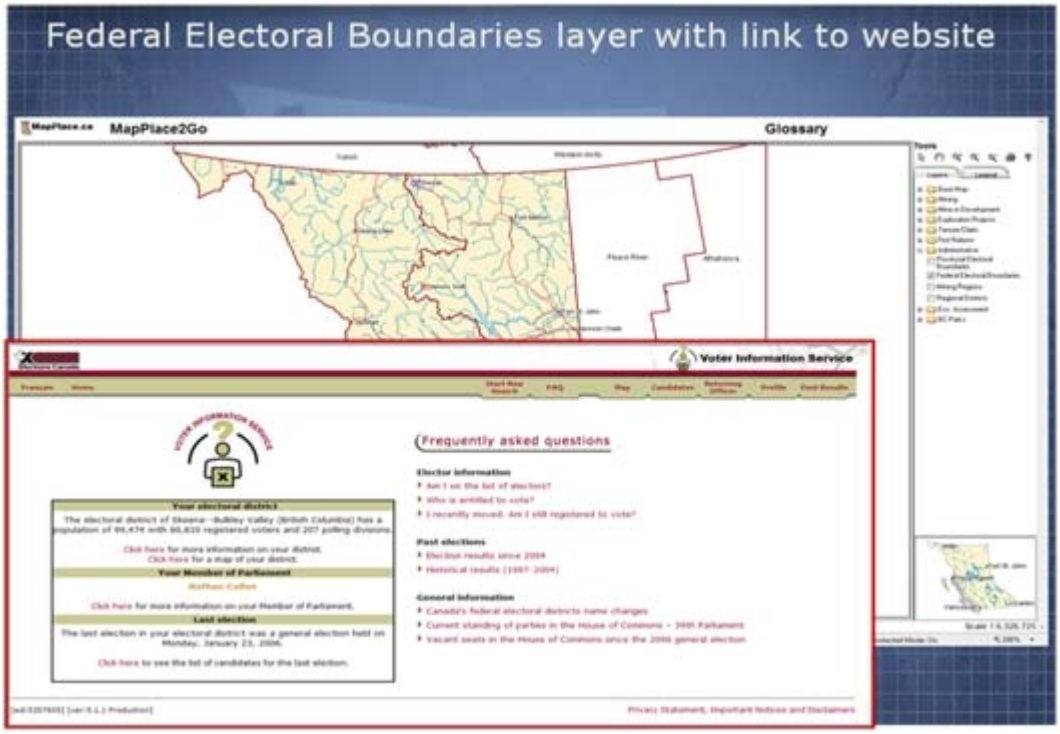
The Zoom Goto or Search tool is a feature for several of the layers. Here it is used to Zoom into the Gitxsan Hereditary Chiefs SOI.

Different datasets can be shown in a single display. Shown here are datasets, Metal Exploration Projects, Mineral Tenure, and Statement of Intent layers.

- Metal Exploration Projects
- Mineral Tenure
- Statement of Intent



The Elections Canada page can be accessed from the Federal Electoral Boundaries layer under the Administrative Group.



Access to MapPlace2Go map is available from the home page.

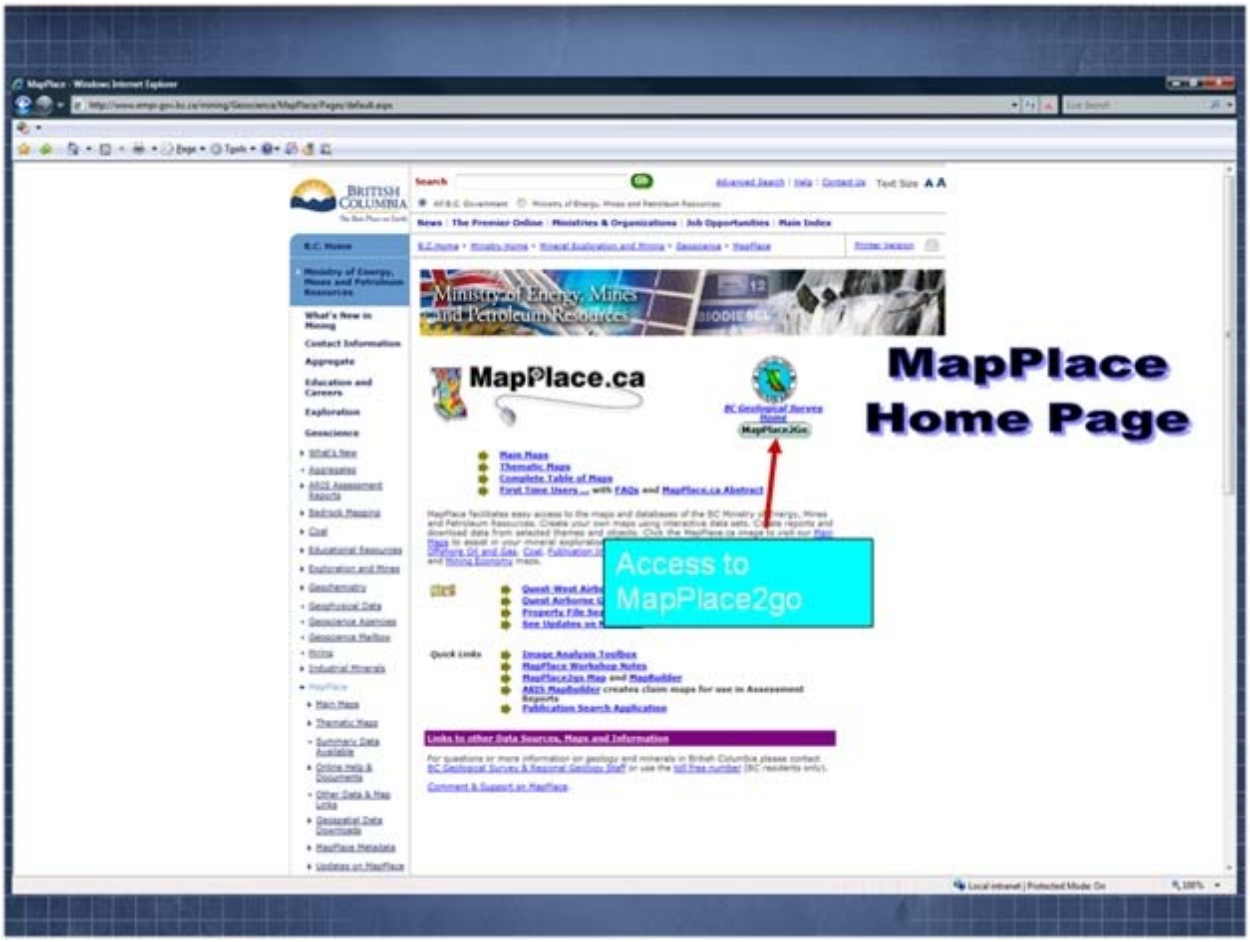


Image Analysis Toolbox

Remote sensing images have been continually added to the MapPlace since 2003. The Image Analysis Toolbox (IAT) was created to utilize this data. Making use of such image data is new for many clients of the website.

Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) is an imaging instrument flying on the Terra satellite, launched in late 1999. The instrument has 3 subsystems that capture readings from different portions of the electromagnetic spectrum at different resolutions. The three subsystems are referred to as VNIR (Visible and Near Infrared), SWIR (Shortwave Infrared) and TIR (Thermal Infrared). Reflectance values in the SWIR range are particularly useful in differentiating rock and soil mineralogy related to alteration zones.

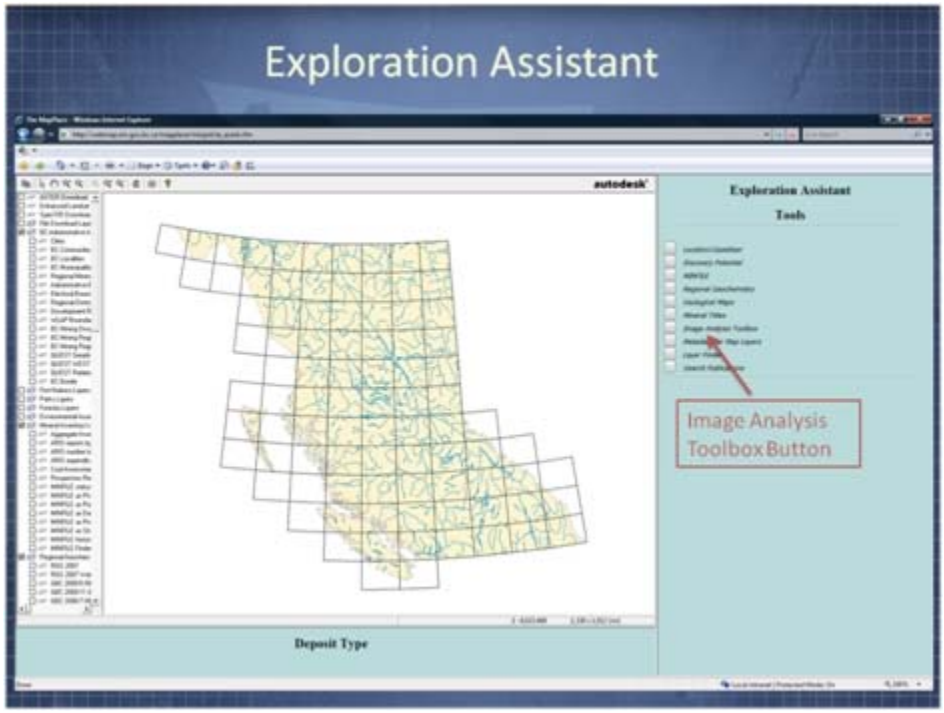
An ASTER image contains 14 bands of information, 4 bands in the VNIR with 15 metre resolution, 6 bands in the SWIR with 30 metre resolution and 5 bands in the TIR with 90 metre resolution. Two of the VNIR bands sample the same wavelength range but one is back-looking providing the ability to generate a stereo view of the scene. A single ASTER scene covers an area of about 60 by 60 kilometres. The ASTER web site http://asterweb.jpl.nasa.gov is an excellent source of information on the instrument, its mission, available imagery, usage examples and analysis tools.

The “Image Analysis Toolbox” project developed and implemented an image analysis capability for the MapPlace and was delivered by Cal Data Ltd. The Toolbox is a framework in which a variety of multi and hyperspectral imagery can be added and processed online by end users. The results of the analysis are georeferenced and can be completely integrated with the information already contained in the MapPlace. The suite of analysis tools in the IAT was added to the Exploration Assistant page of the MapPlace. The appearance and operation of the IAT was designed to maintain the general look and feel of the Exploration Assistant. The purpose of the Toolbox is to provide the ability for MapPlace users to experiment with a variety of imagery and analysis procedures in their search for exploration targets.

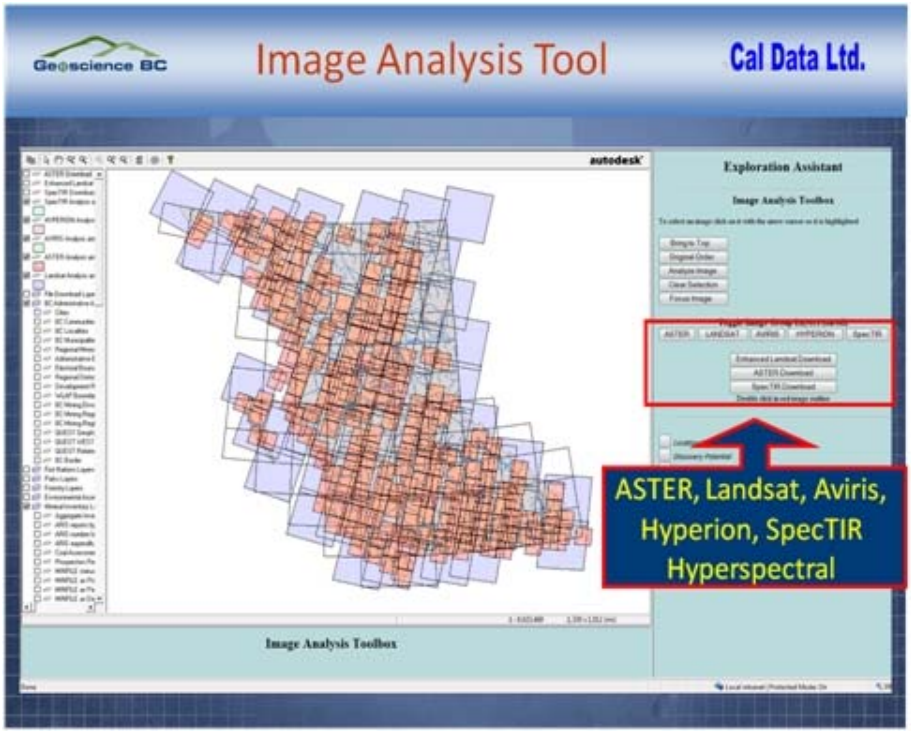
How to access the Image Analysis Toolbox.

The Image Analysis Toolbox is located in the Exploration Assistant Map.

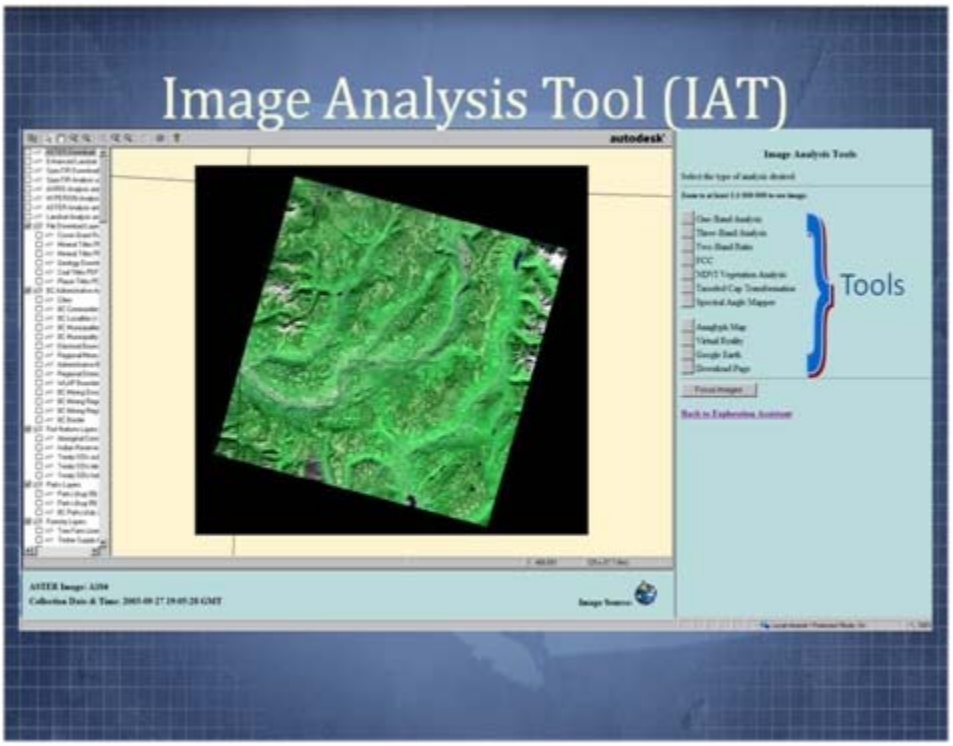
How to Analyze an Image.
To access the IAT open the Exploration Assistant map and under the Exploration Assistant Tools on the left click the button to the left of '*Image Analysis Toolbox'.*



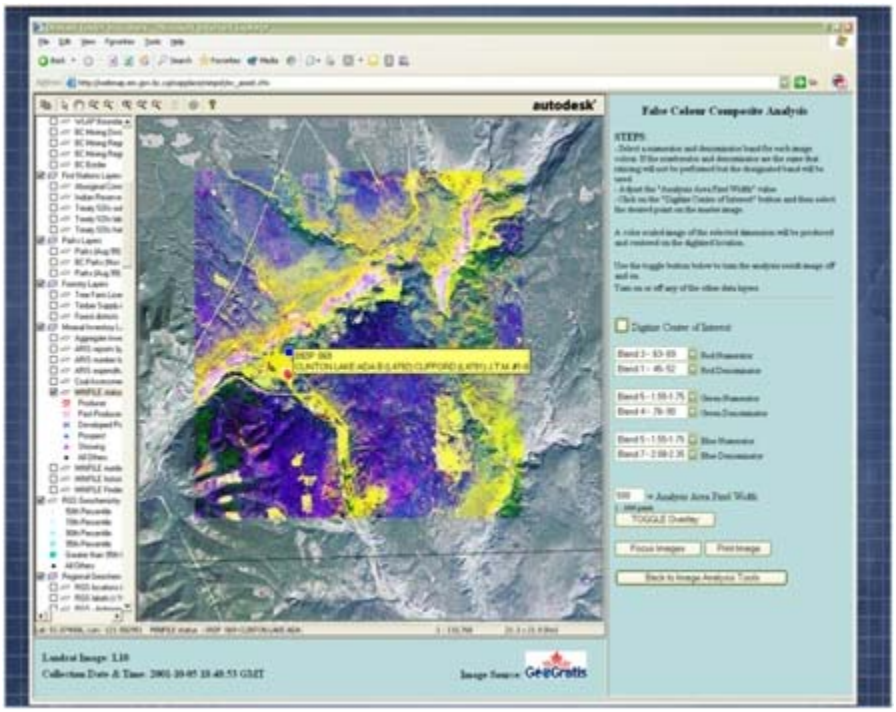
To analyze an image first pick an image and then click on 'Analyze Image'. In this example I have picked an ASTER image. There is a bit of processing time before the chosen image appears.



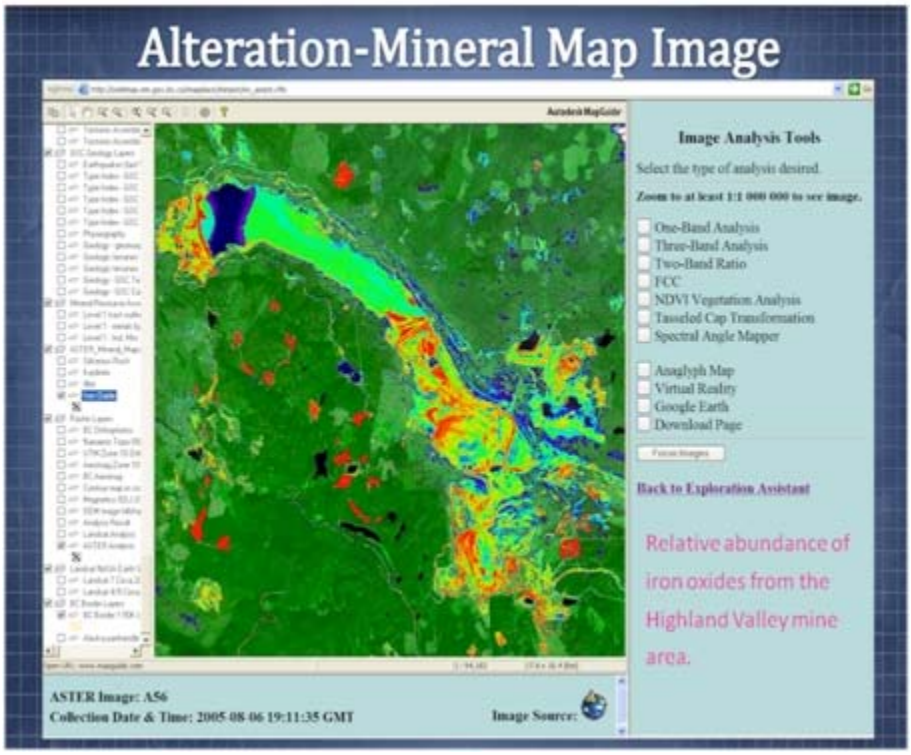
Once the processing has finished, an image with information about the image will appear.



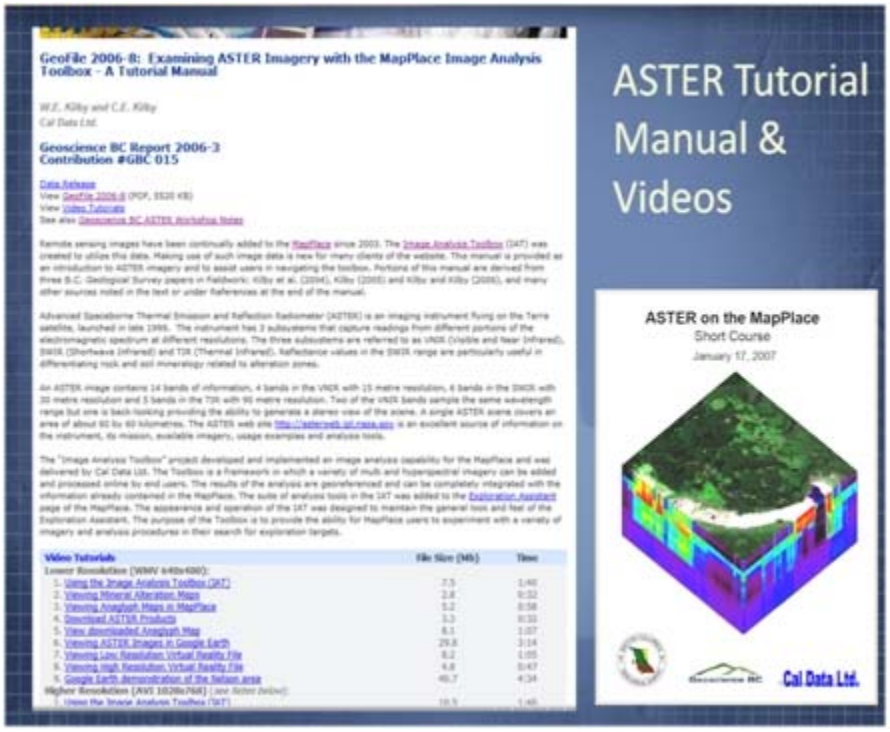
The next example is of a Landsat image within the 92P mapsheet. The type of analysis shown here is the ‘False Colour Composite Analysis’.



Analysis of an ASTER Image for Iron Oxide alteration as well as other alterations has been done for the ASTER Images. Once an image has been selected click on the Iron Oxide layer located within the ‘ASTER Mineral Maps’ group View results.



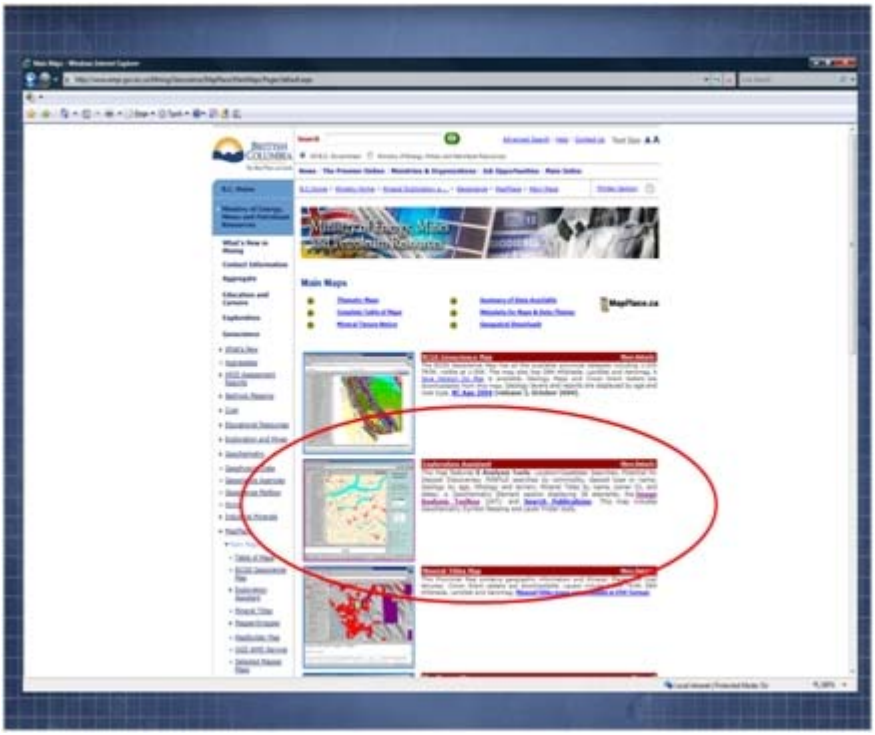
More information is available on the MapPlace website about the IAT.



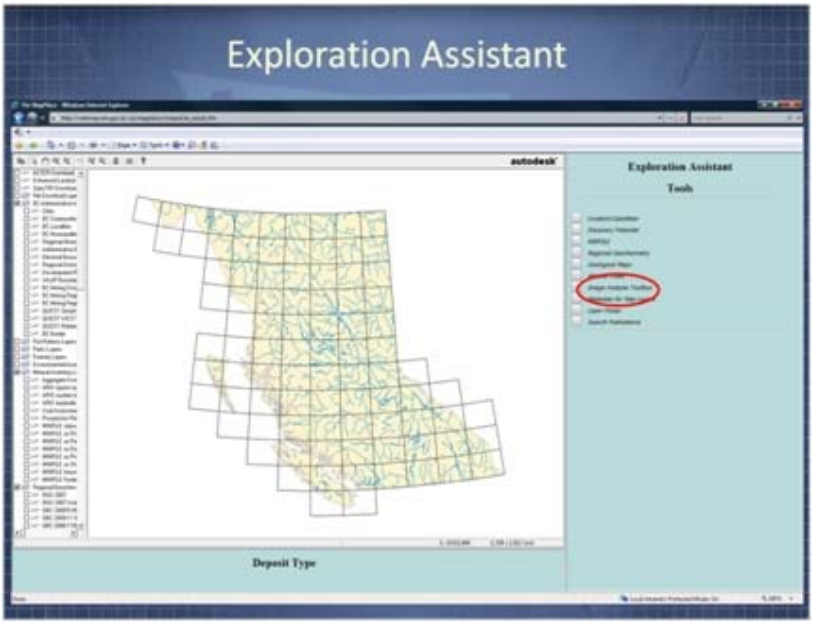
Exercise 1

View an Iron Oxide Alteration around Highland Valley Mine.

Open the Exploration Assistant map

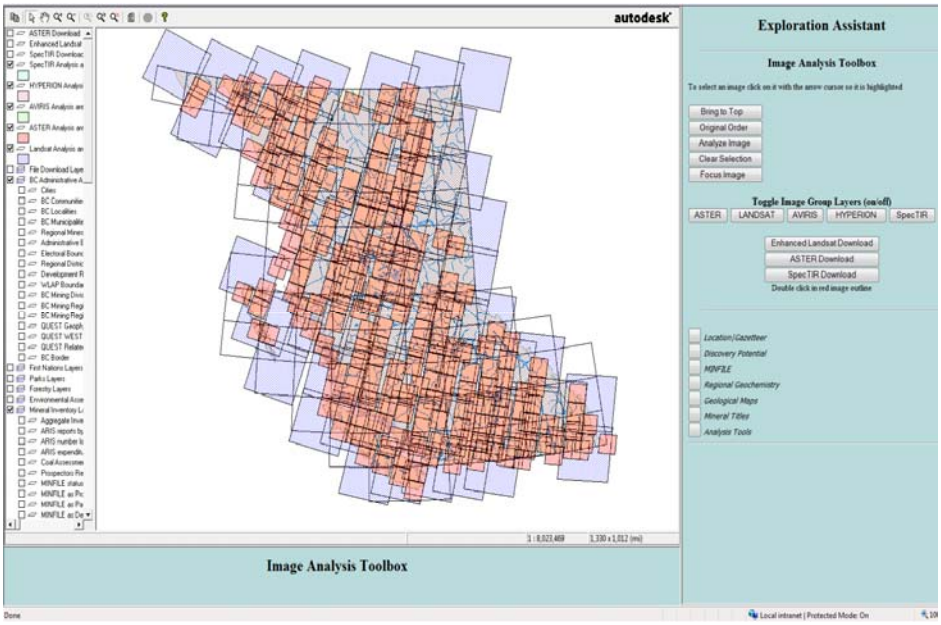


- Click on the image of the Exploration map or on the text ‘Exploration Assistant’



- Click the Image Analysis Button

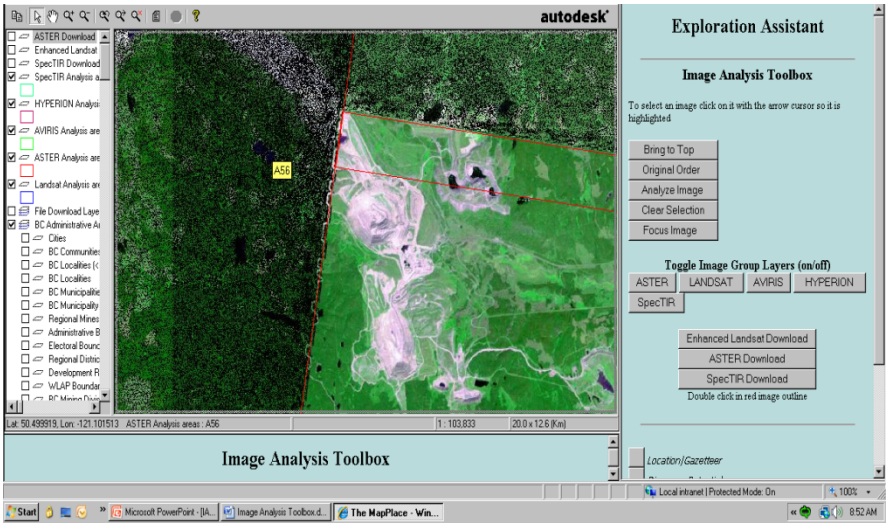
This image shows the IAT open with the tool buttons and image footprints displayed.



Use the **Zoom Goto** tool to locate the **Highland Valley Mine**.

- Place mouse **cursor** within the map window and right click
- Highlight '**Zoom**' and select '**Zoom Goto'**
- To the right of **'Category'** click the down button, locate '**MINFILE Name'** and select it.
- In "**Location**' type '**Highland Valley'** and change the '**Zoom to Width'** to **20km**.
- Click '**OK**

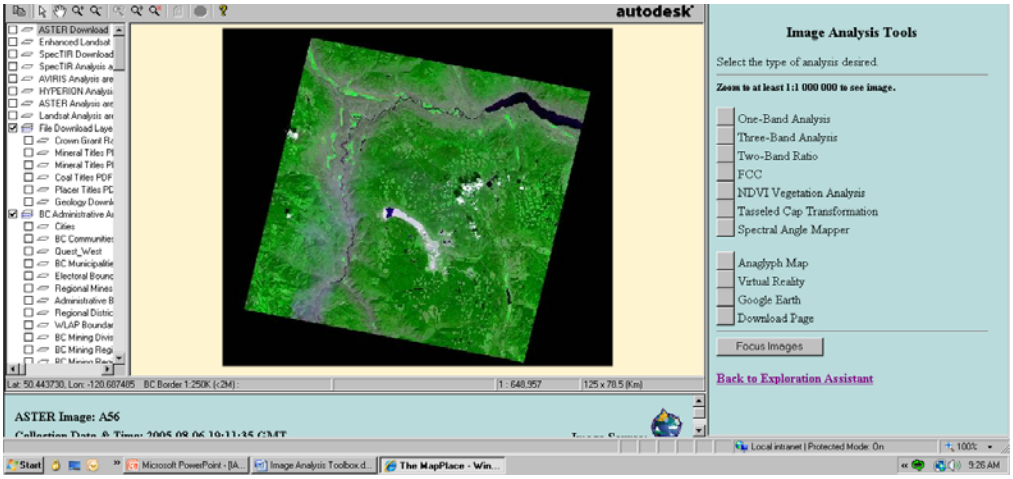
,



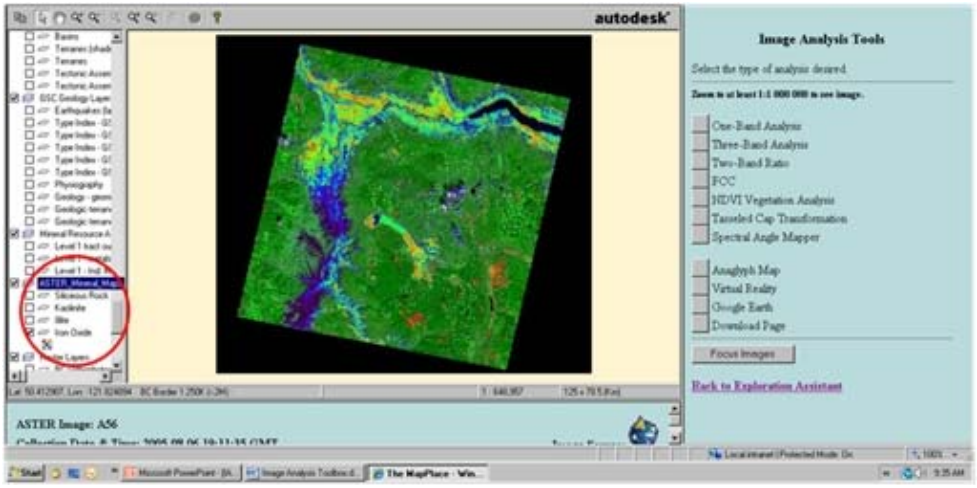
Select ASTER image A56.

- Place cursor on the left side of the map window until '**A56**' appears (see image above)
- With the left mouse button select the image

The image will now load. This takes time and it is necessary to allow the loading to complete before moving on.

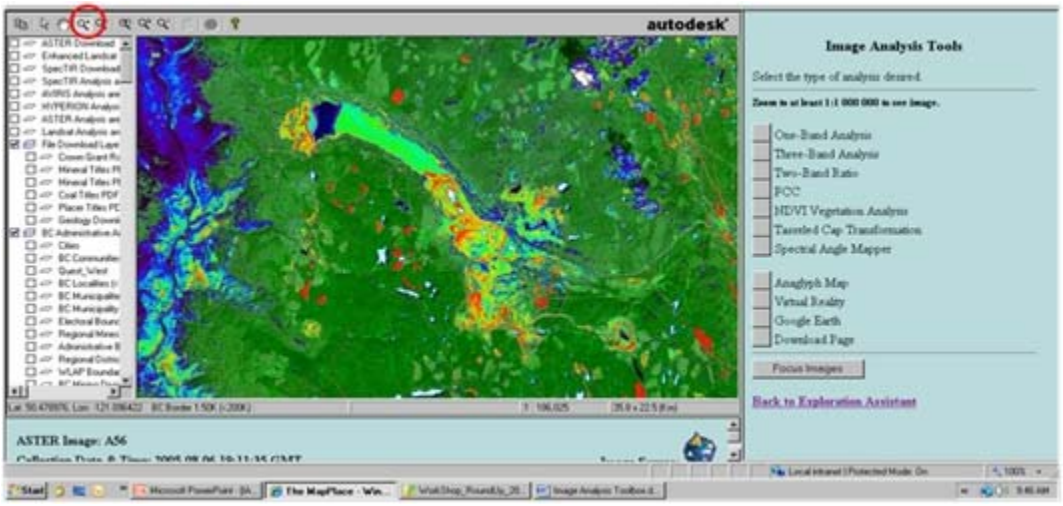


To display the iron **oxide alteration** on this image



Use the Zoom Tool to zoom into the Highland Valley area.

- Select the tool located at the top left part of the computer screen.
- place the zoom tool to the top left of the Highland Valley mine area
- press the left button on the mouse and hold.
- Drag to the bottom right of the area
- Release the button



Please refer to

Mineral Exploration Roundup 2010 MapPlace / MTO Workshop

Part 2: Mineral Titles Online Notes

Integrated MapPlace review of an area in BC

Exercise

This exercise will use the Exploration Assistant Map to show an integrated review of an area in BC. The exercise is designed to demonstrate the interconnectivity of the MapPlace website with other BCGS applications, as well as information sources outside of MapPlace.

Open the Exploration Assistant map

- Zoom GoTo
  Pick Category 'BC Locality'
  Enter Location 'Big Sicker'
  Zoom to Width 50 km

Generate a regional base for the map

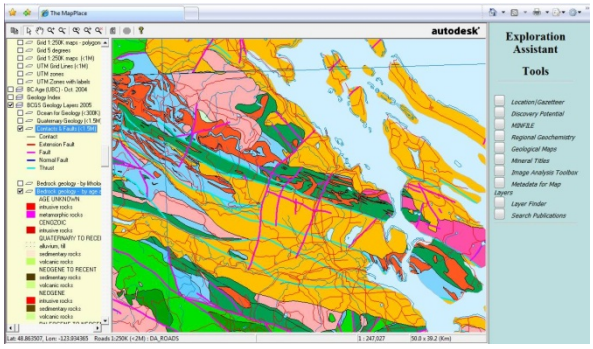
Scroll Layers to Topography

- Pick Roads 1:250K, Lakes 1:250K, Rivers 1:250K

This provides a base to view the overall aspects of the region.

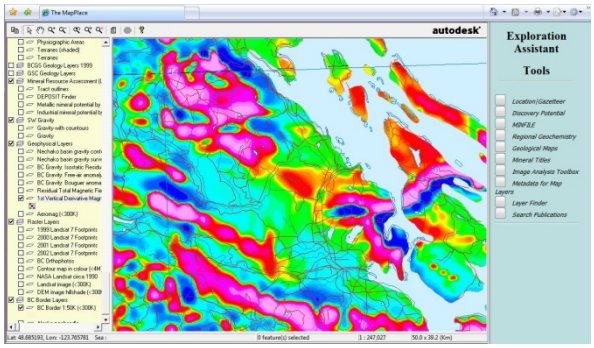
Review the regional Geology of the district

- Pick Contacts & Faults, Bedrock Geology – by age and rock class (solid)
- Turn off the selected layers



Review the regional geophysics of the district

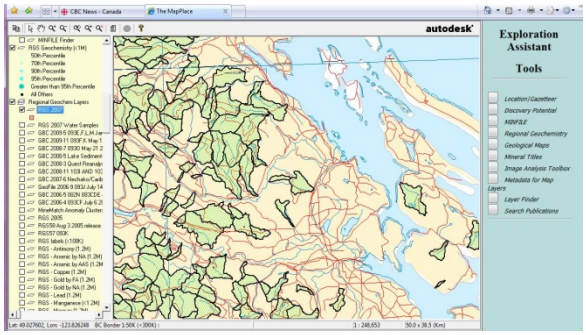
- Pick Residual Total Magnetic Field
- Turn off selected layer
- Pick 1st Vertical Derivative Magnetic Field
- turn off selected layer



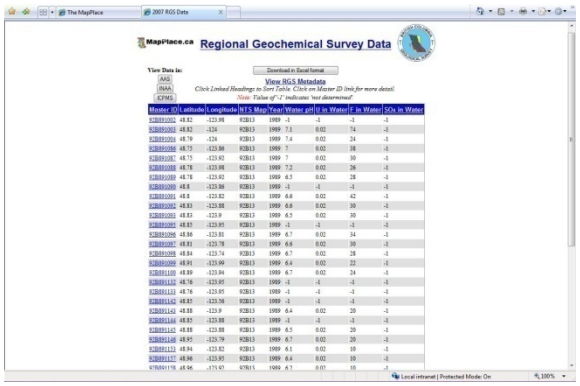
Review the regional geochemistry of the district

- Pick RGS 2007, Catchment Basins v0.1

Catchment basins show the drainage area that contributes to an individual RGS sample site. The polygons have been generated from provincial drainage basin data and filtered to show those for which there is a downstream RGS sample site. Thus one has a very specific area of influence for each sample plus the actual area represented is clearly outlined.



- Select – click and drag - across central portion of map
- View Reports . RGS 2007 Data

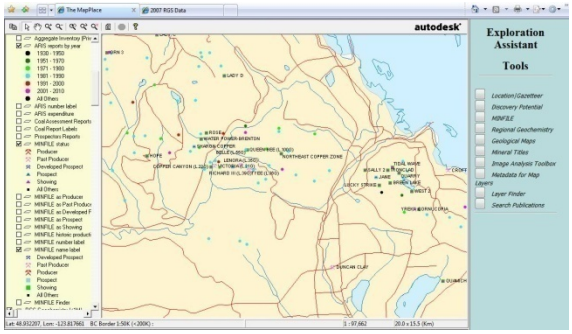


The table of results is displayed in a new tab/window. Clicking on an individual Master ID link will open an individual page with the results for that sample. A download button is available that will copy the RGS data for all the samples that can be opened in a web page Excel view or saved in a CSV structured XLS file that can be opened with Excel.

- Return to map
- Turn off RGS 2007 and Catchment Basins v0.1
- Zoom to Width 20 km

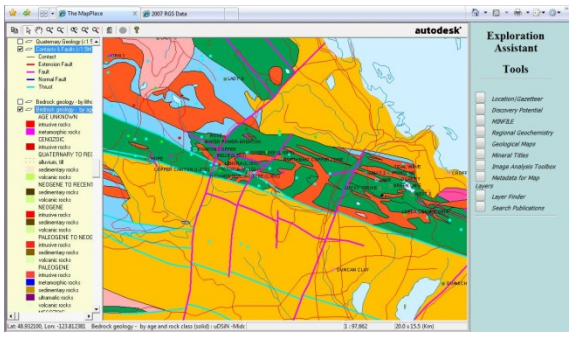
Show minerals related information

- Pick MINFILE Status, MINFILE Name Label, ARIS Reports by Year



Note the significant east-west trend of the minerals related points.

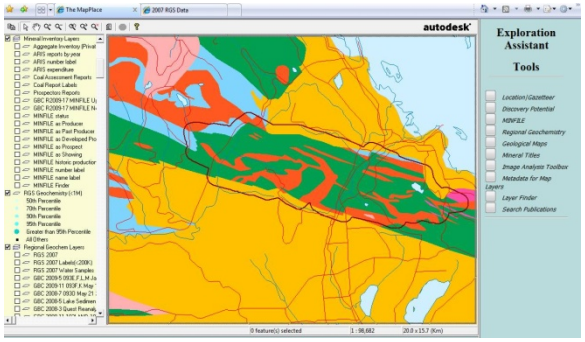
- Pick Contacts & Faults, Bedrock Geology – by age and rock class (solid)



Now it is clear that the mineral occurrences and related work are associated with the Sicker Group volcanic rocks

Create a buffer to select mineral occurrence information

- Turn off the MINFILE Status, MINFILE Name Label, ARIS Reports by Year
- Select the green volcanic polygons (shift click) in the view
- Select View – Buffers
- Select Select - Clear

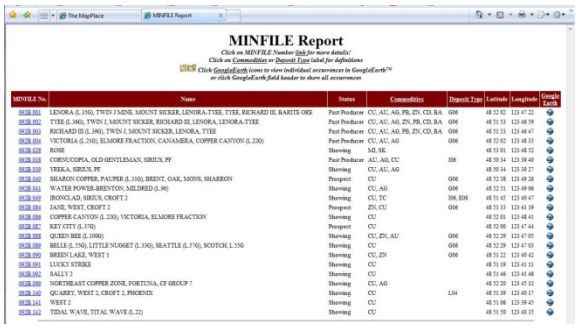


With the buffer we can confine our searches and selections to our area of interest.

- Pick MINFILE Status, ARIS Reports by Year

Review MINFILE information

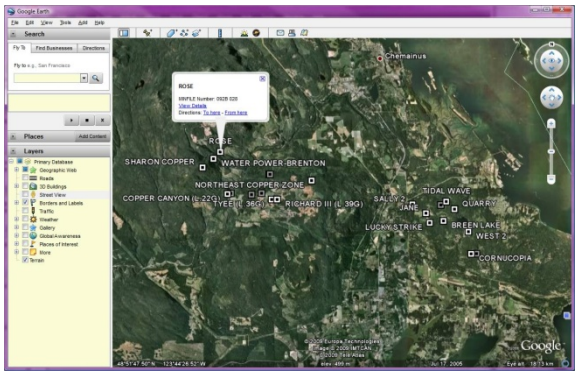
- Click on the buffer line to highlight
- Select – Select within existing polygon
- Select MINFILE Status
- View Report – MINFILE Report



From this table one can go to each MINFILE report and read and download MINFILE information as needed. The additional feature of this report is the Google Earth functionality. If the user has Google Earth installed, this functionality can be used. By clicking on an individual Google Earth icon, a view of that location in a Google Earth window will be generated. In the Google Earth image, a pop up box is pinned to the occurrence with a link that connects to the related MINFILE Summary Report. If one clicks on the Google Earth Header, all the selected occurrences are displayed. Note that the view, the KML file, is built on the fly so there are no limits to the number of or location of occurrences there are.

View MINFILE results on Google Earth

- Pick the Google Earth header
- Open KML file



This Google Earth Image is live to all of the Google Earth imagery so can be customised as needed. The pop up box is shown for illustrative purposes.

Return to the MINFILE Report

- 092B 001

The MINFILE Summary Report presents the most commonly used information for a mineral occurrence. Additional report extracts or the full report can be generated through the MINFILE interface.

The MINFILE Bibliography lists all the sources used for coding the occurrence. Currently dynamic links are connected to the ARIS mineral assessment reports. Also, a new feature includes dynamic links to the Property File.

Review Property File documents

- Open a new tab / window
- navigate to http://propertyfile.gov.bc.ca/
- Enter the value 092B 001 in the "MINFILE No." box
- click the Search button
- 39 items on two pages are available

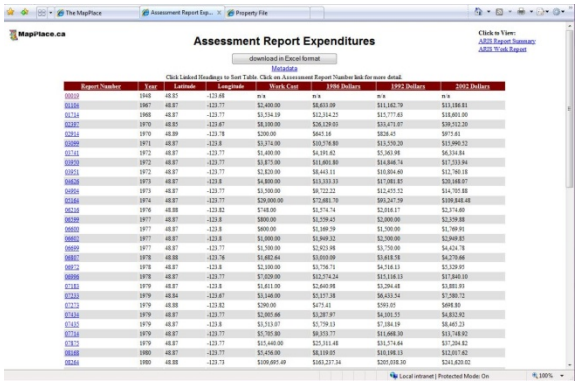
The results are presented in tabular format. Clicking on the title for any item links one to the metadata page for the document. A further link to the document is present there. Clicking on the 'File' link goes directly to the PDF document.

- Click on a Title or File link and view the information available
- Return to the Exploration Assistant map

Review Assessment Report (ARIS) information

- Click on the buffer line to highlight
- Select – Select within existing polygon
- Select ARIS Report
- View Report – ARIS Report

The table of results is displayed in a new tab/window in the same fashion as the RGS data. Clicking on an individual report number link will open an individual page of metadata for that report plus a link to the PDF document. A download button is available that will copy the ARIS data and can be opened in a web page Excel view or saved in a CSV structured XLS file that can be opened with Excel. Links on the table page also generate either a Report Summary or a Work Report.



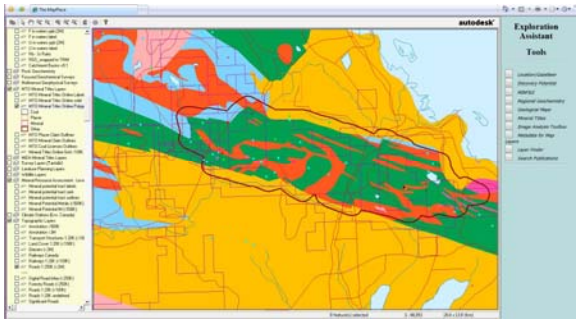
- Pick the first report number (019)
- Pick the last report number (29947)
- Use your browser Back button to reverse navigate through the windows

One can see the change in report style and content from the earliest to most recent time of assessment reporting. Note that often, especially in frequently explored areas, more ARIS reports will appear within the Report table than there are points on the map. This is because many reports are 'stacked' at the same geographic location. This is largely an artefact that Legal Claim Posts (LCP's) were often used as the marker of the ARIS reports. In more recent years, since 2005, the locations have been selected to indicate the center of the area worked. This is important to know because if one double clicks on an ARIS point, only the most recent report will be selected. Thus an area selection returns more reports.

Return to the Exploration Assistant map.

Review Mineral Titles Online information

- Pick MTO Mineral Titles Online Polygons



This shows the location of MTO and legacy claims in the area.

- Pick the Buffer
- Select within existing polygon
- Select MTO Mineral Titles Online Polygons
- View MTO Report

Mineral Titles Online Report

Click on Tenure Numbers for more information.

Click column headings to sort results.

Download to Excel

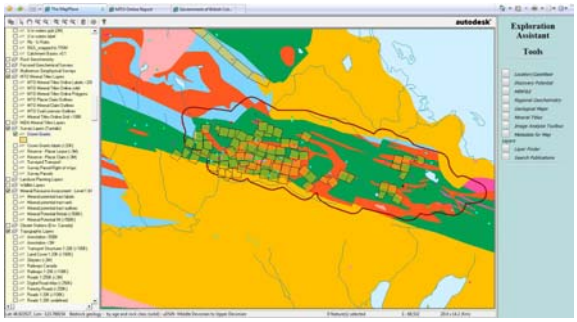
Tenure Number	Type	Claim Name	Good Until	Area (ha)
260341	Mineral	FANG	20100121	500
260393	Mineral	REFER TO LOT TABLE	20100121	25
260394	Mineral	REFER TO LOT TABLE	20100121	25
260606	Mineral	TOOTH	20100121	125
261827	Mineral	COPPER MINT I	20100808	25
261828	Mineral	COPPER MINT II	20100808	25
501465	Mineral	L109	20100131	21.241
501774	Mineral	L108	20100131	21.239
510156	Mineral	055A055D	20100131	42.48
512321	Mineral		20100121	84.965
513291	Mineral		20100131	84.988
513390	Mineral		20100131	84.96
516629	Mineral		20100131	382.371
516963	Mineral		20100131	42.487
516972	Mineral		20100131	42.494
516976	Mineral		20100131	21.244
516980	Mineral		20100131	84.951
517577	Mineral	LENORATYEE	20100131	42.496
531230	Mineral	CORNUCOPIA	20100505	255.111
531777	Mineral	MAPLE MOUNTAIN	20130411	382.672
533072	Mineral	HOLYOAK	20100131	127.422
543042	Mineral	LE BARON	20111011	42.4877
550746	Mineral	VOLCANICS	20100131	106.2599
550890	Mineral	FORTUNA	20100110	1402.569
552353	Mineral	MINNIE LION	20100110	361.3581
553794	Mineral	JANE 2	20100110	467.6761
565021	Mineral	JANE 2	20100110	233.7988
566299	Mineral	JANE 3	20100110	212.5828
566300	Mineral	JANE 4	20100110	127.5216
566301	Mineral	JANE 5	20100110	21.257
566643	Mineral	DUNCAN	20100110	531.5665
573447	Mineral	HALALT	20100110	446.278
573448	Mineral	SOMENOS	20100110	127.5681
592708	Mineral	BRENTSLOPE-SE	20091223	148.6312
592710	Mineral	BRENTSLOPE-SE02	20091230	42.4643
601627	Mineral	LE BARON	20100325	21.2442
602663	Mineral	LE BARON PROSPECTING	20100415	254.8
673423	Mineral	BRENTSLOPE-SE03	20101124	42.4688

Total Area: 7036.6531 ha

This report draws from the MTO database and shows the claims in the area. MapPlace updates the MTO polygon information each day at midnight so the tenure viewed is always the previous day's data. However, it builds the report, based on the existing data for thecurrent day, thus is current for the report. A download button is available that will copy the MTO data and can be opened in a web page Excel view or saved in a CSV structured XLS file that can be opened with Excel. Clicking on an MTO tenure number link connects directly to the MTO site.

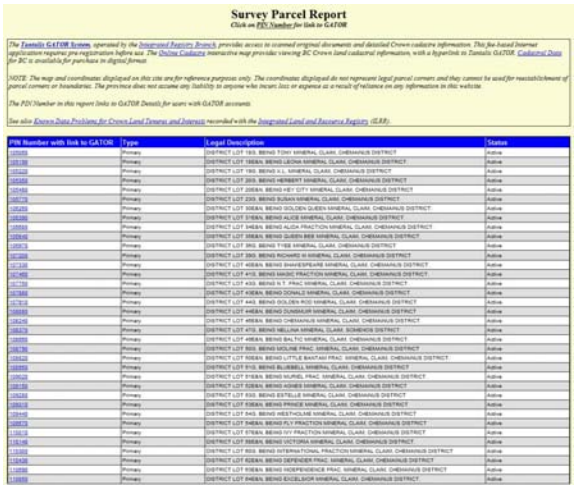
Review the Crown Grant claim information

- Return to the Exploration Assistant map
- Turn off the MTO layer
- Pick Survey Layers [Tantalis]
- Pick Crown Grants



This map shows the Survey Parcels associated with the Crown Grants in the area.

- Pick the buffer polygon
- Select within existing polygon
- Select Crown Grants
- View Reports Crown Grants



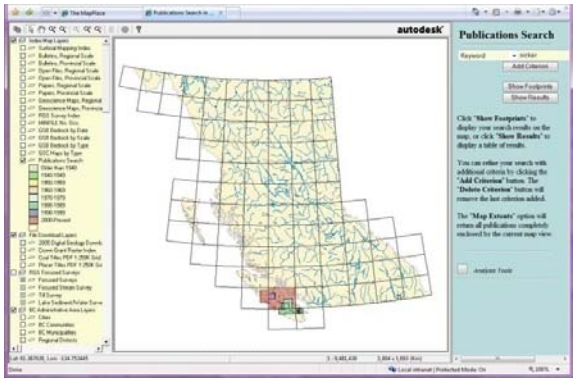
This report shows the Crown Grants in the selected area. Clicking on a Crown Grant PIN link connects to the login page for the Tantalis system. Logging in with a BCeID provides access to the legal information related to the claim.

Publications Search Tool

Open a new tab / window with the Exploration Assistant.

- Pick Publications Search Button.
  This will generate a new map with search criteria in the right panel.
- Criteria down drop box
  Pick 'Keyword'
  Type text 'Sicker' in adjacent box
- Show Footprints

The following map shows the results of the search criteria. Note the colour coding by year. As this is a key word search, the majority of the results cover the area of interest. However, there is one publication located in the southeast of BC that also comes up.



For a different representation:

- Show Results

A new tab/window opens and the results are listed in tabular form. From this page, the publications can be viewed by clicking on the various links. There is also a download function so the table can be loaded into MS-Excel.

End of Exercise

Mineral Exploration Roundup 2010
MapPlace / MTO Workshop

Presented by

BRITISH COLUMBIA
Canada's Pacific Gateway

Ministry of Energy, Mines and Petroleum Resources

AMEBC
Association for Mineral Exploration British Columbia

Sponsored by

Pan American SILVER CORP.

Part 2: Mineral Titles Online Notes

Round Up 2010

Short Course

MapPlace and Mineral Titles Online

Agenda

8:30 - 8:35	Introduction of Presenters
	Kirk Hancock, P.Geo. – MapPlace Geoscientist, BCGS
	Sarah Meredith-Jones, G.I.T. – MINFILE Geologist, BCGS
	Pat Desjardins, P.Geo. – Geomatics Geoscientist, BCGS
	Karen Samuelson – MTO Data & Information, Manager
	Nampreet Kohli – MTO GIS Analyst
8:35 – 9:00	Review of MapPlace Layout and Functions [Kirk Hancock]
9:00 – 10:00	MapPlace: Selected map functions [Sarah Meredith-Jones]
	ARIS MapBuilder
	Buffers
	Mapper Wrapper
10:00 – 10:20	Coffee Break - catered
10:20 – 12:00	Selected MapPlace Functions [Pat Desjardins]
	MapPlace2Go
	Image Analysis Tool (IAT)
12:00 - 1:15	Lunch – self serve offsite
1:15 – 3:15	MTO – Mineral Titles Online [Karen Samuelson & Nampreet Kohli]
	Mineral tenure acquisition
	Statement of Work
	Landowner Notification
3:15 – 3:35	Coffee – Catered
3:35 – 4:30	Integrated MapPlace Exercise [Kirk Hancock]
	Exploration Assistant
	MINFILE
	ARIS
	Property File
	and a host of supporting datasets

These Short Course notes have been prepared exclusively for Round Up 2010
and are Copyright of the Province of British Columbia, January 17, 2010.

BRITISH COLUMBIA

The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

Mineral Titles Branch

BRITISH COLUMBIA
The Best Place on Earth

Where we fit in

Ministry of Energy, Mines and Petroleum Resources

Mineral Titles Online

A title registry system used by Mineral Titles Branch and our clients.

MTO is an Internet-based, client driven method of electronic submissions for acquiring mineral and placer title in BC.

BRITISH COLUMBIA
The Best Place on Earth

Mineral Titles Online ~ Access

Logging on to Mineral Titles Online

Requires 2 items:

- ✓ Free Miner Certificate (FMC)
- ✓ British Columbia Electronic Identification (BCeID)

Are You Online?

Business BCeID

www.BCeID.ca

- Provides secure electronic access to multiple government services.
- Simplifies the registration of mineral claims
- Protects your privacy against unauthorized use
- Verifies your identity at any Service BC office or Mineral Titles Branch (MTB)

Free Miner Certificate (FMC)

- Register through the Service BC offices, or MTB.
- Provides clients with the right of free entry onto mineral lands as well as the right to register mineral titles and other transactions in the registry.
- Requires a yearly renewal fee. The first time fee must be paid by cash or cheque. Subsequent payments are completed online.

Mineral Titles Online (MTO)

www.MTOnline.gov.bc.ca

- Mineral/Placer Map Viewer
- Tenure Search
- Search Reserve Sites
- Renew your FMC
- Acquire Mineral Claims and Placer Claims
- Register Work & Cash Payments on Claims
- Pay Lease Rentals
- Transfer Mineral Titles

Mineral Titles Branch
Online Mapping and GIS Information

Email:
Mineral.Titles@gov.bc.ca

Website:
www.empr.gov.bc.ca/Titles/MineralTitles/GISInformation/Pages/default.aspx

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

Optional Services

GeoBC

BC's Geographic Gateway

www.geobc.gov.bc.ca

Mapping

- **iMapBC**
  - Make a map based on various themes/layers such as mineral/placer titles, landmarks, detailed water bodies, and painted relief etc.
- **ILRR**
  - Get access to legal interests on Crown land and perform land status for your mineral/placer claims.
- **MapPlace**
  - Get access to mineral activity, geophysical, and surficial geology thematic maps through BC Geological Survey.

Download

- **Data Distribution Service**
  - This service allows the client to order land and resource data from the Land and Resource Data Warehouse (LRDW).
- **Web Map Services (WMS)**
  - provides public access to the Province's geographic warehouse through connection links such as Google

Mineral Titles Branch, January 2009, G:\rddTB.shr\Mineral-Titles-Br\RoundUp\2009\handouts

Ministry of Energy, Mines and Petroleum Resources

Logging on to Mineral Titles Online

1. Go to the website: https://www.mtonline.gov.bc.ca/
2. Select the Logon button

3. Enter your BCeID username and password combination

4. Click ‘Next’ to be taken to the MTO Welcome screen

BRITISH COLUMBIA
The Best Place on Earth

MTO Welcome Page

Retrieve your Tenure Overlap Report here.

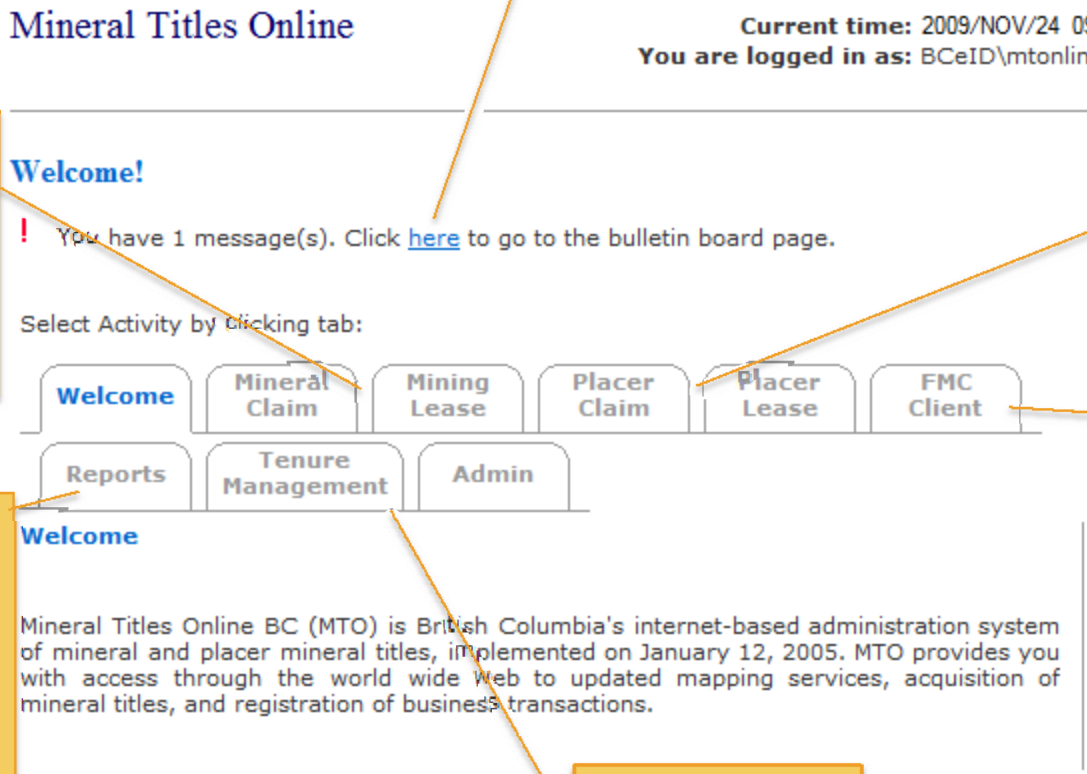
Placer Claim and Placer Lease transactions.

Mineral Claim and Mining Lease transactions.

FMC Renewal, Agent Profile Management

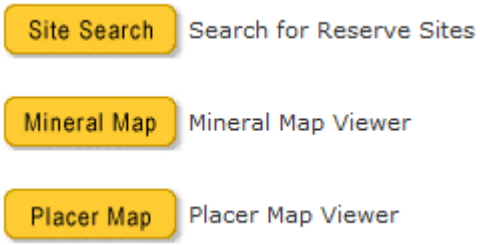
FMC Certificate, Payment Receipts and tenure overlap report requests.

Transfer of Ownership registrations

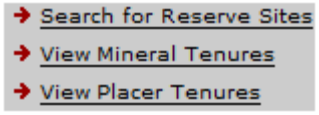


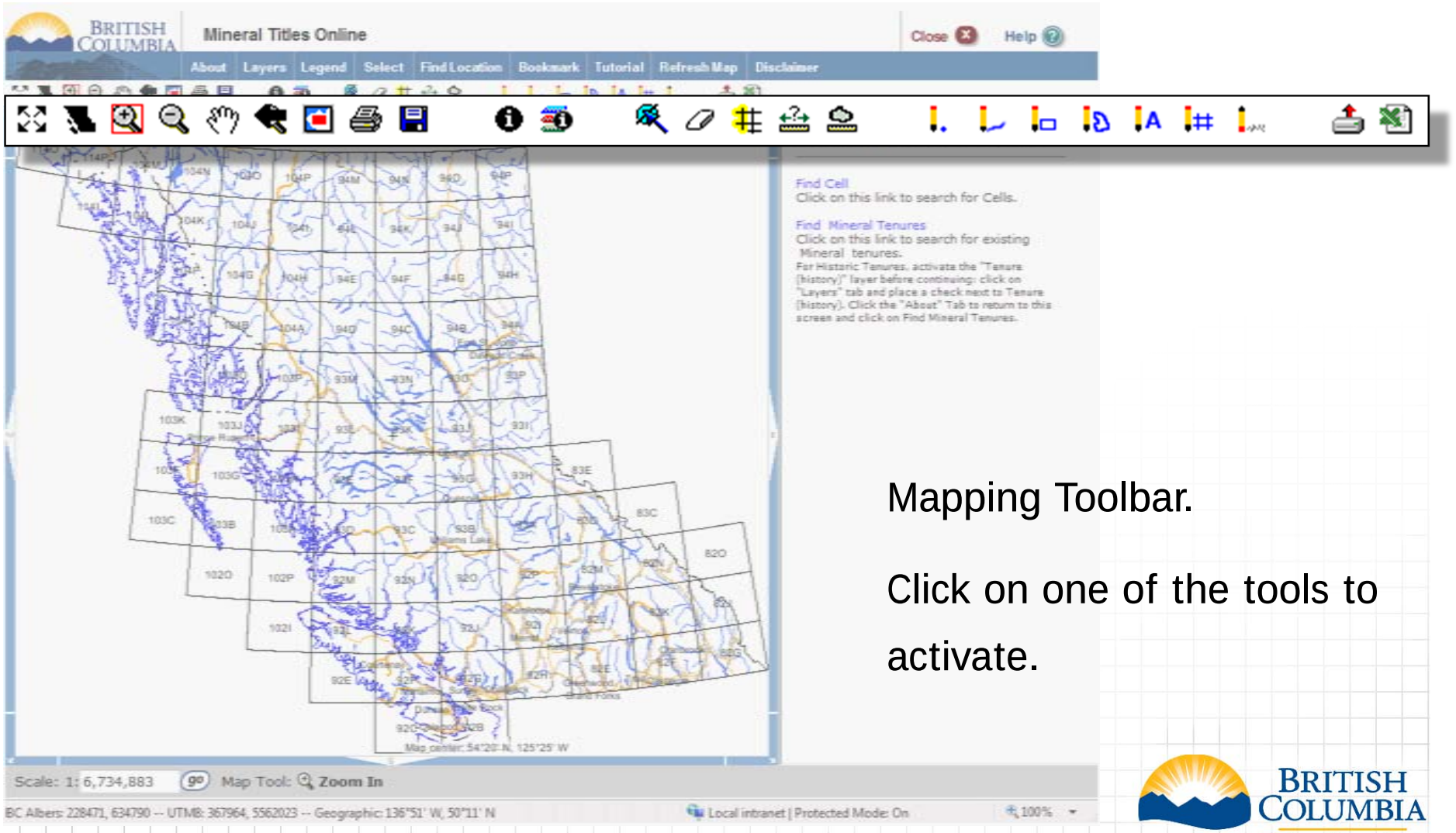
Mineral Titles Online ~ Mapping Basics

Accessible from the main MTO website. No logon required.



Accessible from within MTO logging on with your BCeID.





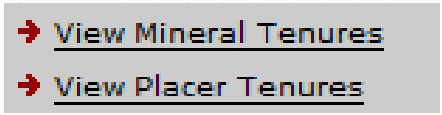
Mapping Toolbar.

Click on one of the tools to activate.

Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

- Open a web-browser
- Enter https://www.mtonline.gov.bc.ca/ into the address bar
- Click on the logon button
- Enter your BCeID username and password
- Click on the tenure type of choice to view the map.



BRITISH COLUMBIA
The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

Mapping Toolbar

- Full Extent - entire province
- BC Extent - entire province
- Zoom in
- Zoom out
- Pan
- Zoom to previous extent
- Overview map
- Full Extent - entire province
- Save session to computer
- Identify – layer specific
- Drill down Identify
- Select
- Clear selection
- Select by Buffer
- Measure length in metres
- Measure area in sq. metres
- Mark-up point location
- Mark-up line
- Mark-up rectangle
- Mark-up polygon
- Mark-up Text
- Mark-up Grid
- Delete individual mark-up
- Upload Shapefile
- Extract Layer to excel

BRITISH COLUMBIA
The Best Place on Earth

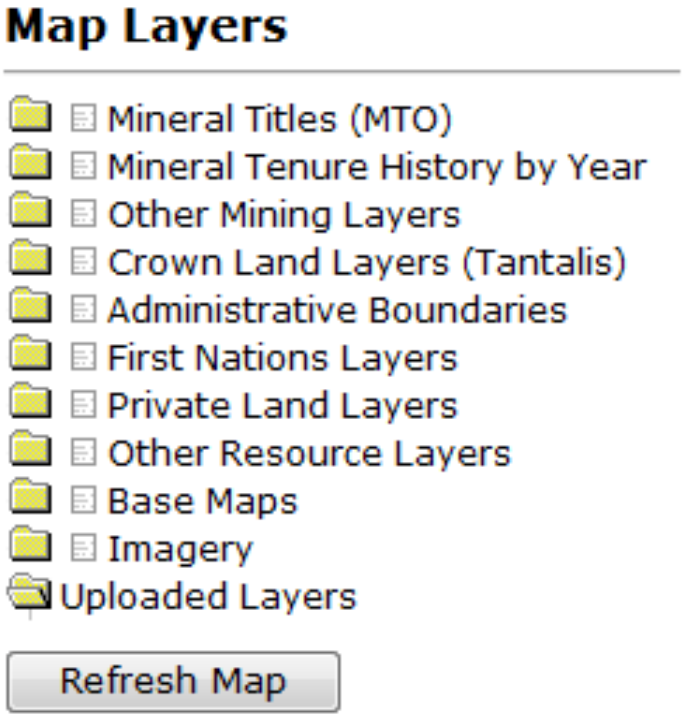
Hands-On Demo

Turning off and on map layers

Select **Layers** from the blue menu bar on the top of the mapping window.

Map Layers Table of Contents will appear on the right hand side.

- Map layers are scale dependent and will only become visible once they are within the pre-defined threshold.



Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

Understanding how map layers work

Folder Theme

Not available for viewing due to scale dependency

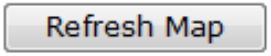
Map layer ‘turned on’

Map layer not ‘turned on’

Hover over to view at what scale layer is visible, or click the ‘+’ to zoom to that scale for layer to turn on.

Change Symbology: Fill color, outline color and label color, size and font

Always refresh your map once a map layer change is made



BRITISH COLUMBIA
The Best Place on Earth

Hands-On Demo

Zoom into an area using Find Location Menu

Select **Find Location** from the blue menu bar on the top of the mapping window.

A list of ‘zoom to’ options appears on the right hand side

- Select Mapsheet, for example, ‘93A063’
- Use the Bookmark tool **Bookmark** to save this location to your machine

Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

Tenure Information

- Select **Layers** menu item
- Click on the ℹ icon next to Tenure (current); it will change from grey to black
- Click on a tenure on the map, a new window will appear with the tenure detail

Review information such as tenure number, type of tenure, issue date, good to date, owners or event transactions.

Tenure Detail

Tenure Number ID	**397168**
Termination Type	
Title Type	PC
Tenure Sub Type	C
Tenure Type	P
Mining Division	CARIBOO
Good To Date	2012/oct/10
Issue Date	2002/oct/10
Termination Comments	
Termination Date	
Tag Number	P97330
Claim Name	OCT 1
Old Tenure Code	397168
Area In Hectares	50.00

Map Numbers:

093A063
093A

Owners:

210630 REED, GRAHAM	33.3%
210631 JARVIS, SCOTT IAN	33.3%
136614 REED, KENNETH PHILLIP	33.4%

Tenure Events:

Submitter	Event	Effective Date
118315 MICKLE, ROBERT EDWARD	L_CAPP(3185713)	2002/OCT/10
118315 MICKLE, ROBERT EDWARD	L_OTRA(3186425)	2002/NOV/04
136614 REED, KENNETH PHILLIP	L_OTRA(3200829)	2003/OCT/07
145938 REED, DON JOHN	L_SOW(3200830)	2003/OCT/07
145938 REED, DON JOHN	L_SOW(3217533)	2004/SEP/28
145938 REED, DON JOHN	SOW(4049984)	2005/SEP/29
145938 REED, DON JOHN	SOW(4104506)	2006/OCT/01
145938 REED, DON JOHN	SOW(4107649)	2006/OCT/23
145938 REED, DON JOHN	BSLI(4145971)	2007/APR/29
145938 REED, DON JOHN	BSLI(4151989)	2007/JUN/05
145938 REED, DON JOHN	BSLI(4151990)	2007/JUN/05
136614 REED, KENNETH PHILLIP	BSLC(4151991)	2007/JUN/05
145938 REED, DON JOHN	BSLI(4164713)	2007/AUG/16
145938 REED, DON JOHN	BSLI(4164716)	2007/AUG/16
145938 REED, DON JOHN	BSLI(4164719)	2007/AUG/16
136614 REED, KENNETH PHILLIP	BSLI(4164734)	2007/AUG/16
210630 REED, GRAHAM	BSLC(4164738)	2007/AUG/16
210631 JARVIS, SCOTT IAN	BSLC(4164761)	2007/AUG/16
145938 REED, DON JOHN	BSLI(4164766)	2007/AUG/16
136614 REED, KENNETH PHILLIP	BSLC(4164768)	2007/AUG/16
136614 REED, KENNETH PHILLIP	SOW(4362808)	2009/OCT/01

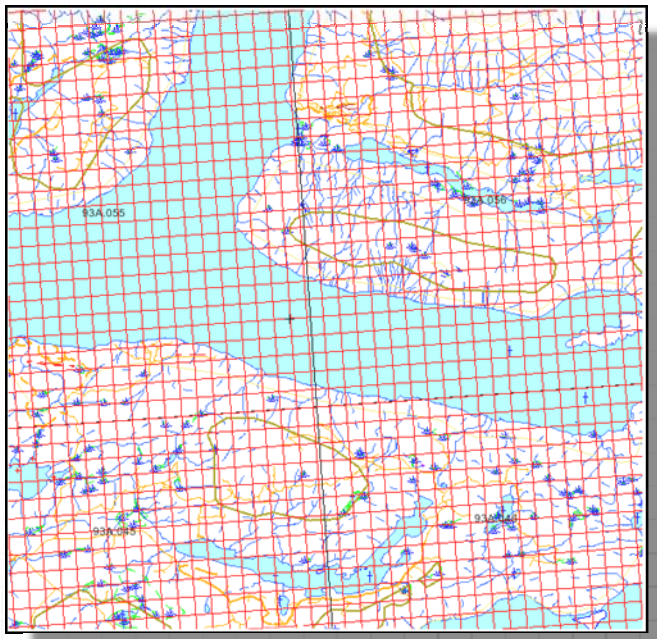
Mineral Titles Online Grid

Size of Grid Cell is approximately 20 hectares

(~21 ha in the most southern border and ~16 ha along the northern border)

- Cost of acquisition of 1 hectare:
  - Mineral Title = $0.40
  - Placer Title = $2.00

- Required maintenance per hectare:
  - Mineral Title =
    - $4.00 /year (for the first 3 years)
    - $8.00 /year (subsequent years)
  - Placer = $10.00 /year



Hands-On Demo

Grid Cell Information

- Select Layers menu item
- Click on the icon next to MTO Grid; it will change from grey to black
- Click on a grid cell on the map, the right hand frame will display the details of the identified cell.

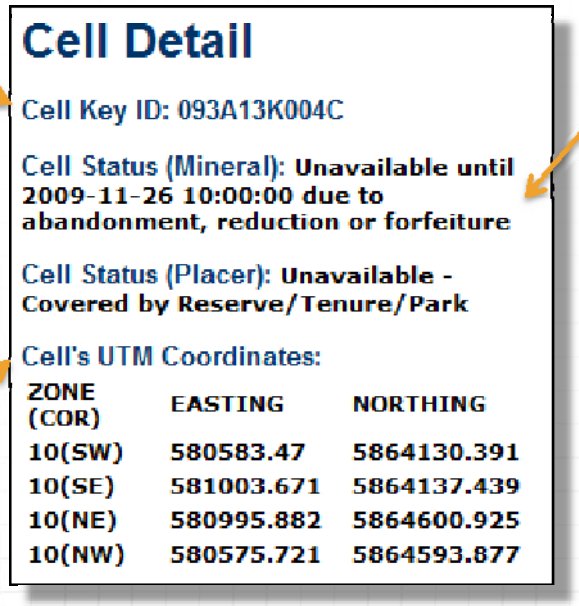
Grid Cell Detail

Grid Cell Information

After identifying a cell the cell detail is displayed

Cell key ID – can be used to acquire claims, find specific cells on the map

UTM Coordinates – can be input into GPS systems for field navigation



Cell Status – Indicates if the cell is available or not for acquisition, why it might not be available and in the case of reductions and abandonments when it might be available

Mineral Titles Online ~ Acquisition of Title

Registration of new claims

- Requires a valid FMC
- Claims may consist of up to 25 adjoining cells
- No rights are acquired by registering a claim over alienated land
- It is the free miner's responsibility to be aware of any Reserves in the area, private land in the area, crown granted 2-post mineral claims, or wildlife interests; any of these may impede with exploration and development of your title.

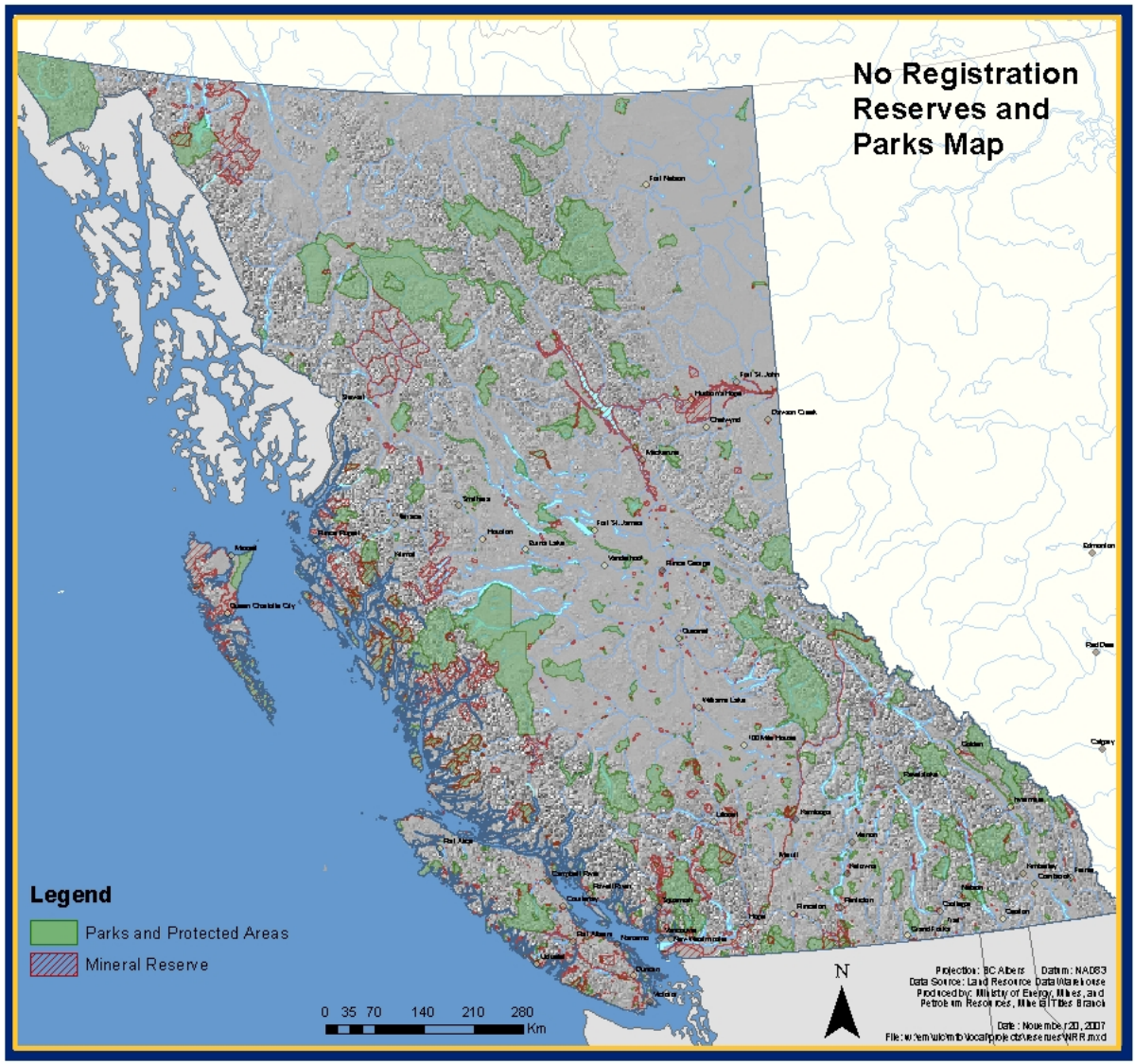
Ministry of Energy, Mines and Petroleum Resources

Where to Acquire Claims

Not available:

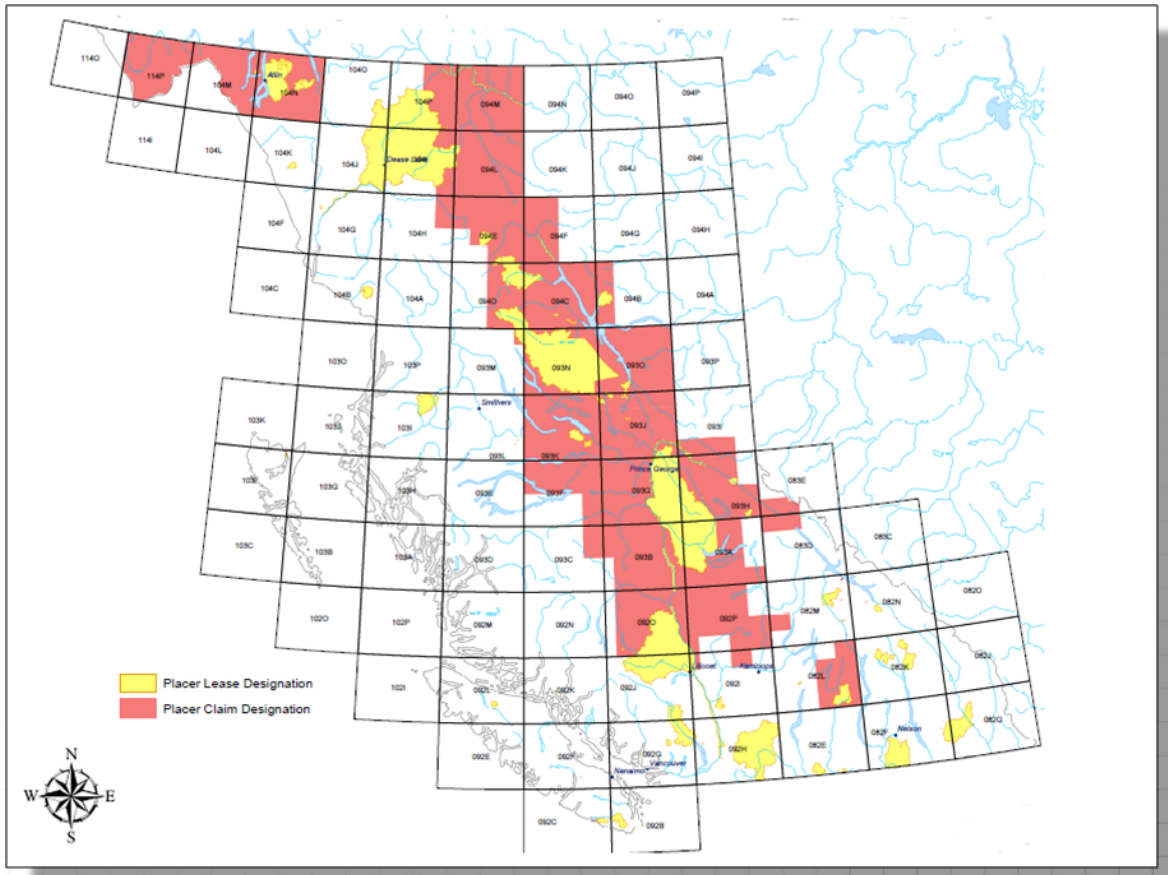
- Parks, Protected areas and Ecological reserves
- Mineral No Registration Reserves (NRR)

The province is available for mineral claim acquisition with some small exceptions

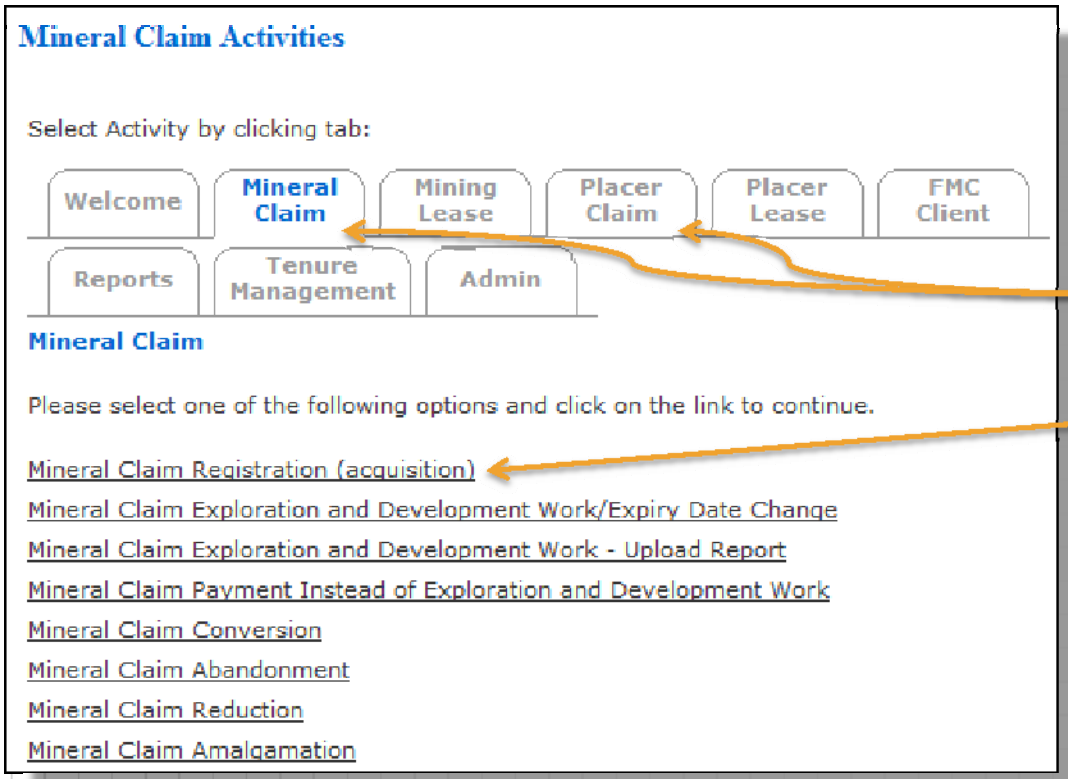


Where to Acquire Claims

Placer claim or lease acquisition is located in specified areas across the province



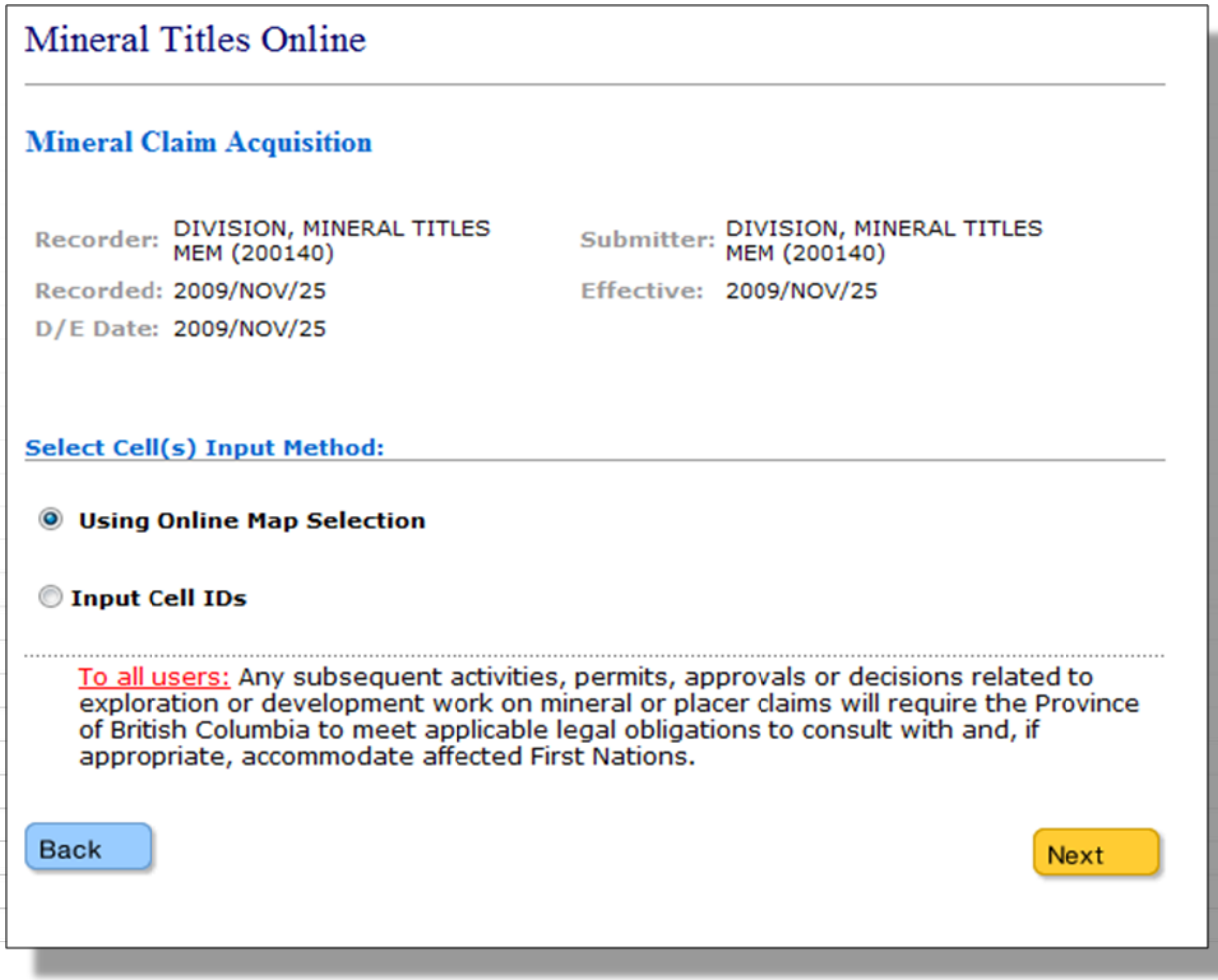
Hands-On Demo



Claim Acquisition

- Select the Mineral Claim or Placer Claim tab
- Select 'Mineral Claim Registration (acquisition)' or 'Placer Claim Registration (acquisition)'

Hands-On Demo



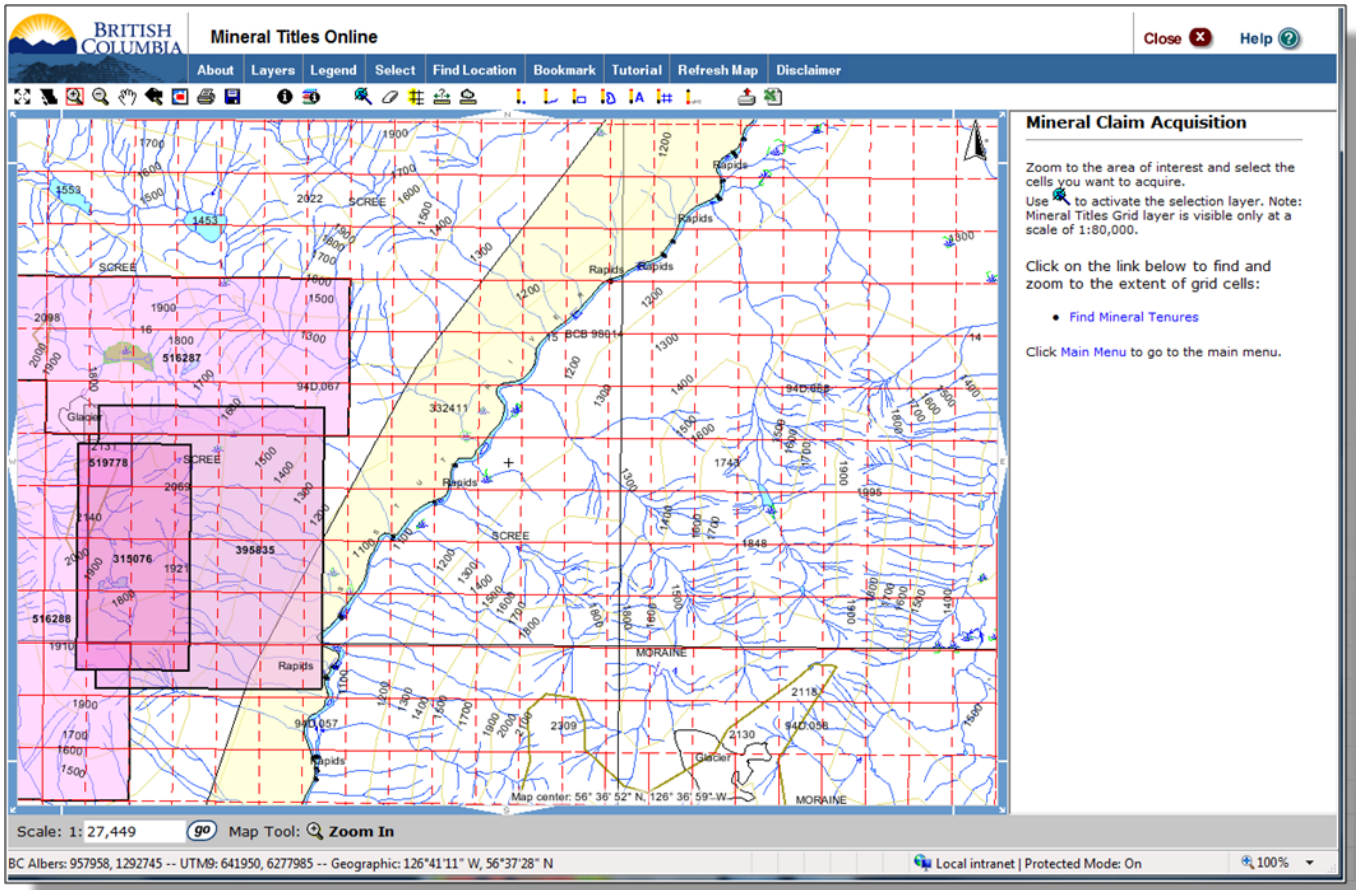
Determine if you wish to input the cell key ids or select cells from a map.

Select this choice and click Next.

Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

Claim Acquisition by MAP SELECTION

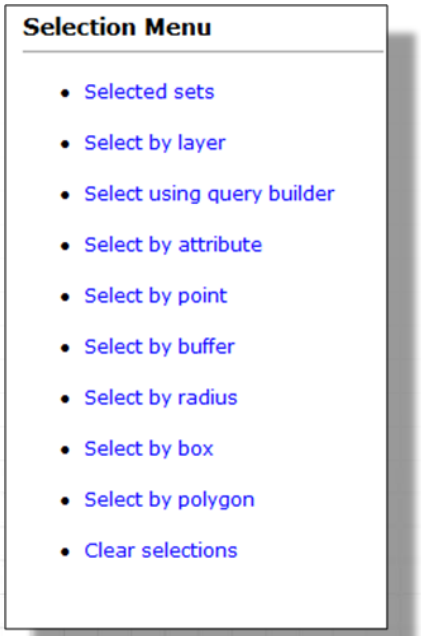


Zoom into the area you wish to acquire title.

Click **Select** from the blue menu

BRITISH COLUMBIA
The Best Place on Earth

Hands-On Demo

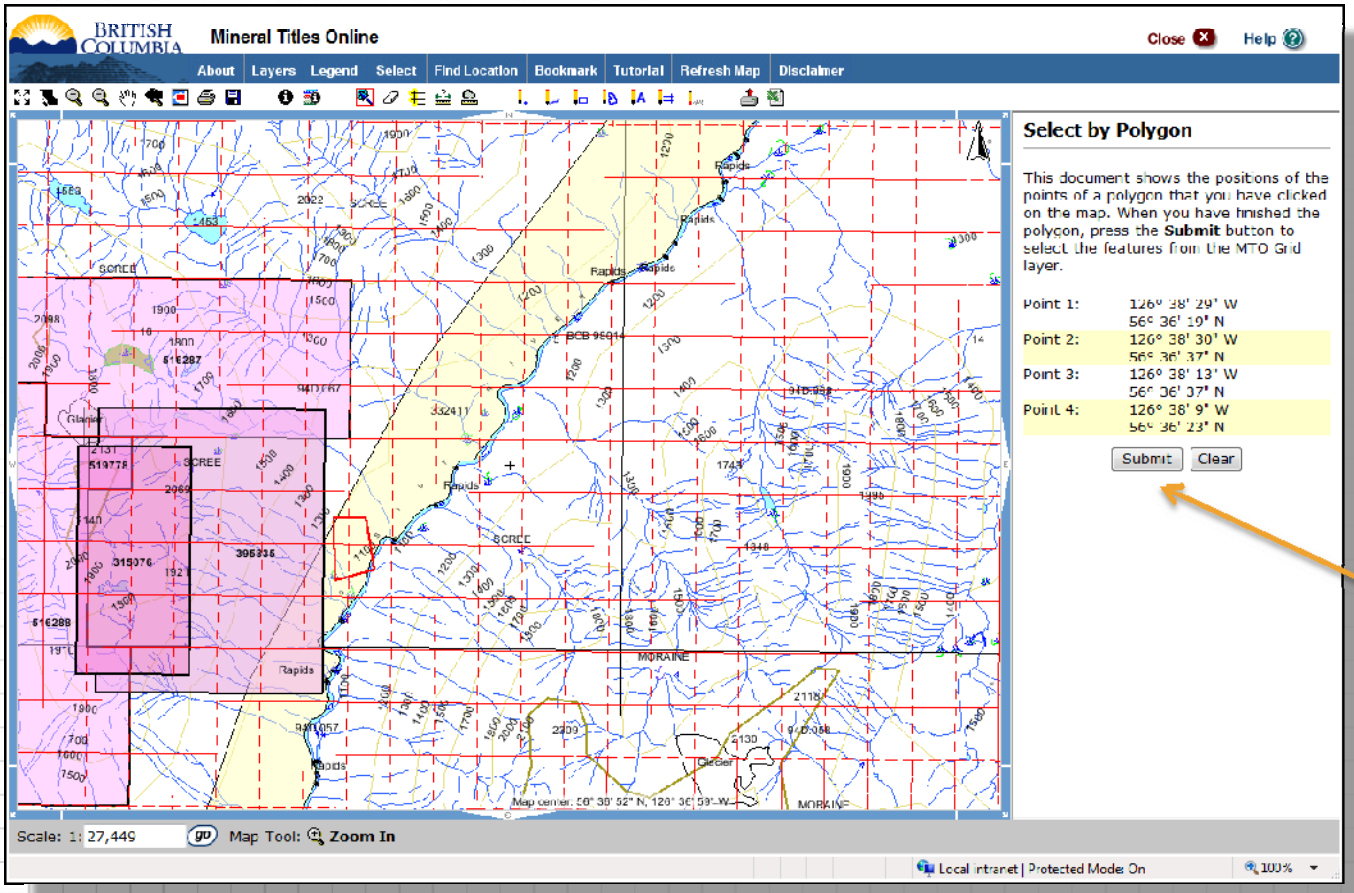


Choose the method of how you would like to select cells from the map for claim acquisition.

Note: Can always return to this menu by clicking the Select menu item.

Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo



Select the cells on the map.

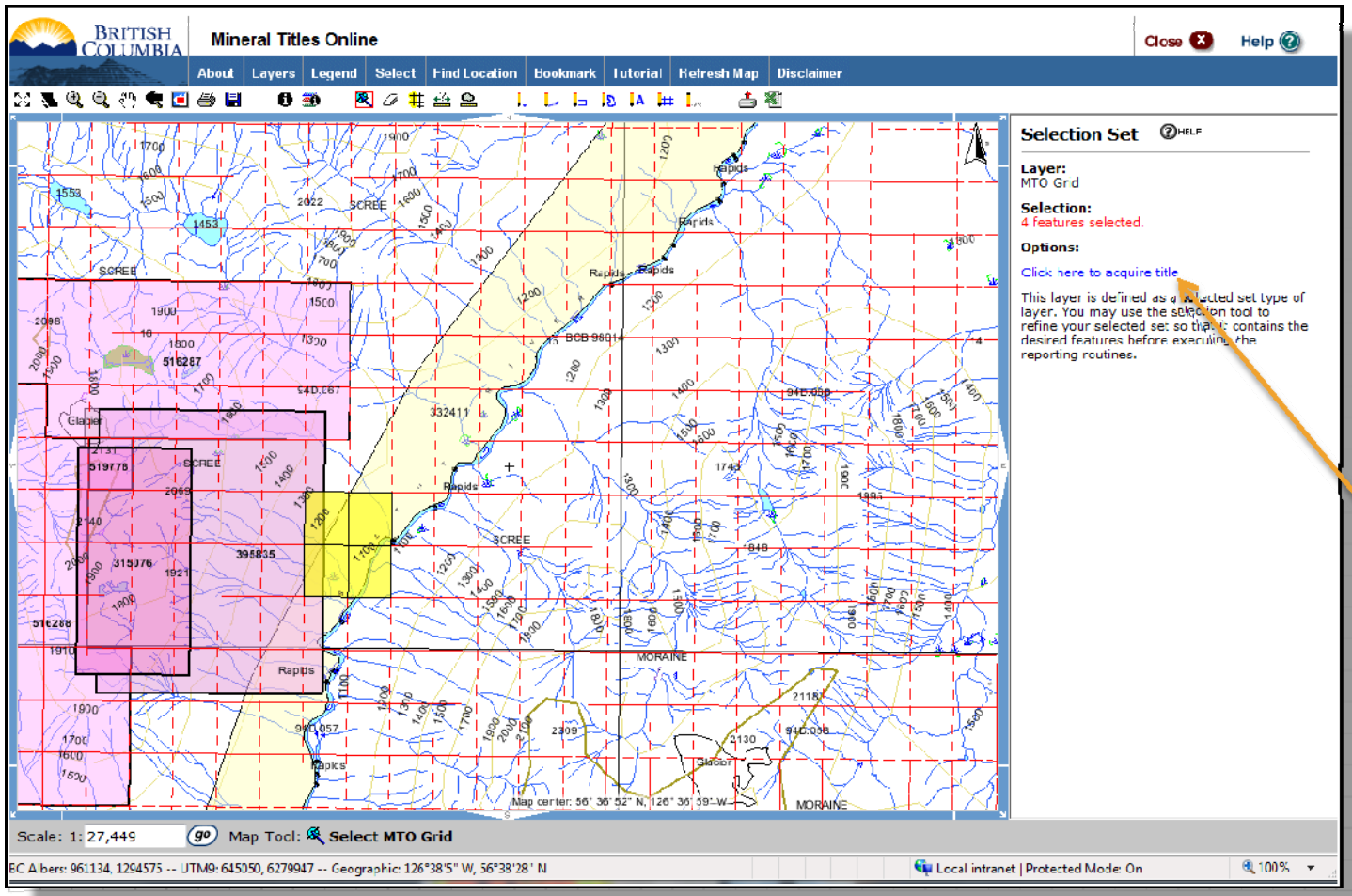
Method of Selection: Select by Polygon

If satisfied with selection, click Submit button

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

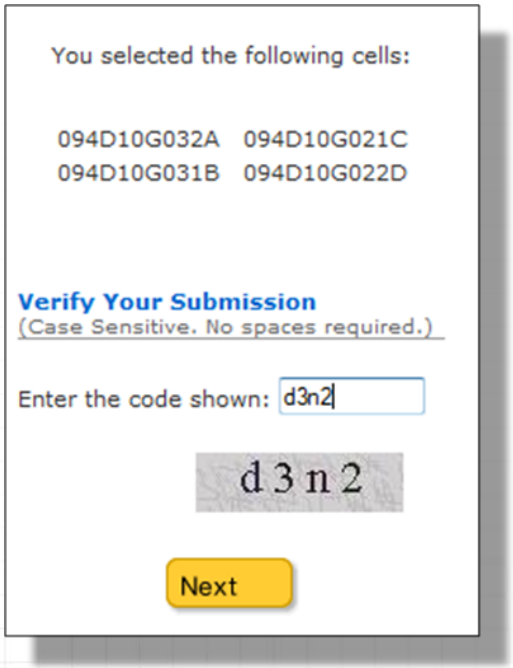


Selection of cells is shown in yellow highlight.

If satisfied, click here to acquire title

BRITISH COLUMBIA
The Best Place on Earth

Hands-On Demo



Enter the letters and digits shown for the security feature

This is case sensitive and no spaces are required

Click Next

Hands-On Demo

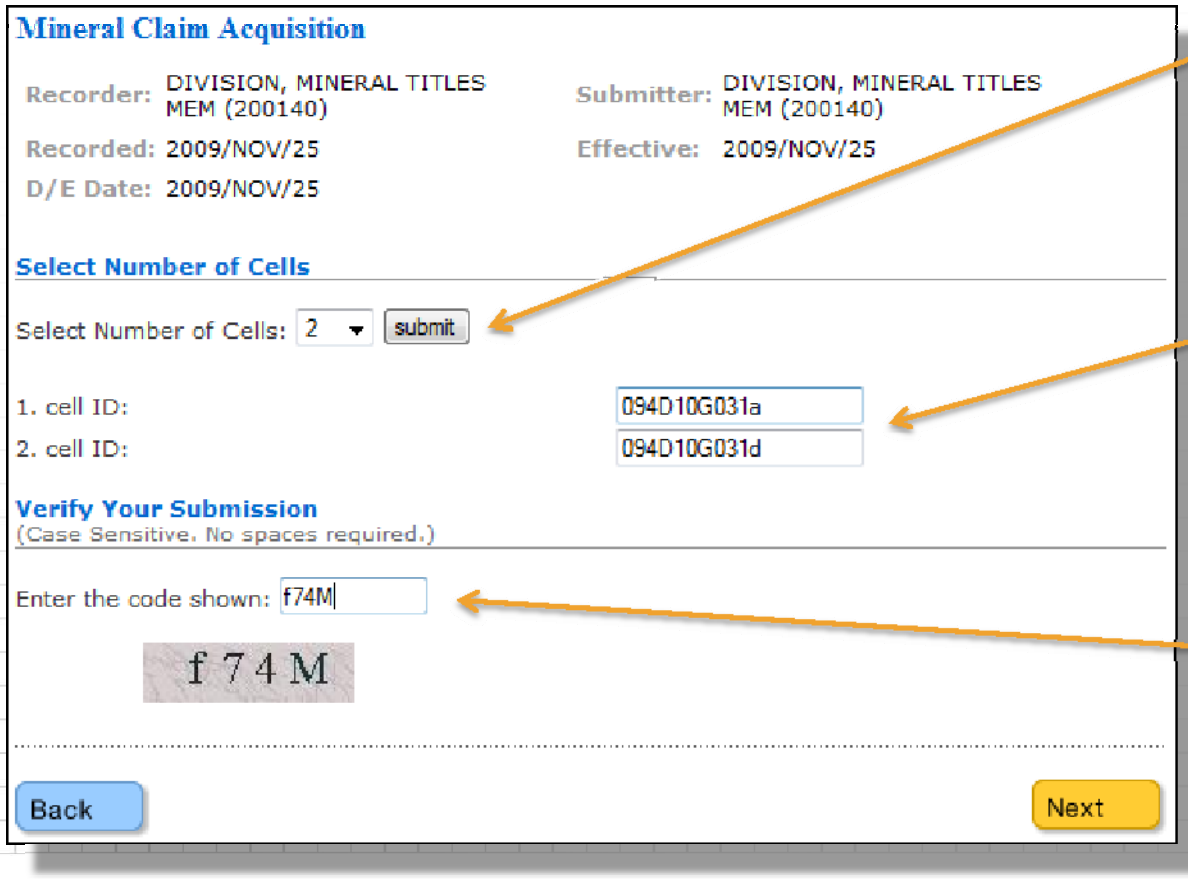
Cell selection complete

After selecting cells by map selection, you are ready to verify the selection information and make payment for your claim.

Option 2, Select cells for acquisition by inputting cell key ID's

Hands-On Demo

Claim Acquisition by INPUT CELL IDS



Use drop-down list to select the number of cells you wish to acquire.
Click submit if you have changed this number.

Enter the cell key ids

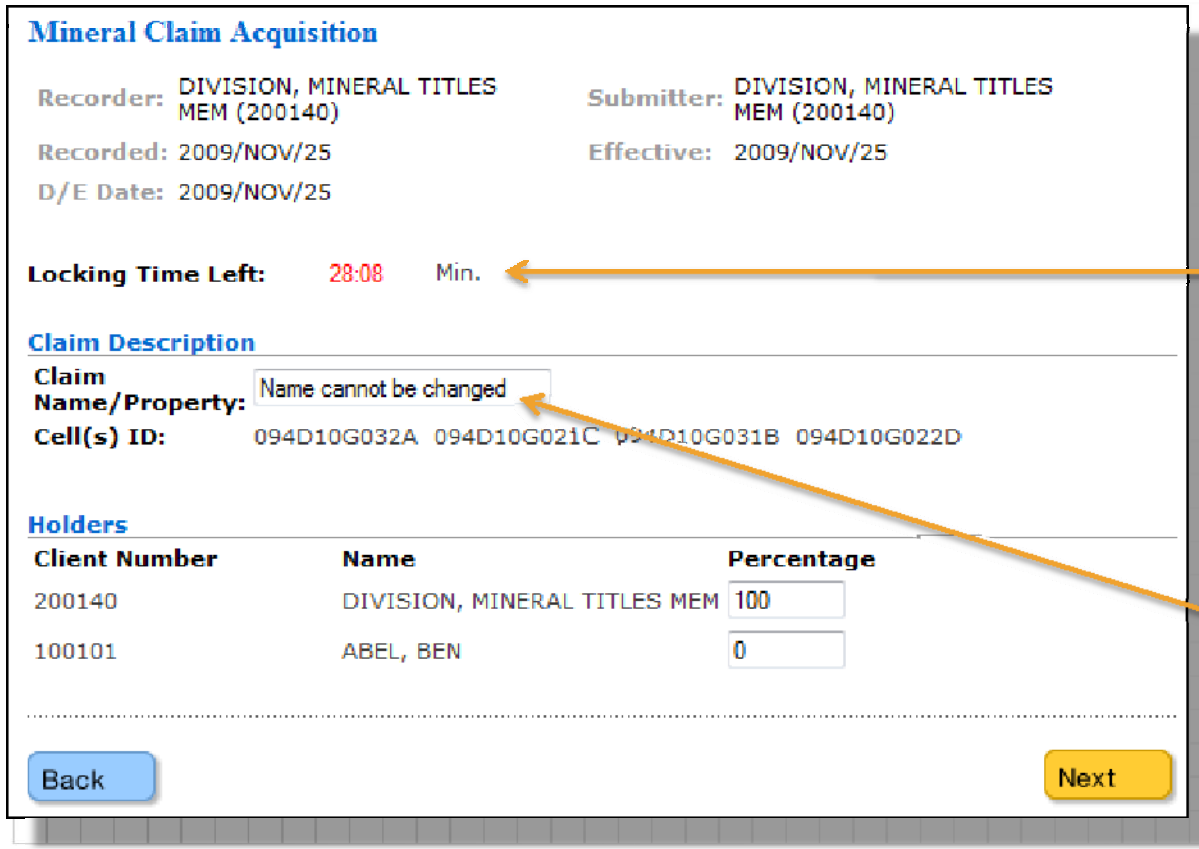
Enter the security code. This is case sensitive and no spaces are required.

Click Next

BRITISH COLUMBIA
The Best Place on Earth

Hands-On Demo

Cell selection complete



After selecting cells by map selection or by inputting cell key ids. You are ready to verify and make payment for your claim.

You have 30 minutes to complete the transaction with payment received by MTO

Enter a claim name.
Optional and cannot be amended

BRITISH COLUMBIA
The Best Place on Earth

Hands-On Demo

Mineral Claim Acquisition

Recorder: DIVISION, MINERAL TITLES MEM (200140)
Submitter: DIVISION, MINERAL TITLES MEM (200140)
Recorded: 2009/NOV/25
Effective: 2009/NOV/25
D/E Date: 2009/NOV/25

Locking Time Left: 26:38 Min.

Claim Description

Claim Name/Property: NAME CANNOT BE CHANGED
Cell(s) ID: 094D10G032A 094D10G021C 094D10G031B 094D10G022D

Holders

Client Number	Name	Percentage
200140	DIVISION, MINERAL TITLES MEM	100

Cost

Total Area: 71.24 ha
Unit Price: $ 0.4
Total: $ 28.5

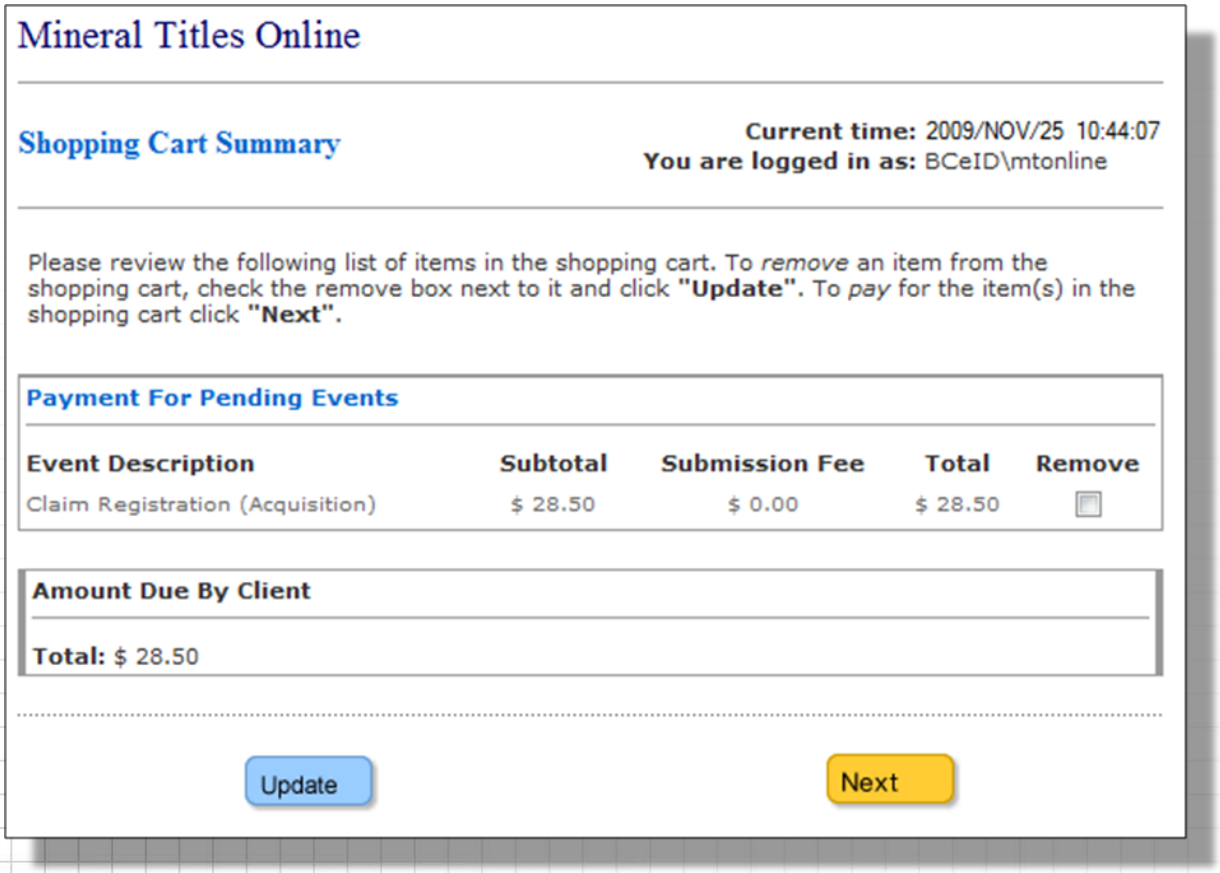
Back Next

Verify the information is correct

- Claim name
- Tenure holders and %
- Number of cells and ID's

Click Next to proceed to payment screens

Hands-On Demo



Summary of items in the shopping cart with respective amounts due

If you do not wish to continue with this transaction, check the remove box and click Next

Otherwise, click Next to proceed to payment screens

Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

Mineral Titles Online

Current time: 2009/NOV/25
You are logged in as: BCeID\mto

Select payment method

Please select the payment method and then click **'Next'** to pay.

- (•) Online Payment
- ( ) Over-the-counter payment (eGARMS)
- ( ) Mineral Titles Branch Only

Back

Credit Card Payment

Payment Information

Invoice/Order Number: 13052
Amount: $28.5[illegible] CAD
Credit Card Type: VISA
Credit Card Number:
Expiration Date: 01 / 2009

Pay Now

Visa, Mastercard, AMEX

Government Agent Revenue Management System (GARMS) Payment

Please input *Authorization Number*, *Paid Amount*, then click **'Next'**.

Authorization Number:
Paid Amount: 0.0

Payment Items:

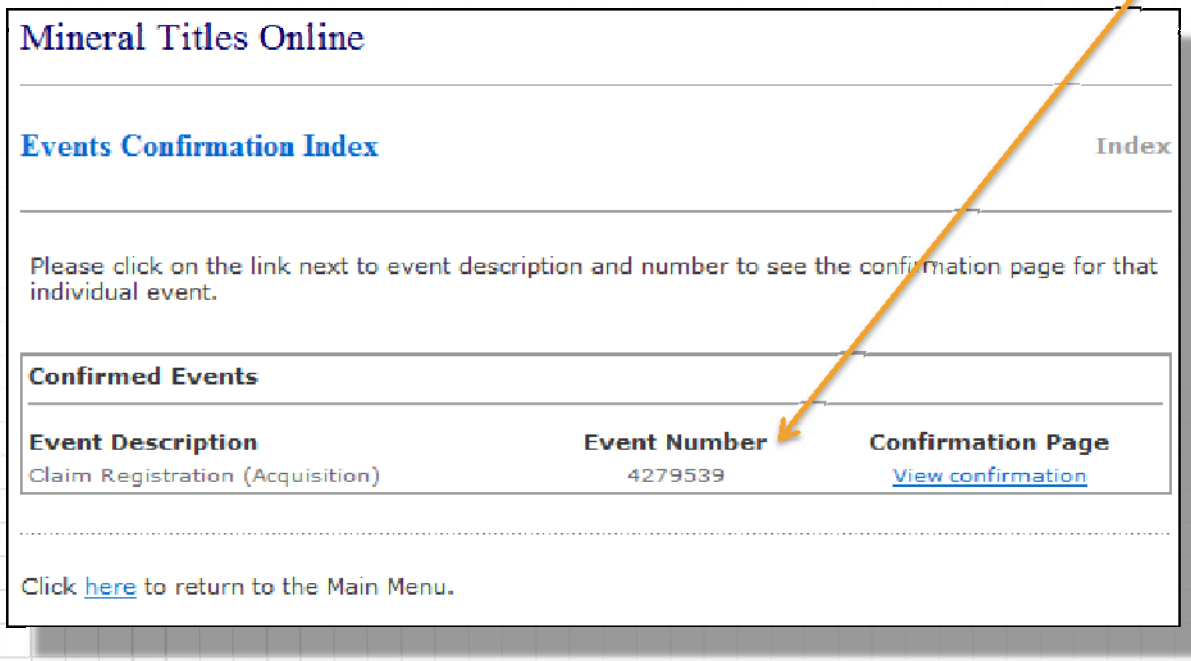
Event #	RMS Code	Subamount
44[illegible]	0625	$ 28.50
Event Subamount:		**$ 28.50**
Amount Due:		**$ 28.50**

Cash / Cheque payment

BRITISH COLUMBIA
The Best Place on Earth

Hands-On Demo

Claim Acquisition complete



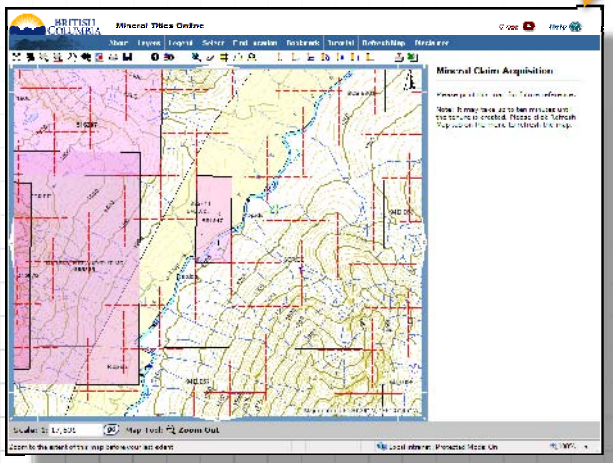
Event number issued

Click 'View Confirmation' to review tenure number, tenure holders, cells and coordinates

Recommended to print the confirmation screen for your files

Hands-On Demo

Print this record for your files



Mineral Titles Online

Mineral Claim Acquisition Confirmation

Recorder: BILINSKI, KAREN E. (KEBILINS_P)
Submitter: DIVISION, MINERAL TITLES MEM (200140)
Recorded: 2009/NOV/25
Effective: 2009/NOV/25
D/E Date: 2009/NOV/25

Event Number: 4279539

Claim Description

Tenure No: 591817

View/Print Map for Acquired Claim

Claim Name/Property: NEW NAME OF CLAIM
Cell(s) ID: 094D10G031A 094D10G031D

Holders

Client Number	Name	Percentage
200140	DIVISION, MINERAL TITLES MEM	100

Cells UTM Coordinates

CellID	ZONE	EASTING	NORTHING
094D10G031A	9(SW)	645276.928	6276278.068
	9(SE)	645660.505	6276291.32
	9(NE)	645644.457	6276754.945
	9(NW)	645260.922	6276741.693
094D10G031D	9(SW)	645260.922	6276741.693
	9(SE)	645644.457	6276754.945
	9(NE)	645628.409	6277218.569
	9(NW)	645244.917	6277205.318

The event was successfully saved.

Please use ***Back*** button to go back to event confirmation index.

Back

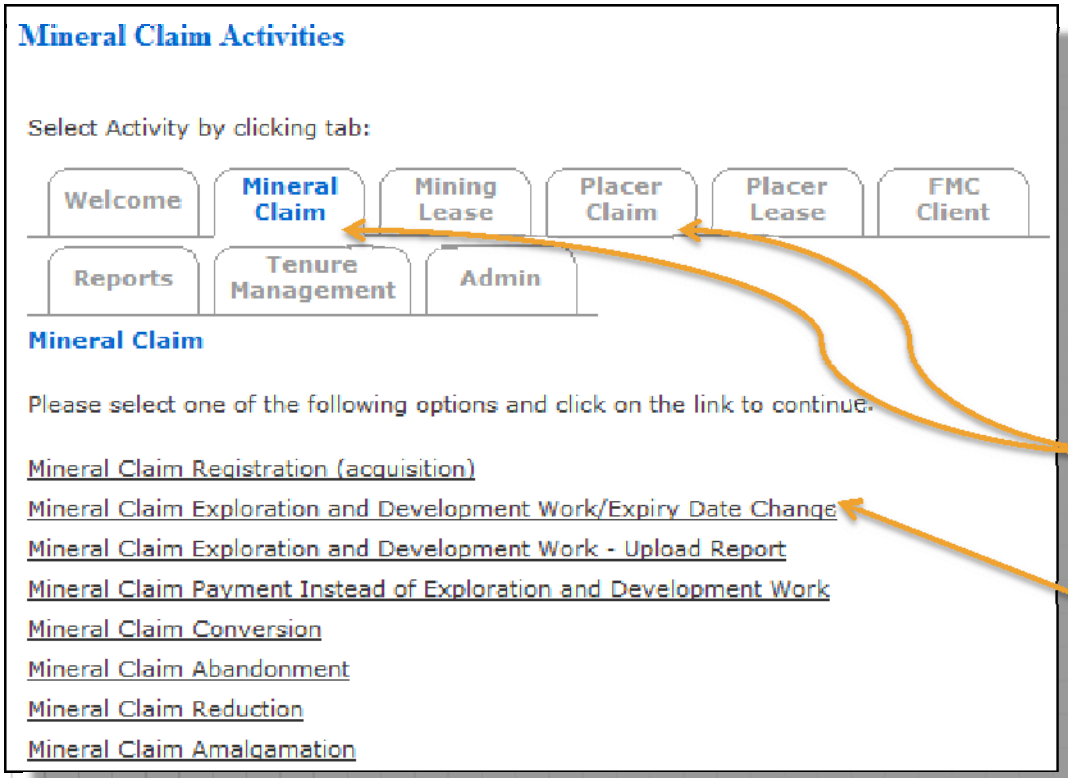
Mineral Titles Online - Title Maintenance

Maintain your claim by:

1. Filing Exploration and Development Work (SOW)

2. Making a payment instead of Exploration and Development Work (CIL)

Hands-On Demo



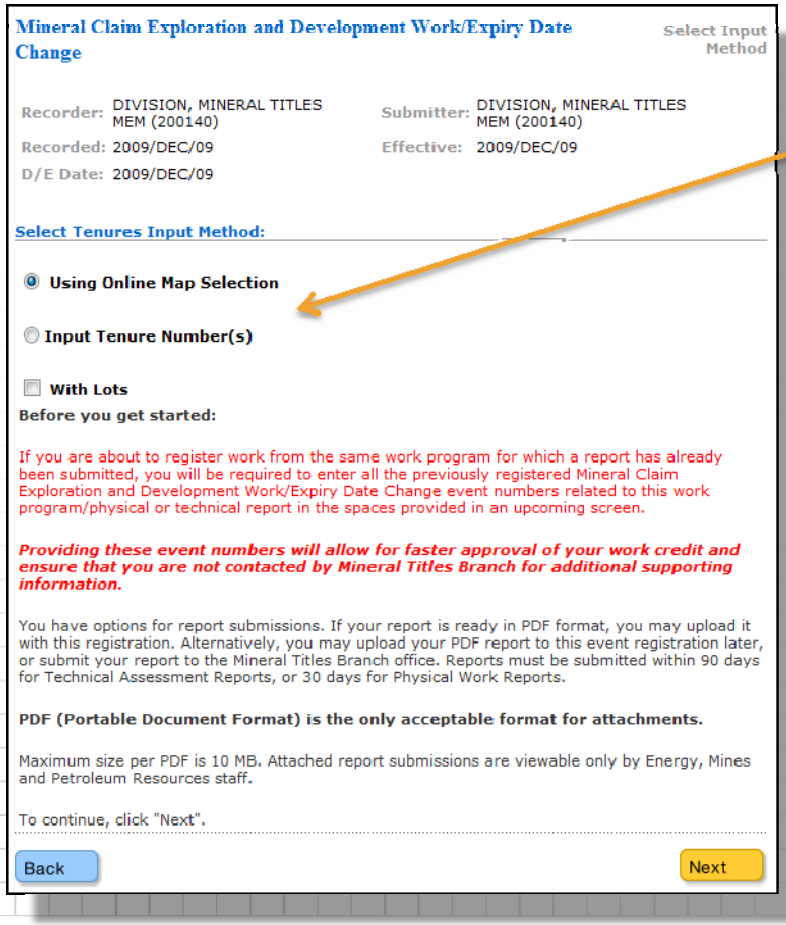
Claim Maintenance

Registration of Exploration and Development

- Select the Mineral Claim or Placer Claim tab
- Select 'Mineral Claim Exploration and Development Work/Expiry Date Change'

BRITISH COLUMBIA
The Best Place on Earth

Hands-On Demo



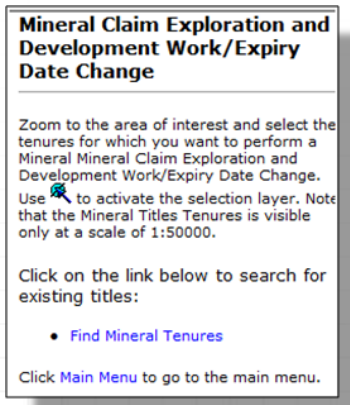
Determine if you wish to input the cell key ids or select cells from a map.

Select this choice and click Next.

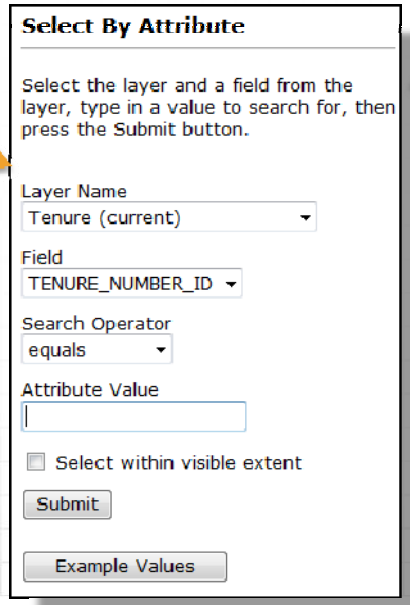
Ministry of Energy, Mines and Petroleum Resources

Hands-On Demo

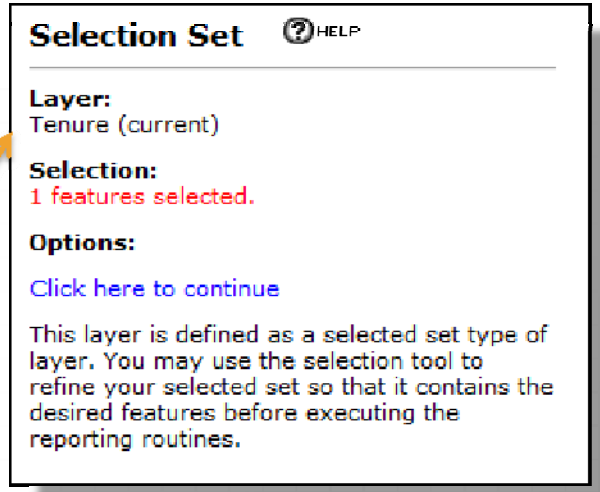
SOW by MAP SELECTION



Select 'Find Mineral Tenures' or zoom/pan to the location of the tenure for selection.



Enter the tenure number you wish to apply work to.



Click here to continue, then click the Next button if the correct tenure was selected

BRITISH COLUMBIA
The Best Place on Earth

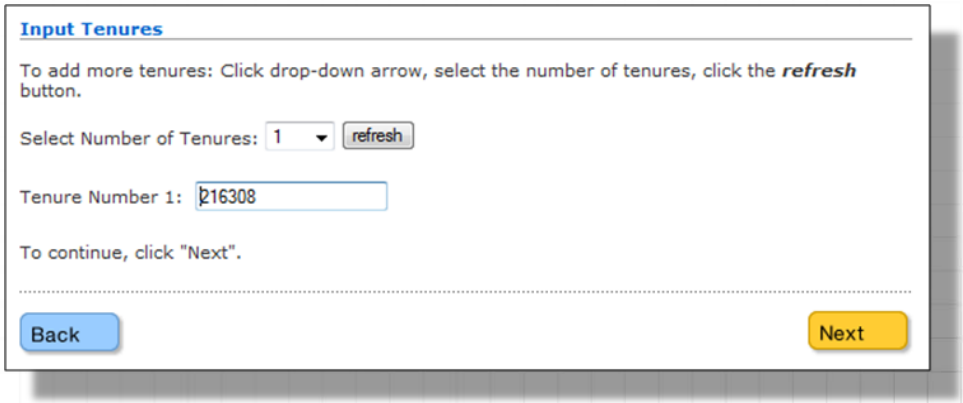
Hands-On Demo

SOW by INPUT CELL IDS

Enter the tenure numbers of those titles you wish to submit with this registration

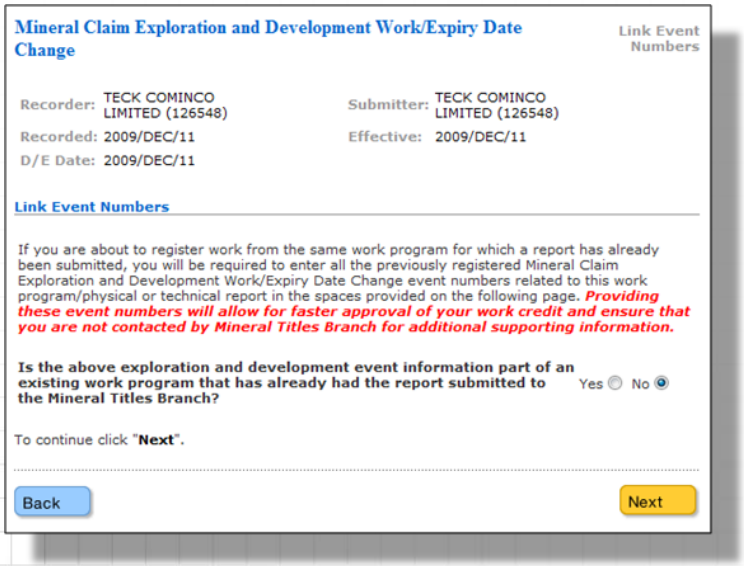
Use the drop-down box to adjust the number of tenures

Click next to go to the Link Event numbers screen



Hands-On Demo

Link Event Numbers



If you are filing an additional SOW registration for a work program for which you have already submitted the report select ‘YES’, otherwise, select ‘NO’.

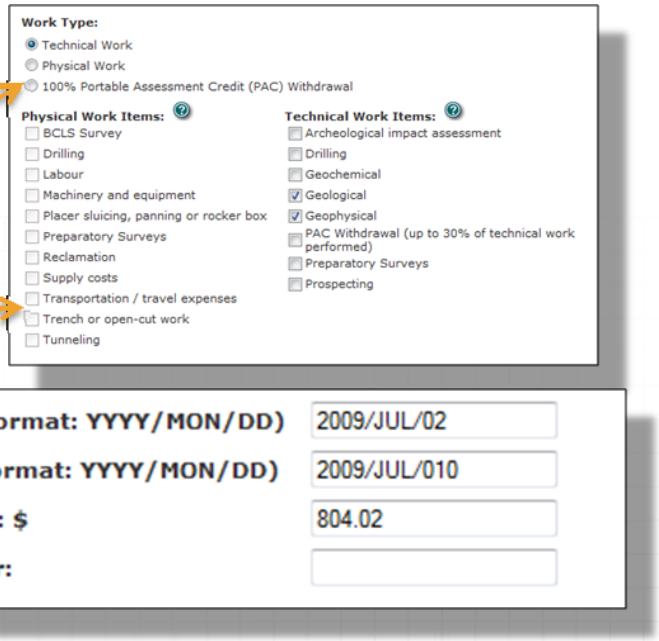
A report will be required for submission if you selected ‘No’.

Hands-On Demo

Registering your Work

Select the type of work: Technical or Physical
Select the appropriate work items

Enter work start / work stop dates for your work program



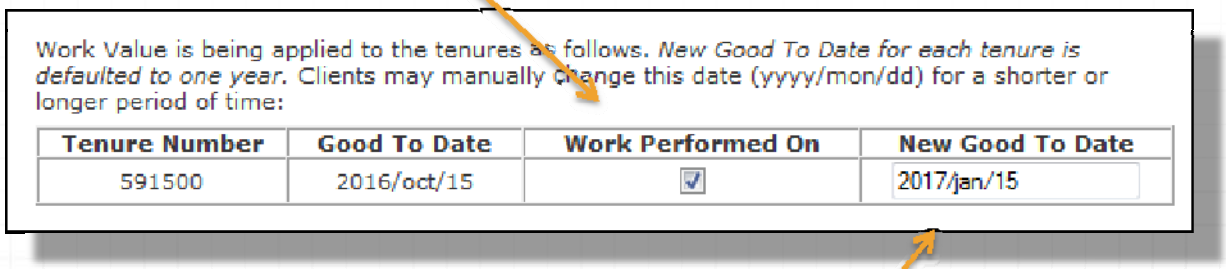
Enter the Value of work. This value needs to be relative to the length of time you wish to advance the expiry date of your claim.

If reported work value is in excess, enter the PAC name in the appropriate form field

Hands-On Demo

Registering your Work

If registering work for a series of contiguous claims, select the tenure for which the work was actually conducted.



Adjust the ‘New Good to Date’ as required

Hands-On Demo

Uploading your Exploration and Development Work Report

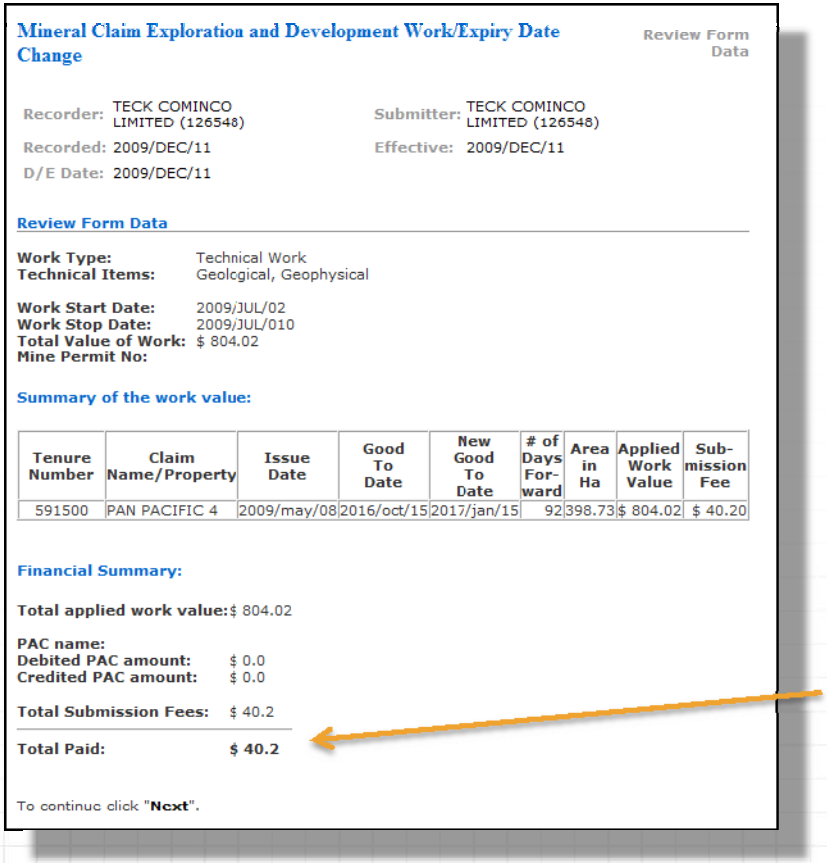
If you have your report prepared as a PDF, you can upload the report with this registration. You can also upload the report separate from the work registration.

http://www.empr.gov.bc.ca/Titles/MineralTitles/mto/Help/main/claim/Pages/workUpload.html#uploadDocs

Hands-On Demo

Statement Review

Correct any errors by clicking on the ‘Back’ button and amending



Mineral Claim Exploration and Development Work/Expiry Date Change

Review Form Data

Recorder: TECK COMINCO LIMITED (126548)
Submitter: TECK COMINCO LIMITED (126548)
Recorded: 2009/DEC/11
Effective: 2009/DEC/11
D/E Date: 2009/DEC/11

Review Form Data

Work Type: Technical Work
Technical Items: Geolcgical, Geophysical

Work Start Date: 2009/JUL/02
Work Stop Date: 2009/JUL/010
Total Value of Work: $ 804.02
Mine Permit No:

Summary of the work value:

Tenure Number	Claim Name/Property	Issue Date	Good To Date	New Good To Date	# of Days For-ward	Area in Ha	Applied Work Value	Sub-mission Fee
591500	PAN PACIFIC 4	2009/may/08	2016/oct/15	2017/jan/15	92	398.73	$ 804.02	$ 40.20

Financial Summary:

Total applied work value: $ 804.02

PAC name:
Debited PAC amount: $ 0.0
Credited PAC amount: $ 0.0

Total Submission Fees: $ 40.2

Total Paid: **$ 40.2**

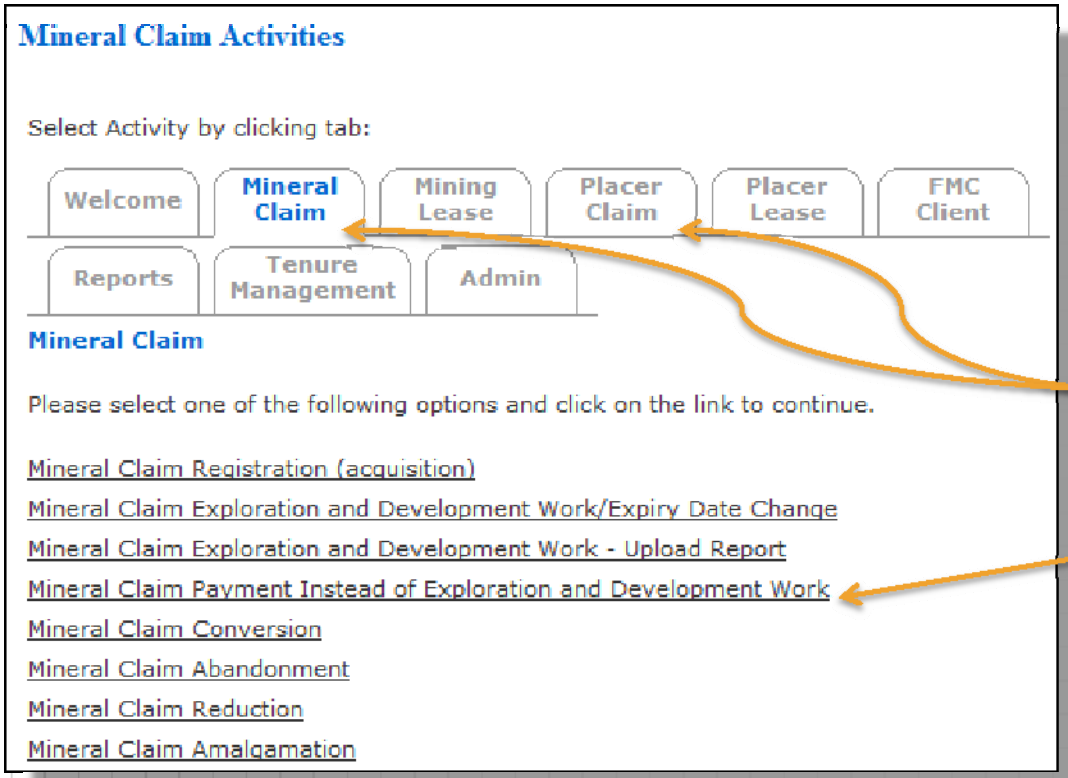
To continue click "**Next**".

Note:

- The new Good to Date
- The number of days forward you are advancing the claim
- The value of work being applied
- Submission Fee

Click ‘Next’ to complete the shopping cart payment

Hands-On Demo



Claim Maintenance

Payment Instead of Exploration and Development

- Select the Mineral Claim or Placer Claim tab
- Select ‘Mineral Claim Payment Instead of Exploration and Development Work’

Hands-On Demo

Review the PIED information

Click ‘Next’

Calculations and summaries of Work Value (PIED) and submission fees are shown

Click ‘Next’ to complete the shopping cart payment

New Good To Dates:

Tenure #	Claim Name	Issue Date	Area in Ha	Good To Date	New Good To Date
520166	WALLCE	2005/sep/19	189.10	2010/sep/19	2011/sep/19

Back Next

Tenure #	Claim Name/ Property	Issue Date	Good To Date	New Good To Date	# of Days For-ward	Area in Ha	Work Value Due	PIW Value	Sub-mission Fee
520166	WALLCE	2005/sep/19	2010/sep/19	2011/sep/19	365	189.10	$ 1512.77	$ 1512.77	$ 75.64

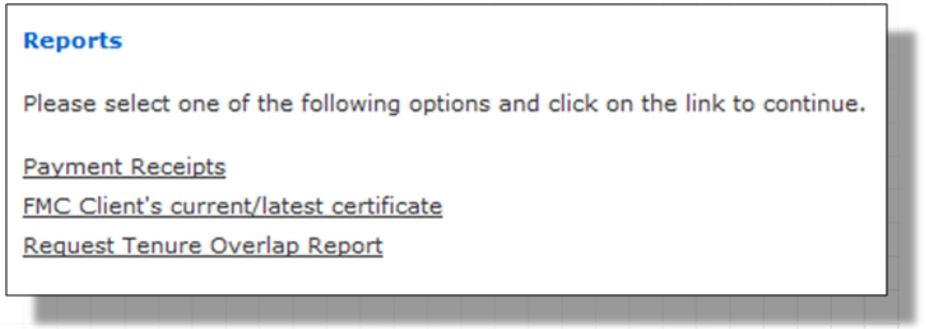
Payment Instead of Work Total: $ 1512.77
Submission Fee: $ 75.64
Total to Pay: $ 1588.41

BRITISH COLUMBIA
The Best Place on Earth

Mineral Titles Online ~ Reports

Reports

1. Free Miner Certificate
   - View renewals of your FMC
   - Print your Section 8, FMC
2. Payment Receipt reports
3. Tenure Overlap Report request



Step-by-step instructions found in our online Help Guide:

http://www.empr.gov.bc.ca/Titles/MineralTitles/mto/help/Pages/default.html

Free Miner Certificate

Select FMC Clients current/latest certificate from the Report selection list

Click next to continue with your client number

BRITISH COLUMBIA

Free Miner Certificate
Section 8
Mineral Tenure Act
Not Transferable

Client name:	DIVISION, MINERAL TITLES MEM
Client number:	200140
	PO BOX 9326 STN PROV GOV'T
	VICTORIA , BC , V8W 9N3
Date of Issue:	2006/FEB/15
Valid From:	2006/FEB/15
Expire Date:	2010/FEB/14

The information on this printout is for reference only.
In the event of a discrepancy between this printout and the information held by Mineral Titles Online, the latter shall prevail.

Click here to go directly to the FMC renewal registration

Ministry of Energy, Mines and Petroleum Resources

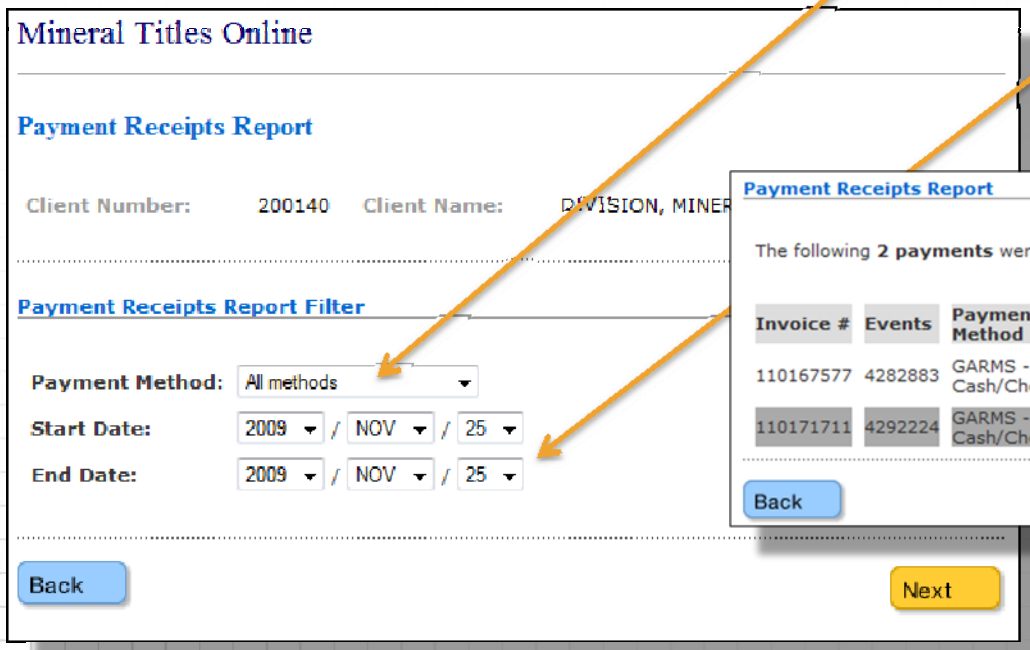
Payment Receipts

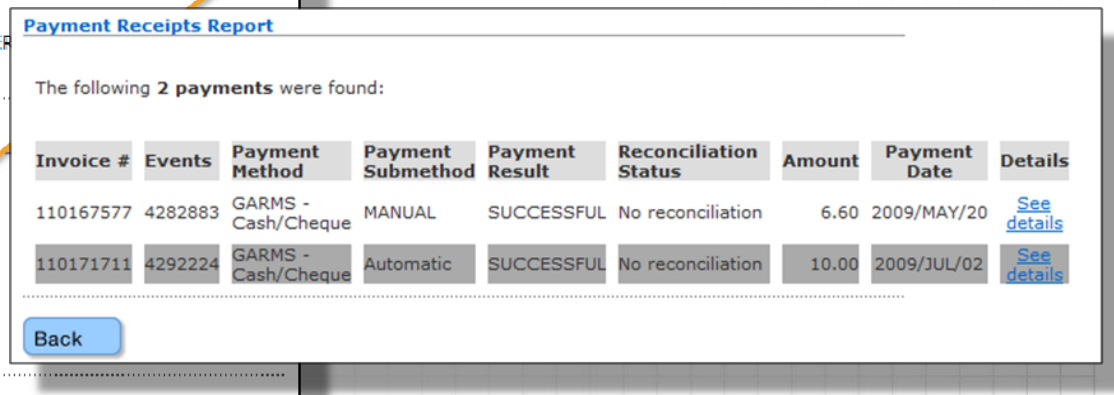
Select Payment Receipts from the Report selection list

Choose the payment method from the drop-down list: Credit Card or Cash/Cheque.

Alter the Start and End dates accordingly.

Click Next





Review the invoice information

BRITISH COLUMBIA
The Best Place on Earth

Payment Receipts

Payment receipt details

Credit Card Receipt

Payment Receipts Report

Service Provided: Mineral Tenure Operation

Date:	Nov 25, 2009	Transaction Type:	Purchase
Card Type:	MasterCard	Amount:	$ 189.70
Card Number:	XXXXXXXXXXXXXXXX	Invoice Number:	110284314

Note 1: *The above card number is hidden for privacy.*

Approval Code:	174512	Response Message:	Approved
Host Date/Time:	Nov 25, 2009 / 02:45:16pm	Sequence Number:	0000000000000
ISO Response Code:	00	Terminal ID:	BCGOVEMMTO
Response Code:	000		

Note 2: *"Mineral Tenure Operation" will appear on your credit card statement.*

Cash / Cheque Receipt

Payment Receipts Report

Service Provided: Mineral Tenure Operation

Invoice Number:	110171711
Amount:	$ 10.00
Garms ID:	20017310
Garms Error Code:	0000
Garms Result Description:	Successful
Agent Number:	00027
Transaction Number:	1000003
Transaction Status:	C
	2009/JUL/03 12:00:00 AM
	PF74967
e:	AUTHORIZATION NUMBER RETRIEVED

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

Tenure Overlap Report request

The tenure overlap report is a PDF document containing a snapshot of tenure information, First Nations Information, Municipal and Regional government information and wildlife information.

A report is automatically generated for each newly acquired claim. If you wish to run a report for an existing claim, or re-run a report for a newly acquired claim using this report function utility.

Once generated, reports will be posted to the Bulletin Board and emailed.

Explanation and documentation of this report is available on our branch website:

http://www.empr.gov.bc.ca/Titles/MineralTitles/mto/Help/Documents/TenureOverlapReport_Help.pdf

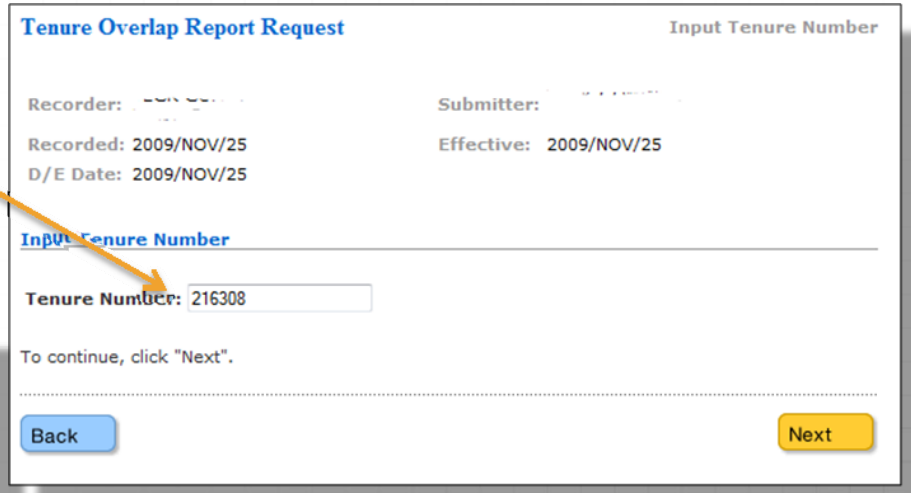
BRITISH COLUMBIA
The Best Place on Earth

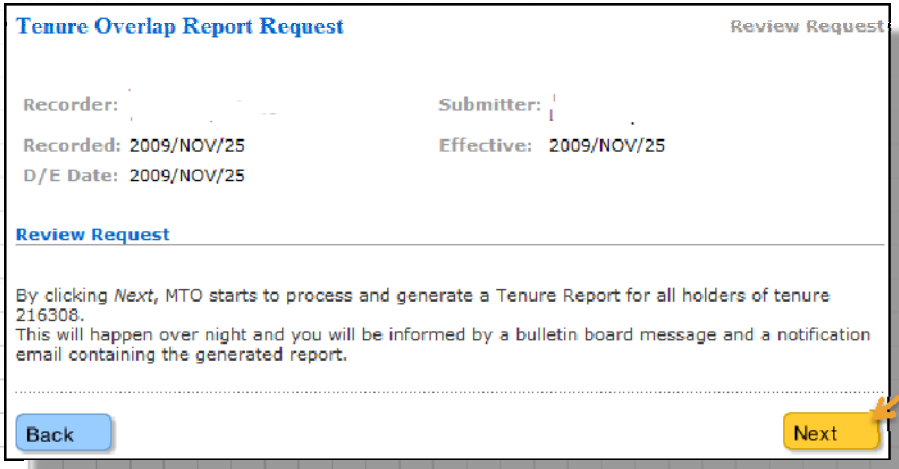
Ministry of Energy, Mines and Petroleum Resources

Tenure Overlap Report request

Select Request Tenure Overlap Report from the Report selection list

Enter a tenure number owned or managed by the submitting client, click Next





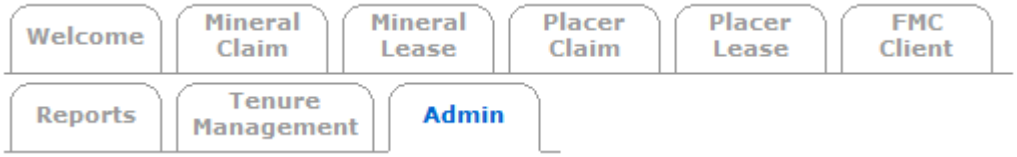
Click Next to submit your request

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

Tenure Overlap Report - Viewing

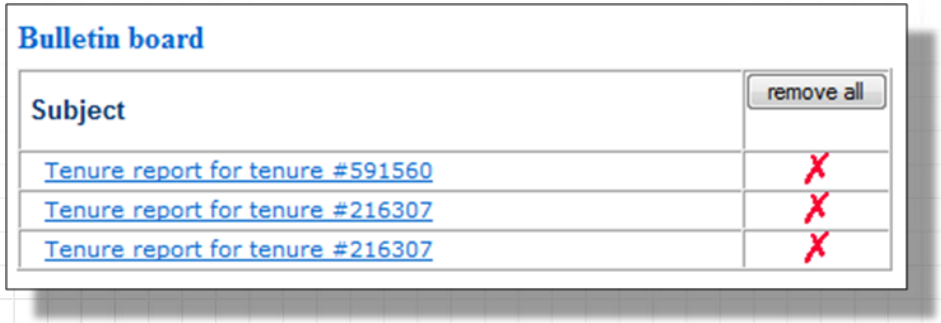
Viewing your Tenure Overlap Report



Select the Admin tab

Click View Bulletin Board link

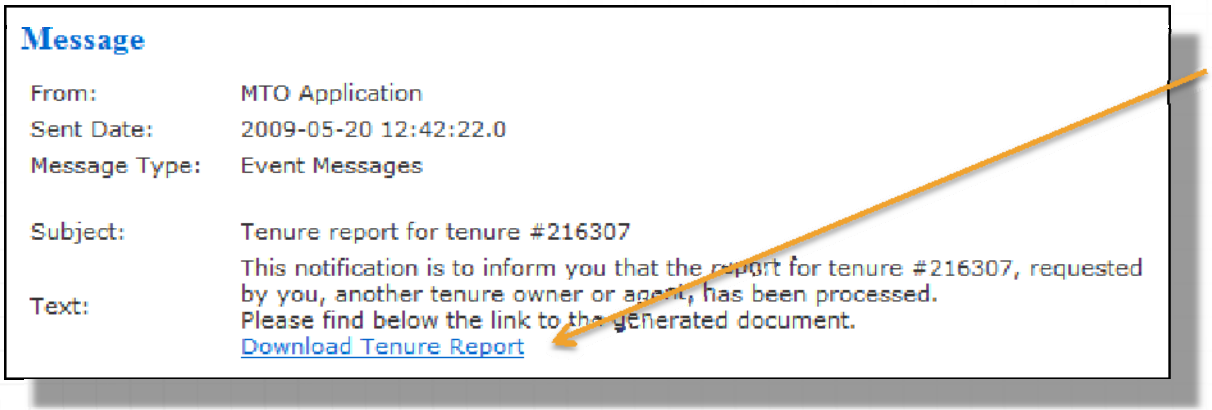
Choose the tenure report you wish to view and click on the link



BRITISH COLUMBIA
The Best Place on Earth

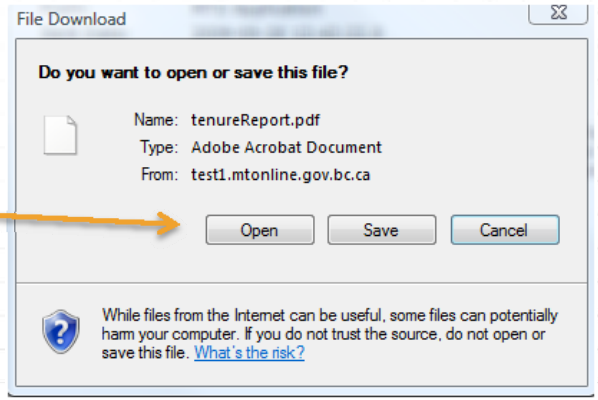
Tenure Overlap Report - Viewing

Download the PDF document for viewing or saving to your computer



Click here to view the report

Open the document to the screen or save to your computer



Landowner Notification

Changes to the Mineral Tenure Act and the Mineral Tenure Act Regulation governing notice requirements for mining activities on private land and Land Act leases came into effect on June 2, 2008.

The Legislature approved amendments to Section 19 of the Mineral Tenure Act (Act) that require a person to notify landowners before entering private land for any mining activity.

http://www.empr.gov.bc.ca/Titles/MineralTitles/Pages/LandownerNotification.aspx

Landowner Notification Procedures

Step-by-step procedures

http://www.empr.gov.bc.ca/Titles/MineralTitles/Documents/FM_LON_procedures.pdf

Information for Free Miners and Titles Holders and Landowners

http://www.empr.gov.bc.ca/Titles/MineralTitles/Documents/Factsheet_LON_Miners.pdf

http://www.empr.gov.bc.ca/Titles/MineralTitles/Documents/Factsheet_LON_Landowners.pdf

Frequently Asked Questions

http://www.empr.gov.bc.ca/Titles/MineralTitles/Documents/LON_FAQs.pdf

Landowner Notification Procedures

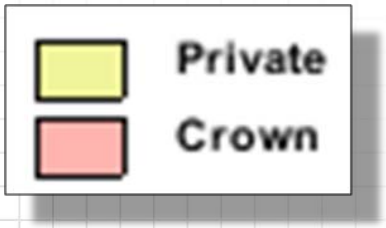
Requirements of the notice:

- a person must not begin a mining activity until eight days after giving notice to the owners of the surface area where the activity will take place
- The notice must state when the activity will occur and include the names and addresses of the free miner or recorded holder and of the on-site person responsible for the operations
- The notice must also describe the activity that will be conducted, state approximately how many people will be on site and include a map or written description of where the activity will take place
- Notices may be mailed, e-mailed, sent by facsimile transmission or hand delivered to the owner.

Landowner Notification Procedures

Private Land layer

1. Use MTO to determine overlaps with private land parcels
   a) Zoom to your Area of Interest
   b) Turn on the **Tantalis Surface Ownership** layer; turn most other layers off
   c) View your area to see if there is any overlap with the surface ownership layer. Set scale at 1:50,000 or less to view the label



Landowner Notification Procedures

Tantalis Surface Ownership layer

Reading the label

15/100 15 (C) 70 (P)

15/100	15 (C)	70 (P)
The first part of the label identifies the number of sub-divisions of a primary parcel that have map representation over the total number of subdivisions. Of the 100 subdivisions in this primary parcel, 15 of those have shapes, leaving 85 subdivisions with no spatial component. Next 2 columns tell us of those 85 subdivisions how many are crown and how many are private.	The number preceding the (C) identifies the number of subdivisions that are missing shapes and are crown surface ownership.	The number preceding the (P) identifies the number of subdivisions that are missing shapes and are private surface ownership.

Landowner Notification Procedures

Crown Land Leases layer

2. Now determine overlaps with Crown Land Leases
   a) Turn off Tantalis Surface ownership
   b) Turn on the **Crown Land leases** layer; refresh the map
   c) View your area to see if there is any overlap with the crown land leases. To see the labels, change the scale to less than 1:20,000

Landowner Notification Procedures

Running the ILRR report

3. Determine if you need to run the ILRR report or not.
    - If there are no overlaps (the areas shown in white have no overlaps) on either the Tantalis surface ownership or Crown Land Lease layers, you may proceed with your mining activity in a normal manner.
    - If there are overlaps, (for instance, the map shows mineral tenures overlapping Crown Land Leases) you now need to run the **Mineral Titles – Landowner Notification report** from the ILRR

Landowner Notification Procedures

The ILRR report

- Start the ILRR application (www.ilrr.ca) by logging on with your BCeID
- Select **Business Reports** from the main menu
- Choose **Mineral Titles – Land Owner Notification** from the drop-down list
- Enter your tenure number or select your specific area on the map
- Save the output report to your computer for viewing

Landowner Notification Procedures

Understanding the Report

General Information Section

- Name of report, date report was run and the type of search conducted (AOI, tenure number)

Part 1 – Crown Land Leases (CLL)

- All CLL that intersect/touch/overlap the area of interest. Multiple owners of these leases will be listed as Record 1, Record 2 etc.

Landowner Notification Procedures

Understanding the Report

Part 2 – Private Lands within Area of Interest (AOI)

- Private land parcels completely or partially within AOI, Land Title PIDs and legal description listed

Part 3 – Possibly within the Area of Interest (AOI)

- Private land parcels which are possibly within or overlap the AOI. PID and legal description listed

Use BC Online or a land title search company to research parcel ownership for notification

Ministry of Energy, Mines and Petroleum Resources

Landowner Notification Procedures

The ILRR report

Notification required

Integrated Land and Resource Registry (ILRR)
Mineral Titles - Land Owner Notification Report
Date: 2009/12/17

Search Information

Area of Interest (AOI): User selected area

This report may contain information of a confidential and sensitive nature.
Please protect the information accordingly.

Crown Land Leases
None found.

Within Area of Interest (AOI)

Parcel Identifier (PID)	Legal Description
None found.	

Possibly within Area of Interest (AOI)

Parcel Identifier (PID)	Legal Description
001622471	LOT 2 SECTION 12 TOWNSHIP 19 RANGE 7 WEST OF THE 6TH MERIDIAN KAMLOOPS DIVISION YALE DISTRICT PLAN 23347
004739004	LOT A SECTION 12 TOWNSHIP 19 RANGE 7 WEST OF THE 6TH MERIDIAN KAMLOOPS DIVISION YALE DISTRICT PLAN 27830
008475847	LOT 1 SECTION 12 TOWNSHIP 19 RANGE 7 WEST OF THE 6TH MERIDIAN KAMLOOPS DIVISION YALE DISTRICT PLAN 23347
008475871	LOT 3 SECTION 12 TOWNSHIP 19 RANGE 7 WEST OF THE 6TH MERIDIAN KAMLOOPS DIVISION YALE DISTRICT PLAN 23347
013808055	PARCEL A (SEE M41640F) OF THE NORTH WEST 1/4 OF SECTION 12 TOWNSHIP 19 RANGE 7 WEST OF THE 6TH MERIDIAN KAMLOOPS DIVISION YALE DISTRICT EXCEPT PLANS 23347, 27830, 29371 AND KAP59080
013807231	THE NORTH 1/2 OF THE SOUTH EAST 1/4 OF SECTION 12 TOWNSHIP 19 RANGE 7 WEST OF THE 6TH MERIDIAN KAMLOOPS DIVISION YALE DISTRICT AS SHOWN ON PLAN OF THE SOUTH EAST 1/4 OF SAID TOWNSHIP DATED AT OTTAWA ON MAY 30TH 1918
013007360	THAT PART OF THE FRACTIONAL NORTH EAST 1/4 OF SECTION 12 LYING SOUTH OF THE SHUSWAP RIVER TOWNSHIP 19 RANGE 7 WEST OF THE 6TH MERIDIAN KAMLOOPS DIVISION YALE DISTRICT AS SHOWN ON PLAN OF THE SOUTH EAST 1/4 OF SAID TOWNSHIP DATED AT OTTAWA ON MAY 30TH 1918
015135446	THAT PART OF LEGAL SUBDIVISION 15 OF SECTION 12 SHOWN RED ON

Integrated Land and Resource Registry (ILRR)
Mineral Titles - Land Owner Notification Report
Date: 2009/12/17

Search Information

Mineral Tenure Number: 607327

This report may contain information of a confidential and sen
Please protect the information accordingly.

Crown Land Leases
None found.

Within Area of Interest (AOI)

Parcel Identifier (PID)	Legal Description
None found.	

Integrated Land and Resource Registry (ILRR)
Mineral Titles - Land Owner Notification Report
Date: 2009/12/17

Search Information

Mineral Tenure Number: 607487

This report may contain information of a confidential and sensitive nature.
Please protect the information accordingly.

Crown Land Leases
None found.

Within Area of Interest (AOI)

Parcel Identifier (PID)	Legal Description
015274632	W 1/2 OF THE S 1/2 OF THE N 1/2 OF DL 5427 R5C
015417500	N 1/2 OF THE N 1/2 OF DL 5427 R5C
015459934	DL 5426 R5C

No notification required

BRITISH COLUMBIA
The Best Place on Earth

Landowner Notification Procedures

Understanding the Report

If you find parcels in part 3 of the report, it means the private land spatial information is not available in the area. The primary parcels are identified but subdivisions may not be known, spatially.

You can order plans via BCOnline to determine if the sub-divsions are actually located over your tenure.

Alternatively, you may decide to get the ownership information for all the parcels and send notices to all owners.

In most cases, if information is available in Part 2 of the report, no information will be reported in Section 3. The reverse is also true.

Landowner Notification Procedures

Determining Ownership Information of a Parcel

BCOnline accounts have access to BC Assessment Authority or Land Title and Survey Authority systems.

Select a titles search company and provide them with the report

In most cases, if information is available in Part 2 of the report, no information will be reported in Section 3. The reverse is also true.

Landowner Notification Procedures

Costs incurred – Statement of Work

Costs related to determining the ownership of land and serving notice can be used to satisfy exploration and development work requirements for claims. The costs may be registered on the claims for which the landownership and notice work was done. If the work is done for land on which claims do not exist, the work can be registered on claims which are subsequently acquired in the area.

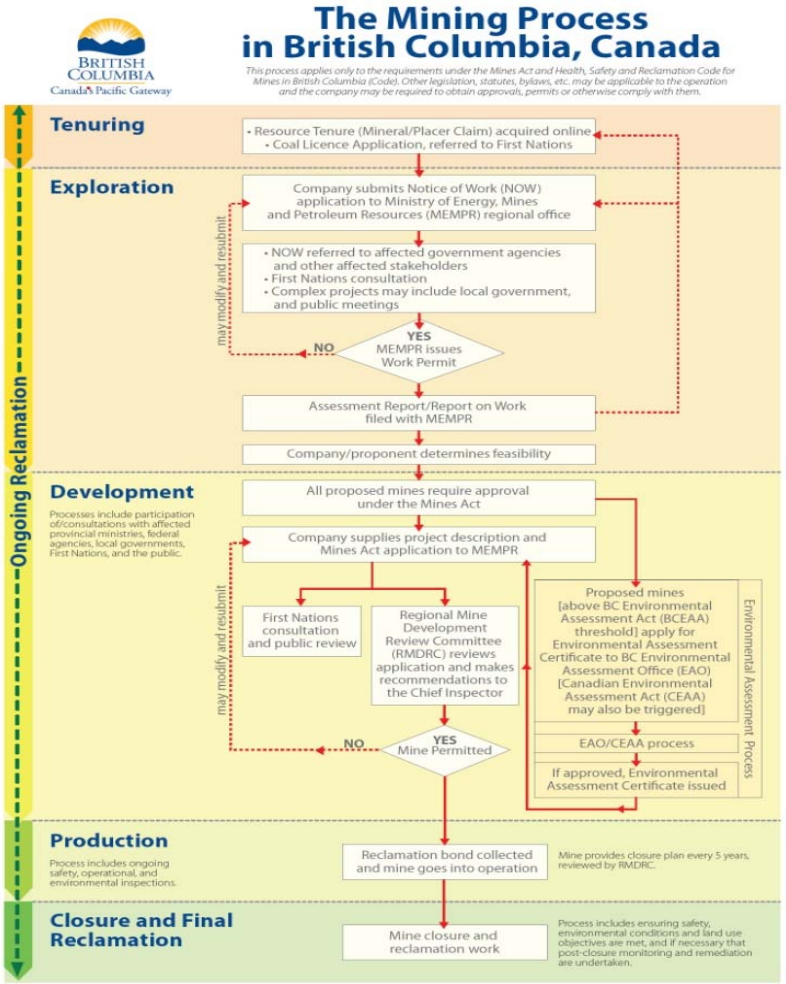
Landowner Notification Procedures

Exemption from the Chief Gold Commissioner

Where a person has made reasonable efforts to serve notice but has been unsuccessful in doing so, the Chief Gold Commissioner may exempt a person from the notice requirements. A person seeking exemption must apply in writing to the Chief Gold Commissioner and provide evidence supporting the application. A form that may be used for applications will be available soon.

Legislation and Titles Information

Mining Process in BC



BRITISH COLUMBIA
The Best Place on Earth

Our Mandate

...to Manage Crown coal, mineral and placer rights in a manner that:

- Provides continuing economic benefit from resource development
- Supports an active industry
- Is responsive to public concerns

How do we fulfill our mandate?

- MTB manages the Crown coal, mineral and placer rights in BC.
- Administers the laws under the *Coal Act* and *Mineral Tenure Act.*
- Manage a tenure registry system, Mineral Titles Online (MTO) for Mineral and Placer rights. And, manage a tenure registry for Coal rights.
- Shape the provincial land-use base by administering Mineral Land reserves in BC.

How do we fulfill our mandate?

Assist Clients with:

- setting up access to, and navigating through Mineral Titles Online,
- understanding the Acts and Regulations,
- collecting and reviewing their Technical and Physical Work reports,
- Mineral tenure conflicts,
- complaints

What does all this mean?

1. We generate revenue for the Province by helping develop our mining resources and keeping our industry healthy

2. We try to listen to what people say about what we are doing

3. We uphold and enforce our legislation, the Mineral Tenure Act and Regulations

4. Maintain records and maps pertaining to the acquisition and maintenance of title as well as the location and status of mineral, placer and coal titles

Definitions

Mineral

an ore of metal, or a natural substance that can be mined, that is in the place or position in which it was originally formed or deposited or is in talus rock.

Placer

a surficial mineral deposit formed by the mechanical concentration of small particles of heavy minerals, as gold, in gravel or small sands.

Coal

Combustible rock of carbonaceous material formed from compaction of altered plant remains.

Claim vs. Lease

Claim

Acquires the right to mineral or placer minerals which were available at the time of location and as defined in the *Mineral Tenure Act*

Required to submit work reports and/or rental fees to maintain claims

Lease

Same rights as a claim...but, is also an interest in land

- Still NO surface rights acquired or right to reside on the land

No work requirement

Annual rental is paid to maintain the title

Legislation

Mineral & Placer

Mineral Tenure Act (MTA)

MTA Regulation

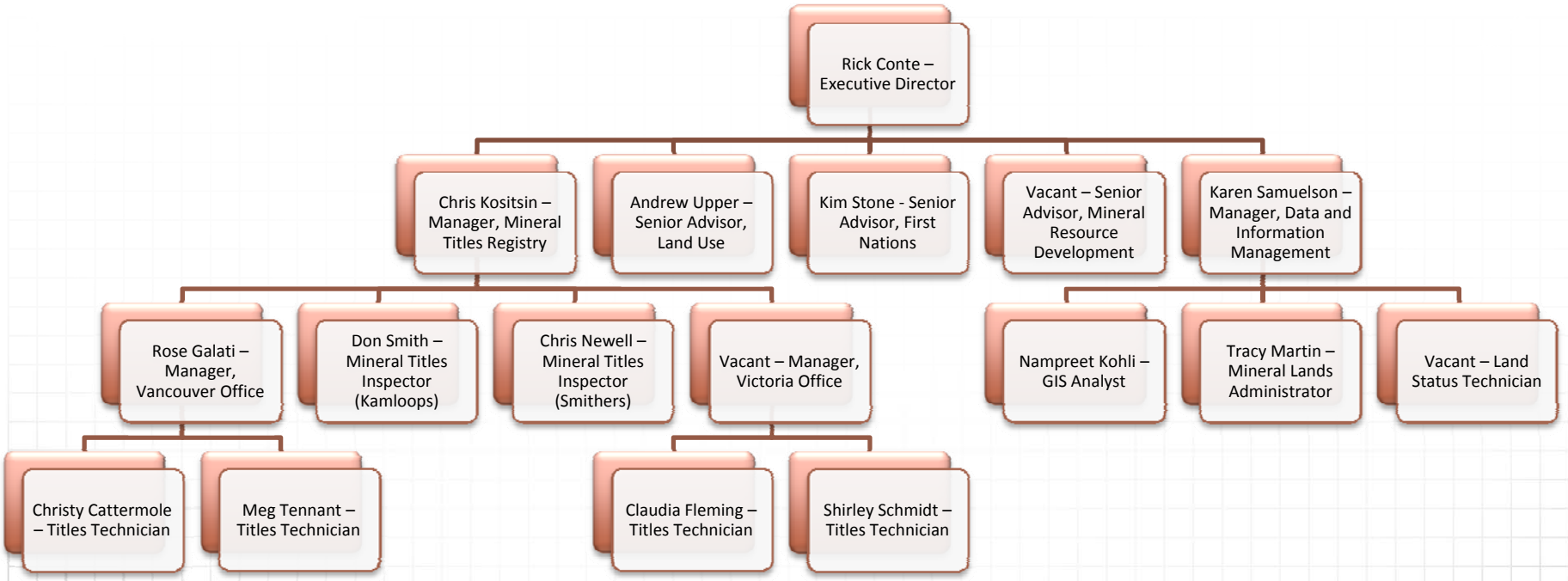
Coal

Coal Act

Coal Act Regulation

Ministry of Energy, Mines and Petroleum Resources

Here We Are...



BRITISH COLUMBIA
The Best Place on Earth

Where Do I Go?

Mining Tenure, Permit and Internet Information

Titles Division

Lisa Nye
A/Executive Lead

Mineral Titles Branch

Lisa Nye
Chief Gold Commissioner

- Titles acquisition and maintenance
- Reserves
- Leases
- Mineral, Placer, and Coal Tenure
- Mineral Titles Online

contacts

email:
Mineral.Titles@gov.bc.ca

phone:
1-866-616-4999

Mining and Mineral Division

John Cavanagh,
Assistant Deputy Minister

Mines Branch Office

Al Hoffman
A/Chief Inspector of Mines

- Mines Permits
- Health and Safety Reclamation
- Regional Geology

regional contacts

phone:
(250) 952-0492 (Victoria)
(250) 371-6069 (Kamloops)
(250) 426-1557 (Cranbrook)
(250) 565-4240 (Prince George)
(250) 847-7383 (Smithers)

Geological Survey Branch

Dave Lefebure
Chief Geologist

- Assessment Report Indexing System (ARIS)
- MINFILE Mineral Inventory
- Geoscience
- MapPlace

contacts

email:
Allan.Wilcox@gov.bc.ca (ARIS)
Kirk.Hancock@gov.bc.ca (MapPlace)
Larry.Jones@gov.bc.ca (Databases)
Sarah.MeredithJones@gov.bc.ca (MINFILE)

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Energy, Mines and Petroleum Resources

www.gov.bc.ca/empr

Mineral Titles Branch, January 2010, G:\rddTB.sh\Mineral-Titles-BrRoundUp\2010\handouts

Ministry of Energy, Mines and Petroleum Resources

How to Contact Us

Phone:
1-866-616-4999 (within BC)
604-660-2672 (outside of BC)

Fax:
604-660-2653

Email:
Mineral.Titles@gov.bc.ca

Website:
www.empr.gov.bc.ca/Titles/MineralTitles

BRITISH COLUMBIA
The Best Place on Earth