

## NEW PUBLICATIONS AND MAPS

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### New this month

Geology of Southern Campbell Range (NTS 105H/3 SW), by F. Devine et al.

Placer Atlas – Everything you need to know about placer mining activity (geospatial database showing claims, operations, water licences, placer potential, etc.) is now on our website [www.mapsyukon.gov.yk.ca/webmaps/mining/placer\\_atlas/](http://www.mapsyukon.gov.yk.ca/webmaps/mining/placer_atlas/)

Yukon Placer Database 2005 – Geology and mining activity of placer occurrences, W.P. LeBarge and J. Coates (comps.). CD-ROM \$30.

### New last year/early this year Annual reports

Yukon Exploration and Geology 2004 (\$10)

Yukon Mineral Deposits 2004 (free)

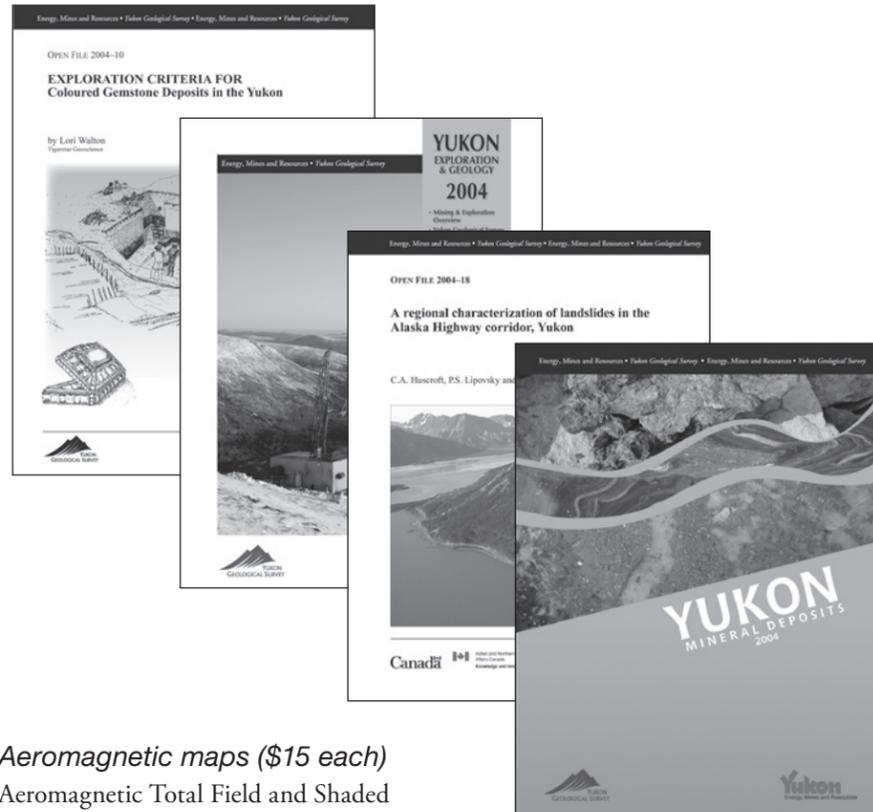
Yukon Mining and Exploration Overview 2004 (free)

Yukon Mineral Property Update 2004 (free)

### Databases (CD \$30)

YukonAge 2004 – A database of isotopic age determinations for rock units from Yukon Territory, compiled by K. Breitsprecher et al.

Yukon MINFILE 2004 - A database of mineral occurrences, compiled by R. Deklerk and S. Traynor



### Aeromagnetic maps (\$15 each)

Aeromagnetic Total Field and Shaded Magnetic Vertical First Derivative 106F/NE-NW, 106K/NW-NE, 106L/NE-NW and 116P/SW-SE, by F. Kiss et al.

### Bedrock geology maps (\$5 each)

17 maps, Anvil District, by L. Pigage

Dorsey Lake (105B/4), by C. Roots et al.

Morris Lake (105B/5), by C. Roots et al.

NTS 95D/8 (northern Toobally Lakes area), by L.C. Pigage

Quill Creek area (parts of NTS 115G/5,6,12), by S. Israel

Seagull Creek (105B/3), by C. Roots et al.

Southwest Yukon, compiled by S. Israel

Waters Creek and Fire Lake map areas (NTS 105G/1, 2), by D.C. Murphy et al.

Whitehorse Copper Belt – An annotated geology map, compiled by D. Héon

### Reports

Bedrock geology compilation of the Anvil District (parts of NTS 105K/2,3,5,6,7), central Yukon, by L.C. Pigage (includes two 1:100 000 and fifteen 1:50 000-scale maps) (report and maps \$75; report only \$15, CD \$30)

Ecoregions of the Yukon Territory – Biophysical Properties of Yukon Landscapes, by Yukon Ecoregions Working Group, edited by C.A.S. Smith, J.C. Meikle and C.F. Roots, Agriculture and Agri-Food Canada (report out of print; CD \$30)

Exploration Criteria for Coloured Gemstone Deposits in the Yukon, by L. Walton (\$5)

Fyre Lake copper-cobalt-gold sulphide-magnetite deposit, by C. Sebert et al. (\$5)

Landslides in the Alaska Highway Corridor, Yukon, by C.A. Huscroft et al. (report and CD \$35)

Placer Geology of the Stewart River (115N&O) and Dawson (116B&C) map areas, west-central Yukon, Canada, by G.W. Lowey (includes two 1:250 000-scale maps) (report and maps \$25; report only \$15; CD \$30)

**Yukon**  
Energy, Mines and Resources



# Yukon Geological Survey

## NEWSLETTER

May 2005

## EVENTS

### YUKON MINING AND GEOLOGY WEEK MAY 20-26, 2005

This year we are kicking off Yukon Mining and Geology Week in Dawson City at the Gold Show.

The celebration is a partnership with the Energy, Mines and Resources (EMR), Yukon Chamber of Mines (YCM) and the Klondike Placer Miners' Association (KPMA).

The week-long event raises awareness of the important roles mining and geology play in our everyday lives and the many positive ways they influence our history, culture and economy.

#### In Dawson

On May 20 and 21, there will be plenty of activities planned for the family at the Gold Show. Enter a team in the community scavenger hunt, participate in a field trip or bring in rocks you'd like a geologist to help you identify. Several activities are geared for children, like soapstone carving and tours of a mock geology field camp.

#### In Whitehorse

There are week-long activities at the Elijah Smith Building on Main Street. KPMA and YCM are offering gold panning, and there are poster and rock displays.

Enter to win fantastic prizes. There's a helicopter trip to be won through the mining and geology trivia contest on the radio, or a \$2,500 Xpress Furniture gift certificate from the "Birth of Mining Contest" in the newspapers.

Join Yukon Geological Survey geologists for evening geology field trips.

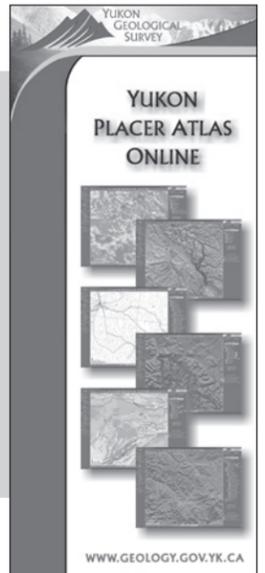
- Friday, May 20 in Dawson, 7-9 p.m. Bedrock geology of Midnight Dome. Meet at the base of Crocus Bluffs at 7 p.m.
- Wednesday, May 25, 7-8:30 p.m. Miles Canyon volcanic rocks. Meet at the viewpoint overlooking Miles Canyon, on the Schwatka Lake road, at 7 p.m.
- Thursday, May 26, 7-8:30 p.m. Old copper mining near Whitehorse. Meet at the Alaska Highway rest area south of Robert Service Way at 7 p.m.

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## GOLD SHOW

### MAY 20-22, DAWSON CITY

Two new important placer data products from the Yukon Geological Survey are being released at the Gold Show: the online Yukon Placer Atlas, and the latest version of the Yukon Placer Database.

The EMR library will be opening access to mineral assessment reports online, and the Mining Recorder's Office will be demonstrating online features such as the Mining Claims Database (NMRS) and the Mineral Claims Interactive Map.

Attend the technical session organized and sponsored by the Yukon Geological Survey. Talks will be presented by members of industry, government and academia.

## NORTHERN LATITUDES MINING RECLAMATION WORKSHOP

### MAY 24-26, DAWSON CITY

The Northern Latitudes Mining Reclamation Workshop is a joint U.S. and Canada biennial workshop on mining, land and urban reclamation and restoration methods. The objective of the workshop is to share information and experiences among governments, industry, consultants, Alaska Natives, northern First Nations and Inuit groups which undertake reclamation and restoration projects, or are involved in land management in the north or in comparable environments.

## YUKON GEOLOGICAL SURVEY

### FIELD ACTIVITIES FOR 2005

by Grant Abbott, Chief Geologist

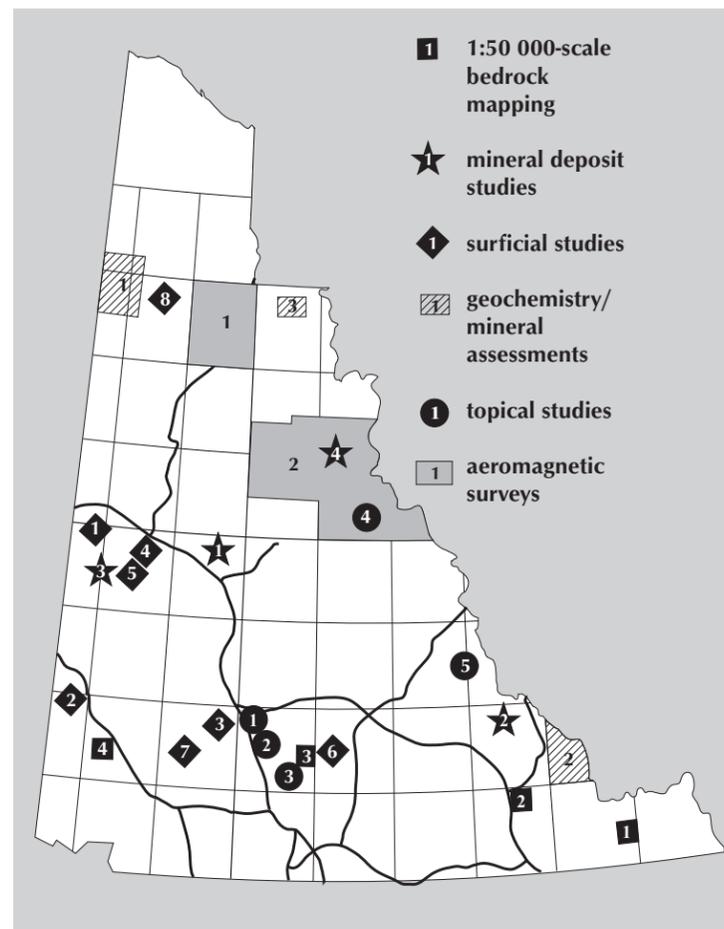
The Yukon Geological Survey (YGS) is looking forward to a busy and productive field season with over 20 field projects on the go. Projects include bedrock mapping, mineral deposit studies, a variety of surficial studies, regional stream geochemistry, mineral potential assessments, and topical studies related to hydrocarbon potential, regional geology and geophysical surveys.

#### Bedrock mapping

Bedrock mapping is underway in Selwyn Basin, Yukon-Tanana Terrane (YTT) and the Insular Belt by Yukon Geological Survey geologists. Lee Pigage will continue to work in southeast Yukon near Toobally Lakes (1) where studies last year revealed significant new information on lower Paleozoic structure and stratigraphy, with implications for our understanding of the mineral potential of southeast Selwyn Basin. Don Murphy will continue work in northwestern Watson Lake map area (2) along the eastern margin of YTT, where significant problems remain in our understanding of the relationships between YTT, Slide Mountain Terrane and ancient North America. Maurice Colpron is mapping in the Livingston Creek area (3) where a lode source for gold placers in the area has yet to be found. This work builds on previous studies of YTT farther north and will help to set the stage for a future mapping program immediately to the west in the northern Whitehorse Trough. In the Insular Belt, Steve Israel is working in the Kluane Ranges (4) to better define the setting of magmatic copper-nickel-platinum group element deposits like Wellgreen.

#### Mineral deposit studies

Mineral deposit studies this year emphasize the importance of Cretaceous plutons to the metallogeny of the Yukon. Jacob Hanley will begin a post-doctoral study at the University of Toronto of the evolution and generation of magmatic fluids and their relationship to gold mineralization (1). John Mair, another post-doctoral fellow from Australia, will be developing a database of the lithological, geochemical and isotopic characteristics of Cretaceous igneous rocks in the Yukon to help to



differentiate mineralized plutons from unmineralized ones (2). YGS staff are undertaking a number of projects. Craig Hart will be partnering on these projects, and with Lara Lewis will continue his studies of tungsten, beryl and gold occurrences. Dr. Jim Mortensen from the University of British Columbia and Bill LeBarge are studying trace element characteristics of placer gold to identify distinct populations and potential lode sources (3). Julie Hunt will continue her studies of iron oxide-copper-gold occurrences associated with the Wernecke Breccias (4). This work will expand on earlier research that identified lithological, structural and fluid compositional influences on mineralization in the Wernecke Mountains.

#### Surficial studies

YGS's Bill LeBarge will visit active placer mining operations throughout the Yukon for the purpose of sampling pay gravel and heavy minerals, completing stratigraphic descriptions and updating the placer database. Ongoing studies by Bill, coordinated with Mark Nowosad

of EMR's Client Services and Inspections branch, will further define the relationship between water quality and placer sediment on the Klondike, Indian, McQuesten and Sixty Mile rivers (1), and put the information gathered in the study into a geological context.

Projects to improve baseline data on permafrost conditions in southern Yukon will be undertaken by Panya Lipovsky of the YGS and Dr. Antoni Lewkowicz of the University of Ottawa. Panya, in partnership with the Geological Survey of Canada (GSC), will compile Yukon Department of Highways' borehole data from the Alaska Highway corridor as part of a national permafrost database (2). Panya will also continue monitoring an active permafrost thaw-related landslide near Carmacks (3). Also in cooperation with GSC, Panya will select up to five key sites for establishment of stations to monitor permafrost thermal regimes.

In the Dawson area (4), Panya and Dr. Lewkowicz will collaborate on studies on the effect of extensive recent forest fires on stability of permafrost. Large numbers of active-layer detachment slides have already increased sedimentation into drainages south and west of Dawson and could impact efforts to monitor the effects of placer mining on water quality. Dr. Lewkowicz will also use permafrost mapping techniques to study the origin and development of thermokarst lakes and palsas.

Jeff Bond from YGS will begin a project to study element distribution patterns in soil profiles on the Lucky Joe copper-gold deposit (5). This project will aid understanding of how to interpret soil and stream geochemical surveys in unglaciated terrain of west-central Yukon. Jeff will also begin a surficial mapping project in the Livingstone Creek placer area (6) in order to reconstruct the ice-flow history of the McConnell glaciation in the Pelly Mountains and to provide insight into placer potential.

Brent Ward from Simon Fraser University will undertake cosmogenic dating of boulders in the Aishihik Lake area (7) in an attempt to determine the age of the Reid Glaciation. This information is essential to developing a clear understanding of placer deposit evolution in west-central Yukon. EMR, in partnership with the Department of Environment, is also sponsoring Dr. Ian Clark from the University of Ottawa to study the karst development at Bear Cave Mountain and the hydrology of the Fishing Branch River (8). This work has implications for our

understanding of karst and climate evolution in the arctic, possible impacts on salmon habitat, and on groundwater flow along the western margin of the Eagle Plains sedimentary basin.

#### Geochemistry and mineral assessments

YGS, in partnership GSC, is undertaking stream geochemical surveys in north Yukon, west of Fishing Branch Territorial Park (1) and in the Flat River map area (2) south of Cantung (southeastern Yukon). The surveys will support mineral exploration and provide valuable information for mineral resource assessments. Geoff Bradshaw from YGS is planning field studies of mineral occurrences in northern Yukon near Rusty Springs (1), and in the Wernecke and Mackenzie Mountains (3) to support land use planning exercises that are currently underway for the north Yukon and the Peel watershed areas.

#### Topical studies

One of the larger efforts by YGS this year is a multidisciplinary study of the northern Whitehorse Trough. Work is aimed at better understanding the hydrocarbon potential of this underexplored intermontane sedimentary basin. Grant Lowey will continue his studies of the stratigraphy of the Laberge Group and Tantalus Formation (1). Dr. Darrel Long from Laurentian University will continue similar studies of the Lewes River Group and Tantalus Formation (2) and Dr. Steve Piercey, who is also from Laurentian, will study the volcanic assemblages in the trough (3). In the Wernecke Mountains (4), Dr. Derek Thorkelson from Simon Fraser University will begin a petrological study of lamprophyre dykes with graduate student Dejan Milidragovic. Finally, Dr. Jim Mortensen from the University of British Columbia will begin a multi-year study of Triassic sedimentary overlap assemblages in central Yukon (5) with graduate student Luke Beranek.

#### Geophysical surveys

Two airborne magnetic surveys are proposed for this year but remain dependent on funding approval. A high resolution survey will focus on the hydrocarbon potential in the Eagle Plains area (1). A regional survey will fill a gap in regional coverage in the Wernecke and Mackenzie mountains (2).