

Yukon Geological Survey

Grant Abbott¹ and staff
Yukon Geological Survey

Abbott, J.G. and staff, 2003. Yukon Geological Survey. *In: Yukon Exploration and Geology 2003*, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 39-55.

OVERVIEW

Eleven years ago, the Canada-Yukon Geoscience Office opened its doors and marked the beginning of a de facto Yukon Geological Survey (YGS) with the creation of the Yukon Geology Program. In April of 2003, that vision finally became a reality when responsibilities for management of Yukon's natural resources devolved from the federal government to the Government of Yukon. The Department of Energy, Mines and Resources now has responsibility for minerals, oil and gas, forestry, agriculture and lands. The new Yukon Geological Survey (Fig. 1) supercedes the Geology Program. YGS is part of the Minerals Development Branch, and is co-managed by Grant Abbott and Rod Hill,



Figure 1. Yukon Geological Survey staff from left to right: Geoff Bradshaw, Charlie Roots, Steve Traynor, Lara Lewis, Rob Deklerk, Grant Lowey, Diane Emond, Ken Galambos, Grant Abbott, Karen Pelletier, Jo-Anne vanRanden, Ali Wagner, Bill LeBarge, Amy Stuart, Rose Williams, Lee Pigage, Craig Hart, Panya Lipovsky, Crystal Huscroft, Mike Burke, Kaori Torigai (Mining Lands), Don Murphy, Julie Hunt, Rod Hill, Jeff Bond, Maurice Colpron.

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under the direction of Jesse Duke (Fig. 2). The Geological Survey integrates the Exploration and Geological Services Division (EGSD) of the Department of Indian Affairs and Northern Development (DIAND), with the Yukon Geoscience Office, the Mineral Assessment Group and the Yukon Mining Incentives Program (YMIP) of the Department of Energy, Mines and Resources of Government of Yukon (YTG). The Geological Survey of Canada (GSC) also maintains an office with the YGS. Activities of the Mineral Assessment Group and YMIP are described separately from this report.

Funding for the YGS remains at the same level as it was in previous years for the Geology Program. This year, in

addition to core funding, we benefited from additional short-term funding from DIAND through the industry-led Northern Geoscience Initiative and through the Knowledge and Innovation Fund. The last federal budget renewed the Natural Resources Canada Targeted Geoscience Initiative for two more years. Yukon Government will see substantial funding this year, with YGS as a partner.

Over the past year we were sorry to lose Roger Hulstein and Robert Stroshein from the Mineral Assessment Group to the private sector. We are pleased to welcome mineral assessment geologist Geoff Bradshaw and project geologist Steve Israel.

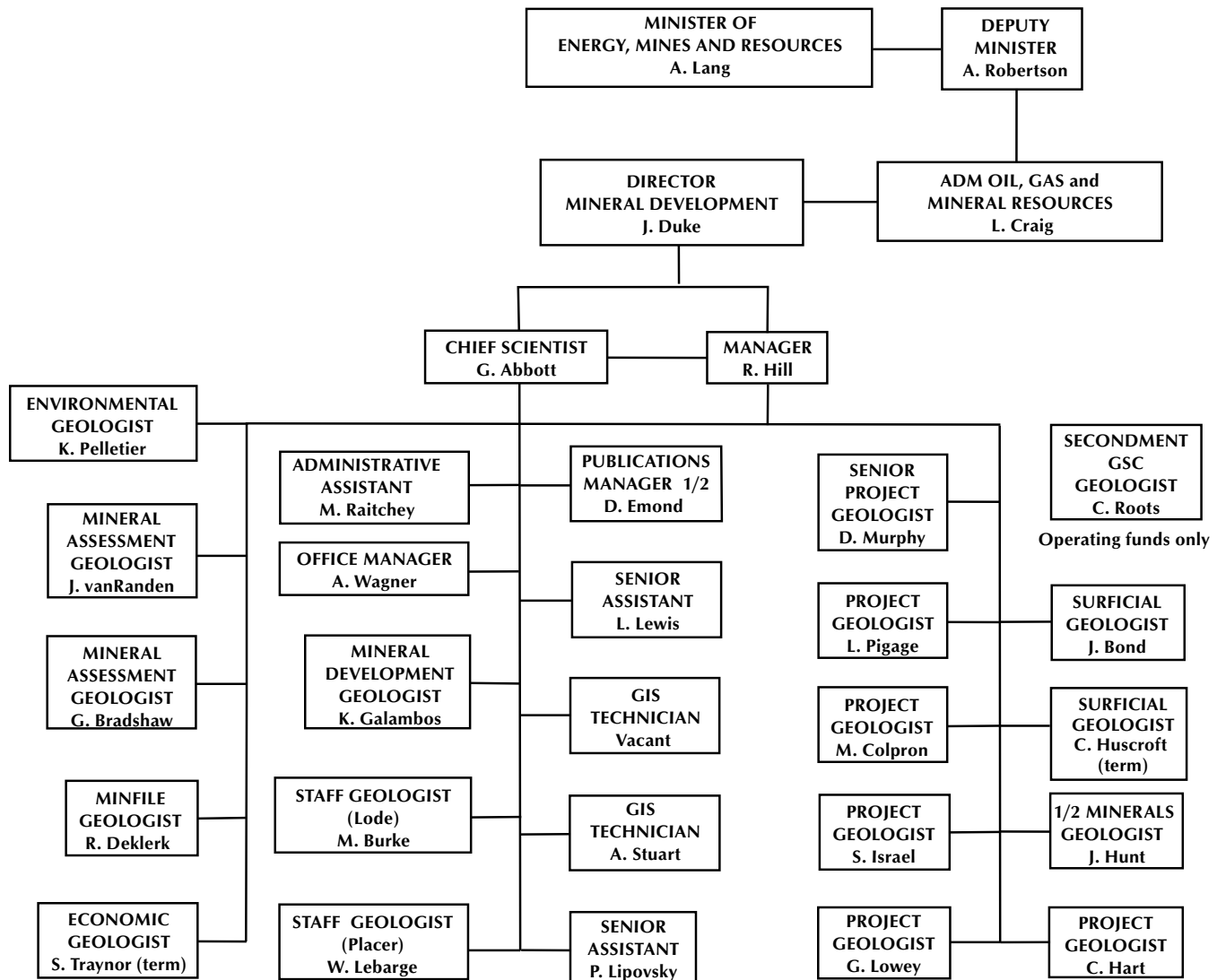


Figure 2. Yukon Geological Survey organization chart.

The Technical Liaison Committee to the YGS reviews our program twice a year. We are grateful to Chair Gerry Carlson and members Al Doherty, Moira Smith, Jean Pautler, Forest Pearson, Bernie Kreft, Jim Mortensen and Jim Christie for their valuable support and constructive advice.

A mandate for the YGS has been developed in consultation with senior management in Energy, Mines and Resources and the Technical Liaison Committee. The YGS now has the responsibility “to build, maintain, and communicate the geoscience and technical information base required to enable stewardship and sustainable development of the Territory’s energy, mineral, and land resources.” The mandate formalizes much of the work that has been underway over the last few years through the Geology Program, and opens the door for projects in new areas. Support for the mineral industry remains the primary focus, but more resources are being dedicated to mapping and studies of areas with hydrocarbon potential. Effort is also going into environmental studies that have relevance to the extractive industries and land use issues. In recent years, interest and demand for geoscience information has increased substantially from regulators, First Nations, the general public and schools. In addition, the interests of resource industries are best served by informed decision-making and informed public opinion. As a result, perhaps the largest change is not in what we do, but in the increased diversity of our clients.

FIELDWORK

The YGS is committed to providing a balanced complement of field projects that not only quickly stimulate mineral and hydrocarbon exploration, but also take the longer term view towards developing an understanding of the Yukon regional geological framework, and building the Yukon Geoscience database. Field projects carried out in 2003 are shown in Figure 3, and the present state and location of geological, geochemical and geophysical surveys are shown in Figure 4.

Bedrock mapping continues to be the cornerstone of the YGS. Several projects are in the completion and writeup stage this year. Lee Pigage has a bulletin in preparation on the geology of the Anvil District, and is writing a bulletin and papers on the La Biche mapping project as part of the Central Forelands National Mapping Project (NATMAP). Grant Lowey has a bulletin in press on the placer geology and potential of Stewart River map area, The Ancient

Pacific Margin NATMAP is in its final year. Maurice Colpron and Don Murphy are each writing bulletins on the Glenlyon and Finlayson Lake areas, respectively. Maurice Colpron, together with JoAnne Nelson of the B.C. Geological Survey Branch, is organizing and editing the synthesis volume for the Ancient Pacific Margin NATMAP project, to be published by the Geological Association of Canada. The volume will summarize the results of more than four years of work in Stewart River, Glenlyon, Finlayson Lake and Wolf Lake map areas in Yukon, parts of northern and southern British Columbia and eastern Alaska by authors from the YGS, Geological Survey of Canada, British Columbia Geological Survey, United States Geological Survey, and several universities. This work has made a seminal leap in our understanding of the geology and mineral potential of the Yukon-Tanana Terrane, up until now the least understood part of the North American Cordillera.

Field work in 2003 included ongoing bedrock mapping in the Finlayson Lake map area where Don Murphy continues to define and expand areas of potential for volcanic-hosted massive sulphide (VMS) deposits and emeralds. Maurice Colpron and Charlie Roots participated in the GSC’s Stewart River mapping project where the additional manpower allowed for timely completion of fieldwork. Lee Pigage undertook a short exploratory trip into eastern Coal River map area to determine possible correlations of Late Proterozoic and Early Paleozoic volcanic and siliciclastic rocks near Toobally Lakes with possibly equivalent strata in the adjacent La Biche map area. Our most important new initiative is the Whitehorse Trough project. The Whitehorse Trough project will be a multidisciplinary partnership with the Geological Survey of Canada and universities, much like the current NATMAP. The purpose is to more accurately determine the hydrocarbon potential of the northern portion of the Trough by more clearly defining its stratigraphic and structural framework. This year, Grant Lowey began a stratigraphic and sedimentological study of the Lebarge Group. Later this year, the GSC, with funding from the Targeted Geoscience Initiative will conduct a seismic survey across the Trough along the Campbell and Klondike highways. Stratigraphic, sedimentological and structural studies, and bedrock mapping will continue over the next two years.

Craig Hart is completing a PhD Program at the University of Western Australia. Most of the requirements for the degree will entail writing papers on his previous field studies of the Tintina Gold Belt and other Yukon gold

occurrences. This year, Craig and Lara Lewis carried out a wide-ranging reconnaissance study of tungsten and beryl occurrences.

Julie Hunt has returned to school to undertake a PhD program at James Cook University in Australia. YGS is funding her fieldwork. Julie partnered with Derek Thorkelson of Simon Fraser University to complete fieldwork on the Wernecke Breccias, and is taking advantage of the Australian connection by comparing the

Yukon breccias with similar Australian rocks which host giant copper-gold ore deposits.

Bill LeBarge and Mark Nowasad completed their studies of the relationship between sedimentology, grain size distribution and water quality of effluent from placer deposits. Their results will be evaluated for possible long-term applications and further research. Data gathered from this study was useful in the 2003 review of the Yukon Placer Authorization.

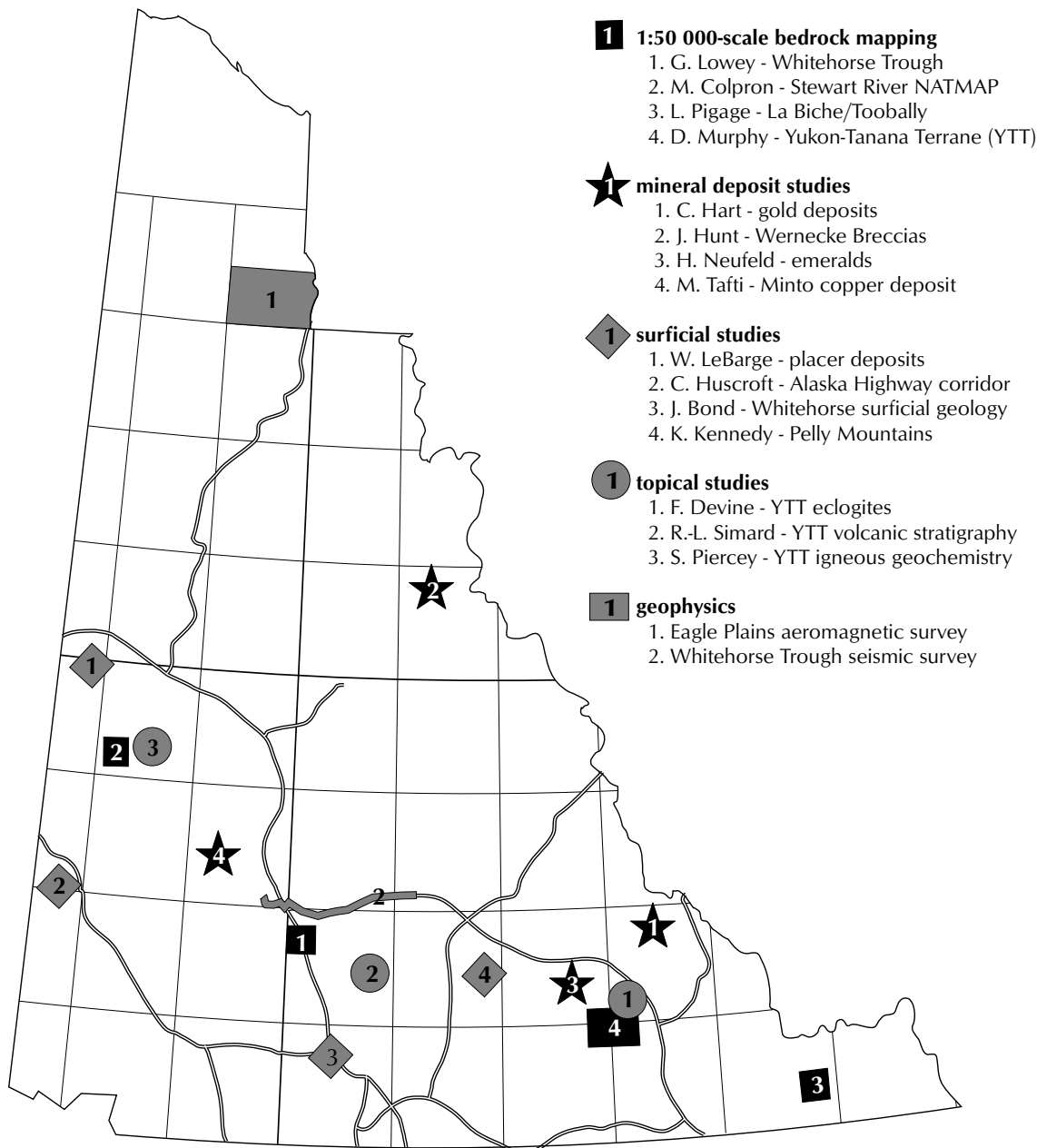


Figure 3. Field projects carried out or sponsored by the Yukon Geological Survey in 2003.

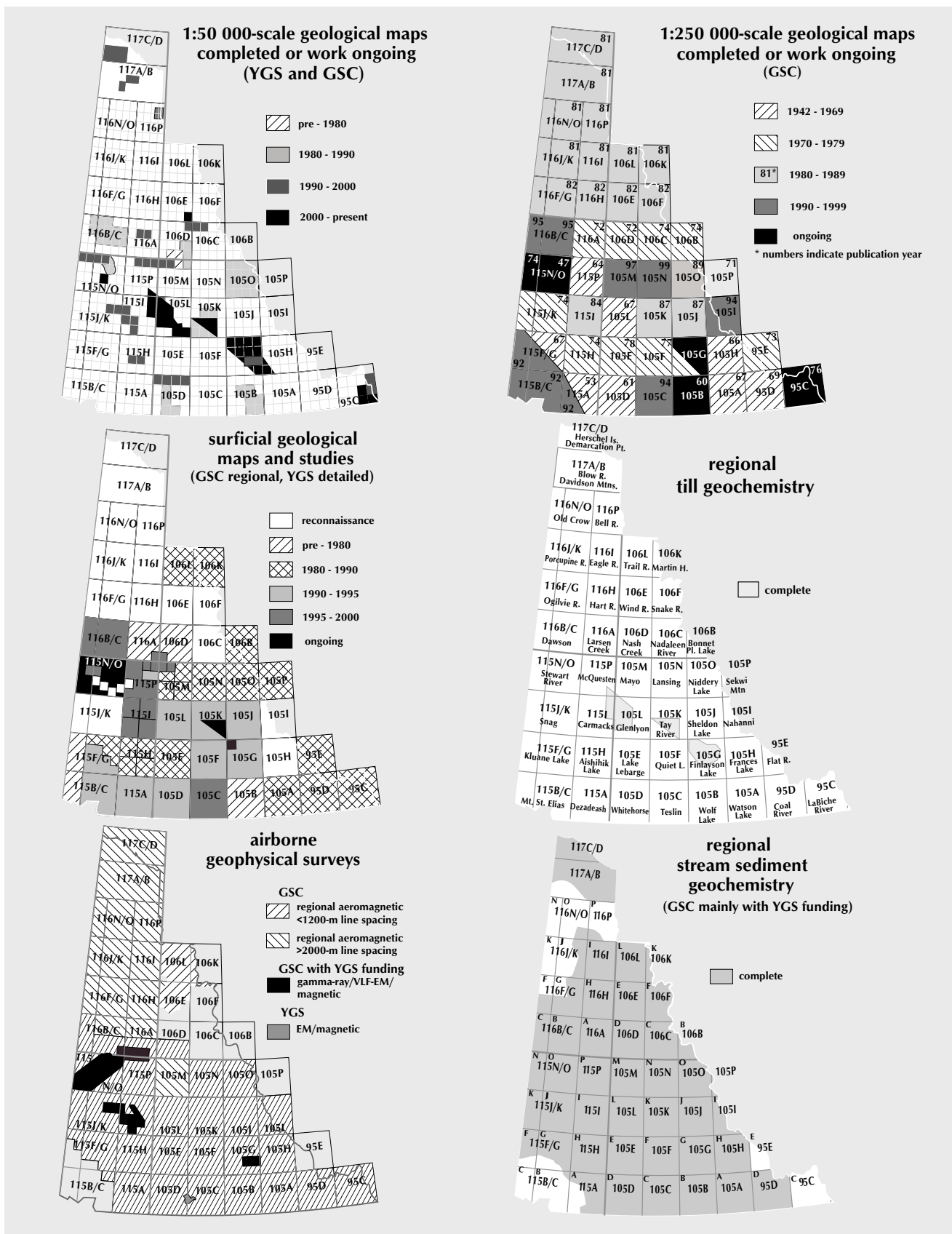


Figure 4. Summary of available geological maps, and regional geochemical and geophysical surveys in the Yukon, in 2003.

Jeff Bond continued surficial mapping of the greater Whitehorse area to be published as two 1:50 000-scale maps. The project will provide baseline information to support land-use decisions, groundwater studies and public education.

Jeff and Kristen Kennedy studied the surficial geology and ice-flow patterns in the Seagull Creek area, and determined that glacial flow was to the north, up-valley, in the opposite direction to what had previously been believed. These results have a significant bearing on the interpretation of soil geochemical anomalies and potential of known gold occurrences in the area.

Jeff also provided advice and support to placer miners, First Nations and to the Department of Fisheries and Oceans on matters related to surficial geology.

EXTERNAL SUPPORT

The Yukon Geological Survey (YGS) is providing financial and logistical support, or is a partner with graduate students and university researchers in the following projects.

Fionnuala Devine began field work in the Finlayson Lake area for a Master's thesis under Dr. S. Carr at Carleton University, Ottawa, Ontario. Her study of the geological setting and geochemical, petrological and geochronological character of high pressure metamorphic rocks of the Yukon-Tanana Terrane will provide critical information on the metamorphic and tectonic history of these rocks.

Reza Tafti is completing a study of the Minto copper deposit for his MSc at the University of British Columbia, Vancouver, British Columbia, under the supervision of Dr. Jim Mortensen. Through the project we will attempt to gain a better understanding of the nature, age and origin of the main host rocks to the Minto deposit and the copper-gold mineralized rock contained within them. This information will be used as a basis for developing an exploration model for similar mineralization elsewhere in the Minto-Williams Creek belt.

Heather Neufeld is completing a study of emerald and beryl occurrences in the Yukon and Northwest Territories for her MSc degree at the University of British Columbia under the supervision of Drs. Jim Mortensen and Lee Groat. The main focus of the study will be the Regal Ridge emerald deposit in the Finlayson Lake district. The purpose of the project is to understand the origin of the

emerald occurrences and to develop exploration guidelines for the northern Canadian Cordillera.

Renée-Luce Simard is completing a study of the volcanic stratigraphy, composition and tectonic evolution of Late Paleozoic successions in central Yukon for her PhD thesis at Dalhousie University, Halifax, Nova Scotia, under the direction of Dr. J. Dostal. The project compares and contrasts the depositional style, composition and tectonic setting of several volcanic successions within the belt of pericratonic terranes in the Northern Cordillera. These include the Klinkit Group in Wolf Lake map area, the Little Salmon formation in Glenlyon map area, and the Boswell and Semenof formations in central Laberge map area.

Dr. Steve Piercey at Laurentian University, Sudbury, Ontario, as part of the Ancient Pacific Margin NATMAP Project, is completing a study of the field, geochemical and isotopic attributes of volcanic and intrusive rocks in the Stewart River map area. The study will, in part, determine the similarities and differences of these rocks to volcanogenic massive sulphide (VMS)-bearing rocks in the Finlayson Lake district.

In addition to providing geochronological support to the GSC's Stewart River project, Mike Villeneuve (GSC - Ottawa) has been using argon geochronology to 1) determine the cooling and uplift history of the Klondike region to aid in understanding mineralizing and tectonic processes in that region; 2) define the timing of recent volcanism in the Yukon, particularly the Fort Selkirk region; and 3) provide timing constraints on intrusion-related gold mineralization in the Tintina Gold Belt.

ENVIRONMENTAL STUDIES

Karen Pelletier continued to administer the Mining and Environmental Research Group (MERG), YTG. The 2003-funded studies include: *The Evolution of Metal Tolerant Vegetation in Native Yukon Vegetation Invading Abandoned Mine Sites: A Strategy for Long-Term Regulation* by Thomas Hutchinson, Trent University; *Bioengineering Experimentation - Noname Creek and Gold Run Creek, Feasibility Study and Field Trials* by Laberge Environmental Services; *Permafrost and Freezing: Implications for Northern Mine Sites* by EBA Engineering Consultants Ltd.; *Examination of Natural Attenuation of Metals in Soils in Northern Environments* by Access Consulting Group; and *Evaluation of Distributions of Bacteria, Sediments, Aqueous Chemistry and Heavy Metals in Yukon Wetlands* by EBA Engineering Consultants Ltd.

Karen continues to review Mining Land Use and Water License applications, and monitor reclaimed sites to document the effectiveness of mitigation practices. Karen also represents YGS on several committees which sponsor environmental research that involves geology.

Funding from the DIAND Knowledge and Innovation Fund has supported a project by Crystal Huscroft to characterize the settings of landslide hazards along the Alaska Highway Corridor. Many of the landslides in the region are related to degradation of permafrost and the influence of frozen ground on soil drainage. This study will help to assess the potential impact of global warming on terrain stability and the risk to future development such as the Alaska Highway pipeline.

LIAISON AND SUPPORT TO INDUSTRY, FIRST NATIONS AND THE PUBLIC

Mike Burke and Bill LeBarge, our main links to the exploration industry, continued to monitor Yukon hard-rock and placer mining and mineral exploration activity, visit active properties, review reports for assessment credit, and maintain the assessment report library.

The YGS continues to focus more attention on increasing awareness among the public, schools and First Nations of geology and its importance to the mining industry, land use planning and environmental management. Karen Pelletier, Charlie Roots and other YGS staff continue to make presentations in the schools and conduct field trips in the communities. Karen also organized field trips with First Nations groups to visit exploration properties to examine modern reclamation practices. We are in the process of developing an interpretive guide to the Whitehorse Copper Belt through a contract with Danièle Héon.

INFORMATION MANAGEMENT AND DISTRIBUTION

With the increasing volume of information generated by YGS and others, and rapidly evolving digital technology, the Survey has placed more effort and resources into making geological information more accessible. A large part of our effort has gone into developing and maintaining key databases, and making all of our information internet-accessible. Ongoing activities include support for the H.S. Bostock Core Library and the Energy, Mines and Resources (EMR) library (Elijah Smith Building).

DATABASES

With new reporting requirements to securities regulators, widely recognized mineral deposit models are becoming increasingly important. In cooperation with the British Columbia Geological Survey, the YGS has contracted Anna Fonseca to adapt the British Columbia Geological Survey Mineral Deposit Models for the Yukon. These models are now incorporated into Yukon MINFILE and will be published in early 2004.

Yukon MINFILE, the Yukon's mineral occurrence database, is maintained by Robert Deklerk. An update was released in November, 2003. The database now contains 2603 records, of which 500 have been revised, and is complete to the end of 2001. All mineral occurrences are now assigned to a deposit model. Reserve tables have been completely revised and updated to match, as closely as possible, the Canadian Institute of Mining Standards for Reporting Mineral Resources and Reserves.

The Yukon Placer Database, compiled under the direction of Bill LeBarge, was released in the fall of 2002. The database is in Microsoft Access 2000 format and is a comprehensive record of the geology and history of Yukon placer mining. The database contains descriptions of 440 streams and rivers, and 1356 associated placer occurrences. It also includes location maps in Portable Document Format (PDF). An update is scheduled for the spring of 2004.

The Yukon GEOPROCESS File, under the direction of Diane Emond, is an inventory of information on geological process and terrain hazards, including 1:250 000-scale maps showing permafrost, landslides, recent volcanic rocks, structural geology, and seismic events, and also includes references and summaries of bedrock and surficial geology. The GEOPROCESS File is intended as a planning aid for development activities and is available for most areas south of 66° latitude. The maps are now standardized in colour, and available on a single compact disk. Maps with text are in AutoCAD 2000 and PDF formats.

The Yukon Digital Geology compilation was updated this year by Steve Gordey and Andrew Makepeace of the Geological Survey of Canada with funding from YGS. It includes syntheses of bedrock geology and glacial limits, compilations of geochronology, paleontology, and mineral occurrences, and a compendium of aeromagnetic images, as well as an oil and gas well database. All are now available on CD-ROM. Bedrock geology and glacial limit paper maps are also available at 1:1 000 000 scale.

The Yukon Regional Geochemical Database 2003, compiled by Danièle Héon, contains all of the available digital data for regional stream sediment surveys that have been gathered in the Yukon under the Geological Survey of Canada's National Geochemical Reconnaissance Program. It is available on CD-ROM in Microsoft Excel 2000 format and in ESRI ArcView Shapefile format.

The YukonAge 2002 Database, compiled by Katrin Breitsprecher and Jim Mortensen at the University of British Columbia with funding from YGS, can now be viewed on the YGS Map Gallery in a version modified by Mike Villeneuve and Linda Richard with the Geological Survey of Canada. The database contains over 1500 age determinations, derived from over 1100 rock samples from the Yukon Territory, in both Microsoft Access 2000 format and as a flat file in Microsoft Excel 2000 format so that the data may be viewed without Microsoft Access. The database will be updated in the spring of 2004.

The Yukon Geoscience Publications Database, 2003, compiled by Lara Lewis and Diane Emond, is current to 2003 and contains more than 5000 references to papers on Yukon geology and mineral deposits, including YGS publications.

Funding from DIAND for Northern Geoscience announced in May, 2003 will be used in part to complete scanning of assessment reports and conversion to PDF format. The complete database of over 5000 files is expected to be available on-line by the spring of 2005.

H. S. BOSTOCK CORE LIBRARY

Mike Burke and Ken Galambos maintain the H.S. Bostock Core Library. The facility contains about 128 000 m of diamond drill core from about 200 Yukon mineral occurrences. Confidentiality of material is determined on the same basis as mineral assessment reports. Confidential core can be viewed with a letter of release from the owner. Rock saws and other rock preparation equipment are available to the public.

EMR LIBRARY

The EMR library in the Elijah Smith Building is an invaluable resource that is available to the public, but often overlooked. It is Yukon's largest scientific library and includes collections that, prior to devolution, belonged to Indian and Northern Affairs Canada and the Department of Energy, Mines and Resources, Yukon Government. The library also houses Yukon assessment reports and contains most geological journals and a good selection of references on general geology, Yukon geology and economic geology.

INFORMATION DISTRIBUTION

The YGS distributes information in three formats. We sell and distribute paper maps and reports through our Geoscience Information and Sales Office. In addition, many of our recent publications and databases are available in digital format at considerably lower prices than for paper copies. Most of our publications are available as PDF files on our website (www.geology.gov.yk.ca), free of charge. A directory of assessment reports is also available online. We are pleased to make spatial data available through our interactive map server; the Map Gallery can be accessed through the YGS website. We are continuing to improve the Map Gallery and have added coverages of regional stream geochemistry, mineral claims and geochronology to the existing coverages of regional geology, MINFILE locations, topography, roads and communities, and First Nations land selections. Vector data can now be clipped and downloaded. Planned enhancements include addition of geophysics and paleontology, and addition of more attribute data to existing coverages. Users are encouraged to provide feedback and suggest improvements.

Hard copies of YGS publications are available at the following address:

Geoscience Information and Sales
c/o Whitehorse Mining Recorder
102-300 Main Street (Elijah Smith Building)
P.O. Box 2703 (K102)
Whitehorse Yukon Y1A 2C6
Ph. (867) 667-5200
Fax. (867) 667-5150
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To access publications and to learn more about the Yukon Geological Survey, visit our website at <http://www.geology.gov.yk.ca> or contact us directly:

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2003 PUBLICATIONS AND MAPS

YGS OPEN FILES

(also see under Joint YGS/GSC Open Files)

Bradshaw, G. and vanRanden, J. (compilers), 2003. Yukon Regional Mineral Potential by Deposit Models 2003. Yukon Geological Survey, Open File 2003-11(D), CD-ROM.

Lipovsky, P.S., Colpron, M., Stronghill, G. and Pigage, L., 2003. GeoFIELD v.2.2 - Data management and map production for the field geologist. Yukon Geological Survey, Open File 2003-8(D), CD-ROM. A customized Microsoft Access 2000 database application, which facilitates data entry/recording and the production of geologic maps while in the field.

Simard, R.-L., 2003. Geological map of southern Semenof Hills (part of NTS 105 E/1,7,8), south-central Yukon (1:50 000 scale). Yukon Geological Survey, Open File 2003-12.

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Lewis, L.L. and Emond, D.S. (compilers), 2003. Yukon Geoscience Publications Database 2003. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, CD-ROM.

JOINT YGS/GSC OPEN FILES AND GEOSCIENCE MAPS

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Gordey, S.P. and Makepeace, A.J. (compilers), 2003. Yukon Digital Geology (version 2). Yukon Geological Survey Open File 2003-9(D), and Geological Survey of Canada Open File 1749, 2 CD-ROMs.

Kiss, F., Coyle, M., Forté, S. and Dumont R., 2003. Six aeromagnetic total field and first derivative maps, Yukon Territory (1:100 000 scale):

EGSD Open File 2003-1/GSC Open File 1538:
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Aeromagnetic Total Field, 106E/NE-NW

EGSD Open File 2003-3/GSC Open File 1540:
Aeromagnetic Total Field, 106L/SE-SW

EGSD Open File 2003-4/GSC Open File 1542:
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La Commission géologique du Yukon

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Le Service de géologie du Yukon

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APERÇU

Il y a onze ans, le Bureau de la géoscience Canada-Yukon ouvrait ses portes, ce qui marquait dans les faits les débuts d'une Commission géologique du Yukon (CGY) par la création du Programme géologique du Yukon. En avril 2003, cette vision se concrétisait enfin lorsque les responsabilités en gestion des ressources naturelles du Yukon étaient transférées du gouvernement fédéral au gouvernement du Yukon. C'est maintenant le ministère de l'Énergie, des Mines et des Ressources qui est responsable des minéraux, du pétrole et du gaz, de la foresterie, de l'agriculture et des terres. La nouvelle Commission géologique du Yukon remplace le Programme géologique. La CGY fait partie de la Direction de la mise en valeur des ressources minérales et est gérée conjointement par Grant Abbott et Rod Hill sous la direction de Jesse Duke. La Commission géologique regroupe la Division des services d'exploration et de géologie (DSEG) du ministère des Affaires indiennes et du Nord canadien (MAIN), le Bureau de la géoscience du Yukon, le Groupe d'évaluation du potentiel minéral et le Programme d'encouragement pour l'exploration minérale du Yukon (PEEMY) du ministère de l'Énergie, des Mines et des Ressources du gouvernement du Yukon. La Commission géologique du Canada (CGC) conserve en outre un bureau à la CGY. Les activités du Groupe des évaluations minières et du PEEMY sont décrites dans un rapport distinct.

Le financement de la CGY reste ce qu'il était les années précédentes dans le cadre du Programme géologique. Cette année, en plus du financement de base, nous recevons un financement additionnel à court terme du MAIN par l'entremise de l'Initiative géoscientifique dans le Nord menée par l'industrie ainsi que du Fonds pour le savoir et l'innovation. Dans le cadre du dernier budget fédéral, l'Initiative géoscientifique ciblée de Ressources naturelles Canada a été renouvelée pour deux autres années. Le gouvernement du Yukon recevra un financement substantiel cette année et la CGY est un partenaire.

Pendant l'année écoulée, nous déplorons la perte de Roger Hulstein et de Robert Stroshein du Groupe d'évaluation du potentiel minéral qui ont accepté des emplois dans le secteur privé. Il nous fait plaisir d'accueillir Geoff Bradshaw à titre de géologue d'évaluation du potentiel minéral et Steve Israel comme géologue de projet.

Le Comité de liaison technique à la CGY examine nos programmes deux fois par année. Nous remercions le président, Gerry Carlson et les membres du comité Al Doherty, Moira Smith, Jean Pautler, Forest Pearson, Bernie Kreft, Jim Mortensen et Jim Christie de leur précieux appui et des conseils constructifs qu'il nous fournissent.

Un mandat pour la CGY a été élaboré en consultation avec la haute direction d'Énergie, Mines et Ressources et le Comité de liaison technique. La CGY a maintenant la responsabilité «d'accumuler, de gérer et de communiquer la base d'information géoscientifique et technique nécessaire pour la gérance et le développement durable des ressources en énergie, en minéraux et en terres du territoire». Le mandat formalise une bonne part des travaux déjà entrepris ces quelques dernières années dans le cadre du Programme géologique et ouvre la voie à de nouveaux projets dans de

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nouveaux domaines. Le soutien à l'industrie minière reste l'objectif premier, mais davantage de ressources sont consacrées à la cartographie et aux études des régions présentant des possibilités pour les hydrocarbures. Des efforts sont également consacrés aux études environnementales pertinentes pour les industries de l'extraction et pour l'utilisation des terres. Ces dernières années, la demande des organismes de réglementation, des Premières nations et du grand public pour l'information géoscientifique a considérablement augmenté. De plus, les intérêts des industries des ressources sont au mieux servis par une prise de décisions éclairée et un public bien informé. Le changement le plus important se manifestera en conséquence non pas au niveau de la nature de nos activités, mais plutôt au niveau de la diversité de notre clientèle.

TRAVAUX SUR LE TERRAIN

La CGY s'est engagée à exécuter un ensemble complémentaire équilibré de projets sur le terrain visant non seulement à stimuler rapidement l'exploration à la recherche de minéraux et d'hydrocarbures, mais, à plus long terme, à comprendre le cadre géologique régional du Yukon et à constituer la base de données géoscientifiques du Yukon.

La cartographie du socle rocheux reste la pierre angulaire de la CGY. Cette année plusieurs projets ont été complétés ou ont atteint le stade de la rédaction du rapport. Lee Pigage a rédigé un bulletin sur la géologie du district d'Anvil actuellement sous presse et des communications concernant le projet de cartographie La Biche mené dans le cadre du Projet de cartographie nationale de l'avant-pays central (CARTNAT). Grant Lowey a rédigé un bulletin, sous presse, sur la géologie et le potentiel des placers de la région de la carte Stewart River. Le CARTNAT de l'ancienne marge du Pacifique en est à sa dernière année. Maurice Colpron et Don Murphy rédigent actuellement des bulletins concernant respectivement les régions de Glenlyon et de Finlayson Lake. Maurice Colpron, en collaboration avec JoAnne Nelson de la Commission géologique de C.-B., travaille à l'organisation et à la direction d'un volume de synthèse portant sur les résultats de plus de quatre années de recherches dans les régions de Stewart River, Glenlyon, Finlayson Lake et Wolf Lake au Yukon, sur les régions septentrionale et méridionale de la C.-B. et sur l'est de l'Alaska par des chercheurs de la CGY, de la Commission géologique du Canada, de la Commission

géologique des États-Unis et de plusieurs universités. Ce volume sera publié par l'association géologique du Canada. Ces travaux ont permis d'accroître considérablement notre compréhension de la géologie et du potentiel minier du terrane de Yukon-Tanana jusqu'à présent l'une des régions les moins bien comprises de la Cordillère nord-américaine.

Parmi les travaux sur le terrain en cours en 2003, mentionnons la cartographie du socle rocheux dans la région de la carte Finlayson Lake où Don Murphy continue à définir et à étendre les régions propices aux gisements de sulfures massifs volcanogènes (SMV) et d'émeraudes. Maurice Colpron et Charlie Roots ont participé au projet de cartographie de la CGC à la rivière Stewart où la main-d'œuvre additionnelle a permis de compléter les travaux sur le terrain en temps opportun. Lee Pigage a effectué un bref voyage d'exploration dans la partie de la région de la carte Coal River pour déterminer des corrélations possibles entre les roches volcaniques et siliciclastiques du Protérozoïque tardif et du Paléozoïque précoce près des lacs Toobally et des strates peut-être équivalentes de la région de l'adjacente carte La Biche. Notre plus importante nouvelle initiative est le projet du bassin de Whitehorse. Il s'agit d'un partenariat multidisciplinaire avec la Commission géologique du Canada et des universités ressemblant beaucoup à l'actuel CARTNAT. L'objectif en est de déterminer avec exactitude le potentiel pour les hydrocarbures de la partie septentrionale du bassin en définissant plus nettement ses cadres stratigraphique et structural. Cette année, Grant Lowey a entrepris une étude stratigraphique et sédimentologique du Groupe de Leberge. Plus tard pendant l'année, la CGC effectuera, à même un financement fourni dans le cadre de l'Initiative géoscientifique ciblée, un levé sismique transversal du bassin le long des routes de Campbell et du Klondike. Les études stratigraphiques, sédimentologiques et structurales ainsi que la cartographie du socle rocheux se poursuivront pendant les deux prochaines années.

Craig Hart complète un programme de doctorat à l'Université d'Australie occidentale. Les exigences pour l'obtention du diplôme comprennent surtout la rédaction d'articles sur ses antérieures études sur le terrain dans la zone aurifère de Tintina et dans d'autres manifestations d'or au Yukon. Cette année, Craig et Lara Lewis ont effectué sur une grande étendue une reconnaissance des manifestations de tungstène et de béryl.

Julie Hunt est retournée aux études pour entreprendre un programme de doctorat à l'Université James Cook en

Australie et la CGY finance ses travaux sur le terrain. Julie a fait équipe avec Derek Thorkelson pour compléter des travaux sur le terrain dans les brèches de Wernecke et tire avantage de ses contacts en Australie pour comparer les brèches du Yukon avec des roches similaires en Australie dans lesquelles on trouve des gîtes géants de cuivre et d'or.

Bill LeBarge et Mark Nowasad ont complété leurs études des relations entre la sédimentologie, la distribution granulométrique et la qualité de l'eau provenant de gîtes placériens. Leurs résultats seront évalués à des fins d'application éventuelle à long terme et pour des recherches plus poussées. Les données recueillies dans le cadre de cette étude ont été utiles pour la revue du processus d'autorisation des placers de 2003 au Yukon.

Jeff Bond a poursuivi ses travaux de cartographie des dépôts meubles dans le grand Whitehorse qui doivent être publiés sous forme de deux cartes à l'échelle de 1/50 000. Le projet fournira l'information de base à l'appui de décisions en aménagement des terres, pour les études de l'eau souterraine et pour l'éducation du public.

Jeff et Kristen Kennedy ont étudié la géologie des dépôts meubles et les configurations de l'écoulement glaciaire dans la région du ruisseau Seagull; ils ont pu déterminer que la glace s'écoule vers le nord en remontant la vallée contrairement à ce que l'on avait d'abord pensé. Ces résultats ont une importante portée pour l'interprétation des anomalies géochimiques des sols et le potentiel pour les manifestations aurifères dans la région.

Jeff a également fourni des conseils aux entreprises d'exploitation de placers, aux Premières nations et au ministère des Pêches et Océans en matière de géologie des dépôts meubles.

Finallement, le Commission géologique du Yukon continue son assistance financière et logistique de nombreuses études thématiques conduites par des étudiants de deuxième et de troisième cycle, et par des chercheurs universitaires.

PROGRAMME D'ENCOURAGEMENT POUR L'EXPLORATION MINÉRALE DU YUKON

Le Programme d'encouragement pour l'exploration minérale du Yukon (PEEMY) a reçu 93 demandes avant la date limite du 1er mars. Une somme totale de 987 000 \$ a été versée à 61 demandeurs répondant aux exigences. Des programmes présentés, 9 ont été approuvés dans le cadre du module Prospection primaire, 19 dans le cadre du module Objectif régional et, enfin, 39 dans le cadre du module Évaluation des cibles.

La hausse du prix de l'or et de certains métaux de base sur le marché mondial a incité les demandeurs à explorer leurs cibles cette saison. L'exploration visant les métaux précieux menée dans le cadre du programme a grimpé, 56 % des demandes portant sur l'or et les éléments du groupe du platine. Les métaux de base ont représenté 30 % des programmes approuvés; le reste, 14 %, a été consacré à l'exploration pour découvrir des pierres précieuses et d'autres substances utiles. Les programmes d'exploration proposés ont touché les quatre districts miniers du Yukon, leur répartition ayant été relativement uniforme sur le territoire. Cette année, quatre conventions d'option ont été signées pour des propriétés explorées dans le cadre du PEEMY et au moins cinq autres sont en cours de négociation.

Les faits saillants de cette année pour les programmes d'exploration visant à découvrir des gîtes placériens et des gîtes en roche dure sont la découverte d'anomalies significatives d'or et d'éléments associés tant dans les sols que dans la roche et le prolongement d'indices connus par des travaux de prospection et de géophysique.

PRIX ROBERT E. LECKIE

Les noms des récipiendaires des prix Robert E. Leckie décernés pour la cinquième année consécutive pour des travaux exceptionnels de restauration de gîtes de quartz et de placers ont été annoncés le 16 novembre 2003 au Forum géoscientifique du Yukon. Ce sont Atac Resources Ltd. pour la restauration exceptionnelle d'un site d'exploration en roche dure au gisement de Mechanic Creek près de Carmacks, et Frank et Karen Hawker pour la restauration exceptionnelle d'un placer au gîte de Sixtymile River près de Dawson.

DIFFUSION DE L'INFORMATION

La Commission géologique du Yukon (CGY) produit maintenant une gamme complète de publications numériques. Toutes nouvelles cartes et rapports géologiques sont disponibles sur demande en format numérique, et toutes publications récentes sont aussi disponibles (sous format PDF) sans frais sur notre site internet (<http://www.geology.gov.yk.ca>). De plus, une gamme de rapports d'évaluation de propriété minières est maintenant disponible par l'entremise de notre site internet. Nous sommes aussi fier de notre service de carte interactive ('Map Gallery'). Ce service est disponible par l'entremise de notre site internet et permet la visualisation de la géologie régionale, des sites MINFILE, des levés régionaux de géochimie des sédiments de ruisseaux, de la topographie, des routes et des communautés du Yukon, et des sélections des terres des nations autochtones. Les données vectorielles peuvent maintenant être sélectionnées et téléchargées. Certaines des améliorations à venir incluent l'addition de données géophysiques, géochronologiques et paléontologiques. De plus, la couverture des concessions minières sera bientôt disponible.

Les publications de la Commission géologique du Yukon sont diffusées par le Bureau d'information et des ventes en géoscience. Elles sont disponible à l'adresse suivante :

Bureau d'information et des ventes en géosciences
a/s Conservateur des registres miniers
le ministère de l'Énergie, des Mines et des Ressources
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Pour en savoir plus long sur la Commission géologique du Yukon, visitez notre page d'accueil à www.geology.gov.yk.ca ou communiquez directement avec :

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