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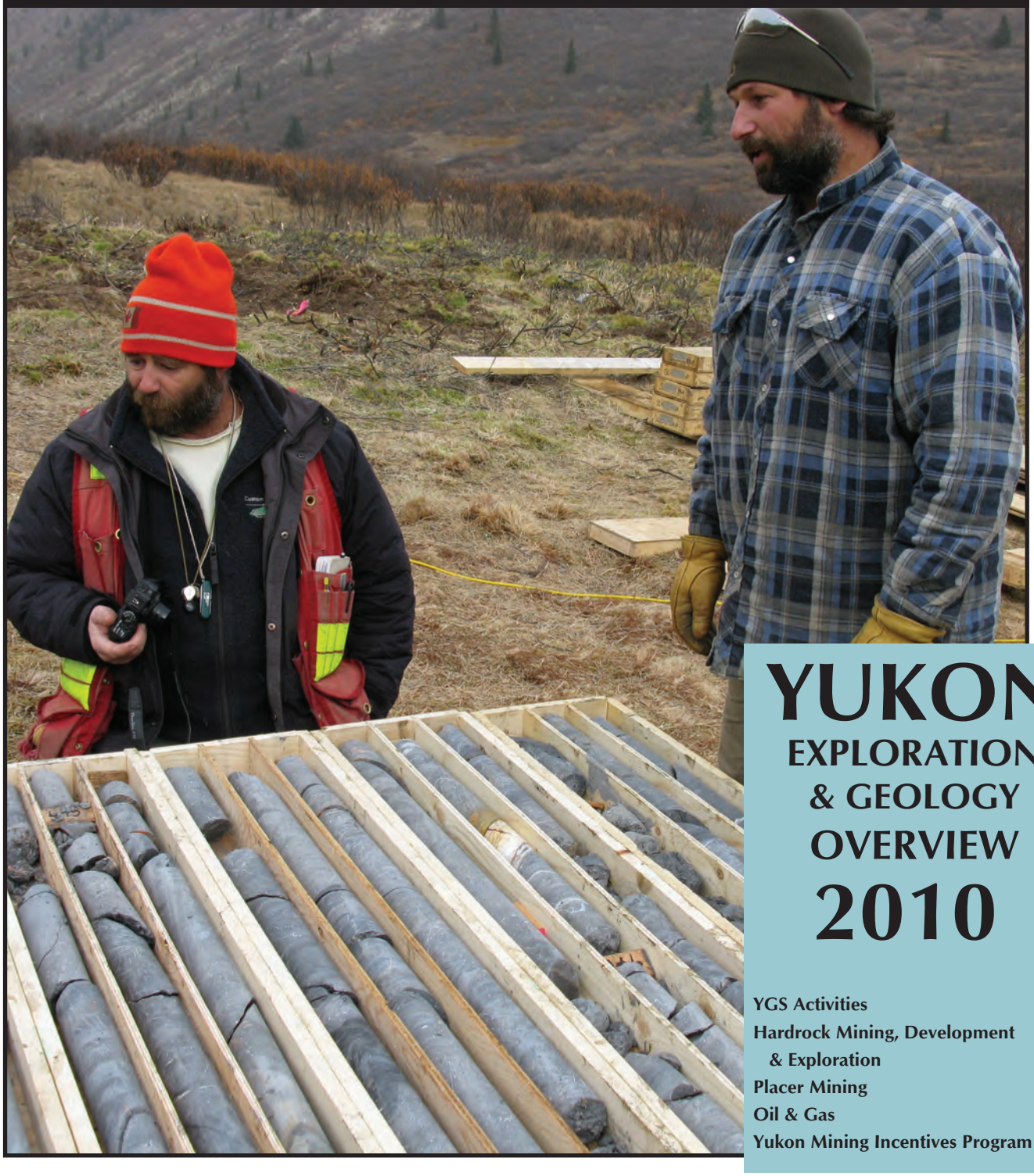

YUKON
EXPLORATION & GEOLOGY OVERVIEW
2010

YGS Activities
Hardrock Mining, Development & Exploration
Placer Mining
Oil & Gas
Yukon Mining Incentives Program

YUKON GEOLOGICAL SURVEY

Yukon
Energy, Mines and Resources

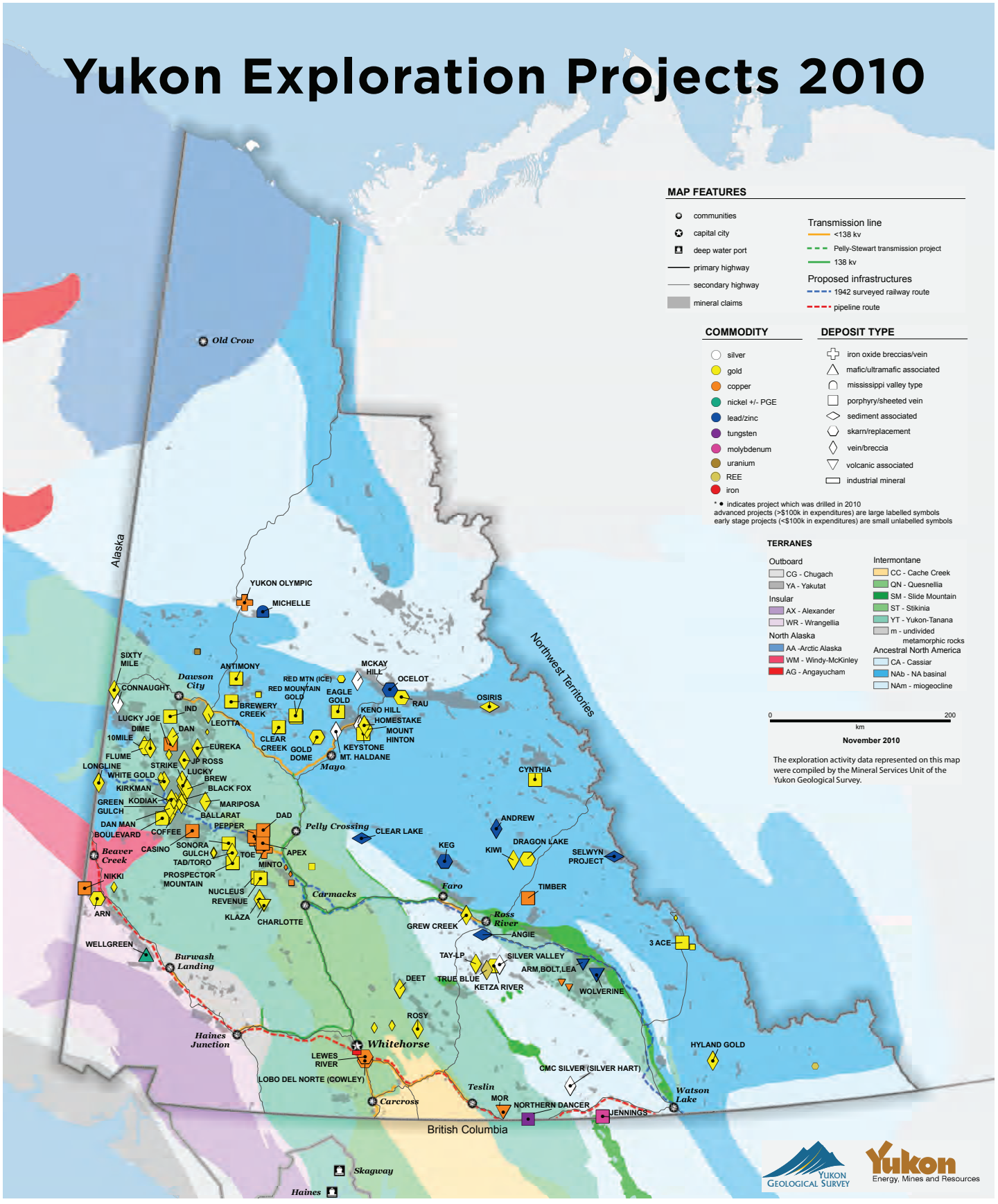

Figure 1. *Yukon advanced exploration projects, 2010. Black dot in symbol indicates project drilled in 2010; advanced projects (>$100 000 in expenditures) have large labelled symbols; early stage projects (<$100 000 in expenditures) have small unlabelled symbols.*

YUKON
EXPLORATION & GEOLOGY OVERVIEW
2010

Edited by
K.E. MacFarlane, L.H. Weston and C. Relf

Yukon Geological Survey
Energy, Mines and Resources
Government of Yukon

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Front cover photograph: Mike Burke (YGS) and Bill Wengzynowski (ATAC Resources) view drill core at the recently-discovered Osiris showing. Photo by Carolyn Relf.

PREFACE

Yukon Exploration and Geology (YEG) continues to be the main publication of the Yukon Geological Survey (Energy, Mines and Resources, Yukon government). This is the 33rd volume of the series. We have moved to digital only distribution of YEG. Individual YEG papers, with colour images, can be downloaded from our website. The Yukon Exploration and Geology Overview continues to be available in print and digital formats.

YEG 2010 contains up-to-date information on mining and mineral exploration activity, studies by industry, and results of recent geological field studies. Information in this volume comes from prospectors, exploration and government geologists, mining companies and students who are willing to contribute to public geoscience for the benefit of the scientific community, general public, and mineral and petroleum industries of Yukon. Their efforts are appreciated.

YEG co-editors Leyla Weston and Carolyn Relf are thanked for their assistance this year. Appreciation is also extended to Yukon Geological Survey (YGS) staff that helped edit earlier versions of manuscripts, before they even crossed our path; this year we thank Joyia Chakungal, Venessa Bennett, Tammy Allen, Maurice Colpron, Kristen Kennedy and Don Murphy.

Sherry Tyrner of the Queen's Printer ensured that the printing process went smoothly.

This year's Yukon Exploration and Geology is dedicated to the administrative, financial and GIS staff that work in survey, exploration, or mining offices. At one time or another you have made my life easier.

We welcome any input or suggestions that you may have to improve future YEG publications. Please contact me at (867) 667-8519, or by e-mail at karen.macfarlane@gov.yk.ca.

Karen MacFarlane

JIM DODGE
IN MEMORIUM

Jim Dodge died in Whitehorse on August 21, 2010, about 3 month shy of his 90th birthday. A familiar face to Yukon explorationists and residents, he is remembered for his easy smile and positive disposition, his genuine interest in others, and a keen sense of individuality and independence. He was known to many as someone with a sharp inquisitive mind, and an appreciation for beauty, kindness and friendship.

Jim had a full and colourful life and loved to tell stories: he would talk about his first job in a mine in Alaska; of landing in Hiroshima as a lieutenant-colonel with the US military in 1945 to help with reconstruction of the Japanese economy (the silence, he said, was eerie); of evading his military bodyguards in Japan to hop on a train to go skiing in the Japanese Alps; of meeting his future wife Elizabeth and bringing her on these skiing adventures; of he and his pregnant wife hearing the Rhodesian lions roar outside their trailer (he closed the screen window; she, matter-of-factly said: "I don't think this is going to help"); of bear encounters in Yukon... He also loved to hear stories. When I met Jim, he was already an elderly man who had an amazing capacity to be open to the experience of others, and reflect on them with kindness and wisdom.

Returning from Japan, Jim went to Germany to study African ore deposits. He subsequently worked with the Atomic Energy Commission in the US, but eventually formally protested the effects of their testing on humans. With Elizabeth, he operated a uranium mine in Utah, before going with her to Africa to look for emeralds. They had two children, Michael and Sarah, who helped him on the standard drill he was using in the MacPass district. In Yukon, Jim prospected for gold, zinc, jade and emeralds, but will be remembered for the development of the Tea barite deposit and the subsequent lawsuit that cost him all his personal assets. He prospected for rare earth elements before they became a hot commodity. His latest wish was to investigate the occurrence of diamonds in non-craton rocks of Australia. He maintained an interest in current developments in the mining business and the exploration scene in Yukon through the final months of his life.

At 80 years old Jim hiked the Chilkoot trail, and in that same decade also taught himself to use a personal computer and the internet. Jim made friends wherever he went. Following the death of his wife, his annual migration cycle was to arrive in Yukon in the spring, spend the summer engaged in solitary prospecting ventures, then fly to New Zealand for our winter months. He eventually settled in the town of Glenorchy, NZ, where, like in Whitehorse, he made a circle of good friends that welcomed him into their family life. He took an interest in a 2nd World War- era scheelite battery (mill) and single-handedly started a renovation effort that eventually mobilized the community, brought government funding and historical designation to the site, and led to an appearance on NZ TV.

Jim was an educated man with a varied geological career in which he witnessed many significant moments in Canadian mining history. I remember him as a proud, kind, independent man that taught me the grace of acceptance. He initially resisted the loss of independence caused by aging, but he persevered, never showing self-pity and always looking forward. He gracefully accepted help and friendship, and his friendship was the treasure offered in return. We will miss him very much.

Danièle Héon

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Yukon Geological Survey staff: (front row, left to right) Laurie Fahr, Olwyn Bruce, Lara Lewis, Tammy Allen, Carolyn Relf, Karen MacFarlane, Tara Genier and Joyia Chakungal; (middle row, left to right) Jeff Bond, Sarah Laxton, Mike Burke, Bailey Staffen, Aubrey Sicotte, Kristen Kennedy, Sue Roy, Danièle Héon, Venessa Bennett, Lee Pigage, Tiffani Fraser; (back row, left to right) Bill LeBarge , Maurice Colpron, Steve Israel, Robert Deklerk, Charlie Roots, Don Murphy, Panya Lipovsky and Ed Long.
Missing from photo: Grant Lowey, Karen Pelletier.

Summary of Yukon Geological Survey's 2010-2011 Activities

Carolyn Relf[1]
Director, Yukon Geological Survey

Relf, C., 2011. Summary of Yukon Geological Survey's 2010-2011 Activities. *In*: Yukon Exploration and Geology 2010, K.E. MacFarlane, L.H. Weston and C. Relf (eds.), Yukon Geological Survey, p. 7-17.

INTRODUCTION

Yukon Geological Survey (YGS) had a very busy field season in 2010 and is in the process of finalizing maps and reports from summer activities. Field work was carried out in eight areas in the territory, with several projects being delivered in partnership with the Geological Survey of Canada (GSC). Confirmation of federal funding for geoscience through the Canadian Northern Economic Development Agency was received in August. This was welcome news, as it will allow YGS to deliver a number of new projects that are of interest to its clients. Staking and mineral exploration activity in 2010 exceeded expectations, fueled by several new significant discoveries; this had implications for Mineral Services staff, who were kept busy visiting company properties and tracking exploration results.

This report provides an overview of YGS' activities for the current 2010-11 fiscal year. Results for some of these activities are described in more detail elsewhere in this volume, while other results will be published separately.

YGS STAFF UPDATE

YGS currently employs 30 staff, including 22 permanent, 7 term, and one Emeritus staff member. Scientific and technical staff are divided into five work units based on discipline, and are supported by two administrative staff and the director. The organizational chart in Figure 1 illustrates reporting relationships.

A number of staff changes impacted the survey this year. Steve Traynor, who has been with YGS since 2003, has left to pursue other interests. Steve managed the YMIP program for 5 years and did an excellent job of documenting its successes.

In June, Rachelle Dufour left the survey to return to school to study home care. Her enthusiasm and warmth will be missed at YGS and will be an asset to patients who benefit from her care.

Karen Pelletier announced that she will be retiring from the survey within a year after 15 years of service in a variety of capacities, including YMIP geologist, environmental geologist, and coordinator for geoscience outreach and education. Karen's efforts in the latter capacity are largely responsible for the survey's visibility among Yukon's schools and the general public.

Leyla Weston will resign following the editing of this volume of Yukon Exploration and Geology. She has provided technical support, editing services, and most recently, liaison between YGS project leaders and Yukon First Nations, in addition to providing a sense of fun and humour to YGS' culture.

Finally, Mike Burke announced his resignation from YGS after 20 years working in the capacity of Yukon's mineral industry liaison geologist. He is leaving to pursue a position as Chief Geologist with Golden Predator, and while his presence will be greatly missed, we look forward to having him as a client.

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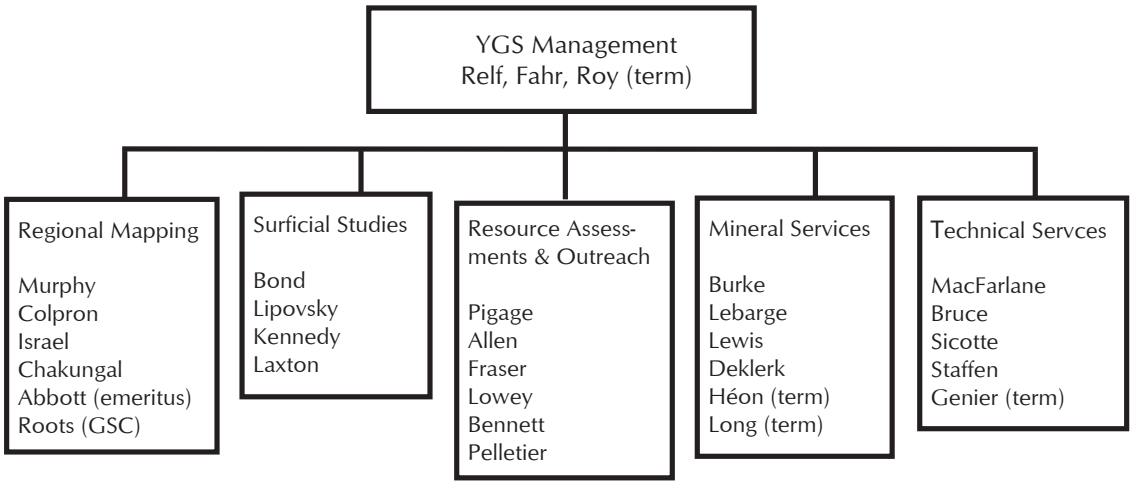

Figure 1. *Simplified organizational chart for YGS; unless otherwise indicated, staff are indeterminate.*

I would like to thank all of the above staff for their contributions to YGS' activities and services over the years and for their commitment to the organization.

Not all staff changes this year involved staff departures. YGS was able to hire two term employees through Yukon Government's First Nations Training Corps. Edward Long is working as a Core Technician, assisting with rock sample preparation, managing lapidary equipment and inventorying core samples in advance of our move to the new Core Library. Tara Genier was hired as a database assistant and has been working on the scanning project, filling requests for scanned documents, and working with the contractor on the systematic scanning and indexing of archived files.

A competition to staff the recently vacated YMIP Geologist position closed in mid-November, and we anticipate having the position filled by early in 2011. In October, Suzanne (Sue) Roy was hired on a casual basis as our map sales coordinator until a competition to permanently staff the position can be completed. A competition for a new Outreach Geologist will likely be held in late spring/ early summer; in the meantime, some of the duties of this position will be covered by other staff.

Finally, YGS welcomed Olwyn Bruce back from maternity leave in October. Since her return she has been working on the Enterprise project and providing GIS support to staff in Minerals Services.

FUNDING AND PROGRAM OVERSIGHT

YGS funds its activities from a number of sources (Table 1). An A-base operating budget funds YGS' core activities such as regional mapping, thematic research (*e.g.*, energy studies and targeted analytical work), monitoring of industry activities and client information services. A separate budget is allocated for the management of our two funding programs - Yukon Mining

Table 1. *Summary of YGS operating funds for 2009-2010.*

Funding Source	Amount	Description
Core Operating Budget	$1,228,000	Bedrock and surficial mapping; energy studies; thematic research (including university partners); exploration property visits; information management and client services.
YMIP	$1,670,000	Dedicated funds for YMIP grants ($30K allocated for program administration); see Table 3 for details.
MPERG	$50,000	Multiple activities; see Table 4 for details.
Climate Change	$100,000	Federal Climate Change funds.
SINED	$725,000	Multiple activities; see Table 2 for details.
Total	**$3,773,000**	

Incentives Program (YMIP) and Mineral and Petroleum Environmental Research Group (MPERG). In addition to Yukon government resources, YGS receives federal funding from two sources: Canada's Climate Change Action Plan provides funds through Yukon's Climate Change Secretariat and Yukon College for research in support of climate change adaptation; and the federal Strategic Investments in Northern Economic Development (SINED) initiative provides resources for a number of geoscience projects (described below).

Planning and priority-setting for YGS are influenced in a number of ways. A Technical Liaison Committee comprising clients and partners from industry, academia and government meets twice annually to review activities and advise on their information needs. Yukon government defines corporate priorities and strategic direction for the department, and determines the timing for initiatives such as land-use planning, to which YGS contributes information on resource potential. Finally, external funding and/or partnership opportunities, such as GSC's Geo-mapping for Energy and Minerals program, influence YGS' priorities as they represent opportunities to leverage resources and enhance our program.

SINED FUNDED ACTIVITIES

Canada's Northern Economic Development Agency (CanNor) recently approved a request by YGS to provide $4.2M in SINED funds over 4 years for geoscience projects that contribute to economic development in Yukon. The funding will support projects in six areas of investment over the four-year program (Table 2).

SINED projects this fiscal year focus on five investment themes: geophysics, geochemistry, placer studies, information management and data mining. A gravity survey is being planned for the Ruby Range area this spring, in order to infill existing GSC data to assess whether alteration associated with potential large porphyry systems is present in the region. Stream sediment samples archived at the GSC will be re-analyzed for 53 elements in order to upgrade existing data. Samples from Selwyn Basin will be targeted for analyses over the next year and a half, with the aim of releasing upgraded data for the entire region by early in 2012. Two placer projects were delivered this year. IP surveys were carried out across several Klondike creeks to determine depth to bedrock and model stratigraphic features, in order to assess the viability of these creeks for placer development.

Table 2. *Summary of proposed allocations of SINED and leveraged funding over 4 years. "YGS" and "Other" funding include in-kind contributions; "Other" includes confirmed and anticipated support from university partners and other Yukon government departments.*

SINED Areas of Investment	2010-11	2011-12	2012-13	2013-14
Geophysical Surveys				
SINED	$200,000	$400,000	$400,000	$400,000
YGS	$20,000	$20,000	$20,000	$20,000
Geochemical Surveys				
SINED	$85,000	$85,000	$100,000	$100,000
YGS	$20,000	$20,000	$20,000	$20,000
Surficial Geology				
SINED	$0	$150,000	$150,000	$130,000
YGS	$12,000	$20,000	$20,000	$20,000
Placer Studies				
SINED	$80,000	$80,000	$80,000	$80,000
YGS	$15,000	$15,000	$15,000	$15,000
Other	$20,000	$20,000	$20,000	$20,000
Information Management				
SINED	$150,000	$15,000	$0	$0
YGS	$35,000	$20,000	$20,000	$20,000
Other	$80,000	$0	$0	$0
Data Mining				
SINED	$180,000	$200,000	$200,000	$200,000
YGS	$15,000	$20,000	$20,000	$20,000
Other	$5,000	$25,000	$25,000	$25,000
Program Evaluation				
SINED	$30,000	$3,000	$3,000	$3,000

In addition, a study of fine gold separation techniques was undertaken and results were reported at a placer workshop held in Whitehorse last November.

The other two SINED projects underway this fiscal year involve further progress on the multi-year Enterprise database project, and ongoing scanning of archived exploration and mining documents donated to YGS by industry. Details of these projects are reported below (see Information Services).

FIELD ACTIVITIES

YGS staff undertook mapping and related field-based studies in eight areas in 2010 (Fig. 2). Four of the projects constitute part of YGS' ongoing collaboration with the Geological Survey of Canada (GSC) under their Geo-mapping for Energy and Minerals (GEM) program. These include bedrock mapping and thematic studies under the Edges project in southwestern Yukon (Coast Belt and North Stevenson Ridge areas), targeted stratigraphic and sedimentological work in Eagle Plain/Peel Plateau, and final wrap-up of bedrock mapping in the Coal River area. Non-GEM activities included bedrock mapping in the southern Wernecke Mountains, surficial mapping in the north Dawson Range area, community-scale surficial mapping around Mayo and Pelly Crossing, and initiation of a new energy study in the Whitehorse trough.

The Yukon component of the Edges project concentrated on bedrock mapping in the Coast Belt this year. Mapping was led by Steve Israel (Israel *et al.*, 2011), who extended Don Murphy's 2007-2009 mapping in the Windy-McKinley area southeastward to Aishihik Lake in the Ruby Range. The crew completed mapping of eleven 1:50 000 map sheets, and provided field support for two thesis projects (see Partnered Research, below). Highlights of mapping include the delineation of a metamorphic gradient in

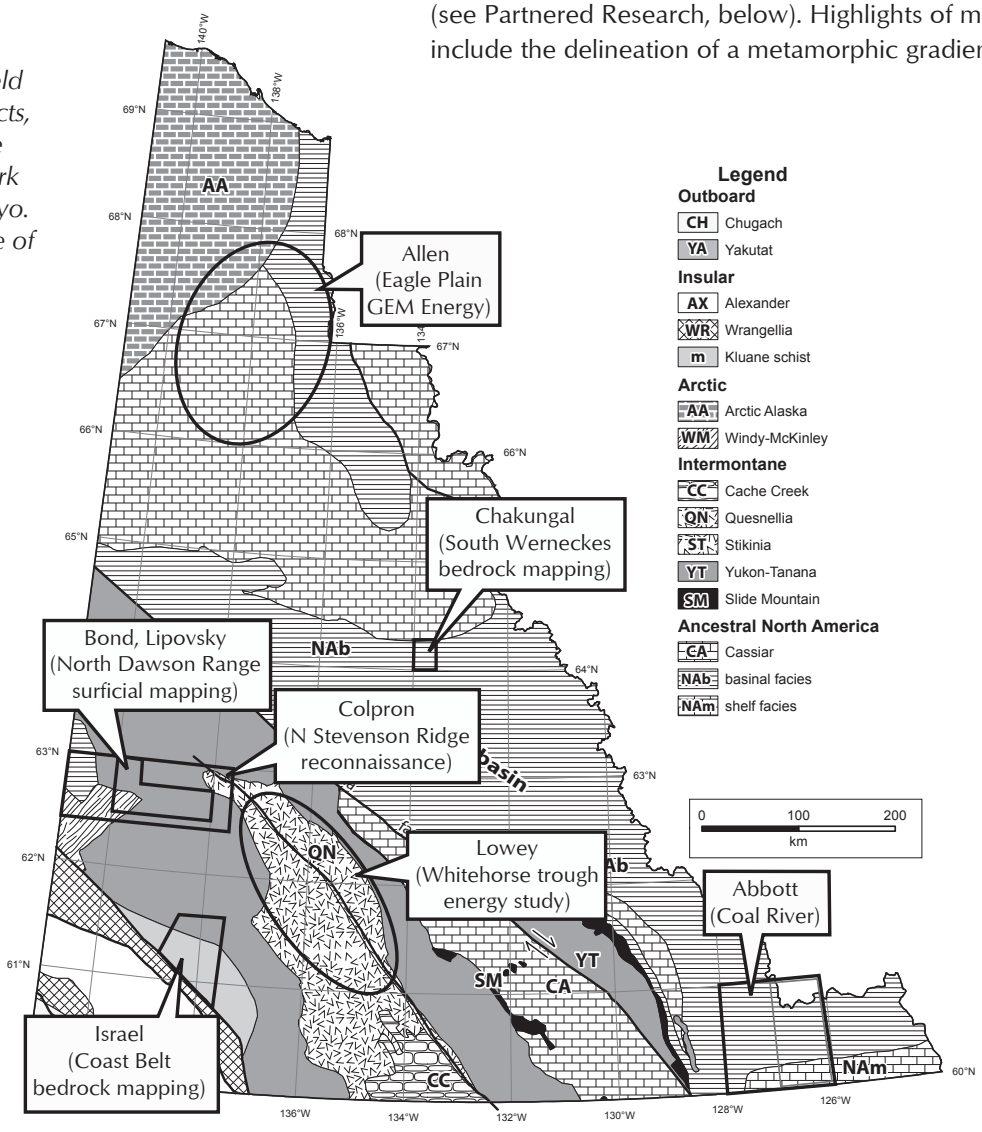

Figure 2. *Locations of field areas of 2010 YGS projects, with the exception of the community mapping work in Pelly Crossing and Mayo. Project leader and nature of study are* indicated.

the Kluane Schist that may have a relationship to gold mineralization, and the identification of porphyry and epithermal-style mineralization associated with the Ruby Range batholith and age-equivalent overlying volcanic rocks. Israel *et al.* (2011) describe the geology in more detail and discuss implications for mineral potential.

Maurice Colpron and Jim Ryan (GSC) conducted a 2-week reconnaissance of Northern Stevenson Ridge map area as a ramp-up for a regional mapping project in 2011. The pair focussed on verifying existing geology maps to determine how much of the area will require re-mapping (versus compiling), and examining mineral occurrences in the Dawson Range to ensure that mapping provides an adequate geologic context to support exploration efforts. Colpron also provided field supervision to a number of students working on GEM Edges studies (see Partnered Research, below), and participated with Don Murphy in a field trip in the Brooks Range of Alaska. The trip was an opportunity to strengthen YGS' relationship with colleagues from Alaska and helped familiarize YGS with the geology of this region in anticipation of future work in North Yukon.

One of the highlights stemming from GEM Edges activities in Yukon this year was a 4-day industry field trip held at the end of the summer (Murphy *et al.*, in press). The field trip, led by Don Murphy, Steve Israel and Maurice Colpron, showcased results of recent mapping in the area between Whitehorse and Beaver Creek. An important focus of the trip was a 40 km-thick section through the Late Cretaceous to Paleogene North American continental margin arc from the Yukon-Tanana terrane basement, across an orogen-scale batholithic complex into coeval porphyry and volcanic/epithermal settings. GSC provided a portion of the funding for the trip through their GEM Program.

A bedrock mapping project in the Coal River area was initiated under the GEM Minerals Program in 2009. Mapping was substantively completed in 2009, although a few questions remained unresolved at the end of the season. To address these questions, Grant Abbott returned to the area briefly in 2010 to collect targeted samples for age dating and examine field relationships in selected outcrops. Compilation of the Coal River map sheet was completed in the fall (Pigage *et al.*, in press) and will be released early in 2011, following final technical edits. An accompanying report will be published once final geochronologic and geochemical data are acquired.

YGS's 2010 contribution to the GEM Yukon Energy project had three components. Tammy Allen documented the distribution of Middle to Upper Devonian Canol Formation and Upper Devonian Ford Lake Shale in Eagle Plain as part of a study to determine their source rock and reservoir potential. She and Tiffani Fraser also contributed to a study of the stratigraphic relationships and hydrocarbon potential of Paleozoic sediments in diamond drill core recovered from eastern Eagle Plain in 2009 (Allen *et al.*, 2011). In addition to the above, YGS supported a student thesis working in Eagle Plain (see Partnered Research, below). More details of the above studies are presented in Adilman and Pigage (this volume).

Tiffani Fraser completed a petrophysical study of the conventional oil and gas reservoir potential of the Peel Plateau and Plain. This work was part of a collaborative study with the GSC and Northwest Territories Geoscience Office carried out between 2004 and 2008. For this particular study, Fraser examined geophysical logs from 17 wells in the basin and ranked the reservoir potential of each stratigraphic unit based on criteria such as reservoir and net pay thicknesses, porosity, permeability and water saturation. An open file report on this study has just been completed (Fraser, 2010).

Joyia Chakungal started a multi-year mapping project in the South Wernecke Mountains in 2010. The project involves 1:50 000-scale bedrock mapping across the region to resolve stratigraphic and structural complexities in the rocks that host the Rau and Osiris gold occurrences. Mapping was initiated in map sheet 106C/04 and will continue westward next summer. In addition to bedrock-focussed studies, Chakungal undertook a ridge-and-spur soil sampling program, demonstrating the usefulness of these data as a tool for both mapping and exploration. Highlights of this year's activities are presented in Chakungal and Bennett (2011).

Regional surficial mapping of five 1:50 000-scale map sheets in the Northern Dawson Range area(115J/9-13) was completed by Jeff Bond and Panya Lipovsky in 2010. The maps and associated paper (Bond and Lipovsky, 2011) will provide surficial geological information on the distribution and character of weathered bedrock, loess and fluvial deposits that will aid in the interpretation of regional soil and stream sediment geochemical data. In addition, the study documented landforms associated with permafrost, the character of which will be important when considering future development of mineral resources in the area. While not technically part of the GEM Edges project, the study area lies within the footprint of the Edges project and field work benefited from access to Edges helicopter support.

Grant Lowey undertook a literature review of carbonate rocks and reconnaissance field work in order to develop a workplan for a three-year study of the Triassic carbonate platform in the Whitehorse trough. Specifically, the study proposes to examine the depositional setting(s) and source rock/reservoir potential of platform and reef carbonates of the Hancock Member (Aksala Formation, Lewes River Group). Highlights from the field work include the identification of the shoreline and margin of this arc-fringing platform and the development of several conceptual stratigraphic gas plays.

Kristen Kennedy carried out detailed (1:10 000-scale) mapping in and around the communities of Mayo and Pelly Crossing. The work was funded by the Climate Exchange Program at Yukon College, and focussed on identifying potential risks to the communities associated with climate change impacts such as permafrost degradation and river bank erosion. The project was part of a larger integrated study to support community planning and climate change adaptation strategies; final reports of project results will be released this spring.

MINERAL SERVICES/METALLOGENY

Quartz claim staking and hardrock mineral exploration, particularly for gold, exceeded expectations this year, fuelled by new discoveries in the Dawson Range and Selwyn basin (see Lewis and Burke, this volume). Mike Burke and Lara Lewis visited active exploration projects, reviewed assessment reports, and provided information and advice to clients. Burke also participated in numerous trade shows and meetings with industry clients and investors, providing information on Yukon's mineral potential and regulatory environment as a background to potential investors.

Venessa Bennett visited exploration projects to collect data for metallogenic studies and to support assessments of regional mineral potential (Fig. 3). She examined property-scale features of many showings for comparisons at a district-scale, and in the fall, she generated new U-Pb age data from selected samples that were collected over the summer. These data will be released in 2011 as two

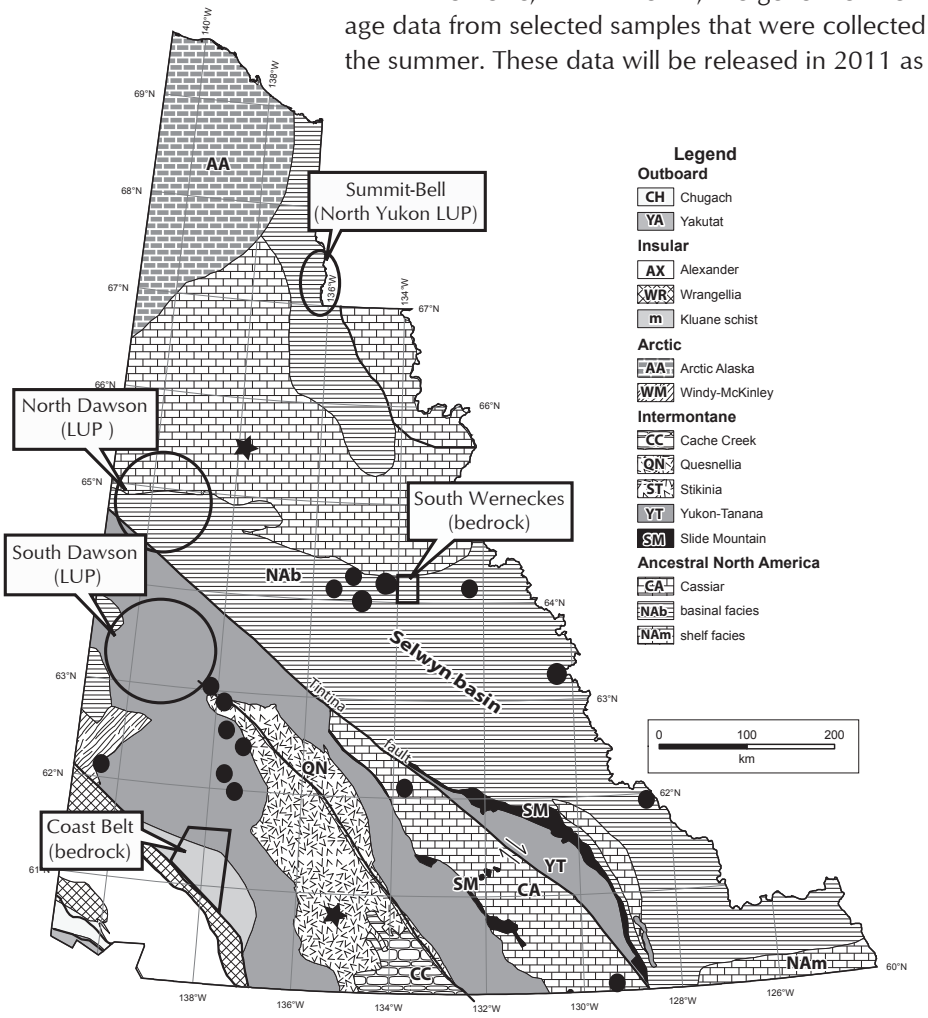

Figure 3. *Locations of mineral occurrence studies underway by Bennett. Circles indicate property visits for regional metallogenic studies; stars indicate property visits carried out for mineral assessment purposes. Outlined areas include studies underway for mineral assessment purposes in support of regional land use planning (LUP), as well as work being done in collaboration with bedrock mapping projects.*

separate reports; 1) focussing on the implications of new age data for mineral exploration in the Dawson Range (such as timing of controlling structures and the evolution of metals in the system through time); and 2) reporting on the respective roles, at a deposit-scale, of structural preparation and stratigraphic setting, on the distribution of mineralization in the Selwyn basin.

Placer exploration and development continued to be an important contributor to Yukon's economy in 2010. Lebarge compiled an overview of placer highlights for 2010 (see Lebarge, this volume). In addition, he completed an overview volume of placer industry activity for 2006-2009 which will be released early in 2011 (Lebarge, in press).

GEOHAZARDS STUDIES

Sarah Laxton continued work on a two-year project to compile Yukon permafrost data and examine evidence for permafrost degradation. She is developing a web-based Permafrost Knowledge Network to be hosted by YGS; information will be distributed via a Google Earth interface. This work is part of a larger study of infrastructure vulnerability funded through Yukon's Climate Change Secretariat and supported by the federal government's Climate Change Action Plan. Over the summer, Laxton conducted a ground penetrating radar (GPR) and borehole survey of buildings compromised by permafrost degradation in Dawson and Ross River (see Laxton and Coates, 2011).

Panya Lipovsky was involved in several hazards-related studies in 2010. She oversaw the completion of the Alaska Highway borehole database, which captures data on surficial materials and ice characteristics from nearly 9,000 boreholes along the Alaska Highway. The database will be released early in 2011. In addition, she worked with colleagues from Parks Canada to set up a web camera and digital SLR to monitor the surging Lowell Glacier. Panya continued to monitor key landslides around the territory, including the Kusawa Lake landslide above a territorial campground and the Miles Ridge landslide near the White River bridge on the Alaska Highway. Lipovsky is also YGS' lead on inter-governmental seismic hazards monitoring initiatives in support of the Alaska Pipeline Project. This year's work focussed on building a chronology of past earthquakes on the Denali fault near Burwash Landing.

YGS FUNDING PROGRAMS

YUKON MINING INCENTIVES PROGRAM

The Yukon Mining Incentives Program (YMIP) was funded at an increased level ($1.67M) for a second year in a row. A total of 165 applications seeking just under $5.2M were received this year. One hundred and forty nine of the applications were eligible for funding; of these, 84 were approved and offered funds. Some statistics on the distribution of funds between program modules are presented in Table 3, and more details are presented by Héon (this volume).

Table 3. *Distribution of YMIP funds between program modules.*

Placer Projects (25% of total YMIP budget)		**Applications received**	**Funding requested**	**Applications funded**	**Total amount allocated**	**Exploration commitment**
Module:	Grassroots	11	$152,968	7	$84,020	$125,026
	Focussed Regional	2	$39,860	2	$39,860	$53,151
	Target Evaluation	23	$851,345	14	$413,550	$1,423,169
Hardrock Projects (75% of total YMIP budget)						
Module:	Grassroots	12	$196,059	11	$106,819	$295,863
	Focussed Regional	43	$970,186	26	$622,675	$1,069,787
	Target Evaluation	58	$2,240,519	24	$808,805	$2,203,990
Ineligible applications			Placer	Total requested	Hardrock	Total requested
			1	$50,000	15	$688,000

Based on investment commitments made by successful applicants, YMIP funds leveraged over $5M in exploration expenditures in 2010, representing a leveraging ratio of ~3:1. In fact, promising exploration results on several projects triggered even further exploration investments. More information on 2010-11 YMIP projects can be found at www. geology.gov.yk.ca/ymip.html.

Industry feedback on YMIP for the 2010-11 fiscal year suggested that efforts should be made to allocate the funds among a larger number of applicants, potentially by capping individual grants or reducing the total funding that any given applicant can receive. YGS is updating YMIP guidelines and will factor this advice into next year's program once the funding level for 2011-12 has been determined.

MINING AND PETROLEUM ENVIRONMENTAL RESEARCH GROUP

The YGS provides up to $50K/year to the Mining and Petroleum Environmental Research Group (MPERG) to support research to help mitigate the impacts of mineral and petroleum exploration and development. YGS has approached Yukon College about taking over the administration of the program starting in 2011. The College's Northern Research Centre's mandate overlaps with MPERG program goals, and the funds could be used to leverage additional resources from NSERC. Discussions are underway to finalize the details of the funds transfer and amend the structure of the Steering Committee to include representation from the College. This year, MPERG funds were allocated to six projects (Table 4).

OUTREACH

Karen Pelletier continued to coordinate YGS' outreach and education program this year. Staff participated in numerous outreach events, including school visits, career fairs, open houses, Mining Week activities, and field trips to name a few. Pelletier has been working with Charlie Roots to complete a geologic road map for Yukon; the map, which will include information on land features and tectonic processes, is currently being edited and will be released in 2011.

In addition to the road map, a series of brochures illustrating geologic features along the North and South Klondike Highways, Alaska Highway (east and west) and the Campbell Highway are nearing completion.

INFORMATION SERVICES

YGS continues to release publications and update information on its website. A list of 2010 publications is included in this volume. Web page updates are underway; new pages have been developed and we hope to launch them at the Mineral Exploration Roundup in Vancouver in January, 2011.

Maurice Colpron has been leading the development of an upgraded digital bedrock geology map for Yukon for the past couple of years. The map will be released as a digital product in phases, with the first phase, covering Whitehorse trough, to be released in January at the Mineral Exploration Roundup. Subsequent phases will cover the Dawson Range and Coal River areas (spring, 2011), Finlayson area (summer, 2011), and Windy-McKinley and Kluane areas (~fall/winter, 2011).

Table 4. *List of MPERG projects funded in 2010-11.*

Project	Lead proponent	MPERG funding
Study on the effect of copper on olfaction in Yukon River Chinook Salmon	Minnow Environmental	$20,000
Limiting access on resource roads: working guidelines for industry	Ecological Logistics & Research Ltd.	$9,000
Evaluation of factors influencing spontaneous vegetation succession in northern latitude disturbances	Diane Lister	$3,500
Soil conservation, replacement and impact mitigation techniques for linear disturbances in Yukon	Golder Associates Ltd.	$5,500
Update and reprint of "Yukon Reclamation/Revegetation Guidelines"	Dept. of Environment	$2,000
Reprint of "Flying in Caribou Country"	MPERG	$4,000
Total funds committed		**$44,000**

MINFILE DATABASE

Robert Deklerk continued to be YGS' lead for data entry and QA/QC for the MINFILE database. In response to the unprecedented staking rush this year, data capture shifted from a systematic to a more opportunistic approach. Research focussed on adding new occurrences and updating existing data for the White Gold district, Minto, Casino, Williams Creek and Howard's Pass areas. In addition, mineral occurrence data were upgraded for the Coal River area (95D) where recent mapping was completed by Pigage *et al.* (see Field Activities section, above).

ARCHIVED COLLECTIONS

In 2009, YGS sought an estimate for the cost of scanning and indexing its collection of archived industry files in order to make them web accessible to clients. The collection comprises about 50 boxes of files and 4,000 maps and sections. In January 2010, YGS awarded a contract to start systematically scanning these documents; priority for scanning is based on input from the Technical Liaison Committee. In spring of 2010, YGS hired a term employee, Tara Genier, to fill individual requests for scanned documents and allow the larger project of scanning YGS' archives to continue without interruption from short-term requests. To date, approximately 1500 maps and 3250 reports have been completed.

ENTERPRISE DATABASE PROJECT

Aubrey Sicotte, Olwyn Bruce and Karen MacFarlane continued work on the Enterprise database project in 2010. The project comprises several phases and includes development of both the Enterprise database itself, and several web applications that will allow end users to query, discover and download data.

Preparatory work, completed in spring 2009, involved the development and testing of a data model to capture the information in all of YGS' databases in order to eliminate duplication and streamline data entry. Phase 1 of the project started in fiscal year 2009-10 and included the building of three modules (MINFILE, Publications and Placer) and associated data entry forms. The final step of Phase 1, completed in fall 2010, entailed forms testing and migration of data.

Phase 2, initiated in fall 2010, entails two parts. The first involves building of modules for field data (including stations, structure and sample data) and map layers (both bedrock and surficial geology). The second involves the development of web applications that will allow access to data captured in Phase 1 modules. Documents scanned as part of the scanning project will be included in the Publications module and will be accessible on-line following completion of Phase 2. Phase 2 is expected to be completed and testing concluded by late spring/early summer 2011.

CORE LIBRARY

Building design for the new H.S. Bostock Core Library was completed in the spring of 2010 and construction of the new facility began in August 2010. The new core library will be located at Mile 918 on the Alaska Highway, beside Energy, Mines and Resources Forestry Management Branch. In addition to YGS' rock and core collections and our lapidary and sieving facilities, the building will include a warehouse to hold field equipment, as well as an office area containing teaching collections for our Outreach Program. The structure is scheduled to be substantially completed by the end of March, 2011; YGS will move from the old core library over the summer. A half-time position will be located at the Core Library to manage the facility and to oversee the core program.

In addition to its hardrock drill core program, YGS manages core and cuttings from Yukon's oil and gas wells, housed at the Geological Survey of Canada's core facility in Calgary. Core and cuttings can be sampled for analysis with YGS' approval; Lee Pigage administers the approval process.

PARTNERED RESEARCH

In 2010, YGS provided partial funding and/or logistical support for several thematic studies that were led by university researchers. Many of these studies involve graduate theses based on different aspects of Yukon geology. The studies are described briefly in Table 5. A number of these researchers have contributed papers to the Yukon Exploration and Geology 2010 volume.

Table 5. *Summary of university-based studies being supported by YGS. "Other student projects" are those that are funded by GSC or industry and receive YGS support through staff time and/or provision of field logistics.*

Project Objectives	Student/Supervisor
University-based studies funded by YGS in 2010-11	
Testing the link between SEDEX and carbonate-hosted Zn-Pb Deposits, Mackenzie Mountains and Selwyn Basin, NT and YT	Neil Fernandes/Sarah Gleeson (University of Alberta)
Geochemical, structural and paragenetic study; development of a model for the formation of the Rau deposit.	Eric Thiessen/Sarah Gleeson (University of Alberta)
Regional stratigraphy of Rapitan iron formation, and quantification of Neoproterozoic variations in redox state	Geoff Baldwin/Elizabeth Turner & Balz Kamber (Laurentian University)
Litho- and chemostratigraphic study of Neoproterozoic Sequence B (basal Hematite Creek Group); correlations with Shaler and Mackenzie Mountains supergroups	Elizabeth Turner (Laurentian University)
Mapping, chemostratigraphy, geochronology and paleomagnetic studies to constrain Neoproterozoic rifting, displacement and rotation of Proterozoic inliers in Yukon	Justin Strauss, Emily Smith/Francis Macdonald (Harvard University)
Stratigraphic, geochemical, and geochronologic study of the Mount Harper volcanic and sedimentary rocks; implications for resolving Rodinian breakup	Grant Cox/Galen Halverson (McGill University)
Petrography and reservoir characteristics of Cretaceous sandstones, Eagle Plain Basin, Yukon	Michael McQuilkin/Per Pedersen (University of Calgary)
Determination of the origin of clasts in Wernecke Breccia; implications for Paleoproterozoic overthrusting of an igneous terrane	Oscar Nielsen/Derek Thorkelson (Simon Fraser University)
Middle to Late Pleistocene glacial stratigraphy and tephrochronology of SW Yukon	Derek Turner/Brent Ward (Simon Fraser University)
Detailed mapping, structural analyses and geochronologic study of Nikki porphyry and Arn skarn prospects; linkages to young deformation affecting southwest Yukon	Rosie Cobbett/Jim Mortensen (University of British Columbia)
YGS Students in write-up stage of project	
Genesis of the southeastern Dawson Range porphyry and epithermal vein systems, Yukon	Thierry Bineli Betsi/David Lentz (University of New Brunswick)
Study of the origin of fluids and petrogenesis of skarn mineralization at Mactung	Ayalew Gebru/David Lentz (University of New Brunswick)
Structural, tectonic and geochronologic controls on fracture propagation and fluid flow in the Keno Hill district	Simon Craggs/David Lentz (University of New Brunswick)
Metallogenesis of the Keno Hill Ag-Zn-Pb deposit, Yukon	Jos Hantelmann/Sarah Gleeson (University of Alberta)
Structural mapping of the D'Abbadie strike-slip fault, Pelly Mountains	Melanie Mercier/Sharon Carr (Carleton University)
Other student projects	
Study of deformation and metamorphism of Yukon-Tanana terrane at the continental margin during Mesozoic-Paleogene terrane collisions	Steven Scott/Sharon Carr, Don Murphy (Carleton University)
Structural and petrological study of Kluane Schist	Ben Stanley/Shouffa Lin (University of Waterloo)
Late Cretaceous magmatism and associated mineral occurrences in west-central Yukon	Witold Ciolkeiwicz/Craig Hart (University of British Columbia)
Quantitative thermobarometry and geochronology of structural and metamorphic events in the Yukon-Tanana terrane	Reid Staples/Dan Gibson, Maurice Colpron (Simon Fraser University)
Stratigraphy and age constraints of Neo- to Mesoproterozoic Pinguicula Group	Kirsty Medig/Derek Thorkelson (Simon Fraser University)
Eclogites in the Yukon-Tanana terrane, Canadian Cordillera: tectonic erosion of the overriding plate	Meredith Petrie/ Jane Gilotti, Bill McClelland (University of Iowa)
Study of Cu-Fe isotopes and zircon chemistry of Early Jurassic plutons; linkages to mineral potential	John Chapman/Simon Jackson (GSC)
Petrogenesis and structural controls on ore at Minto Mine	Shawn Hood/Ken Hickey (University of British Columbia)

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Yukon Hardrock Mining, Development and Exploration Overview 2010

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Lewis, L.L. and Burke, M., 2011. Yukon Hardrock Mining, Development and Exploration Overview 2010. *In:* Yukon Exploration and Geology 2010, K.E. MacFarlane, L.H. Weston and C. Relf (eds.), Yukon Geological Survey, p. 19-65.

INTRODUCTION

With gold prices climbing steadily in 2010, exploration for gold in Yukon hit levels not seen in decades. Two new gold districts have recently emerged in Yukon: The Dawson Range gold district of West Yukon (includes Kinross Gold Corporation's White Gold property and other related discoveries such as Kamink Resource's Coffee property) and the Selwyn basin gold district, north and east of Keno Hill, (mainly comprising Atac Resource's massive Rau Gold property which encompasses several new discoveries). The Dawson Range gold district was the scene of a staking rush that resulted in over 25 companies with land holdings from the Carmacks area in the south, through the White Gold area, and northwest to the Yukon-Alaska border. At the Rau property, the newly discovered Osiris zone is being described as a Carlin-style gold occurrence, a deposit style that has long been sought after in Yukon. This discovery, within a structural trend and hosted in Selwyn basin stratigraphy, increases the gold potential of a vast area of eastern Yukon. Staking in this area has been robust and several companies acquired significant land positions targeting similar structural, stratigraphic and geochemical trends within the district. Numerous other areas of Yukon with known gold potential are being re-evaluated; staking of these areas, as well as areas with previously unrecognized gold potential, is occurring throughout the Territory.

Base metal exploration in Yukon was overshadowed by the search for gold, but several base metal properties have been advanced and new discoveries have been made. Capstone Mining's exploration program at Minto uncovered three new Cu-Au-Ag zones: Wildfire, Copper Keel NE and Inferno. Atac Resources Ltd. discovered the Ocelot Ag-Pb-Zn-In showing on its Rau property while searching for gold. Strategic Metals met with drilling success on its Keg (Silver Range) Ag-Zn-Pb-Cu-Sn-In property north of Faro. The Casino Cu-Au-Mo-Ag porphyry deposit of Western Copper Corporation is at the pre-feasibility stage with a recent significantly increased resource. Overland Resources' Yukon Base Metal Project (Andrew/Darcy, Zn-Pb-In) is advancing through feasibility. Selwyn Resources successfully closed a $100 million joint venture transaction with Chihong Canada Mining Ltd. to form Selwyn Chihong Mining Ltd. in order to advance the huge Selwyn Zn-Pb project in southeast Yukon.

Exploration costs for 2010 are estimated at $160 million with gold capturing 58% of expenditures, silver 10%, copper and copper-molybdenum projects 12%, zinc-lead 15%, and other commodities (W, Mo, U, Ni, REE, Fe) 5%.

Capstone Mining's Minto Cu-Au-Ag Mine was Yukon's only fully operating hardrock mine in 2010; however, Alexco Resource Corp. completed pre-production development of its underground silver-lead-zinc mine at Bellekeno and began commissioning the 400-tonne-per-day conventional flotation concentrator mill in November, 2010, and shipped the first concentrates to the Port of Skagway in early December. Development expenditures were also incurred to complete development of Yukon Zinc's Wolverine Zn-Ag-Pb-Cu-Au deposit in the Finlayson Lake volcanogenic massive sulphide district. The Mine is in partial production with full production planned for March 2011. Expenditures for a water treatment plant and other capital expenses continue at the Minto Mine as the company continues to make new discoveries, expanding the resources and extending the current mine life. Mine development expenditures in 2010 for these three properties are estimated at $150 million.

There were over 130 active hardrock exploration projects in Yukon (Fig. 1 on front inside cover): 83 projects recorded expenditures of greater than $100,000, and 36 spent more than $1 million. The remaining projects were regional or grassroots generative projects with total exploration expenditures reaching record levels of approximately $160M (Fig. 2).

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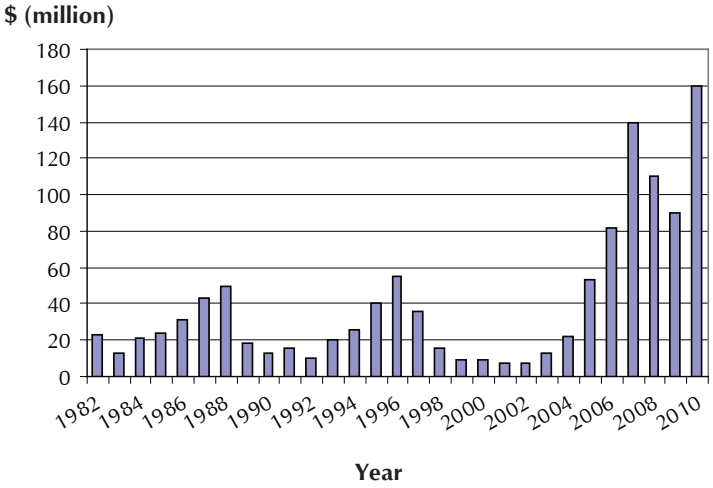

Figure 2. *Exploration expenditures in Yukon, 1982 to 2010.*

Claim staking was off-the-charts and 79,993 claims were staked in 2010, and the number of claims in good standing rose to a total of 158,419 by year end (Figs. 3 and 4). One must keep these numbers in perspective, however, by recognizing that a single Yukon Quartz Mining claim is approximately 0.2025 km^2. The largest staking rush in the history of Yukon has claimed only slightly more than 3% of the Yukon land mass bringing the total area of Yukon under mining claims to just over 7%.

The reader is reminded that this exploration overview is by no means a comprehensive overview of the activity in Yukon. Many results are still pending at the publication deadline of this volume and thus are preliminary in nature. This publication is available as a pdf document with colour photos on the Yukon Geological Survey (YGS) website (*www.geology.gov.yk.ca*) . Links to company websites are available in this report; these websites contain much more comprehensive information including, in many cases, up-to-date results, plan maps and sections.

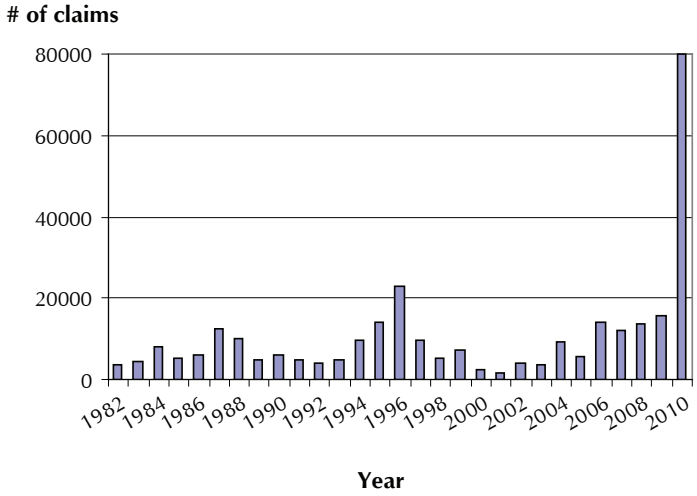

Figure 3. *Mineral claims staked, 1982-2010.*

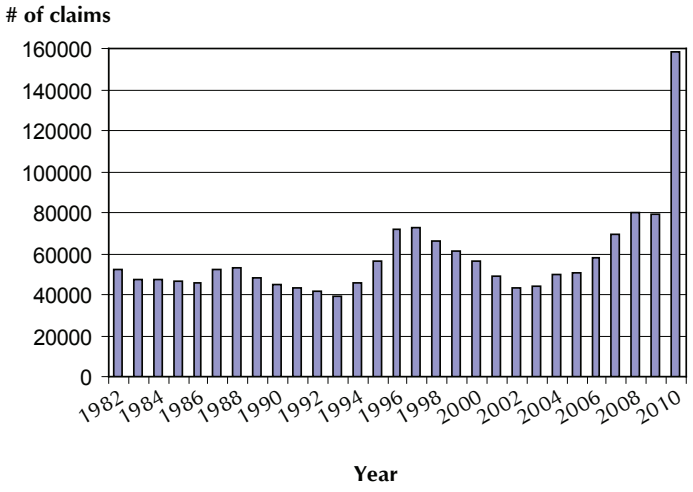

Figure 4. *Mineral claims in good standing, 1982-2010.*

MINING AND MINE DEVELOPMENT

The **Minto** (Yukon MINFILE 115I 012) high-grade Cu-Au-Ag open-pit mine (Fig. 5), operated by Capstone Mining Corp. (*www.capstonemining.com*), was Yukon's only producing hardrock mine in 2010. Production at the Minto Mine for the first nine months of 2010 was 30.7 million lbs copper, 18,156 oz gold and 156,938 oz silver at a head grade of 2.28% Cu, 0.95 g/t Au and 8.6 g/t Ag. The cash cost for each payable pound of copper was US$1.49. Forecast production for 2010 is between 40 and 43 million pounds copper. The company is looking at further expanding the mill rate, from its current operating level of 3000 — 3500 tonnes/day, to 4100 tonnes/day (Fig. 6). A new NI 43-101 compliant resource was released in 2010 for areas outside of the main pit and including Area 2/118, Ridgetop, Minto North and Minto East (Table 1). The new resource estimate includes drilling results to the end of April 2010. In its Phase IV Yukon Environmental and Socio-economic Assessment application, Minto has requested approval for a second open pit, along with underground mining to run simultaneously. The application would extend mine life by two years, taking production into 2013. Current resources at the main pit are expected to be mined out by spring, 2011, and stockpiles will feed the mill for a year after that. A Phase V pre-feasibility study is being completed, which will look at extending operations into 2020 or 2021, based on new resources identified at the mine site. Exploration at the Minto Mine continues to be very successful with new discoveries at the Wildfire Zone, Inferno Zone and Copper Keel NE (see Exploration section).

Figure 5. *Mill building at Minto mine.*

Figure 6. *Ball mill at Minto mine.*

Table 1. *Mineral resources by class for all deposits outside of the current mining operation at the Minto MIne (Area 2/118, Ridgetop, Minto North and Minto East).*

Class	Tonnage*	Grade
Measured	10.417 Mt	1.39% Cu, 0.56 g/t Au, 4.6 g/t Ag
Indicated	23.944 Mt	0.96% Cu, 0.32 g/t Au, 3.4 g/t Ag
Additional Inferred	6.504 Mt	0.90% Cu, 0.3 g/t Au, 3.1 g/t Ag

*Cut-off grade of 0.5% Cu.

Yukon Zinc Corporation (*www.yukonzinc.com*) substantially completed development of the Zn-Ag-Pb-Cu-Au **Wolverine** Mine (Yukon MINFILE 105G 072), which is planned to go into full production in 2011. Yukon Zinc Corporation is a private company wholly owned by Jinduicheng Molybdenum Group Ltd. and Northwest Nonferrous International Investment Company Ltd. The mine is being developed as a 1700-tonne-per-day underground mine operation with an initial mine life of 9.5 years. The Wolverine volcanogenic massive sulphide deposit contains proven and probable reserves of 5.2 million tonnes at a grade of 9.71% Zn, 284.2 g/t Ag, 0.93% Cu, 1.37 g/t Au, 1.26% Pb. The Wolverine Mine processing plant is being commissioned and modification and optimization work is ongoing (Fig. 7). Stockpiled ore has been processed to produce zinc, copper and lead concentrates, which was being transported to the port at Stewart, BC starting in late October 2010, for subsequent shipment to Asian smelters. Yukon Zinc has completed ground stabilization plans for the mid and upper levels of the mine, and testing, geotechnical modeling, and the development of safety protocols and procedures are ongoing. There are currently 97 employees at Wolverine, which will increase to approximately 190 as production ramps up in 2011.

Figure 7. *Mill building at Wolverine property.*

Alexco Resource Corp. (*www.alexcoresource.com*) completed construction at the **Bellekeno** Ag-Pb-Zn mine (Keno Hill; Yukon MINFILE 105M 001) and began commissioning the mill in November 2010 (Fig. 8). The silver-lead-zinc vein deposit is located in the historic Keno Hill District. Extensive underground drilling at Bellekeno during the year (46 holes for 4830 m) focussed on definition and exploratory drilling to expand the minable resource. The concentrator is running at design capacity and has produced silver/lead and zinc concentrates. Mill operations are currently focussed on optimizing metal recovery and increasing efficiency (Fig. 9). In December, 2010, Alexco entered into lead and zinc concentrate off-take agreements with Glencore Ltd., Stamford, a branch of a wholly owned subsidiary of Swiss-based Glencore International AG. Over the initial two year term of the off-take agreements, roughly 42 800 tonnes of concentrate (27 300 tonnes of lead and 15 500 tonnes of zinc concentrate) are to be shipped from Bellekeno for smelter treatment and refining. Planned yearly production at Bellekeno is 12 000 tonnes Pb-Ag concentrate (average of 6200 g/t Ag and 70% Pb) and 8400 tonnes Zn-Ag concentrate (average of 480 g/t Ag and 55% Zn). The company plans to ship 2.0 to 2.8 million ounces of silver per year. The first truckload of silver concentrate arrived at the port at Skagway in early December, 2010. It is to be transported by barge to Seattle then trucked to the smelter in Trail, BC.

Figure 8. *Portal at Bellekeno Mine.*

Figure 9. *Mill building at Bellekeno Mine.*

EXPLORATION

PRECIOUS METALS - GOLD

SKARN/REPLACEMENT

Atac Resources (*www.atacresources.com*) continued drilling several targets on its recently discovered **Rau** property (Yukon MINFILE 106D 005), north and east of Keno Hill in central Yukon in the Selwyn basin gold district. The property, larger than Hong Kong, was also subjected to a program of reconnaissance-scale stream sediment sampling, soil sampling, mapping, as well as prospecting led by Bill Wengzynowski. Infill and expansion drilling was carried out at the Tiger zone, a carbonate-replacement sulphide and oxide gold occurrence on the property, which was first drilled in 2008. A NI 43-101 resource for this zone is expected in the third quarter of 2011. Reconnaissance drilling (diamond drillhole CH-10-04) on the Cheetah Zone, located 4.9 km northwest of the Tiger, returned 1.29 g/Au over 16.90 m at a depth of 104.90 m, the true width of which is estimated to be 60% of the reported interval. This highlights the potential for additional resources in the area, which hosts four other known surface occurrences within 5 km of the Tiger Zone. An enormous amount of excitement was generated by the discovery of the Osiris showing, 100 km east of the Tiger Zone. Low temperature arsenic sulphides characterize Osiris; realgar and orpiment are associated with gold hosted in limestone debris flow and turbidite units. The Osiris shares many similarities with deposits in the well known Carlin trend in Nevada including: stratigraphy in the Selwyn basin that is coeval with the Great Basin in Nevada; a complex structural setting of mineralized trends; similar mineralogy; and a similar enigmatic source of the mineralizing fluids.
The discovery hole, drilled just over 30 days after the initial prospecting discovery of significant surface mineralization, returned an impressive 4.65 g/t gold over 65.20 m (Table 2; Fig. 10). Only a small (3 x 2 km) area near the discovery has been prospected, and an integrated exploration

Figure 10. *Discovery drillhole (OS-10-01) at Osiris Zone on Atac Resources' Rau property.*

Table 2. *Significant diamond drill intercepts from the Rau property including the Osiris, Conrad and Eaton zones.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection*
OS-10-01	Osiris	7.62	8.76 m @ 1.81 g/t Au
and	Osiris	56.08	65.2 m @ 4.65 g/t Au
includes	Osiris	72.20	31.13 m @ 9.26 g/t Au
OS-10-02	Osiris	14.07	35.08 m @ 2.31 g/t Au
and	Osiris	138.60	4.65 m @ 2.48 g/t Au
OS-10-03	Osiris	104.79	22.3 m @ 2.21 g/t Au
OS-10-04	Osiris	1.52	16.76 m @ 2.03 g/t Au
includes	Osiris	13.63	4.65 m @ 5.77 g/t Au
	Osiris	229.00	7.22 m @ 8.37 g/t Au
OS-10-06	Osiris	4.20	4.94 m @ 1.76 g/t Au
OS-10-06	Conrad	41.35	21.13 m @ 8.03 g/t Au
OS-10-09	Eaton	104.47	39.76 m @ 1.61 g/t Au

*true thickness is not known

program is planned for 2011. Atac increased its claim holdings substantially at the Rau, increasing the property to 1500 km^2 to cover prospective ground around Osiris. The company is planning a 40 000 m diamond drill program for 2011, the bulk of which will target the Osiris area; 10 000 m will test five peripheral oxide gold targets within 5 km of the Tiger zone.

Strategic Metals (*www.strategicmetalsltd.com*) has accumulated several properties totaling over 1750 claims in the Selwyn basin gold district. Grid soil sampling in 2010 at the **Rod** (Yukon MINFILE 106C 087) property outlined a 500 by 1500 m area of anomalous gold results (20 to 106 ppb) coincident with very high silver (20 to 293 ppm), antimony (20 to 918 ppm), arsenic (500 to 10 400 ppm), mercury (5 to 100 ppm) and lead (1000 to 20 700 ppm) values. This area is in the immediate footwall of a regional thrust fault; the Rod anomaly itself is underlain by a shale unit. Strategic plans are to drill at the Rod property and the **Crag** (Yukon MINFILE 106C 073) property, 30 km east of the Rod, that have documented occurrences of realgar and orpiment mineralization.

Colorado Resources (*www.coloradoresources.com*) acquired the **Oro** property in the MacMillan Pass area that covers the **Neve** (Yukon MINFILE 105O 032) occurrence. Previous work has identified realgar and orpiment, micron gold, intermediate dykes and sills, and potentially favourable shale and silty limestone units, cut by fault zones and overlain by broad areas of anomalous soils. The Neve has several areas of gold-silver mineralization with associated arsenic, antimony and mercury. Previous work has included drilling (B85-4, 0.5 g/t Au over 65.9 m) and trenching (83-1, 2.49 g/t Au over 44 m).

The **Dragon Lake** (Yukon MINFILE 105J 007) gold property of Eagle Plains Resources Ltd. (*www.eagleplains.com*), 80 km northeast of Ross River, was explored by mapping, soil sampling, trenching and an airborne geophysical survey. Trenching highlights include 4.9 g/t Au, 1.1 g/t Ag and 0.1% Cu over 6.0 m. Broad soil anomalies returned values up to 454 ppb gold. The airborne geophysical survey was flown to identify potential buried intrusions and structural features that could have controlled gold mineralization. Historic trenches and diamond drill core were re-sampled and soil geochemistry coverage was expanded to the south and west of the property. The property is underlain by Upper Proterozoic to Lower Cambrian Hyland Group metasedimentary rocks. Mineralization is characterized by gold skarn associated with intrusive rocks and vein occurrences hosted both within intrusive and surrounding metasedimentary rocks.

Golden Predator Corp. (*www.goldenpredator.com*) staked over 3100 claims (the **Rogue** Project) covering several known intrusion-related gold occurrences in the MacMillan Pass area. The claims cover known occurrences and areas that have newly recognized potential in the Selwyn basin gold district. Constantine Metal Resources Ltd. (*www.constantinemetals.com*) also conducted extensive staking in the Selwyn basin gold district, west of the MacMillan Pass area, acquiring over 1500 claims in the region that targeted anomalous regional stream sediment samples recorded in the Yukon Regional Geochemical Database 2003 (Héon, 2003), structural trends, and permissive stratigraphy in the emerging district. Radius Gold Inc. (*www.radiusgold.com*) staked two properties totaling 550 claims covering prospective stratigraphy to the north and east of Atac's Osiris discovery. Manson Creek Resources (*www.manson.ca*) have also expanded their **Tell** (Yukon MINFILE 106C 091) property located south of Atac's Rau claims, midway between the

Tiger and Osiris zones. Previous work by Manson Creek on the Tell property identified many of the characteristics found in the Carlin-style gold deposit model, including the presence of carbonate and calcareous sedimentary rocks, stratabound mineralization, folded stratigraphy, abundant barite, and the presence of pathfinder minerals such as arsenic and mercury. Preliminary exploration work was conducted by North Arrow Resources (*www.northarrowminerals.com*) on the **Cal-Dotty** property, located 70 km west of Atac Resources' Tiger zone, targeting similar geology and anomalous stream sediment geochemistry. Results of the program are pending.

In southeastern Yukon, Eagle Plains Resources (*www.eagleplains.com*) conducted an airborne geophysical survey, geological mapping, prospecting and re-sampling of known skarn and vein-style mineralization on the **Sprogge** property (Justin claims; Yukon MINFILE 105H 035). The Sprogge property contains widespread mineralization of different styles with consistent values of anomalous gold. Chip sampling from the 2010 program confirmed and expanded on the historic results of known mineralization, including 1.4 g/t Au over 11 m at the Main zone. Results also include 2.85 g/t Au and 4.2 g/t Ag over 1.5 m from the Kangas zone. New mineralization was located at the Pow zone, where a new skarn was found on the margins of an intrusive plug and returned up to 2.4 g/t Au from the skarn and 2.9 g/t Au from mineralized quartz veins. Another new skarn unit was also found to the south of the Confluence zone, returning 83.4 g/t Ag and 9% combined Pb/Zn from a subcrop grab sample.

Yukon Nevada Gold Corp. (*www.yukon-nevadagold.com*) continued exploring its **Ketza River** (Yukon MINFILE 105F 019) gold property in south-central Yukon. Two styles of mineralization occur at Ketza: 1) Manto Zone - massive pyrrhotite-pyrite replacement mantos hosted in Lower Cambrian limestone; and, 2) Shamrock Zone - quartz-pyrrhotite-pyrite fissure and stockwork veins, breccias, and disseminations hosted in Lower Cambrian argillite, shale, siltstone, and sandstone units. Mineralization on the property is thought to be associated with a buried intrusion. Yukon-Nevada drilled over 119 holes for a total of 18 028 m in 2010. Drill targets included the Break Zone, QB, Connector, B-Mag and Vertical vein target (Table 3). The QB Zone was identified as a drill target from the Titan 24 IP survey conducted in 2009 on the property. Deep drilling on the QB included an intercept of 7.8 m of 2.53 g/t Au in DDH KR-10-1478; however, the first two holes on the zone failed to reach the target depth due to poor rock conditions. Additional IP anomalies from the survey remain to be drill tested in the future.

Table 3. *Significant diamond drill intercepts from the Ketza property.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection*
KR-10-1471	Bluff Zone	17.02	2.42 m @ 20.80 g/t Au
KR-10-1473	Bluff Zone	4.45	3.24 m @ 12.17 g/t Au
KR-10-1504	Break Zone - Sulfide	72.34	2.95 m @ 1.82 g/t Au
and	Break Zone - Sulfide	83.85	12.77 m @ 3.72 g/t Au
KR-10-1506	Break Zone - Sulfide	50.90	2.49 m @ 7.95 g/t Au
and	Break Zone - Sulfide	57.26	11.93 m @ 6.75 g/t Au
KR-10-1510	B-Mag Zone	26.52	0.79 m @ 46.9 g/t Au
and	B-Mag Zone	40.31	1.45 m @ 1.60 g/t Au
and	B-Mag Zone	44.27	1.45 m @ 2.44 g/t Au
KR-10-1488	Connector	14.33	0.27 m @ 2.19 g/t Au
and	Connector	111.75	0.45 m @ 1.47 g/t Au
and	Connector	115.16	13.78 m @ 2.38 g/t Au
and	Connector	137.91	1.81 m @ 1.60 g/t Au
and	Connector	146.08	0.44 m @ 7.97 g/t Au
and	Connector	152.64	0.43 m @ 2.96 g/t Au
KR-10-1532	Hoodoo Zone	25.29	4.28 m @ 2.95 g/t Au
and	Hoodoo Zone	57.00	9.14 m @ 37.37 g/t Au

*true thickness values are not known.

VEIN/BRECCIA

Kinross Gold Corp. (*www.kinross.com*) acquired Underworld Resources early in 2010, which included its **White Gold** (Yukon MINFILE 115O 011,012), **JP Ross** (Yukon MINFILE 115O 160), and other properties in the area, 90 km south of Dawson. Gold mineralization at the Golden Saddle zone is thought to be intrusion-related. It occurs in quartz veins, stockwork and breccia zones, pyrite veinlets and disseminations within meta-igneous host rocks. A NI 43-101 resource was released for the Golden Saddle and Arc zones (Table 4). Kinross spent $14 million exploring on both the White Gold and JP Ross properties. Over 25 000 m of diamond drilling was completed on the two properties. Property-wide geological mapping, airborne geophysical surveys and soil sample surveys were also completed (Fig. 11).

Table 4. *NI 43-101 Indicated Mineral Resource for White Gold property (Golden Saddle and Arc zones).*

Description	Classification	Tonnes (10^3)	Au (g/t)
Golden Saddle Zone			
Open Pit	Indicated	9 665	3.19
	Inferred	4 104	2.33
Underground	Indicated	132	3.23
	Inferred	918	3.38
Arc Zone			
Open Pit	Inferred	4 369	1.21

Cut-off grade of 0.5 g/t for open pit and 2.0 g/t for underground.

Figure 11. *Fireweed Helicopters flying geophysics and slinging a Can Dig excavator at the White Gold property.*

Kaminak Resources (*www.kaminak.com*) explored its **Coffee** (Yukon MINFILE 115J 110) vein/breccia gold property with soil sampling, trenching and drilling (the first holes ever drilled on the property) in 2010. The property is located approximately 30 km south of the White Gold discovery; mineralization in drill core from both properties is strikingly similar. Gold mineralization consisting of quartz veins, stockwork and breccia zones, pyrite veinlets and disseminations is hosted in both granite and metasedimentary rocks and is associated with heavily bleached rock composed mainly of sericite and quartz (Fig. 12). The drill program tested gold-in-soil anomalies at several zones which resulted in eight discoveries of significant mineralization in drill core over a 15 km trend. Prominent structures controlling mineralization are delineated in several main zones: Latte (east-trending structure), Supremo (north-trending structure), Double Double (east-trending) and Kona (~north-trending). Extensive soil sampling in 2010 (almost 10 000 samples) extended known soil anomalies over a 30-km trend and identified new zones: Cappuccino, Macchiato, Americano and Americano West trend, the Sugar trend, and a geochemical anomaly located on the Apollo property, 25 km northwest of Coffee. Kaminak drilled 76 holes on Coffee (16 000 m) during the season (Table 5). The company has announced their intentions to complete a major program including 30 000 m of drilling on Coffee in 2011.

Figure 12. *Oxidized, brecciated gold-bearing drillcore from the Coffee property.*

Table 5. *Significant diamond drill intercepts from the Coffee property.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection*
CFD-011	Latte	19	70 m @ 1.86 g/t Au
CFD-35	Latte	117	81 m @ 1.39 g/t Au
CFD-50	Latte	169	5 m @ 8.15 g/t Au
CFD 16	Supremo	53	14 m @ 12.43 g/t Au
CFD 23	Supremo	82	51 m @ 1.27 g/t Au
CFD-27	Double Double	34	9 m @ 2.04 g/t Au
and	Double Double	139	35 m @ 6.30 g/t Au
CFD-29	T2 structure	92	16 m @ 3.73 g/t Au
and	T2 structure	178	2 m @ 7.07 g/t Au
CFD-34	T6 structure	4	14 m @ 2.11 g/t Au
and	T6 structure	33	19 m @ 2.38 g/t Au
CFD-53	Kona	3.25	56.75 m @ 2.21 g/t Au
and	Kona	156	23 m @ 1.92 g/t Au
CFD-71	Connector	24	1 m @ 3.65 g/t Au
and	Connector	49	8 m @ 0.73 g/t Au
and	Connector	65	2 m @ 2.09 g/t Au
and	Connector	195	7 m @ 3.16 g/t Au
and	Connector	234	3 m @ 5.67 g/t Au
and	Connector	254	2 m @ 2.32 g/t Au

*True width is estimated at 70 to 100% of core length.

Arcus Development Group Inc. (*www.arcusdevelopmentgroup.com*) conducted trenching work at its Dawson gold project. The Dawson gold project consists of the **Touleary**, **Dan Man**, **Green Gulch** and **Shamrock** properties, all located in the White gold area, Yukon. Trenching on all the properties encountered permafrost that hindered efforts to properly test gold soil anomalies. Significantly, a 34 m section of a trench on the Touleary property yielded a weighted-average grade of 0.82 g/t Au and 14.3 g/t Ag. Within the 34 m section were two 5 m sample intervals that assayed 2.59 g/t gold with 20.0 g/t silver, as well as 1.025 g/t gold with 28.8 g/t silver. None of the trenches on the Dan Man project, located just north of Kaminak's discoveries on the Coffee property, reached bedrock.

Expedition Mining Inc. (*www.expeditionmining.com*) and Aldrin Resource Corp. (*www.aldrinresourcecorp.com*) performed trenching and additional soil sampling on the **Brew** (Yukon MINFILE number pending) project, located 20 km east of Kinross Gold Corp.'s White Gold project. The soil surveys delineated a strong northwest-trending 3 km-long gold-in-soil anomaly across the central grid area, as well as a second 3 km-long parallel anomaly, 1 km to the north. Gold is associated with the pathfinder elements arsenic, antimony and mercury. Anomalies appear to be related to a strong, northwest-trending fault system that is likely associated with regional structures thought to control mineralization on other prospects in the White Gold district. Five trenches, totalling 1000 m were dug over soil geochemical anomalies. Slightly elevated gold values were obtained in breccia zones cut by the trenches. The trenching program was not completed; the highest gold-in-soil values will be trenched and diamond drilled in 2011.

Figure 13. *Al Doherty, geologist for Solomon Resources, samples a trench at the Dime property.*

Stina Resources (*www.stinaresources.com*) conducted soil sampling, trenching and diamond drilling on its **Dime** (Yukon MINFILE 115O 097) property in the White Gold district (Fig. 13). Five diamond drillholes, totalling 657 m, were drilled, confirming gold mineralization at the property (Table 6). Four holes targeted the West gold soil anomaly and the remaining hole targeted the newly defined East gold soil anomaly. Drilling intersected a brecciated and silicified east-trending fault. The fault breccias display multiple episodes of quartz veining and brecciation and have been traced for over 185 m. Stina plans on flying an airborne magnetic and radiometric survey over the block in 2011, as well as completing more drilling.

Table 6. *Significant diamond drilling intercepts from the Dime property.*

Drillhole	Depth of intersection (m)	Intersection
DDH-10-01	2.50	40 m @ 0.28 g/t Au
DDH-10-02	23.00	17.5 m @ 0.15 g/t Au
DDH10-03	58.50	14.8 m @ 0.568 g/t Au
includes	58.50	1.5 m @ 4.15 g/t Au
DDH-10-04	59.90	32 m @ 0.71 g/t Au

The **Longline** (Yukon MINFILE number pending) property of Aldrin Resource Corp. (*www.aldrinresourcecorp.com*) is located on the Yukon-Alaska border approximately 60 km west of Kinross's White Gold project, and 36 km from the Alaska Highway. Three gold-in-soil anomalies (North, Central and South) have been identified on the property and range in size, but reach up to 1.8 x 0.5 km. The zone containing the three soil anomalies is aligned north-south and extends for nearly 12 km. The company's 2010 program consisted of pit excavation and diamond drilling at Longline, and a large reconnaissance soil sampling program on the contiguous Antler claim block. (The company has an option to acquire a 100% interest in the Antler claims held by a local placer gold miner.) The soil sampling program focussed on ridges proximal to the numerous placer creeks in the area; local placer deposits are reported to be some of the highest grade producers in Yukon. The company is awaiting results of this soil program. At Longline, roughly 300 shallow pits were mechanically excavated and a seven hole diamond drill program was completed. Six holes were drilled in the North anomaly, and one hole was completed in the South anomaly area. Results from the first three drillholes recorded sporadic gold mineralization with less than economic values. The company is continuing its evaluation of the project.

The **Mariposa** property (Yukon MINFILE 115O 075), located in the White Gold district, east of the White Gold property of Kinross Gold Corp., was optioned by Pacific Ridge Exploration (*www.pacificridgeexploration.com*). Pacific Ridge explored the property with extensive soil sampling. Several anomalous areas were defined on the property, and the Skookum Jim target was explored with trenching (Fig. 14). Rock types within the zone hosting gold values consist of altered and oxidized gneiss, schist and quartzite which host quartz veining, stockwork fractures and breccia with minor sulphide mineralization and hematite. Trenching results included 1.25 g/t Au over 30 m. Drilling on defined targets will begin in 2011.

Figure 14. *Geologists sample the trench on the Skookum Jim target on the Mariposa property.*

Kestrel Gold Inc. (*www.kestrelgold.com*) optioned the **King Solomon Dome** (Mitchell; Yukon MINFILE 115O 068) project southeast of Dawson City. Geologically, the property consists of schist and gneiss and mineralization is concentrated in quartz veins, and altered and sheared, or weakly brecciated host rocks. Mineralized zones are adjacent to regional-scale thrust faults, or associated with intrusive rocks. Exploration work consisted of soil and rock sampling, and limited trenching and road building in advance of a larger program planned for the 2011 season. Results from rock sampling include an altered schist, from within a 1.2 km-long gold soil anomaly, that assayed up to 51 200 ppb gold. The soil anomaly returned values up to 450 ppb gold and coincided with an area of old hand-dug trenches and pits likely dating from the Klondike gold rush.

Aldrin Resource Corp. (*www.aldrinresourcecorp.com*) explored its **Keystone** (Yukon MINFILE number pending) property, 10 km south of Keno Hill, with geological mapping, rock sampling, diamond drilling (2000 m, 12 holes; Fig. 15) and soil sampling, which substantially expanded the existing soil grid. Previous soil sampling on the property outlined a roughly 3.2 x 1.5 km gold-arsenic-antimony anomaly with gold values of up to 2.6 ppm. Anomalous gold values coincided with high arsenic (up to 10 000 ppm) and antimony (up to 2000 ppm). The soil anomaly has been expanded to an area of 6 x 1 km, and includes a high-grade area of 34 samples that returned gold values over 100 ppb. Diamond drilling confirmed the presence of a structural corridor with multiple parallel structures containing anomalous arsenic and gold values. Diamond drillhole KEY10-12 intersected 9 m of silicified rock with arsenic sulphides grading 1.2 g/t Au; several holes recorded intercepts of just under 1 g/t Au. The company is evaluating the results and will finalize plans for additional exploration on the project.

Figure 15. *Slinging core boxes at Aldrin Resources' Keystone property.*

Taku Gold Corp. (*www.takugold.com*) explored several of its properties in the White Gold district. A high-definition airborne magnetic and radiometric survey was completed over **Rosebute, Dan, Quartz, Sulphur, Montana and Wounded Moose** properties (Yukon MINFILE numbers pending). Rosebute, Dan and Quartz were explored with a 6000+ sample auger soil geochemistry survey. Taku drilled the Sulphur property with five holes (~500 m), testing a strong southeast-trending conductor on the margin of a magnetic high. Soil augering revealed interesting, angular, dark yellow gold, bound up with quartz fragments; this is atypical of placer gold in that area.

Taku Gold Corp. (*www.takugold.com*) also explored its **Portland** (Gold Run; Yukon MINFILE 115O 063) property in the White Gold district. The property is located at the headwaters of the placer-producing Portland and Gold Run creeks, approximately 45 km southeast of Dawson City. Six trenches were dug at the historical Gold Run showing. The trenches were spaced at 50 m intervals along a

strike length of 250 m over a poorly exposed sulphide-bearing quartz-breccia vein. A total of 22 chip samples were collected over the mineralized structure at 1 m intervals. The best assay values were from trench No. 4 with an average of 97.23 g/t Au (uncut) over 7 m; the maximum value in this trench assayed 455.76 g/t Au.

Cloudbreak Resources (*www.cloudbreakresources.com*) explored its **BRC** and **Lucky Strike** claims (Yukon MINFILE number pending), located 5 km east of Kinross' Golden Saddle deposit, with a high resolution airborne geophysical survey. Cloudbreak's claims are underlain by the same package of Devono-Mississippian metamorphic rocks that host the Golden Saddle gold deposit. The geophysical survey coverage of Lucky Strike includes part of a regional shear zone with a series of northwest-trending structures that enclose a zone of strong potassic alteration. Linear gold-in-soil anomalies extend up to 7 km, and include values up to 75 ppb. These gold soil anomalies are concentrated within a potassic zone along northeast, north-northeast and north trends interpreted as crosscutting extensional structures. Reconnaissance soil sampling on the BRC claims outlined two 1 km-long parallel gold trends coincident with an east-northeast-trending magnetic low. The densest cluster of gold anomalies occurs where east-northeast structures intersect northwest, northeast and north-trending structures. The ridge that adjoins the west side of the BRC block is at the head of four active placer creeks.

Radius Gold Inc. (*www.radiusgold.com*) explored its **Sixty Mile** property (Yukon MINFILE 116C 146), 75 km west of Dawson City at the Canada/US border (Fig. 16). The company conducted airborne geophysics, geological mapping and soil sampling on the property before choosing drill targets. The drill program was designed to determine potential sources of placer gold in creeks draining the area and to test altered volcanic rocks for epithermal gold potential. Seven holes were drilled for a total of 1607 m. Two holes targeted the volcanic rocks and intersected low-grade gold mineralization associated with carbonate/sulphide veining in altered andesite. Five holes tested the metasediments, and three of the holes intersected gold-bearing quartz-sulphide veins hosted in quartzite units.

Figure 16. *Roger Hulstein of Radius Gold in Trench 10-2, conducting follow-up to historical Kennecott trenching from 1996.*

The **Ballarat** property (Yukon MINFILE 115J 061) of Hinterland Metals (*www.hinterlandmetals.com*) is located approximately 100 km due south of Dawson City in the White Gold district of Yukon. The 2010 exploration program consisted of 30 km of line cutting, 961 deep auger-type soil samples, rock sampling and 750 m of mechanical trenching. Two strong, apparently east-trending, gold-in-soil anomalies were outlined, spanning a distance of approximately 1 km. Soil samples from the southern anomaly assayed up to a maximum of 796 ppb Au; the northern anomaly had values assaying up to 188 ppb Au. The company increased the soil sample depth from an average of 30 cm (in 2009) to 60 cm in 2010 and consequently increased the assay values by sampling the less weathered, more representative C-horizon of the soil profile. Four trenches were dug. The best trench result was 1.3 g/t Au from a 1.0 m wide quartz vein. The trenching was completed before the soil geochemical results were received and did not test the gold-in-soil anomalies.

Solomon Resources (*www.solomonresources.com*) optioned the **Ten Mile Creek** (Yukon MINFILE 115O 035) property from Radius Exploration. Gold mineralization at the property appears to be associated with late-stage faults and fracture sets that postdate the known intrusions. The relationship among magmatism, structural deformation (at least three stages), and gold mineralization, is currently being unravelled. Diamond drilling in 2010 targeted trends defined by soil anomalies. Gold-and-arsenic-in-soil anomalies have variable correlation on the property: on the southern Ten Mile claims, arsenic values closely correlate with higher gold values, whereas, on the joint-venture claims, arsenic values appear to be broadly dispersed haloes around higher gold values. The gold concentrations found to date are marginally subeconomic: the best drillhole assayed 0.39 g/t Au over 11.0 m and 0.40 g/t Au over 22.0 m, from depths of 5.0 m and 31.0 m, respectively (DDH2010-05). For future work, the large, linear gold-in-soil anomalies on the northern join-venture claims will be examined more closely.

Valdez Gold Inc., at year end, merged with Ryan Gold Inc. (*www.valdezgold.ca*). Valdez explored the Flume property (Yukon MINFILE 115N 110) with detailed airborne radiometrics and magnetic geophysical surveys followed by detailed soil sampling surveys and geological mapping. The Flume adjoins the Ten Mile Creek property and hosts a variety of styles of gold mineralization.

Silver Quest Resources (*www.silverquest.ca*) drilled its **Boulevard** (Yukon MINFILE 115J 050) gold property in the White Gold district in 2010, 10 km southwest of Kaminak Resources' Coffee property (Fig. 17). The drill program tested three gold-arsenic-antimony soil anomalies called the Vegas, Sunset and Hollywood zones. The company drilled 20 diamond drillholes for a total of 3006 m (Table 7). Gold mineralization occurs in quartz-carbonate vein stockwork and chlorite-biotite schist wall rock. Silver Quest has also acquired over 15 other exploration properties and staked a large number of new claims in the district increasing their total landholdings to of over 4000 claims. The company conducted early stage mapping, prospecting and collected over 11 000 soil samples on its extensive claim holdings.

Table 7. *Significant diamond drill intercepts from the Boulevard gold property.*

Drillhole	Zone	Depth of intersection (m)	Intersection*
BV10-22	Vegas	56.00	19.20 m @ 0.36 g/t Au
BV10-23	Vegas	62.00	23.90 m @ 0.79 g/t Au
including	Vegas	62.00	6.26 m @ 2.11 g/t Au
BV10-24	Vegas	63.05	1.01 m @ 0.93 g/t Au
and	Vegas	81.14	4.00 m @ 0.48 g/t Au
and	Vegas	95.00	1.40 m @ 3.52 g/t Au
BV10-27	Vegas	148.65	2.64 m @ 0.45 g/t Au

*True widths are estimated to be 80 to 90% of the mineralized interval.

Figure 17. *Geologists examine core at Silver Quest's Boulevard property.*

The **Prospector Mountain** property (Yukon MINFILE 115I 034) was optioned by Silver Quest Resources Ltd. (*www.silverquest.ca*), who explored the property with eight diamond drillholes (1463 m), in addition to mapping, prospecting, a ground magnetic survey, and rock and soil sampling (Fig. 18). The property is located within the Dawson Range, 38 km southwest of the Minto copper-gold mine, and is underlain by Late Cretaceous to early Tertiary Carmacks Suite volcanic rocks that are intruded by early Tertiary monzonite of the Prospector Mountain Suite. Late northwest to northeast-trending structures crosscut the property. Rock sampling on the property returned values ranging up to 109 g/t Au. The diamond drill program was designed to test the Bonanza zone. The Bonanza zone target occurs along a 1200 m, north-northwest-trending structure near the contact between potassic-altered monzonite and overlying volcanic rocks. Mineralization on the property is characterized by quartz veins and breccia containing varying amounts of hematite, tourmaline, hematized siderite and limonite. Results from drilling are pending.

Figure 18. *Geologists review a soil geochemical map at the Prospector Mountain property.*

The **Ind** (Yukon MINFILE number pending) property, optioned by Aldrin Resource Corp., (*www.aldrinresourcecorp.com*) is located on the fringes of the Klondike goldfields, 38 km south of Dawson City. The property is road-accessible and contains a gold-soil anomaly spanning 2.3 km by 750 m. The property is one of the rare hardrock exploration programs currently being explored in the Klondike district. Aldrin completed soil sampling and trenching on the property. Results are pending.

Goldbank Mining Corp. (*www.goldbankmining.com*) performed mapping, prospecting and sampling at its **Leota Project** (Yukon MINFILE 115O 026, 074) in the Klondike goldfields, southeast of Dawson City. The exploration program focussed on evaluating test pits excavated by track hoes. The pits provided fairly continuous sections of exposure to evaluate geological structures potentially associated with mineralization. Regional mapping of the property has outlined significant, previously undocumented ophiolitic rocks. At the contact between hangingwall ophiolitic rocks and underlying footwall rocks, intense and pervasive listwaenite alteration is present. These abundant ophiolites have never been systematically explored for their gold potential. The company is also exploring for low-grade, bulk-tonnage, White-style gold mineralization, with the identification of younger granites and felsite dykes on the property. Ridge and spur soil sampling was carried out to test the southern part of the property. As well, detailed soil sampling was conducted in three separate areas of the property where intense and pervasive hydrothermally altered contact-zone rocks have been locally exposed.

The recent **3 Ace** (Yukon MINFILE number pending) gold vein discovery was optioned by Northern Tiger Resources (*www.northerntigerresources.com*) in 2010 from prospector Alex McMillan. The original discovery was of visible gold mineralization in vein float immediately below an outcropping quartz vein. The quartz veins crosscut Late Proterozoic to Cambrian Hyland Group metasedimentary rocks and are structurally controlled (Fig. 19). Northern Tiger conducted a program consisting of detailed structural mapping, prospecting, hand trenching and detailed sampling before conducting a late-season, nine-hole (1240 m) drill program. The work outlined several vein showings: Main Zone, Green Zone, North Zone, and Sleeping Giant. Surface sampling discovered visible gold in the Main, North, and Sleeping Giant vein systems; the Main zone produced spectacular chip sample results. Both the Sleeping Giant and the Main Zone were drilled. Two holes in the Main Zone intercepted high-grade gold; five of the six holes collared in the Sleeping Giant zone intersected mineralization (Table 8). Drilling revealed that the Sleeping Giant occurs as a gently east-dipping zone roughly 6 m wide along the 180 m drilled part of its strike extent. Drill results, combined with surface sampling, suggest that high-grade gold mineralization may be specific to certain parts of the zone, and that a strong coarse gold effect exists. Results from the Main Zone demonstrate that gold mineralization is not confined to the high-grade vein, but also occurs over a significant thickness in the altered wallrock.

Figure 19. *Chris Buchanan, structural geologist (left) and Venessa Bennett of the Yukon Geological Survey at the discovery outcrop at the Main Zone on the 3 Ace property.*

Table 8. *Significant diamond drill intercepts from the 3 Ace property.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection
3A-10-01	Main Zone	49.1	30.3 m @ 4.3 g/t Au
including	Main Zone	50.2	8.2 m @ 13.5 g/t Au
3A-10-02	Main Zone	24.6	10.9 m @ 14.8 g/t Au
including	Main Zone	28.15	1.05 m @ 145.2 g/t Au
3A-10-04	Sleeping Giant	15.7	6.5 m @ 1.35 g/t Au
and	Sleeping Giant	120.7	1.9 m @ 3.48 g/t Au
3A-10-06	Sleeping Giant	42.6	5.6 m @ 0.98 g/t Au
and	Sleeping Giant	113.5	10.8 m @ 0.50 g/t Au
3A-10-08	Sleeping Giant	34.4	1.2 m @ 2.16 g/t Au

Argus Metals Corp. (*www.argusmetalscorp.com*) resurrected the **Hyland Gold** (Yukon MINFILE 095 011) property in 2010, drilling four diamond drillholes for a total of 764 m (Table 9; Fig. 20). The property has been variously described as structurally controlled or a distal intrusion-related gold occurrence. Mineralization is hosted in metasedimentary strata of the Proterozoic to Lower Cambrian Hyland Group. Argus identified gold mineralization below the historic Main Zone oxide deposit and identified a new gold-bearing Feeder Zone sulphide system. The Quartz Lake Shear structure that hosts the Feeder Zone can be followed for 14 km on the property. Argus has identified two new kilometre-scale geochemical anomalies with similar signatures in soils to the Hyland gold deposit. Two new areas (Spartan and Spy projects) were staked to cover arsenic geochemical anomalies hosted in carbonate sedimentary rocks. A total of 1782 additional claims were staked by Argus to expand the Hyland Gold project and acquire other targets in the area.

Figure 20. *Hyland Lake gold camp on Hulse Lake.*

Table 9. *Significant intercepts from drilling at the Hyland gold property.*

Drillhole	Depth of intersection (m)	Intersection
HY10-25	22.86	9.13 m @ 2.08 g/t Au and 13.51 g/t Ag
and	75.59	7.61 m @ 0.87 g/t Au and 11.11 g/t Ag
HY10-26	59.9	34.74 m @ 1.1 g/t Au and 3.79 g/t Ag
HY10-27	89.25	4.3 m @ 0.14 g/t Au and 0.01 g/t Ag
HY10-27	177.7	4.6 m @ 0.13 g/t Au and 0.53 g/t Ag
HY10-28	5.49	50.31 m @ 0.14 g/t Au and 0.21 g/t Ag

Several companies completed preliminary exploration on their holdings in the Dawson Range area: Golden Predator Corp. (27 reverse circulation holes for a total of 2927 m on the **Eureka** property; Table 10), RockBridge Resources Inc. (soil sampling on the **MGK** claims), First Lithium Resources Inc. (soil sampling at the **Lewis Strike** and **Lewis Strike South** claims), and Midnight Sun Capital Corp. (five diamond drillholes at the **Arn** Project). Other companies active in the area include Network Exploration Ltd., Expedition Mining,

Table 10. *Significant reverse circulation drilling intercepts from the Eureka Project.*

Drillhole	Depth of intersection (m)	Intersection
EU-10-02RC	60.96	1.52 m @ 1.93 g/t Au
EU-10-04RC	70.1	1.53 m @ 2.44 g/t Au
EU-10-20RC	64.01	3.05 m @ 1.382 g/t Au
EU-10-26RC	71.63	1.52 m @ 6.62 g/t Au

Central Resources Corp. and Habanero Resources. A good resource for companies active in the White Gold district of Dawson Range is the independent website (*www.whitegolddistrict.com*).

Ansell Capital Corp. (*www.ansellcapital.com*) optioned the **Charlotte** epithermal gold-silver property (Yukon MINFILE number pending) in the Mt Nansen Mine area, and completed 1452 m of diamond drilling (14 holes) in the Flex Zone, in 2010. Drilling confirmed historic drill intercepts and expanded known gold and silver mineralization along strike and down-dip (Table 11). The Flex zone consists of several anastamosing quartz-sulphide veins crosscutting quartz-feldspar chlorite gneiss that is intercalated with amphibolite gneiss. Veins host strong gold and silver mineralization with abundant pyrite and lesser arsenopyrite, stibnite, galena and sphalerite. Veins commonly exhibit broad propylitic, phyllitic, argillic and silicic alteration.

Table 11. *Significant diamond drill intercepts from the Mt Nansen (Charlotte) property, Flex Zone.*

Drillhole	Zone	Depth of intersection (m)	Intersection
DDH-10-240	Flex Zone	59.60	31.25 m @ 1.66 g/t Au and 67.91 g/t Ag
and	Flex Zone	96.00	1.75 m @ 1.89 g/t Au and 60 g/t Ag
DDH-10-243	Flex Zone	19.45	28.9 m @ 5.06 g/t Au and 138.09 g/t Ag
including	Flex Zone	37.50	3.05 m @ 14.3 g/t Au and 55.5 g/t Ag
DDH-10-245	Flex Zone	57.00	5.35 m @ 20.91 g/t Au and 131.54 g/t Ag
DDH-10-248	Flex Zone	83.30	8.6 m @ 3.25 g/t Au and 240.9 g/t Ag
and	Flex Zone	101.40	14.25 m @ 2.13 g/t Au and 82.8 g/t Ag

Rockhaven Resources (*www.rockhavenresources.com*) explored its road-accessible **Klaza** (Esansee; Yukon MINFILE 115I 067) property, a gold-silver vein/breccia occurrence in the south Dawson Range, in the historic Mt. Nansen area. Mineralization occurs as veins and breccias hosting galena, arsenopyrite, pyrite and sphalerite, and is associated with narrow west-northwest feldspar porphyry dykes (Fig. 21). Pervasive phyllic and argillic alteration has been developed in granodiorite wallrocks and within clasts in the breccia. The company completed trenching and airborne magnetic and radiometric surveys on the property. There are four main mineralized structural zones that are parallel to one another along a northwest-trending corridor: Klaza, BYG, Herc and BRX. Drill testing (11 diamond drillholes, 1641 m) of the structural zones was successful in intersecting gold-silver mineralization (Table 12). Diamond drillhole KL-10-07 tested the full width of the Klaza zone, intersecting 3.23 g/t Au and 117.7 g/t Ag over 36.50 m. Rockhaven is planning an 8000 m diamond drilling program for 2011 with two diamond drill rigs.

Figure 21. *Pyrite-sphalerite-galena-carbonate vein in drilll core from the Klaza gold-silver property.*

Table 12. *Significant diamond drill intercepts from the Klaza property.*

Drillhole	Depth of intersection (m)	Intersection
KL-10-03	32.96	2.54 m @ 4.34 g/t Au and 71.2 g/t Ag
and	62.08	50.28 m @ 1.10 g/t Au and 23.5 g/t Ag
KL-10-04	97.60	13.40 m @ 0.74 g/t Au and 9.1 g/t Ag
KL-10-05	20.41	28.49 m @ 0.77 g/t Au and 14.8 g/t Ag
and	79.20	1.96 m @ 1.47 g/t Au and 95.1 g/t Ag
KL-10-06	21.64	3.36 m @ 32.52 g/t Au and 34.3 g/t Ag
KL-10-07	33.50	1.00 m @ 1.91 g/t Au and 38.5 g/t Ag
and	57.80	1.00 m @ 5.51 g/t Au and 107 g/t Ag
and	128.00	36.50 m @ 3.23 g/t Au and 117.7 g/t Ag
including	134.00	15.30 m @ 7.2 g/t Au and 260.0 g/t Ag

The **Grew Creek** (Yukon MINFILE 105K 009) epithermal gold property, located near Faro in Central Yukon, was optioned by Golden Predator Corp. (*www.goldenpredator.com*) in 2010. Golden Predator drilled three oriented diamond drillholes for 710 m in order to better understand the structure hosting the mineralization. Historic drilling on the property was dominantly oriented in a south-southwesterly direction, targeting a Tintina fault splay. The new oriented drilling demonstrated that the mineralization occurs in veins filling northwest-trending Riedel shears, although the mineralization envelope itself aligns along a west-northwesterly splay of the Tintina fault. Drill results (Table 13) returned longer consistent gold intersections than previous drill programs.

Table 13. *Significant intercepts from drilling at Grew Creek.*

Drillhole	Zone	Depth of intersection (m)	Intersection
GC10-001	Carlos	40.00	146.3 m @ 1.72 g/t Au
including	Carlos	65.53	3.05 m @ 17.93 g/t Au
and	Carlos	77.72	32.23 m @ 2.80 g/t Au
GC10-002	Carlos	39.32	132.18 m @ 1.21 g/t Au
including	Carlos	100.55	35.51 m @ 2.19 g/t Au
GC10-002	Carlos	196.85	31.75 m @ 2.08 g/t Au
GC10-003	Carlos	60.55	60.85 m @ 1.93 g/t Au
including	Carlos	62.32	7.78 m @ 7.65 g/t Au

Wesgold Minerals Inc. (*www.wesgold.com*) optioned the **Snowcap** property (Yukon MINFILE 105K 006) from Radius Gold Inc. in 2010. The company diamond drilled four holes to test for the source of anomalous mercury and gold-in-soil values overlying a structurally controlled Tertiary volcaniclastic basin. Basinal lithologies include chalcedony-bearing tuffs and phreatic breccias with sinter clasts. The drillholes intersected altered volcanic and epiclastic rocks with quartz, carbonate and pyrite veining. Assay results are pending.

Exploration for gold expanded beyond the Dawson Range. Several exploration companies and individuals completed grassroots exploration work on gold vein/breccia properties across Yukon: the **Laskey** property, south of Dawson City (owned by Bernie Kreft); the **Kiwi property**, north of Ross River (owned by Eagle

Plains Resources Ltd.); the **Golden Culvert**, south of Cantung (owned by Gary Lee), and Mount Hinton, in the Keno Hill area (owned by Rockhaven Resources).

A potentially significant new discovery was made by Tarsis Resources (*www.tarsis.ca*) on its White River property (new MINFILE number pending) located southwest of the White Gold district near Beaver Creek. Sampling on the property has returned values up to 19.3 g/t Au, 1310 g/t Ag and 8.52% Cu in an apparent Au-Ag epithermal system.

INTRUSION-RELATED

Victoria Gold Corp. (*www.victoriaresourcecorp.com*) continued drilling its road-accessible **Eagle Gold Project** (Dublin Gulch; Yukon MINFILE 105D 025) in central Yukon. Drilling for deposit expansion and upgrading, plus environmental baseline data collection, and geotechnical and condemnation drilling (Fig. 22) continued at the intrusion-hosted Eagle Deposit (an analogue to the Fort Knox deposit in Alaska), which consists of sheeted veins within a Tombstone-age (~91 Ma) granodiorite stock. A positive pre-feasibility study on the Eagle was reported in April, 2010, targeting a production start-up date in early 2013, at an average rate of ~170,000 ounces of gold per year, at a cash cost of under US$500 per ounce. The company is at the feasibility study stage, but exploration continues on the property. Victoria Gold drilled 26 diamond drillholes for a total of 5500 m outside the Eagle Deposit. The exploration campaign identified a large northwest-trending mineralized structural corridor referred to as the Potato Hills trend. The corridor hosts structurally controlled vein arrays of gold and silver mineralization over a length of at least 7.5 km. The veins occur in the host sedimentary rocks and consist of quartz-arsenopyrite veins. The system along the trend has a polymetallic character with high levels of Au, Ag, Pb, Zn, Mo, Bi in soils. Among others along this trend, drill intersections at the Popeye zone and the Shamrock zone successfully intersected gold mineralization (Table 14). Victoria Gold erected a $5 million, 200-person, all-season camp at the end of the field season in order to extend the season and gain an early start for exploration in 2011. On December 20, the company submitted the final Eagle Gold Project proposal to the Yukon Environmental and Socio-Economic Assessment Board. This significant milestone engages the formal Yukon environmental assessment review process and is an important precursor to the permitting of full-scale mine development.

Figure 22. *Geotechnical drilling at the Eagle Zone, Dublin Gulch property.*

Table 14. *Significant diamond drilling intercepts from the Dublin Gulch property.*

Drillhole	Zone	Depth of intersection (m)	Intersection
DG10 377C	Shamrock	5.80	30.50 m @ 12.03 g/t Au
including	Shamrock	5.80	12.20 m @ 27.98 g/t Au
and	Shamrock	53.00	1.50 m @ 1.36 g/t Au
and	Shamrock	104.90	0.60 m @ 5.68 g/t Au
and	Shamrock	199.60	1.70 m @ 10.02 g/t Au
DG10 384C	Olive	18.10	20.30 m @ 1.93 g/t Au
and	Olive	49.10	41.10 m @ 0.96 g/t Au
and	Olive	117.70	1.60 m @ 2.10 g/t Au
and	Olive	128.00	0.90 m @ 5.64 g/t Au
and	Olive	139.00	16.60 m @ 0.88 g/t Au
and	Olive	192.20	1.70 m @ 1.01 g/t Au
DG10 398C	Steiner	31.10	2.20 m @ 0.35 g/t Au
and	Steiner	57.00	6.10 m @ 0.25 g/t Au
and	Steiner	92.00	13.80 m @ 0.26 g/t Au
and	Steiner	130.20	36.50 m @ 0.31 g/t Au
and	Steiner	175.90	12.70 m @ 0.24 g/t Au
DG10 404C	Popeye	25.20	8.90 m @ 6.00 g/t Au

AM Gold's (*www.amgold.ca*) **Red Mountain Ice** (Yukon MINFILE 115P 006) property, northwest of Mayo, is an intrusion-related gold property. The 12-hole (4100 m) 2010 diamond drill program (Table 15) focussed on expanding the previously disclosed Inferred Resource of 542,000 troy ounces (23.6 million tonnes grading 0.7 g/t gold) announced on July 16, 2010. The first two holes of the program successfully tested the vertical and longitudinal continuity of the mineralized zone to a depth of almost 500 m below surface, over 250 m below the deepest previous drilling in the resource area. Subsequent drilling tested the Jethro structure, a northwest-trending fault transecting the property. Mineralization at Red Mountain is hosted in quartz monzonite porphyry and in metasedimentary rocks, and is characterized by arsenopyrite and lesser pyrrhotite and chalcopyrite hosted in multiple generations of quartz veining and disseminations (Fig. 23). Two diamond drill rigs were stored on the property to allow for an early start-up of drilling operations in the 2011 season.

Table 15. *Significant intercepts from drilling at the Red Mountain (Ice) gold property.*

Drillhole	Depth of intersection (m)	Intersection*
ICE10028	0	526.57 m @ 0.75 g/t Au
including	48.50	101.40 m @ 1.41 g/t Au
ICE10029	4.5	451.00 m @ 0.58 g/t Au
including	58.95	38.05 m @ 1.02 g/t Au
ICE10030	26	268.5 m @ 0.72 g/t Au
including	27	131.8 m @ 0.93 g/t Au
ICE10038	4.57	364.24 m @ 0.46 g/t Au
including	124.0	20.50 m @ 3.03 g/t Au
ICE10039	9.5	227.5 m @ 0.34 g/t Au
ICE10037	20.00	41.00 m @ 0.70 g/t Au
and	188.50	64.48 m @ 0.45 g/t Au

*True widths are not known

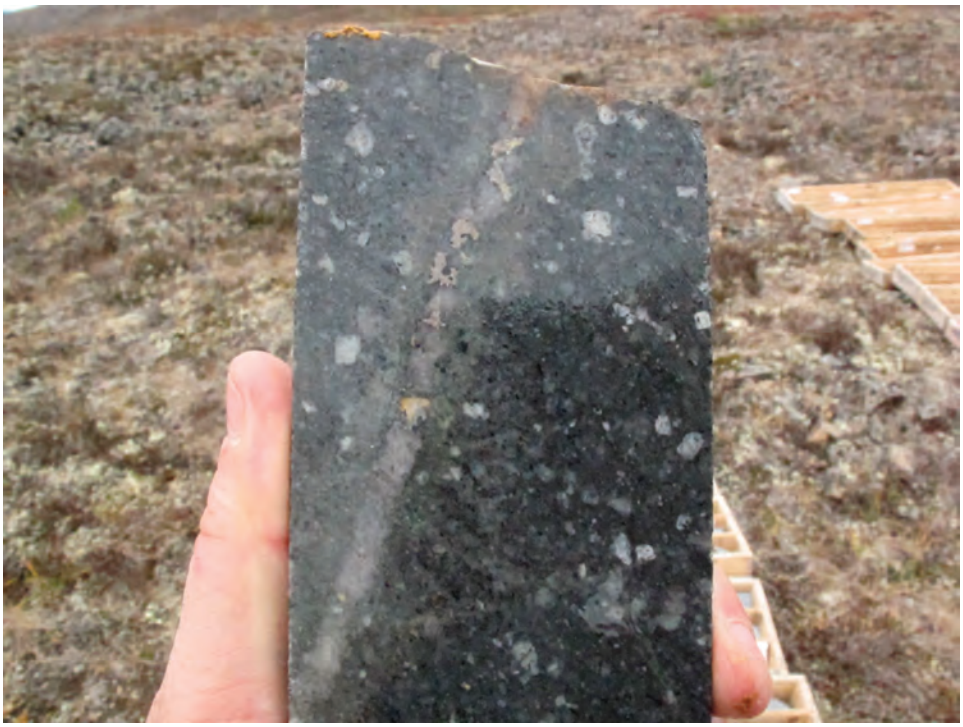

Figure 23. *Gold-bearing quartz-sulphide vein cross-cutting porphyry in drillcore at the Red Mountain (Ice) property of AM Gold Inc.*

Regent Ventures (*www.regentventuresltd.com*) **Red Mountain** (Yukon MINFILE 115P 006) property adjoins the property of AM Gold. The company performed geophysical surveys, geological mapping, and diamond drilling. Results from the program are pending.

Northern Freegold Resources (*www.northernfreegold.com*) completed a >11 000 m reverse circulation and diamond drill program at its road accessible **Freegold Mountain** property (Yukon MINFILE 115I 107). Drilling was focussed on the Nucleus and Revenue zones. At the Nucleus deposit, 11 diamond drillholes and five RC step-out holes were completed. Nucleus has a 1 million ounce NI 43-101 inferred gold resource (April 2010), *i.e.*, 35.82 million tonnes @ 0.87 g/t gold (at 0.4 g/t Au cutoff grade). Nucleus is characterized by Cretaceous granodiorite sills intruding metasedimentary rocks and later crosscutting quartz-feldspar porphyry dykes. Mineralization in the Nucleus zone occurs in all rock types and variably consists of sulphide-bearing hydrothermal breccias; quartz-sulphide and sulphide veins and stockworks; and, disseminated sulphides and massive sulphide skarn. A Titan 24 IP survey was carried out over the Nucleus and Revenue zones on the property. The results revealed conductive zones at depth in the Nucleus and Revenue zones and suggest that the zones, to date, are the near surface expressions of a deeper target. Reverse circulation holes were drilled into the Discovery, Guder and Granger targets (Table 16), and support the model of a potential Au-Cu porphyry system at depth.

Table 16. *Significant drill intercepts (RC - reverse circulation and DD - diamond drillholes) from the Nucleus and Revenue properties, Mt. Freegold Project.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection*
DD91-01	Discovery target	13.67	89.05 m @ 0.73 g/t Au, 9.96 g/t Ag, 3062 ppm Cu, 179.3 ppm Mo and 326.9 ppm W
RC10-20	Discovery target	27.43	12.19 m @ 0.4 g/t Au, 0.49 g/t Ag and 217.7 ppm Cu
and	Discovery target	45.72	3.05 m @ 0.85 g/t Au, 0.5 g/t Ag and 269.5 ppm Cu
and	Discovery target	77.72	10.67 m @ 7.26 g/t Au, 2.31 g/t Ag and 717.2 ppm Cu
RC10-26	Discovery target	57.91	143.26 m @ 0.12 g/t Au, 1.76 g/t Ag, 779 ppm Cu, 46.2 ppm Mo and 53.6 ppm W
RC10-001	Granger target	3.35	69.8 m @ 0.42 g/t Au, 0.52 g/t Ag and 428.6 ppm Cu
and	Granger target	16.76	4.58 m @ 3.38 g/t Au, 1.83 g/t Ag and 534.7 ppm Cu
and	Granger target	36.58	4.57 m @ 0.97 g/t Au, 0.53 g/t Ag and 574.2 ppm Cu
RVRC10 031	Revenue	6.1	111.25 m @ 0.36 g/t Au, 3.27 g/t Ag, 0.15% Cu and 66.2 ppm Mo and 128.8 ppm W

*true widths are unknown

The **Sonora** gold property (Yukon MINFILE 115J 008) of Northern Tiger Resources (*www.northerntigerresources.com*) had 2875 m of diamond drilling in 12 holes (Table 17) on the Nightmusic zone and on Cu-Mo porphyry targets generated by a Titan 24 IP survey (Fig. 24). The company performed a Titan 24 IP survey resulting in a recommendation to drill 29 holes to test the survey's IP anomalies. These anomalies cover a 2 x 1 km area, surrounding and draping over a less chargeable core. Only five of the recommended targets were drill tested in 2010 producing anomalous Au-Cu-Mo results and porphyry-style alteration. Numerous compelling targets remain to be tested.

Table 17. *Significant diamond drill intercepts from the Sonora Gulch property.*

Drillhole	Depth of intersection (m)	Intersection*
SG-10-53	194.5	16.0 m @ 1.9 g/t Au, 6.1 g/t Ag, 255 ppm Cu and 13 ppm Mo
SG-10-55	115.0	6.0 m @ 7.6 g/t Au, 155.5 g/t Ag, 548 ppm Cu and 4 ppm Mo
SG-10-51	0.0	288.0 m @ 0.8 g/t Ag, 245 ppm Cu and 19 ppm Mo
SG-10-53	146.5	30.0 m @ 1.6 g/t Ag, 802 ppm Cu and 88 ppm Mo
SG-10-54	7.0	88.0 m @ 0.9 g/t Ag, 313 ppm Cu and 13 ppm Mo
SG-10-56	205.0	78.0 m @ 0.9 g/t Ag, 403 ppm Cu and 24 ppm Mo

Figure 24. *Geologists (left to right) Dennis Ouellette, Brad Mercer and Jim McFaul at the Sonora Gulch gold camp.*

Golden Predator Corp. (*www.goldenpredator.com*) optioned the road-accessible **Gold (Scheelite) Dome** (Yukon MINFILE 115P 004) property in 2009 and explored it with 14 oriented diamond drillholes (3854 m) and 28 reverse circulation (Fig. 25) holes (4606 m) in 2010. The property is an intrusion-related gold system that hosts numerous styles of gold mineralization. The area is covered by a 10 x 3 km gold-bismuth soil anomaly and is known for active placer gold operations in streams draining the property. Golden Predator diamond-drilled five targets: Hawthorne Ridge, Aorta, Harvey Ridge, Swede and the Tom zone. Five of the six holes drilled in the newly discovered Swede zone encountered mineralization (Table 18). Drilling has also continued to encounter mineralization at the previously recognized Tom, Aorta and Hawthorne Ridge zones. Reverse circulation holes were drilled on the Toby, Tom, Swede, Hawthorne Ridge and Aorta zones. Drilling has encountered mineralized intervals greater than 1 g/t Au in the majority of holes on the property indicating a large mineralizing event. The extent of the mineralization has prompted Golden Predator to seek a joint venture partner who is capable of pursuing a major exploration program on the property.

Figure 25. *Reverse circulation drilling on Gold Dome.*

Table 18. *Significant intercepts from drilling at the Gold Dome property.*

Drillhole	Zone	Depth of intersection (m)	Intersection
GDDH-10-020	Tom zone	83.05	9.75 m @ 1.68 g/t Au
and	Tom zone	179.50	13.30 m @ 1.29 g/t Au
GDRC10-016	Swede	56.39	12.19 m @ 1.49 g/t Au
GDRC10-019	Hawthorne Ridge	39.62	4.58 m @ 3.76 g/t Au
GDDH-10-022	Hawthorne Ridge	58.60	10.00 m @ 0.55 g/t Au
and	Hawthorne Ridge	90.60	4.00 m @ 0.64 g/t Au
and	Hawthorne Ridge	156.92	8.00 m @ 0.68 g/t Au
and	Hawthorne Ridge	212.92	21.95 m @ 1.00 g/t Au
and	Hawthorne Ridge	246.87	12.00 m @ 0.58 g/t Au
GDRC-10-023	Harvey Ridge	12.19	1.53 m @ 1.2 g/t Au
and	Harvey Ridge	111.25	6.10 m @ 0.54 g/t Au
and	Harvey Ridge	169.16	1.53 m @ 1.73 g/t Au
and	Harvey Ridge	201.17	3.05 m @ 1.36 g/t Au
GDDH-10-030	Aorta zone	54.00	4.00 m @ 0.78 g/t Au
and	Aorta zone	65.05	12.00 m @ 0.51 g/t Au
and	Aorta zone	93.05	8.00 m @ 0.5 g/t Au
and	Aorta zone	117.40	4.00 m @ 0.81 g/t Au
and	Aorta zone	160.50	2.00 m @ 2.03 g/t Au

Golden Predator Corp.(*www.goldenpredator.com*) optioned the **Clear Creek** (Yukon MINFILE 115P 023) intrusion-related gold occurrence in 2009. The occurrence is located 65 kilometres northwest of Mayo. The property has five distinct targets: Bear Paw, Contact, Saddle, Josephine and Rhosbegobel. Golden Predator drilled four of the targets with four diamond drillholes (1054 m) and 38 reverse circulation holes (2589 m; Table 19). The Saddle zone drill program tested a 600 m-long Au-As soil anomaly. The Contact Zone drilling tested mineralization associated with a clay-altered silicic dyke and tested sheeted quartz-k-feldspar veins in host granitic rocks. The drill program at the Bear Paw zone was designed to test the northeast trend of a 1 km x 250 m Au-As soil anomaly. All of the zones returned significant intersections that will be followed up with an expanded program in 2011 (Fig. 26).

Figure 26. *Reverse circulation drilling at the Clear Creek gold property.*

Table 19. *Significant drill intercepts from the Clear Creek property.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection
CC10-17	Contact	70.10	12.2 m @ 2.06 g/t Au
including	Contact	71.63	4.57 m @ 4.52 g/t Au
CC10-21	Contact	74.68	3.04 m @ 4.52 g/t Au
CC10-08	Bear Paw	1.52	21.34 m @ 0.88 g/t Au
including	Bear Paw	16.76	6.1 m @ 1.62 g/t Au
CC10-09	Bear Paw	41.15	9.14 m @ 1.05 g/t Au
CC10-13	Bear Paw	16.76	7.62 m @ 1.49 g/t Au
CC10-16	Bear Paw	59.44	1.52 m @ 2.38 g/t Au
CC10-25	Saddle	10.67	22.86 m @ 1.24 g/t Au
CC10-01	Bear Paw	44.90	45.3 m @ 0.776 g/t Au
including	Bear Paw	71.35	10.92 m @ 1.736 g/t Au
CC10-05	Bear Paw	1.52	35.06 m @ 1.033 g/t Au
CC10-07	Bear Paw	1.52	42.68 m @ 1.868 g/t Au
including	Bear Paw	10.67	25.91 m @ 2.585 g/t Au
and	Bear Paw	16.76	9.15 m @ 5.635 g/t Au

Golden Predator Corp.(*www.goldenpredator.com*) optioned the intrusion-related **Brewery Creek** gold property (Yukon MINFILE 116B 160) in 2009. The company explored the formerly producing mine property with 13 diamond drillholes (2367 m) and 16 reverse circulation (Fig. 27) holes (2350 m) (Table 20). The exploration program at Brewery Creek was designed to increase the existing resource through near-surface drilling, and explore for higher grade feeders underneath the historic resource. The drill program targeted fault structures thought to be associated with the main mineralizing trends. Reverse circulation drilling tested the down-dip extension of high-grade gold south of the Lucky pit. Gold mineralization is hosted within intrusive rocks and silicified and brecciated sedimentary rocks at Brewery Creek. Major ore-controlling structures in the intrusive rocks are related to a post Tombstone age (91 Ma) north-northwest compressional event that produced east-southeas and northeast striking conjugate shears and east-northeast listric normal faulting. Late season drilling tested the structural interpretation in the Bohemian-Schooner trend in the eastern portion of the property and intersected a significant high-grade trend. The eastern portion of the former producing Brewery Creek Mine was not mined nor extensively explored during the period the mine was in operation. A new resource calculation for the property is expected in the second quarter of 2010. All permits for the mine are in good standing.

Figure 27. *Reverse circulation drill at Brewery Creek gold property. Photo by Cathie Archbould from www.goldenpredator.com.*

Table 20. *Significant diamond drill intercepts from the Brewery Creek gold property.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection
BCRC10-2315	Lucky Pit	53.34	7.62 m @ 4.161 g/t Au
and	Lucky Pit	64	1.53 m @ 2.59 g/t Au
BCRC10-2318	Lucky Pit	73.15	10.67 m @ 1.23 g/t Au
BCRC10-2319	Bohemian	53.34	9.14 m @ 3.97 g/t Au
BCRC10-2322	Bohemian	32	38.1 m @ 1.48 g/t Au
BC10-168	Bohemian	15.5	50.5 m @ 2.79 g/t Au
including	Bohemian	37.5	21.5 m @ 5.35 g/t Au
BC10-170	Bohemian	5	3.9 m @ 3.59 g/t Au
and	Bohemian	27	56.5 m @ 3.2 g/t Au
including	Bohemian	45	29 m @ 5.89 g/t Au
BC10-171	Bohemian	0	10 m @ 3.02 g/t Au
and	Bohemian	35	41 m @ 0.86 g/t Au
and	Bohemian	105	2 m @ 1.49 g/t Au

The **Antimony Mountain** (Yukon MINFILE 116B 094) intrusion-related gold occurrence was optioned by Golden Predator Corp. (*www.goldenpredator.com*) and explored with diamond drilling (768 m, 4 holes). Mineralization is characterized by massive to semi-massive sulphide replacement and fracture fillings in limy, oxidized breccias, sulphide disseminations in quartzite, and pyrrhotite-chlorite skarn. The company drilled four diamond drillholes at the Golden Wall (Fig. 28) zone. Diamond drillhole GW-10-027 intercepted 2 m of 1.16 g/t Au and diamond drillhole GW-10-028 intercepted 23 m of 0.65g/t Au. Intense alteration was noted throughout all holes. Future work on the property will focus on the extension and delineation of the higher grade vein systems occurring across the project area.

Figure 28. *Diamond drill set up on Antimony Mountain gold property.*

Golden Predator Corp. (*www.goldenpredator.com*) drilled its newly acquired **Cynthia** (Yukon MINFILE 105O 007) property in 2010 (seven holes, 1100 m), located west of MacMillan Pass in eastern Yukon. The occurrence is characterized by intrusion-related and epithermal gold mineralization, with multiple episodes of mineralization. The first three diamond drillholes at Cynthia were directed toward a prominent northwest-trending shear zone containing a quartz porphyry dyke in its hangingwall. Diamond drillhole 1 intersected 1.5 m of 1.31 g/t Au; the second hole had similar results. Diamond drillhole 3 returned 14 m of 0.70 g/t Au. The four other holes targeted extensions of the shear zone as well as an area of intense silicification. All holes intersected strong alteration.

Dawson Gold Corp. (*www.dawsongold.com*) explored its **Toro** (Yukon MINFILE 115I 031) property located in the Dawson Range, 100 km northwest of Carmacks. The 2010 exploration program included eight diamond drillholes (1516 m), deep penetration IP, soil surveys, stream sampling, mapping, and resampling of historic drill core. The property is primarily underlain by granitic rocks of the mid-Cretaceous Dawson Range Batholith that have intruded meta-igneous and metasedimentary rocks of the Yukon-Tanana Terrane. Late Cretaceous Prospector Mountain Suite quartz-feldspar porphyry dykes and sills later intruded the area and are known to be associated with gold-copper mineralization in this belt. The 2010 diamond drilling focussed on three distinct zones: the historic Ridge Zone, Main Zone, and a newly defined geophysical (IP anomaly) target. Drilling at the Ridge Zone targeted two large historic gold-in-soil anomalies. Anomalous gold results were returned in assays from seven of eight drillholes, confirming gold mineralization on the historic Main zone and at the Ridge Zone, *e.g.*, DDH TT-104 – 91.5 m of 0.330 g/t Au including 1 m of 2.73 g/t Au.

SILVER

VEIN/BRECCIA

Alexco Resources Corporation (*www.alexcoresource.com*) continued exploring its property in the historic **Keno Hill** district (Yukon MINFILE 105M 001). The Keno Hill properties encompass numerous silver-lead-zinc vein occurrences hosted primarily in Mississippian Keno Hill Quartzite, 35 of which have had historical production. Alexco drilled several targets on the property, including Bellekeno, Lucky Queen, Silver King, Husky, Galkeno, Bermingham, Onek, and Flame & Moth prospect (Fig. 29), for a total of 28 162 m in 150 holes. The company also drilled surface step-out holes at Bellekeno and performed 1151 m of sonic drilling in 34 holes on the tailings at Elsa, the results of which will be included in a scoping study currently underway. In addition, a reverse circulation drill program was completed in the McQuesten Valley in order to capture stratigraphic information. Alexco's step-out exploration drilling southwest of the Bellekeno mine intersected high-grade mineralization 130 m down-plunge from the existing Bellekeno resource. The deep drilling targeted the silver rich 48 vein at depth and within a stratigraphic sequence not previously tested at Bellekeno (Table 21). Results from this deep surface drilling are being used to guide underground development off the 800 level (deepest active level in the existing mine). Drilling at the 99 Zone of Bellekeno tested the up- plunge extension of the existing resource. The three shallow drillholes intersected sub-ore-grade silver intercepts. Exploration and infill drilling at Onek have confirmed high-grade zinc-silver-lead mineralization with localized gold and also significant indium values. Drill results will be used to update the current resource estimate planned for the second quarter of the 2011 calendar year. The Lucky Queen continued to produce spectacular high-grade intersections from the mine that has historically been the highest grade producer in the district.

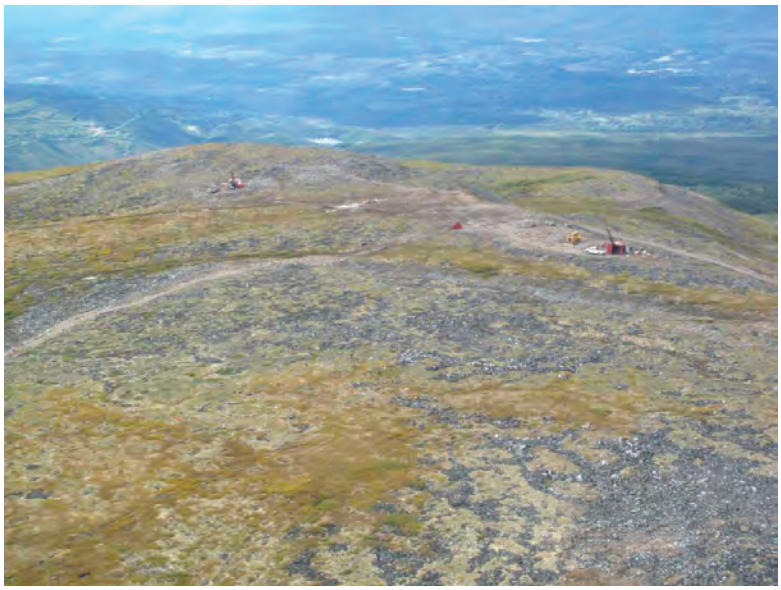

Figure 29. *Two active diamond drills on the Onek property, Keno Hill District.*

CMC Metals Ltd. (*www.cmcmetals.ca*) performed trench sampling in the TM Zone on its **Silver Hart** (Yukon MINFILE 105B 021) property in order to evaluate grades and widths of the main vein structure for future bulk sampling purposes. The historical deposit consists of high-grade polymetallic silver-lead-zinc veins hosted in the mid-Cretaceous Cassiar Batholith and Cambrian or older biotite-quartz schist, limy hornfels and calcareous horizons. The property has a historical non-NI 43-101 compliant inferred resource of 45 634 tonnes grading 2088 g/t Ag at the TM Zone. Trench sample results on the TM Zone include TR10-11-03 – 1.38 m of 1950 g/t Ag, 9.87% Pb, 0.37% Cu, and 0.15% Zn. The 200-tonne bulk sample taken in 2010 was a metallurgical recovery test for potential larger bulk samples. Data from the trench sampling as well as drill data will be used to evaluate the potential of taking a larger 5000-tonne bulk sample from the TM pit area during the permitting review period.

Table 21. Significant intercepts from diamond drilling at the Keno Hill property.

Drillhole	Zone/Area	Depth of intersection (m)	Intersection
DDH K10-254	Onek	122.10	7.30 m @ 834.4 g/t Ag, 1.194 g/t Au, 6.68% Pb and 21.84% Zn
DDH K10-265	Onek	53.79	10.42 m @ 1518.6 g/t Ag, 1.003 g/t Au, 17.93% Pb and 3.15% Zn
BKUD10-174	Bellekeno East/Lower East	38.40	2.10 m @ 1033 g/t Ag, 0.180 g/t Au, 1.22% Pb and 1.37% Zn
BKUD10-184	Bellekeno East/Lower East	228.05	3.07 m @ 137.7 g/t Ag, 1.618 g/t Au, 0.76% Pb and 27.33% Zn
K-10-0221	Silver King	79.54	0.62 m @ 184 g/t Ag, 0.868 g/t Au, 0.16% Pb and 0.72% Zn
and	Silver King	241.42	2.42 m @ 217.5 g/t Ag, 0.078 g/t Au, 0.75% Pb and 1.83% Zn
and	Silver King	244.14	1.41 m @ 569.6 g/t Ag, 0.594 g/t Au, 3.69% Pb and 0.18% Zn
K-10-0260	Bellekeno-southwest	508.15	2.57 m @ 540.6 g/t Ag, 0.408 g/t Au, 10.35% Pb and 7.71% Zn
includes	Bellekeno-southwest	508.15	0.40 m @ 2729 g/t Ag, 0.472 g/t Au, 52.16% Pb and 6.29% Zn
K-10-0257	Bellekeno-99	151.79	0.44 m @ 149.9 g/t Ag, 0.453 g/t Au, 0.50% Pb and 0.35% Zn
and	Bellekeno-99	155.50	2.08 m @ 129.6 g/t Ag, 0.151 g/t Au, 0.70% Pb and 0.51% Zn
and	Bellekeno-99	159.62	1.33 m @ 353.9 g/t Ag, 0.093 g/t Au, 0.08% Pb and 0.26% Zn
DDH K10-278	Lucky Queen	231.55	1.12 m @ 1878 g/t Ag, 0.140 g/t Au, 0.3% Pb and 0.7% Zn
and	Lucky Queen	245.37	1.33 m @ 1756 g/t Ag, 0.079 g/t Au, 4.9% Pb and 3.3% Zn

BASE METALS – COPPER

Capstone Mining Corp. (*www.capstonemining.com*) continues to expand its copper-gold-silver **Minto Mine** property (Yukon MINFILE 115I 012) in west Central Yukon. The exploration program included step-out drilling targeting deeper mineralized horizons at area 2 and 118, step-out drilling to expand upon the Minto East discovery, and an additional 24 km of Titan 24 surveying on the east and west flanks of the 2009 survey that successfully defined known zones and discovered Minto East. In 2010, drilling a new Titan 24 target resulted in the discovery of the Wildfire Zone - DDH 10SWC-635 - 10.8 m @ 2.41% Cu, 0.81 g/t Au, 6.8 g/t Ag (Fig. 30). Diamond drilling in 2010 (47 084 m in 167 holes) focussed on Minto East, Copper Keel, Area 2 and other Titan 24 IP targets (Table 22), but also included nine confirmation holes on the southern rim of the open pit. An updated resource estimate for Minto East was released in 2010. The Phase V pre-feasibility study, which is currently underway, will incorporate mineral resources from Area 2, Minto North, Minto East and Ridgetop, with the development of simultaneous surface and underground operations. Capstone is also working on defining a resource at the Wildfire and Copper Keel zones, which could be extracted by open pit and/or underground methods. The two mineralized trends are stacked on top of

each other, whereby the best grades at Copper Keel trend north-northwest, and those at Wildfire trend north-northeast. Late in 2010, Capstone announced the discovery of a new high-grade copper-gold zone – Inferno – northeast of the Minto Main deposit, and a 250 m extension northeast of the Wildfire/Copper Keel. Both areas were detected by a deep-penetrating Titan 24 IP survey conducted earlier in 2010. Capstone notes that the alignment of the Inferno, Minto East, Copper Keel North, Wildfire and Copper Keel South is along an axis approximately parallel to the Minto North, Minto Main, Area 2 and Ridgetop axis, providing a focus for further exploration along this trend.

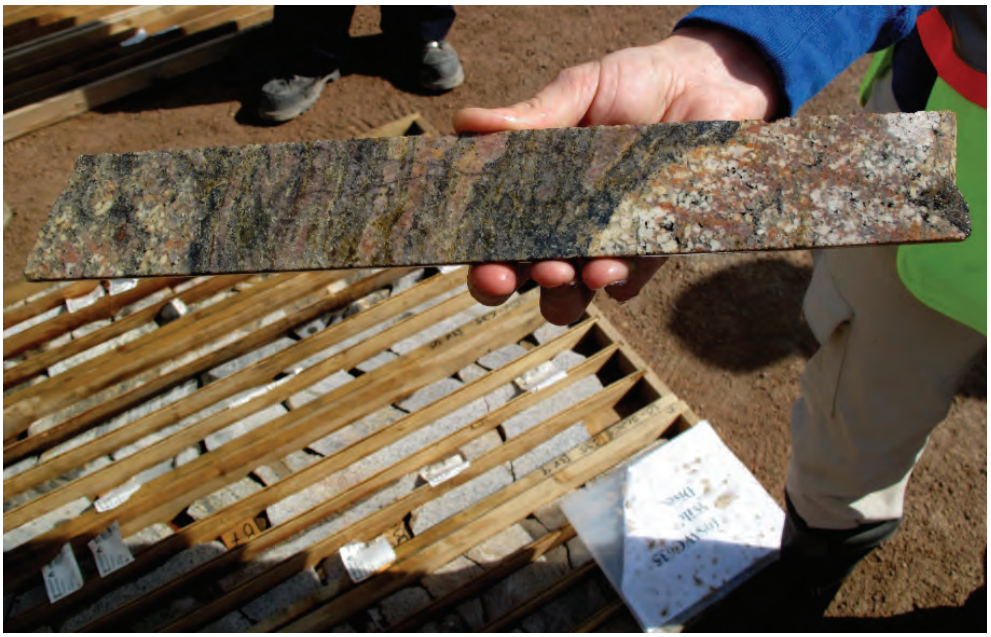

Figure 30. *Mineralized core from the 2010 Wildfire discovery on the Minto mine property.*

Table 22. *Significant diamond drill intercepts from the Minto mine property.*

Drillhole	Zone	Depth of intersection (m)	Intersection
10SWC-592	Area 2 South	30.9	14.7 m @ 1.33% Cu, 0.41 g/t Au and 2.7 g/t Ag
and	Area 2 South	68.5	17.7 m @ 1.43% Cu, 0.58 g/t Au and 7.3 g/t Ag
and	Area 2 South	221.1	3.6 m @ 1.75% Cu, 0.65 g/t Au and 3.7 g/t Ag
10SWC-606	Area 2/118	157.3	14.0 m @ 2.29% Cu, 0.98 g/t Au and 7.2 g/t Ag
10SWC-641	Minto East	308.0	12.5 m @ 3.49% Cu, 1.35 g/t Au and 13.6 g/t Ag
and	Minto East	314.8	5.6 m @ 4.06% Cu, 1.85 g/t Au and 20.6 g/t Ag
10SWC-669	Minto East	312.3	12.6 m @ 5.07% Cu, 2.22 g/t Au and 14.5 g/t Ag
10SWC-645	Copper Keel	189.5	8.7 m @ 2.01% Cu, 0.71 g/t Au and 7.1 g/t Ag
and	Copper Keel	202.7	6.4 m @ 0.61% Cu, 0.12 g/t Au and 1.6 g/t Ag
and	Copper Keel	250.6	5.0 m @ 3.34% Cu, 1.23 g/t Au and 11.9 g/t Ag
and	Copper Keel	276.7	5.5 m @ 1.06% Cu, 0.23 g/t Au and 2.3 g/t Ag
10SWC-647	Wildfire	90.2	20.4 m @ 1.39% Cu, 0.65 g/t Au and 5.4 g/t Ag
and		176.6	7.6 m @ 1.02% Cu, 0.35 g/t Au and 2.7 g/t Ag
10SWC-642	Wildfire	105.5	9.8 m @ 2.49% Cu, 1.88 g/t Au and 10.4 g/t Ag
10SWC-746	Inferno	31.6	29.8 m @ 0.82% Cu, 0.57 g/t Au and 6.1 g/t Ag
and		278.3	4.0 m @ 3.19% Cu, 1.83 g/t Au and 11.3 g/t Ag
10SWC-750	Inferno	273.6	2.6 m @ 15.26% Cu, 4.39 g/t Au and 67.7 g/t Ag

PORPHYRY/SHEETED VEIN

Western Copper Corp. (*www.westerncoppercorp.com*) expanded its porphyry copper-gold-molybdenum **Casino** deposit (Yukon MINFILE 115J 028) in west-central Yukon based on three years of infill drilling (Table 23). The new resource figure significantly expanded the deposit and also includes a silver grade. The Casino deposit is hosted in the mid-Cretaceous Casino pluton, and mineralization is related to an overprinting Late Cretaceous event. Western Copper completed 64 holes (14 285 m) of exploration, hydrogeological, and geotechnical drilling in 2010 (Table 24; Fig. 31). The deposit was expanded by the conversion of areas previously classified as internal waste into the resource, and by converting areas of waste within the pit design into the resource number. The results of the expanded and upgraded resource, as well as the extensive environmental and geotechnical program conducted on the property, will be incorporated in a new pre-feasibility study scheduled for release in early 2011.

Table 23. *NI 43-101 Inferred Mineral Resource for supergene oxide, supergene sulphide and hypogene zones of the Casino deposit.*

Class	Tonnage*	Grade
Inferred	1696 Mt	0.14% Cu, 0.16 g/t Au, 0.019% Mo, 1.37 g/t Ag (0.37% Cu equivalent)

*Cut-off grade of 0.25% Cu equivalent

Table 24. *Significant intercepts from drilling at the Casino property.*

Drillhole	Category	Depth of intersection (m)	Intersection
CAS-063	Leached CAP	9.00	58.5 m @ 0.21 g/t Au, 1.4 g/t Ag, 0.03% Cu and 0.034% Mo
	Supergene	67.50	130.3 m @ 0.34 g/t Au, 2.6 g/t Ag, 0.37% Cu and 0.02% Mo
	Hypogene	197.78	3.4 m @ 0.23 g/t Au, 2.1 g/t Ag, 0.24% Cu and 0.008% Mo
CAS-073	Leached CAP	4.77	100.6 m @ 0.13 g/t Au, 0.9 g/t Ag, 0.01% Cu and 0.043% Mo
	Supergene	105.40	114.4 m @ 0.34 g/t Au, 1.8 g/t Ag, 0.34% Cu and 0.072% Mo
	Hypogene	219.80	110.9 m @ 0.24 g/t Au, 1.5 g/t Ag, 0.16% Cu and 0.064% Mo
CAS-074	Leached CAP	6.20	117.8 m @ 0.32 g/t Au, 2.8 g/t Ag, 0.02% Cu and 0.041% Mo
	Supergene	124.00	117.9 m @ 0.38 g/t Au, 3.7 g/t Ag, 0.33% Cu and 0.036% Mo
	Hypogene	241.85	138.0 m @ 0.19 g/t Au, 1.6 g/t Ag, 0.14% Cu and 0.013% Mo
CAS-082	Leached CAP	0.00	117.0 m @ 0.45 g/t Au, 2.2 g/t Ag, 0.03% Cu and 0.015% Mo
	Supergene	117.00	117.0 m @ 0.52 g/t Au, 3 g/t Ag, 0.4% Cu and 0.02% Mo
	Hypogene	234.00	226.2 m @ 0.28 g/t Au, 1.9 g/t Ag, 0.25% Cu and 0.021% Mo
CAS-084	Leached CAP	0.00	116.5 m @ 0.27 g/t Au, 1.9 g/t Ag, 0.04% Cu and 0.007% Mo
	Supergene	116.50	198.5 m @ 0.32 g/t Au, 2.4 g/t Ag, 0.27% Cu and 0.016% Mo
	Hypogene	315.00	133.7 m @ 0.29 g/t Au, 1.9 g/t Ag, 0.3% Cu and 0.021% Mo

Figure 31. *Diamond drilling on the Casino porphyry deposit; camp in background.*

BC Gold Corp. (*www.bcgoldcorp.com*) and Kestrel Gold Inc. (*www.kestrelgold.com*) explored the **Toe** property (Yukon MINFILE 115 006, 024) in the Dawson Range with a four-hole, 1058 m diamond drill program. The drill program was designed to test four Minto-type coincident geochemical and geophysical anomalies. No significant mineralized intersections were returned; however, biotite and magnetite alteration was encountered in two of the holes. The company is considering the recommendation of its consulting geophysicist who suggests a detailed pole-dipole induced polarization survey over the current gradient array survey area in order to resolve the induced polarization and resistivity targets with respect to their location, depth and extent. BC Gold Corp. also explored its **Apex East** property (Yukon MINFILE number pending), just north of Minto mine with a short drill program which planned for four holes and 1000 m in order to test three parallel coincident copper-in-soil (+/-gold) and geophysical anomalies.

Northern Tiger Resources (*www.northerntigerresources.com* explored its **DAD** Cu-Mo porphyry project (Pelly; Yukon MINFILE 115I 026) with a two hole (404 m) diamond drill program in order to test an induced polarization anomaly coincident with a copper-in-soil geochemical anomaly. Drilling intersected Granite Mountain batholith intrusive rocks (host to the Minto copper-gold deposit) and an underlying sequence of pyrite-rich metasedimentary rocks. The enigmatic metasedimentary unit is thought to be the source of the chargeability anomaly but is not mapped at surface, either locally or regionally. Copper values up to 363 ppm and gold up to 103 ppb were intersected over short intervals. Northern Tiger completed an IP geophysical survey on the **Mel** property in 2010. The Mel property is one of the five Minto-style properties Northern Tiger Resources acquired from Capstone Mining in June 2008 (Bond, Dad, Del, Led, and Mel). The properties have potential for copper-porphyry mineralization and are located in the Dawson Range.

BASE METALS – ZINC

SEDIMENTARY

Selwyn Resources Ltd. (*www.selwynresources.com*) is advancing its **Selwyn** (Howards Pass; Yukon MINFILE 105I 12, 37, 38) zinc-lead SEDEX property, located at the Yukon/NWT border, 160 km northeast of Ross River (Fig. 32). A feasibility study is currently being prepared by Wardrop Engineering Inc. and is scheduled for completion by mid-2011. The study will assess the feasibility of both open-pit and underground operations at the site. The Selwyn sedimentary exhalative deposit is one of the largest zinc-lead resources in the world. Laminated sphalerite and galena are hosted in black shale of the Ordovician-Silurian Road River Formation. Diamond drilling over the years has defined 15 mineralized zones over 38 km of the known mineralized trend.

Figure 32. *Don Valley camp, Selwyn lead-zinc property.*

In December 2009, Selwyn announced a binding framework agreement with Yunnan Chihong Zinc & Germanium Co. Ltd., to form a joint venture operating company to finance the advancement of the Selwyn Project. The new Canadian Joint Venture company is 50% owned by each of Selwyn and Chihong. To earn its 50% interest, Chihong provided $100 million to fund the joint venture. A predevelopment program budget of $89 million for 2010 and 2011 was approved to advance permitting, complete the feasibility study, and engineering and resource definition drilling both underground and on surface.

The 2010 Selwyn drill program was substantial – 86 holes, 27 486 m. The $18 million definition diamond drill program (Table 25) was designed to upgrade high grade resources at the XY Central, XY West and Don zones (Table 26). In 2011, the joint venture plans to begin underground development and advanced exploration on the deeper parts of the XY Central deposit. The underground development will allow for exploration of the core of the synclinal structure that hosts the high-grade mineralization. Condemnation drilling was done in the proposed areas for the tailings impoundment facility and mill site.

Table 25. *Significant intercepts from drilling at the Selwyn project.*

Drillhole	Zone/Area	Depth of intersection (m)	Intersection*
XYC-210	XY Central	245.00	21.01 m @ 9.60% Zn and 2.91% Pb
including	XY Central	263.20	5.19 m @ 21.13% Zn and 7.58% Pb
XYC-191	XY Central	83.00	11.42 m @ 4.04% Zn and 1.21% Pb
and	XY Central	108.30	14.67 m @ 7.89% Zn and 3.37% Pb
including	XY Central	108.30	5.87 m @ 11.78% Zn and 3.62% Pb
XYC-197	XY Central	255.40	10.43 m @ 5.36% Zn and 1.63% Pb
including	XY Central	262.40	5.36 m @ 6.94% Zn and 2.15% Pb
XYC-207	XY Central	390.90	6.48 m @ 4.38% Zn and 1.08% Pb
and	XY Central	410.10	1.82 m @ 13.37% Zn and 2.53% Pb
and	XY Central	416.70	0.30 m @ 9.27% Zn and 1.62% Pb
XYC-222	XY Central	29.60	0.97 m @ 13.23% Zn and 1.00% Pb
and	XY Central	83.60	5.62 m @ 9.60% Zn and 1.59% Pb
and	XY Central	103.60	10.16 m @ 16.05% Zn and 4.71% Pb

*intersection interval is true thickness

Table 26. *NI 43-101 high-grade underground mineral resource for XY Central, XY West, Don, Don East and HC West, at the Selwyn project.*

Class	Tonnage	Grade
Indicated	16.06 Mt	10.25% Zn and 4.23% Pb
Inferred	26.70 Mt	8.81% Zn and 2.81% Pb

BRECCIA/REPLACEMENT

The **Michelle** property (Yukon MINFILE 116A 016) of Zinccorp Resources Inc. (*www.zinc-corp.com*) is a base metal occurrence with specialty metal enrichment, located 130 km northeast of Dawson. Zinc, lead, silver and gallium mineralization predominantly occurs in carbonate and oxide form in upper Cambrian to lower Devonian carbonate rocks of the Bouvette Formation (Fig. 33). Limited sampling for germanium and indium has revealed elevated values in these metals as well. Fifteen mineralized zones have been identified within an area of roughly 12 x 7 km. Diamond drilling in 2010 tested targets within two of the 15 mineralized zones. Ten holes (1034 m) were drilled at the Blender and Nanny zones. In addition, the company performed prospecting, mapping, and a gravity geophysical survey over the property.

Figure 33. *Bouvette Formation carbonates on the Michelle property.*

VEIN/BRECCIA

Overland Resources' (*www.overlandresources.com*) **Yukon Base Metal Project** (Yukon MINFILE 105K 089) is a vein/breccia base metal property. The deposit consists of coarse sphalerite and galena in quartz-carbonate veins and breccias. Overland drilled 34 diamond drillholes (3485 m) to expand the resource on the Darcy Zinc deposit and test the mineralization at the Darin prospect (Table 27). The mineralization at the Darcy zone was doubled in its strike length extent and remains open along strike and to depth. Results from this years drilling are being incorporated into a new JORC compliant mineral resource for the project. A feasibility study is in progress and advanced metallurgy is being completed. Metallurgical work to date has shown exceptional recoveries of zinc and lead; 96.1% and 98.5% respectively. Additional work with Dense Media Separation is providing encouraging results that could lower cutoff grades. The company anticipates completing the bankable feasibility study in 2011 and submitting a project proposal to begin the permitting process.

Table 27. *Significant intercepts from diamond drilling at the Yukon Base Metal Project (Andrew/Darcy deposits).*

Drillhole	Zone	Depth of intersection (m)	Intersection
AN10-128	Andrew	115.2	43.8 m @ 5.7% Zn
DY10-020	Darcy	2.5	6.6 m @ 2.3% Zn
DY10-021	Darcy	27.0	7.0 m @ 6.5% Zn
and	Darcy	37.0	3.5 m @ 3.6% Zn
and	Darcy	62.0	14.0 m @ 6.7% Zn
DN10-016	Darcy	66.0	7.0 m @ 4.2% Zn
DY10-023	Darcy	10.7	23.3m @ 2.0% Zn
and	Darcy	67.0	5.0 m @ 3.7% Zn
DY10-024	Darcy	5.2	46.6 m @ 4.6% Zn
including	Darcy	5.2	24.8 m @ 2.2% Zn
and	Darcy	33.0	19.0 m @ 8.4% Zn
DY10-24	Darcy	87.0	8.0 m @ 3.8% Zn
DN10-017	Darin	157.0	3.5 m @ 0.8% Zn
DN10-018	Darin	24.0	5.0 m @ 1.7% Zn
and	Darin	76.0	4.0 m @ 1.2% Zn

Strategic Metals (*www.strategicmetalsltd.com*) drilled its new Pb-Zn-Ag-Cu **Silver Range Project** (Keglovic; Yukon MINFILE 105K 078) in the Faro district in 2010 and received encouraging results (Table 28). Widely spaced drillholes at the Keg Zone intersected broad intervals of porphyry-style, disseminated and stockwork mineralization in all four holes. The geochemical and geophysical anomalies in the Keg Zone cover an area of about 4 km by several hundred metres. Diamond drilling tested a 550 m strike length of the anomaly. Four additional large-scale zones of silver-zinc-lead-copper mineralization were identified on the project. A comprehensive exploration program utilizing five diamond drill rigs is planned for the Silver Range Project in 2011.

Table 28. *Significant diamond drill intercepts from the Silver Range Project (Keg property).*

Drillhole	Depth of intersection (m)	Intersection*
Keg-10-01	59.3	125.7 m @ 50.09 g/t Ag, 1.2% Zn, 0.65% Pb, 0.14% Cu, 217 ppm Sn and 9.55 ppm In
Keg-10-02	7.62	131.38 m @ 28.1 g/t Ag, 1.39% Zn, 0.21% Pb, 0.22% Cu, 534 ppm Sn and 5.94 ppm In
Keg-10-03	150.75	80.95 m @ 15.67 g/t Ag, 0.64% Zn, 0.26% Pb, 0.07% Cu, 114 ppm Sn and 4.21 ppm In
Keg-10-04	24.92	119.35 m @ 32.48 g/t Ag, 1.08% Zn, 0.32% Pb, 0.18% Cu, 333 ppm Sn and 8.33 ppm In

*True widths of mineralized intervals are approximately 85% of intersected lengths.

Atac Resources Ltd. (*www.atacresources.com*) discovered the **Ocelot** (Yukon MINFILE number pending) Ag-Pb-Zn-In showing on its substantial **Rau** property while searching for gold. Ocelot occurs along the same structural corridor that hosts the Tiger zone carbonate-replacement gold occurrence at Rau, which is located 15 km to the west. The Ocelot target was explored with IP, ground gravity and an airborne ZTEM/mag geophysical survey early in 2010. Soil sampling delineated areas with coincident geochemical and geophysical anomalies, which were subsequently explored with four reconnaissance diamond drillholes. Core from hole OC-10-01 assayed 360 g/t Ag, 9.83% Pb, 25.06% Zn and 48.2 g/t In over 4.23 m. Diamond drilling in 2011 is expected to explore untested geophysical and geochemical anomalies that extend to the west and southeast of the discovery showing at Ocelot.

VOLCANIC-ASSOCIATED MASSIVE SULPHIDE

The Finlayson Lake District properties (**Arm, Bolt, Lea, Off** – Yukon MINFILE number pending) of Strategic Metals (*www.strategicmetals.com*) were explored through diamond drilling in 2010. The district is well known for its VMS potential as exemplified by the Wolverine deposit, which is slated to begin producing in 2011.

Tarsis Resources (*www.tarsis.ca*) diamond drilled its **Mor** (Yukon MINFILE 105C 061) volcanic-associated massive sulphide property in south Yukon to test a copper-in-soil anomaly proximal to an IP and gravity anomaly. Drilling (two holes for 444 m) intercepted massive to disseminated sulphides, with a drill highlight of 7.80 m of 0.71% Cu, 0.41 g/t Au and 0.80% Cu.

BASE METALS – NICKEL + PLATINUM GROUP ELEMENTS (PGE)

MAFIC/ULTRAMAFIC

Prophecy Resource Corp. (*www.prophecyresources.com*) merged with Northern Platinum Ltd. in 2010 and explored the nickel-copper massive sulphide **Wellgreen** (Yukon MINFILE 115G 024) property in southwest Yukon. The 2010 drill program focussed on expanding the eastern limit of the Wellgreen deposit with six diamond drillholes for a total of 2112 m (Table 29; Fig. 34). Prophecy estimates that only 20% of historical drill cores have been assayed with a focus on massive sulphide. The company plans to assay historic core containing visible disseminated sulphide over long intercepts. A total of 470 drill core samples from the 2006 through 2010 drill programs that assayed better than 1g/t Pt or Pd are being assayed for Rhodium,

Osmium, Ruthenium, and Iridium. Prophecy is examining and digitizing all prior Wellgreen drill and geological data for detailed resource modeling. The company has also commissioned a scoping-study level of independent metallurgical testing.

Table 29. *Significant diamond drilling intercepts from the Wellgreen property.*

Drillhole	Depth of intersection (m)	Intersection
WS10-177	5.33	525.90 m @ 0.17% Cu, 0.26% Ni, 0.248 g/t Pt, 0.248 g/t Pd, 0.054 g/t Au and 0.02% Co
WS10-178	5.18	566.78 m @ 0.16% Cu, 0.23% Ni, 0.247 g/t Pt, 0.219 g/t Pd, 0.051 g/t Au and 0.014% Co
WS10-183	0.00	43.59 m @ 0.094% Cu, 0.257% Ni, 0.2262 g/t Pt, 0.224 g/t Pd, 0.031 g/t Au and 0.015% Co
and	43.59	45.23 m @ 0.02% Cu, 0.007% Ni, 0.006 g/t Pt, 0.02 g/t Pd, 0.006 g/t Au and 0.004% Co
and	88.82	27.92 m @ 0.149% Cu, 0.3% Ni, 0.347 g/t Pt, 0.235 g/t Pd, 0.043 g/t Au and 0.021% Co
WS10-182	0.00	71.17 m @ 0.223% Cu, 0.31% Ni, 0.277 g/t Pt, 0.153 g/t Pd, 0.036 g/t Au and 0.022% Co
WS10-181	10.21	280.91 m @ 0.051% Cu, 0.165% Ni, 0.079 g/t Pt, 0.095 g/t Pd, 0.011 g/t Au and 0.012% Co
WS10-180	5.49	17.68 m @ 0.143% Cu, 0.28% Ni, 0.196 g/t Pt, 0.287 g/t Pd, 0.03 g/t Au and 0.015% Co
and	23.16	221.77 m @ 0.031% Cu, 0.176% Ni, 0.082 g/t Pt, 0.114 g/t Pd, 0.01 g/t Au and 0.013% Co

Figure 34. *Geologist Sydney van Loon happy to be underground at the Wellgreen mine.*

Pacific Coast Nickel Corp. (*www.pacificcoastnickel.com*) completed a TEM geophysical survey on its **Burwash** (Wash; Yukon MINFILE 115G 100) property optioned from Strategic Metals. It is anticipated the survey will identify conductors underlying known mineralization and will generate targets for follow-up drilling. Burwash is a nickel-copper-PGE Alaskan-type magmatic occurrence hosted in Late Triassic rocks of the Kluane Mafic-Ultramafic belt.

BASE METALS – TUNGSTEN + MOLYBDENUM SKARN

PORPHYRY/SHEETED VEIN

Largo Resources Ltd. (*www.largoresources.com*) explored its **Northern Dancer** tungsten-molybdenum porphyry deposit (Logtung; Yukon MINFILE 105B 039). The mineralization is hosted in fractures, veinlets and veins associated with a northeast-trending sheeted vein structure hosted in diorite and metasedimentary rocks that have been skarned and hornfelsed by the diorite intrusion. Largo completed a nine hole, 2500 m diamond drill program to test higher grade zones within the deposit. A preliminary economic assessment for the project is currently underway.

Agnico-Eagle Mines Ltd. (*www.agnico-eagle.com*) drilled 27 diamond drillholes for a total of 18 723 m on its **Jennings Project** (Tootsee River; Yukon MINFILE 105B 089) in south Yukon during 2010. The target is a disseminated, stockwork porphyry molybdenum deposit and minor molybdenum and tungsten occurs in surrounding metasedimentary country rock. Approximately US$4 million was spent on exploration and limited initial environmental baseline monitoring in 2010. The company is assessing whether the deposit has economic potential in order to determine how to proceed with the project.

RARE EARTH ELEMENTS, URANIUM AND INDUSTRIAL MINERALS

Great Western Minerals Group Ltd. (*www.gwmg.ca*) optioned the **True Blue** (Yukon MINFILE 105F 081) property (55 km south of Ross River) from True North Gems to evaluate the rare earth potential of the property. The exploration program consisted of geological mapping, sampling of showings, soil and chip sampling along talus slopes below mineralization, stream sediment sampling, and a low-level, high-resolution heliborne magnetic and radiometric survey over the host Mississippian syenite and its metamorphic aureole. The exploration program also consisted of a metallurgical component: metallurgical testing on mineralized samples and detailed analyses to determine the REE mineral phases present.

Endurance Gold Corp. (*www.endurancegold.com*) optioned the **Bandito** (Dunn; Yukon MINFILE 095C 051) nickel-copper-rare earth element project in southeast Yukon from True North Gems in 2010. The property is characterized by a 3-km-long rare earth element niobium and zirconium-enriched system associated with a 2 km^2 alteration zone centred on a mid-Cretaceous nepheline syenite intrusion and affecting surrounding Paleozoic host rocks. Within the alteration zone, nickel-copper mineralization has been recognized with values up to 9.5% nickel and 1.2% copper. The alteration zone outside the syenite consists of sodium and potassium metasomatized clastic sediments – fenites. Multiphase alteration mineralogy of the fenites includes albite, k-feldspar, sericite, biotite, arfvedsonite, aegirine, riebeckite, magnetite, specular hematite, chlorite, rhodonite, sphene, zircon, monazite, xenotime, pyrochlore, fluorite and apatite. Rock samples collected in 2005 and 2006

(but not analysed) were sent for analysis to confirm historically reported values of REEs, niobium and zirconium. Rock sample no. 478706 (iron oxide, manganese oxide fenite breccia) returned 0.565% TREO+Y, 2240 ppm niobium and >10 000 ppm zirconium.

Copper Ridge Exploration (*www.copper-ridge.com*) explored its **Borealis** (Yukon MINFILE 116B 098) intrusion-hosted uranium-gold property north of Dawson City. Prospecting and soil geochemical sampling were carried out to identify potential gold mineralization on the property.

Eagle Industrial Minerals (*www.eagleimc.com*) is looking into the feasibility of mining magnetite from the historic tailings in the **Whitehorse Copper Belt**. There are an estimated 10.1 million tons of tailings from open pit and underground operations at the site. The tailings contain 18-20% magnetite. The preliminary plan is to excavate the tailings, add water to form a slurry, use magnetic separators to separate the magnetite, de-water the magnetite, return the barren tailings to the tailings area and re-vegetate. The proposed operation would process 500 tonnes per hour, around-the-clock for seven to eight months of the year. The estimated project life is six to seven years.

ACKNOWLEDGEMENTS

This report is based on public information gathered from a variety of sources. It includes information provided by companies through press releases, personal communication with exploration companies, and property visits conducted during the 2010 field season. The cooperation of companies and individuals in providing information, as well as their hospitality, time and access to properties during field tours, is gratefully acknowledged.

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APPENDIX 1: 2010 EXPLORATION PROJECTS

Project	Optioner/Owner	MINFILE	NTS	Work type	Commodity	Deposit
PRECIOUS METALS – GOLD						
3 Ace	Northern Tiger Resources Inc./McMillan, Alex	105H 036	105H/9	P, G, GC, T, DD, RC/P	Au	porphyry/sheeted vein
Antimony	Golden Predator Corp./ RyanWood Exploration Inc.	116B 094	116B/8	DD	Au	porphyry/sheeted vein
Arn	Midnight Sun Capital Corp./ ATAC Resources Ltd.	115F 048	115F/15	DD	Au	skarn/replacement
Ballarat	Hinterland Metals Inc.	115J 061	115O/3	P, G, GC	Au	vein/breccia
Bishop	Taku Gold Corp.	New	115O/10	DD	Au	vein/breccia
Boulevard	Silver Quest Resources Ltd.	115J 050	115J/13	P, G, GC, T, DD	Au	porphyry/sheeted vein
Brew	Expedition Mining/Aldrin Resources Corp.	New	115O/3	G, GC, GP, T	Au	vein/breccia
Brewery Creek	Golden Predator Corp./ Alexco Resource Corp.	116B 160	116B/1	DD, RC/P	Au	porphyry/sheeted vein
Cal-Dotty	North Arrow Minerals Inc./ Cathro Resources Corp.	New	106D/5	P, G, GC	Au	skarn/replacement
CBC	Central Resources Corp./ Strategic Metals Ltd.	New	115J/9	P, G, GC	Au	vein/breccia
Charlotte	Ansell Capital Corp.	New	105I/3	DD	Au	volcanic associated
Clear Creek	Golden Predator Corp.	115P 023	115P/14	DD, RC/P	Au	porphyry/sheeted vein
Coffee	Kaminak Gold Corp./Ryan, Shawn	New	115J/14	C, P, G, GC, T, DD	Au	vein/breccia
Cynthia	Golden Predator Royalty & Devel. Corp./18526 Yukon Inc.	105O 007	105O/6	DD	Au	porphyry/sheeted vein
Dan	Taku Gold Corp.	New	115O/12	GC, AGP	Au	vein/breccia
Dan Man	Arcus Development Group/ ATAC Resources Ltd.	New	115J/14	GC, T	Au	vein/breccia
Deet	Northern Tiger Resources Inc./37999 Yukon Inc.	105E 053	105E/8	P, G, GC	Au	vein/breccia

Abbreviations

AGP - airborne geophysics
DD - diamond drilling
G - geology
GC - geochemistry
GP - ground geophysics
MD - mine development
P - prospecting
RC/P - reverse circulation/percussion drilling
T - trenching
U/GD - underground development

Appendix 1 (continued): 2010 EXPLORATION PROJECTS

Project	Optioner/Owner	MINFILE	NTS	Work type	Commodity	Deposit
Dime	Stina Resources Ltd./ RyanWood Exploration Inc.	New	115O/12	P, G, GC, T, DD	Au	vein/breccia
Dragon Lake	Eagle Plains Resources Ltd.	105J 007	105J/12	P, G, GC, AGP, T	Au	skarn/replacement
Dublin Gulch	Victoria Gold Corp.	106D 025	106D/4	G, GC, DD	Au	porphyry/sheeted vein
Eureka	Golden Predator Corp./ Strategic Metals Ltd.	115O 057	115O/10	RC/P	Au	vein/breccia
Flume	Valdez Gold Inc./Valley High Ventures Ltd	115N 110	115N/9	G, GC, AGP	Au	skarn/replacement
Gold (Scheelite) Dome	Golden Predator Corp.	115P 004	115P/9, 16	DD, RC/P	Au	skarn/replacement
Golden Culvert	Lee, Gary	New	105H/16	P, G, GC	Au	vein/breccia
Green gulch	Arcus Development Group/ ATAC Resources Ltd.	New	115J/14	GC, T	Au	vein/breccia
Grew Creek	Golden Predator Corp./Carlos, Al	105K 009	105K/2	DD	Au	vein/breccia
Homestake	Monster Mining	105M 011	105M/14		Au	vein/breccia
Hyland Gold	Argus Metals Corp.	095D 011	095D/12	DD	Au	vein/breccia
Ind	Aldrin Resources Corp./Ryan, Shawn	New	115O/13	T	Au	porphyry/sheeted vein
JP Ross	Kinross Gold Corp.	115O 160	115O/3	P, G, GC, AGP, T	Au	vein/breccia
Karma	Skeena Resources Ltd.	New	115I/8	P, G, GC, GP	Au	porphyry/sheeted vein
Ketza River	Yukon-Nevada Gold Corp.	105F 019	105F/9	G, GC, T, DD	Au	skarn/replacement
Keystone	Aldrin Resources Corp./Ryan, Shawn	New	105M/14	P, G, GC, DD	Au	porphyry/sheeted vein
King Solomon Dome	Kestrel Gold Inc/Kreft, Bernie	115O 068	115O/15	GC, T	Au	vein/breccia
Kirkman	Kaminak Gold Corp./Ryan, Shawn	115O 016	115O/3	P, G, GC, T	Au	vein/breccia
Kiwi	Eagle Plains Resources Ltd.	105J 043	105J/12	P, G, GC	Au	vein/breccia

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Appendix 1 (continued): 2010 EXPLORATION PROJECTS

Project	Optioner/Owner	MINFILE	NTS	Work type	Commodity	Deposit
Klaza	Rockhaven Resources Ltd./ ATAC Resources Ltd.	115I 067	115I/3	P, G, GC, AGP, T, DD	Au	vein/breccia
Kodiak	Stina Resources Ltd./ RyanWood Exploration Inc.	New	115O/3	GC, T	Au	vein/breccia
Laskey	Kreft, Bernie	115O 132	115O/10	P, G, GC, T	Au	vein/breccia
Leotta	Goldbank Mining Corp./ Leotta Goldfields	115O 074	115O/15	P, G, GC	Au	vein/breccia
Longline	Aldrin Resources Corp./Ryan, Shawn	115N 024	115N/2	P, G, GC, T, DD	Au	vein/breccia
Lucky	Cloudbreak Resources Ltd.	New	115O/3	GC, AGP, T	Au	vein/breccia
Mariposa	Pacific Ridge Exploration	115O 075	115O/1, 2	GC, T	Au	vein/breccia
Montana	Taku Gold Corp.	New	115O/11	AGP	Au	unknown
Mount Hinton	Rockhaven Resources Ltd.	105M 052	105M/14	P, G, GC	Au	vein/breccia
Mount Nansen (Charlotte)	Ansell Capital Corp.	New	115I/3	DD	Au	volcanic associated
Nucleus	Northern Freegold Resources	115I 107	115I/6	G, GC, DD	Au	porphyry/sheeted vein
Oreo	Neugebauer, Henry/ RyanWood Exploration Inc.	116A 027	116A/4	G, GC	Au	porphyry/sheeted vein
Rau-Osiris	ATAC Resources Ltd.	New	106D/7	P, G, GC, T	Au	sediment associated
Portland	Taku Gold Corp.	115O 064	115O/15	G, GC, T	Au	unknown
Prospector Mountain	Silver Quest Resources Ltd./ Tarsis Capital Corp.	115I 034	115I/5	P, G, T, DD	Au	porphyry/sheeted vein
Pure Gold	Castillian Resources Corp.	New	115O/14	P, G, GC	Au	vein/breccia
Quartz	Taku Gold Corp.	New	115O	GC, AGP	Au	unknown
Rau-Tiger area	ATAC Resources Ltd.	106D 005	106D/1	DD	Au	skarn/replacement
Red Mountain Gold	Regent Ventures Ltd.	105P 008	115P/15	G, GC, AGP, GP, DD	Au	vein/breccia
Red Mountain Gold (Ice)	AM Gold Inc.	115P 006	115P/15	DD	Au	porphyry/sheeted vein

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T - trenching
U/GD - underground development

Appendix 1 (continued): 2010 EXPLORATION PROJECTS

Project	Optioner/Owner	MINFILE	NTS	Work type	Commodity	Deposit
Revenue	Northern Freegold Resources	115I 042	115I/6	GP, RC/P	Au	porphyry/sheeted vein
Rod (Midas Touch)	Strategic Metals Ltd.	New	106D/1	GC	Au	unknown
Rose Bute	Taku Gold Corp./RyanWood Exploration Inc.	New	115O/6	GC, AGP	Au	vein/breccia
Rosy	Bonaparte Capital Corp./ ATAC Resources Ltd.	105C 024	105C/13	DD	Au	vein/breccia
Selwyn Creek Gold	Central Resources Corp.	New	115J/9	GC	Au	vein/breccia
Sixty Mile	Radius Gold Inc.	116C 146	116C/2	P, G, GC, AGP, T, DD	Au	vein/breccia
Snowcap	Wesgold Minerals Inc.	105K 006	105K/1	P, G, GC, AGP	Au	volcanic associated
Sonora Gulch	Northern Tiger Resources Inc.	115J 008	115J/9	P, G, GC, GP, DD	Au	porphyry/sheeted vein
Sprogge	Eagle Plains Resources Ltd.	105H 035	105H/9	P, G, GC	Au	porphyry/sheeted vein
Strike	Network Exploration Ltd.	New	115O/3	GC	Au	vein/breccia
Sulphur	Taku Gold Corp.	115O 133	115O/10	AGP, DD	Au	vein/breccia
Toro	Dawson Gold Corp.	115I 031	115I/12	P, G, GC, GP, DD	Au	vein/breccia
Tay-LP	Cap-Ex Ventures Ltd.	105F 121	105F/10	GC, AGP	Au	vein/breccia
Ten Mile	Solomon Resources Ltd/ Radius Gold Inc.	115O 035	115O/5	GC, GP, T, DD	Au	vein/breccia
Touleary	Arcus Development Group/ ATAC Resources Ltd.	115J 060	115J/14	GC, T	Au	vein/breccia
White Gold	Kinross Gold Corp.	115O 011	115O/4	G, GC, AGP, T, DD	Au	vein/breccia
White River	Tarsis Capital Corp.	New	115K/1	P, G, GC	Au	vein/breccia
Wounded Moose	Taku Gold Corp.	New	115O/10	AGP	Au	unknown
PRECIOUS METALS – SILVER						

Abbreviations

AGP - airborne geophysics
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GC - geochemistry
GP - ground geophysics
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P - prospecting
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T - trenching
U/GD - underground development

Appendix 1 (continued): 2010 EXPLORATION PROJECTS

Project	Optioner/Owner	MINFILE	NTS	Work type	Commodity	Deposit
CMC Silver (Silver Hart)	CMC Metals Ltd.	105B 021	105B/7	GC, DD	Ag	vein/breccia
Connaught	Klondike Silver Corp./ATAC Resources Ltd.	115N 040	115N/15	P, G, GC	Ag	vein/breccia
Keno Hill	Alexco Resource Corp.	105M 001	105M/14	G, GC, DD	Ag	vein/breccia
McKay Hill	Monster Mining/Keno Hill Exploration Corp.	106D 038	106D/6	P	Ag	vein/breccia
Mt. Haldane	Habenero Resources Ltd./ Misty Creek Ventures	105M 032	105M/13	G, DD	Ag	vein/breccia
BASE METALS – COPPER						
Apex	BCGold Corp.	New	115I/11	DD	Cu	porphyry/sheeted vein
Casino	Western Copper Corp.	115J 028	115J/10	G, GC, GP, DD	Cu	porphyry/sheeted vein
Dad	Northern Tiger Resources Inc.	115I 026	115I/14	DD	Cu	porphyry/sheeted vein
Del	Northern Tiger Resources Inc.	115I 095	115I/7	P, G	Cu	vein/breccia
First Base	Arcturus Ventures Inc.	New	105G/7	P, G, GC	Cu	volcanic associated
Led	Northern Tiger Resources Inc.	115 010	115I/7	P, G	Cu	vein/breccia
Lewes River	Arcturus Ventures Inc.	105D 062	105D/10	G	Cu	skarn/replacement
Lobo Del Norte (Cowley)	Ernewein, Barry	105D 059	105D/10		Cu	skarn/replacement
Lucky Joe	Taipan Resources Inc./Copper Ridge Exploration Inc.	115O 051	115O/11, 12	DD	Cu	porphyry/sheeted vein
Mars	Strategic Metals Ltd.	105E 002	105E/7	AGP	Cu	porphyry/sheeted vein
Mel (Dawson Range)	Northern Tiger Resources Inc.	New	115I/11	P, G	Cu	porphyry/sheeted vein
Minto	Capstone Mining Corp.	115I 021	115I/11	G, GP, DD	Cu	Minto-style
Mor	Tarsis Capital Corp.	105C 061	105C/1	DD	Cu	volcanic associated
Nikki	Strategic Metals Ltd.	115K 082	115K/2	AGP, DD	Cu	porphyry/sheeted vein
RB	Arcturus Ventures Inc.	105G 088	105G/7	P, G, GC	Cu	volcanic associated
Timber	Cortez Gold Corp./Strategic Metals Ltd.	105J 035	105J/4	GP	Cu	porphyry/sheeted vein

Abbreviations

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GP - ground geophysics
MD - mine development
P - prospecting
RC/P - reverse circulation/percussion drilling
T - trenching
U/GD - underground development

Appendix 1 (continued): 2010 EXPLORATION PROJECTS

Project	Optioner/Owner	MINFILE	NTS	Work type	Commodity	Deposit
Toe	Kestrel Gold Inc./BCGold Corp.	115I 024	115I/11	DD	Cu	porphyry/sheeted vein
Yukon Olympic	REC Minerals Corp./Copper Ridge Exploration Inc.	116G 082	116G/1	DD	Cu	Wernecke Breccia
BASE METALS - ZINC-LEAD						
Andrew/Darcy	Overland Resources Ltd./ Berdahl, Ron	105K 089	105K/16	G, DD	Zn-Pb	vein/breccia
Arm Bolt Lea Off	Strategic Metals Ltd.	New	105G/9	P, G, GC	Zn-Pb	volcanic associated
Keg	Strategic Metals Ltd.	105K 078	105K/11	GC, AGP, DD	Zn-Pb	skarn/replacement
Michelle	Zinccorp Resources Inc.	116A 016	116A/13	P, G, GC, DD	Zn-Pb	Mississippi Valley Type
Rau-Ocelot	ATAC Resources Ltd.	New	106C/1	P, G, GC, AGP, GP	Zn-Pb	skarn/replacement
Selwyn Project	Selwyn Resources Ltd.	105I 012	105I/6	DD	Zn-Pb	sediment associated
Wolverine	Yukon Zinc Corp.	105G 072	105G/8	MD	Zn-Pb	volcanic associated
BASE METALS - NICKEL +/-PLATINUM GROUP ELEMENTS (PGE)						
Bandito	Endurance Gold Corp.	095C 051	095C/5	GC	Ni	skarn/replacement
Burwash	Pacific Coast Nickel Corp./ Strategic Metals Ltd.	115G 100	115G/6	GP	Ni/PGE	mafic/ultramafic associated
Wellgreen	Prophecy Resource Corp.	115G 024	115G/5	GC, DD	Ni/PGE	mafic/ultramafic associated
RARE EARTH ELEMENTS AND URANIUM						
True Blue	Great Western Minerals Group/True North Gems Inc.	105F 081	105F/8	C, P, G, GC, AGP	REE	vein/breccia
Borealis	Copper Ridge Exploration Inc.	116B 098	116B/11	P, G, GC	U & Au	porphyry/sheeted vein
BASE METALS - TUNGSTEN AND MOLYBDENUM						
MacTung	North American Tungsten Corp. Ltd.	105O 002	105O/8	MD	W	skarn/replacement
Northern Dancer	Largo Resources Ltd.	105B 039	105B/4	DD	W	porphyry/sheeted vein
Jennings	Agnico-Eagle Mines Ltd.	105B 089	105B/1	DD	Mo	porphyry/sheeted vein
INDUSTRIAL MINERALS						
Whitehorse Cu Tailings	Eagle Industrial Minerals	New	105D/11		Fe	industrial minerals

Abbreviations

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APPENDIX 2: 2010 DRILLING STATISTICS

Property	Optioner/Owner	# of drillholes	# of metres
	Diamond drilling		
3 Ace	Northern Tiger Resources Inc./McMillan, Alex	9	1240
Andrew	Overland Resources Ltd./Berdahl, Ron	36	3668
Antimony	Golden Predator Corp./RyanWood Exploration Inc.	4	768.4
Apex	BCGold Corp.	3	796
Arm Bolt Lea Off	Strategic Metals Ltd.	7	1032.8
Arn	Midnight Sun Capital Corp./ATAC Resources Ltd.	4	480
Bishop	Taku Gold Corp.	5	700
Boulevard	Silver Quest Resources Ltd.	20	3006
Brewery Creek	Golden Predator Corp./Alexco Resource Corp.	6?	1430
Casino	Western Copper Corp.	64	14 285
Charlotte	Ansell Capital Corp/Eagle Trail Properties Inc. and Guinness Exploration Inc.	14	1452
Clear Creek	Golden Predator Corp.	4	1054
CMC Silver (Silver Hart)	CMC Metals Ltd.	21	827
Coffee	Kaminak Gold Corp./Ryan, Shawn	76	16 000
Cynthia	Golden Predator Corp./18526 Yukon Inc.	7	1099.8
Dad	Northern Tiger Resources Inc.	2	404
Dime	Stina Resources Ltd./RyanWood Exploration Inc.	5	657
Dublin Gulch	Victoria Gold Corp.	26	5500
Gold (Scheelite) Dome	Golden Predator Corp.	14	3584
Grew Creek	Golden Predator Corp./Carlos, Al	3	710
Homestake	Monster Mining	11	1146.8
Hyland Gold	Argus Metals Corp.	4	764
Red Mountain Gold (Ice)	AM Gold Inc.	12	4100
Jennings	Agnico-Eagle Resources	27	18 723
Keg	Strategic Metals Ltd.	4	958
Keno Hill	Alexco Resource Corp.	150	28 152
Ketza River	Yukon-Nevada Gold Corp.	119	18 028
Key	Aldrin Resources Corp./Ryan, Shawn	12	2000
Klaza	Rockhaven Resources Ltd./ATAC Resources Ltd.	11	1641
Line	Aldrin Resources Corp./Ryan, Shawn	7	1050
Lobo Del Norte (Cowley)	Ernewein, Barry		
Lucky Joe	Taipan Resources Inc./Copper Ridge Exploration Inc.	2	287
Michelle	Zinccorp Resources Inc.	10	1034
Minto	Capstone Mining Corp.	167	47 084

Appendix 2 (continued)**: 2006 DRILLING STATISTICS**

Property	Optioner/Owner	# of drillholes	# of metres
Mor	Tarsis Capital Corp.	2	444
Mount Nansen (Charlotte)	Ansell Capital Corp.	14	1452
Mt. Haldane	Habenero Resources Ltd./Misty Creek Ventures	3	400
Nikki	Strategic Metals Ltd.	4	1500
Northern Dancer	Largo Resources Ltd.	9	2500
Nucleus	Northern Freegold Resources Ltd.	11	3000
Prospector Mountain	Silver Quest Resources Ltd./Tarsis Capital Corp.	8	1463
Rau-Ocelot	ATAC Resources Ltd.	5	1109.5
Rau-Osiris	ATAC Resources Ltd.	9	1898.3
Rau-Tiger area	ATAC Resources Ltd.	61	13 447.8
Red Mountain (Gold)	Regent Ventures Ltd.		
Rosy	Bonaparte Capital Corp./ATAC Resources Ltd.	3	263
Selwyn Project	Selwyn Resources Ltd.	86?	27 487
Silver Basin	Monster Mining	7	1104.6
Sixty Mile	Radius Gold Inc.	7	1607
Snowcap	Wesgold Minerals Inc.	4	420
Sonora Gulch	Northern Tiger Resources Inc.	12	2875
Toro	Dawson Gold Corp.	8	1516
Ten Mile	Solomon Resources Ltd./Radius Gold Inc.	6	800
Toe	Kestrel Gold Inc./BCGold Corp.	4	1071
Wellgreen	Prophecy Resources Inc./Northern Platinum Ltd	6	800
White Gold/JP Ross	Kinross Gold Corp.		30 505
Yukon Olympic	REC Minerals Corp./Copper Ridge Exploration Inc.	5	1194
		1048	280 519.0
Percussion/Reverse Circulation			
McQuesten Valley (Keno tailings)	Alexco Resource Corp.	34	1151
Brewery Creek	Golden Predator Corp./Alexco Resource Corp	17	2350
Eureka	Golden Predator Corp./'Strategic Metals Ltd.	27	2927
Gold (Scheelite) Dome	Golden Predator Corp.	28	4606
Scheelite Dome	Golden Predator Corp.	28	4606
Clear Creek	Golden Predator Corp.	38	2589
Revenue	Northern Freegold Resources Ltd.	40	400
		212	18 629

Yukon Placer Mining Overview 2010

William LeBarge[1]
Yukon Geological Survey

LeBarge, W., 2011. Yukon Placer Mining Overview 2010. *In*: Yukon Exploration and Geology 2010, K.E. MacFarlane, L.H. Weston and C. Relf (eds.), Yukon Geological Survey, p. 67-70.

PLACER MINING

More than a century after the discovery of gold in Yukon, placer mining is still an important sector in Yukon's economy. Royalty records, which represent the minimum amount of gold production, show that nearly 16.7 million crude ounces (518 tonnes) of placer gold have been produced to date in Yukon — at today's prices, it would be worth more than $16 billion.

In 2010, there were approximately 140 active placer mining operations, directly employing approximately 400 people. This was a substantial increase over 2009, which had only 131 operations. As usual, the industry saw a fair amount of transition: some operations moved to new drainages, others closed, several were sold, and a few brand new mines began operating. Although most placer operations are still small and family-run (with an average of three or four employees), there is a recent trend with small, relatively inactive properties being sold to new owners and re-activated. In addition, several mine owners now have more than one active property, resulting in a shift towards larger mining consortiums.

Dawson's rainy mid-summer weather (after a relatively dry, warm spring) was helpful for miners in high gulches, but became a problem for operators on the lower reaches of major streams. Warm fall weather allowed the mining season to be extended for those miners able to take advantage of it. The last operation to be sluicing in 2010 was likely Tic Exploration on Gladstone Creek – their last day of washing gravel was November 6.

There are ten placer mining areas distributed throughout the four Yukon Mining Districts (Fig. 1). The majority of active placer mining operations were in the Dawson Mining District, followed by the Whitehorse Mining District and the Mayo Mining District. No placer mines are currently active in the Watson Lake Mining District, although there are a few exploratory properties along the Pelly, Liard and Hyland rivers.

The total Yukon placer gold production in 2010 was 51,302 crude ounces (1 595 672 g), compared to 54,478 crude ounces (1 694 456 g) in 2009. The value of this 2010 gold production was CDN$51.8 million or US$50.3 million (Fig. 2).

Approximately 88% of Yukon's placer gold was produced in the Dawson Mining District, which includes the unglaciated drainages of the Klondike River, Indian River, Fortymile and Sixtymile rivers, and lower Stewart River. The remaining gold came from the unglaciated Moosehorn Range in the Whitehorse Mining District, and placer mining areas in the glaciated Mayo and Whitehorse mining districts.

Reported placer gold production from Indian River drainages in 2010 decreased slightly from 15,336 crude ounces (477 003 g) in 2009 to 14,707 crude ounces (457 439 g) in 2010. A decrease in production from Dominion Creek was due in part to the cessation of mining by Ross Mining Ltd.; however, new operations on Little Blanche, Quartz and Canyon creeks partially compensated for this difference.

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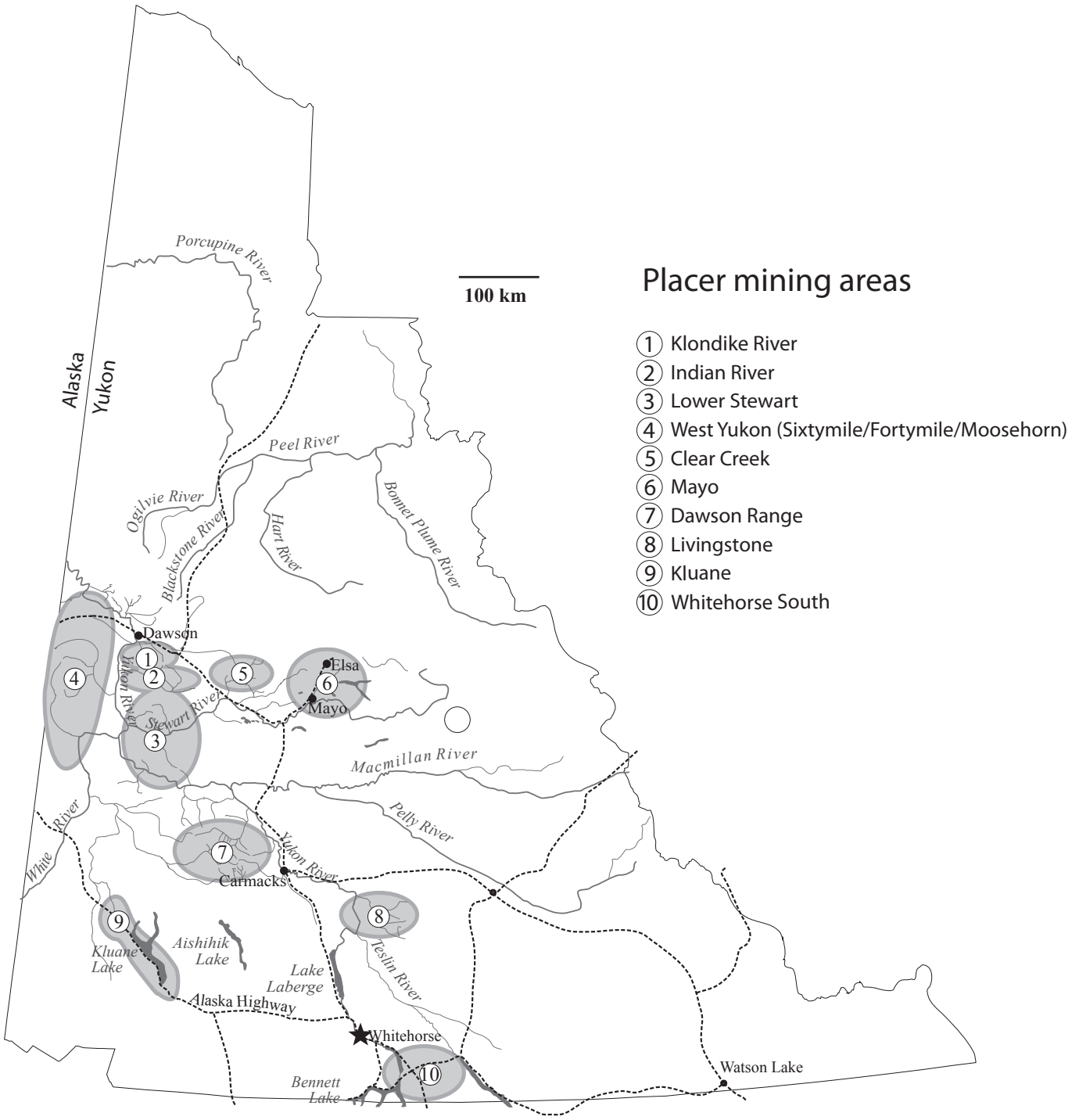

Figure 1. *Yukon placer mining areas.*

In Klondike area drainages, production slightly increased from 13,268 crude ounces (412 681 g) in 2009 to 13,609 crude ounces (423 287 g) in 2010. Notable increases were reported from Hunker and its tributary creeks, while royalties from Bear and Bonanza creeks dropped significantly.

West Yukon (Sixtymile, Fortymile and Moosehorn Range) placer gold production decreased dramatically from 8316 crude ounces (258 657 g) in 2009 to 6929 crude ounces (215 516 g) in 2010. The largest decreases were from Sixtymile River and Matson Creek; however, renewed production from Ten Mile Creek partially offset those losses.

Production from operations in the Lower Stewart drainages was down slightly to 9916 crude ounces (308 422 g) in 2010 from 9955 crude ounces (309 635 g) in 2009. Gold royalties from Black Hills, Barker and Kirkman creeks were up substantially, while royalties from Henderson and Scroggie were down. Several relatively new operations continued to step up production on Black Hills Creek, and North Henderson produced for the first time.

Clear Creek drainages had a major increase in gold royalties, from 443 crude ounces (13 779 g) in 2009 to 767 crude ounces (23 856 g) in 2010. A new operation began mining on Barlow Creek, where there has not been activity for many years.

In the Dawson Range, reported placer gold production dropped from 2014 crude ounces (62 642 g) in 2009 to 1044 crude ounces (32 472 g) in 2010. All creeks had decreased royalties and the highest drop recorded was on Nansen Creek.

In the Mayo area, gold production increased substantially from 1035 crude ounces (32 192 g) in 2009 to 1585 crude ounces (49 299 g) in 2010. Duncan and Owl creeks increased, while Lightning Creek decreased.

In the Kluane area, reported placer gold production decreased from 1859 crude ounces (57 821 g) recorded in 2009 to 1156 crude ounces (35 955 g) recorded in 2010. All creeks reported lower royalties.

No royalties were reported in the Livingstone area in 2010, although there was mining activity. In 2009, 16 crude ounces (497 g) of gold were reported.

In the Whitehorse South area, no royalties were reported, although 82 crude ounces (2550 g) of gold were reported in 2009.

In the Watson Lake Mining District, 4.6 crude ounces (143.1 g) of gold were reported from the Liard River. This is the first time in 20 years that gold has been reported from the Watson Lake Mining District.

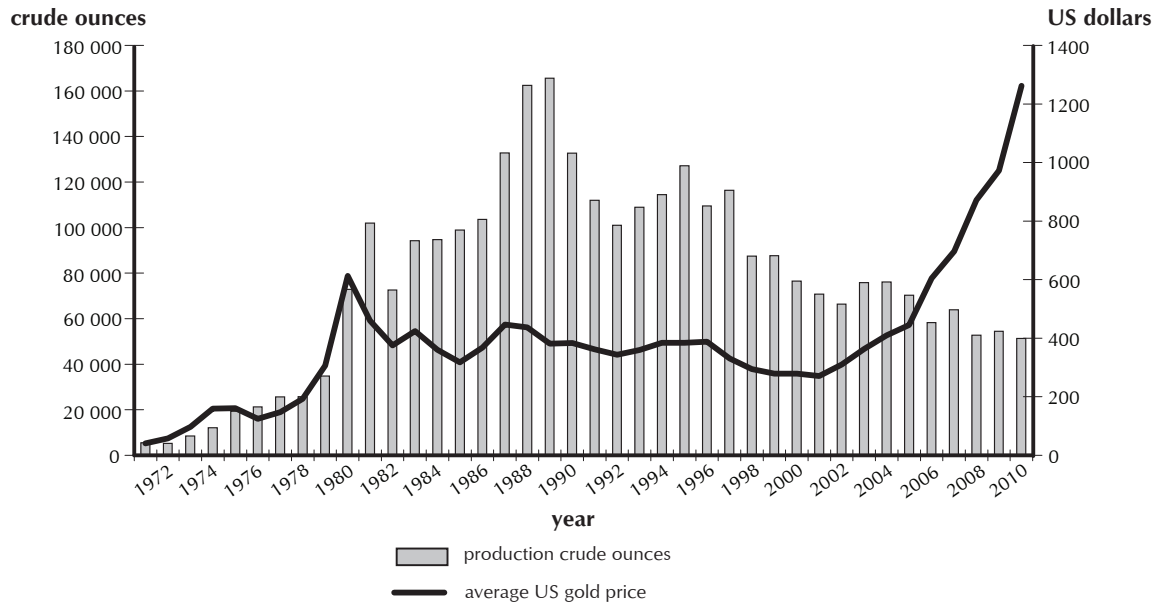

Figure 2. *Yukon placer gold production figures and average US gold price, 1971-2010.*

PLACER EXPLORATION

One of the highlights of the 2010 season was the substantial increase in placer staking activity in the Lower Stewart Placer District, fuelled in part by exploration on the nearby White Gold hardrock gold discovery north of Thistle Creek. In addition, several small operations were established in the south Dawson placer area, including both Maisy May and Black Hills creeks which have had relatively low levels of activity in recent years.

CONTACT US

The staff at the Yukon Geological Survey and the Client Services and Inspection Division (Department of Energy, Mines and Resources, Yukon Government) can provide information and advice regarding placer mining in the Yukon. Many recent publications and maps can be downloaded for free from our website at www.geology.gov.yk.ca. Information is also available at the Yukon Placer Secretariat, http://www.yukonplacersecretariat.ca/. Publications on placer mining in the Yukon are available through the Yukon Geological Survey office at Room 102, Elijah Smith Building, 300 Main St. Whitehorse, Yukon.

Yukon Oil and Gas Overview 2010

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Adilman, B. and Pigage, L., 2011. Yukon Oil and Gas Overview 2010. *In:* Yukon Exploration and Geology 2010, K.E. MacFarlane, L.H. Weston and C. Relf (eds.), Yukon Geological Survey, p. 71-80.

ABSTRACT

Yukon's semi-annual oil and gas rights disposition processes continue to attract industry's attention. One bid and one permit were issued in the Spring 2010 process to Northern Cross (Yukon) Ltd.

Yukon's Oil and Gas Resources (OGR) branch anticipates amendments to the Yukon Oil and Gas Act being tabled in the Legislature in the spring of 2011. OGR also continues preparation of pipeline regulations and amendments to existing regulations.

Production of natural gas yielded more than 39 000 10^3m^3 from two wells in southeast Yukon.

Other OGR activities in 2010 included: development of the Energy for Yukon initiative; implementation of the oil and gas component of the Yukon Energy Strategy; continuing preparation for northern pipeline development; participation in several offshore oil and gas initiatives; continued consultation and cooperation with affected First Nations on a variety of oil and gas issues; ensuring oil and gas interests are taken into account during the Land Use Planning process; and ongoing cooperation with the Yukon Geological Survey with field work and associated analytical work in order to discover potential source rocks and petroleum reservoir rocks.

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INTRODUCTION

During 2010, the Oil and Gas Resources (OGR) branch of the Department of Energy, Mines and Resources (EMR) continued its role of promoting Yukon's oil and gas industry. While industry activity was limited over the past year, OGR focused on preparations for future exploration and development in Yukon, specifically pipeline and drilling activities.

Yukon has eight onshore sedimentary basins containing an estimated 17 trillion cubic feet (Tcf) (480 billion m^3) of natural gas and 770 million barrels (120 million m^3) of oil (Government of Yukon, 2010; Fig. 1). Offshore estimates in the Beaufort Sea north of Yukon consist of an additional 40 Tcf (1.5 trillion m^3) of natural gas and 4.5 billion barrels (720 billion m^3) of oil (Government of Yukon, 2010), contributing to Yukon's vast and virtually untapped petroleum resources.

There was one permit issued in the Eagle Plain basin during OGR's dispositions of oil and gas rights in 2010. Opportunities in southeast Yukon and the proposed construction of the Mackenzie and/or Alaska Highway pipelines continue to hold promise for the Yukon's oil and gas sector.

OGR continues to develop partnerships with other jurisdictions and governments, including First Nations. A unique and competitive oil and gas common regime is in place in preparation for potential expansion of exploration and production. This regime, jointly crafted by Yukon and First Nation governments, applies to all Yukon lands. Yukon and First Nation governments are also working together to develop the Energy for Yukon initiative. OGR has created an attractive economic and legislative framework that bodes well for future activity.

YUKON'S OIL AND GAS RIGHTS DISPOSITION PROCESS

Pursuant to the Government of Yukon's *Oil and Gas Act* and Oil and Gas Disposition Regulations, rights to oil and gas are granted by the Minister through a competitive disposition process. Oil and Gas Resources runs two disposition processes annually, which are designed to be completed in approximately five months. Each process consists of the following:

- submission for consideration of Requests for Postings (RFP) for locations of interest to explore for oil and gas;
- review of the RFP, wherein the public, First Nations and government agencies may submit presentations on environmental, socio-economic and surface access concerns related to the requested locations;
- a Call for Bids, where corporations are invited to submit bids on posted locations; and
- issuance of oil and gas permits to successful bidders.

A successful bidder is required to submit a work deposit equal to 25% of their bid. The work deposit is returned proportionally as work is completed.

The initial term of the Permit is six years. Permits may be renewed for a further four-year term if a well is drilled during the initial term. Before any activity takes place, companies are required to obtain all regulatory approvals and undergo environmental screening through the Yukon Environmental and Socio-Economic Assessment Act. Companies are also encouraged to follow best management practices as outlined by OGR.

Between 2007 and 2010, 16 new permits were issued in northern Yukon totalling $29.4 million in work commitments.

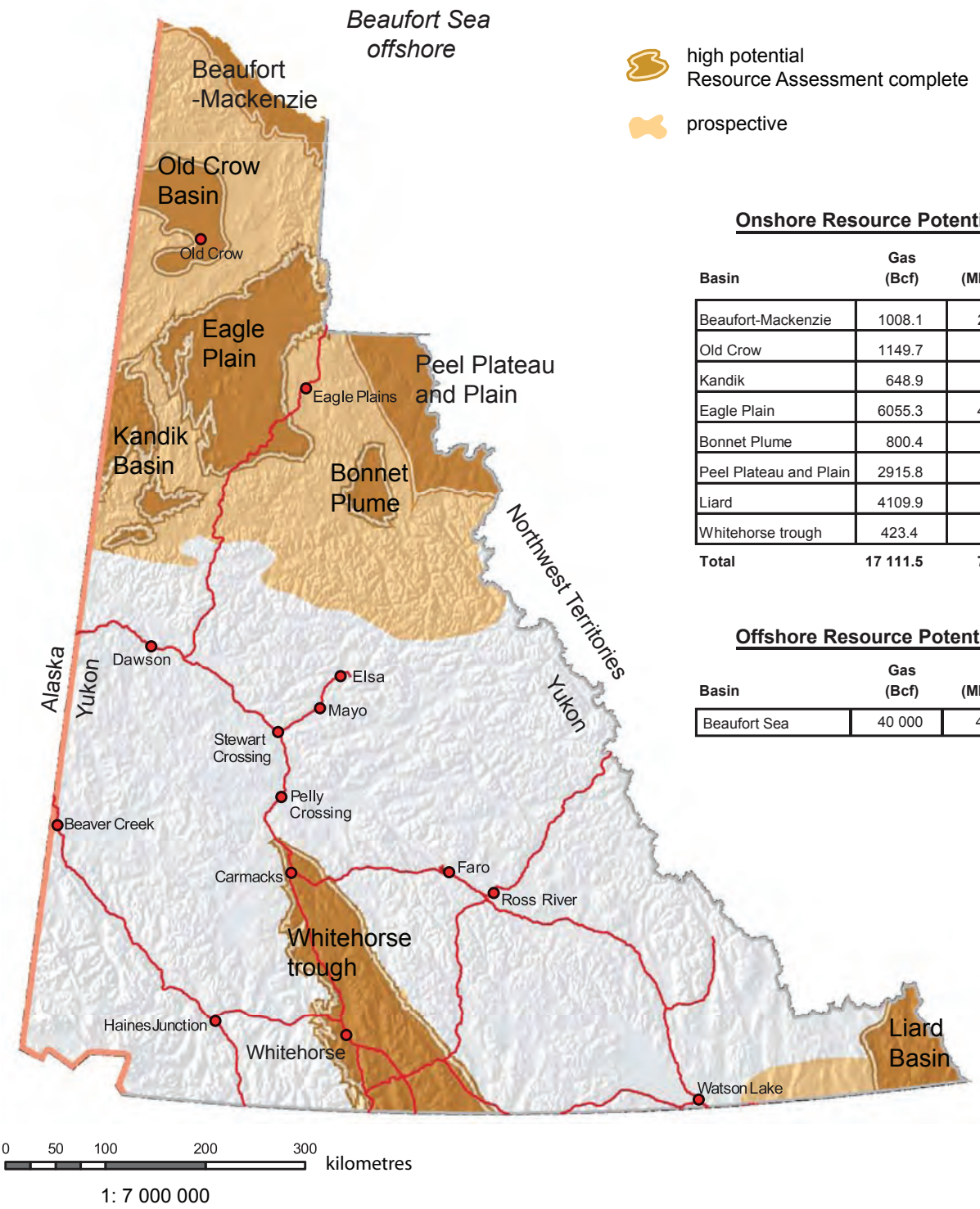
In summary, the Government of Yukon's oil and gas rights disposition process provides:

- an attractive investment climate for future development since it is efficient, streamlined and offers certainty;
- a two-year rolling schedule, providing companies with an opportunity to plan ahead; and
- a minimum work commitment which has been lowered from $1 million to $400 000.

NATURAL GAS PRODUCTION

In southeast Yukon, natural gas is produced from the Kotaneelee Field in the Liard Basin. The two producing wells (B-38 and L-38) yielded 39 508 10^3m^3 of natural gas in the period from January 2010 to September 2010 (Oil & Gas Resources Branch, 2009; Fig. 2). The field is in the later stages of life and gas production and reservoir pressure are declining slowly, whereas water cuts are increasing. Recovery factor to date is 56% of initial gas-in-place, which is considerably better than similar nearby fields in the basin.

Yukon oil and gas basins



Onshore Resource Potential

Basin	Gas (Bcf)	Oil (MMbbls)
Beaufort-Mackenzie	1008.1	216.7
Old Crow	1149.7	0
Kandik	648.9	99.3
Eagle Plain	6055.3	436.7
Bonnet Plume	800.4	0
Peel Plateau and Plain	2915.8	0
Liard	4109.9	0.1
Whitehorse trough	423.4	19.2
Total	**17 111.5**	**772.0**

Offshore Resource Potential

Basin	Gas (Bcf)	Oil (MMbbls)
Beaufort Sea	40 000	4500

Figure 1. *Yukon's oil and gas exploration regions.*

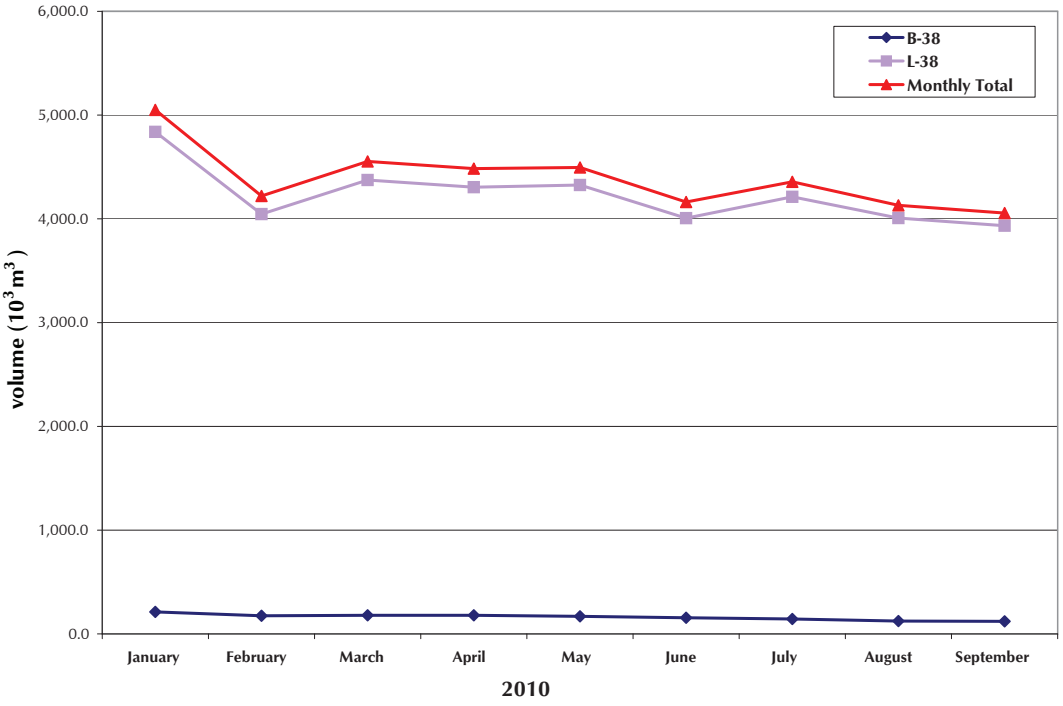


Figure 2. *Yukon natural gas production, from Kotaneelee field, southeast Yukon.*

FIRST NATIONS

OGR continues to build strong working relationships with First Nations through the ongoing development of a common oil and gas regime and through regular consultation during the disposition and licensing processes. OGR supports the Aboriginal Pipeline Coalition (APC) and believes it has a very important role in ensuring that First Nations are informed to prepare for the Alaska Highway Pipeline Project. Canada, Yukon, and the APC are working cooperatively toward concluding a more stable long-term funding arrangement as First Nation engagement and participation is essential to the development and implementation of an efficient pipeline regulatory process and an outcome where First Nations enjoy substantial benefits.

ENERGY FOR YUKON

The development of Yukon's natural gas resources is a priority action of Yukon's Energy Strategy which states: "The government's strategy for oil and gas is focused on how to best develop Yukon's resources and also meet Yukon's energy needs" (Government of Yukon, 2009).

Oil & Gas Resources is working in partnership with a First Nations-led initiative to identify the most promising opportunities and the priority actions for government, industry and stakeholders to facilitate the use of Yukon's natural gas.

Developing Yukon gas resources will create numerous economic development opportunities throughout Yukon, as well as provide reliable and clean energy for mining projects and for Yukoners.

Relying on expensive and less clean diesel fuel for energy is a major disincentive to the development and operation of mining projects in Yukon.

The 2008 Energy to Mines study identified several competitive scenarios to utilize Yukon gas as an energy source for mines.

Demand on Yukon's electrical grid is projected to outstrip the supply of renewable energy by 2012.

Potential new mines will require 200 megawatts of reliable and competitively priced electricity by 2021 to enhance their economic viability.

Currently, EMR is:

- completing analysis of the economics and regulatory requirements to develop Yukon gas resources;
- advancing the regulatory regime to develop oil and gas resources; (pipeline regulations are to be completed by spring 2011);

- engaging industry and other key stakeholders on this proposal with the intent of obtaining their feedback on how to proceed and to promote the concept; and
- working with four Northern First Nations to determine the economic viability of developing Eagle Plains' natural gas resources.

PIPELINES

Both the Mackenzie Gas Project (MGP) and the Alaska Highway Pipeline Project (AHPP) offer enormous economic opportunities for the north (Fig. 3). The Government of Yukon continues to work hard in order to ensure Yukon is pipeline-ready, benefits are maximized, and potential negative impacts are minimized. Work will also continue with our neighbouring jurisdictions — Alaska, British Columbia, Northwest Territories and Alberta — to prepare for both projects.

AHPP will generate an estimated 375 000 person-years of employment over 24 years (McCracken, 2002), whereas MGP estimates are 181 000 person-years over the same 24-year span (Wright Mansell Research Ltd., 2004). The construction of these two projects will also inject billions of dollars into the North American economy. These projects would provide access for Yukon's natural gas to southern markets, which could earn the Government of Yukon more than $40 million annually in royalty revenues from the production of natural gas resources.

Figure 3. *Northern natural gas pipeline options.*

ALASKA HIGHWAY PIPELINE PROJECT (AHPP)

Both the TransCanada PipeLines Ltd/Exxon Mobil partnership (APP) and BP and ConocoPhillips (The Denali Project) concluded their open seasons in 2010.

An 'open season' is a limited window created by a pipeline company to identify gas producers and shippers interested in seeking carrier capacity on the line if built, and provide a willingness to commit their product at an economically feasible carrier price.

Both project proponents are in negotiations with potential shippers as a result of conditional commitments made during their respective 'open season,' and the APP is continuing with field work in Yukon on and near the existing easement to refine their pipeline design.

Since fall 2009, EMR and other Government of Yukon representatives have met several times with both proponents to share information and discuss potential issues.

Should the chosen route follow the Alaska Highway, this will be important to the interests of the Government of Yukon. Yukon has seven well documented Alaska Highway Pipeline Project interests:

- ensuring a net fiscal benefit to Yukon;
- enhancing positive socio-cultural impacts while mitigating negative socio-cultural impacts;
- promoting environmental stewardship;
- recognizing municipal, community and First Nation interests;
- advancing a clear and efficient regulatory process;
- supporting economic pipeline access for Yukon natural gas; and
- requiring gas take-off points.

Oil and Gas Resources is also working closely with other jurisdictions that would be affected by an Alaska Highway pipeline:

- one initiative is the Strategic Action Plan Working Group, comprising participants from Yukon, British Columbia and Alberta. This group was created in order to manage common issues expected to arise from the various inter-jurisdictional concerns over the Alaska project. Yukon continues to urge the Canadian government to demonstrate that they are prepared with a streamlined, efficient regulatory process for either project; and
- EMR and Natural Resources Canada continue to complete pipeline preparatory work described within the Canada – Yukon Work Plan. Specifically, the Government of Yukon is working closely with the Northern Pipeline Agency on the regulatory process, including the environmental assessment component, First Nations consultation requirements, and permitting of 2011 field work activities.

MACKENZIE GAS PROJECT

OGR's involvement with the Mackenzie Gas Project (MGP) hearings bore fruit in December when the National Energy Board stated its support for the project. Numerous requests and submissions from OGR and the Government of Yukon were not only recognized in the NEB report, but were also recommended as necessary for the project to proceed.

Areas where Yukon concerns were addressed include:

- open access to the pipeline;
- training and employment;
- wildlife issues, specifically barren land caribou issues;
- supplying communities with natural gas from the pipeline; and
- tolling methodology.

The MGP proponents – led by Imperial Oil – now have up to five years to commence construction of the project.

Yukon's interest in the construction of this project is significant, as there are benefits for Yukon to be derived from this pipeline both during and after construction. During construction, supplies and services will be required of Yukon businesses. Construction will also provide employment opportunities for Yukon residents. The presence of a pipeline provides a means for Yukon gas to be transported competitively to southern markets.

OGR's intervention in the MGP hearings has resulted in both the proponent (Imperial Oil) and Yukon committing to the enhancement of potential positive effects from construction and operation of the project, and to mitigate potential adverse effects from the proposed project on Yukon's environment, communities and transportation infrastructure.

OFFSHORE

Although the federal government transferred responsibility for onshore oil and gas to the Government of Yukon,

it continues to maintain responsibility for oil and gas management and development in the Beaufort Sea.

The Canada 2009-10 offshore Call for Bids closed on July 6, 2010. Chevron Canada obtained new exploration rights with a successful work bid of $103.3 million.

A significant amount of 2-D and 3-D seismic surveys has been undertaken by GX Technology and almost $2 billion in work commitments were made by Imperial, BP, Chevron, ConocoPhillips since 2007. These are all clear indicators that industry remains interested in the offshore, and that governments will need to prepare for this renewed interest.

Yukon remains committed to finalizing a shared offshore oil and gas management regime and revenue-sharing arrangement with Canada in accordance with the Canada Yukon Oil and Gas Accord. As an interim step, Yukon and Canada have signed a Memorandum of Understanding detailing Yukon's enhanced role in offshore oil and gas management and the collaborative approach undertaken by Canada and Yukon. OGR continues to advance Yukon's offshore interests, including the following: governance, economic benefits, resource revenues, financial considerations, infrastructure, capacity development, and sustainable development.

Yukon will continue to take an active role in Beaufort Sea initiatives, including:

- **the NEB arctic drilling review** - In May 2010 the NEB announced a review of arctic safety and environmental offshore drilling requirements in light of the oil spill in the Gulf of Mexico. Currently, there is neither drilling nor applications for drilling in the Beaufort Sea;
- **the Beaufort Regional Environmental Assessment (BREA)** - In August, the Government of Canada committed to provide almost $22 million over five years to fund the Beaufort Regional Environmental Assessment (BREA). Research will be focused on issues such as spill preparedness and response, engineering requirements for safe operations, climate change, waste management, and information management;
- **the Integrated Oceans Management Plan (IOMP)** – The goal for the Beaufort Sea integrated management planning process is to have an effective, collaborative process that provides integrated and adaptive management plans, strategies and actions for ecosystem, social, economic, and institutional sustainability; and
- **Marine Protected Areas (MPAs)** - In August, Prime Minister Stephen Harper announced the establishment of the Tarium Niryutait Marine Protected Areas (MPAs) in the Beaufort Sea to protect beluga whales. Three areas, totaling approximately 1800 square kilometres, make up the MPAs. The MPAs do not include any parts of the adjoining area along Yukon's north coast.

Yukon is also pleased that Canada has made northern sovereignty and security a national priority. Given the significant oil and gas resources in the Beaufort Sea and international interest in the Northwest Passage, Canada's sovereignty in the region must be recognized.

Finally, Yukon continues to work cooperatively and collaboratively with the Government of the Northwest Territories and the Inuvialuit on relevant offshore matters.

OIL AND GAS LEGISLATION

Yukon is planning to introduce amendments to the Yukon *Oil and Gas Act* in 2011.

These amendments will:

- update the Act to reflect Yukon's current oil and gas regulatory regime;
- provide certainty and growth opportunities for industry; and
- improve opportunities for Yukon and its First Nations to benefit from oil and gas activity.

It is important to continue to improve the legislative framework to support the emerging oil and gas sector within Yukon. A stable framework provides for the needs of industry while maintaining government's ability to responsibly manage resources and provide Yukoners with the benefits of development.

OGR also continues to work on the development of Pipeline Regulations, as well as amendments to the Royalty Regulations, the Drilling and Production Regulations, the Disposition Regulations and the Geoscience Exploration Regulations.

OIL AND GAS CONSENT AND ACCOMMODATION AGREEMENT IN SOUTHEAST YUKON

There continues to be interest in oil and gas prospects in southeast Yukon. This region is of high interest to industry because there is existing pipeline infrastructure and good potential for an economic oil and gas discovery. If the area is further developed, it will also mean a significant economic boost to the residents in the area.

In areas where land claims remain unsettled, Yukon requires consent of the affected Yukon First Nations prior to disposition of oil and gas rights or authorization of oil and gas activities.

The agreement contains provisions that facilitate economic development, as well as providing the certainty needed by industry. Once concluded, the agreement will be made public.

Current efforts are focused on obtaining consent of the Liard First Nation and Ross River Dena Council. Progress is being made in these efforts. Throughout the disposition and licensing process, the Government of Yukon will consult with affected First Nations.

YUKON GEOLOGICAL SURVEY

In 2010, the Yukon Geological Survey (YGS) conducted oil and gas related research studies in Peel and Eagle Plain basins in northern Yukon. In addition, compilation and reconnaissance studies continued within Whitehorse trough in southern Yukon.

YGS continued its partnership with the Geological Survey of Canada, studying the Eagle Plain and Peel Plateau basins as part of the Geo-Mapping for Energy and Minerals (GEM) 2008-2013 initiative. Tammy Allen and Tiffani Fraser are each directing projects under the GEM umbrella. Tammy Allen completed four weeks of fieldwork in these basins, focusing on the source rock potential of upper Paleozoic strata and stratigraphic correlations between Peel and Eagle Plain areas, an extension of her research with the earlier multi-agency Peel Project (Pyle and Jones, 2009). Tiffani Fraser completed a study examining the petrophysical properties of reservoir units in 17 Peel wells; publication of this work as a Yukon Geological Survey Open File is imminent. A similar study for select Eagle Plain wells is being initiated. Her next planned field project is to research the reservoir characteristics of the Mississippian Chance Member of the Hart River Formation in the Eagle Plain area. Two weeks were spent in Calgary examining and sampling core intersecting the Chance Member from Eagle Plain wells.

Analytical studies continued with the BTW, HQ and NQ diamond drill hole core intersecting the Imperial, Canol and Road River formations from the Eagle Plain and west Richardson Mountains. Also a GEM-funded program, the core retrieval project is a collaborative project between the GSC, Northern Cross (Yukon) Ltd. and the YGS. Approximately 1400 m of diamond drill core donated by Archer, Cathro & Associates (1981) Ltd. was retrieved from a 2007-2008 mineral exploration drilling program. The core was logged and sampled for TOC, Rock-Eval, bulk mineralogy and palynology. Preliminary results for a subset of the core from the Rich property are reported in Allen *et al.* (2011). Complete results will be published later in an external journal. YGS is helping support field work for Mike McQuilkin, an undergraduate at the University of Calgary under the supervision of Dr. Per Pedersen. Mike collected core and hand samples of middle to upper Cretaceous sandstones from the western and southern parts of the Eagle Plain area. This winter he will be analysing at the total porosity, effective porosity, matrix clay content, permeablility, mineralogy and petrography of the sandstone samples. Part of his research will be to correlate between surface samples and subsurface core based on mineralogy and petrography.

The recent regional airborne magnetic survey completed over the Eagle Plain region was co-released in 2010 as Yukon Geological Survey and GSC open files. Over 45 400 line-km of data were collected on east-west oriented lines spaced 800 m apart. The airborne data are being used to help interpret major fault patterns in the Eagle Plain area.

In southern Yukon, Grant Lowey has been involved in a stratigraphic and sedimentological study of the Jurassic Laberge Group in Whitehorse trough since 2003. Parts of his research have been published previously (Lowey, 2004, 2005, 2007, 2008; Lowey and Long, 2006; Lowey *et al.*, 2009). A YGS open file summarizing the Laberge Group is in final editing stages. This publication is due to be released in early 2011; it will include detailed measured sections from his field work.

During 2010, Lowey initiated a reconnaissance study to scope out the potential for a three-year field and lab research project studying the stratigraphy, sedimentology and petroleum potential (source rock and reservoir) of carbonate rocks of the Triassic Hancock member in

Whitehorse trough. Results from the project will provide insight into the Triassic evolution of Whitehorse trough. Data from the project may also be used in the resource assessment of the petroleum potential of this area.

Maurice Colpron is finalizing new 1:250 000-scale geology compilation maps for Whitehorse trough. The new compilation provides a revised structural interpretation for the Whitehorse trough derived in part from regional fieldwork completed in 2006 (Colpron *et al.*, 2007) and from the 2004 seismic survey data acquired near Carmacks (White *et al.*, 2006). The final maps will be published in 2011 as part of the YGS Geoscience Map series and will encompass parts of map sheets 105C, 105D, 105E, 105F, 105L, 115H and 115I.

OTHER ACTIVITIES

OGR continues to contribute to the development of a Climate Change Action Plan and to ensure the Government of Yukon's oil and gas interests are taken into account during the regional land use planning processes.

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Yukon Mining Incentive Program 2010

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Yukon Geological Survey

Héon, D., 2011. Yukon Mining Incentive Program 2010. *In*: Yukon Exploration and Geology 2010, K.E. MacFarlane, L.H. Weston and C. Relf (eds.), Yukon Geological Survey, p. 81-84.

PROGRAM SUMMARY

The Yukon Mining Incentive Program (YMIP) supports individual prospectors, partnerships and companies by sharing the risk of exploring for minerals in Yukon. YMIP funding has consistently demonstrated its impact as an effective economic incentive by supporting the exploration community in its efforts. This support has led to discoveries which in turn have provided significant economic benefits to the territory.

YMIP funding supports placer and hardrock exploration projects by reimbursing a percentage of approved exploration expenditures. Funding is merit-based and is allocated by scoring exploration proposals according to set criteria (details on our website at www.geology.gov.yk.ca/ymip). The program comprises three different modules of varying reimbursement rates and maximum allowable funding (Table 1).

Table 1. *Maximum funding levels available for 2010.*

2010 funding levels	Grassroots	Focused Regional	Target Evaluation
maximum funding	$15,000	$25,000	$50,000
reimbursement rate	up to 100% of eligible expenses	up to 75% of eligible expenses	up to 50% of eligible expenses
no. of approved placer applications	7	2	14
no. of approved hardrock applications	12	26	22

UPDATE FOR 2010

The program was oversubscribed again this year, with 165 applications competing for $1.67M in funding; the same amount was awarded in the previous year (2009-10; up from $0.6M in the previous two years). This was the second consecutive year of increased funding, designed to support the industry through the recession. In light of the current exploration boom, this has been a successful strategy which has supported prospectors and companies during the downturn and in turn contributed to the current robust exploration climate.

These funding increases resulted in a massive increase in project proposals, resulting in more projects receiving funding, and being funded at a higher rate than in the past. Table 2 outlines historical funding levels for the past four years.

A total of 83 applications were offered funding in 2010. The amounts available under each module were maintained at the same (increased) levels as in 2009-10. Last year, applicants were funded at

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Table 2. *Historical funding levels, 2007-2010.*

Historical funding	2007-08	2008-09	2009-10	2010-11
available funding	$600,000	$600,000	$1.67M	$1.67M
no. of applications	56	58	173	165
approved projects	45	46	102	83
max funding level grassroots	$10,000	$10,000	$10,050	$15,000
max funding level focused regional	$15,000	$15,000	$18,750	$25,000
max funding level target evaluation	$20,000	$20,000	$50,000	$50,000

75% of the maximum allowable under each module. This year, most applications were funded at the maximum allowable, except for the placer target evaluation projects which were funded at the 75% level.

Hardrock projects account for 75% of the successful applications in 2010, and placer projects account for the remaining 25%. Individual prospectors and private companies secured approximately 65% of available funds, while public junior mining companies received approximately 35% of the funds. The breakdown between the different modules and the demographics of the applicants over the past two years is outlined in Table 3.

The bulk of placer projects are centered in the Klondike and Sixty Mile placer districts, and a few projects are located in the Kluane and Dawson Range areas. The Dawson Range/White Gold district attracted the bulk of hardrock projects, as the Underworld/Kinross and Kaminak projects magnefied exploration efforts in that area. A few YMIP projects are located in the vicinity of the Rau discovery, north of Mayo. Other successful applications are located in other parts of Selwyn basin, in the Whitehorse Copper Belt, in Southern Yukon, and along the Cantung Road (see Fig. 1).

The success of the program can be measured by a number of indicators. In 2010, YMIP funding leveraged approximately $5M. As of press time, 10 of the 2010 projects have been optioned and 7 more are pending. Benefits of the program can span several years, *e.g.* follow-up property option and/or exploration work may occur several years after the initial YMIP funding. A number of significant properties have benefited from YMIP funding in the past which has led to important expenditures. Table 4 highlights a few of these projects.

Table 3. Yukon Mining Incentive Program demographics for 2009 and 2010 projects.

Approved projects	2009-10		2010-11	
	No. of approved projects	% of approved funding	No. of approved projects	% of approved funding
approved placer	28	30.42%	23	25%
approved hardrock	74	69.58%	60	75%
total projects approved	102	-	83	-
prospectors/individuals	36	33.25%	49	46.8%
private companies	31	29.80%	14	18.7%
public companies	33	36.95%	22	36.3%

Program materials have been gradually updated and posted on the website. A new version of the application form, scoring criteria and program guidelines for the next funding year will soon be available.

PROGRAM REVIEW

The increased funding of the past two years triggered an even greater increase in the number of applications. A review of the program is underway. In order to distribute the funding to a greater number of projects that meet funding criteria, the following options are being considered:

- Reduction of the maximum funding available under some or all of the modules, dependent on available funding.
- Reduction of the maximum funding available to each applicant (currently $150,000).
- Limitation of activities eligible for reimbursement. Reimburse hard costs (assays, contracts, machinery costs) but limit some items like wages, self-owned equipment rentals, daily living expenses, staking costs, report writing. Possibly compensate for daily living expenses by allowing flat rate per sample, or per station, or per line-km.

The final guidelines and maximum funding levels will be announced when the budget for the 2011-12 fiscal year has been determined.

Table 4. Properties that have benefited from YMIP funding.

YMIP#	Property name	Total YMIP contribution(s)	Optioned by	Company investment or work commitment
01-011	Ice/Red Mountain	$12,500	AM Gold	~$4.5M
03-079	White Gold	$10,000	Madeilena/Underworld/ Kinross	~$25.2M
04-072 and 05-043	Blende	$30,000	Blind Creek Res.	>$5M
06-054	Antimony Creek	$10,000	Logan Resources/Golden Predator	$0.35M
04-041 and 07-043	Coffee	$35,000	Kaminak Gold Corp.	~$10M
07-056, 08-012 and 09-112	Toni/Sixty Mile	$33,000	Radius Gold	~$1.5M
03-023, 06-033 and 09-137	Scheelite/Gold Dome	$75,000	Golden Predator	~$1.4M
09-015	Clear Creek	$10,450	Golden Predator	~$1.1M
09-016 and 017	Ten Mile Creek	$25,600	Radius Gold/Solomon Res.	~$0.38M
09-158	Prospector Mountain	$30,750	Silverquest Resources	~$0.85M
09-116	Cynthia	$15,350	Golden Predator	~$0.7M
09-173	Shark/True Blue	$21,354	Great Western Minerals	~1M

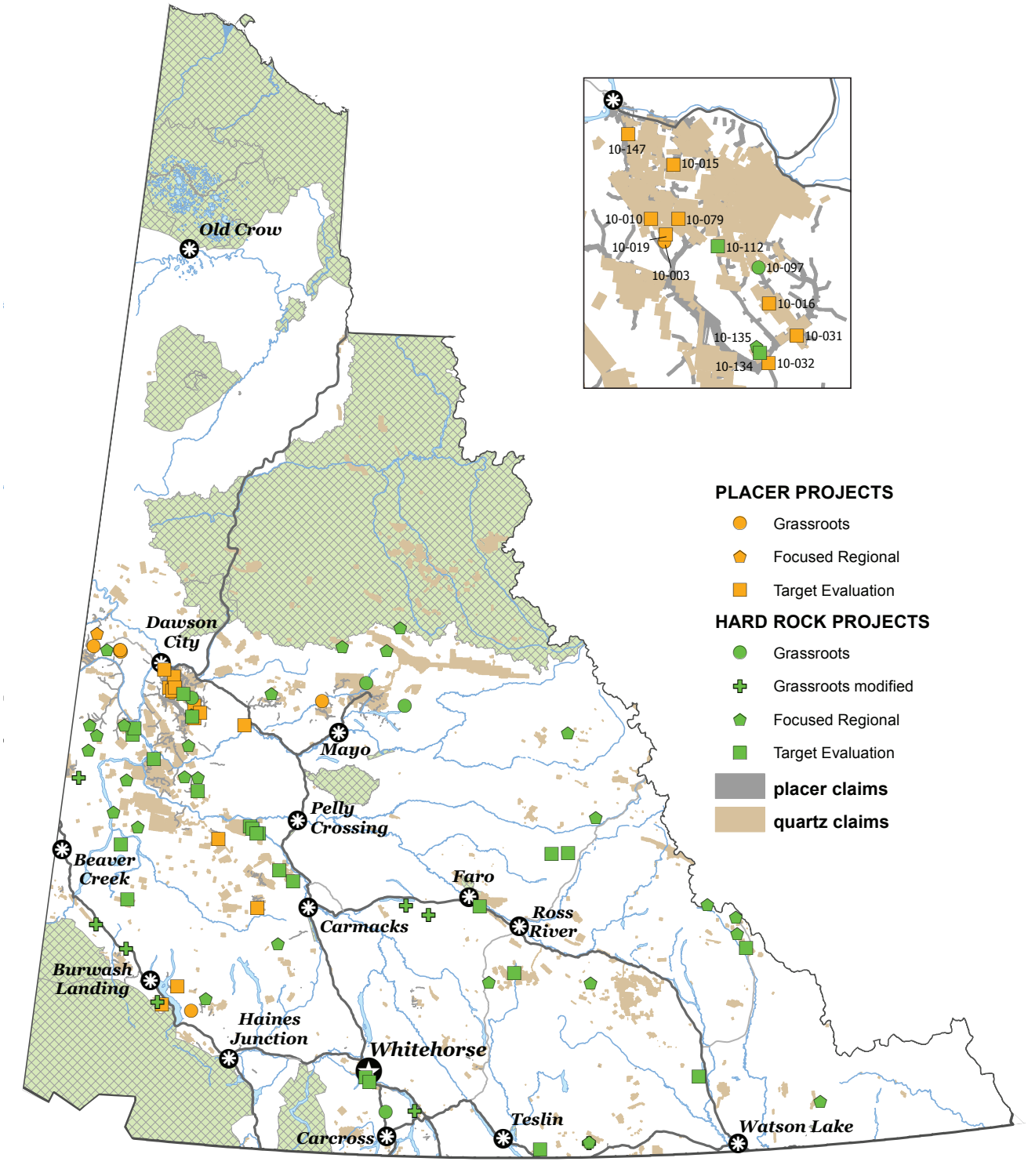

Figure 1. *Exploration projects funded by the Yukon Mining Incentives Program (YMIP) for 2010.*

Robert E. Leckie Awards for Outstanding Reclamation Practices

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Mining Lands, Energy Mines and Resources

St. Amand, J., 2011. Robert E. Leckie Awards for Outstanding Reclamation Practices. *In:* Yukon Exploration and Geology Overview 2010, K.E. MacFarlane, L.H. Weston and C. Relf (eds.), Yukon Geological Survey, p. 85-87.

QUARTZ RECLAMATION

STRATEGIC METALS LTD.

Strategic Metals Ltd. conducted a Class 3 exploration program in the Dawson Mining District from 2004 to 2009. The project included soil sampling, mapping, drilling and a large trenching program.

The company has perfected their trench reclamation technique so that in addition to restoration, site stability is increased and access to all terrain vehicles is impeded (Fig.1). Their methods have created habitat for small mammals, protection to wildlife from human predation, and areas for airborne seedlings to be established, where wind erosion is lessened and water can easily pool to promote accelerated re-vegetation.

Figure 1. *Trench reclamation by Strategic Metals Ltd.*

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HONORABLE MENTION:

STEVEN JOHNSON

The Johnson family has been mining in the Mayo Mining District for the last 15 years and has met all environmental challenges through modern mining practices. Their work has exceeded expectations for decommissioning this site.

Murphy's Pup had been previously mined, creating gradient related stability challenges for final channel construction. The Haggart Creek Road, a public road, regularly washed out as a result.

The Johnsons stockpiled coarse rock and top soils for restoration of the site. They armoured the channel and created a boulder spillway to protect the road at freshet. They insulated permafrost areas and sloped, contoured and scarified before spreading fines to coax rapid re-vegetation (Fig. 2). The road and creek have remained stable since these efforts were undertaken. The Johnson family has returned the area to a structurally sound and aesthetically pleasing landscape.

Figure 2. *Sloped, contoured and scarified area along Haggart Creek Road, near Mayo. Reclaimed area was covered in fines to enhance re-vegetation.*

PLACER MINING RECLAMATION

MARTIN KNUTSON

Martin Knutson has mined at several sites in the Dawson Mining District. In 2010, he mined an area between the Klondike Highway and the Klondike River adjacent to Bear Creek subdivision; residents were consulted prior to commencement of the work. The program began and finished in 2010 and the area was left in an improved state from how it was originally found. Trees were removed only as necessary, so that the edge could be blended for a natural look.

Mr. Knutson cleaned the site of all litter and debris that had accumulated over time. He sloped and contoured, spreading fines that were previously stockpiled for that purpose. A swimming hole, for local residents, was constructed from the original pit. This depression will fill annually via seepage from the Klondike River as other dredge ponds in the area are wont to do. He left a raised trail for hiking (Fig. 3). This trail acts as a berm to ensure that the Klondike River will no longer flood the area in spring.

A new recreation area has been created in the wake of mining.

Figure 3. *Berm/trail created to alleviate flooding.*

Yukon Exploration and Geology 2010 Abstracts

The following abstracts are from the Yukon Exploration and Geology 2010 volume.
Full versions of the individual papers are available at the Yukon Geological Survey website, www.geology.gov.yk.ca/recent.html.

Preliminary results from a diamond drillhole study to assess shale gas potential of Devonian strata, Eagle Plain, Yukon

T.L. Allen, T.A. Fraser and L.S. Lane

An evaluation of hydrocarbon resource potential in Eagle Plain is one aspect of the Yukon Sedimentary Basins Project, a five-year (2008-2013), collaborative Geo-Mapping for Energy and Minerals (GEM) Program of the Geological Survey of Canada (GSC), in partnership with territorial governments and universities. As part of this project, Yukon Geological Survey (YGS) and Northern Cross (Yukon) Limited (NCY) are collaborating with the GSC to assess shale gas potential of Devonian shale at Eagle Plain.

Diamond drill core was retrieved from mineral exploration properties to evaluate shale gas potential of Devonian shale of Road River Group and Canol and Imperial formations. Diamond drill core from four holes, located on the Rich property east of Eagle Plain Hotel, were examined and sampled. The core was systematically sampled and analysed by Rock-Eval pyrolysis, optical microscopy, X-ray diffraction (XRD) mineralogy, and palynology.

The results indicate that the succession is thermally overmature with respect to hydrocarbon generation. Due to the high levels of thermal maturity, the Rock-Eval data are unreliable. However, high amounts of residual organic carbon suggest that the Canol Formation has the potential to be an important source rock in the region, under favourable burial conditions. The very high level of thermal maturity of the strata also resulted in very few identifiable palynomorphs; however, Canol and Imperial formation samples yielded dates of Middle to Late Devonian and Frasnian to Famennian, respectively. XRD analyses indicate Canol Formation shale is highly siliceous, whereas Road River Group shale and silty shale of the Imperial Formation are less siliceous and exhibit a more varied lithology. This study suggests that the Canol Formation is more prospective for shale gas than strata of the Imperial Formation or Road River Group.

Surficial geology, soils and permafrost of the northern Dawson Range

J.D. Bond and P.S. Lipovsky

New mineral discoveries in the Dawson Range have been heavily supported by soil geochemistry. The use of soil augers to penetrate through loess-rich units and into locally derived weathered bedrock has been important in the successful application of this technique. To assist the mineral exploration industry, we characterized the surficial geology soils and permafrost of the northern Dawson Range. Mapping indicated that widespread loess is present in the study area and the thickest deposits are located in basins on the south side of the Dawson Range near the Donjek and White rivers. A mantle of weathered bedrock covers virtually the entire landscape. The texture of fluvial deposits is affected by stream order and base level changes along the Yukon River. By understanding the effects of slope, aspect, elevation and permafrost processes on surficial materials, a landscape model can be developed that will facilitate geochemical exploration and mineral development in the region.

Preliminary stratigraphic and geotechnical investigations of the glaciolacustrine and loess deposits around the city of Whitehorse (NTS 105D/11), Yukon

M.-A. Brideau, D. Stead, J.D. Bond, P.S. Lipovsky and B.C. Ward

This paper presents the preliminary results of a study investigating the stratigraphy and basic geotechnical properties of the surficial geology deposits observed in the bluffs around the city of Whitehorse. A total of eleven sections were examined on both the east and west banks of the Yukon River. Representative stratigraphic units were analysed for grain size distribution; deposits ranged in size from silt and clay to coarse gravel. Most of the observed sediments represent the glaciolacustrine depositional environment of Glacial Lake Laberge with the exception of a loess unit exposed near the top of the sections. Consistency indices of seven silt and clay-rich samples collected in the bluffs surrounding Whitehorse indicate a low plasticity compared with other Canadian loess units such as the glaciolacustrine bluffs around Kamloops and in the Elk Valley of British Columbia. The soil unconfined compressive strength was estimated using a pocket penetrometer and the dry silt and clay-rich units were found to have strength estimates up to two orders of magnitude greater than the sand-rich units.

New bedrock geology of Mount Mervyn map sheet (106C/04) and mineral potential for the South Wernecke mapping project

J. Chakungal and V. Bennett

An integrated bedrock mapping and regional soil sampling program in the Mount Mervyn map area (106C/04) was undertaken in 2010. It is the first year of a multi-year initiative called the South Wernecke mapping project (SWP), which will cover ten 1:50K map sheets in the southern Wernecke Mountains area in central Yukon. Field work in the first year served to highlight the complexities of the bedrock geology in the region, and identify areas of mineral potential.

The Mount Mervyn map sheet is underlain by Proterozoic and Paleozoic siliciclastic and carbonate rocks that have been deformed into an east-trending fold-and-thrust belt. Regional soil geochemical data coupled with bedrock observations highlight new areas of mineral potential (*i.e.* Ni and Au) that have not been previously identified. The style of mineralization with which the anomalous values are associated remain unknown will be resolved with continued field work and as isotopic constraints become available.

A field, petrographic and preliminary S-isotopic study of the Walt and Tyrala sediment-hosted barite occurrences (105O/7), and associated Ba-Zn-Pb mineralization, MacMillan Pass district, Yukon

N.A. Fernandes and S.A. Gleeson

The MacMillan Pass district (map sheet 105O), located in east Yukon, contains several sediment-hosted Ba ± Zn ± Pb deposits including the Tom and Jason deposits, as well as a multitude of `barren` sediment-hosted barite occurrences. A classic sedimentary-exhalative (SEDEX) model has been postulated for these occurrences in which the barite horizons represent distal expressions of a hydrothermal vent system. Fieldwork was completed at the Walt and Tyrala barite occurrences that occur within the MacMillan Pass District in order to examine the deposit-scale geology and to sample undeformed barite horizons for subsequent geochemical analysis. Samples were also collected from drill core from the Hess barite occurrence. Barium mineralization occurs in both the Devonian Portrait Lake Formation (Lower Earn Group) and in underlying Ordovician-Silurian limestone of the Road River Group. A variety of textures were encountered that were indicative of both synsedimentary deposition of barite, as well as diagenetic to epigenetic barite mineralization. Base metal sulphides that are interpreted to post-date the barite mineralization were encountered at depth in drill core and are primarily hosted by Road River Group carbonates.

New insights into the geology and mineral potential of the Coast Belt in southwestern Yukon

S. Israel, D. Murphy, V. Bennett, J. Mortensen and J. Crowley

The southwestern Yukon Coast Belt mapping project is a joint Yukon Geological Survey/Geological Survey of Canada initiative operated under Natural Resources Canada's GEM (Geomapping for Energy and Minerals) program. This project is aimed at investigating the geological relationships and mineral potential of the Kluane Schist, the Ruby Range batholith and the Yukon-Tanana terrane in southwestern Yukon. Bedrock mapping at 1:50 0000-scale followed a 400 m line-spaced aeromagnetic survey flown in the winter of 2010. Preliminary results indicate the presence of a northeast-dipping structural stack through a ~40 km-thick crustal section, whereby the Kluane Schist occupies the lowest structural level and the Yukon-Tanana terrane the highest. The Ruby Range batholith intruded along the contact between the Kluane Schist and the Yukon-Tanana terrane, and was emplaced late in the deformation history. An orthogneiss/paragneiss unit of unknown tectonic affinity was mapped structurally between the Ruby Range and the Kluane Schist. Detrital zircon analyses from two samples of Kluane Schist indicate that the onset of deposition for this metasedimentary sequence occurred after *ca.* 94 Ma. Two significant metamorphic events, dated at 82 and 70 Ma, affected the Kluane Schist. This indicates that original structural juxtaposition between the Kluane Schist and the Yukon-Tanana terrane pre-dated intrusion of the Ruby Range batholith.

Mineral potential in the Coast Belt area is significant and includes porphyry Cu-Mo-Au, epithermal Au-Ag and orogenic Au occurrences. The upper level of the Ruby Range batholith is most prospective for porphyry and epithermal mineralization, while the Kluane Schist is most prospective for orogenic Au mineralization.

Preliminary observations on stratigraphy and hydrocarbon potential of middle to Upper Cretaceous strata, Eagle Plain basin, northern Yukon

K. Jackson, M. McQuilkin, P.K. Pedersen, R. Meyer and L.S. Lane

The Eagle Plain basin, having proven hydrocarbon potential, is a relatively underexplored intermontane basin located in northern Yukon. Previous studies of the middle Albian-Cenomanian Parkin Formation and the Turonian Fishing Branch Formation are based on broad lithostratigraphic correlations. The primary goal of the study is to refine the sequence stratigraphic framework of the middle to Upper Cretaceous succession based on sedimentological observations. New findings from this study require subdivision of the stratigraphic nomenclature by defining new informal lithological members. Facies transitions, paleoflow indicators and isopach maps indicate overall westward deepening of the basin. Large-scale, sand-prone mass transport deposits observed in the upper part of the lower Parkin shale member in western Eagle Plain indicate the presence of shelf-to-basin floor relief of at least 100 m. Recognition of significant shelf-to-basin floor topography greatly increases the potential for hydrocarbon reservoirs (gas-dominated) in stratigraphic traps associated with the shelf edge.

Geophysical and borehole investigations of permafrost conditions associated with compromised infrastructure in Dawson and Ross River, Yukon

S. Laxton and J. Coates

The effects of permafrost degradation in Yukon have serious negative implications for the structural integrity of vertical infrastructure. This is especially pertinent for critical buildings such as hospitals, schools, *etc*., in small communities that are situated on top of warm, ice-rich permafrost. Projections of mean annual air temperature over the next few decades, based on regional climatic models, indicate that air temperature will rise, hastening the thaw of permafrost. The combination of rising of air temperatures and buildings situated on warm permafrost has prompted this investigation into the vulnerability of Yukon Government vertical infrastructure. The application of DC resistivity and ground penetrating radar in conjunction with borehole drilling indicates that in Dawson there is warm ice-rich permafrost beneath the Palace Grand Theatre; the Old Territorial Administration building is underlain by primarily unfrozen sediment; and permafrost under the St. Andrew's Church is characterized by high variability. A deep active layer was observed at Ross River School and geophysical surveys indicate that warm water drainage from the roof is contributing to the thaw of the underlying permafrost.

Quartz vein gold mineralization in the Klondike Schist: the Mitchell-Sheba system, central Klondike district, Yukon

T. Liverton and W. Mann

The Mitchell-Sheba occurrence is a gold, silver and base metal-bearing quartz vein system contained within a thrust slice of mafic schist that forms part of the Klondike Schist. The vein system formed late in the D_4 folding event or subsequently. Mineralization occurs as gold + silver, base metal sulphides and sulphosalts within quartz veins. Low-grade gold associated with pyrite mineralization is hosted within the surrounding chlorite schist. The mafic rocks are interpreted to be metavolcanic in origin and have reached upper greenschist facies metamorphism. Hydrothermal sericite-carbonate alteration of the host rocks is associated with mineralization and is reflected in the whole rock geochemistry. The prospect underlies one of the larger soil geochemical anomalies in the Klondike region.

Neoproterozoic and early Paleozoic correlations in the western Ogilvie Mountains

F.A. Macdonald, E.F. Smith, J.V. Strauss, G.M. Cox, G.P. Halverson and C.F. Roots

Continued investigations of sedimentary units in the Tatonduk and Coal Creek inliers of the western Ogilvie Mountains have resulted in a refinement of the regional Neoproterozoic and early Paleozoic stratigraphy. The proposed correlations simplify the stratigraphic nomenclature in Yukon and promote synthesis of geological data.

Strata of the Pinguicula, Fifteenmile, Rapitan and Hay Creek groups, as well as the upper Windermere Supergroup, are present in both inliers. Prominent unconformities are present between the Pinguicula and Fifteenmile groups, within the Fifteenmile Group, and between the Windermere Supergroup and the variable overlying Paleozoic stratigraphy, representing at least three distinct tectonic events and basin-forming episodes.

We propose redefining the Fifteenmile Group, abandoning the Tindir Group, and recognizing equivalent strata to the Coates Lake Group and Mackenzie Mountains Supergroup. This new stratigraphic nomenclature across the Ogilvie, Wernecke and Mackenzie mountains will improve regional correlations between the northern Cordillera and inliers of the western Arctic.

Paleoproterozoic Bonnet Plume River intrusions: Evidence for a calc-alkaline arc at 1.7 Ga and its partial preservation in Yukon, Canada

A.B. Nielsen, D.J. Thorkelson, D.D. Marshall and H.D. Gibson

The 1.71 Ga Bonnet Plume River intrusions (BPRI) and related volcanics are preserved only as clasts in the 1.60 Ga Wernecke breccias of Yukon that host iron-oxide copper gold (IOCG) occurrences. Field work conducted in 2009 confirmed that they did not intrude the surrounding <1.64 Ga Wernecke Supergroup. Petrography shows that they are extensively altered and/or metasomatized, although relicts of primary igneous minerals remain. The major oxides are of little use in classification. Trace element geochemistry however, reveals a mafic to intermediate, calc-alkaline volcanic arc signature. Geochemical modelling has demonstrated that crystal fractionation was dominated by pyroxenes, plagioclase and olivine. The BPRI and related volcanic rocks are thought to have originated in a calc-alkaline volcanic arc that was obducted onto the Wernecke Supergroup, subsequently partially brecciated, and finally sank within the Wernecke breccias to the level of the Wernecke Supergroup.

Volcano-sedimentary megaclast in Wernecke breccia, Yukon, and its bearing on the Proterozoic evolution of northwestern Laurentia

T.J. Peters and D.J. Thorkelson

A group of hydrothermal breccias, collectively known as Wernecke breccia, formed at approximately 1.60 Ga in Yukon. The breccias consist of a hydrothermally precipitated matrix that cements clasts derived mainly from the metasedimentary Wernecke Supergroup. Locally, clasts and megaclasts of the Bonnet Plume River intrusions, the Slab volcanics, and other volcanic rocks are also present within the breccias. This paper describes a volcano-sedimentary succession interpreted as a megaclast within Wernecke breccia. The succession consists of pyroclastic and epiclastic rocks that formed in a volcanic environment in a region of evolved crust. This finding adds detail to the character of a postulated Proterozoic terrane that may have collided with the northwestern margin of ancestral North America toward the end of the Paleoproterozoic.

Stratigraphy of the Mackenzie Mountains supergroup in the Wernecke Mountains, Yukon

E.C. Turner

Mackenzie Mountains supergroup (MMSG) strata in the Wernecke Mountains are described in detail. Three new formations are assigned to the revised and formalized Hematite Creek Group, which forms the base of the MMSG. The Dolores Creek Formation (black mudrocks and microbial dolostone) is the basal unit of the MMSG. The Black Canyon Creek Formation (cyclic peritidal dolostone) and Tarn Lake Formation (desiccation-cracked, shallow-marine siltstone and sandstone) are probably equivalent to the 'H1 unit' and Tsezotene Formation in NWT, respectively. The Hematite Creek Group is overlain by the Katherine Group (thick quartz arenite-dominated succession). The highest MMSG strata documented belong to the Basinal assemblage (Little Dal Group). Regional thickness and lithofacies variations in two of the new formations suggest that the basin had considerable paleobathymetric variation that is not consistent with patterns established in NWT. The economic potential of the succession is unknown.

Geology of new gold discoveries in the Coffee Creek area, White Gold District, west-central Yukon

A.J. Wainwright, A.T. Simmons, C.S. Finnigan, T.R. Smith and R.L. Carpenter

A new widespread, structurally controlled gold mineralizing system has been identified during the 2010 exploration drilling program at the Coffee Project, west-central Yukon. The Coffee Creek area is underlain by a sequence of shallowly to moderately south to southwest-dipping Paleozoic metamorphic rocks that are considered to be part of the Yukon-Tanana terrane and are intruded by the Cretaceous Coffee Creek granite along a west to northwest-trending contact. During the 2010 drilling program, structurally controlled gold mineralization was discovered in all major lithological units underlying the Coffee property. Importantly, these mineralized zones correspond to a number of discrete structural corridors. The gold zones are steeply dipping and characterized by extensive silicification in addition to sericite and clay alteration accompanied by variable As-Ag-Sb-Ba-Mo enrichment. Polyphase breccias of both hydrothermal and tectonic origin, in addition to andesite-dacite dykes, are common within the gold-bearing structural corridors. The dominant sulphide is pyrite, although trace arsenopyrite, chalcopyrite and stibnite are observed locally. The similarity of breccia textures and alteration/sulphide mineralogy between all gold zones currently defined on the Coffee property implies a common mineralizing event.

2010 List of Publications and Maps

2010 YGS PUBLICATIONS

YGS released 39 new publications in 2010: 2 Annual Reports, 2 Miscellaneous Reports and 35 YGS Open Files.

YGS ANNUAL REPORTS

Yukon Exploration and Geology Overview 2009. K.E. MacFarlane, L.H. Weston and L.R. Blackburn (eds.), 2010, Yukon Geological Survey, 96 p.

Yukon Exploration and Geology 2009. K.E. MacFarlane, L.H. Weston and L.R. Blackburn (eds.), 2010, Yukon Geological Survey, 329 p.

YGS MISCELLANEOUS REPORTS

Bennett, V., Colpron, M. and Burke, M., 2010. Current thinking on Dawson Range Tectonics and Metallogeny, Yukon Geological Survey Miscellaneous Report MR-2.

Jackaman, W., 2010. Yukon NGR Stream Sediment Database Assessment Project. Yukon Geological Survey Miscellaneous Report MR-1.

YGS OPEN FILES

Fraser, T.A., 2010. Conventional reservoir petrophysical property assessment for 17 wells, Peel Plateau and Plain, Yukon Territory (65° 00′ to 67° 00′ N; 132° 00′ to 136° 00′ W). Yukon Geological Survey, Open File 2010-35.

Kiss, F., 2010. Total magnetic field, Eagle Plains Aeromagnetic Survey, NTS 116 G (north half), Yukon. Yukon Geological Survey Open File 2010-1; Geological Survey of Canada Open File 6454, scale 1:100 000.

Kiss, F., 2010. First vertical derivative of the magnetic field, Eagle Plains Aeromagnetic Survey, NTS 116 G (north half), Yukon. Yukon Geological Survey Open File 2010-2; Geological Survey of Canada Open File 6455, scale 1:100 000.

Kiss, F., 2010. Total magnetic field, Eagle Plains Aeromagnetic Survey, NTS 116 H (north half), Yukon. Yukon Geological Survey Open File 2010-3; Geological Survey of Canada Open File 6456, scale 1:100 000.

Kiss, F., 2010. First vertical derivative of the magnetic field, Eagle Plains Aeromagnetic Survey, NTS 116 H (north half), Yukon. Yukon Geological Survey Open File 2010-4; Geological Survey of Canada Open File 6457, scale 1:100 000.

Kiss, F., 2010. Total magnetic field, Eagle Plains Aeromagnetic Survey, NTS 116 I (south half), Yukon. Yukon Geological Survey Open File 2010-5; Geological Survey of Canada Open File 6458, scale 1:100 000.

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