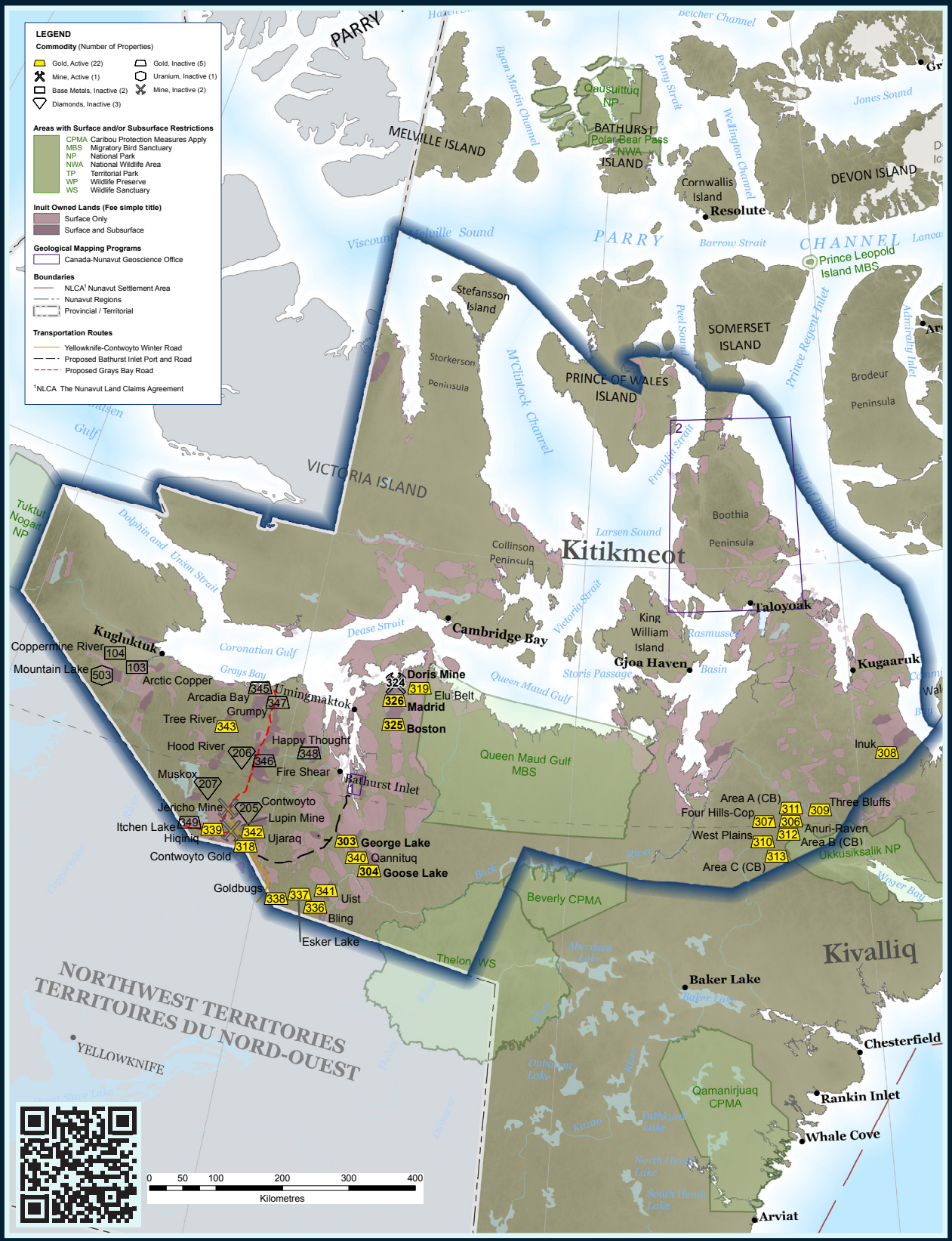
OVERVIEW 2018

NUNAVUT Mineral Exploration, Mining and Geoscience

KITIKMEOT REGION



https://cngo.ca/exploration-overview/

KITIKMEOT REGION

KITIKMEOT REGION GEOLOGY

The Kitikmeot region includes some of the oldest rocks in Canada, which make up the northern part of the Canadian Shield. These are metamorphosed, granitic, and volcanic rocks that formed during the Precambrian Eon; the time between when the Earth formed (about 4.5 billion years ago) until the beginning of the Cambrian period (540 million years ago). These rocks have been deformed at various times in the past by mountain-building events and, in places, have been enriched with metallic deposits such as gold, silver, copper, zinc, nickel, or platinum. These folded and faulted rocks are deeply eroded and are exposed across the present landscape of the Kitikmeot mainland. Clues as to where metallic deposits occur can be found by prospecting with ground and airborne geophysical surveys, or discovered by their association with quartz veins or the rusty weathering of sulphide-rich rocks.

To the north, on Victoria and Prince of Wales Islands, younger sedimentary rocks of the Paleozoic Arctic platform were deposited over the ancient Shield rocks while they were submerged below an ocean basin. These flat-lying or gently-tilted sedimentary rock layers preserve numerous fossils of marine life, including shellfish and corals. The bedrock in the region is often hidden beneath a cover of much younger clay, sand, and gravel deposited by glaciers. This soil-like material, called glacial till, is formed when the bedrock is ground down by the movement of glaciers and is left behind as the glaciers melt. Fragments of harder minerals, including diamonds, can be found in these till deposits and often can be traced to their place of origin.

SELECTED MINING AND EXPLORATION HIGHLIGHTS

Sabina Gold and Silver Corp. continued exploration and development activities at its **Back River** project. The project area – located approximately 75 kilometers southwest of Bathurst Inlet and covering an area of almost 50,000 hectares (ha) with a length of 80 km – consists of seven properties. All of the 2018 exploration activities were focused on the Goose and Boulder properties and on the newly constructed marine laydown area, which was completed in time to receive two sealifts prior to termination of the shipping season.

Current resource estimates for the Goose property total 7.18 million ounces of gold in the measured, indicated and inferred resource categories. The above estimates include only the Umwelt, Llama, and Goose Main deposits. The George property contains an indicated resource of 1.1 million ounces of gold and an inferred resource of 980,000 ounces of gold.

In January 2018, the company finalized a $66 million investment by Zhaojin Mining Industry Co Ltd, and obtained a Type B Water Licence required for completion of pre-construction infrastructure work. Additional financing of $22 million was announced by the company in December. In April 2018, Sabina finalized the Inuit Impact Benefit Agreement and the Long Term Land Tenure Agreement with the Kitikmeot Inuit Association. These agreements, in addition to outlining benefits to Inuit, included shares in Sabina and a one per cent net smelter return.

Construction of the marine lay-down (MLA) area and landing at Bathurst Inlet was completed with a permanent 45-person camp, barge landings, laydown areas, a 3,000 foot gravel airstrip, and a permanent fuel farm pads built. In November, the company announced it had received positive Ministerial recommendation for its Type A Water Licence, which will allow Sabina to commence activities, including mine construction, on site. The licence allows for the development of the Umwelt, Llama, and Goose Main open pits as well as underground workings at Umwelt.

Sabina planned an aggressive, 25,000 metre diamond drilling program in 2018 designed to follow up on the 2017 drilling campaign and to test other promising targets. In addition to drilling, geological mapping, a till survey, and geochronology work were done on selected areas of the property. The first stage of the drill program consisted of 6,000 metres in 10 holes that targeted areas in the vicinity of the existing mineral resource and stand-alone targets located outside of the resource. Some of the highlights of the spring drilling campaign included further expansion of the Llama Extension, as well as discovery of a new mineralized zone, Nuvuyak Target, which could represent an extension of the Goose Main deposit. The newly discovered target is located approximately 850 metres along strike to the west and 1,000 metres down plunge of the Goose Main deposit. Sabina also completed a short exploration program at the Boulder property located 15 kilometers northwest of the Goose property. Result of this till survey, in conjunction with earlier geophysical surveys, defined targets for a four-hole exploratory drill program. One of these holes intersected gold mineralization in banded iron formation.

Auryn Resources Inc. continued to work on its 100 per cent owned **Committee Bay** gold project located in the eastern Kitikmeot region, approximately 180 km northeast of Agnico Eagle Mines Limited's Meadowbank gold mine. The Committee Bay belt has been explored for base metals, uranium, and gold. The Three Bluffs deposit, discovered in 2003 and located in the central part of the property, contains an indicated mineral resource of 524,000 ounces of gold and an inferred resource of 720,000 ounces of gold.

The 2018 drilling program was planned for six prospects. Of these, only three – Aiviq, Kalulik, and Aarluk – were drilled, with almost 5,000 metres of diamond drilling done on Aiviq target and 22 rotary air-blast (RAB) holes totalling 4,135 metres drilled at the Kalulik and Aarluk prospects. All of the drill holes completed at Aiviq prospect this year intercepted gold mineralization associated with a 20 to 40 metre wide zone. RAB drilling at Kalulik and Aarluk prospects intersected gold as did boulder sampling down-ice from those prospects.

TMAC Resources Inc. continued its development and exploration activities along its wholly-owned **Hope Bay** belt project, which includes one operating mine at Doris and deposits at the Madrid trend and at Boston, containing a total resource of 6.59 million ounces of gold.

Since installing the first of two concentrator lines in its processing plant in 2017, TMAC has struggled to meet gold recovery targets. Gold recovery improved from 71 per cent in the first quarter of 2018 to 82 per cent in October. A second concentrator line was installed and commissioned by June, 2018. The mine produced 33,100 ounces of gold in Q3, 2018 – the highest amount since the mine commenced commercial production.

In 2018, the approximately 28,500-metre exploration drilling program concentrated on the Doris deposit and on the Madrid North trend. Over 19,000 metres of drilling were completed at Doris in the first three quarters of 2018. At Madrid trend, TMAC drilled 75 drill holes totalling 9,452 metres. All of these holes concentrated on near-surface mineralization at the Naartok East and West deposits. TMAC also completed a limited regional exploration program consisting of two regional exploration drill holes and 790 till samples. The two regional exploration drill holes totalling 758 metres were designed to provide stratigraphic information within a broad, sediment-covered valley between the Madrid and Doris deposits.

In September, TMAC announced a public offering of $90 million, of which $20 million has been budgeted toward exploration in 2019. On November 11, 2018, TMAC received its project certificate from NIRB for the Madrid and Boston projects, and the Type A Water Licence for each project was approved January 14, 2019.

Silver Range Resources Ltd.'s **South Kitikmeot Gold** project consists of seven gold properties: Uist, Goldbugs, Esker Lake, Hiqiniq, Ujaraq, Qannituq, and Bling. In February 2018, Silver Range was issued 47,000 ha of prospecting permits close to its Gold Bugs, Esker, and Bling properties, expanding the size of the project to almost 73,000 ha in mineral claims and prospecting permits.

Gold mineralization in the project area is found in rocks similar to those which host gold at Sabina's Goose and George properties and at the past-producing Lupin gold mine. In March 2018, Silver Range signed a letter of intent to allow Amaroq Gold Corporation to purchase 100 per cent interest in the project, in exchange for $1,725,000 and shares of Amaroq issued to Silver Range over five years. Silver Range retains a three per cent net smelter return in the project, and remained the operator for the 2018 exploration season. No results from any exploration activities at the South Kitikmeot Gold project were released by either company.

Silver Range also obtained three prospecting permits totalling 39,250 ha located 155 km southeast of Kugluktuk. The **Tree River** project hosts gold mineralization in Archean quartz pebble conglomerates, similar to rich gold deposits found at Witwatersrand (South Africa) and Pilbara (Australia).

In August, Silver Range announced a summer exploration program consisting of a two-person crew who mapped, prospected, and collected a total of 88 rock samples. Two mineralized zones (Main and West Zones), approximately 4 km apart, were sampled and prospected. The Main Zone is 650 metre long, and the West Zone is 300 metres long. Silver Range did not disclose future exploration plans for the property.

OTHER GEOLOGICAL PROGRAMS AND STUDIES

Nunavut Prospectors Program (NPP) and Introduction to Prospecting Course (IPC)

Since 2001, the Economic Development and Transportation (EDT) department of the Government of Nunavut has offered a week-long Introduction to Prospecting course to residents of Nunavut's 25 communities. More than twelve hundred Nunavummiut are graduates of 114 course deliveries. This long-running course introduces participants to basic prospecting skills, rocks, minerals, and the mining industry. Course graduates may qualify for financial and technical assistance through the Nunavut Prospectors Program. This program has provided grant-contributed assistance to 174 resident prospectors in 24 communities in all three regions since its inception in 2000.

In 2018, the IPC course was offered to seven communities in Nunavut, including Gjoa Haven in the Kitikmeot region, with 43 persons receiving certificates. The 2018 Nunavut Prospecting Program assisted four prospectors with their exploration for minerals in the vicinity of three communities. The delivery of prospecting course and support of local prospectors is expected to continue in 2019.

GLOSSARY OF TERMINOLOGY

Deposit – a natural accumulation of a metal, gemstone or other valuable mineral substance, which may be economically viable but whose characteristics require more detailed study to be classified as a resource.

Drilling – the extraction of rock or surface material using a rotary drill. Drills can extract cylinder-shaped cores of rock using a synthetic diamond drill bit, or chips of rock using a jackhammer-type drill bit. Geologists study these cores and chips to better understand the underground geological structure of an area and determine the presence or absence of ore minerals.

Exploration – the process of searching for mineral deposits.

Geophysical survey – the collection of information associated with bedrock using sensors that record electric, magnetic, or other kinds of data. The survey can be conducted from the air or the ground and is used by mineral exploration companies to detect physical properties of rocks such as magnetism, gravity or conductivity.

Prospecting – the search for outcrops or surface exposures of mineral deposits with economic potential.

Resource – a published estimate of the amount of naturally occurring metal, gemstone, or other mineral substance in a mineral deposit that could allow for economic extraction of the material in the future. Classifying a resource within a deposit indicates there is moderate confidence in the quantity and quality of ore in that deposit. Specific legal criteria exist to classify a deposit as a resource.

Canada-Nunavut Geoscience Office

867 975 4412
867 979 0708

info@cngo.ca

www.cngo.ca

Government of Nunavut

Department of Economic Development and Transportation

Minerals and Petroleum Resources Division

867 975 7800
867 975 7870

minerals@gov.nu.ca

www.edt.gov.nu.ca

Government of Canada

Crown Indigenous Relations and Northern Affairs Canada

Lands Directorate

867 975 4500
867 975 4276

AANDC.MineralsNU-Mineraux NU.AADNC@canada.ca

AANDC.ArchivesNU.AADNC@canada.ca

www.rcaanc-cirnac.gc.ca

Nunavut Tunngavik Incorporated Lands, Minerals, Oil and Gas

867 983 5600
867 983 5624

JAitaok@tunngavik.com

www.ntilands.tunngavik.com

Check Out the Nunavut Exploration Overview on-line:

www.NunavutGeoscience.ca

The most authoritative stop for Nunavut geoscience information.