



**A GUIDE TO MINERAL OPPORTUNITIES  
IN THE GWICH'IN SETTLEMENT AREA**



**Gwich'in Tribal Council**

**The Gwich'in Tribal Council** (GTC) recognizes the potential of mineral exploration and mining activities as a possible avenue for future economic and social development for the Gwich'in people. This includes the generation of revenue, employment opportunities, training, and business and investment opportunities. As such, the GTC aims to promote mineral exploration and mining development within the Gwich'in Settlement Area (GSA).

GTC supports future sustainable mineral exploration practices and mining activity under particular conditions, outlining the protections that must be put in place to ensure sustainable mining development. This includes the protection of the fundamental rights of the Gwich'in people and respect for the environment in Gwich'in territory.



## ABOUT THE GWICH'IN TRIBAL COUNCIL

We are an Indigenous organization representing Gwich'in Participants in the Mackenzie Delta of the Northwest Territories (NWT) and across Canada. Our objectives are to:

- Develop and promote economic, social, educational and cultural programs that will enable the Gwich'in to become self-sufficient and full participating members in a global society
- Receive, preserve and enhance the capital, the lands and other benefits transferred to the Gwich'in pursuant to the Gwich'in Comprehensive Land Claim Agreement signed on April 22, 1992
- Protect and preserve the rights, interest and benefits of the Gwich'in in reference to their use, ownership and management of lands, waters, and resources in the Gwich'in Settlement Area
- Retain, preserve and enhance the traditional and cultural values, customs and language of the Gwich'in in a changing society.

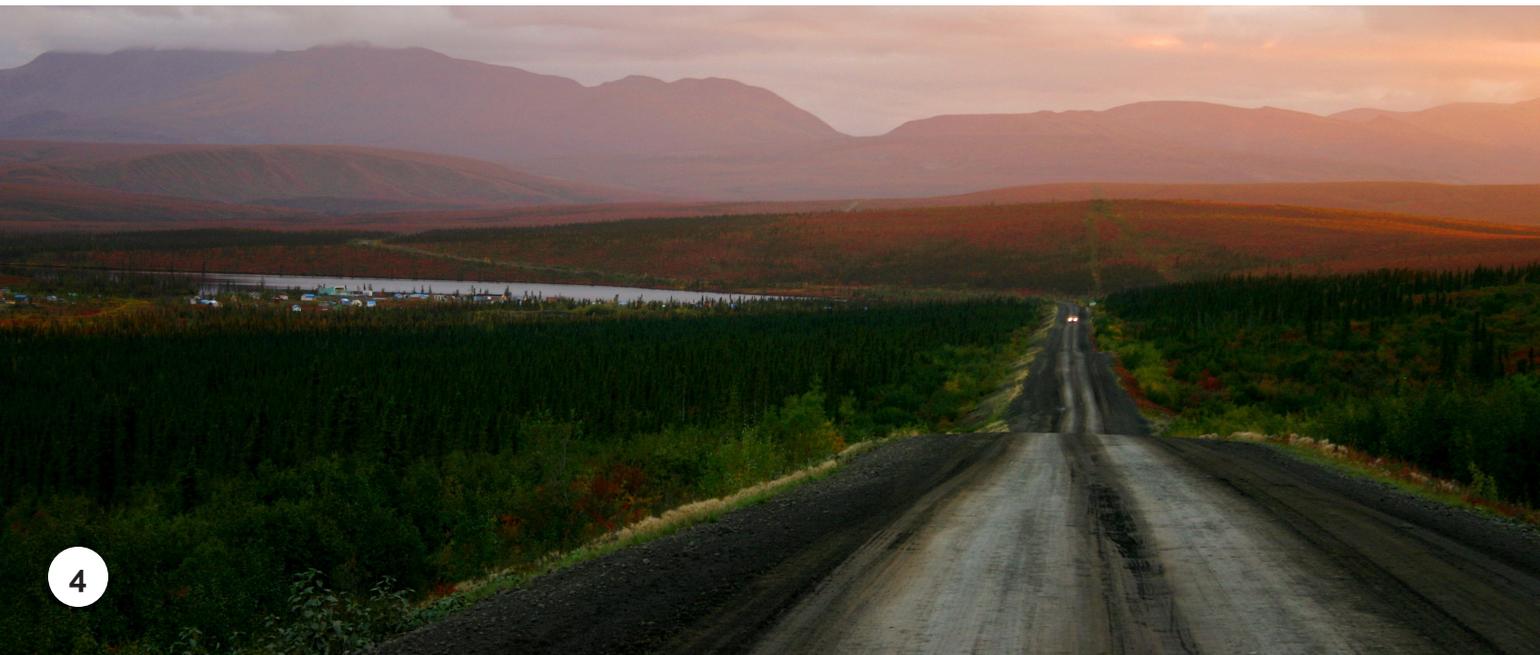


## ABOUT THE GWICH'IN SETTLEMENT AREA (GSA)

The GSA comprises an area of approximately 57,000 square kilometres in the north-western corner of the NWT. It abuts Yukon Territory to the west, the Inuvialuit Settlement Region to the north and east, and the Sahtu Settlement Area to the east and south. The MacKenzie and Peel Rivers are key resource and traditional transportation ways in the region.

40% of this land, or 22,422km, is Gwich'in private land. The remainder is NWT public land within the GSA, where the Gwich'in have land use rights. In the GSA, the Gwich'in have surface rights on 28% of the land comprising 16,234 square km, while the Gwich'in also have sub surface rights on 4,299 square km. In addition, the Gwich'in own parcels of land within municipal boundaries of each community.

The four Gwich'in communities are Inuvik, Aklavik, Fort McPherson and Tsiigehtchic (the former two shared with the Inuvialuit). Inuvik is accessible by air year-round. Inuvik, Fort McPherson and Tsiigehtchic are accessible via the Dempster Highway year-round, with the exception of spring "break up" and fall "freeze up", when neither ferries nor ice bridges are operational. Aklavik is accessible via ice road in winter and by air from Inuvik in other seasons.



## **GEOLOGY OF THE GWICH'IN SETTLEMENT AREA (GSA)**

The GSA is underlain primarily by sediments of the Interior Platform derived from erosion of the Cordilleran Mountain Belt. Small sections of the Cordilleran Mountain Belt are included in the extreme northwest corner and the southernmost tip of the GSA. They are referred to respectively as the Aklavik Arch Complex and the Mackenzie Fold Belt. The sedimentary rocks which underlie the largest portion of the GSA consist primarily of sandstones, carbonates and shales.

The geologic history of the northeastern Yukon and northern Mackenzie region includes many episodes of mountain building, erosion and sedimentation. The highly deformed rock formations of the Cordilleran Mountain Belt, including the Aklavik Arch Complex and the Mackenzie Fold Belt, have undergone massive compression and as a result are often highly folded and fractured. Along the fractures, volcanic magma created kimberlite rocks. Some of these kimberlites contain diamonds and are the source of the diamond mining operations further south in the NWT.



## MINERAL AND HYDROCARBON POTENTIAL OF THE GSA

### Cordilleran Mountain Chain

The small sections of the Cordilleran Mountain Belt included in the Aklavik Arch Complex and the Mackenzie Fold Belt are characterised by relatively high mineral potential. While the mineral potential differs somewhat between these two areas, these highly deformed rocks contain known mineral showings of gold, silver, copper, zinc, nickel, uranium, iron ore, coal, barium and gypsum.

### Inland Sedimentary Basin

These types of geological formations are generally known for their potential for copper, lead, zinc and silver deposits, however, within the GSA they have been explored mainly for their oil and gas potential to date. There are significant, known deposits of hydrocarbons in



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these sedimentary formations where they extend northwards under the continental shelf of the Beaufort Sea.

Exploratory wells have also been drilled on land in these sedimentary formations looking for conventional oil and gas deposits and for the most part they have been unsuccessful. However, recent work conducted by the Northwest Territories Geological Survey in the central and eastern parts of the GSA has resulted in the identification of significant potential for shale-hosted hydrocarbons.

### **Diamond Deposits**

There is the potential for the presence of kimberlite pipes, within and beneath the sediments in the central and eastern parts of the GSA. Previous exploration has produced promising indications of the presence of kimberlite pipes beneath the surface, but direct evidence through drilling has yet to occur. Further systematic exploration is required.





## **Sand and Gravel Deposits**

A large portion of the GSA is covered in glacial deposits. These materials can form valuable sources of aggregate material suitable for local construction of roads and buildings. They can also contain 'indicator minerals' useful in prospecting for kimberlites.

## **AVAILABILITY OF INFORMATION, DATA AND MAPS**

Information is available online and from the Government of the Northwest Territories Geological Survey (NTGS) and historical work conducted by the Geological Survey of Canada (GSC).

The NTGS has developed eight web applications that provide systematic, searchable access to geoscience information in the form of reports, maps at varying scales and databases of mineral showings. These applications provide access to:

- a. NTGS geological maps focused on surficial geology and one compilation map of the underlying bedrock geology
- b. NTGS reports documenting work in specific regions of the GSA focussed on enhancement of pre-existing geophysical and well-log data for hydrocarbon potential
- c. Company assessment reports describing exploration work conducted on mineral properties
- d. Database of mineral showings along with classification, brief descriptions and location by latitude and longitude.

GSC conducted both detailed and large-scale geological mapping and interpretation of the Yukon, NWT and Nunavut landscapes. One of the most useful documents relevant to the GSA is GSC Bulletin 422 (1997), describing Operation Porcupine, an air-supported, regional mapping of the geology and mineral potential of the northern Yukon Territories and the north-western district of Mackenzie, including the area defined by the GSA.



## **CURRENT REQUIREMENTS FOR MINERAL EXPLORATION ON NWT PUBLIC LANDS**

All mineral exploration activities are to be carried out with the existing legal and regulatory regime in the NWT used as a minimum standard, namely the NWT Mining Regulations and the requirements of the Gwich'in Land and Water Board (GLWB) for any exploration activity within the GSA.

The GNWT currently does not pre-qualify or screen companies operating in the Territories based on financial, technical or reputational criteria, either at the exploration or production phases.

In order to allow Gwich'in communities to share concerns about where exploration should or should not occur after a claim is made, but before exploration activity begins, any proponent obtaining a claim from the Mining Recorder must contact the GTC Lands and Resources Department. This will enable the Lands Department to notify Gwich'in



communities through their organizational channels. This is expected of proponents preparing for any exploration activity on public land within or overlapping with the GSA.

In addition, all proponents planning for any exploration activity are advised to consult the Gwich'in Land Use Plan, which designates protected and conservation areas.

Once exploration on public lands requires medium or heavy activities, including drilling, heavy equipment, blasting, trenching or construction of larger or more permanent camps, plans are required to be submitted to GNWT. In these cases, the relevant information must also be provided to the GTC Lands Department. If the exploration activity is medium or heavy (or exceeds a certain camp size or fuel quantity) and is occurring in the GSA, a permit must be obtained from GLWB.

Mine development on public lands within, or on lands overlapping with the GSA are governed by the GNWT's Mineral Resources Act, Mackenzie Valley Resource Management



Act, NWT Mining Regulations and additional GNWT regulations. Notification and appropriate engagement and consultation at each stage in the mine development process must be provided to the GTC, even when activity occurs on public lands in the GSA.

### **CURRENT REQUIREMENTS FOR MINERAL EXPLORATION ON GWICH'IN PRIVATE LANDS**

Similar to other types of surface access requests, mineral exploration requests on private GSA lands, or overlapping onto private GSA lands are to be received by GTC Lands and Resources Department.

### **CONSULTATION REQUIREMENTS IN THE GSA**

Any person or company intending to explore for minerals, oil and gas in the Gwich'in Settlement Area and requiring a land use permit or water license from the Gwich'in Land and Water Board, must consult the Gwich'in Tribal Council before the exploration takes



place. Engagement must take place prior to medium or heavy exploration, development and production of minerals.

The Gwich'in Comprehensive Land Claim Agreement (GCLCA - 21.1.3) lists areas which must be included in consultation from proponents prior to exploration for resources in the GSA. These areas include environmental impact of the activity and mitigative measures, impact on wildlife harvesting and mitigative measures, and orientation and counselling for Gwich'in employees.

Companies applying for a surface lease to the GTC for access on private lands will receive guidance to complete the appropriate engagements. The GTC will conduct ongoing engagement and communication to ensure that these requirements are communicated effectively to potential proponents.

This consultation process is to be paid for by a proponent, without cost to the GTC.



## GWICH'IN CULTURE AND TRADITION

All mineral development and mining activities conducted within the GSA shall be carried out with respect for the Gwich'in way of life. The GTC – in conjunction with the GLWB – does not permit mineral exploration and mining activity at designated sites with high cultural or spiritual value. Traditional Knowledge will be given high precedence when considering areas for protection. The Cultural Heritage Department of the GTC will play a role in advising regarding such sites, along with the Gwich'in Land Use Plan.

The GTC will work with industry proponents to encourage and promote cultural sensitivity in all mineral exploration and mining activity, including cultural awareness training for employees and company representatives.

Should the GTC choose to engage in mining activity in the GSA, the GTC aims to be a partner in mining development to ensure it fulfills its mandate for protecting and preserving the rights and interests of the Gwich'in, and so that the economic and social benefits for the Gwich'in are maximized.



# THE GWICH'IN SETTLEMENT REGION

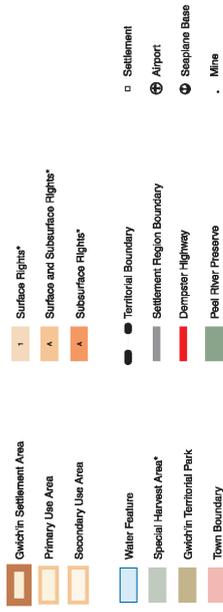
Yukon and Northwest Territories, Canada

Scale 1:768,140



Lambert Conformal Conic Projection  
Standard parallels at 64° and 68°

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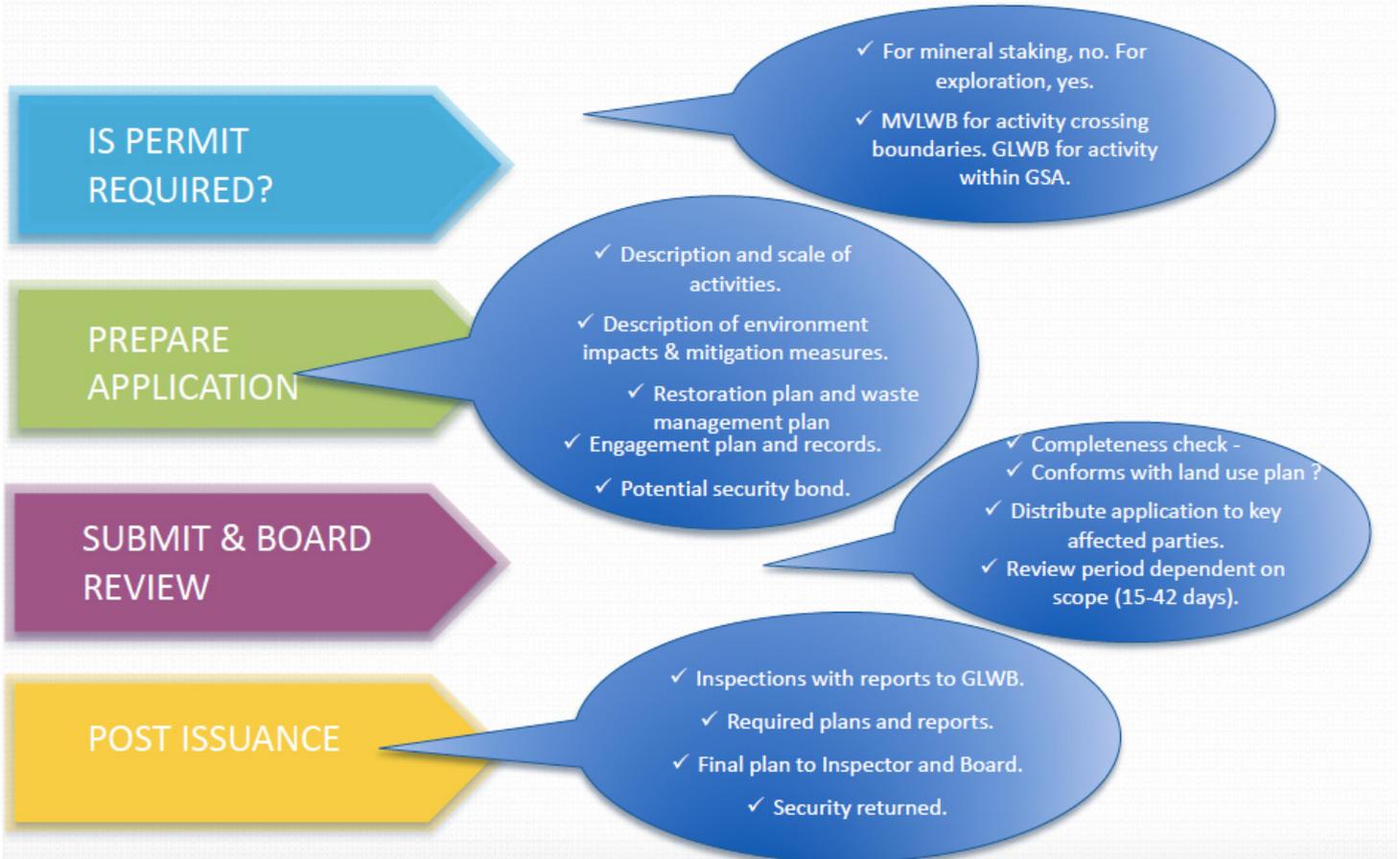
\* Refer to the Gwich'in Comprehensive Land  
Claim Agreement for specific rights and conditions







# How to get a GLWB land use permit



## GUIDING PRINCIPLES

- Respect for the Gwich'in Participants, lands, wildlife and environment
- Mineral Development is managed using sustainability principles and maximizes social and economic benefits of mining for Gwich'in People
- Minimize negative social and environmental impacts of mining



### **CONTACT US:**

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### **LINKS:**

Gwich'in Land Use Plan is  
downloadable from  
<https://www.gwichinplanning.nt.ca/>

GTC Department of Cultural Heritage  
<https://www.gwichin.ca/>

Gwich'in Tribal Council  
<https://gwichintribal.ca/>



