

# Hackett River Project

October 2012

Xstrata Zinc Canada

# Agenda for this meeting

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1. Who is Xstrata?
2. Life Cycle of a Mine
3. Hackett River Project Overview
4. Bathurst Inlet Port and Road Project Update

Break

5. Environmental and Socio-Economic Baseline Studies
6. Regulatory Review Process and Schedule
7. Hear your views and questions about the projects



# Xstrata's Operations Worldwide

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- **Xstrata is the fourth largest mining company in the world.**
- Industry leading organic growth with an extensive portfolio of projects.
- Known and proven world class record of project execution.
- Xstrata has leading standards of health, safety and environment management.
- Xstrata is committed to the development of sustainable communities where it operates.

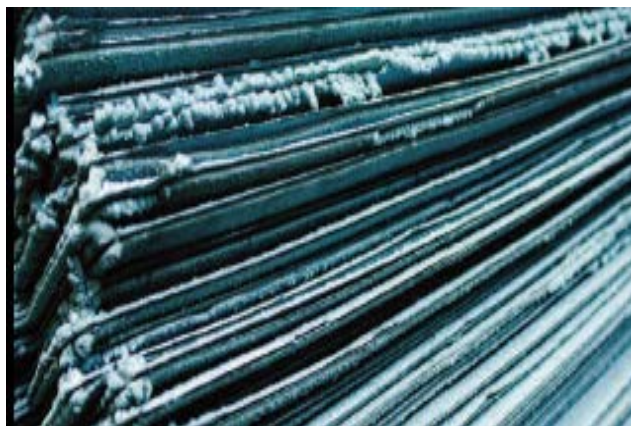


# Xstrata's Business Units

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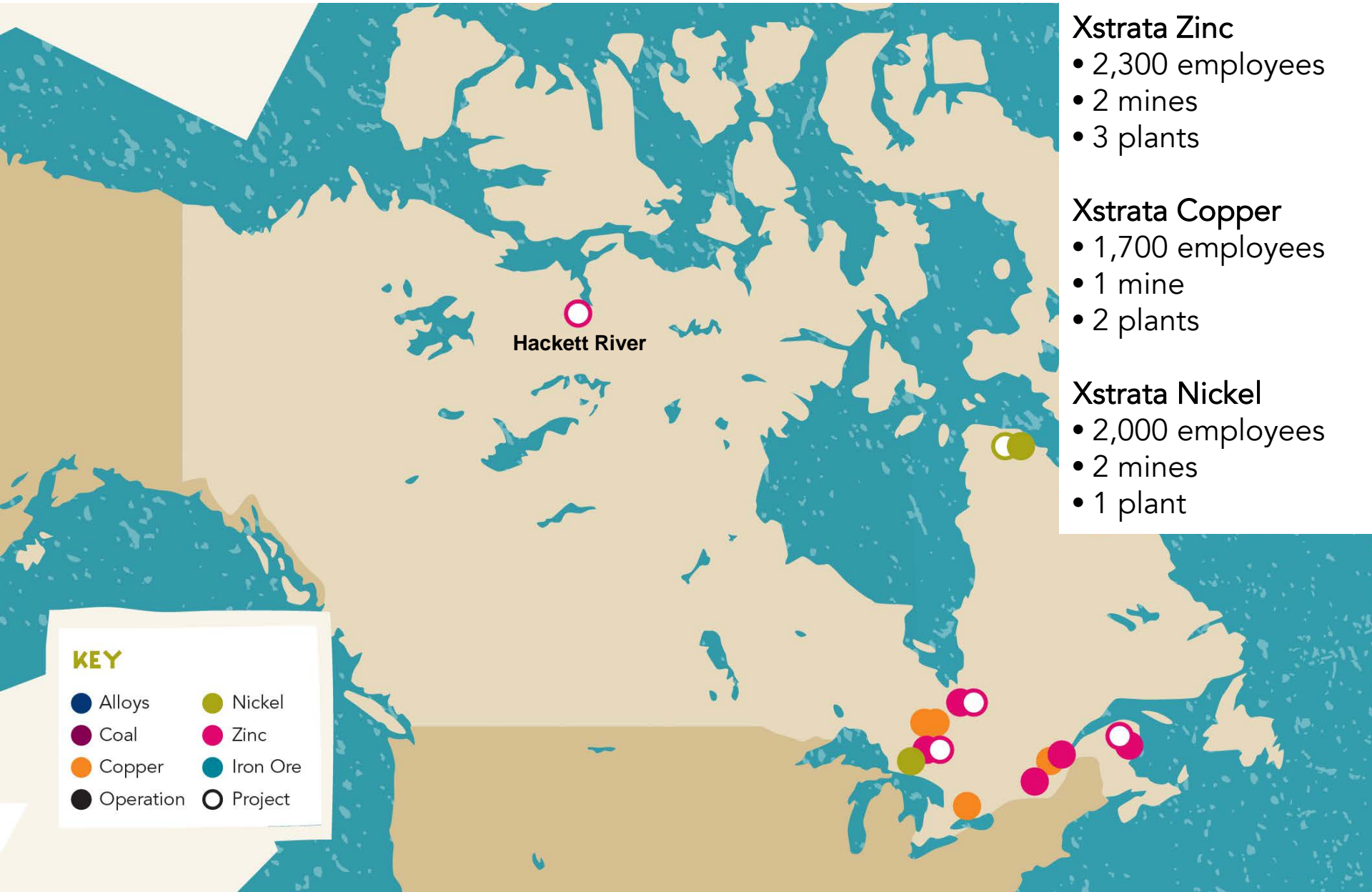


- Alloys
- Coal
- Copper
- Nickel
- Zinc





# Xstrata Operations and Exploration in Canada



## Xstrata Zinc

- 2,300 employees
- 2 mines
- 3 plants

## Xstrata Copper

- 1,700 employees
- 1 mine
- 2 plants

## Xstrata Nickel

- 2,000 employees
- 2 mines
- 1 plant

# Xstrata Sustainable Development Policy

The Xstrata SD Policy is based on the following four basics components:

- **The Environment:** We aim to preserve the long-term health, function, and viability of the natural environments affected by our operations.
- **Our Communities:** We contribute to the social and economic development of sustainable communities associated with our operations.



**Sustainable Development Policy**

We are committed to the goal of sustainable development. We balance social, environmental and economic considerations in how we manage our business. We believe that operating to leading standards of health, safety and environmental management, contributing to the development of sustainable communities, and engaging with our stakeholders in two-way, open dialogue, regardless of our location, enhances our corporate reputation and is a source of competitive advantage. This enables us to gain access to new resources, maintain a license to operate, attract and retain the best people, access diverse and novel sources of capital, identify and act upon business opportunities, and optimise our management of risks.

We comply in full with the laws and regulations in each country where we operate. In addition, we operate in accordance with Xstrata's sustainable development framework, aspiring to achieve the highest international standards regardless of location and without exception. We conduct regular internal and external audits of our business and operations to assure compliance with our business principles, policies and standards.

**Health and Safety**

We aim to operate a safe workplace that is injury- and fatality-free, and to enhance the well-being of employees, contractors and communities. To achieve this:

- we provide visible safety leadership, and appropriate leadership development and training at every level;
- we foster and maintain a positive safety culture, behaviour and awareness;
- we identify and eliminate or mitigate safety, occupational and community health and hygiene hazards;
- we maintain operational integrity;
- we apply safe work systems and occupational and community health and hygiene programmes;
- we actively engage with and monitor contractors, suppliers and business partners so that they understand and respect our occupational and community health and safety standards;
- we encourage and support our people and the communities associated with our operations to participate in programmes which enhance their health and well-being;
- we report, manage and learn from injuries, illnesses and high potential incidents; and
- we prepare for and effectively respond to emergencies and crises.

**Environment**

We aim to preserve the long-term health, function, and viability of the natural environments affected by our operations. To achieve this:

- we act as responsible stewards of our owners' assets and operate to leading practice environmental standards;
- we eliminate, mitigate or remediate the environmental impacts of our activities;
- we continually improve the efficiency with which we use raw materials, energy and natural resources;
- we reduce our direct and indirect greenhouse gas emissions and work with other organisations, governments and groups to address climate change;
- we reduce harmful emissions to air, water and land;
- we avoid net losses or degradation of natural habitats, biodiversity and landscape functions;
- we reduce waste and the toxicity of our wastes;
- we prevent or mitigate the impacts of adverse environmental incidents; and
- we work with our stakeholders to mitigate the environmental impacts of our product life cycle and supply chain.

**Sustainable Communities**

We contribute to the social and economic development of sustainable communities associated with our operations. To achieve this:

- we identify the communities and other stakeholders associated with our operations and actively engage with them in a culturally appropriate and consistent manner as early as possible and throughout the life cycle of our operations to establish relationships based on mutual benefit and active participation;
- we respect the culture, customs, interests and rights of communities, including indigenous peoples and vulnerable or previously disadvantaged groups;
- we work with governments, local authorities, community representatives, inter-governmental and non-governmental organisations and other interested parties to develop and support projects that benefit the communities associated with our operations;
- we contribute a minimum of 1% of Group profits before tax each year to fund initiatives that benefit the communities associated with our operations, particularly those located in remote areas or in regions with a lower level of social and economic development and infrastructure;
- we manage our funding so that our community initiatives remain viable and continuing financial support; and
- we work to minimise the adverse impacts of our operations on the communities in which we operate and to avoid sole dependence on our operations.

**Our People**

We maintain a safe workplace that is based on mutual respect, fairness and integrity. To achieve this:

- we do not tolerate any form of workplace discrimination, bullying, harassment or physical assault and we provide a fair and non-discriminatory employee grievance system;
- we value diversity and treat all employees and contractors fairly, providing equal opportunity at all levels of the organisation without bias;
- we employ and promote employees on the basis of merit while upholding legislation in regions that aim to benefit historically disadvantaged groups;
- we provide fair remuneration;
- we uphold and enforce a drug- and alcohol-free workplace;
- we collect personal and private information about employees in a legal and ethical manner and take every precaution to protect the privacy of our employees and their personal information;
- we uphold the right of employees to freedom of association and collective bargaining;
- we provide appropriate training and development opportunities; and
- we consult, communicate and provide appropriate support to employees during significant organisational changes including closures, acquisitions, mergers and divestitures.

*Phil Davis*  
 ML Davis, Chief Executive – December 2007

- **Health and Safety:** We aim to operate a safe workplace that is injury- and fatality-free, and to enhance the well-being of employees, contractors and communities.
- **Our People:** We maintain a safe workplace that is based on mutual respect, fairness and integrity.

# Xstrata is a recognized Leader in Sustainability



- Xstrata has leading standards of health, safety, environmental management and community support, together referred to as 'Sustainable Development'
- Our company has a robust commitment to community social investment which includes programs for community development, enterprise and job creation, health, education and the environment as well as culture and arts
- Xstrata was assessed as the mining & metals sector leader in the Dow Jones Sustainability Index (DJSI) for 5 consecutive years and annually receives an A+ rating from the Global Reporting Initiative (GRI) – two of the top Corporate Responsibility rankings
- In 2012, our Brunswick Mine near Bathurst, New Brunswick, was awarded the John T. Ryan Award for being the safest metal mine in Canada

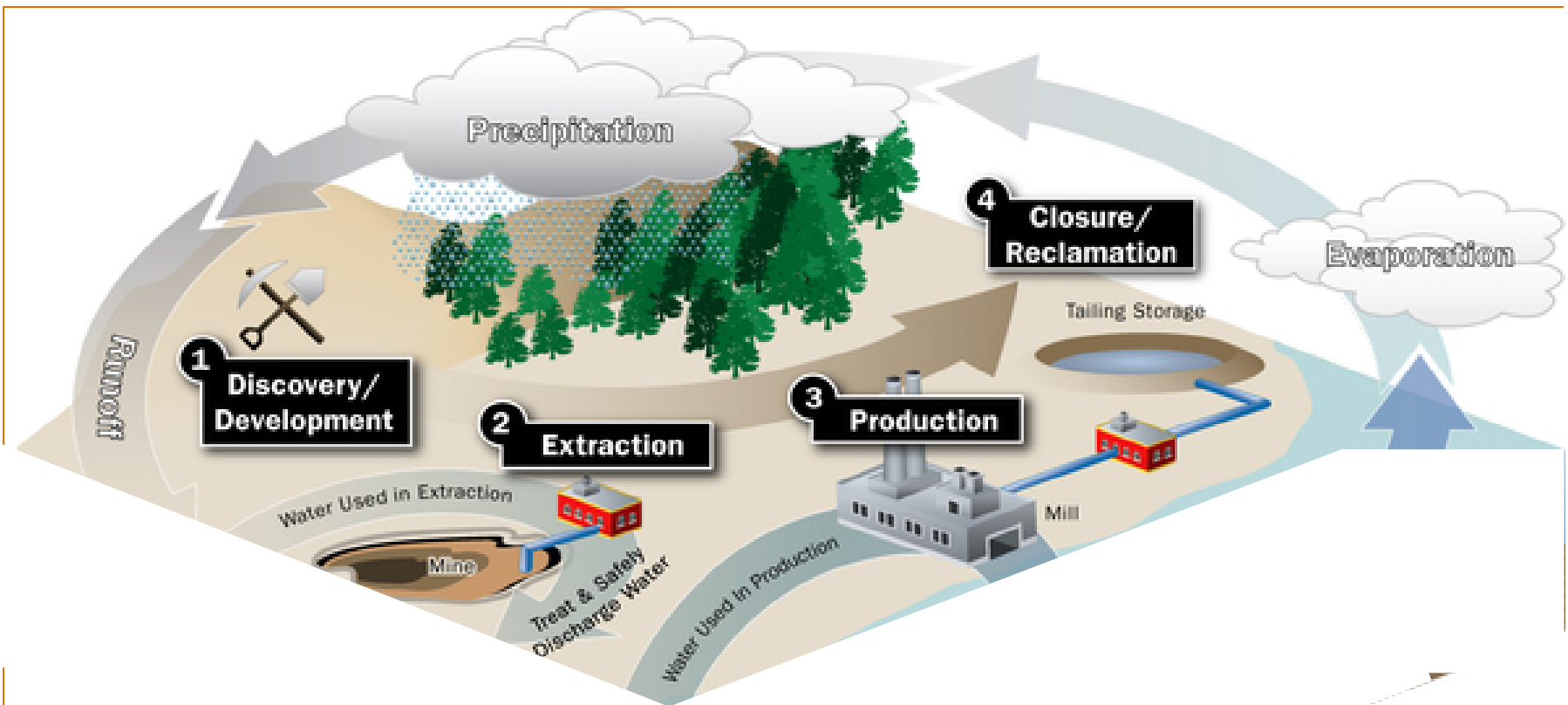




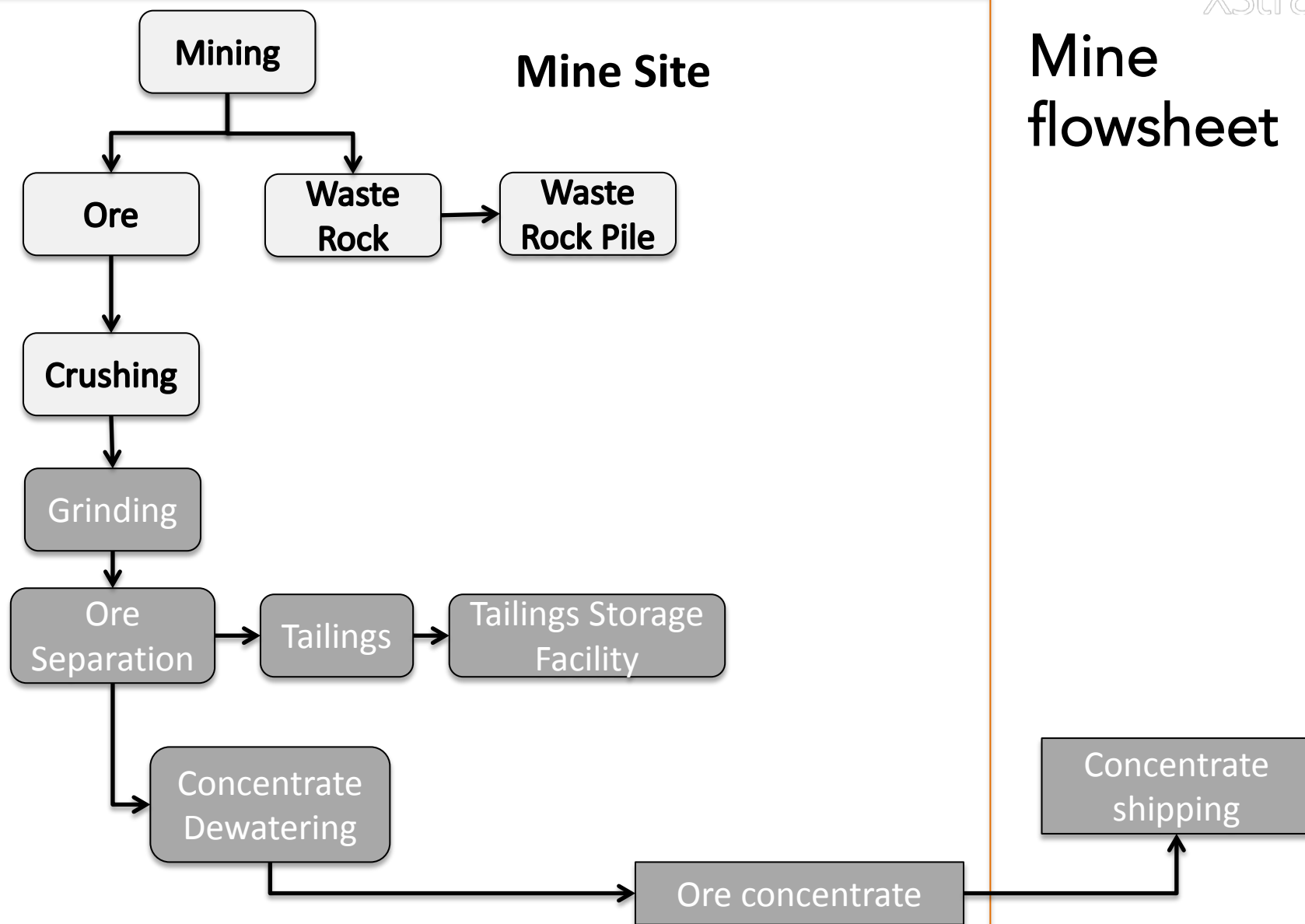
# The uses of metals



# Mine Life Development

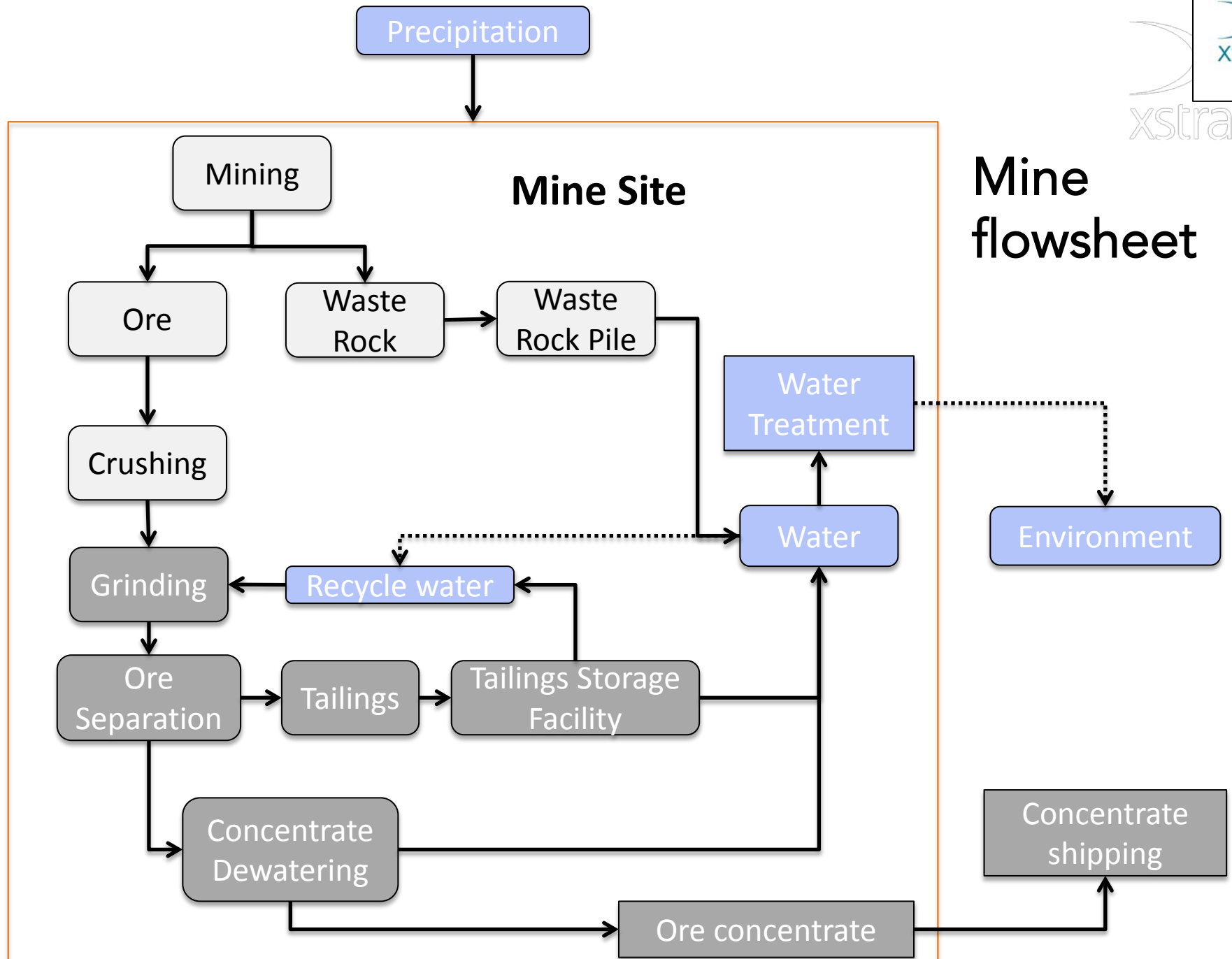


# Mine flowsheet



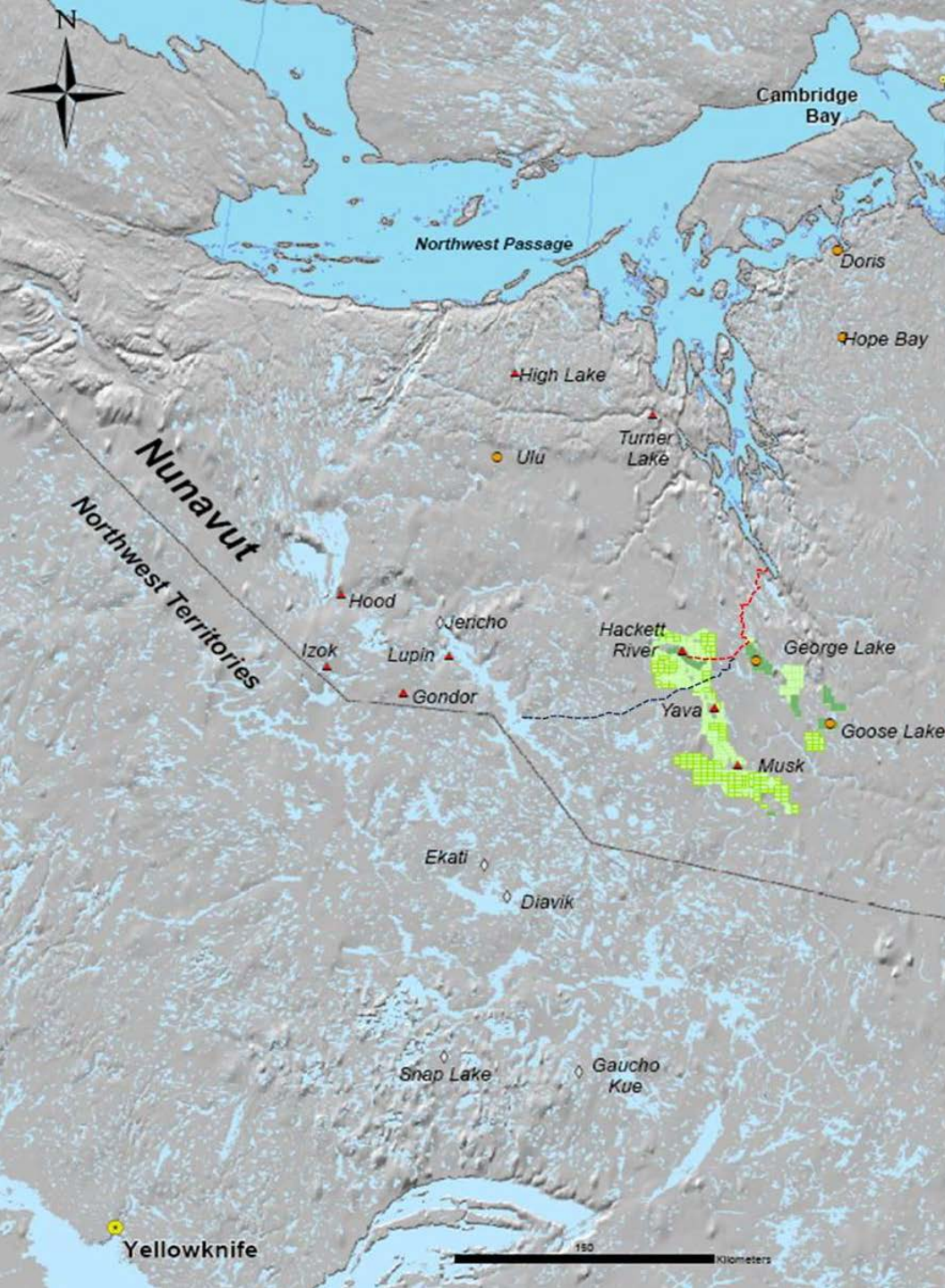


# Mine flowsheet



# The Hackett River Project

# Hackett River Project



- Located in the Kitikmeot, about 625 km southwest of Gjoa Haven.
- No road access, 75 km south of a potential deep-water port on the Bathurst Inlet
- Mineral leases covering an area of 10,637 hectares
- Vast property barely explored



# Hackett River Project Camp





Xstrata Zinc Canada  
All land holdings

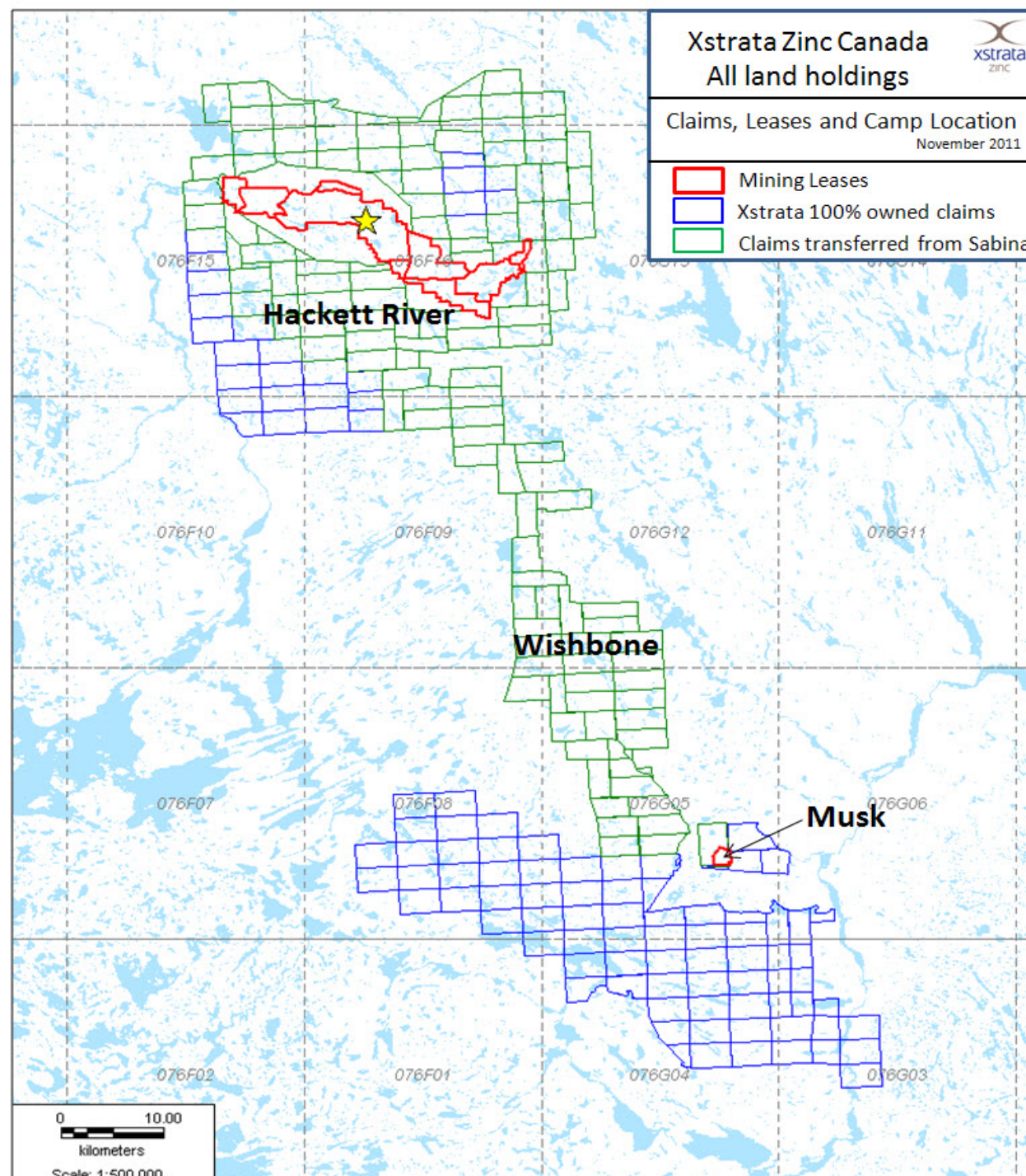


Claims, Leases and Camp Location  
November 2011

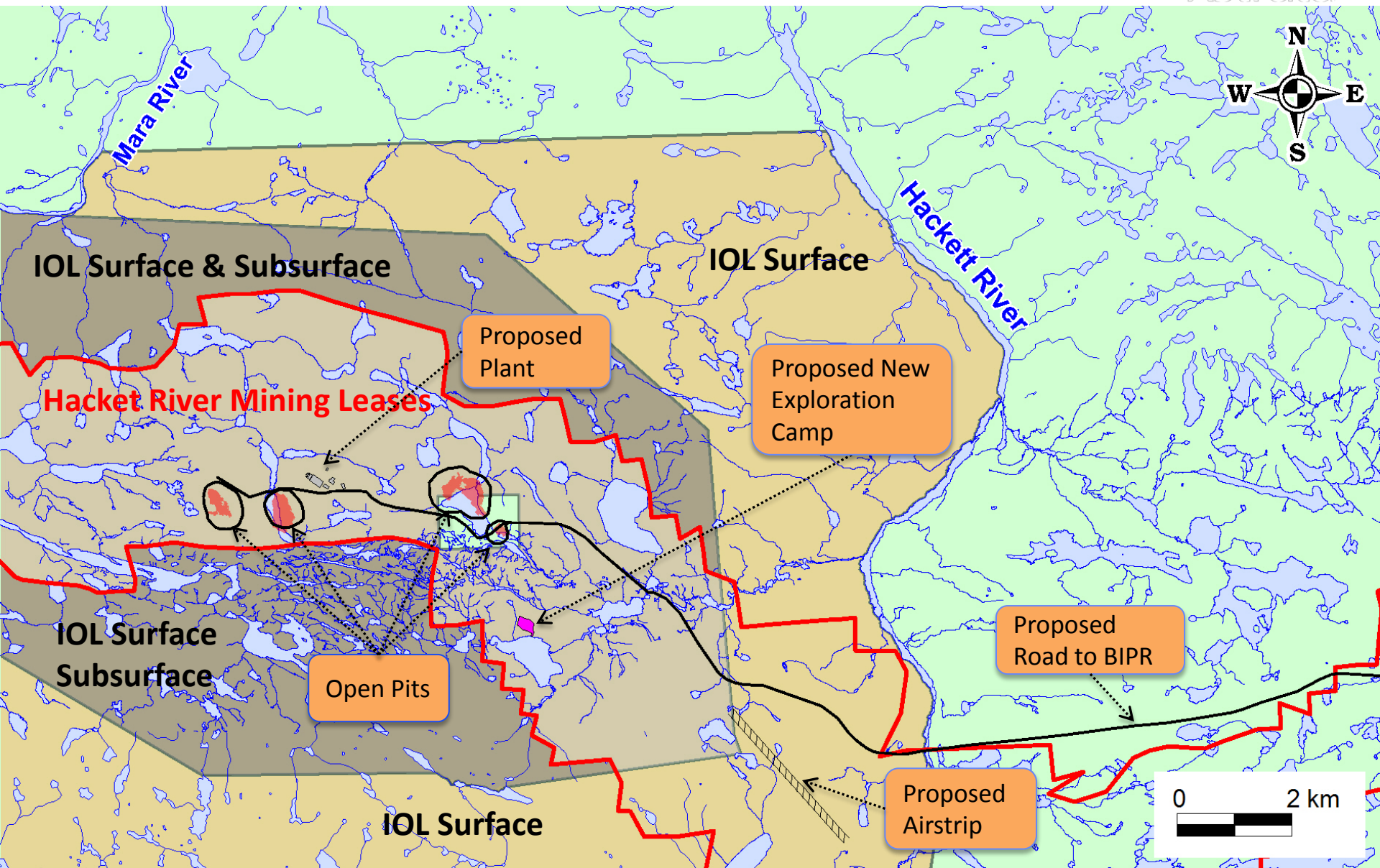
- Mining Leases
- Xstrata 100% owned claims
- Claims transferred from Sabina



## Hackett River Property

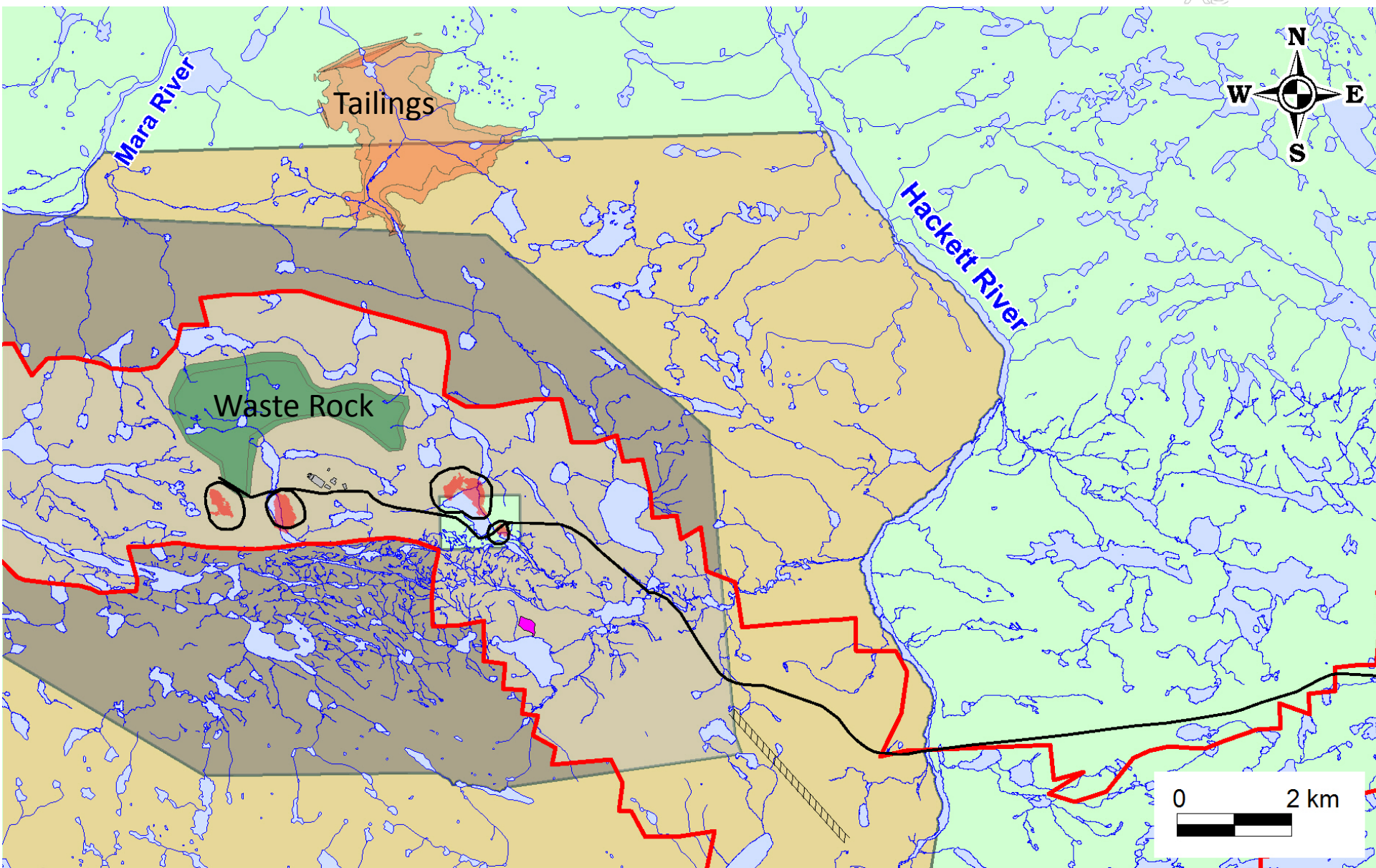


# Hackett River Project Map

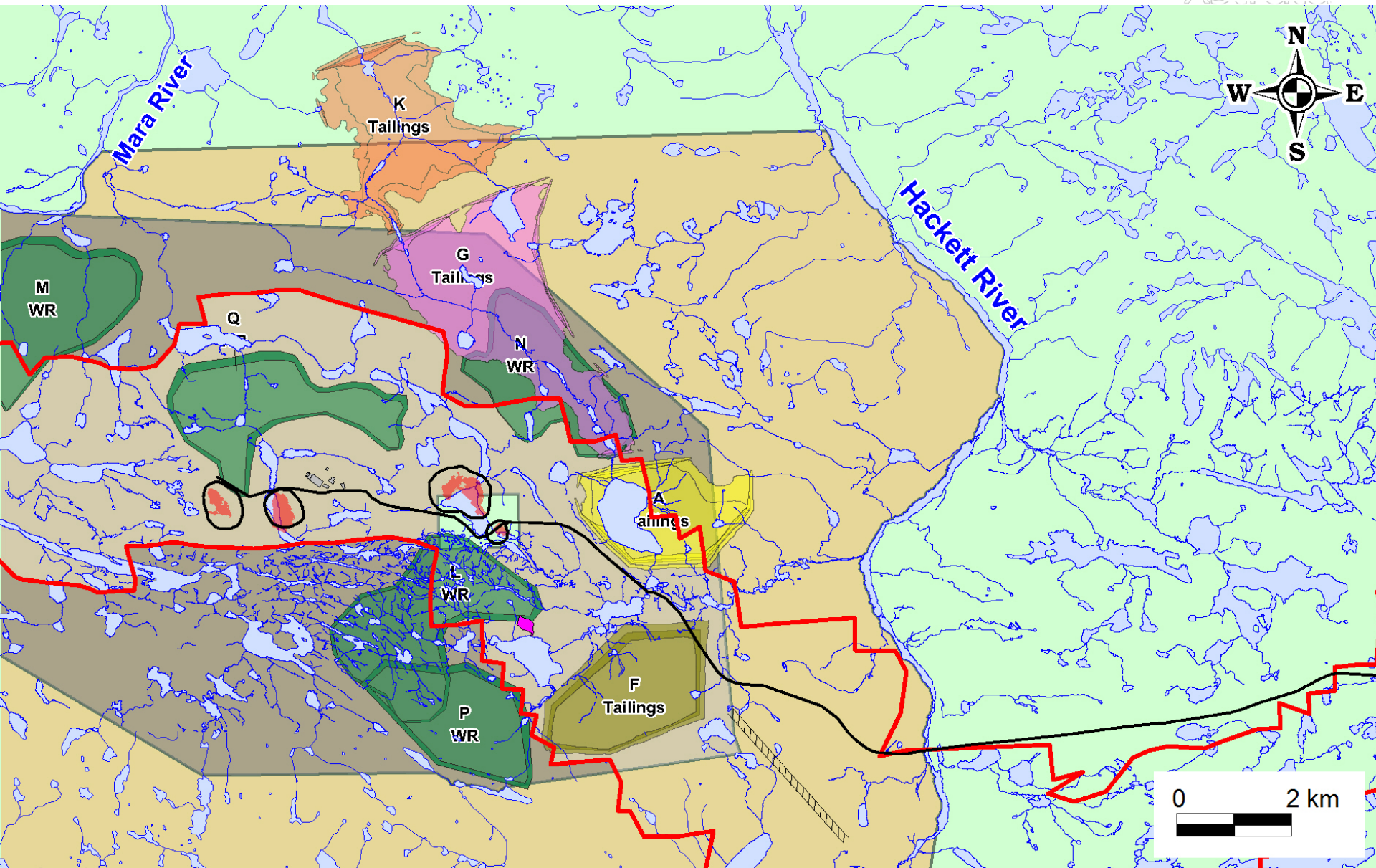




# Preferred Options for Tailings and Waste Rock Storage Areas



# Other Options for Tailings and Waste Rock Storage Areas





# Hackett River Project: Key Facts

- **Mineral Resources:**
  - zinc, copper, lead, silver and gold
- **Project Status:** Advanced exploration and pre-feasibility ongoing
- **Estimated Resources:** 61.3MT
  - 0.9% lead, 138g/t silver, 4.2% zinc
  - 0.5% copper, 0.2 g/t gold
- **Expected mine rate:** 10,000-20,000 tonnes/day
- **Expected mine life:** Over 15 years
- **Employment:** 800 during construction and 500 when operational
- **Community Benefits:** Direct and indirect employment, training opportunities, business development opportunities, community development projects



# Hackett River



# Hackett River Project: Workplan 2012-2013

- Advanced Exploration Program
  - 51,000 m in 2012
  - Another 50,000m planned in in 2013
- Environmental and Socio-Economic Baseline Studies – **mostly completed**
- Engineering and pre-feasibility study - **started in Sept 2012**
- Evaluating potential for year round shipping window option - **ongoing**
- Submission of Draft Environmental Impact Statement - **scheduled for Q3 2013**
- Inuit Impact and Benefit Agreement negotiation - **2013**
- Economic evaluation of project - **Ongoing**





# Hackett River Mine Life Development and Operation Timelines

Up to 2011

2012

2015

2018

2030

Exploration

**Advanced  
Exploration**

Development /  
Construction

Mining  
/ Milling

Closure





# Bathurst Inlet Port and Road Project Update



# History of BIPR Environmental Review Process

Historical events of BIPR	Date
Initial Project Description submitted	May 2003
Project Final Guidelines issued by Nunavut Impact Review Board	December 2004
Submission of Draft Environmental Impact Statement	January 2008
Review suspended	November 2008
Previous Proponent does not intend to re-engage the Technical Review Process	July 2011
New proponent (Xstrata Zinc and Sabina) intends to re-engage the Technical Review Process	March 2012
Submission of <u>revised</u> Draft Environmental Impact Statement	December 2012

# Bathurst Inlet Port and Road Project

## Project Components

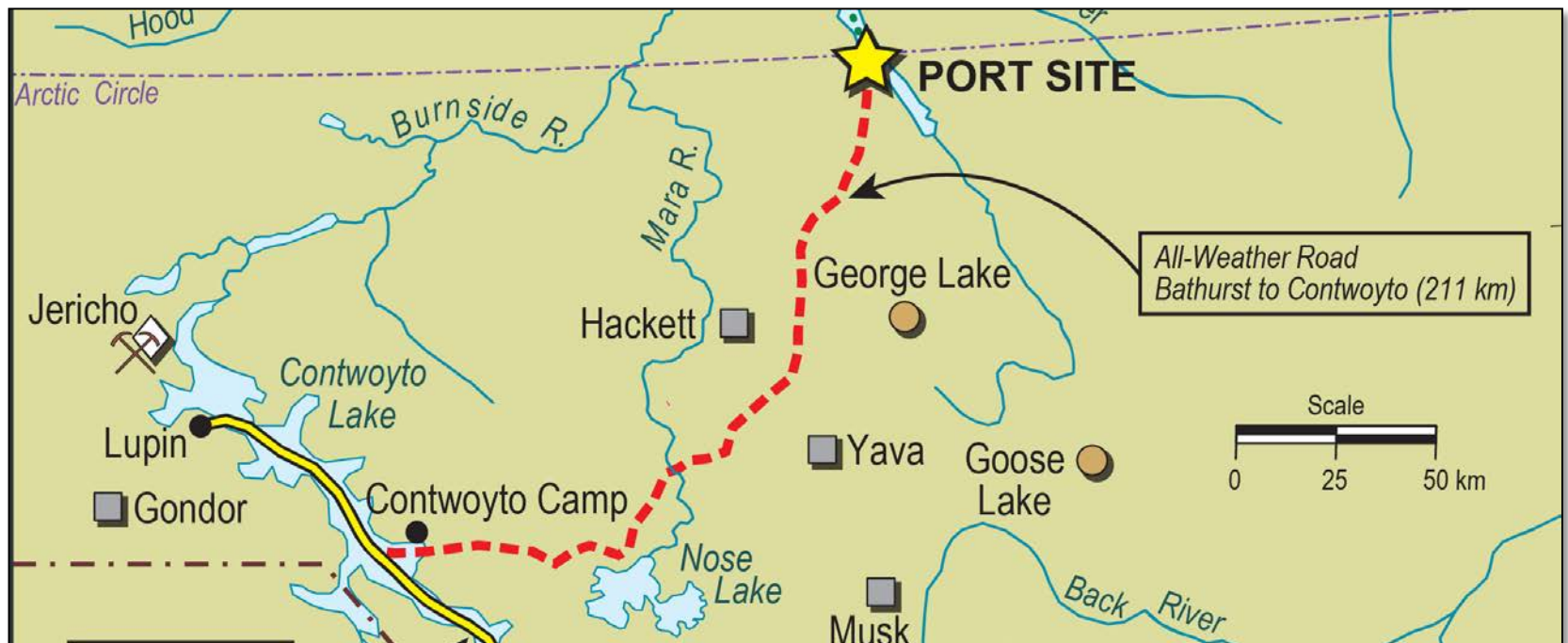


- Port and Facilities on Bathurst Inlet
- 211 km all-weather road from Bathurst Inlet to Contwoyto Lake
- Camp and Facilities at Contwoyto Lake

# Bathurst Inlet Port and Road

## All-Weather Road

- 9 metre wide all season road
- 211kms of road in total – 82kms on Inuit Owned land and 129kms on federal Crown Land
- 42 quarries identified for road construction
- Approximately 7,000 truck trips couple operate on the road each year (20 truck trips per day)





# Bathurst Inlet Port and Road

## Port Facilities

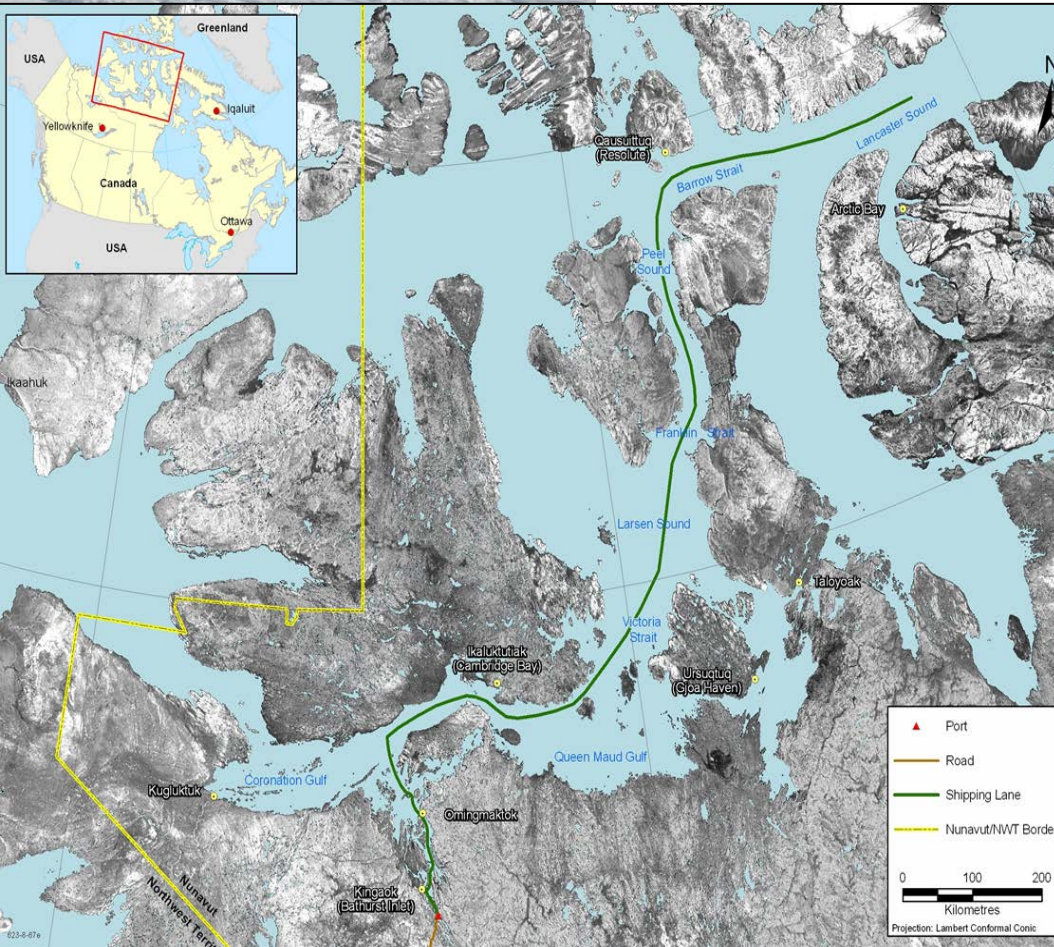
The proposed site for the port facilities is located at the south end of Bathurst Inlet.

The facilities would include the following components:

- wharf to serve vessels (up to 50,000t) delivering fuel and bulk cargo to the port
- dock to handle barges serving the Kitikmeot communities
- 200 person camp and services
- 220 million L diesel fuel tank farm
- 1,200 m airstrip and heliport
- fuel dispensing and loading station
- truck and trailer maintenance shop
- explosives storage and mixing plant
- sewage treatment plant
- cargo laydown area
- diesel power plant



# Bathurst Inlet Port and Road



- Capacity of Ships of approximately 50,000 tonnes
- Capacity to handle one ship at a time
- Confirmed users include Hackett River Mine, Back River Mine
- Potential to include other users
- Joint venture ownership model
- Fuel distribution to communities
- Current ship traffic (based on confirmed users) estimated at about 1 ship per month
- Year round port capability



**Break**

# **Hackett River Environmental and Socio-Economic Baseline Studies**

# Environmental and Socio-Economic Baseline Surveys - Hackett River Project

## Study Elements

Air Quality and Climate	Fish and Fish Habitat
Wetlands	Wildlife
Hydrogeology	Socio-economics
Geochemistry	Land Use
Terrain and Soils	Archaeology
Surface Water Hydrology	Community Consultation
Terrestrial Ecosystems , Vegetation and Wetlands Mapping	Traditional Knowledge
Aquatic Resources	Country Foods
Marine Environment	

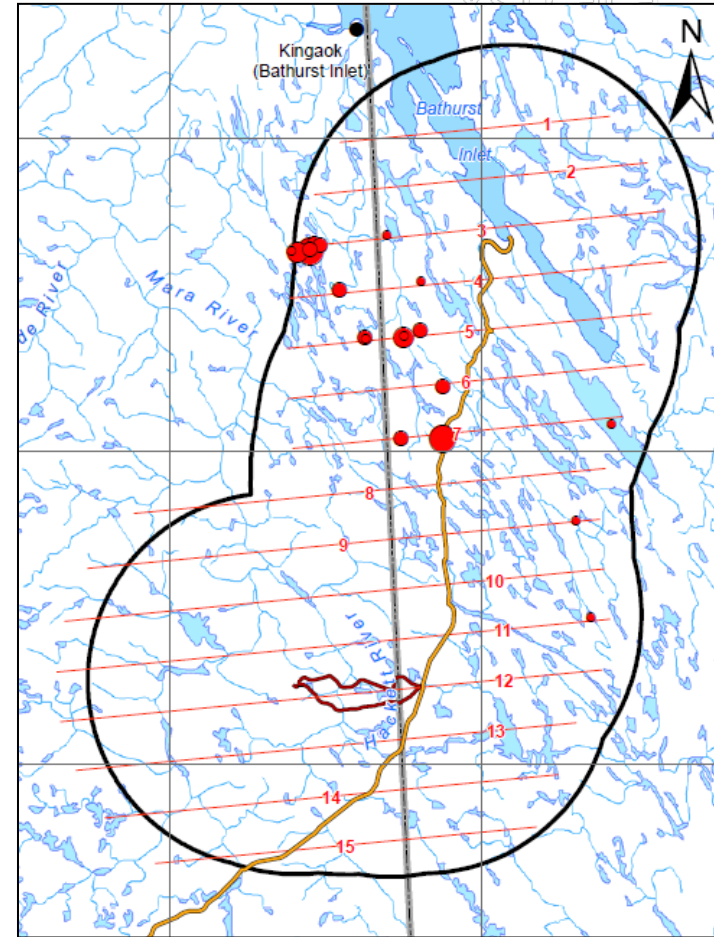




# Wildlife

## Study Objectives and Work to Date

- Record mammals and birds in the study area;
  - Map wildlife habitat for important species;
  - Conduct birds surveys – seabirds, ducks, raptors and upland birds;
  - Study the distribution of grizzly bears using DNA from hair;
  - Map how caribou and muskox use the area; and
  - Map and monitor dens – wolves, foxes and grizzlies.
- 2007, 2008, 2010, 2012





# Wildlife

- Motion-triggered Photos



Caribou using esker



Caribou using esker





# Vegetation and Ecosystems

## 2007 and 2012 Baseline Programs

- Mapped local study area for vegetation communities and surveyed 106 plots (2007) and 131 (2012);
- Identify presence and extent of rare plants;
- Identified 125 plant species; and
- Collected plant tissue samples for metals analysis in both years.



# Terrain and Soils

## 2007 and 2012 Field Programs

- Completed field surveys for terrain and soils covering 131 plots (2007) and 87 (2012);
- Collected soil samples for metals analysis; and
- A terrain and soils map will be created.



# Wetlands

## Objectives and Field Program

- Identify, delineate and classify wetland habitat;
- Collect vegetation, groundwater, and soils information to identify potential wetland functions;
- Sampled 78 wetlands and recorded dominant vegetation and soils information (2012); and
- Collected water sedge for metals concentration analysis.

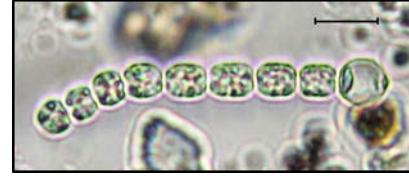




# Aquatic Resources

- Work to Date

- Surveys done in 2007, 2008, 2009 and 2012
- Assessed physical, chemical, and biological properties of 37 lakes and 38 streams in the winter, spring, summer, and autumn;
- Collected water, sediment, bacteria, algae, and invertebrates; and
- Collected temperature, dissolved oxygen, and water clarity data.



# Fish and Fish Habitat

## Work to Date



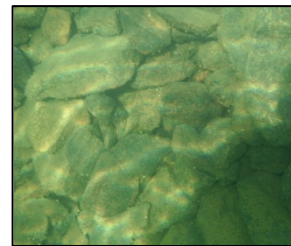
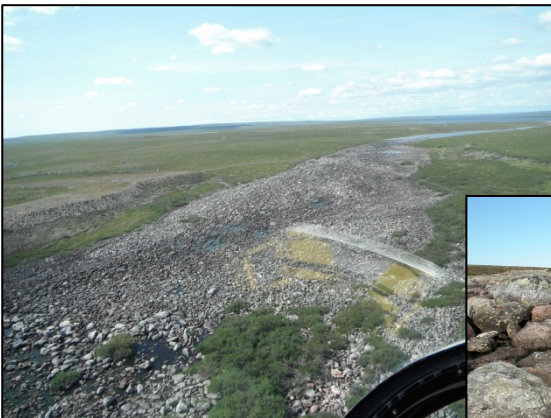
- Surveys done in 2007, 2008, 2010 and 2012
- Collected data from 30 lakes, 5 large river sites, 33 stream sites and 6 ponds located in Project Area;
- Surveyed fish community and fish habitat at ponds and streams within waste rock and tailings options; and
- Mapping of depth in over 35 lakes and ponds.



# Fish and Fish Habitat

## Fish Habitat Compensation Surveys

- Fish Habitat needs to be compensated when impacted
- Scouted ~37 potential fish habitat compensation sites
- Types of compensation
  - Improving access
  - Improving rearing and spawning with shoals





# Hydrology: Surface Water

## Objectives and Work to Date

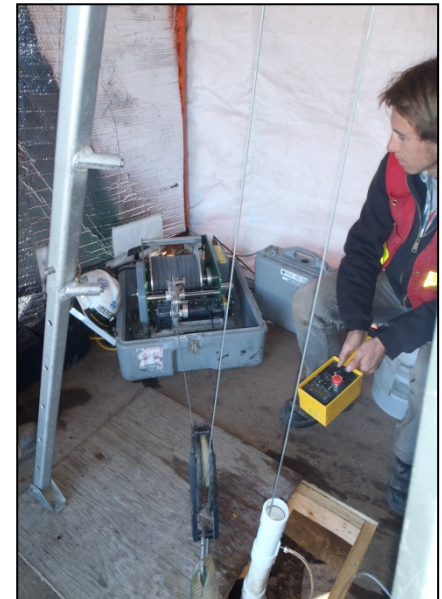
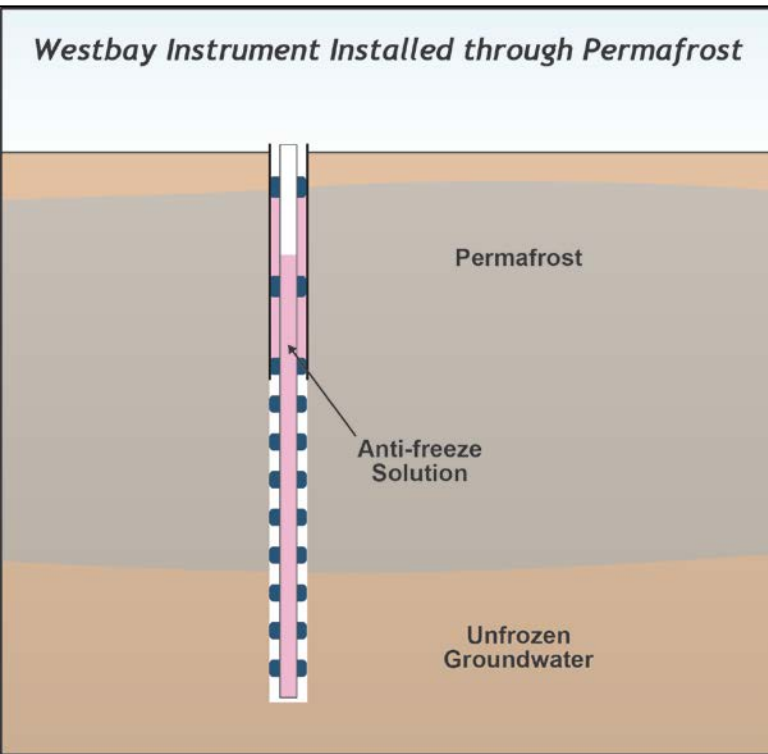
- Record the amount of snow on the landscape and the amount of water flowing in the Project area;
- Study how river flow changes during times of snow melt, rainfall, and dry times;
- Surveys done in 2007, 2008 and 2012;
- Monitored up to 15 rivers in the Project area; and
- Conducted snow surveys at 19 locations.



# Hydrogeology: Groundwater

## 2012 Field Program

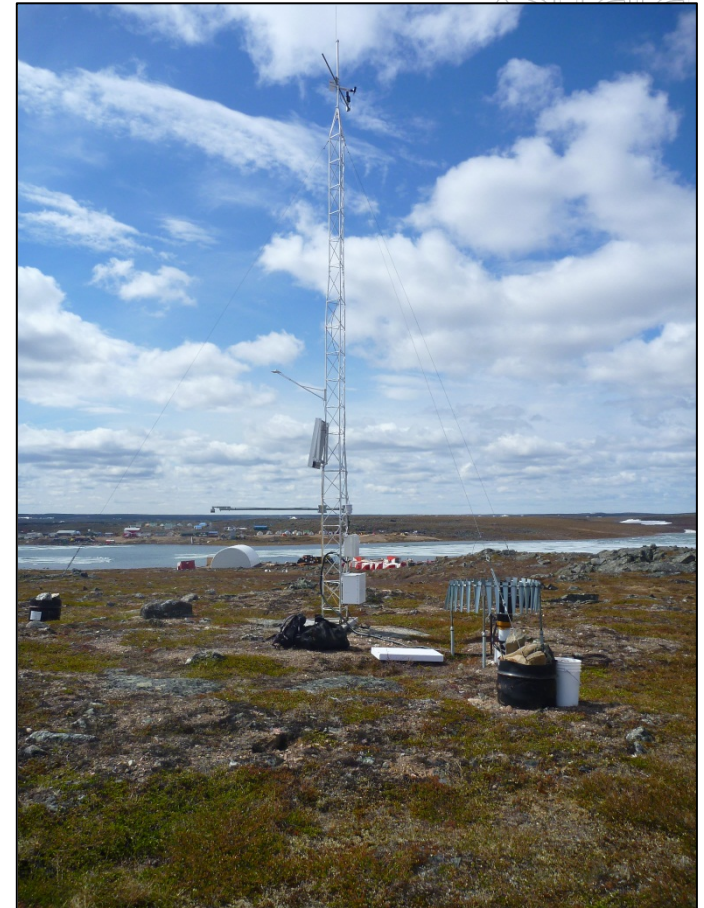
- Measured water quality in groundwater below the permafrost (below 525 m deep); and
- Measuring shallow and deep ground temperatures at 11 sites in proposed mine construction areas.



# Air Quality and Climate

## Work to Date

- Weather station (2007-2012)
- Installed a small-scale weather station (2012).

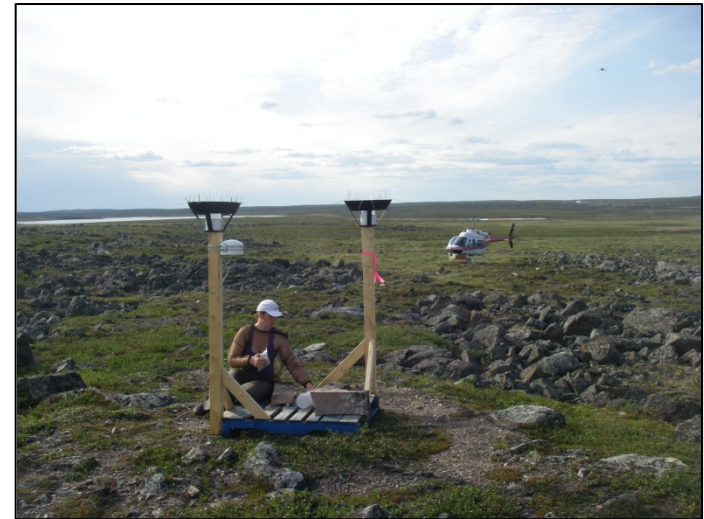
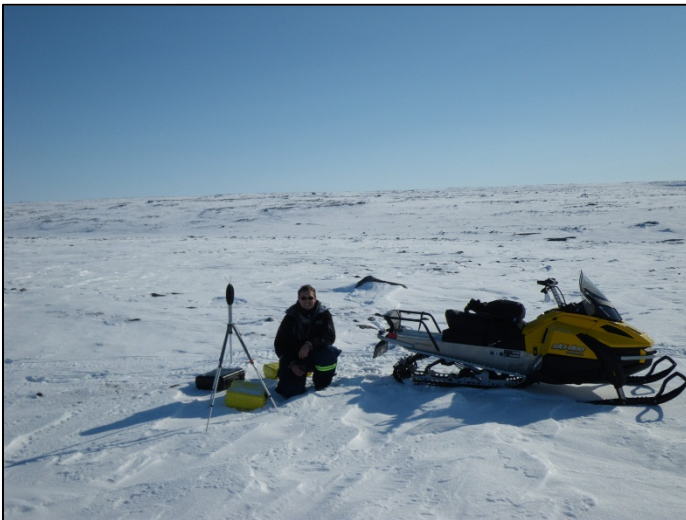




# Air Quality and Climate

## 2012 Field Program

- Recorded noise/sound in the natural environment during the winter and summer; and
- Sampled the air quality during the summer.



# Geochemistry: Rock Chemistry

## Study Objective and Work to Date

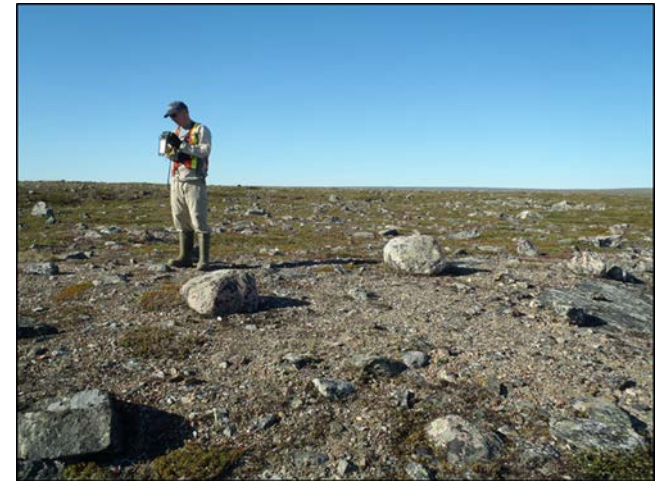
- Assess the potential for metals to be washed off from rock being exposed to air and water; and
- Conducted tests on over 1,800 core samples.



# Archaeology

## Study Objectives and Work to Date

- Identify and evaluate archaeological sites near proposed developments;
- Surveys done in 2007, 2009, 2010 and 2012
- 98 archaeological sites recorded.

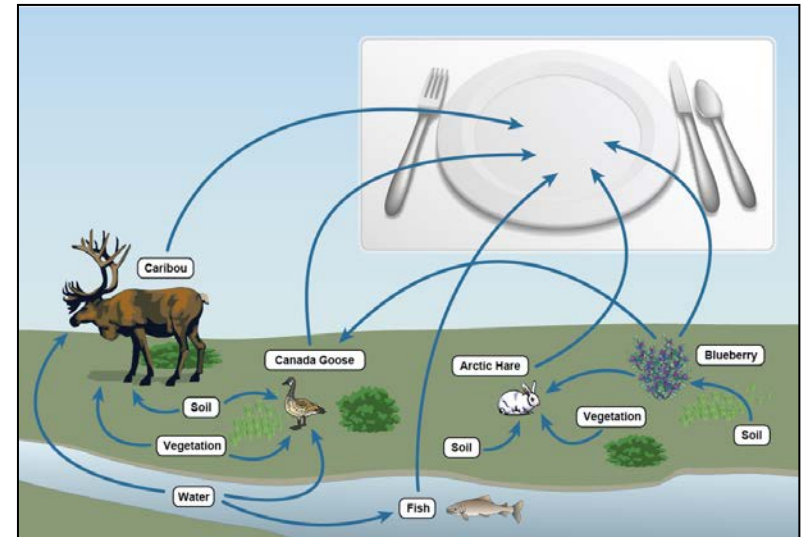




# Country Foods

## Study Objectives and Work to Date

- To identify contaminants present in the environment today that may be of concern during Project development;
- Estimate the risk of consuming country foods (fish, wildlife, berries, medicinal plants);
- Studies done in 2007, 2008, and 2012; and
- Collection of plant, berries, fish tissue, water, soil, and sediment for analysis of metal concentrations.



# Socio-economics

## Baseline Studies

- Provide information about the human environment at the territorial, regional, and local or community scale;
- Topics include history, society, economy, culture, education and health;
- Compile information from available sources; and
- Complete research and 60 interviews with key informants.



# Land Use

## Study Objectives

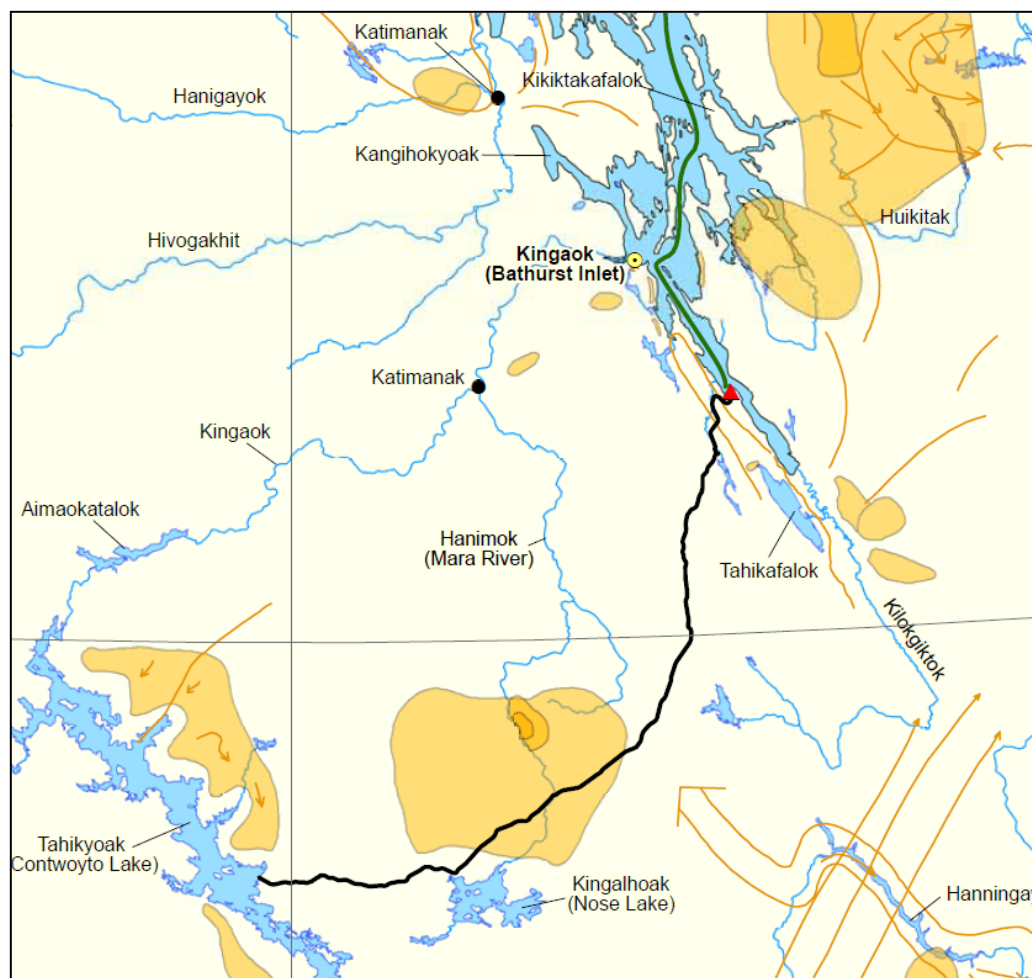
- Review available information;
- Complete interviews with focus groups (Nov 2012) working with the HTOs;
- Address both regional and local scales;
- Current land use by people, communities and organizations;
- Conduct resource and land use mapping; and
- Changes in land use patterns and changes over time.





# Traditional Knowledge

- Xstrata will work with the KIA to obtain Traditional Knowledge information from the database available;
- These data will create a comprehensive understanding of land, wildlife, water and other elements in the area; and
- The data will also assist in conducting the Environmental Impact Assessment.



# **Bathurst Inlet Port and Road Environmental and Socio-Economic Baseline Studies**

# Bathurst Inlet Port and Road

## Work to Date

### Baseline studies began in 2001:

- Fish and Fish Habitat – lake and streams
- Aquatic Ecology – lake and streams
- Marine Environment – Port Site
- Wildlife
- Bedrock Geology
- Terrain
- Vegetation
- Atmospheric
- Metal Leaching/ARD
- Surficial Geology and Soils
- Traditional knowledge
- Community Consultation
- Economic





# Bathurst Inlet Port and Road

## Work to Date

### Baseline studies continued in 2007:

- Vegetation – plant tissue
- Aquatic Ecology – stream water and sediment
- Marine Environment – marine mammals and habitat
- Marine Environment – water, invertebrates, sediment, algae
- Wildlife – birds, caribou
- Atmospheric
- Metal Leaching/ARD
- Community Consultation



# Bathurst Inlet Port and Road

## Draft Environmental Impact Statement



A Draft Environmental Impact Statement was completed in 2007 and submitted to the Nunavut Impact Review Board (NIRB) in January of 2008.

# Bathurst Inlet Port and Road

## Work to Date

### Baseline studies continued in 2010:

- Noise and Meteorology
- Hydrology
- Terrain and Soils
- Wetlands
- Ecosystem Mapping
- Freshwater Aquatic Resources
- Freshwater Fish and Fish Habitat
- Marine Aquatic Resources
- Marine Fish and Fish Habitat
- Marine Birds
- Human Health





# Bathurst Inlet Port and Road

## Historic Work to Date

### Baseline studies completed in 2012:






- Noise and Meteorology
- Hydrology
- Upland Breeding Birds
- Rare Plants
- Marine Shellfish
- Ocean Currents



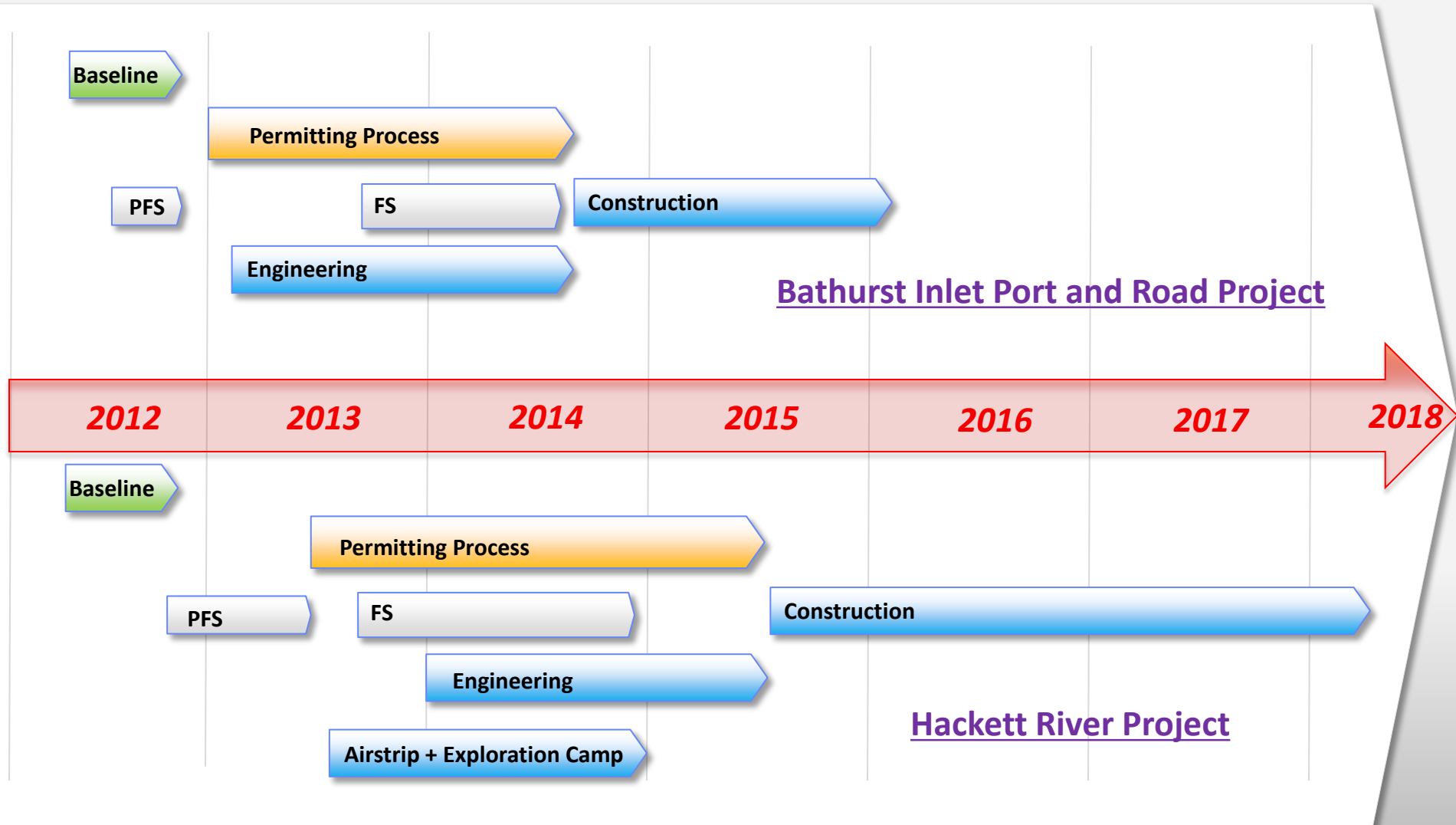
# **Next Steps for Hackett River and BIPR Projects**

Nunavut Impact Review Board (NIRB) Process Steps	BIPR Project	Hackett River Project
Issuance of Guidelines for the preparation of a Draft Environmental Impact Statement (EIS)	2004	2008
Preparation and <u>submission</u> of the Draft EIS	2008	
NIRB – Guideline Conformity review of Draft EIS		
Technical review of the Draft EIS	2008	
Technical Meeting		
Pre-Hearing Conference (PHC)		
Preparation and <u>submission</u> of the Final EIS		
NIRB – Final EIS compliance review		
Technical review of the Final EIS		
Final Hearing		
NIRB’s Determination Final Hearing Report to the Minister		



Nunavut Impact Review Board (NIRB) Process Steps		BIPR Project	Hackett River Project
Issuance of Guidelines for the preparation of a Draft Environmental Impact Statement (EIS)		2004	2008
	<b>Preparation and <u>submission of the Draft EIS</u></b>	2008 / End 2012	Fall 2013
NIRB – Guideline Conformity review of Draft EIS			
Technical review of the Draft EIS		2008 / Mid 2013	
Technical Meeting			
Pre-Hearing Conference (PHC)			
	<b>Preparation and <u>submission of the Final EIS</u></b>		
NIRB – Final EIS compliance review			
Technical review of the Final EIS			
Final Hearing			
	<b>NIRB's Determination on acceptability of project</b> Final Hearing Report to the Minister	Fall 2014	Fall 2015

# BIPR and Hackett River Projects Timelines



Regulated processes  
(NIRB, NWB, DFO, KIA, AANDC, EC)



Pre-Feasibility (PFS) or  
Feasibility Studies (FS)



Project Engineering



Field

# Community Commitments

- Currently developing a Community Investment Strategy with a focus on education & training, community development, sustainability and arts & culture
- Initial Investments Include:
  - Kitikmeot Cup – ‘Player of the Game’ sponsor
  - Kitikmeot Games Sponsorship
  - Kugluktuk’s ‘Last Chance Fishing Derby’
  - Women Building Futures – attracting women in trades





# Our Team



# Hackett River and BIPR – Summary and Next Steps



- The Hackett River Project has the potential to be a major driver of jobs and economic growth for the Kitikmeot Region
- Construction of a multi-user port and a road (BIPR) can lead to other major developments in the area.
- There will be a need for skilled employees and service providers leading to a high demand for workers of the Kitikmeot Region – especially skilled trades - and opportunities for the next generation of young workers.
- Given the specific window for this project, success depends on timely permitting
- We will have other community consultation sessions in 2013 and are actively engaging community leaders and government agencies on this project.





# Questions ?