



# DENINU KUE FIRST NATION



EA1314-01 [2013] Environmental Assessment for the Jay Project  
Presentation at Public Hearings  
September 14 – 16, 2015  
Yellowknife, NT



# DENINU KUE FIRST NATION

- 830 members
- Fort Resolution / Yellowknife
- Treaty 8 signed in 1900
- Akaitcho Treaty 8 Tribal Council

*“...for as long as the sun shines,  
the rivers flow, and the grass grows...”*

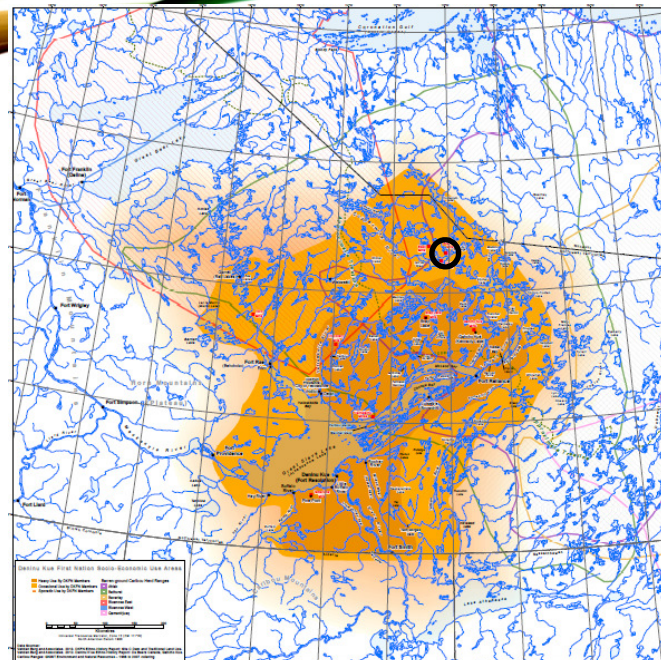


# DENINU KUE FIRST NATION

*The DKFN asserts that their treaty rights include the right to hunt, fish, trap and gather to sustain their livelihood in their traditional territory.*



**DKFN  
Socio-  
economic  
Use Area.**



# DENINU KUE FIRST NATION

- DKFN supports responsible development in its Traditional Land Use area.
- DKFN has concerns and recommendations that need to be addressed to ensure that this development has minimal infringement or affect on their Aboriginal and Treaty Rights.



# GENERAL COMMENTS

- Too many information gaps are proposed to be filled post EA approval
- Examples:
  - A detailed Air Quality and Emission Monitoring and Management Plan (MaMP)
  - A detailed Waste Rock Seepage MaMP
  - A detailed Surface and Mine Water MaMP
  - A detailed Mine Water MaMP



## CONCERNS

- Air Quality
- Caribou and wildlife
- Fisheries and water
- Cumulative Effects



## AIR QUALITY

- Assessment endpoint

*Compliance with applicable regulatory  
ambient air quality standards (AAQS)  
and objectives.*



## AIR QUALITY

- Air quality modeling results
  - NO<sub>2</sub>, PM<sub>2.5</sub> and TSP exceed AAQS
  - Does not meet the assessment endpoint

*Compliance with applicable regulatory  
ambient air quality standards (AAQS)  
and objectives.*

Effects determined to be NOT SIGNIFICANT



## AIR QUALITY

- Effects determined to be NOT SIGNIFICANT

when predicted concentrations may either be above or below the AAQS for the NWT, but where exceedances are consistently confined to the area immediately adjacent to the Project activities, and/or where the changes to air quality that results in the exceedances of the AAQS are reversible upon cessation of the Project activities



## AIR QUALITY

- Effects needs to be clearly defined
  - Humans
  - Vegetation
  - Caribou
  - Aquatic resources



## AIR QUALITY

### Recommended Measure:

*Develop an effective air quality mitigation and monitoring program be implemented to test the predictions of the DAR.*



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## CARIBOU

- **Assessment endpoint**

*Self-sustaining and ecologically  
effective caribou populations*



## CARIBOU

- Bathurst caribou herd
  - 93.2% decline between 1986 and 2010
  - Pop'n fluctuate between 2010 and 2014
  - Slight increase in 2013
  - Large decline in 2014

*No stable or positive pop'n growth*



## CARIBOU

- Bathurst caribou herd
  - Management actions
    - Harvest closures
    - Harvest restrictions
    - Mobile core conservation zone



## CARIBOU

- Bathurst caribou herd
  - Pop'n resilience compromised
  - Social and cultural systems



## CUMULATIVE EFFECTS

- Dominion Diamond stated:
  - Effects are anticipated to be reversible and should be within resilience limits
  - Conservative assumptions to manage uncertainty
  - Actual duration of effects is unknown

*Response to DAR-DKFN-IR2-06*



# CARIBOU

## Recommended Measure:

*Develop and implement a collaborative caribou monitoring and recovery strategy to ensure the Bathurst caribou herd is self-sustaining and ecologically effective.*



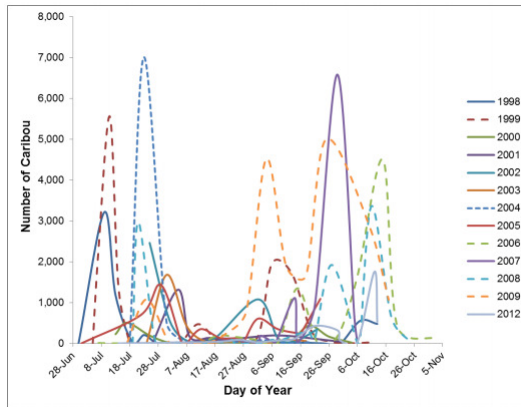
# CARIBOU

- Is there an effect or not?
  - Conservative approach and assumptions



# CARIBOU

- **There is interaction with the mine**



*Annual Temporal Distributions of Bathurst Caribou in the Ekati Mine Regional Study Area from Post-calving Aerial Surveys, 1998 to 2012*

*Draft Caribou Road Mitigation Plan – July 2015*



# CARIBOU

- **Recommended Measure:**

*Implement mitigation measures to ensure no sensory effects on caribou are realized and that no barrier effects from roads occur.*



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## AQUATIC & FISHERIES

### Stream Crossings

#### Recommended Measure:

Dominion Diamonds to design all Stream Crossings of streams that provide habitat for fish (e.g. Spawning of Arctic Grayling in Stream Ac35) or other mobile aquatic organisms “bottomless”.



# AQUATIC & FISHERIES

## Sub-Basin Diversion Channel

### Recommended Measures:

1. Boulder (>30 cm diameter) placements should be part of the sub-basin diversion channel design.
2. The channel design needs to be reviewed in detail before it is implemented (in support of DFO's request).



# AQUATIC & FISHERIES

## Changes to Water Level

### Recommended Measure:

A detailed mitigation and emergency management plan to counteract possible water level changes in the narrows and other shallow water migration corridors needs to be included into the project scope (in support of DFO's request).



# AQUATIC & FISHERIES

## Fish Out Data

### Recommended Measure:

All fish independent of size need to be enumerated during the fish-out of the diked area in Lac du Sauvage. This information needs to be made public and is needed to verify population estimates and to use verified numbers for a compensation or offsetting account.



# AQUATIC & FISHERIES

## Re-Suspension of Fines within the Silt Curtains

### Recommended Measure:

Before the silt curtains are removed, the accumulation of fines that have been deposited between the dike and the silt curtain need to be monitored and removed or otherwise managed.



# AQUATIC & FISHERIES

## Meromictic Conditions in Misery and Jay Pits

### Recommended Measure:

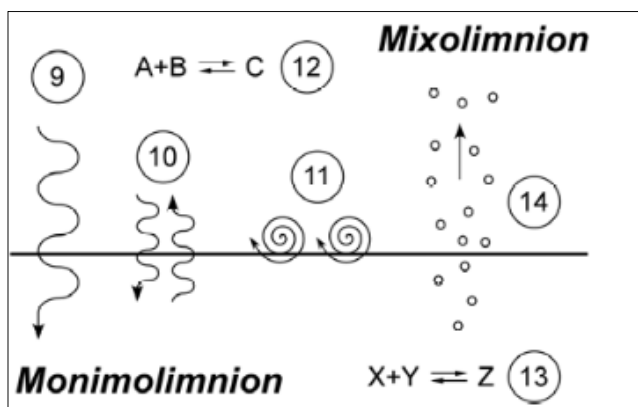
We strongly support the Lutsel K'e Dene First Nation proposal of the formation of an independent review panel or alternatively the hiring of an independent expert that will advise on:

1. The stability of the meromictic condition in the Jay and Misery Pits.
2. The monitoring needed to ascertain that no mixing through the chemocline occurs.



# AQUATIC & FISHERIES

## Meromictic Condition: Water Exchange through the Chemocline



- 9 = Disposal of waste
- 10 = Diffusion
- 11 = local turbulent mixing
- 13 = Resuspension
- 14 = Ebullition or bubbling



# AQUATIC & FISHERIES

## Meromictic Condition:

### Examples of Predictability of Meromictic Status

Pit Lake	Faro	Grum	Vangorda	Waterline	Main Zone	Z2P
Max. Depth (m)	~90	~50	~50	40	120	110
Surface Area (ha)	51	9.5	5.9	2.6	20.5	17.3
Observed Mictic Status	meromictic	uncertain	uncertain	meromictic	holomictic	intermittent

Source: Pieters & Lawrence 2014



# AQUATIC & FISHERIES

## Large Fish Health Sampling

### Recommended Measure:

In support of the IEMA's recommendation, non-lethal large fish tissue sampling should be carried out.



# AQUATIC & FISHERIES

## Chronic Toxicity Testing (in support of IEMA)

### Recommended Measure:

In addition to the acute (Rainbow Trout 96h - LC 50) toxicity testing, chronic (10 -30 day) toxicity testing of the mine effluent should be carried out.

