

# PEEL RIVER WATERSHED Sampling Program

*Water quality in the Peel River basin is generally excellent. The recent sampling carried out in the Peel River and its tributaries shows that waters are safe for drinking\* and aquatic life.*

\* After boiling for 5 complete minutes

## Why were the Samples Collected?

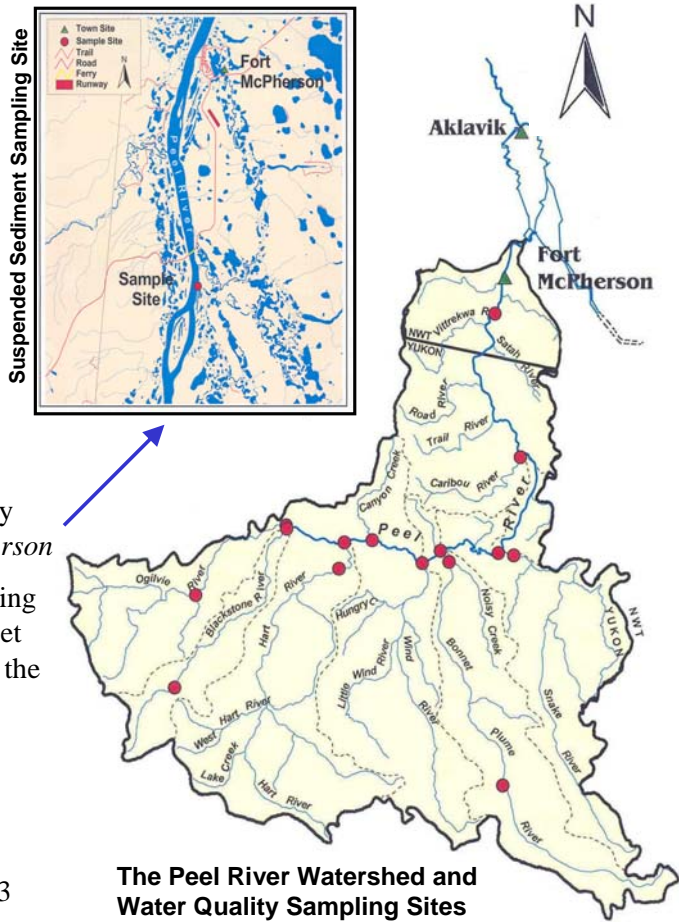
- To meet the requirements of the Transboundary Water Management Agreement between the Yukon and the Northwest Territories
- To understand water and sediment quality conditions in the Peel River basin
- To address community concerns about possible contaminants in water and suspended sediment

## Where were the Samples Collected?

- At the long term (1969-present) water quality sampling site: *Peel River above Fort McPherson*
- In major tributaries of the Peel River including the Ogilvie, Blackstone, Wind, Snake, Bonnet Plume, and Hart and several locations along the Peel mainstem

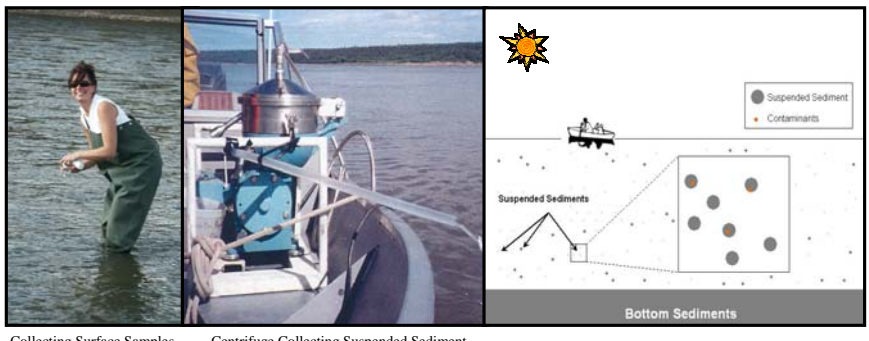
## When were the Samples Collected?

Water: March 1999, July 2002 & June 2003  
Suspended Sediment: July 2002 & June 2003



## What was Collected?

- **Water**  
(surface samples)
- **Suspended Sediment**  
(soil floating in water)



Metals and contaminants can attach to suspended sediment in rivers and be carried long distances.

## What were we looking for?

**Basic Tests:** temperature, pH, nutrients (phosphorous), major ions (calcium, magnesium, sodium)

**Metals:** arsenic, copper, zinc, lead, mercury, etc.

**Hydrocarbons:** Compounds produced naturally and/or by burning fuels or oil by people and industry.

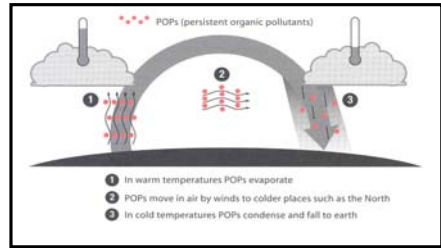
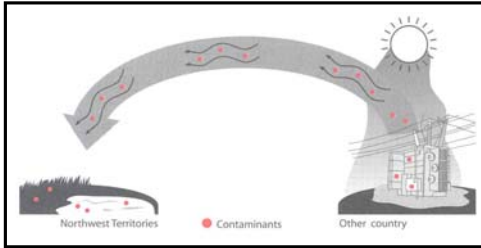
**Organochlorines:** Compounds that contain chlorine and carbon. These include pesticides such as DDT and lindane as well as PCBs.



Limestone cliffs along the Peel River

- small quantities of metals are important for all living things; when found, it does not mean that the water quality is bad
- source of metals can be natural (bedrock erosion) or human-made (mining, and other developments)

## How do pesticides (DDT) and contaminants such as PCBs get into our northern environment?



DDT & PCBs last a long time in the environment and can travel long distances around the world

## What did we find?

Water Quality	
pH, levels of suspended solids, turbidity, levels of calcium, magnesium & nutrients	All within historical range of data collected at Peel River above Fort McPherson (1969-present).
Metals: aluminum arsenic cadmium chromium copper iron lead mercury nickel zinc	All metals (except aluminum) in water met the drinking water quality guidelines.  Some metals found in levels greater than freshwater aquatic life guidelines – not likely to cause adverse affects.  All metals within historical range of water quality at Peel River above Fort McPherson.
Organochlorines (DDT)	None found.
PCBs	None found.
PAHs	None found.

Suspended Sediment Quality	
Metals	Some metals found in levels greater than the freshwater aquatic life guidelines
Organochlorines (DDT)	None found
PCBs	Very small amounts found in July 2002 None found in June 2003
PAHs	Small amounts found on both sampling occasions – likely natural

**Water Quality = GOOD**

**Suspended Sediment Quality = GOOD**

## What do these results mean? What's the bottom line?

- Water quality in the Peel River and its tributaries is very good.
- Some metals did not meet the guidelines for the protection of aquatic life. Most metals are attached to suspended sediments therefore it is unlikely that metals in the Peel River currently pose a hazard to aquatic life.
- All metals (except Al) in water met the drinking water quality guidelines. Aluminum results however do fall within the historical range of data collected at *Peel River above Fort McPherson* (1969-present).
- PAHs found in the suspended sediment are likely natural and therefore unlikely to be causing a hazard to aquatic life.
- The levels of PCBs found in the July suspended sediment sample are **very low**. The levels are **SAFE** for humans and animals.



The Peel River