Newfoundland Labrador

Water Resources Management Division

Department of Environment & Conservation

Regulatory Applications of Real-time Water Quality Data in Newfoundland and Labrador

8th National Monitoring Conference
Portland, Oregon
April 30th – May 4th, 2012

Presented by: Ryan Pugh

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Newfoundland and Labrador … most days are beautiful!!!!!

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Newfoundland and Labrador.....

when Andy Ziegler visited in June 2011!!

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Expanding Development in Newfoundland and Labrador

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If you cannot measure you cannot manage

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Partnership and Collaboration

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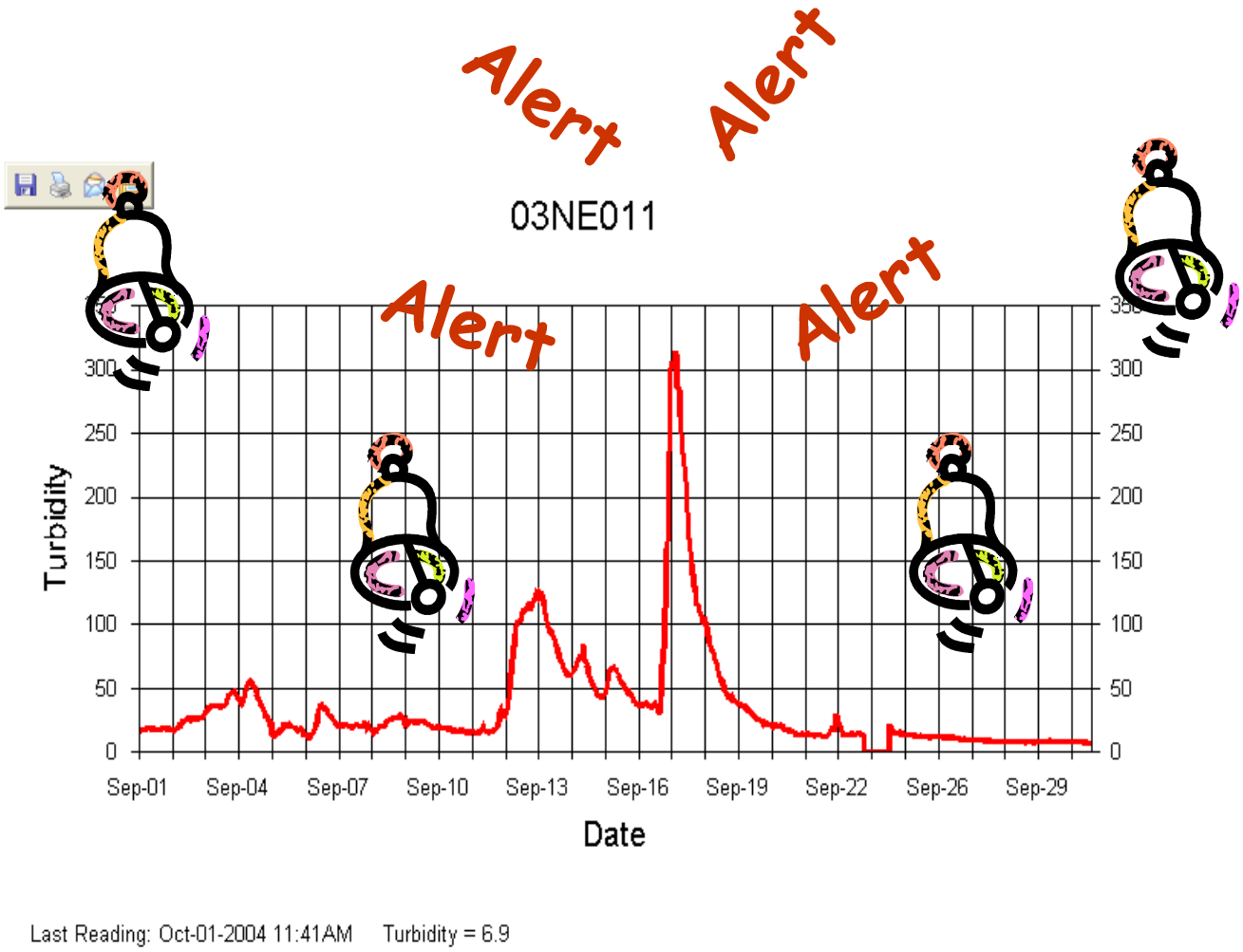
Early Warning System



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Regulatory Tools

- Systematic QA/QC Program
- Transparent Web-based Reporting
- Automated Email Alert System
- Categorization of Risk Associated with Alerts
- Prediction of Non-measured Parameters (Turbidity vs. TSS)
- Calculation of Site-specific Guidelines for pH
- Compliance Monitoring around Tailing Impoundment Areas

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Systematic QA/QC Program

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http://www.env.gov.nl.ca/env/waterres/rti/rtwq/qa.html

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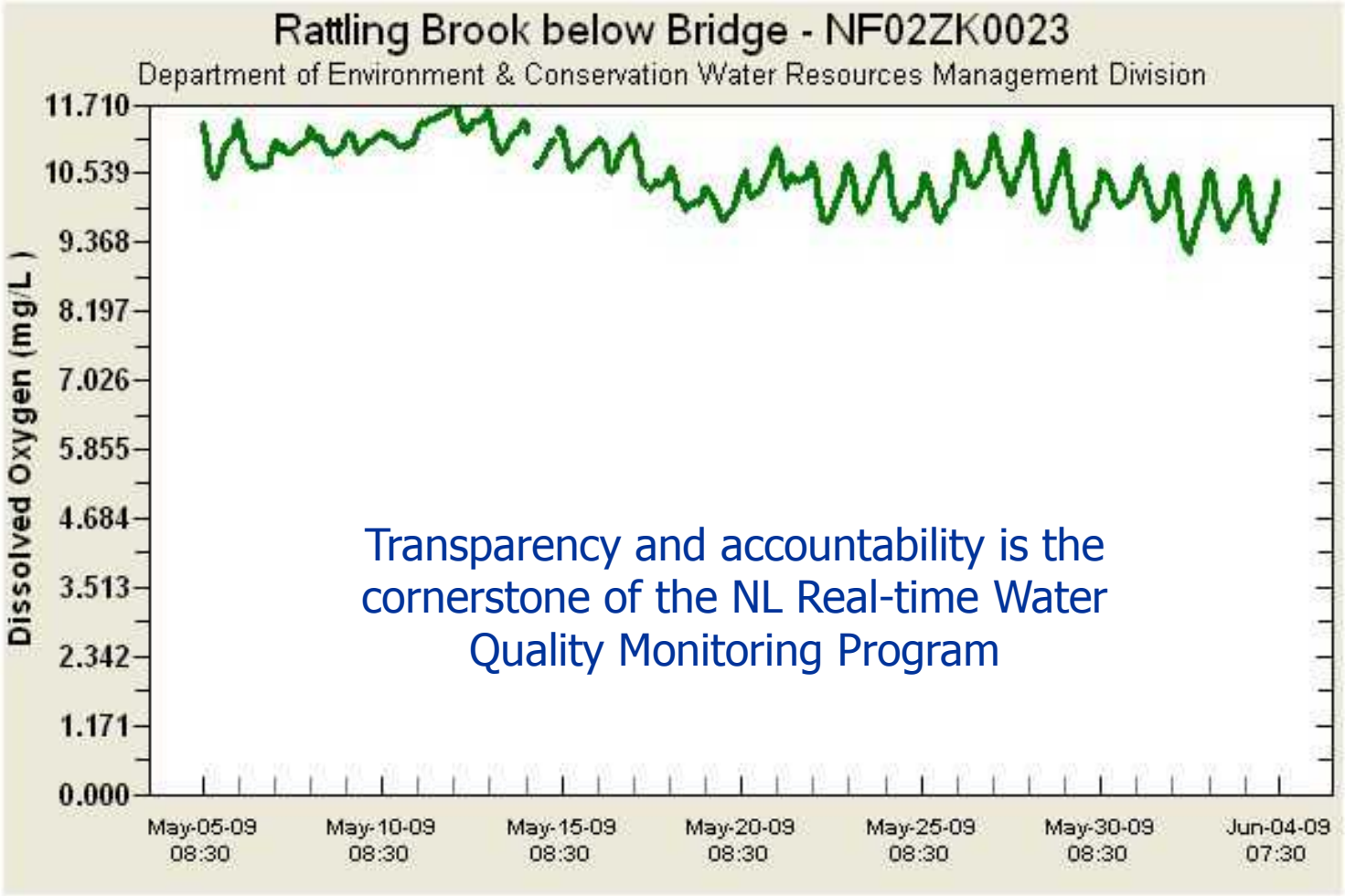
Transparent Web-based Reporting



Transparency and accountability is the cornerstone of the NL Real-time Water Quality Monitoring Program

http://www.env.gov.nl.ca/env/waterres/rti/stations.html

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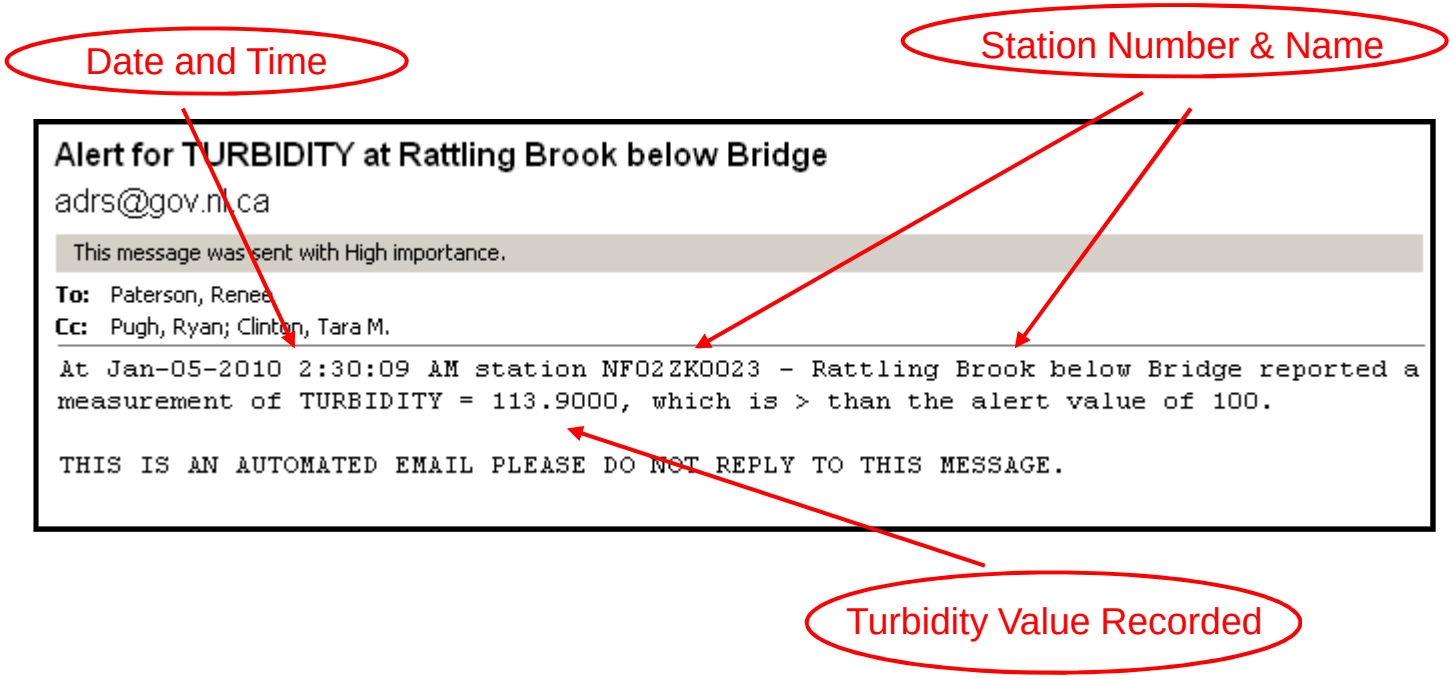
Automated Email Alert System

- Implemented an auto-alert system (through email) that notifies industry and government personnel when turbidity values have risen above a specified trigger.



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Categorization of Risk Associated with Alerts

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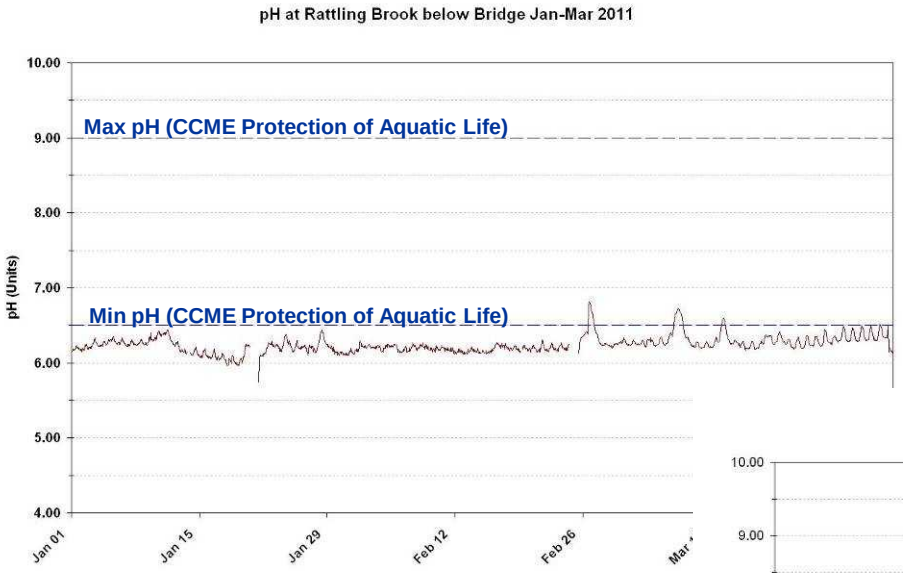
Prediction of Non-measured Parameters
Turbidity vs. TSS

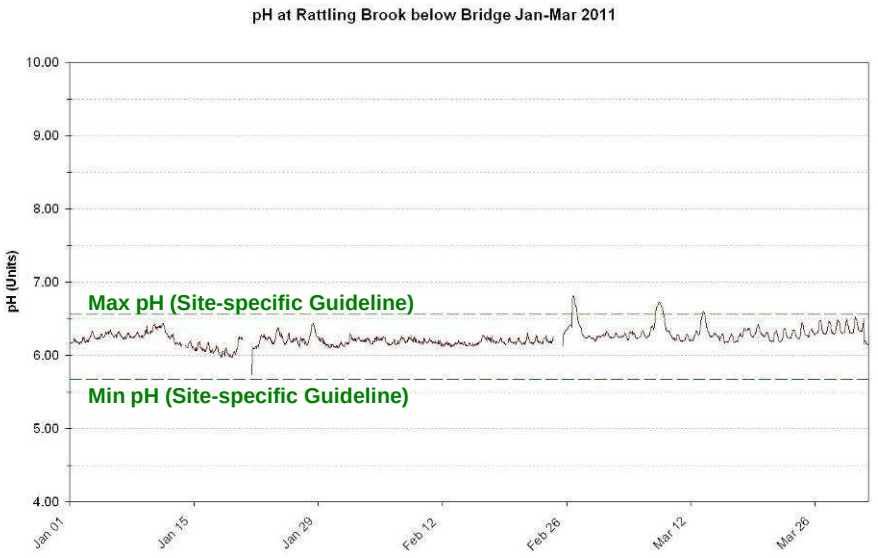
- There is no regulatory limit established in NL for turbidity, however there is a compliance limit in receiving waters for total suspended solids (TSS) – 30 mg/L

- Using statistical analysis, turbidity measured from the continuous monitor can be used to predict the approximate TSS concentration.

- This work has led to a new policy being implemented on select industrial sites whereby Environmental staff are required to investigate and collect additional grab samples when predicted TSS values are approaching the regulatory limit.

Calculation of Site-specific Guidelines for pH





- NL water bodies are naturally acidic thus site-specific guidelines were calculated and applied to the reporting mechanism to better understand when water quality events are occurring.

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Compliance Monitoring around Tailings Impoundment Areas

- Groundwater wells that monitor water quality and level in real-time are being installed around Tailings Impoundment Areas associated with major industrial operations.

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Partnership between government and industry can minimize the impact to aquatic ecosystems due to surrounding development

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Path forward

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4th Real-Time Water Quality Workshop to be hosted in St. John's Newfoundland & Labrador in June 2013

All Are Welcome!!!

Previous workshop proceedings can be viewed at:

http://www.env.gov.nl.ca/env/waterres/rti/rtwq/workshops.html

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In Newfoundland and Labrador you never know what you will encounter in the field…

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Some days are brighter than others…

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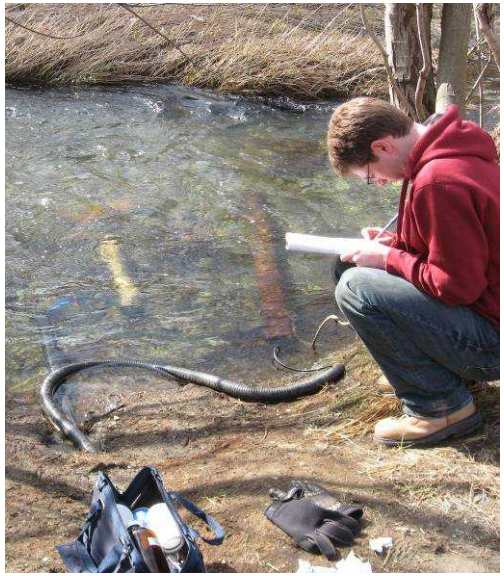
…but the work continues!!!



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It's a team effort!!!!

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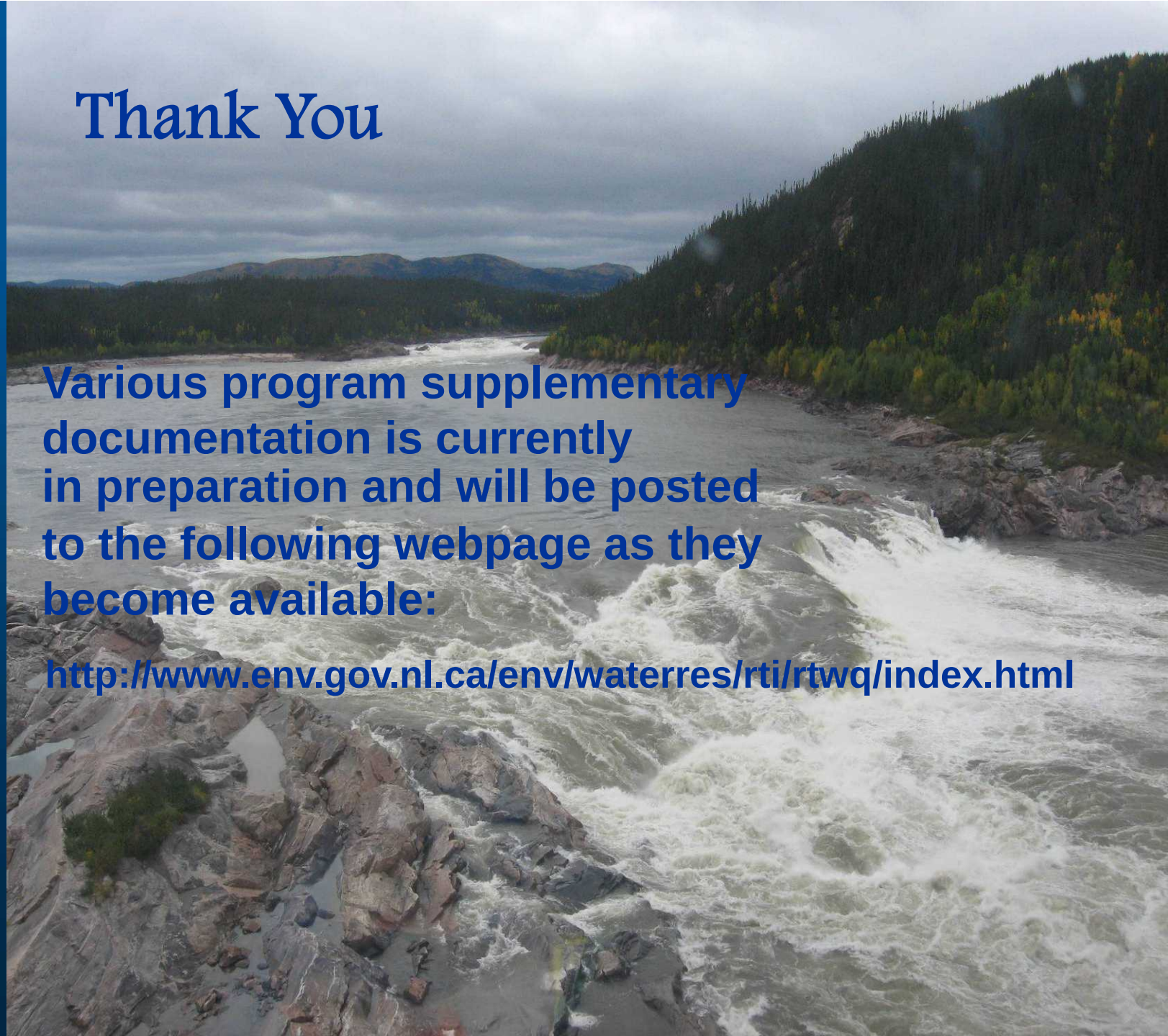

Thank You

Various program supplementary documentation is currently in preparation and will be posted to the following webpage as they become available:

http://www.env.gov.nl.ca/env/waterres/rti/rtwq/index.html

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