First Nations (Alberta) Technical Services Advisory Group

“Be a leader with integrity by cooperatively providing a safe sustainable future for First Nations through quality technical services.”

Innovative Technologies & Approaches
Remote Water Monitoring
AFN Water Conference March 6-7, 2012
TSAG

- Not-for-profit First Nations organization.
- Mandated by Alberta Chiefs Steering Committee & Board of Directors.
- We provide services and training in the following areas:
  - Animals and Human Health
  - Asset Management
  - Environmental Management
  - Fire Prevention
  - Information Technology
  - Circuit Rider Training Program
Network Operations

- TSAG created an in-house Network Operations Center (NOC) and Help Desk to allow First Nations to have access to the Information Superhighway with dedicated support.

- The combination of all of this infrastructure and expertise uniquely allows TSAG to provide a comprehensive solution in its support of First Nation communities.
TSAG has built a province wide information network linking all First Nation schools and health centers. Currently, TSAG is connecting band administration offices and water treatment plants to the Alberta SuperNet.
Circuit Rider Training Program

- The CRTP involves the use of certified trainers who visit First Nations communities and instruct operators on their own system.

- The objective is to help operators obtain certification, maintain & upgrade their skill levels so that they can operate well-functioning water and wastewater treatment systems within their communities according to provincial standards.
Circuit Rider Training Program

- Train and advance the skills of First Nations operators and trainers to:
  - Maintain water and wastewater treatment systems.
  - Maintain water treatment facility management.
  - Ensure health and safety standards.
  - Enhance the process of reporting.
  - Conduct water testing.
  - Create community awareness.
Issues Regarding Water and Wastewater

- High staff turnover amongst First Nation plant operators.
- Substandard adherence to proper maintenance and repair at certain water and wastewater plants.
- Water and wastewater plants do not report information on the plant and plant operations in a timely manner.
- When issues occur, such as water quality, the process to resolving issues take an inordinate amount of time.
Circuit Rider Training Program Plus
(CRTP+)

- TSAG has expanded the CRTP to CRTP+.
  CRTP+ encompasses the existing CRTP with the following additions:
  - Remote Water Monitoring in all water and waste water facilities.
  - Real time identification of problems at the facilities.
  - Help desk that can provide support for plant operators.
  - Plant operations data is stored at a central location (TSAG NOC) which allows for accurate and timely reporting.
  - Revised education programs and safety training.
  - Enhanced trouble shooting services.
Remote Water Monitoring System

Concept: Remote water monitoring systems have been used in urban communities for many years. They give a qualitative representation of the water quality (chlorine residual, turbidity, nitrates, and organic substances) in real time.

Process: Should the system find an anomaly in the water quality, it will alert plant operators, administrations, and/or anyone required to rectify the situation or alert the public. Further laboratory testing will be required, but this will allow First Nation communities to have real time access to their drinking water quality.
Environmental Safety

- Utilizing Aquatic Life, a Canadian owned distributor of environmental testing products, based near Winnipeg, MB.
- s::can Spectro::lyser – is a revolutionary optical multi-parameter probe. Using advanced mathematics to analyse the full UV-VIS spectrum allows calibration of the unit to provide accurate and detailed colour, turbidity equivalent and DOC of surface, bore and treated waters.
- Provides continuous, real-time, on-line monitoring that allows for observation of trends and provides early warning of problems for numerous parameters.
- Allows for drinking water security, environmental monitoring, water quality assurance, waste water and effluent monitoring.
Remote Water Monitoring System

Benefit: Water quality problems are promptly identified and designated people are contacted immediately.

Result: TSAG has implemented the use of a remote water monitoring system to provide additional support via the TSAG Circuit Rider Training Program.
Overall Benefits of RWMS

- Increases the health and safety of potable drinking water in Alberta First Nations.
- Creates alarms to alert Operators/CRTP trainers in the event something goes awry.
- Features an additional level of security for water treatment facilities.
- Mitigates the risk of water contamination.
- Add features to ensure reporting and regular maintenance is conducted.
Thank you

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Questions