



Yukon's Groundwater Program





Presentation Overview

Expanding the Groundwater Program

Existing Programs

Proposed Components of a Yukon Groundwater Program

Critical Stages and Timelines



Why do we need a Groundwater Program

- 97% of Yukoners rely on groundwater
- Critical to human health
- Integral to replenishment of surface water systems that support aquatic and terrestrial life
- Supports business and industrial activities



Groundwater in the Water Strategy

To Better Understand and Manage Yukon's Groundwater

- Enhance and formalize the existing groundwater program in Yukon
- Develop a regulatory framework to manage groundwater



Groundwater in the Water Strategy

Enhance and formalize the existing groundwater program in Yukon

- Online process for Water Well logs – voluntary to start and progress to regulation
- Add groundwater expertise to existing programs e.g. EA's and licenses
- Groundwater database
- Engage other water managers in the Yukon – other Depts., First Nations, municipalities etc.
- Expand existing long-term monitoring network – including baseline sampling in target areas



Groundwater in the Water Strategy

Develop a regulatory framework to manage groundwater

- Engage other water managers in the Yukon – other Depts., First Nations, municipalities etc. to establish protection measures
- Develop a water well drilling program – including water well registry, well drilling practices, construction standards



Existing Programs

Community Services – public drinking water systems in Yukon communities

Health and Social Services – regulates public drinking water systems

Energy, Mines and Resources – geological surveys and permafrost monitoring; oil and gas development; resource mapping

Environment – long-term trend groundwater monitoring network; Water Resources; SARU; Standards and Approvals

Other Yukon Gov. Dept. - Highways and Public Works, Parks Yukon and Community Services have groundwater wells for drinking water and other responsibilities relating to groundwater



Program Gaps – Maybe more?

- **Legislation** – submission of driller’s well logs, well identification, etc...
- **Knowledge** – limited wells in the groundwater monitoring network
- **Climate Change** – more research needed to understand impacts to groundwater
- **Government Coordination** – coordination between all layers of government (First Nations, Territorial, Federal, Municipal), other water agencies, NGOs etc.



Proposed Components

Water Well Registry Program

Why?

- Increases access to data for improved decision making
- Most other jurisdictions have a registry
- Begin with voluntary submission to Yukonwater.ca
- Develop water well drilling program that would make submissions mandatory



Water Well Records

Yukon Department of Environment
Water Resources Branch
Yukon Water Well Registry
Box 1763, Whitehorse, Yukon Y1A 2C6

Well Record Page 2 of 2

Well ID: _____
To be assigned by Dept. Of Environment

INSTRUCTIONS FOR COMPLETING THE FORM

1. For detailed instructions and regulations see the attached Booklet of Regulations.
2. Consider this form to be valid only if filled out in accordance with the instructions.
3. All test well observations should be reported to 1-800-661-0275.
4. Please print clearly in black ink.
5. Complete and send observations in the responsibility of the井owner/owner.
6. Please specify units or imperial units for all measurements.

WELL LOCATION AND OWNER'S INFORMATION

A1 Well Name: _____

A2 Drilled For: _____
First Name Last Name Company / Department / Organization

A3 Street Address of Well Location: _____

A4 Town / Village / Area / Lot #: _____

A5 UTM Coordinates (using handheld GPS): NAD 83 Zone _____

Casting Nothing

A6 Elevation of Top of Casting: _____ m / ft ASL

A7 Accuracy of GPS: _____ m / ft

A8 Purpose of Well:
 Domestic Test Well Pipetion Geotechnical (Quality)
 Commercial Municipal Observation - Water Level Other (please identify use)
 Industrial Agricultural Recreational

Sketch of Well Location
In sketch, indicate direction of north with arrow, well ID, latitude and longitude, if available.

LOG OF OVERBURDEN AND BEDROCK MATERIALS (All depths are below ground surface, state appropriate units, use descriptions provided)

EXAMPLE ONLY →

Interval	SOils (m / ft)	Miscellaneous Material	SS - Soil Common Materials	SS - Secondary Materials	BT - Bedrock Description

B8 Permafrost Encountered: NO YES (Type, indicated depth (m / ft), from _____ to _____)

WELL CONSTRUCTION (Continue on Page 2)

Date Well Completed: _____

C1 Drilling Method: Air Rotary (Conventional) Dip Other (please specify)
 Reverse Air Rotary Cable Tool
 Mud Rotary Auger (Auger / Sd of Bits)

C2 Well Type: OVERBURDEN BEDROCK

C3 Outside Diameter: _____ m / ft **C4 Casing Material:** Steel Plastic Other _____

C5 Casing Wall Thickness: _____ m / ft **C6 Casing Depth to:** _____ m / ft

C7 Other Comments Regarding Casing: _____



Proposed Components

Enhanced Centralized Groundwater Database

Why?

- Improved accessibility for all residents, industry, etc. – anyone who would utilize groundwater data
- Improved planning and decisions



Proposed Components

Water Well Specifications

Why?

- Standardized practises for drilling/construction will protect well owner supply and keep groundwater resources healthy for future generations
- Possibly look at using existing standards (i.e. BC, Ontario) to develop standards and consider incorporation into regulation.



Proposed Components

Undertake Aquifer Mapping

Why?

- Provides scientific basis for protecting sources that replenish groundwater
- Will identify how much groundwater is available
- Helps create models for groundwater flow to support sustainable use



Proposed Components

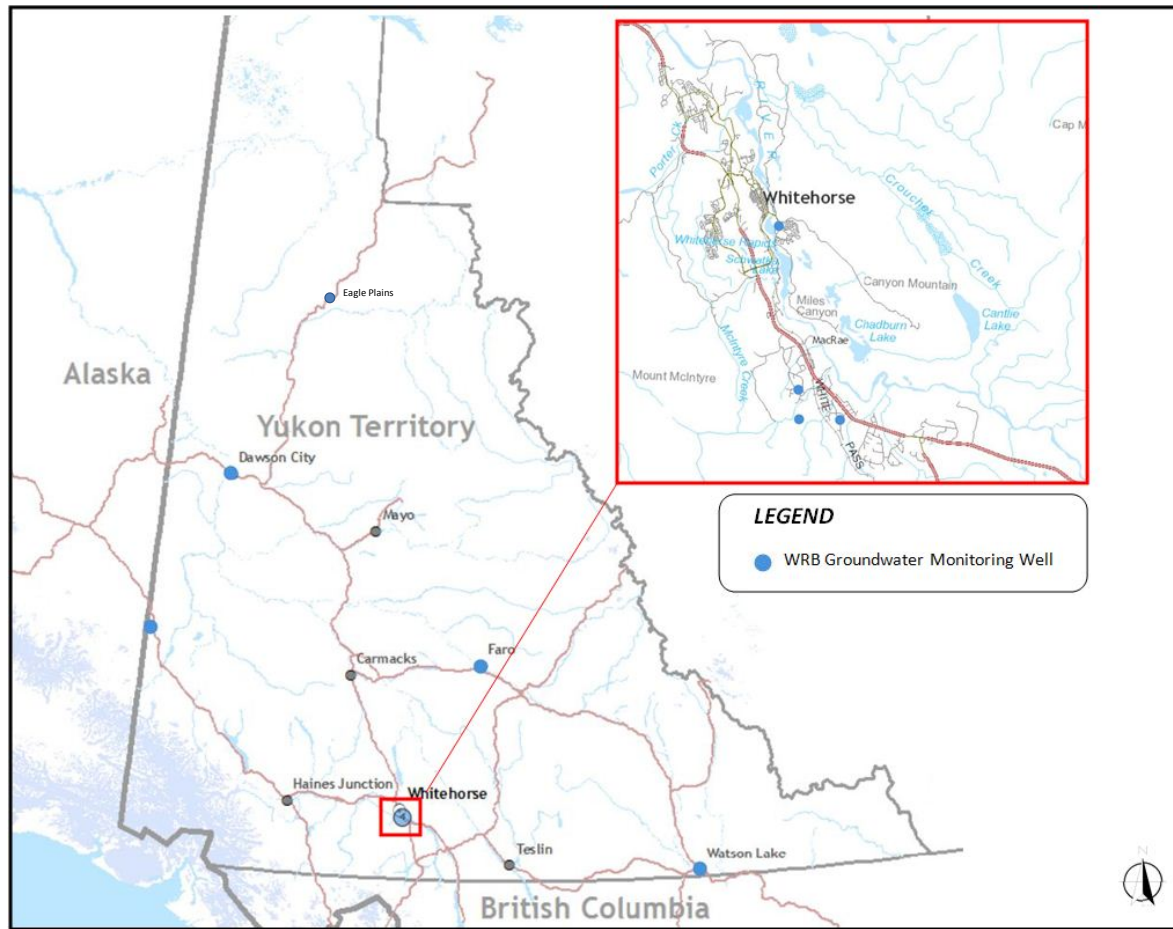
Network Expansion

Why?

- Current Yukon network only has 9 monitoring wells
- Need more to establish sufficient baseline data to support decision making and infrastructure planning
- Establish partnerships with other well owners (i.e. municipalities, First Nations, other Yukon Gov. Depts.) to instrument and monitor

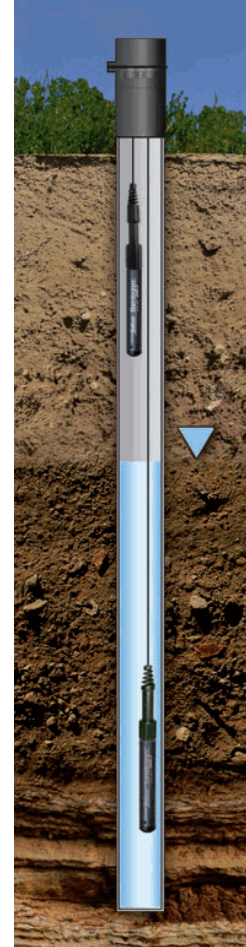


Yukon Wide Groundwater Monitoring Network



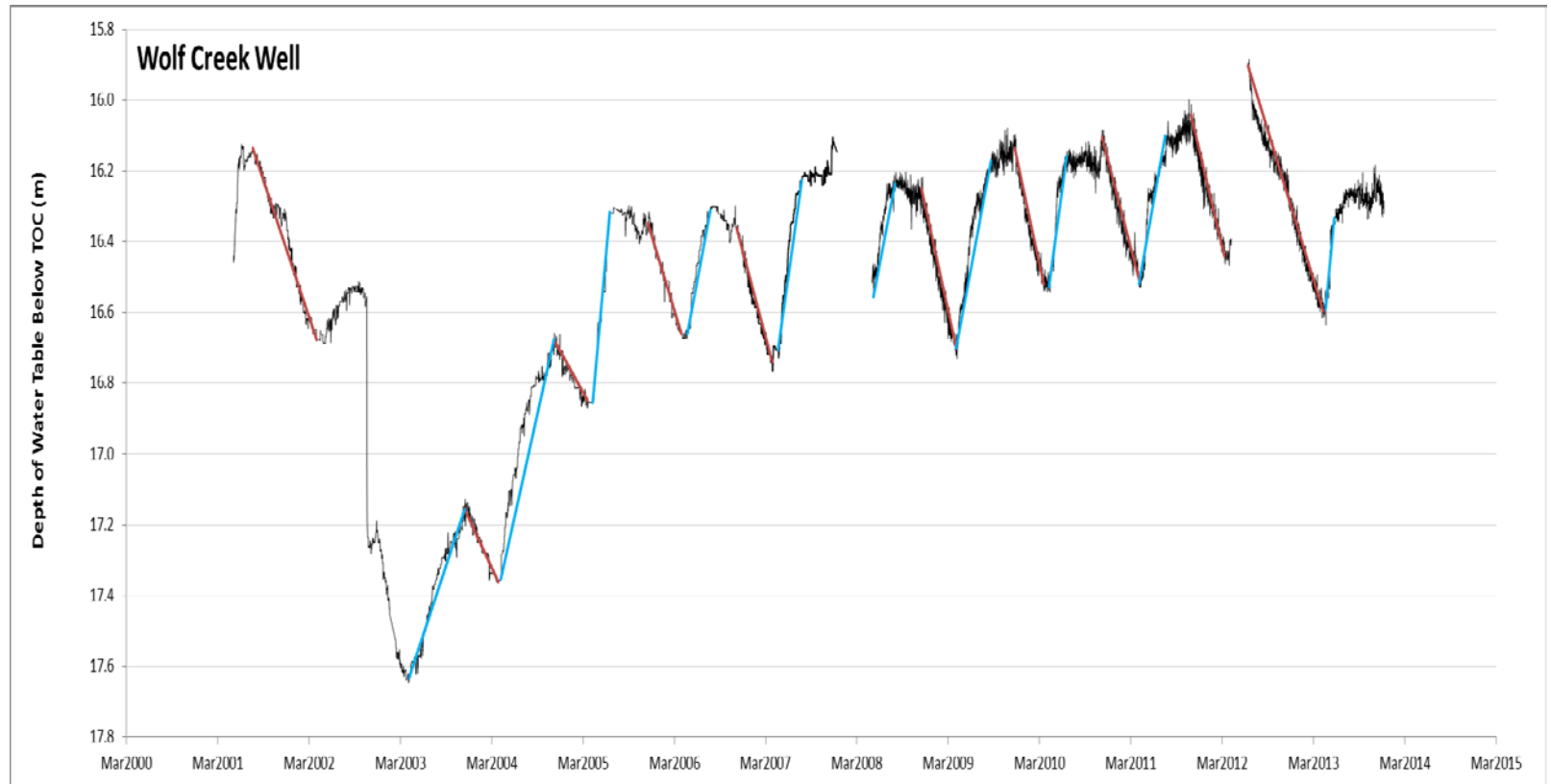


Yukon Wide Groundwater Monitoring Network





Yukon Wide Groundwater Monitoring Network





Proposed Components

Research and Partnerships

Why?

- Limited knowledge of our groundwater resources and the Yukon government is not the only responsible water manager
- Partner with Yukon Research Centre, industry (where appropriate), First Nations, and other agencies such as the Federal Government, Canadian Water Network, University of Calgary, etc.
- Increased interest to understand effects of industrial development on groundwater and protection of resources



Proposed Components

Partnerships

Why?

- Yukon government is not the only government with responsibilities/interests in groundwater in the Yukon
- Collaboration is required in order to undertake adequate work



Groundwater Program Development

Develop an Interdepartmental Working Group

- Representatives from relevant YG departments with existing groundwater program areas
- Should include both technical and policy representatives.
- Potential expansion to include outside Yukon gov groups such as First Nations, Federal Gov, etc.



Groundwater Program Development

Development of Inventory

- Develop an inventory of groundwater programs in Yukon
- Utilize Water Management Framework approach to inventory (i.e. mandates, legislation, existing policies, programs, etc...)



Groundwater Program Development

Groundwater Workshop

- Bring together agencies with groundwater responsibilities and industry
- Seek input on discussion paper and help confirm proposed priorities; seek input on other potential components
- Opportunity to identify potential partners

Questions?

