

Update on Groundwater



THIS REPORT IS PREPARED FOR YOU by the water management teams within the Ministry of Environment and Climate Change Strategy (ENV) and the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNR).

IN THE SEPTEMBER 2021 ISSUE:

- Groundwater Licensing – Upcoming Deadline and New Resources
- Provincial Groundwater Program Regional Update – South Natural Resource Area
- Provincial Groundwater Observation Well Network Update (PGOWN)
- Groundwater Staff Contact List

REPORT NON-COMPLIANCE

- Have you noticed a well that does not meet the construction standards of the Groundwater Protection Regulation?
- Know of someone who is drilling a well or installing a well pump without being registered?

RAPP
Report All
Poachers and
Polluters

24 Hr Hotline:
1-877-952-RAPP
Cellular Dial #7277
(On Telus Network)

CONTACT US

The contact information for various groundwater staff across the province is available in every newsletter. We look forward to industry reaching out to us directly with questions.

Groundwater Licensing – Upcoming Deadline and New Resources

Apply by March 1, 2022

March 1, 2022 is the deadline to apply for a water licence for those who were using groundwater from a well or dugout on or before Feb. 29, 2016 (“existing groundwater users”), for non-domestic purposes, such as irrigation or industrial use. A water licence is not required for a household well or groundwater used for domestic purposes, such as watering lawns and gardens.

Missing the deadline could have significant impacts. Existing groundwater users who have not applied by March 1, 2022 must stop using groundwater until a licence can be obtained and will lose recognition of their historical date of first use. Missing the deadline could also be costly. Fines may apply for using groundwater without a licence, a one-time application fee may be required, and there may be costs for additional studies to support an application.

Contact FrontCounter BC to learn how to apply at 1-877-855-3222 or FrontCounterBC@gov.bc.ca.

Information Bulletin

An *Information Bulletin* was released to the public on July 2, 2021. The bulletin highlights the important March 1, 2022 deadline, which is the deadline to apply for a water licence for those who were using groundwater for a non-domestic purpose on or before February 29, 2016. Licensing groundwater use provides a fair, transparent, and accountable process to manage water use throughout B.C. and is particularly valuable during periods of water shortage.

GET MORE INFORMATION
Groundwater.gov.bc.ca

Licensing Groundwater in BC

Do you use groundwater?
Secure your water rights by
applying today!



New: How to Apply Video

FrontCounter B.C. has produced a [YouTube video](#) that describes water licence application requirements for new and existing groundwater users and provides a step-by-step tutorial on how to apply for an existing use groundwater application online.

New: Application Assistance Initiative

FrontCounter B.C. has recruited several co-op students to help existing groundwater users apply for a water licence. We hope to have the application assistance program in place for September 2021. This program will supplement the already-existing application assistance offered by FrontCounter BC.

New: Question and Answers for Livestock Watering and Dugouts

A new question and answer document was developed to communicate common questions and answers related to groundwater licensing for [Livestock Watering and Dugouts in B.C.](#) This is an appendix to the main [Licensing Groundwater in B.C. Questions and Answers](#) document.

Report: Hydrogeology and Environmental Flow Needs Assessment of a Groundwater Licence Application near Lumby, B.C.

A **new report** was released in March 2021, summarizing the technical information related to the refusal of a new groundwater use licence application near Lumby, B.C. The purpose of the report is to provide the public and professional communities with context around the licence refusal. The report summarizes information provided by the applicant, the subsequent information review and discussions, and the supplemental technical information provided to defend the refusal.

Learn More:

To learn more about water licences:

<https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/gwlicensingqas-2020.pdf>

Apply online: <https://portal.nrs.gov.bc.ca/web/client/-/secure-your-water-rights-today>

Register a domestic well:

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/groundwater-wells/well-records-registration>

For help, contact FrontCounter BC:

<https://portal.nrs.gov.bc.ca/web/client/contact>



Provincial Groundwater Program Regional Update – South Natural Resource Area

We are pleased to provide an update on groundwater activities that are being carried out by the regional groundwater staff in the South Natural Resource Area of the Ministry of Forest, Lands, Natural Resource Operations and Rural Development (FLNRORD). The South Area includes the Cariboo, Thompson Okanagan, and Kootenay Boundary Regions.

Aquifer Mapping

A 2021-22 project will revise historical aquifer mapping and identify previously unmapped aquifers in several locations across the Cariboo Region to support groundwater management and further water research.

Groundwater Science

Drought Support

South Area Groundwater Science is supporting the Provincial drought response through numerous site and watershed-scale projects. Primarily focused within the Kootenay Boundary and the Thompson Okanagan Regions, this work informs the application of regulatory tools to manage water use in times of scarcity.

Assessment of Groundwater – Surface Water Interactions on the Vaseux Creek Alluvial Fan, Oliver, BC

In partnership with the Okanagan Nation Alliance (ONA), this research project focuses on groundwater/stream interactions across an alluvial fan to inform water management decisions, efforts to conserve important fish species, and drought response activities. Key objectives for year one of this three-year project include: conceptual model development, the installation of up to ten groundwater monitoring locations and two hydrometric stations, the collection of water quality information, and reporting on preliminary results. Final results will be reported in the BC Water Science Series:

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-science-data/water-science-series>

Hullcar (Clachl) Aquifer Monitoring

Shallow groundwater monitoring wells constructed by the provincial government in the Hullcar (Clachl) Valley area in 2019-2020 continue to be monitored for water quality and elevation data. This work was undertaken in partnership with the Spltasin First Nation. Results are being incorporated in an updated consultant report which, when complete, will be made available on the Provincial Hullcar Aquifer Information page:

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-permitting-compliance/hullcar-aquifer>

Nicola and Coldwater River Research

Hydrogeology and groundwater/surface water interactions research continues in the drought sensitive Nicola and Coldwater River valleys near Merritt, BC through a partnership between the South Area Groundwater Science team, the Fraser Basin Council, and the City of Merritt. This year's efforts focus on further clarification of flow dynamics and assessment of the impact of some larger users. Completed reports, based on previous project work, are now available and can be searched using key words (Nicola Aquifer and Merritt Coldwater River) on B.C. Ecological Reports Catalogue (EcoCat BC):

<https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/libraries-publication-catalogues/ecocat>

Groundwater Monitoring

Real-time groundwater monitoring sites included in the Provincial Groundwater Observation Well Network (PGOWN) are now receiving datalogger upgrades to ensure the continued availability of high-quality groundwater monitoring data. South Area wells will be switched over to the new system at a rate of approximately ten wells per year.

A new Provincial Observation Well will be added to the PGOWN this year. It will be located adjacent to Vaseux Creek in Oliver, BC. Provincial groundwater level data is publicly available through the Provincial Groundwater Level Data map:

<https://governmentofbc.maps.arcgis.com/apps/webappviewer/index.html?id=b53cb0bf3f6848e79d66ffd09b74f00d>

Groundwater Protection and Regulatory Compliance

South Area staff continue to work with well owners to bring older flowing wells into compliance with the *Water Sustainability Act*. Regulatory compliance files have also been actioned related to: failure to submit well records to the province and well owner; well decommissioning; wellhead stick-up; wellhead access and storage of contaminants close to the wellhead; and well setbacks (i.e. from existing wells, sewage systems, riparian areas). Staff continue to provide education to well owners on groundwater legislation. A number of complaints are also received each year from well owners with water rights lacking formal land access agreements to their well located on private property or crown land.

There continues to be a high volume of inquiries seeking clarification on the concepts of well registration vs water licensing requirements. The GWELLS database continues to become a more useful tool as a large volume of domestic well registrations forms continue to be submitted to the Province. This process includes attaching original well records to the database where available.

Staffing Changes

Jeff Corrie has stepped into the role of Groundwater Technician taking over responsibility for the Okanagan and Kootenay Boundary portions of the Provincial Groundwater Observation Well Network (PGOWN). Jeff has a B.Sc. (hons) in Environmental

Chemistry from UBC Okanagan and has experience working as an environmental consultant.

Rae Dunphy has temporarily joined the team as a South Area Groundwater Protection Officer. Rae comes to us from FrontCounterBC where she worked as a Natural Resource Specialist for two years. Prior to that, she gained experience in groundwater science as an Environmental Technician with the City of Kamloops.

Quinnlan Dartnell has joined us from the Water Engineering Technology (WET) program at Okanagan College in Kelowna as our Groundwater Co-op. He is primarily supporting PGOWN operations throughout the summer.

Provincial Groundwater Observation Well Network (PGOWN) Update

As we continue the 60-year celebration of the Provincial Groundwater Observation Well Network, this month we learn about the early evolution of the monitoring equipment used across the network.

Originally, water levels were manually collected once a month by government staff and members of the public using the wetted-tape method, or other means, and this information was recorded on a paper card.

Over time, monitoring methods changed and eventually the Stevens Chart Water Level recorder (see Photo 1) was installed in many of the observation wells. This method of monitoring produced a real time graph of the water level using a float and counterweight attached to a pulley. To ensure the line would not slip on the pulley, a beaded line or perforated tape was used. The pulley was connected to a marking pen. As the float moved up and down in relation to the groundwater level, the stylus on the marking pen moved at the same time and produced a permanent record on graph paper of the rise, fall and time of the water level movement.

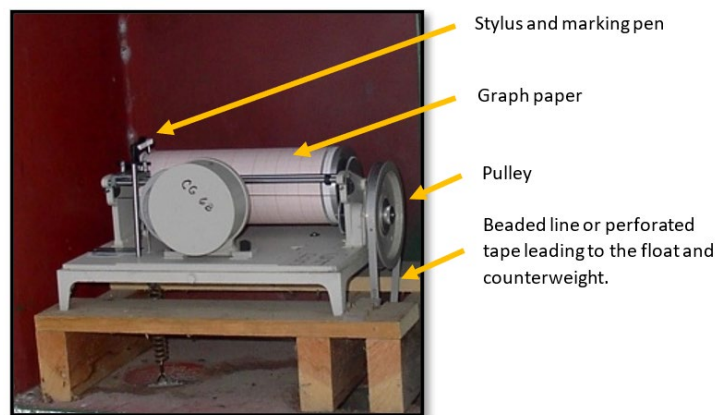


Photo 1: Stevens Chart Recorder

Next, the Thalimedes (Photo 2) began to replace the Stevens Chart recorders. The Thalimedes also used a float and counterweight. The changes in water level indicated by the

movement of the float and counterweight were transferred to the float pulley on an encoder unit. The rotation of the pulley was converted to an electrical signal and sent via cable to an electronic data logger where the information was stored.

Today, pressure transducers are used to continuously monitor the water levels across the network and the data is stored in dataloggers. Consistent maintenance and calibration of the monitoring equipment is essential to ensure high quality monitoring data is collected and publicly available.

Do you have questions about the PGOWN?

Contact groundwater@gov.bc.ca

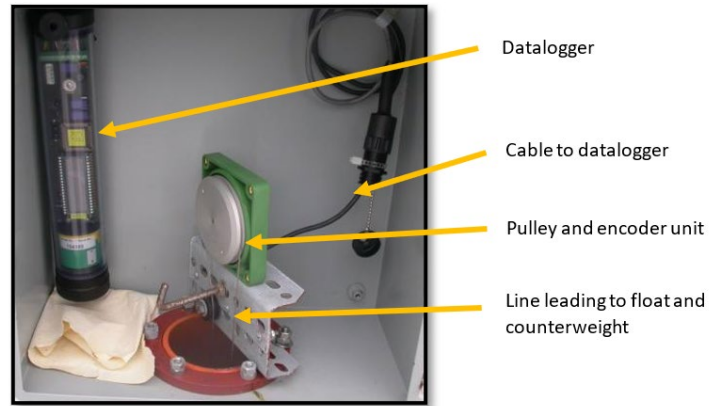


Photo 2: Thalimedes

Contact Information for Groundwater Staff with Statutory Designation

Office	Name	Statutory Designation	Phone	Email	Ministry
West Coast (Nanaimo)	Graeme Henderson	Officer	250-751-7119	Graeme.Henderson@gov.bc.ca	FLNR
	Sylvia Barroso, P. Geo.	Assistant Water Manager	250-751-3265	Sylvia.Barroso@gov.bc.ca	
	David van Everdingen, P. Geo.	- (Regional Hydrogeologist)	250 739-8503	David.vanEverdingen@gov.bc.ca	
	Jessica Doyle, P. Geo.	Assistant Water Manager	778-693-3035	Jessica.Doyle@gov.bc.ca	
South Coast (Surrey)	Emma Webster, P. Geo.	Officer	778-572-2160	Emma.Webster@gov.bc.ca	
	Michele Lepitre, P. Geo.	Assistant Water Manager	778-572-2168	Michele.Lepitre@gov.bc.ca	
	Shirley Wang, P. Geo.	Assistant Water Manager	778-572-2167	Shirley.Wang@gov.bc.ca	
South Area (Penticton)	Skye Thomson, P. Geo.	Assistant Water Manager	778-622-6907	Skye.Thomson@gov.bc.ca	
	John Pogson, P. Geo.	Assistant Water Manager	778-622-6876	John.Pogson@gov.bc.ca	
	Nicole Pyett, P. Geo.	Assistant Water Manager	778-622-6974	Nicole.Pyett@gov.bc.ca	
South Area (Vernon)	David Thomson, P. Geo.	Assistant Water Manager	778-943-6924	David.Thomson@gov.bc.ca	
South Area (Kamloops)	Laurie Lyons	Officer	250-312-7262	Laurie.Lyons@gov.bc.ca	
North Area (Smithers)	Johanna Wick, P. Geo.	Assistant Water Manager	778-693-2671	Johanna.Wick@gov.bc.ca	
North Area (Prince George)	Ed Bryson, P. Geo.	Officer	778-693-3177	Stuart.Bryson@gov.bc.ca	
Victoria	Amy Sloma, P. Eng.	Deputy Comptroller	778-698-4866	Amy.Sloma@gov.bc.ca	ENV
	Leia Fougere, P.Eng.	Officer (Sr. GW Data Specialist)	236-478-3730	Leia.Fougere@gov.bc.ca	
	Uelun Tuvshinjargal	Officer (GW Data Specialist)	236-478-0448	Uelun.Tuvshinjargal@gov.bc.ca	

For general enquiries, contact Groundwater@gov.bc.ca