

# Update on Groundwater



THIS REPORT IS PREPARED FOR YOU by the water management teams within the Ministry of Water, Land, and Resource Stewardship (WLRS), the Ministry of Environment and Climate Change Strategy (ENV), and the Ministry of Forests (FOR).

## IN THE SEPTEMBER 2023 ISSUE:

- Drought Conditions
- Provincial Government Groundwater Program Regional Update
- Provincial Groundwater Observation Well Network Update (PGOWN)
- Registering as a GWELLS user to submit well records online
- 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.

## Drought Conditions

People and communities are experiencing severe drought conditions – much earlier this year than is usually the case. Most of the province is now at a Drought Level 4 or 5 classification – with Level 5 being the highest classification possible, indicating adverse impacts to socio-economic or ecosystem values are almost certain.

- We all have a role to play in conserving water to make sure everyone has access to water when they need it. We are urging people and businesses to reduce water usage wherever possible. In response to our changing climate - every drop counts.

Drought conditions are serious and will likely mean that an increasing number of people, business and communities will face challenges.

- We know that right now farmers and ranchers are among those facing the most immediate challenges.

The Province is supporting farmers and ranchers and working with the agricultural community, as well as the federal government, to support B.C. producers. New programs are being created to help farmers find more hay and feed for their animals.

Access to water by food producers is crucial for food security for all of us. We are doing this conservation work to preserve drinking water and water for our food supply and for the health of fish and animals.

Water supply is also vital for firefighting, and for the operations of many services and businesses.

The Province is working to find ways to limit water in government facilities throughout B.C. and working closely with large businesses and industries to reduce water use.



Monitoring well on the banks of Coldwater River during low water. Photo Credit: Laurie Lyons.

The Province recently updated our drought response plan, and we continue to work with municipal partners and Indigenous communities to support them in their local water management.

- We are prepared for this. We are asking people directly to conserve water because we know that when we face challenging times, people want to take an active role in protecting their whole community – and it makes a positive difference.

In B.C., drought response is a shared responsibility with the Province, the federal government, water providers, regional districts, municipalities, and First Nations. During these severe drought conditions, the Province is supporting local governments in efforts to conserve water. Please check with your **local municipal authority or First Nations** for water restrictions in your community.

For the latest information, please visit [www.gov.bc.ca/drought](http://www.gov.bc.ca/drought)

## Provincial Groundwater Program Regional Update – South Natural Resource Area

We are pleased to provide an update on groundwater activities being carried out by the groundwater staff in the South Natural Resource Area of the Ministry of Forests (FOR). The South Area includes: the Cariboo, Thompson-Okanagan, and Kootenay-Boundary Regions.

### Groundwater Science

#### Drought Support

South Area Groundwater Science is supporting the Provincial drought response through a variety of site and watershed-scale activities. Those supports are currently focused within the Kootenay-Boundary and the Thompson-Okanagan Regions to inform the application of regulatory tools for managing water use in times of scarcity. Current information on drought conditions is publicly available through the [Drought Information Portal](#). A new feature for the [Drought Information Portal](#) is a Groundwater Conditions tab. The Groundwater Conditions tab provides access to an interactive mapping, aquifer information, groundwater level statistics and more.

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

In partnership with the Okanagan Nation Alliance (ONA), this 3-year 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. Year 3 objectives include: continued collection of surface water level, flow and chemistry information from seven surface water monitoring sites, collection of groundwater level and water chemistry information from eight groundwater monitoring locations, further development and testing of the site conceptual model, and inclusion of Traditional Ecological Knowledge. A summary of Year 2 efforts will be available in the 2022-23 Compendium of Provincial Groundwater Science and Monitoring Projects: [Water Science Series](#).

#### Clcahl/Hullcar Valley Aquifers

The Clcahl/Hullcar Valley Aquifers provides drinking water for approximately 250 residents. Safe, reliable, clean drinking water is the cornerstone of human health and community well being. Through the last decade, the quality and quantity of water in the aquifers has been reduced by various land use

practices. Through strong partnerships and collaboration with the Province, the Splatins and Interior Health are working together via the Clcahl/Hullcar Steering Committee to ensure the health of the aquifer and the watershed for all those living and working in the valley. Recently a numerical model has been constructed and calibrated for the Hullcar Valley to assist understanding the groundwater system.

### Groundwater Monitoring

The Provincial Groundwater Observation Well Network (PGOWN) is currently comprised of 228 active observation wells, 76 of which are located within South Area. The PGOWN wells monitor groundwater levels using pressure transducers that collect data hourly. PGOWN groundwater level data may be viewed on the interactive map platforms: [Groundwater Level Data Interactive Map](#) or Real-time Water Data. Almost two-thirds of the observation wells in the network transmit data via satellite telemetry. Upgrades to telemetry equipment in the Okanagan and Kootenay regions are ongoing.

Five new Provincial Observation Wells locations have been added to the PGOWN within the South Area. Those locations include: the South Okanagan Grasslands Protected Area near Osoyoos (installed in aquifer 0238), Canyon area of Creston (aquifer 0489), Tulameen River/Otter Lake area (aquifer 1010); Deep Creek/Otter Lake area near Spalumcheen (aquifer 1153); and Falkland (aquifer 0097). Well locations were selected to increase understanding of groundwater/surface water interactions, hydraulic connectivity, and concerns of potential groundwater level decline.

The Groundwater Level Data Interactive Map provides access to groundwater level data collected from the Provincial Groundwater Observation Well Network.



### HAVE SUGGESTIONS FOR IMPROVEMENTS?

Do you have ideas on how the application can be improved? Email [gwells@gov.bc.ca](mailto:gwells@gov.bc.ca)

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/groundwater-observation-well-network/groundwater-level-data-interactive-map>

Flowing artesian condition advisories for the Naramata and Armstrong areas are currently under development and expected to be released in the Fall 2023. Flowing artesian condition advisories provide information about where one is more likely to encounter flowing artesian conditions.

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/groundwater-wells/information-for-well-drillers-well-pump-installers/well-drilling-advisories/flowing-artesian-conditions-advisories>

### **Groundwater Protection and Regulatory Compliance**

South Area staff continue to provide timely responses to complaints and enquires related to groundwater and wells. Problems with well construction and poor maintenance, improper well siting, uncontrolled flowing artesian conditions, work completed by under qualified or non-registered practitioners and failure to submit well construction records are just some of the issues groundwater protection officers have responded to.

Joint inspections are often undertaken as water complaint infractions often fall under a multitude of legislation and jurisdictions. The joint inspections are a training opportunity for the various compliance officers, and the well/property owner have access to knowledgeable water officers with powers under the Acts. As of July 1, 2023, there were eight joint files between Interior Health and South Area staff. Provincial staff continue to look for opportunities to provide resources on wells and groundwater to the public and industry.

Groundwater Protection Officer Laurie Lyons provided BC Small Water Systems Community Network an online presentation titled Groundwater and Wells: An Overview for a Well Owner or Well Operator. The presentation included a brief overview of groundwater, wells and legislation protecting them as well as how aquifers affect the availability of water that can be pumped from a well. Water quantity and water quality are not just a reflection of the natural environment but also a reflection of well construction, maintenance, and operation. A recording of the presentation is available on their [Online Help Centre](#) website.

### **Staffing Changes**

Regional Hydrogeologist Nicole Pyett is on a temporary assignment and currently supporting the Thompson-Okanagan drought response. Tserenpil Jeppesen joined our team for a summer co-op position in the Penticton office. She is studying her first year of the Applied Environmental Science and Planning Technology program at Selkirk College and has assisted with the operation, maintenance and upgrading instrumentation for observation wells in the network.



*Drilling Observation Well 510 in Deep Creek (March 2023).*

*Photo credit: Ministry of Forests*

## **Provincial Groundwater Observation Well Network (PGOWN) Update**

The Provincial Groundwater Observation Well Network (PGOWN) is seeing positive changes this year with the development of an operations manual for our field staff and the hiring of additional permanent staff who will work on network expansion, along with other duties to improve the operation of the network.

In addition, the PGOWN wells have been integrated into the [BC Drought Information Portal](#) (under “Groundwater Conditions”). Groundwater in many parts of the province provides baseflow to hydraulically connected streams and thus plays a critical role during the dry summer months. The River Forecast Centre recently added a “Daily Groundwater Level Conditions” section to their portal as groundwater can help to inform drought conditions. This portal shows the daily percentiles for all PGOWN wells with sufficient data (i.e., newer wells will not yet have percentiles available). In addition, selecting individual wells will generate further information and links to interactive hydrographs and regional percentile reports.

### **Do you have questions about the PGOWN?**

Contact [groundwater@gov.bc.ca](mailto:groundwater@gov.bc.ca)

Learn more about the Provincial Groundwater Observation Well Network by using the interactive map available at:

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/groundwater-observation-well-network/groundwater-level-data-interactive-map>.



## Registering as a GWELLS user to submit well records online

### Get access in three easy steps:

1. Visit the GWELLS BCeID registration page to obtain either a Basic BCeID account or Business BCeID account. (Note, if you already have a Basic or Business BCeID account, you do not need to create a new one to access GWELLS)
2. After obtaining your BCeID, go to GWELLS and select the login button (top right of the application screen).
3. Once you have logged in, email [gwells@gov.bc.ca](mailto:gwells@gov.bc.ca) to request access for your BCeID user account.

**Once access has been granted, you will be able to enter and submit groundwater well reports through GWELLS.**

## Contact Information for Groundwater Staff with Statutory Designation

Office	Name	Statutory Designation	Phone	Email	Ministry
West Coast (Nanaimo)	Jessica Doyle, P. Geo.	Assistant Water Manager	778-693-3035	<a href="mailto:Jessica.Doyle@gov.bc.ca">Jessica.Doyle@gov.bc.ca</a>	FOR
	David van Everdingen, P. Geo.	Assistant Water Manager	250-739-8503	<a href="mailto:David.vanEverdingen@gov.bc.ca">David.vanEverdingen@gov.bc.ca</a>	
	Chris Donnelly, P. Geo.	Assistant Water Manager	250-952-2020	<a href="mailto:Chris.Donnelly@gov.bc.ca">Chris.Donnelly@gov.bc.ca</a>	
	Nicole Fulcher	Officer	250-739-8339	<a href="mailto:Nicole.Fulcher@gov.bc.ca">Nicole.Fulcher@gov.bc.ca</a>	
South Coast (Surrey)	Michele Lepitre, P. Geo.	Assistant Water Manager	778-572-2168	<a href="mailto:Michele.Lepitre@gov.bc.ca">Michele.Lepitre@gov.bc.ca</a>	
	Elyse Sandl, P. Geo.	Assistant Water Manager	236-468-3876	<a href="mailto:Elyse.Sandl@gov.bc.ca">Elyse.Sandl@gov.bc.ca</a>	
	Kumar K C	Officer	778-572-2162	<a href="mailto:Kumar.K.C@gov.bc.ca">Kumar.K.C@gov.bc.ca</a>	
South Area (Penticton)	John Pogson, P. Geo.	Assistant Water Manager	778-622-6876	<a href="mailto:John.Pogson@gov.bc.ca">John.Pogson@gov.bc.ca</a>	
	Jeff Corrie	Officer	778-622-6973	<a href="mailto:Jeff.Corrie@gov.bc.ca">Jeff.Corrie@gov.bc.ca</a>	
South Area (Vernon)	David Thomson, P. Geo.	Assistant Water Manager	778-943-6924	<a href="mailto:David.Thomson@gov.bc.ca">David.Thomson@gov.bc.ca</a>	
South Area (Kamloops)	Melissa Wade, P. Geo.	Assistant Water Manager	778-362-4714	<a href="mailto:Melissa.Wade@gov.bc.ca">Melissa.Wade@gov.bc.ca</a>	
	Laurie Lyons	Officer	250-312-7262	<a href="mailto:Laurie.Lyons@gov.bc.ca">Laurie.Lyons@gov.bc.ca</a>	
North Area (Prince George)	Jun Yin, P. Geo.	Assistant Water Manager	778-693-3015	<a href="mailto:Jun.Yin@gov.bc.ca">Jun.Yin@gov.bc.ca</a>	
Victoria	Amy Sloma, P. Eng.	Deputy Comptroller	778-698-4866	<a href="mailto:Amy.Sloma@gov.bc.ca">Amy.Sloma@gov.bc.ca</a>	WLRS
	Qihong Su	Officer (Sr. GW Data Specialist)	778-405-3156	<a href="mailto:Qihong.Su@gov.bc.ca">Qihong.Su@gov.bc.ca</a>	

For general enquiries, contact [Groundwater@gov.bc.ca](mailto:Groundwater@gov.bc.ca)



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