

# GWELLS Enhancements



**Update on Recently Completed Enhancements**

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Water Protection and Sustainability Branch

## Smaller Enhancements

1. **GW Licensing volume disclaimer**
2. **Change to the Hydraulically Connected Field**
3. **Change “Artesian advisory” to “Drilling and operation advisory”**
4. **Addition of new “tool tips”**
5. **Changes to the Main Aquifer Search page**
  - **Remove “Hydraulically Connected”**
  - **Change “Artesian Advisory” to “Drilling and operation advisory”**

# Aquifer Search Updates

## Well Information

|   |                             |
|---|-----------------------------|
| Number of wells correlated to the aquifer <a href="#">?</a>                 | 77                          |
| Number of uncorrelated wells within mapped aquifer extent <a href="#">?</a> | 56                          |
| Flowing artesian wells <a href="#">?</a>                                    | 3 artesian wells in aquifer |

Well info last updated 4/4/2023

## Documentation

### Factsheets

- AQ\_00318\_Aquifer\_Factsheet.pdf

### Other Documents

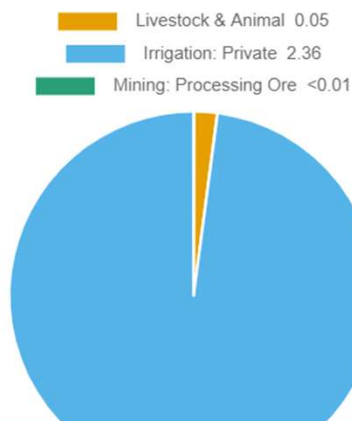
- AQ\_00318\_Aquifer\_Mapping\_Report.pdf

## Licensing Information

The licensing summaries should be considered estimates. Total volume is likely more than what is indicated in charts due to domestic use and unprocessed licence applications. Due to complexities in the structure of the licensing data, reported values should be confirmed through the [e-licensing portal](#).

|                                  |                      |
|----------------------------------|----------------------|
| Number of groundwater licences   | 11                   |
| Water withdrawal volume (annual) | 2414624 cubic metres |

Licensed volume by purpose (millions of cubic meters)



## Knowledge Indicators

|   |  |
|---|--|
| Advanced mapping <a href="#">?</a>                          | o North Okanagan 2018 - Piteau   |
| Drilling & operation advisory <a href="#">?</a>             | No information available.  |
| Observation wells <a href="#">?</a>                         | No information available.  |
| Numerical Model <a href="#">?</a>                           | No information available.  |
| Aquifer notations <a href="#">?</a>                         | Fully Recorded   |
| Water Budget <a href="#">?</a>                              | No information available.  |
| Water quality information <a href="#">?</a>                 | 0 wells with an EMS ID   |
| Hydraulically connected (screening level) <a href="#">?</a> | See Guidance on Determining Likelihood of Hydraulic Connection   |
| Groundwater Surface Water Interactions <a href="#">?</a>    | No information available.  |
| Other information   | o Hydrogeology and Environmental Flow Needs Assessment of a Groundwater Licence Application near Lumby, B.C. |

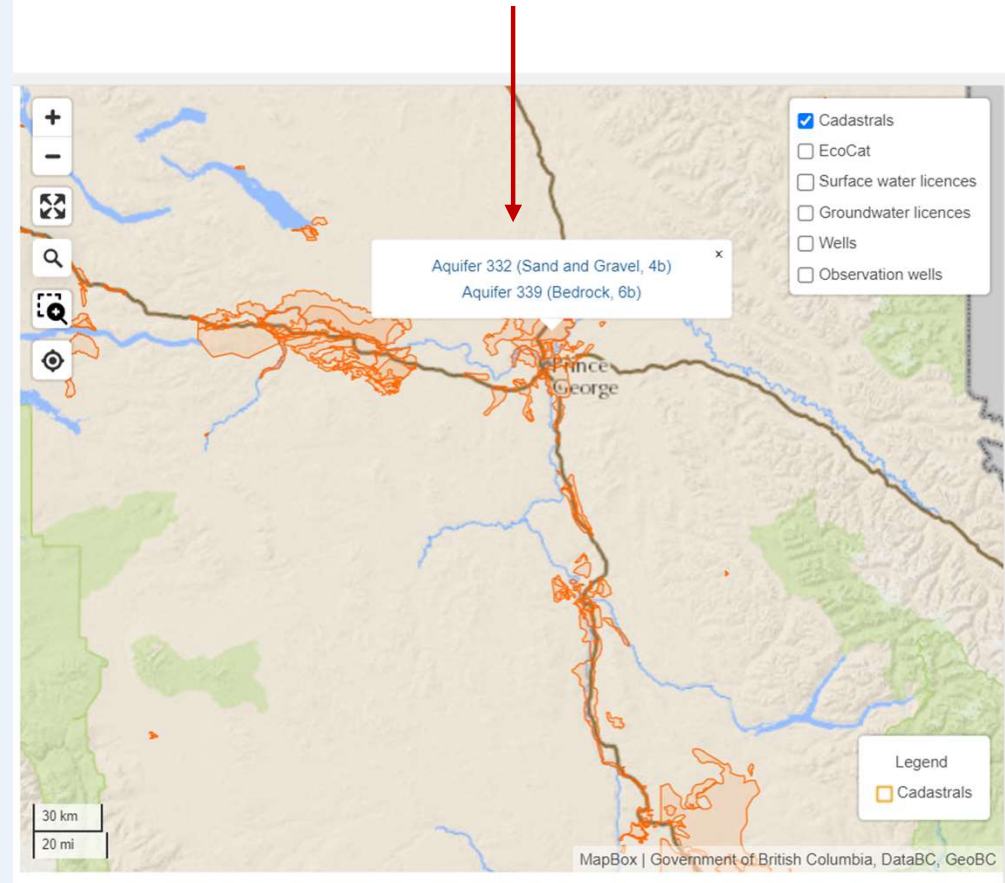
# Aquifer Search Updates

## Smaller Enhancements

### 6. Aquifer Map Call-out Boxes additional info

- Aquifer lithology (bedrock/sand & gravel), and
- Aquifer subtype (1a, 1b, 2, 3, etc.)

e.g., Aquifer 51 (Sand and Gravel, 4b)



- **Add Aquifer Notations field to each Aquifer Summary Page**
- **Add “Aquifer Notations” as an advanced aquifer search option**
- **If aquifer has “Possible water shortage” notation, AND it falls within West Coast or South Coast Regions, add “and/or Saline Intrusion Issues” to the notation.**

# Aquifer Notations and Advisories

Well Search | Aquifer Search | Registry Search | Groundwater Information

## Aquifer Search

### Basic Search

Search by aquifer name or number (leave blank to see all aquifers)

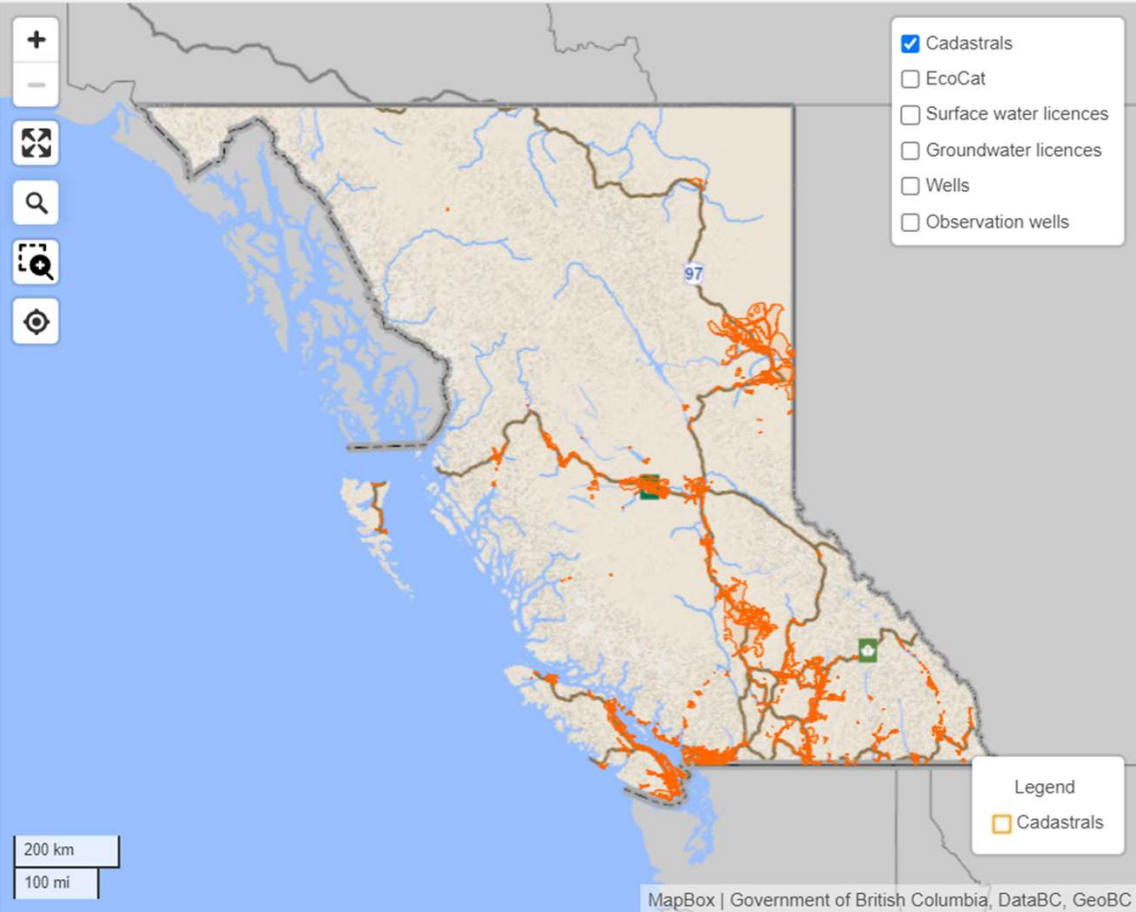
### Advanced Search

Any field match  All field match

- Advanced mapping
- Aquifer notations
- Drilling and operation advisory
- Groundwater surface water interactions
- Numerical model
- Other information
- Water budget

Download all aquifers

- [Aquifer extract \(XLSX\)](#)
- [Aquifer extract \(CSV\)](#)



MapBox | Government of British Columbia, DataBC, GeoBC

# Aquifer Notations

## Well Information

|   |                             |
|---|-----------------------------|
| Number of wells correlated to the aquifer <a href="#">?</a>                 | 1042                        |
| Number of uncorrelated wells within mapped aquifer extent <a href="#">?</a> | 1219                        |
| Flowing artesian wells <a href="#">?</a>                                    | 6 artesian wells in aquifer |

Well info last updated 3/6/2023

## Documentation

### Factsheets

- AQ\_00709\_Aquifer\_Factsheet.pdf

### Other Documents

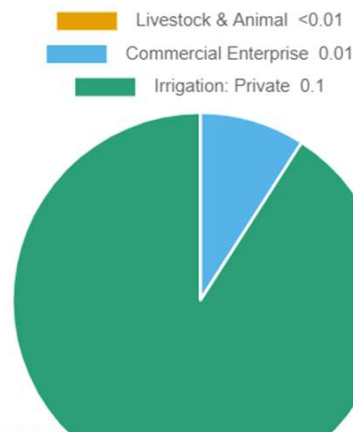
- AQ\_00709\_Aquifer\_Mapping\_Report.pdf

## Licensing Information

The licensing summaries should be considered estimates. Total volume is likely more than what is indicated in charts due to domestic use and unprocessed licence applications. Due to complexities in the structure of the licensing data, reported values should be confirmed through the [e-licensing portal](#).

|                                  |                     |
|----------------------------------|---------------------|
| Number of groundwater licences   | 3                   |
| Water withdrawal volume (annual) | 104551 cubic metres |

Licensed volume by purpose (millions of cubic meters)



## Knowledge Indicators

### Advanced mapping [?](#)

No information available.

### Drilling & operation advisory [?](#)

No information available.

### Observation wells [?](#)

Active

- o 196 Water Level Analysis: Stable or Increasing
- o 197 Water Level Analysis: Stable or Increasing
- o 316 Water Level Analysis: Stable or Increasing
- o 385 Water Level Analysis: N/A

Inactive  
(data may not be available)

- o No Water Level Analysis: 194, 195, 317

### Numerical Model [?](#)

- o Characterizing Recharge to Fractured Bedrock in a Temperate Climate (Gabriola Is.)

### Aquifer notations [?](#)

Possible Water Shortage and/or Saline Intrusion Issues

### Water Budget [?](#)

- o Water Budget Project: RDN Phase one (Gabriola, DeCoursey &

## Smaller Enhancements

- 1. Add “conductor casing” to list of casing drop options**
- 2. Add additional text to the General Disclaimer on the Well Submission page**
  - any notes and comments that are included in well reports filed under WSA and its regulations) will be made available to the public by the government in accordance with the Open Government License-British Columbia (OGL-BC)




# Well Summary Page Updates

## Smaller Enhancements

### 1. New flag for “Technical Reports” on each well summary page

Well Search / Well Summary

#### Well Summary

For best print results, use the Chrome browser 

Well Tag Number: 121457

Well Identification Plate Number: 61103

Owner Name: SUNSHINE COAST REGIONAL DISTRICT

Intended Water Use: Water Supply System

Artesian Condition: No

Well Status: New

Well Class: Water Supply

Well Subclass: Not Applicable

Aquifer Number: 560

Technical Report: Report Available

Observation Well Number:

Observation Well Status:

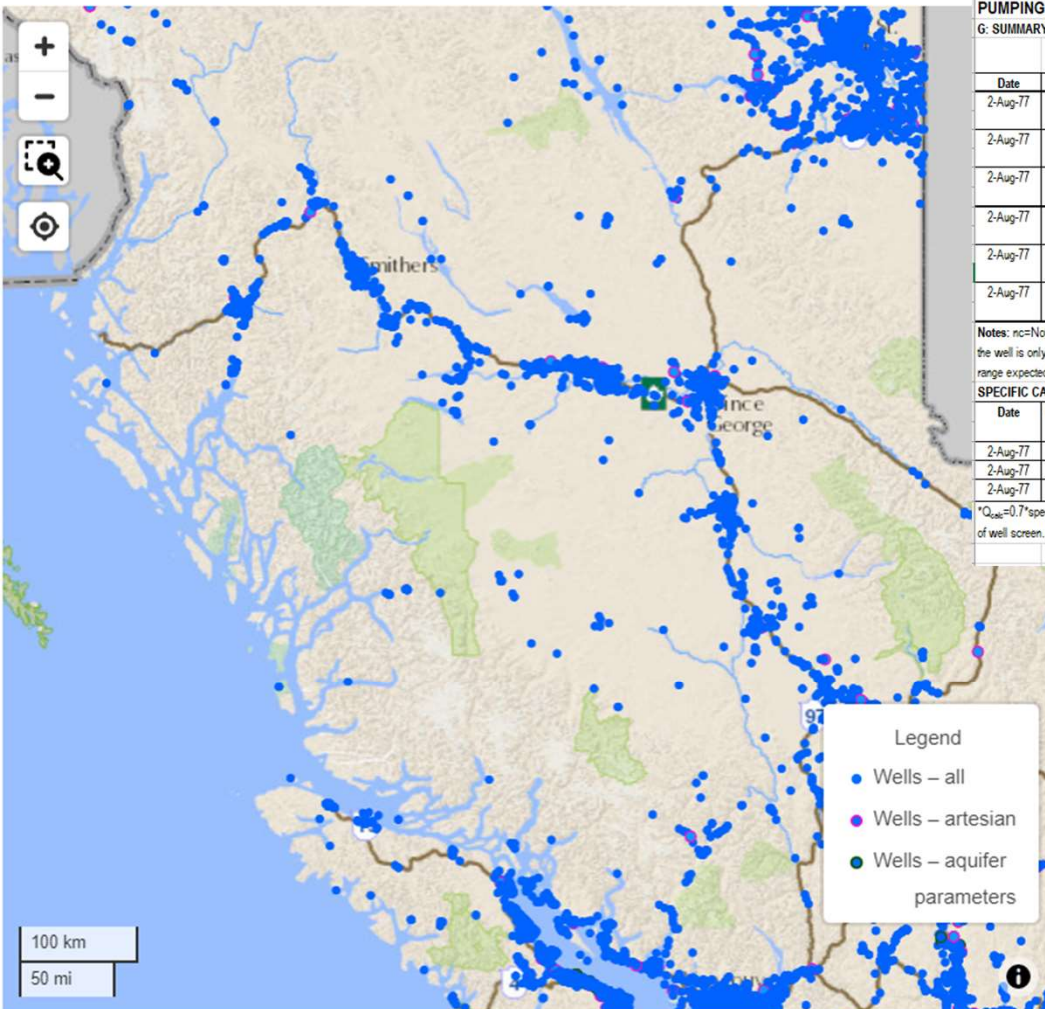
Environmental Monitoring System (EMS) ID:

Alternative specs submitted: No

### 2. Halos on GWELLS well map search to find wells with pumping test data

- A halo shows up around any wells with either hydraulic conductivity, storativity, or transmissivity data
- The legend shows halos as “Wells – Aquifer parameters”

# Well Summary Page Updates



## PUMPING TEST, WELL AND AQUIFER SUMMARY - PAGE 4

### G: SUMMARY RESULTS

| Date     | Well  | Description      | Method         | TRANSMISSIVITY |                |                     | STORATIVITY (dimensionless) |                |                | CONDUCTIVITY   |       |  |
|----------|-------|------------------|----------------|----------------|----------------|---------------------|-----------------------------|----------------|----------------|----------------|-------|--|
|          |       |                  |                | T <sub>1</sub> | T <sub>2</sub> | Units               | S <sub>1</sub>              | S <sub>2</sub> | K <sub>1</sub> | K <sub>2</sub> | Units |  |
| 2-Aug-77 | 37733 | Pumping well     | Theis          | 79             | nc             | m <sup>2</sup> /day | nc                          | nc             | 7              | nc             | m/d   |  |
|          |       |                  |                | 6364           | nc             | USgpd/ft            |                             |                | 24             | nc             | ft/d  |  |
| 2-Aug-77 | 37733 | Pumping well     | Jacob          | 77             | nc             | m <sup>2</sup> /day | nc                          | nc             | 7              | nc             | m/d   |  |
|          |       |                  |                | 6163           | nc             | USgpd/ft            |                             |                | 23             | nc             | ft/d  |  |
| 2-Aug-77 | 37733 | Pumping well     | Theis Recovery | 39             | nc             | m <sup>2</sup> /day | nc                          | nc             | 3.6            | nc             | m/d   |  |
|          |       |                  |                | 3165           | nc             | USgpd/ft            |                             |                | 12             | nc             | ft/d  |  |
| 2-Aug-77 | 17595 | Observation Well | Theis          | nc             | nc             | m <sup>2</sup> /day | nc                          | nc             | nc             | nc             | m/d   |  |
|          |       |                  |                | nc             | nc             | USgpd/ft            |                             |                | nc             | nc             | ft/d  |  |
| 2-Aug-77 | 17595 | Observation Well | Jacob          | 56             | nc             | m <sup>2</sup> /day | 2.3E-03                     | nc             | 6              | nc             | m/d   |  |
|          |       |                  |                | 4504           | nc             | USgpd/ft            |                             |                | 19             | nc             | ft/d  |  |
| 2-Aug-77 | 17595 | Observation Well | Theis Recovery | 106            | nc             | m <sup>2</sup> /day | nc                          | nc             | 11             | nc             | m/d   |  |
|          |       |                  |                | 8516           | nc             | USgpd/ft            |                             |                | 37             | nc             | ft/d  |  |

Notes: nc=Not calculated, e.g. storativity not calculated (not valid) for pumping well. For derivation of K, assumption of methods is that well is fully penetrating the aquifer, therefore test provides a conservative estimate of K if the well is only partially penetrating the aquifer. Values of T & K are consistent between methods and wells. Storativity value is within the range expected for an confined aquifer. Conductivity values are in the low end of the range expected for a gravel aquifer (Heath, R. 1983. Basic Groundwater Hydrology).

### SPECIFIC CAPACITY & WELL YIELD ESTIMATE

| Date     | Owner Well Number | Well Tag Number | Description  | Time     | Pumping rate (L/s) | Drawdown (m) | Specific capacity (L/s/m) | Specific capacity (USgpm/ft) | Available drawdown (m) | Long-term well capacity, Q* |     |       |
|----------|-------------------|-----------------|--------------|----------|--------------------|--------------|---------------------------|------------------------------|------------------------|-----------------------------|-----|-------|
|          |                   |                 |              |          |                    |              |                           |                              |                        | Q <sub>calc</sub>           | L/s | USgpm |
| 2-Aug-77 | 77-1              | 37733           | Pumping well | 1 hour   | 23.3               | 7.7          | 3.0                       | 15                           | 19.7                   |                             |     |       |
| 2-Aug-77 | 77-1              | 37733           | Pumping well | 1 day    | 18.4               | 12.4         | 1.5                       | 7.2                          | 19.7                   | Q <sub>calc</sub>           | 13  | 283   |
| 2-Aug-77 | 77-1              | 37733           | Pumping well | 100 days | 18.4               | 19.8         | 0.93                      | 4.5                          | 19.7                   | Q <sub>avail</sub>          | 18  | 292   |

\*Q<sub>calc</sub>=0.7\*specific capacity\*available drawdown, if Q<sub>calc</sub>>Q<sub>avail</sub>, long term capacity for well taken as Q<sub>avail</sub> (weighted average of pumping rates). Available drawdown calculated as depth between static water level and top of well screen.

# Driller/Pump Installer Registry

- A new map search feature is live for finding Well Drillers and Well Pump Installers (Phase 1)

Search for a Well Driller or Well Pump Installer

To update contact information or for general enquiries email [groundwater@gov.bc.ca](mailto:groundwater@gov.bc.ca).

[Learn more about registering as a well driller or well pump installer in B.C.](#)

Use the search function below to define your search criteria. Please note:  
The map only shows registered well drillers and well pump installers whose base operation and address are within B.C. Some well drillers and well pump installers may operate in multiple areas throughout B.C. For a complete list refer to the results table below.


Choose professional type:  
 Well Driller  Well Pump Installer

Community:

All  
BC  
100 Mile House  
150 Mile House  
70 Mile House  
Abbotsford

Individual, company, or registration number:

Entries:  
10



- Phase 2 (pending) will be using the map feature to click a region to see what WD/WPI is operational in that area.
  - Currently shows business address (town) and not the area in which they operate. Expected to go live ~May 2023.

## Larger Enhancement

- Increased ability to add pumping test data
- Currently can add 1 value for transmissivity, hydraulic conductivity, and storativity PER WELL.
- New feature will allow multiple tests (datasets) and multiple analysis/interpretation to be added to each well.
- Underway, but expected to be in production ~May 2023.

**Questions? Comments?**

**Thank you!**

**Amy Sloma**

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