

Water Purveyor Working Group

Fall Workshop 2016

Quality Bayside Resort, Parksville

October 21st, 2016



DRINKING WATER
WATERSHED
PROTECTION



REGIONAL
DISTRICT
OF NANAIMO



SUSTAINABLE
INFRASTRUCTURE
SOCIETY

Agenda

10:45 am to 11:00 am Registration & Coffee

11:00 am to 11:10 am Welcome & Introductions

11:10 am to 11:45 am Understanding Water Use: Metering Water Flowrates from Wells and Monitoring Groundwater Levels

11:45 am to 12:15 pm Successes and Challenges Roundtable

12:15 pm to 1:15 pm LUNCH

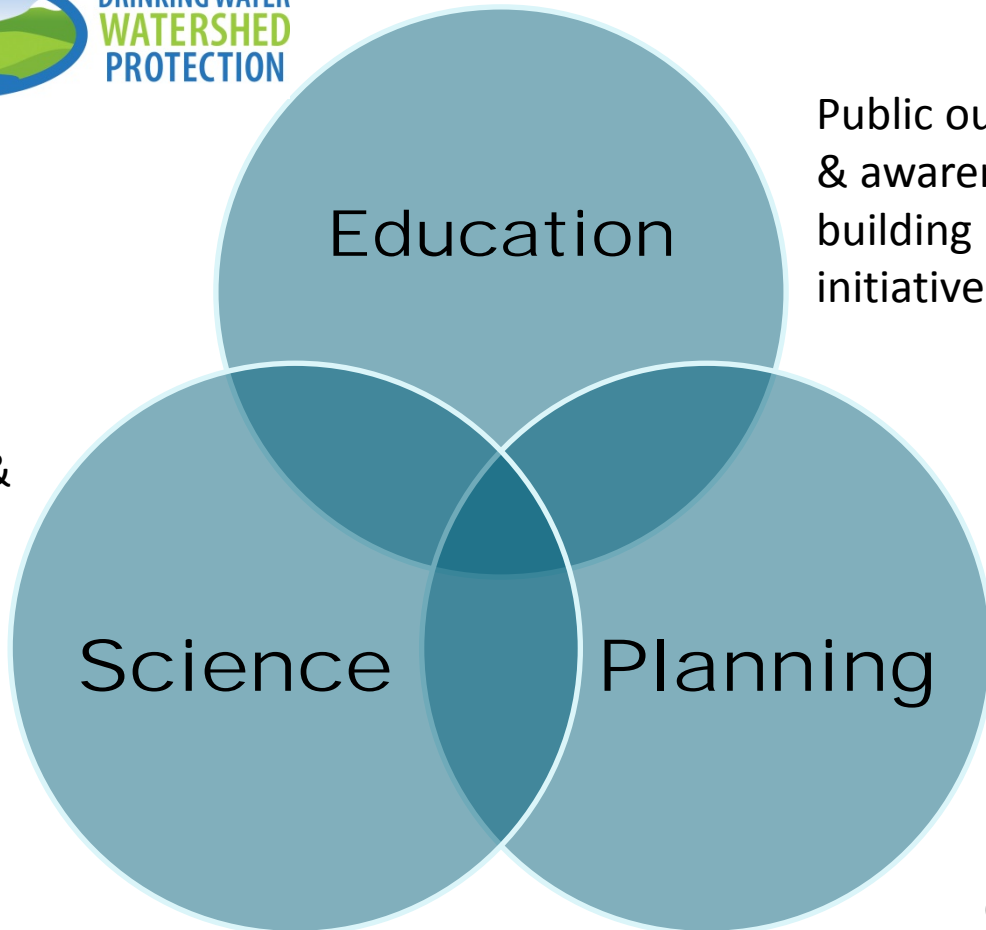
1:15 pm to 1:45 pm Useful web-based tools for water purveyors

2:00 pm to 5:00 pm
(SEPARATE SESSION) BC Groundwater Association Information Session – Groundwater Licensing Requirements

Our Program



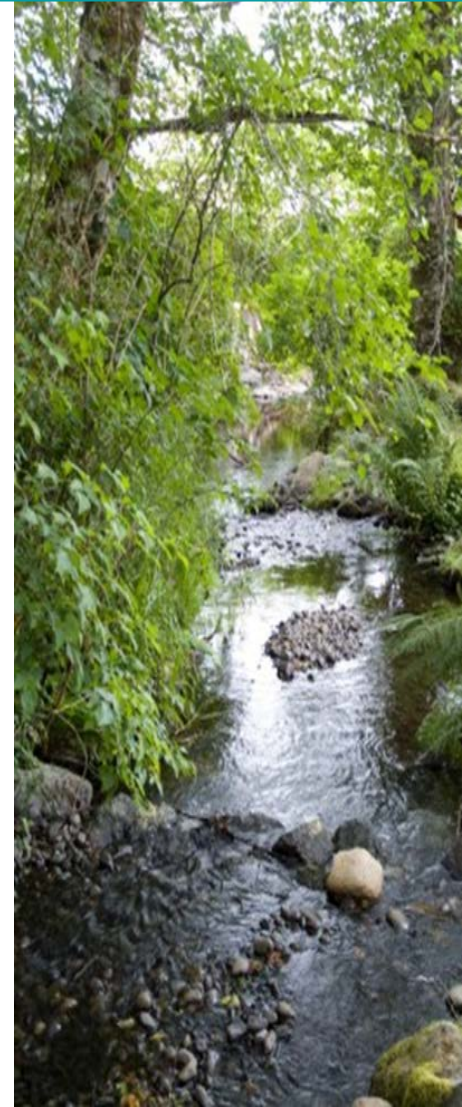
DRINKING WATER
WATERSHED
PROTECTION



Public outreach
& awareness
building
initiatives

Data
collection,
knowledge
gathering &
monitoring

Inform
policy,
provide
decision
support





Understanding Water Use: Metering Water Flowrates from Wells and Monitoring Groundwater Levels

With

Leon Cake

[Four Star
Waterworks Ltd.](#)

&




Joe Woolls

[Island Flow Controls
Water Solutions, Ltd.](#)

Presentation Summary:

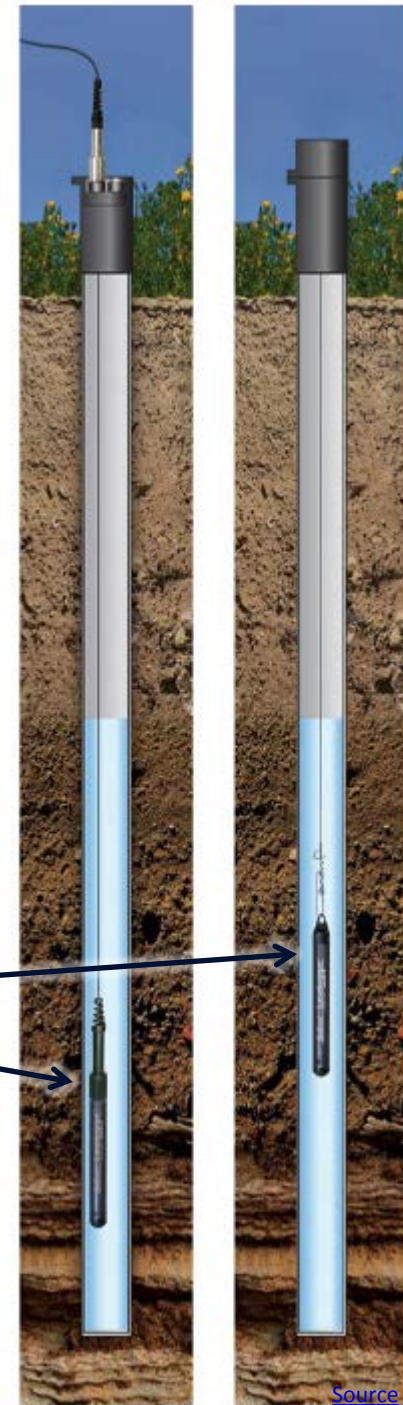
Measuring and tracking well levels over time can help you to establish trends, identify issues, and plan for the future. It is also important information for your groundwater license application and annual reporting requirements.

Equipment to determine water levels (static or pumping) of a well:

- **Well Sounder** →  [Source](#)
- **Water level meter/probe ("dip tape")** →  [Source](#)
- **Pressure Transducer (both wired and wireless models available)** → 

Backflow prevention is important:

- To protect the integrity of your system, a backflow assembly should be installed that is sized appropriately for the system's specifications.



Presentation Summary (cont'd):

In order to complete your groundwater licensing application and comply with the annual reporting requirements for licensees, you will need to know the quantity of water being beneficially used by the system annually.

Benefits of water meters go far beyond billing:

- Leak detection
- Assistance with accurate chlorination
- Consumption tracking
(for operational purposes and reporting requirements)



Choosing a meter:

- Multi-flow meters are better for turbidity.
- Appropriate meter sizing is very important for accuracy.
- Well yield (eg. Gallons per Minute) is just as important as pipe size when choosing a meter for a groundwater-fed system.
- Flow rates and their consistency are also important considerations.
- Some meters are programmable, and some can connect to monitoring software (SCADA).

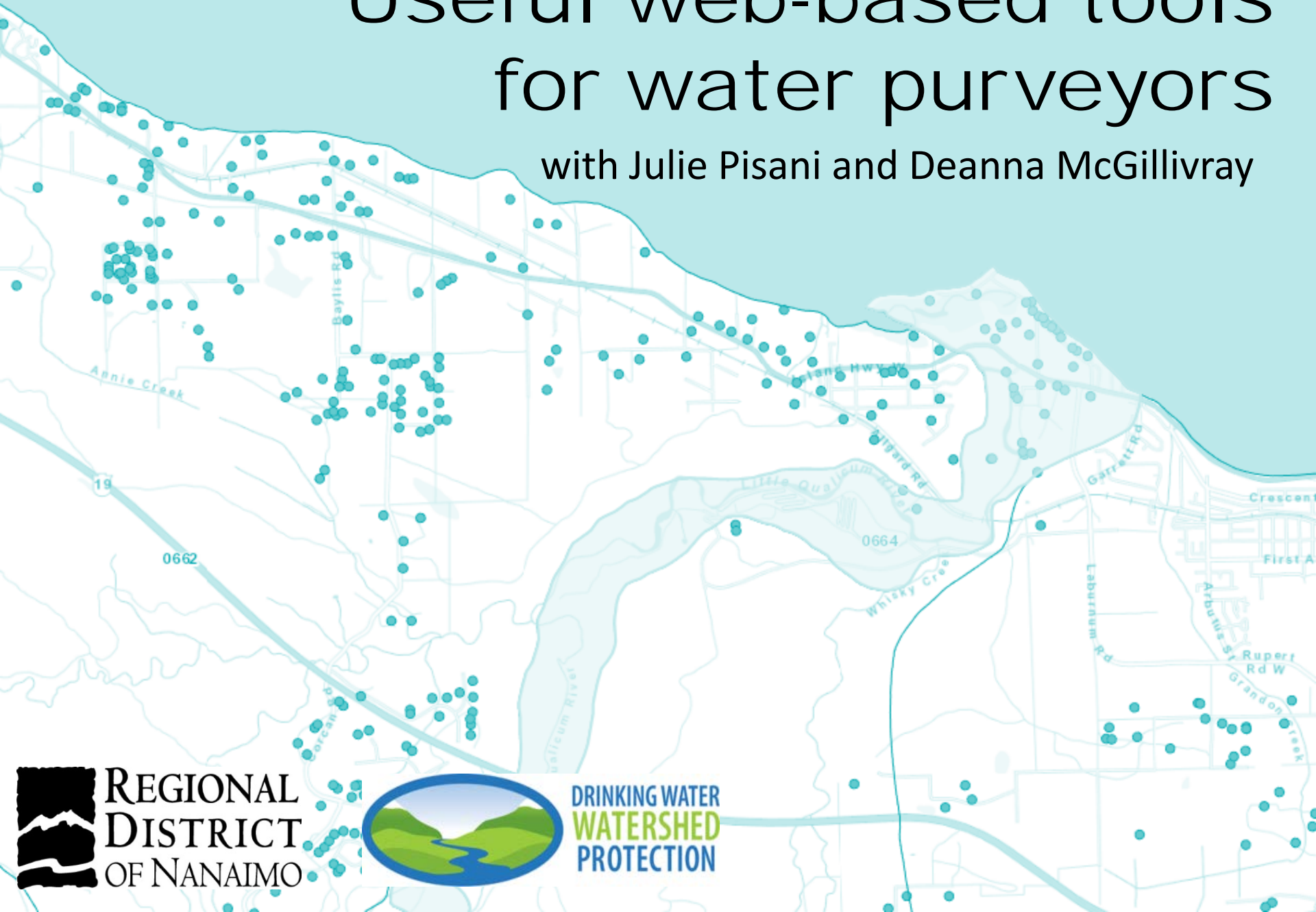
Roundtable Discussion:

Share the *successes* and *challenges* you have experienced over the past year



Useful web-based tools for water purveyors

with Julie Pisani and Deanna McGillivray



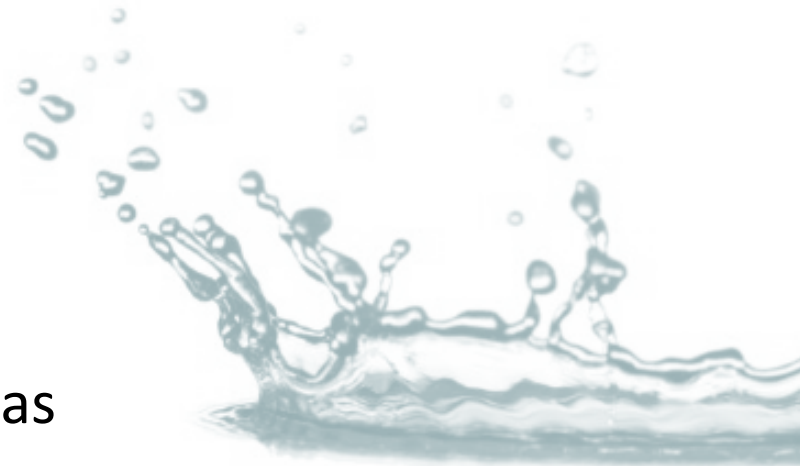
What do you need to know?

About the **well**:

- [Well report](#) should tell you the details
- Location of the well – coordinates & address
- Depth of the well – sounder or dip-tape
- Well ID plate number or well tag number

Available web resources:

- [BC Water Resources Atlas](#) – use the map to see if your well shows up!
- Ministry of Environment: [Water Wells Database](#) – link from Atlas



Let's look at an example...



**RDN
Surfside
Water
System**

- ▶ [Laws & Rules](#)
- ▶ [Water Licensing & Rights](#)
- ▶ [Drought, Flooding, Dikes & Dams](#)
- ▶ [Water Quality](#)
- ▶ [Groundwater Wells](#)
- ▶ [Water Planning & Strategies](#)
- ▶ [Water Conservation](#)
- ▼ [Water Science & Data](#)
 - ▼ [Water Data & Tools](#)
 - [Snow Survey Data](#)
 - [Hydrometric Standards Field Forms](#)
 - [Water Science Series](#)

Water Data & Tools

Discover scientific data, information and tools that assist in planning and protecting our water resources.

Groundwater Data and Tools

Find information about groundwater and aquifers, and search for or submit information about water wells in B.C.

- [Aquifers](#)

Aquifers are mapped, identified and categorized using data from the WELLS database. The map based Aquifer Classification System was developed in 1994, and over 1100 aquifers have been classified as of January, 2016. Work continues to inventory the remaining aquifers.
- [WELLS Database](#)

Search the database for information on a particular water well.
- [eWELLS](#)

Online portal for submitting information about the construction, alteration or decommissioning of a well.
- [Provincial Groundwater Observation Well Network](#)

The Observation Well Network provides data about selected aquifers in B.C. Use the interactive map on this page to view and download groundwater data.

Water Rights Information

Search the databases for detailed information about authorized water use in B.C.

- [Water Licence Query Tool](#)

Use a variety of search terms, including stream name, water use purpose and water licence number, to find information about authorized water use in B.C.

DataBC

Discover provincial data, applications and geographic services.

- [Explore DataBC](#)

Relevant Links

[NorthEast Water Tool \(NEWT\)](#)

The BC Water Tool and the NorthEast Water Tool (NEWT) are easy to use, map based tools that provide information about water availability, existing water users and monitoring data.

Flood and Drought Information

Learn about areas at risk for flooding or drought in B.C.

- [Floodplain maps](#)
Find out more about flood hazards and conditions and areas susceptible to flooding in B.C. It's part of what we're doing to help minimize flood damage.
- [Flood advisories and warnings](#)
Discover flood warnings and advisories, stream and lake runoff condition forecasts, water supply and low stream flow advisories and snow data information.
- [Drought map](#)
This map is updated regularly during spring, summer and fall to show areas of the province at risk of or experiencing drought conditions.

Mapping Tools

BC Water Resources Atlas, iMapBC and HabitatWizard are mapping applications that allow you to create your own layers for mapping waterbodies, water related infrastructure and fish habitat.

- [BC Water Resources Atlas](#)
Discover water-related data through the BC Water Resources Atlas. The Atlas is an iMapBC application with enhanced query functionality to enable the display of detailed water related data, including watersheds, water quantity and quality monitoring sites, aquifers, water wells and flood protection works. This tool is designed for use with Internet Explorer and may not work as well in other web browsers.
- [iMapBC](#)
Discover natural resource data. This tool is designed for use with Internet Explorer and may not work as well in other web browsers.
- [HabitatWizard](#)
Access detailed fish and fish habitat information using this map based tool.

Climate Tools

Discover long-term weather station data.

- [Climate BC](#)
- [Provincial Climate Data Set](#)

BRITISH COLUMBIA BC Water Resources Atlas

Navigation Markup Query Analysis

Full Extent Zoom In Zoom Out **Pan** Previous Extent Next Extent

Show Layers Print Map Point Identify Albers Coordinate Lat/Long UTM Scale

Scale: 1: 7,479,868

Jump to a map bookmark...

Add Shapefile Add Data

- ### Map Layers
- Operational Layers
 - Aquifer Classification
 - Aquifer Characterization
 - Water Wells
 - Water Wells - All
 - Water Wells - Private Domestic
 - Water Wells - Licensed/Unlicensed
 - Water Wells - Artesian
 - Water Wells - Lithology
 - Surface Water Licensing
 - Dams
 - Flood Protection / Dikes
 - Snow Survey Sites
 - Hydrometric
 - Water Quality and EMS
 - Watersheds
 - Land Ownership
 - Administrative Boundaries
 - Parks and Protected Areas
 - Contours
 - Reference Grids
 - Imagery



[Click here for link](#)

Navigation Markup Query Analysis

Full Extent Zoom In Zoom Out Pan Previous Extent Next Extent

Navigation Tools

Show Layers Print Map Point Identify Albers Coordinate Lat/Long UTM Scale

Map Layers Printing Location Info Zoom To

Scale: 1: 7,583

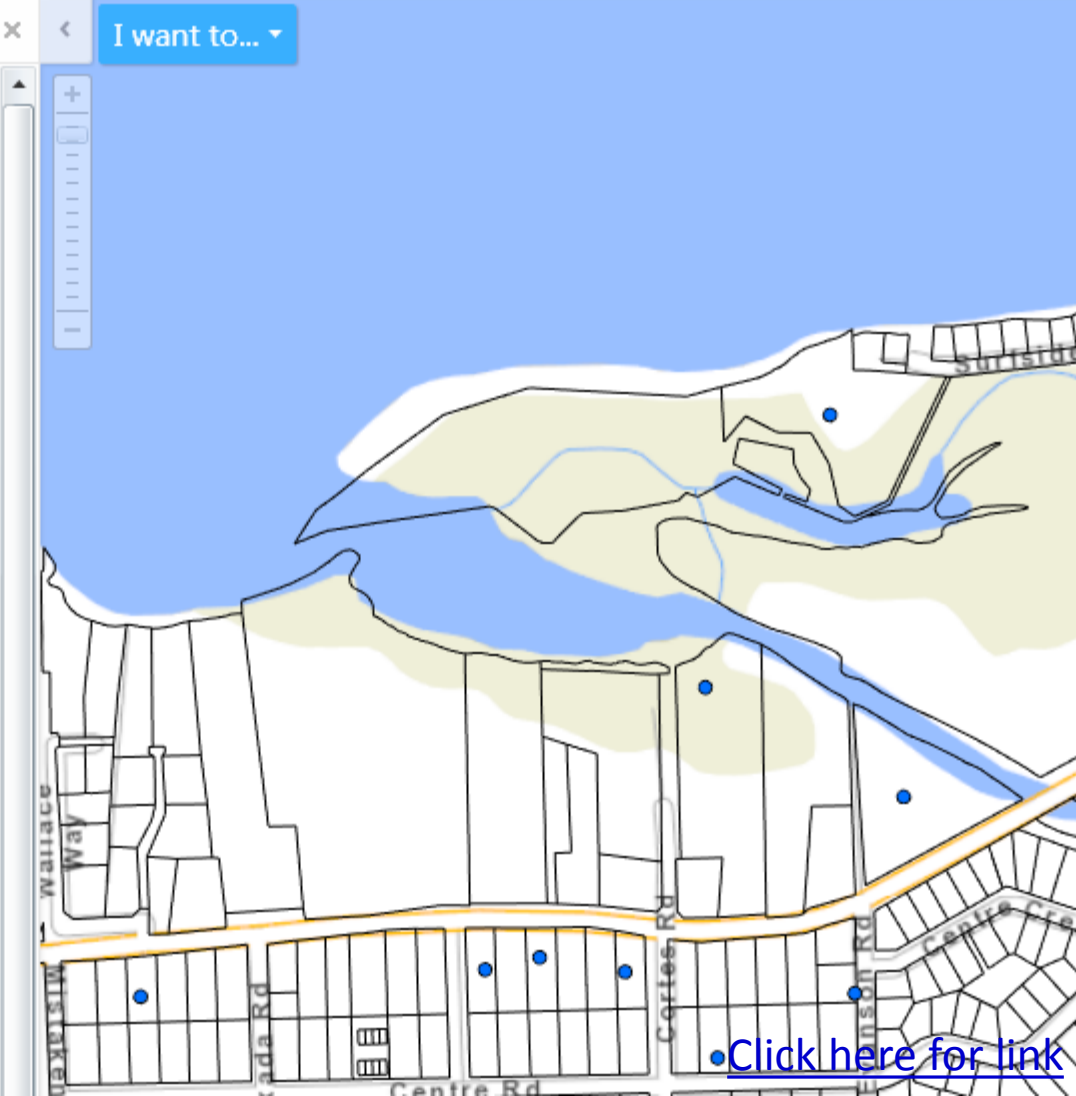
+ Jump to a map book

Map Scale & Bookm

Map Layers

I want to...

- Operational Layers
 - Aquifer Classification
 - Aquifer Characterization
 - Water Wells
 - Water Wells - All
 - Water Wells - Private Domestic
 - Water Wells - Licensed/Unlicensed
 - Water Wells - Artesian
 - Water Wells - Lithology
 - Surface Water Licensing
 - Dams
 - Flood Protection / Dikes
 - Snow Survey Sites
 - Hydrometric
 - Water Quality and EMS
 - Watersheds
 - Land Ownership
 - Integrated Cadastral Fabric - Outlined
 - Integrated Cadastral Fabric - Private Ownership
 - Integrated Cadastral Fabric - Crown Ownership - All



[Click here for link](#)

Results (2)

[View History](#) [View Selected](#)

[Refine Results](#) | [Table View](#)

- Integrated Cadastral Fabric - Outlined, 002192195
- Water Well: 28459**



Water Well: 28459

[Zoom to Feature](#) | [Pan to Feature](#) | [Create a Report](#) | [Copy to Drawing](#) | [Add to Selected](#)
[Export Feature Attachments](#)

Details | **Attributes** | Links

Field Name	Field Value
OBJECTID	29523
GEOMETRY	Point
Well ID Plate	
Well Tag Number	28459
Depth to Water (ft)	6
Depth to Bedrock (ft)	
Finished Well Depth (ft)	31
Diameter (in)	8.0
Street Name	3547 WEST ISLAND HIGHWAY

Scroll down in box to find a link to the well record in the BC Wells Database.

[Click here for link](#)

Report 1 - Detailed Well Record

Construction Date: 1973-07-19 00:00:00

Driller: Pacific Water Wells

Well Identification Plate Number:

Plate Attached By:

Where Plate Attached:

PRODUCTION DATA AT TIME OF DRILLING:

Well Yield: 60 (Driller's Estimate) Gallons per Minute (U.S./Imperial)

Development Method:

Pump Test Info Flag: Y

Artesian Flow:

Artesian Pressure (ft):

Static Level: 6 feet

WATER QUALITY:

Character:

Colour:

Odour:

Well Disinfected: N

EMS ID:

Water Chemistry Info Flag:

A sample well record.
Clicking the link in the well's
feature attribute box in the
BC Water Resources Atlas
(shown on the previous slide)
will take the user to the
record for the well.

What's the difference?

Well Tag Number:

- Unique identifier for well's record in Provincial database
- Your Well's digital "Fingerprint"

Well Identification

Number:

- On a metal plate on the physical well
- Installed by well driller/pump installer



[Click here for link](#)

No well report? Try these other sources...

- Location of the well – GPS or BC WR atlas
- Static water level – sounder or dip-tape
- Depth of well – Driller's log
- Do you have any other reports or documents?
- Your well will be registered as part of the application process.



[Source](#)



[Source](#)

**Well not
registered?**

What do you need to know?

About the surrounding area:

- Official name (number) of the aquifer
- A location description if no number
- Nearby streams or water bodies...

Available web resources:

- [BC Water Resources Atlas](#) – use the map to see if your well shows up!
- [DWWP Interactive Map](#)

Strait of
Georgia



Navigation Markup Query Analysis

Full Extent Zoom In Zoom Out Pan Previous Extent Next Extent

Show Layers Print Map Point Identify Albers Coordinate Lat/Long UTM Scale


Scale: 1: 94,257

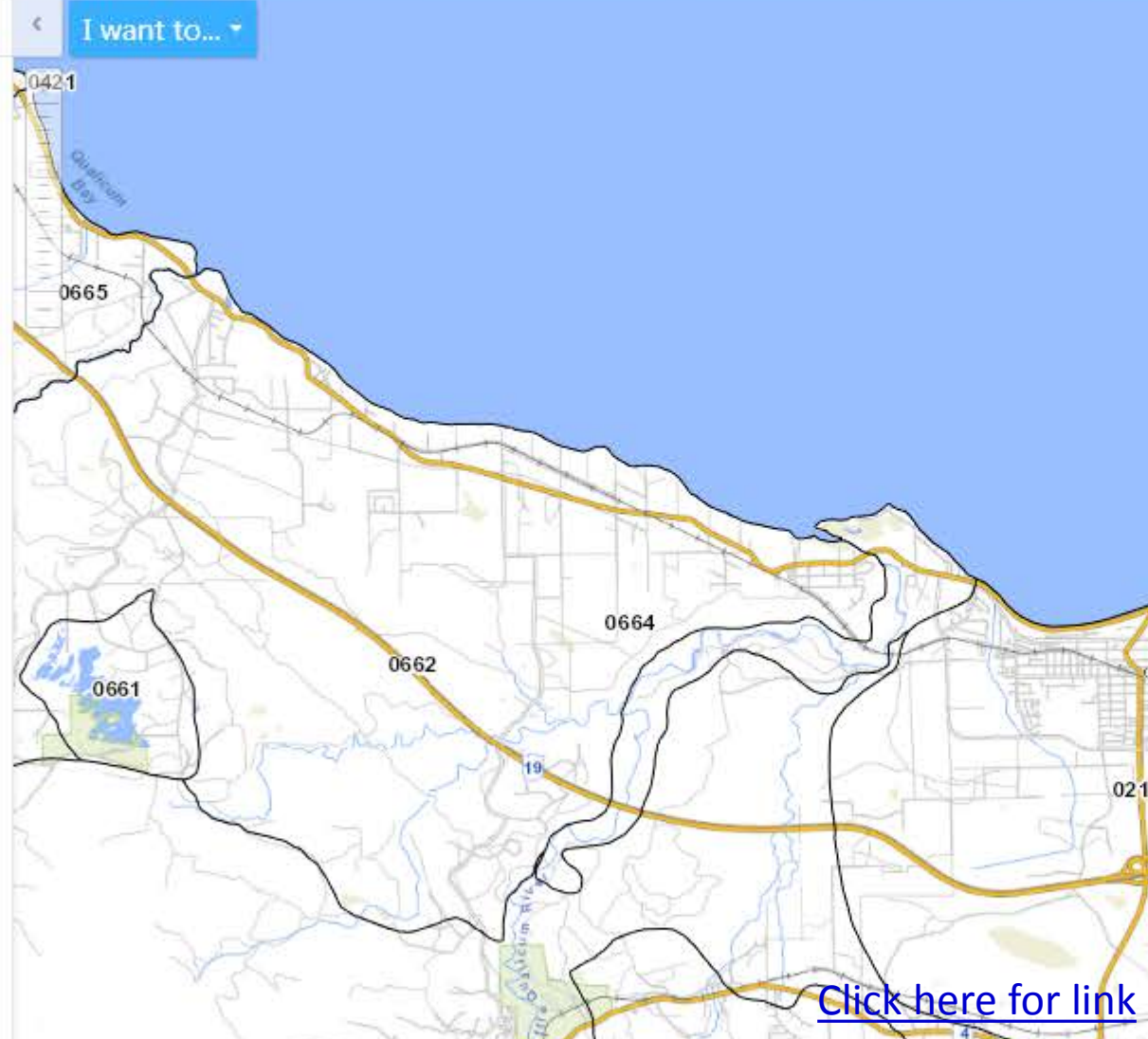
Jump to a map book

Map Scale & Bookm

Map Layers

I want to...

- Operational Layers
 - Aquifer Classification
 - Aquifers - BC - Outlined 
 - Aquifers - Demand - BC - Colour Themed
 - Aquifers - Productivity - BC - Colour Themed
 - Aquifers - Vulnerability - BC - Colour Themed
 - Aquifer Characterization
 - Water Wells
 - Surface Water Licensing
 - Dams
 - Flood Protection / Dikes
 - Snow Survey Sites
 - Hydrometric
 - Water Quality and EMS
 - Watersheds
 - Land Ownership
 - Administrative Boundaries
 - Parks and Protected Areas
 - Contours
 - Reference Grids



[Click here for link](#)



Navigation Markup Query Analysis

Full Extent Zoom In Zoom Out Pan Previous Extent Next Extent Show Layers Print Map Point Identify Albers Coordinate Lat/Long UTM Scale

Scale: 1: 21,997

Jump to a map bookm

Map Scale & Bookma

Results (1)

<< View History

Refine Results | Table View

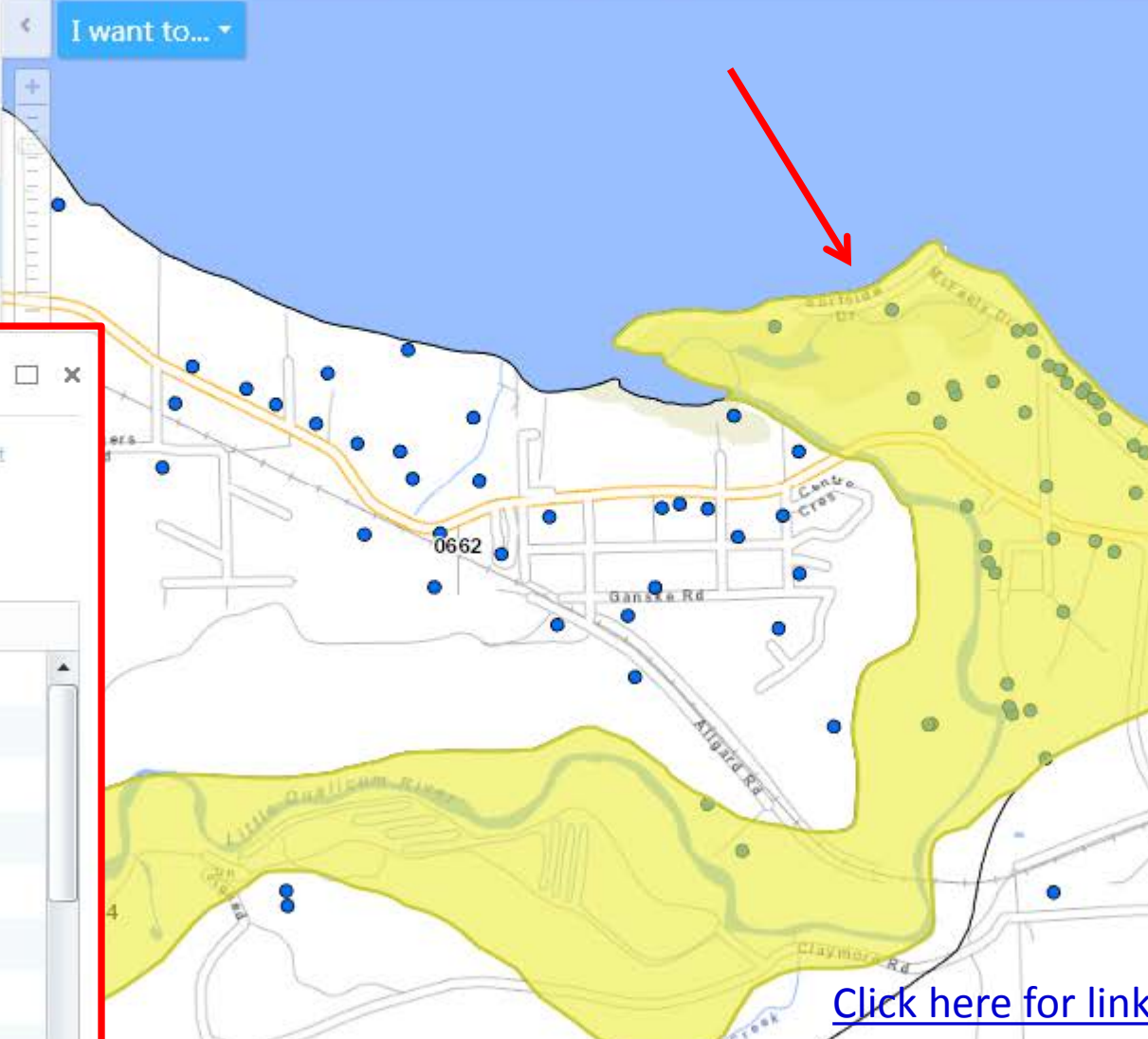
664 IA (13)

664 IA (13)

Zoom to Feature | Pan to Feature | Create a Report
Copy to Drawing | Add to Selected
Export Feature Attachments

Details | Attributes

Field Name	Field Value
AQ Tag	0664
Aquifer Name	664 IA (13)
Aquifer Number	0664
Aquifer Materials	Sand and Gravel
Productivity	High
Vulnerability	High
Demand	High



[Click here for link](#)



> **Learn More!**
Click on your region



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How to: Apply for a Groundwater License in BC



WaterGuru

"How To's"
for Water
Suppliers

What: Beginning 29th February 2016 all non-domestic users of groundwater in British Columbia must obtain a water licence and pay water fees and rentals.

Why: It's a legal requirement as part of the Water Sustainability Act. Groundwater licensing establishes equity between stream water and groundwater users, and provides additional benefits.

Steps

Step 1: Make sure that as an existing user of groundwater you are using the water beneficially (Note: If you are a new groundwater user you follow a different process to the one outlined below).

Web links

[New Groundwater Requirements](#)

Step 2: As a non-domestic user prepare to apply for a groundwater license (*Domestic Use:* Use for household purposes). For full definition check the Water Sustainability Act.

[Water Sustainability Act](#)

Step 3: Review the Guide *Preparing an Application for an Existing Groundwater User* on [Virtual FrontCounter BC](#) (The application process is lengthy, it will require obtaining a BCeID – see next step – that will allow you to make an application over several sessions).

[Guide: Virtual FrontCounter BC](#)

Step 4: Obtain a BCeID (British Columbia Electronic Identification) known as BCeID. BCeID is available via the [Online Service](#) that makes it easier for you to use your user ID and password to sign in securely to the participating Government of British Columbia services.

[Electronic Identification BCeID](#)

Step 5: After reviewing the Guide, ensure you have the information you require to make the application. Consult with other water system operators or specialists if necessary who can help you find the information required for the application.

[Canadian Water Directory - BC Section](#)



Step 6: Go to the webpage of FrontCounter BC and choose START. Work through the application process; find out how to remit the required fees, and ensure you can provide the signature(s) that may be required.

[FrontCounterBC](#)

Step 7: Check on the progress of your application by visiting FrontCounter BC and entering your BCeID and Password.

[FrontCounterBC](#)

DEADLINES: To 1st March 2017 – Application Fees Waived To 29th March 2019 – Date of Precedence Granted

WaterGuru shows you how to carry out a range of tasks that are important for the sustainable operation of community water suppliers, and provides convenient web links. For the complete series of WaterGuru and Terms of Use please see: [www.CanadianWater.Directory](#) and click on Resources

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WaterGuru "How to" Guide
for Applying for a GW License
www.canadianwater.directory/resources-water-supply

Canadian Water Directory

www.canadianwater.directory



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. DIRECTORY™

www.CanadianWater.Directory

Home of the only online Regional Directories covering products and services for **Water Supply**, **Wastewater Management** and **Irrigation and Drainage** in Canada.

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[British Columbia](#)

[Manitoba](#)

[New Brunswick](#)

[Newfoundland & Labrador](#)

[Northwest Territories](#)

Search by Province

To go directly to the Regional Directories for your province of interest, click on its link below.



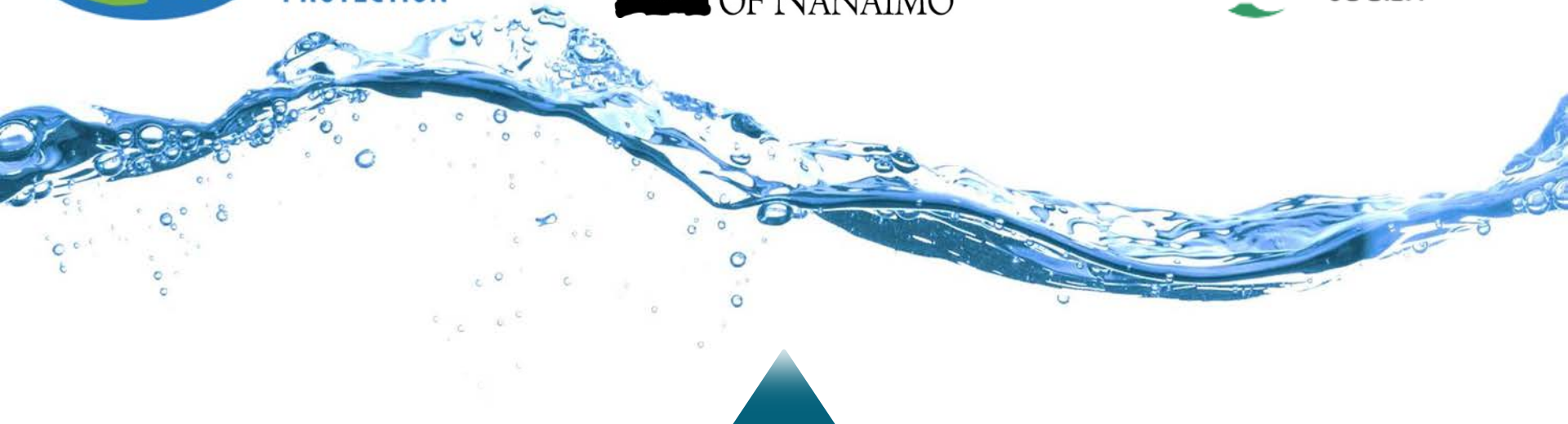
CANADIAN WATER
WEB SITES

Affordable web sites for Canadian water suppliers... [more..](#)

econics



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Thank you!

You can find a copy of the BC Ground Water Association presentation on Groundwater Licensing Requirements here: [Click for Link](#)

